

**Before the  
U.S. DEPARTMENT OF COMMERCE  
National Telecommunications and Information Administration  
Washington, D.C.**

**And the  
U.S. DEPARTMENT OF AGRICULTURE  
Rural Utilities Service  
Washington, D.C.**

American Recovery and Reinvestment Act of 2009 Broadband Initiatives )  
 )  
 ) Docket No. 090309298-9299-01  
Joint Request for Information )  
 )

**COMMENTS OF VIASAT, INC.**

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April 13, 2009

## EXECUTIVE SUMMARY

Properly structured, the broadband funding programs to be established pursuant to the American Recovery and Reinvestment Act of 2009 (“ARRA”) can achieve a number of important policy goals:

- Increase the adoption of broadband Internet access services, particularly by unserved households who otherwise will continue to be left on the wrong side of the digital divide;
- Provide those households with a quality of Internet access that is similar to the service most other Americans currently may enjoy;
- Provide those households with service at pricing that is competitive with the broadband Internet access service available in urban America today; and
- Allow competitive market forces to maintain the momentum created by ARRA funding by promoting the development of open wholesale access platforms.

ViaSat is pleased to provide its views on a framework for ARRA funding of broadband infrastructure that will achieve these goals.

As an initial matter, ViaSat recommends that ARRA broadband funding be prioritized for those areas where it is most needed: the approximately 15 million U.S. households who are (and otherwise will likely remain) outside the reach of existing terrestrial broadband networks. Moreover, ARRA broadband funding should be used to provide consumers with a meaningful and affordable broadband experience — for fixed installations,<sup>1</sup> one comparable to the median cable modem service available today.

This goal is lofty, but it is readily achievable. ViaSat is developing an innovative satellite-based broadband solution that is uniquely suited to meet the needs of these households on a cost-effective basis. This system will be capable of providing about 1 million households with broadband service that is comparable in both speed and price with today’s median cable broadband service. Significantly, the capital cost for this system will be less than \$1,000 per household, even for households located in remote areas. ViaSat would be pleased to provide a demonstration of the capabilities of this system to NTIA and RUS, as an assurance that this proposed framework for awarding ARRA funds can yield meaningful and long-term benefits to the unserved in America within the next few years.

With this goal in mind, ARRA-eligible broadband for fixed installations (“Target Broadband”) should be defined with reference to the following characteristics, which are akin to today’s median cable broadband service:

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<sup>1</sup> ViaSat makes proposals with respect to the provision of broadband in fixed installations, and takes no position regarding definitions for mobile broadband.

- Download speed: ~ 4 Mbit/s or better;
- Upload speed: ~ 1 Mbit/s or better;
- Provisioned rate at peak busy hour: 50 kbit/s per subscriber; and
- Monthly retail price: \$45 or less.

As noted above, stimulus funds should be awarded for a broadband infrastructure project only if the proposed service meets this definition of Target Broadband, and also should be prioritized for service to “unserved” households---any household that does not have available Internet access service with each of the following characteristics:

- Download: 768 kbit/s or better;
- Upload speed: 256 kbit/s or better;
- Provisioned rate at peak busy hour: 15 kbit/s per subscriber; and
- Monthly retail price: \$45 or less.

Households with broadband availability that falls in between the proposed definition of “Target Broadband” and the proposed definition of “unserved” should be considered “underserved” for purposes of ARRA funding. Because these underserved households already have some level of acceptable broadband service, market forces will serve to improve the quality of their service, and raise it to the level of Target Broadband, over time. Those market forces would be stimulated, however, by allowing ARRA funds to be used for programs that not only provide Target Broadband to the unserved, but also simultaneously serve underserved areas, because doing so will “raise the bar” competitively for broadband services in underserved areas.

Absent the use of ARRA funds, however, *unserved* households will likely continue to be left behind. That is why ViaSat recommends that ARRA funding be prioritized for the needs of the *unserved*.

Many of the broadband-needy households that are located in the vicinity of geographic zones deemed to be “served” will undoubtedly be unaccounted for in the ongoing broadband mapping exercises. Absent conducting a census of every household, there is no reliable way to capture every household that is unable to receive broadband service. To supplement the broadband mapping efforts, consumers should be allowed to identify themselves easily through automated procedures as being within the scope of the ARRA, subject to timely government confirmation.

Commercial companies are well positioned to offer innovative and efficient broadband proposals to meet the goals of the ARRA, particularly on a multi-state basis. Commercial companies, along with governmental and non-profit entities, therefore should be eligible for ARRA funding. Since many different interests will be competing for limited funding, funding decisions must be open and transparent, and based on clearly articulated evaluation criteria, including:

- *Open wholesale access*: Funding priority should be awarded to commercial programs that commit to use an open wholesale access model to enable multiple Internet access service providers to compete for end users over the same network. This is

- *Subscriber efficiency*: Funding priority should be awarded to programs that yield the lowest ratio of ARRA funding to the total number of previously unserved broadband subscribers supported by the program. Satisfaction of ViaSat's proposed quality of service requirements will ensure that large numbers of subscribers do not dilute the overall broadband experience in these cases.
- *Capital efficiency*: Funding priority should be awarded to programs that yield the lowest ratio of total capital expenditures to the total number of previously unserved broadband subscribers supported by the program.
- *Service level efficiency*: Funding priority should be awarded to programs that yield the lowest ratio of monthly retail service charge to the provisioning rate per subscriber, thus providing an objective measurement of the quality and affordability of a proposed service compared with the definition of Target Broadband.

Given the considerable efficiencies afforded by broadband systems that span multiple states, a significant percentage of total ARRA funding should be made available for multi-state solutions. ViaSat recommends that NTIA and RUS each designate at least 75% of the available funding for multi-state (national or regional projects), with the remainder designated for state, county or municipal projects. State and other local governmental entities, of course, should have an essential role in evaluating any such multi-state proposals, which could be done through a grading mechanism that NTIA and RUS could use in making their final determinations.

ViaSat strongly urges the adoption of appropriate accountability measures to ensure that stimulus funds are not wasted and applicants are held accountable for the performance promised in their applications. The large dollar amounts being made available in these programs provide strong incentives for applicants to over-promise in their proposals. NTIA and RUS should implement reporting obligations, anti-gaming restrictions and under-performance penalties to reduce the chance of waste and fraud. Funding recipients should be required to periodically report on the progress of their programs, as measured against the proposed schedule and objectives described in their funding applications. Penalties should be imposed that are proportionate to any performance shortfalls.

Allocating ARRA funds in a manner consistent with these proposals will both stimulate the economy and achieve longer-term policy goals. Indeed, spurring the growth of viable and robust broadband solutions with ARRA funds will lay a strong foundation for the development of a national broadband plan over the next few years.

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**COMMENTS OF VIASAT, INC.**

ViaSat responds to the joint request for information (“RFI”) of the National Telecommunications and Information Administration (“NTIA”) and the Rural Utilities Service (“RUS”) in connection with the broadband funding programs to be established pursuant to the American Recovery and Reinvestment Act of 2009 (“ARRA”).<sup>2</sup> The ARRA will enable some of the largest and most significant public works projects in decades. ViaSat lauds the Administration’s efforts to bridge the digital divide and believes that the ARRA’s focus on the broadband needs of unserved U.S. consumers and institutions is an important first step in meeting that goal.

As a leading provider of communications solutions for both commercial and military applications, ViaSat is pleased to provide its perspective on the key issues raised in the RFI. ViaSat is well-qualified to comment on these issues as the provider of the ground network

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<sup>2</sup> American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Joint Request for Information, Docket No. 090309298-9299-01, 74 Fed. Reg. 10716 (Mar. 12, 2009); American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) (“ARRA”).

for the broadband satellite system operated by WildBlue, and also as the developer of new and innovative satellite technology that will both revolutionize the broadband industry and advance the important goals of ARRA broadband funding programs.

ViaSat's broadband satellite system is designed to deliver cable-modem-like broadband services at affordable prices. With its ability to serve about 1 million households at a capital cost of less than \$1,000 each, this system is a cost-effective means of extending high-quality broadband service to households who simply do not have that option available today. Government representatives who witnessed ViaSat's recent demonstration of the capabilities of this satellite broadband technology found it enlightening and informative. ViaSat invites others at the agencies to view this demonstration to illustrate the ways in which satellite technology can meet the Congressional goals expressed in the ARRA.

ARRA funding can be used to achieve a number of important policy goals:

- Increase availability, affordability and ultimately adoption of broadband Internet access services, particularly by the unserved households that otherwise will continue to be left on the wrong side of the digital divide;
- Provide those households with a quality of service that is similar to the broadband service that most other Americans currently enjoy;
- Provide those households with service at pricing that is competitive with the broadband Internet access service available in urban America today; and
- Allow competitive market forces to maintain the momentum created by ARRA funding by promoting the development of open wholesale access platforms.

The agencies can achieve these goals, and also facilitate investment in systems that will be meaningful building blocks for the future by (i) appropriately defining critical terms, (ii) developing suitable criteria for funding eligibility, (iii) ensuring that households that may not be counted in mapping exercises are able to raise their hands and be counted, (iv) providing

meaningful funding for multi-state projects, (v) establishing an open and transparent selection process with clearly-articulated selection criteria and methodologies, and (vi) holding ARRA funding recipients accountable for delivering the broadband systems they propose.

## **I. THRESHOLD ELIGIBILITY FOR BROADBAND FUNDING**

Establishing appropriate definitions of “broadband,” “unserved” and “underserved” for purposes of ARRA funding is an important threshold matter.<sup>3</sup> The definitions that the agencies establish for these terms will determine which programs are eligible for funding, and which are not. As such, it is important, at the outset, to articulate policy goals for the funding program that will inform those definitions. ViaSat’s proposed definitions below are for the provision of broadband in fixed installations, and it takes no position with respect to definitions for mobile broadband.

ViaSat recommends that the limited ARRA broadband funding be prioritized for those areas where it is most needed: projects providing a minimum specified level of broadband service (defined below as “Target Broadband”) to the approximately 15 million U.S. households who are (and otherwise will likely remain) outside the reach of existing terrestrial broadband networks. ARRA funding will make it possible to serve those households on a cost-effective basis and also provide them with affordable broadband service that is comparable to the median cable modem service that is available today. While other U.S. households (those who have some acceptable level of Internet access) undoubtedly would benefit from better service and more competition, competitive market forces continue to operate to improve the options for those already-served households. In fact, because served and unserved households often exist in close proximity, broadband systems that cover both served and unserved households provide a unique

opportunity to leverage valuable ARRA funds to both bring initial service to unserved households, as well as to “raise the bar” competitively with respect to the quality of broadband service for served households.

With these goals in mind, and as detailed below, ViaSat recommends the following definitions:

- “Target Broadband”: Internet access service at 4 Mbit/s downstream and 1 Mbit/s upstream (or better), provisioned at a minimum rate of 50 kbit/s per subscriber at peak busy times, at a retail monthly rate of \$45 or less.
- “Unserved”: any household that does not have Internet access service available at 768 kbit/s downstream and 256 kbit/s upstream (or better), provisioned at a minimum rate of 15 kbit/s per subscriber at peak busy times, at a retail monthly rate of \$45 or less.
- “Underserved”: any household whose available Internet access service does not qualify as “Target Broadband,” but which household does not qualify as “Unserved.”

The bases for these proposed definitions are provided below.

**A. Programs Should Meet Minimum Speed and Provisioned Bandwidth and Maximum Retail Price Requirements**

In order to ensure that government funding for broadband infrastructure programs is used to support a service that can provide the basis for the next generation of broadband applications and that also is provided at an affordable price, funding for such programs should be limited to those that will meet three important requirements: network speed, provisioning rates (actual minimum allocated bandwidth to end users at peak busy hour) and affordability. The definitions of “broadband,” “unserved,” and “underserved” for ARRA purposes need to take these requirements into account.

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<sup>3</sup> See Joint Request for Information, 74 Fed. Reg. at 10719; H.R. Rep. No. 111-16, at 776 (2009) (Conf. Rep.).

## **1. Network speed**

As an important threshold matter, broadband infrastructure that receives ARRA funding should provide network speeds of approximately 4 Mbit/s downstream and 1 Mbit/s upstream. These data rates approximate the median speeds available through cable broadband service today, and are consistent with current consumer expectations and business requirements for broadband services. Funding networks that support these speeds will allow unserved consumers to truly cross the digital divide and enjoy the quality of service that most of America currently enjoys.

## **2. Provisioned bandwidth**

While network speed is important, it is not the only relevant factor in defining quality of service for an end user. An even more important factor is the rate of service that an end user enjoys during peak busy periods. The way a network is managed determines how congestion during peak traffic times affects the actual speeds experienced by the user. It also affects when broadband users actually are able to receive advertised network speeds, and when they will experience congestion, slow downloads, sluggish page load times and unacceptable performance. Consistent with Congress' direction,<sup>4</sup> broadband infrastructure programs qualifying for ARRA funding should be required to manage their networks to achieve a minimum level of throughput per subscriber — 50 kbit/s per subscriber in the downstream direction, which approximates the median level of throughput available through a cable broadband service today, and is consistent with current consumer expectations. This measure of

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<sup>4</sup> NTIA's notice recognizes that network congestion is a relevant consideration in defining the salient terms for ARRA funding purposes. *See* Joint Request for Information, 74 Fed. Reg. at 10719. Additionally, in the Conference Report on the ARRA, Congress directs NTIA to take into consideration, "the actual speeds that broadband networks are able to deliver to consumers under variety of circumstances." H.R. Rep. No. 111-16, at 776.

service level — the “provisioned bandwidth” — should be accounted for in ARRA funding criteria, and is included within ViaSat’s proposed definition of Target Broadband.

Any broadband delivery platform with insufficient provisioned bandwidth per subscriber will perform poorly. All networks, regardless of technology (*e.g.*, wireline, terrestrial wireless, cable, satellite), have points where bandwidth is aggregated and shared among multiple end users. Although these “choke points” can result in significantly slower service for end users, particularly during peak busy periods, properly designed and managed networks can minimize the impact of these choke points through appropriate allocation of bandwidth on a per subscriber basis. The amount of necessary bandwidth is most often derived empirically and is a balance between (i) subscribers’ traffic demands and the desire to receive advertised speeds 100% of the time, and (ii) the service provider’s need to deliver an acceptable quality of service in the most economical fashion. The amount of provisioned bandwidth increases every year, but today that amount for a median cable modem service varies between 30 and 50 kbit/s.

The provisioning rate for any system can readily be calculated by dividing the total bandwidth available at the relevant choke point by the total number of subscribers that are assigned to share that bandwidth (*i.e.*, the worst case situation where all subscribers contend for access simultaneously). To illustrate:

- Assume that a cable access network is designed to share 10 Mbit/s among a maximum of 200 subscribers. If at busy hour, 100 active users contend for access to the network, each will get an average 100 kbit/s (10 Mbit/s/100) of allocated bandwidth. This allocated amount would be more than enough, given the bursty nature of data transmissions, for each to have a high quality of service.<sup>5</sup> If the maximum number of subscribers assigned to this node on the cable system is 200, then the “provisioned bandwidth” on this system would be 50 kbit/s (10 Mbit/s/200 total subscribers assigned to this network).

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<sup>5</sup> Because most Internet traffic consists of data packets that are sent intermittently, the chances are low that all users on the network are sending or receiving data simultaneously.

- Assume that a 3G wireless cell has a combined bandwidth of 20 Mbit/s. The maximum speed achievable by an individual subscriber at the edge of this cell might be 1.5 Mbit/s. Suppose further that the wireless service provider has 2,000 subscribers in that cell. The provisioned bandwidth would only be 10 kbit/s per subscriber (20 Mbit/s/2,000 subscribers). Even though an individual subscriber could expect to get 1.5 Mbit/s during periods of little congestion, that same subscriber would see greatly reduced speeds at peak hour because the 10 kbit/s of provisioned bandwidth is well below the empirically derived amount of 40-50 kbit/s necessary to deliver a high quality of service in today's Internet. The service provider would have to shrink the cell size to cover only 400 subscribers, or quadruple the bandwidth in the cell, to provision sufficient bandwidth (50 kbit/s) for an acceptable quality service.
- Assume that the same 3G wireless cell described above, having a combined bandwidth of 20 Mbit/s, was supporting a total of 400 subscribers and thus, the allocated bandwidth per subscriber was 50 kbit/s over the access cell portion of the network. Assume further, however, that because the cell is located in a remote area, the network uses satellite backhaul from that base station, and that satellite link provides only 4 Mbit/s of backhaul capacity. In this case, the choke point would be the satellite backhaul, where the provisioned bandwidth would be 10 kbit/s per subscriber (4 Mbit/s of backhaul/400 total subscribers). The quality of service in this example would suffer, not because of the use of satellite backhaul, but because only 10 kbit/s of bandwidth was allocated to each subscriber over that portion of the network. In order to provide service of acceptable quality using this network architecture, the bandwidth of the satellite backhaul would need to be increased to 20 Mbit/s.

ViaSat's proposed provisioned bandwidth requirement of 50 kbit/s per household represents the high end of the range for provisioned bandwidth (30-50 kbit/s) offered across the United States by cable systems today. Setting the provisioning rate at the high end of the range provides room for growth as traffic demands increase in the coming years.

### **3. Retail price**

The definition of broadband for ARRA purposes needs to take into account the retail price of the service that will be offered under any funded program. Consistent with the goal of providing a meaningful and affordable broadband experience, recipients of government funding should also be required to offer broadband Internet access service at a maximum

monthly retail price of no more than \$45, for at least 5 years from the date service is initiated.<sup>6</sup> Such a requirement is particularly important for systems serving the previously unserved, who, absent the benefit of an open wholesale access network, would not enjoy the benefits of the competitive forces that historically have forced a decline in the price of communications services. Thus, including a maximum retail price metric in the definition of broadband is critical to maintaining affordable service to this population.

**B. The Definition of “Unserved” Should Capture Those Who Do Not Have Access to Acceptable Internet Access Service Today**

As acknowledged by the Federal Communications Commission (“FCC”), it is generally accepted in the industry that speeds of roughly 768 kbit/s downstream and 256 kbit/s upstream represent the minimum level of acceptable Internet access today.<sup>7</sup> The FCC’s current threshold for first generation broadband services — download speeds of 200 kbit/s — does not reflect a service that can realistically satisfy today’s business needs or consumer expectations. Therefore, the definition of an “unserved” household should include those who do not have access to an Internet access service with a minimum downstream network speed of 768 kbit/s and a minimum network upstream speed of 256 kbit/s. Consistent with the explanation above regarding the proposed definition of “Target Broadband,” the definition of “unserved” also should take into account provisioned bandwidth and retail pricing. The minimum provisioned bandwidth should be no less than 15 kbit/s per subscriber, based on customer dissatisfaction with current generation wireless and satellite services where the provisioned bandwidth can be as low

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<sup>6</sup> Recipients would be free, however, to either reduce price over time, or improve the quality of service while maintaining the same price.

<sup>7</sup> *Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscriber Data, and Development of Data on Interconnected Voice over Internet*

as 5 to 12 kbit/s. The maximum retail monthly price of \$45 is appropriate because cable subscribers typically pay this amount for median cable broadband services available in urban America today.

**C. The Definition of “Underserved” Should Capture Those Who Do Not Have Target Broadband and Are Not Unserved**

Underserved consumers are those who have at least the level of service that defines the unserved, but do not yet have access to a service that is comparable in quality and price to median cable broadband services (*i.e.*, Target Broadband). Although the underserved are identified as a population for whom the ARRA aims to provide improved broadband services, stimulus funds are more appropriately aimed at bringing broadband services to the unserved, as discussed above. As the market moves toward faster speeds, demand for high-bandwidth applications will compel competitive enterprises to improve the quality of service provided to underserved consumers. Without stimulus funds, however, unserved consumers are in danger of being left behind. Therefore, stimulus funding should be focused on bringing median cable service quality levels to the unserved.

**D. Unserved and Underserved Consumers Should Be Allowed to Self-Identify**

ViaSat urges NTIA and RUS to supplement the current broadband mapping processes with a mechanism that ensures all unserved and underserved consumers are accounted for, and that the needs of all such consumers are taken into account in ARRA funding determinations.

Based on the actual experience over the past several years of the Australian government with its Australian Broadband Guarantee program, any attempt to identify unserved and underserved households based on geographic reporting (whether zip codes, census tracts, or

other) inevitably will leave some households unaccounted for. The reason is that these households are everywhere — pockets of unserved and underserved exist throughout America, even in and around areas that are considered to be densely populated.

This phenomenon is confirmed by the fact that the vast majority of the approximately 1 million satellite-based broadband subscribers in North America today are located in and around the more populated portions of America — areas east of the Mississippi and on the west coast. They subscribe to today’s satellite broadband service not because of the quality it offers or its affordability — today’s satellite broadband providers offer service in the range of 512 kbit/s to 1.5 Mbit/s, with a provisioned bandwidth of about 5 to 12 kbit/s, and at pricing between \$39 and \$79/month — but rather because they have no alternative. As an example, a mapping of the thousands of satellite broadband customers located in the Commonwealth of Kentucky shows that the vast majority of them are located in areas where Connect Kentucky (a public/private partnership renowned for its broadband mapping efforts) indicates that broadband is offered by more than one terrestrial service provider. This example demonstrates that any mapping exercise that does not account for all of the households that subscribe to satellite broadband necessarily would understate the number of unserved households in America.

In order to account for all consumers who are candidates for service over ARRA-funded programs, the current broadband mapping efforts should be supplemented with a self-identification mechanism, similar to that implemented by the Australian government as part of its Australian Broadband Guarantee program, by which consumers can have themselves counted. Households that meet the definition of “unserved” or “underserved” should be allowed to certify

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Rulemaking, 23 FCC Rcd 9691 ¶ 20 n.66 (2008).

their status as such, and following timely government verification, should be eligible to receive services provided pursuant to ARRA-funded programs.

## **II. PRIORITIZATION AND GRANT OF FUNDING PROPOSALS**

### **A. The Funding Application Process Should Be Open to Commercial Companies and Projects of Varying Size and Scope**

The public interest would best be served by permitting commercial companies, as well as governmental and non-profit entities, to submit proposals for funding. Expanding the pool of applicants increases the potential for innovative and efficient broadband proposals. Thus, commercial companies, either directly or through a partnership with a non-profit or governmental entity, should be able to apply for and receive stimulus funding. In particular, holders of licenses or other authority from the FCC or another governmental entity have already demonstrated their qualifications to serve the public interest. Making commercial companies eligible for grant awards is consistent with Congress' mandate to permit as many entities as possible to apply for competitive grants.<sup>8</sup>

Because of the significant efficiencies that are afforded by broadband networks that offer multi-state coverage, ViaSat recommends that a significant portion of NTIA and RUS funding (75% or more) be designated for multi-state (*e.g.*, national or regional) broadband initiatives, with the remaining funding designated for discrete state, county or municipal projects. Funding larger projects is consistent with Congress' direction to RUS to prioritize projects that will serve the highest proportion of rural populations and its mandate to NTIA to consider whether an infrastructure project would provide the greatest broadband speed possible and increase affordability of, and subscribership to, the greatest population of users in an area.<sup>9</sup>

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<sup>8</sup> See H.R. Rep. 111-16, at 775.

<sup>9</sup> See *id.* at 5, 405, 775.

Of course, individual states have an important role to play in evaluating funding requests, and state and local input on national and regional proposals should be part of the evaluation process.

Because of the limited availability of ARRA funds, and the likelihood of more funding requests than available funding, NTIA and RUS should account for the possibility that a meritorious proposal may be able to be funded only in part. In such a case, ViaSat encourages the agencies, rather than rejecting the request, to provide the applicant an opportunity to revise its proposal and demonstrate what it could achieve at a lower ARRA funding level.

Finally, the requirement that an applicant explain why stimulus funding is needed to implement its proposal should not be viewed as a limitation on the use of stimulus funds only to support construction of new broadband infrastructure. ViaSat urges NTIA and RUS also to consider programs that would enable upgrades or improvements to existing infrastructure or service offerings in order to yield better quality, faster speed and provisioning rates of broadband services, and/or lower monthly retail prices.

**B. Clear Grading Criteria Are Needed to Evaluate Broadband Infrastructure Proposals**

It is critical that the ARRA broadband funding process be open and transparent, and that the agencies articulate objective bases on which they make funding decisions. To enable that to occur, applicants should be required to provide similar baseline information. In cases where applicants seek funding for broadband infrastructure projects, or otherwise to provide broadband service to end users, the information should include at a minimum:

- The goals and intended results of the project (expressed in quantitative and objective terms, to the extent possible);
- The reasons why the requested funding is needed to achieve those goals and results in the specified time frame; and

- In the case of a proposed commercial program, a detailed business plan demonstrating the long term viability of the business, including projected revenues, expenditures and cash flows.

In addition, NTIA and RUS should establish objective criteria by which to evaluate and prioritize competing applications. A well-articulated set of evaluation criteria would facilitate the comparison of a wide range of technologies and the relative merits of different proposals, and also would allow the most efficient and effective proposals to be given funding priority. As described above, initial eligibility criteria should screen out programs that would not support the provision of broadband at the Target Broadband level. Of eligible programs, priority should be given to those that meet the needs of the unserved. In addition, priority should be given to programs that promote retail competition among service providers and that use awarded funds efficiently. Each funding proposal should be required to include information and supporting data necessary to evaluate these criteria in an objective manner.

Moreover, it is critical that applicants provide complete descriptions of their network topologies, so that potential limiting factors on the quality of service, such as the choke points (and the associated limitations on provisioned bandwidth) described above, can be understood and assessed. Since choke points have such a critical impact on quality of service, a comparative evaluation of those limitations on provisioned bandwidth should be one of the evaluation criteria, because networks that use different technologies to serve end users may, in reality, look very much the same when comparing the way they connect to the Internet backbone.

**1. Funding should be prioritized for open wholesale access systems.**

Particularly in areas where government funding is used to provide the only true broadband service, it is important that consumers have access to multiple competitive retail Internet access service providers. Competition among multiple service providers not only would provide important choices to consumers, but also would improve the quality and lower the cost

of service. Funding priority thus should go to systems that commit to use an open wholesale access business model, because stimulus funding may be the only means of bringing broadband services to these otherwise-unserved consumers. The ARRA directs RUS to prioritize projects that give end users a choice of Internet service providers.<sup>10</sup> As supported by the Conference Report on the ARRA, NTIA has broad discretion to consider any factors that it deems important in establishing selection criteria for competitive grants.<sup>11</sup> Consideration of competitive retail opportunities would be consistent with the Act's goal of promoting improved broadband access to consumers in unserved areas, and also would ensure consistency in funding management.

**2. Funding should be prioritized based on the efficiency of the program.**

NTIA and RUS should prioritize proposals to fund broadband infrastructure, and other broadband service proposals, based on the efficiency with which the unserved households within the coverage area would be served. Namely, the agencies should consider whether one proposal, as compared to other proposals, would use funding awards to serve the target unserved households more efficiently, provide more cost-effective service, and offer better quality and more affordable service. Appropriate efficiency measures should include the following:

- *Funding efficiency.* Amount of the requested funding divided by the number of previously unserved broadband subscribers supported.
- *Capital efficiency.* Total capital cost of the project divided by the number of previously unserved broadband subscribers supported. This metric would enable, for example, an objective comparison of a system that serves a large number of subscribers across a wide geographic area with a system offering similar service levels but to fewer subscribers over a smaller area.
- *Cost efficiency.* Retail monthly charge divided by the provisioned bandwidth per subscriber. For instance, the calculated factor for a broadband service meeting the threshold service level criteria would be \$45/month per 50 kbit/s, or \$0.90/kbit/s/month.

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<sup>10</sup> H.R. Rep. 111-16, at 5.

<sup>11</sup> *See id.* at 774.

Applicants should be required not only to include these calculations in their proposals, but also to provide suitable back-up materials. As detailed below, applicants also should be held accountable for achieving these promised results and penalized if they are not able to do so.

### **C. Accountability Is Critical to Ensure Stimulus Funds Are Not Wasted**

The use of taxpayer funds mandates that entities who are awarded ARRA broadband funding be held accountable for achieving their stated performance goals. Reporting obligations, anti-gaming restrictions, and under-performance penalties are all needed to ensure that applicants are reasonable in their promises, and that government funds are not the only capital at risk should a funded program not perform as intended.

*Reporting.* In addition to the reports required under the ARRA, grantees should provide annual reports on the actual progress of their programs, measured against the proposed schedule and objectives identified in their funding requests.

*Anti-gaming.* In order to reduce the opportunity to “game” the system, including flipping for a profit a business whose main asset is ARRA funding, NTIA and RUS should consider requiring applicants to demonstrate or agree to the following requirements:

- The amount of the funding provided should bear some meaningful relationship to the size and financial stability of the applicant (*e.g.*, percentage of assets or revenues). Where an applicant cannot satisfy such a financial test, the owners of the applicant should be required to pledge their ownership interests in the applicant as security, to preclude a profitable sale of the enterprise before the goals of the funded program have been achieved.
- The applicant should provide a first priority security interest in the assets funded by the program (already a requirement under the existing RUS program), which requirement also would provide a means of recourse should the program not achieve the stated objectives.
- Consistent with commercial practices, funding awards should be conditioned upon compliance with contractual covenants, such as maintaining certain financial metrics (*e.g.*, debt-to-equity ratios) and limiting payments and distributions to affiliates and shareholders. Commercially reasonable covenants akin to those

commonly included in private commercial transactions are necessary to adequately ensure government funds are used for the intended purpose.

*Penalties.* Should an applicant fail to achieve the goals stated in its application in a timely fashion, the agencies should impose consequences that are proportional to the degree to which the project falls short of the stated goals, ranging from fines and forfeitures to (in cases where the program entirely fails) a possible return of the total amount of the funds awarded.

### **III. ALL TECHNOLOGIES THAT MEET STATED QUALITY GOALS SHOULD BE ELIGIBLE FOR FUNDING**

#### **A. Funding Should be Permitted for Systems Reaching Users in Eligible as Well as Non-Eligible Areas**

In establishing ARRA funding rules and procedures, ViaSat urges NTIA and RUS to use care not to establish definitions or eligibility criteria in a manner that inadvertently excludes certain broadband technologies from funding opportunities. In particular, ViaSat cautions that funding eligibility should exist for programs that have multiple purposes, such as systems that serve not only unserved or underserved consumers, but also consumers who are not eligible for funded services because they are adequately “served.” Applicants with such “dual purpose” proposals should be required to explain how funding would be used to advance the needs of the unserved and the underserved.

ViaSat urges the agencies to take this approach as a means of avoiding the significant limitations under the previous RUS broadband loan program, which did not accommodate networks that served both rural and non-rural communities. The limitations of that prior program effectively precluded the possibility of serving the most remote unserved rural areas with larger and more efficient regional or nation-wide systems that may have been the most efficient way to deliver services.

In sum, ARRA funding should be available for those who can show how they will use funds most efficiently to provide the targeted rate of service to eligible end users over those networks.

**B. Next Generation Broadband Satellites Are Uniquely Suited to Meet the Goals of the ARRA**

The next generation of fixed-satellite service (FSS) broadband satellites will vastly expand the availability of affordable, high-quality broadband service to unserved consumers at competitive speeds and quality levels. Significantly, satellite broadband systems that will be launched within the next two years are capable of meeting the definition of Target Broadband that ViaSat proposes, thereby offering users a broadband experience that is similar in terms of speed and price to the broadband service that most Americans currently enjoy. These next generation satellite broadband platforms will be launched not only here in the United States, but also in Europe in the same time frame. The use of next generation satellites (together with wireless infrastructure) was expressly identified by the Australian government recently as the most cost-effective way to reach the last 10% of the Australian population with high speed Internet access service.<sup>12</sup> Clearly, these new networks will solve the shortfalls in today's satellite broadband service offerings. Indeed, limitations in provisioned bandwidth and network congestion are the factors that account for the disparity in the speed and retail price of today's satellite broadband services, as compared to terrestrial alternatives.<sup>13</sup> Next generation satellites, such as ViaSat-1 in the United States, Eutelsat's KaSat in Europe, and the two satellites

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<sup>12</sup> Joint Media Release, Prime Minister of Australia, Treasurer of Australia, Minister for Finance and Deregulation, Minister for Broadband, Communications and the Digital Economy, New National Broadband Network (Apr. 7, 2009), *available at* [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/022](http://www.minister.dbcde.gov.au/media/media_releases/2009/022).

<sup>13</sup> Existing satellite broadband services are typically provisioned at a rate between 5 and 12 kbit/s (4 to 6 times lower than the provisioning rate of DSL and cable).

envisioned by the Australian government, will increase the amount of bandwidth available per capital dollar invested by more than an order of magnitude when compared with today's satellite broadband providers.

Moreover, satellite offers a capital-efficient and cost-effective nationwide or regional network that, upon launch, is able to offer broadband to unserved consumers, wherever they may be located. The launch of a single spacecraft enables any consumer within the service area to receive service simply by installing a small user terminal costing a few hundred dollars. Thus, satellite is essential not only to reach rural consumers, who will never likely be within the reach of terrestrial broadband systems, but also for those consumers in pockets of more densely populated areas who either are not captured by broadband mapping exercises, or are not able to be served cost-effectively by terrestrial means. Satellite infrastructure, deployed effectively, not only reaches the most remote unserved households, but also makes broadband service available in the underserved areas of the nation as well. This availability of higher quality service in underserved areas leads to increased competition in those areas, "raising the bar" and encouraging private investment to improve the quality of terrestrial services in that part of the market. A good example of this phenomenon can be seen in the way direct-to-home (DBS) satellite television service provides rural customers with affordable video programming to which they would not otherwise have access and at the same time provides a strong competitive alternative to cable and telco-provided video services, forcing those providers to improve their services.

#### IV. CONCLUSION

Allocation of ARRA funds in a careful and efficient manner is critical both to stimulate the economy and achieve longer-term policy goals. Thus, NTIA and RUS should ensure that the fund distribution processes they implement are marked by transparency and openness, and that the funding programs are implemented in a manner that accommodates broadband projects of all sizes, using the best available technologies, and offered by a wide range of applicants, including commercial companies. Spurring the growth of viable and robust broadband solutions will lay a strong foundation for the development of a national broadband plan.

Respectfully submitted,

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April 13, 2009