

BEFORE THE  
DEPARTMENT OF COMMERCE  
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION  
AND  
DEPARTMENT OF AGRICULTURE  
RURAL UTILITIES SERVICE

In the Matter of )  
Broadband Initiatives Program and ) Docket No. 090714113791375-05  
Broadband Technology Opportunities Program ) RIN: 0660-7A28 & 0572-ZA01

**COMMENTS OF THE  
CITY OF PALO ALTO, CALIFORNIA**

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## EXECUTIVE SUMMARY

The second-round NOFA furnishes NTIA with the opportunity to go beyond the more rural-oriented focus of the first-round NOFA and to use the BTOP (as opposed to the BIP) as a catalyst to help our nation catch up with our international competitors in terms of broadband infrastructure. That will be essential to future job-growth and the future economic and health care well being of our nation.

NTIA cannot move our nation toward that goal, however, unless it revises, and tailors, the infrastructure grant portion of the second-round NOFA move to achieve that goal, rather than being little more than a larger “me-too” sibling of the RUS BIP program. NTIA should revise BTOP to “raise the bar” in our nation’s critical high-technology centers that are currently underserved in terms of their unique broadband needs. The goal should be to “raise the bar” significantly, in terms of broadband speed, in high-technology corridors, like the Silicon Valley, that currently have only DSL or cable modem speeds available.

Palo Alto accordingly urges the NTIA to revise the second-round BTOP NOFA infrastructure grant application requirements in a manner that (1) is more amenable to applications by municipalities, other public sector applicants, and newly-formed public/private partnerships; (2) creates a separate “anchor institution network” infrastructure grant category with its own unique “broadband” definition of at least 200 Mbps symmetrical service; (3) establishes a separate “underserved” definition for our nation’s high-tech corridors of at least 25 Mbps symmetrical service; and (4) for purposes of both the “broadband” and “underserved” definitions, replaces “advertised” speeds with actual verifiable speeds.

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The City of Palo Alto, California (“Palo Alto” or the “City”), submits these comments to the Department of Commerce, National Telecommunications and Information Administration (“NTIA”), and to the Department of Agriculture’s Rural Utilities Service (“RUS”) in response to the Joint Request for Information (“RFI”) regarding the forthcoming second-round notice of funding availability (“NOFA”) for the broadband initiatives of the American Recovery and Reinvestment Act of 2009, Pub. L. No. 11-5, 123 Stat. 115 (2009) (“ARRA”).<sup>1</sup>

Palo Alto did not submit a broadband infrastructure application in response to the first-round NOFA<sup>2</sup> because various aspects of that NOFA, in the City’s judgment, rendered it ineligible to apply. We believe that NTIA can and should revise those aspects in the forthcoming second-round NOFA to better fulfill the ARRA’s goals and to bring the job-creating and other economic benefits of BTOP to communities like Palo Alto in the heart of the vital

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<sup>1</sup> *Broadband Initiatives Program and Broadband Technology Opportunities Program*, Joint Request for Information, 74 Fed. Reg. 58940 (Nov. 16, 2009) (“RFI”).

<sup>2</sup> *Broadband Initiatives Program and Broadband Technology Opportunities Program*, Notice of Funds Availability, 74 Fed. Reg. 33014 (July 9, 2009).

Silicon Valley, which are critical to our nation's future ability to compete economically in a global market.

**I. INTRODUCTION.**

Palo Alto is a community of approximately 63,000 residents with a daytime population exceeding 125,000. Palo Alto delivers a full range of municipal services, and its Utilities and Public Works Department ("CPAU") operates eight utilities serving between 24,000 and 28,000 electric, gas, water, wastewater treatment, wastewater collection, refuse, storm drain and fiber optic customers. Palo Alto also acts as the administrator of a six-agency local cable franchising joint powers authority ("JPA") comprising the cities of Palo Alto, Menlo Park, and East Palo Alto, the Town of Atherton, and the unincorporated areas of lower San Mateo and upper Santa Clara Counties, California. The JPA has developed a broadband institutional network serving educational and public institutions in the local area.

Palo Alto is located in the heart of the Silicon Valley, the nation's and the world's pre-eminent technology center. It has long been a marketplace for Internet entrepreneurship and innovation and home to the world's largest collection of technology companies. It is known for its venture capital prominence and enjoys international name recognition for its educational and medical excellence. Palo Alto and the surrounding Silicon Valley area are home to such innovative companies as Google, Hewlett-Packard, and Facebook. Travelers from all over the world come to Palo Alto for purposes of education or research at Stanford University, training or business with the high technology firms of the Stanford Research Park, or medical care at the Veteran Administration's Palo Alto facility ("VA Hospital"), the Lucille Packard Children's Hospital, and the Stanford Medical Center.

Palo Alto is a critical cornerstone for a new national broadband strategy and is uniquely situated to lead this nation in worldwide competition in high technology and in deploying

affordable state-of-the-art broadband infrastructure. Palo Alto would serve as an ideal beta test site that other jurisdictions throughout the nation can emulate in rolling out their own broadband networks.

With appropriate economic stimulus support, Palo Alto is ready to embark on a broadband project promptly, resulting in immediate economic benefits for not only Palo Alto, but the entire Silicon Valley area, in terms of jobs, infrastructure and education, and public safety and other public services purposes. Due to Palo Alto's unique role in the new worldwide Internet economy, it is critical to the future of U.S. international competitiveness that Palo Alto anchor institutions, businesses and residences should be served with genuine, high capacity, fiber-to-the-premises ("FTTP") broadband service. Moreover, FTTP capability to JPA-area schools is critical for educational growth and opportunities, particularly for the City of East Palo Alto, which ranks well below the national average in the percentage of its population that are high school graduates, and below the California average in median household income.

Unfortunately, Palo Alto residents, businesses and institutions do not enjoy most of the true benefits of broadband today. Palo Altans and other JPA-area communities currently can purchase Internet access service from two providers – either through DSL offered by the local phone company or cable modem service from the cable company – offering maximum advertised broadband speeds of only 16 megabits/second ("Mbps") downstream, and only 2 Mbps upstream. Moreover, anchor institutions and other key institutions in Palo Alto lack affordable, sufficient access to the genuine ultra-speed data capacity (100 Mbps to 1Gbps) that is necessary for new bandwidth-intensive Internet applications that are critical for more efficient healthcare, public safety and economic development. The absence of strong broadband competition in Palo Alto has not yielded sufficient broadband quality, speed and affordability. It has also failed to

reach many key local anchor institutions, including schools. Many in the Palo Alto community, including high-tech industry business leaders, entrepreneurs and local residents, have bemoaned Palo Alto's lack of universally available advanced high-speed broadband facilities at affordable prices. Palo Alto's Internet-related businesses and educational and healthcare institutions have been clamoring for robust broadband so they can invest in the development of transformational technologies and applications.

Because the private sector has failed to provide universal high-bandwidth broadband even to such a sophisticated and desirable market as Palo Alto and its surrounding communities, the City has sought to pursue that goal itself. A decade ago, Palo Alto took the first step in its quest to become a "City of the Future" by building its own dark fiber backbone, the critical infrastructure that would support a 21<sup>st</sup> Century local and regional economy. Since that time, Palo Alto has attempted twice to implement its vision of a new information super highway that would provide universal and affordable fiber-based broadband to every premise in Palo Alto. Like many other municipalities across the nation, however, to date Palo Alto has been unable to obtain sufficient funding to construct this much-needed infrastructure.

At present, evidence of the shrinking economy is abundant in Palo Alto. Several of Palo Alto's major revenue sources have been affected by the dramatic change in the local and national economy. Rising unemployment, declining consumer confidence and the erosion of corporate profitability will continue to impact local revenues. Santa Clara County's unemployment rate has risen steadily and is at 11.9% in October 2009. Retail and office vacancy rates have grown to 10.8%, home prices have declined, and home sales have slowed. These and other factors, such as the breakdown in the municipal bond market, impede the ability of local governments like Palo Alto to obtain the financial resources needed to revitalize their infrastructure.

Federal support for broadband in Palo Alto would afford Silicon Valley the opportunity to continue to be a national, indeed international, center of innovation, economic growth, job creation, educational opportunities and global competitiveness. Promoting the economic health and growth of Palo Alto, and Silicon Valley generally, through modern state-of-the-art FTTP infrastructure will be critical in lifting our economy out of its economic malaise and ensuring America's future international competitiveness.

**A. History of Broadband in Palo Alto.**

In 1997, CPAU installed a 41-mile fiber "backbone" that the City viewed as a stepping stone toward fiber connection to every commercial and residential premise in the City. This vision of a universally fiber-connected City in which Internet data could flow at 100 Mbps, upstream and downstream, would provide enormous benefits to its citizens and businesses, and to the national and regional economies. Unfortunately, the extensive capital costs, estimated at around \$45 million, to extend the City's fiber backbone to a last-mile FTTP network have been an as-yet insurmountable obstacle to the City's goal.

Several attempts to marshal the capital needed have not succeeded. In 1999, the City issued a Request for Proposals ("RFP") to attract private investors, but this failed either for lack of sufficient bidder capitalization or because firms lacked the experience and expertise to execute. The City then conducted, at its own expense, a FTTP trial and connected 65 homes to its backbone. The trial gave the City valuable experience with the benefits, costs and risks of installing and operating a FTTP network. This trial proved technologically feasible and was embraced by Palo Alto residents. Palo Alto businesses and residents could see that there was an alternative to the expensive, slow, and, at times, unreliable Internet access service provided by the incumbent telephone and cable companies. Based on its FTTP trial, the City developed an internal business plan in 2002 to determine whether it could provide a complete FTTP network



and provide data, telephony, and video services to all businesses and residents. Because of the fledgling market for telecommunications bonds and the high rate of return expected by private investors for their risk (fifteen to twenty percent), the City had to table the plan.

In 2007, the City again issued an RFP for private companies to build and operate a FTTP network. The proposed business model of one bidder to the RFP, which is currently implementing business plans for consortia operating in France, Canada, and Singapore, called for a public-private partnership, whereby the City would contribute anywhere from thirty to fifty percent of the required capital. While Palo Alto is willing to leverage its existing dark fiber assets in a public-private partnership, it cannot raise the substantial amounts of capital that private sector parties wishing to participate in such a public-private partnership have required the City to provide. Moreover, the economic downturn has restricted private parties' ability to obtain their own financing for the project. Palo Alto's negotiations with the successful RFP bidder have terminated, as the bidder has withdrawn its proposal due to the City's unwillingness to make a sizable capital contribution beyond that called for in the bidder's proposal. The City remains optimistic, however, that a public-private partnership arrangement will be reached, as the bidder has continued to express interest in assisting the City in a consultant or contractor capacity.

After considerable research, it has become apparent to the City that the private sector alone cannot be relied upon to furnish universal, truly high-speed broadband deployment, even in a cutting-edge city like Palo Alto. To recoup capital costs, the private sector, in the main, has focused on commercial and high-income areas with solid economic bases. This has caused avoidance of lower income areas. Equally important, dominance by incumbent telephone and cable companies has also dulled the private sector incentive to invest in new system

architectures. These factors have resulted in high prices for relatively slow-speed services, especially when compared to other developed nations. This is a very shortsighted result, and it is among the major reasons that the United States is losing its technological and economic competitive edge to countries with more robust, widespread and affordable high bandwidth service.<sup>3</sup>

Especially given current economic conditions, federal funding will be required to move all of our citizens into the future of high-speed broadband. It is equally clear that reliance on existing incumbent private providers will not be sufficient. Municipalities and public-private partnerships have a critical role to play. Accordingly, the second-round BTOP NOFA should be revised from the first-round NOFA to be better suited to providing grant assistance to municipalities and public-private partnerships, rather than private sector providers. The second-round NOFA also should be revised to recognize the special broadband needs of more urban, high-technology communities like Palo Alto.

#### **B. Broadband Deployment Plan.**

With adequate funding support, Palo Alto is ready to deploy a FTTP network in the City, and to do so rapidly. The network would be constructed by expanding CPAU's existing multiple loop, 41-mile fiber backbone that surrounds the entire City. Building off of the fiber ring increases the speed with which the City can commence system construction and complete the project.

Palo Alto is prepared to begin construction of a FTTP network within 90 to 120 days of funding commitment, and the City plans to roll out the project in phases over a two-year time

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<sup>3</sup> See, e.g., Org. for Econ. Co-Operation and Dev., "OECD Broadband statistics" (June 2008), available at <http://www.oecd.org/dataoecd/21/60/39574903.xls>.

period. Several hundred new jobs would be created in the construction, engineering and information technology fields to support construction and operation of the City's FTTP network.

Palo Alto would construct a world-class FTTP network capable of delivering a minimum bandwidth of 100 Mbps symmetrical service to its approximately 23,000 residential and 5,000 business premises. The symmetrical design of Palo Alto's FTTP network would deliver data streams at the same speed in both upstream and downstream directions, enabling every network user to be a source of information and exchange and innovative new applications.

The City plans to proceed with the project in two stages. The first stage would involve construction of an "anchor institution" network reaching over 20 key institutions in the City, including the schools of the Palo Alto Unified School District ("PAUSD"), other elementary, middle and high schools in the City, Stanford University, the Stanford Medical Center, the Lucille Packard Children's Center, the VA Hospital, other medical and healthcare facilities in the City, the City's public safety locations, non-profit public housing entities, and other key institutions in the City. The second stage would entail extending the FTTP network further to every residence and business in the City.

The City's FTTP network would be operated on an open access standards-based platform that would promote competition among multiple content and application service providers over the same network. Palo Alto's network would follow the principle of net neutrality, treating all traffic equally without imposing higher tolls for certain kinds of content or services.

The network would be designed to support a full range of data, video and voice services. It would also accommodate services such as data backup and storage, streaming audio, security, telehealth and distance learning. In addition, it would provide a backbone that would be used to implement Palo Alto's energy management, smart grid and wireless system initiatives.

FTTP network construction costs are expected to total \$65 million, or \$1,607 per premise passed. This figure assumes the network would pass 100 percent of the homes and businesses in Palo Alto and would include connections to 50 percent of the premises. This cost includes the cost of labor, electronics, customer drops, and network software. The first step – the “anchor institution” network – would likely cost in the range of \$10 to \$15 million.

Palo Alto has set aside cash reserves of approximately \$5 million to cover network operating costs until the system is able to generate enough revenue to meet annual expenses. These costs include sales and marketing expenses, inbound call center, bill and payment processing, network operations center, installation, and network repair and maintenance costs. Palo Alto anticipates that by Year Five of the project, revenues will begin to cover operating expenses.

Palo Alto anticipates that it would need BTOP grant funding in the amount of \$45 million to fund the construction of its FTTP network to all City residences and businesses.

Alternatively, BTOP funding in the amount of \$7 to \$10.5 million would be needed to fund the construction of the first-stage, “anchor institution” network.

**C. Benefits of an FTTP Network.**

Connecting the Palo Alto community to ultra high-speed broadband will bring remarkable economic, social, cultural and other benefits not only to Palo Alto, but to surrounding Silicon Valley communities like Stanford, Menlo Park, East Palo Alto and Atherton, and the nation as well. More competition will result in lower prices and improved service quality for consumers. New services and applications will emerge to improve citizen’s lives and make Palo Alto and surrounding communities a more attractive place to live, work and invest. It also will serve as a launching pad for entrepreneurial innovation in the Silicon Valley that will spur the nation’s international competitiveness. Not only will it revolutionize broadband Internet service;

it will allow us to address the critical challenges that face our community and our nation. These include economic growth, job creation, international competitiveness, healthcare, education, energy consumption, environmental protection and public safety.

Affordable high-speed Internet service is crucial to stimulating economic growth and international competitiveness in Palo Alto and the greater Silicon Valley, which is a keystone to our nation's future global competitiveness. Affordable, universally available high-speed broadband service will stabilize and expand Palo Alto's industrial and commercial base, preventing future migration to other, often international, markets that offer broadband services at better prices and with higher capacity. With a connected community, more high-tech, bio-tech and other businesses will be lured not only to Silicon Valley, but to the U.S.

Palo Alto is home to a number of medical and bio-medical facilities of national stature, and a FTTP network could thus provide a test bed for revolutionary health care advances and reducing healthcare costs. Using broadband in the provision of healthcare can revolutionize medical treatments. Telehealth technologies can remotely monitor patients, facilitate the collaboration between medical professionals, and the exchange medical data and images. Robust broadband will enable the monitoring of chronic illnesses, improved access to medical specialists, and reduced travel to and among medical offices and hospitals.

Educational opportunities in Palo Alto will be enhanced with access to universal broadband technology at school and at home. Palo Alto is also adjacent to Stanford University, one of the most prestigious institutions of higher education and research in the world. Stanford has produced much of the talent that founded many successful high-tech companies in Palo Alto and the greater Silicon Valley. A state-of-the-art broadband system would enable Stanford students and faculty to better connect with other world-renowned institutions, letting students

and faculty interact with leading experts in scientific, technology, medical and engineering fields.

## **II. SECOND-ROUND BTOP/BIP NOFA RECOMMENDATIONS.**

Palo Alto appreciates the opportunity provided by NTIA and RUS in the RFI to provide suggestions and recommendations on revisions that should be made to the second-round BTOP/BIP NOFA. Given the time and information constraints, the first-round NOFA was an admirable effort by NITA and RUS, and Palo Also applauds the effort.

Experience with the first-round NOFA, however, suggests ways that the second-round grant process can be improved. With respect to BTOP broadband infrastructure grants in particular,<sup>4</sup> the first-round NOFA's "broadband" and "underserved" definitions precluded most broadband infrastructure grant applications in urban and suburban areas. The reason: The "advertised" 768/200 Kbps "broadband" definition meant that areas with cable modem or DSL service were ineligible for infrastructure grant funding, unless the 40%-or-less penetration prong of the "underserved" definition were satisfied. Moreover, obtaining reliable information to demonstrate compliance with that "underserved" prong is difficult if not impossible, because the data is largely confidential and in the hands of incumbent telephone companies and cable operators. For these reasons, although Palo Alto wanted to file an infrastructure grant application for its proposed FTTP network in response to the first-round NOFA, it did not do so.

Although the first-round NOFA's infrastructure grant emphasis on unserved, and largely rural, areas is understandable, Palo Alto believes that the focus of the infrastructure grant portion of the second-round BTOP NOFA should be revised. While bringing very basic, relatively low-speed broadband service to more rural areas is a worthwhile goal, and the first-round NOFA

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<sup>4</sup> Palo Alto comments will focus on BTOP, not BIP. Being an urban/suburban community, Palo Alto does not qualify for BIP, so we leave BIP issues to those parties more directly interested in that program.

served that goal, it should not be the only goal of the BTOP (as opposed to the RUS) infrastructure grant program.

Our nation's urban and suburban communities, largely served only by last-generation DSL and cable modem service, are also in desperate need of the BTOP's economic development and job creation benefits. Moreover, the 768/200 Kbps standard, while perhaps useful for more rural areas having little current broadband service, is simply inadequate for our nation's high-tech corridors, which require far greater broadband speeds to compete with their global high-tech center competitors. Yet the residents and institutions of many of our nation's high-tech corridors, like Palo Alto, remain mired in last-generation DSL and cable modem service. The problem is further exacerbated in the case of "anchor institution" and "middle mile" networks, which of course must be of a capacity far, far above the first-round NOFA's "broadband" threshold both to serve the special high-capacity needs of anchor institutions and to serve as a launching pad suitable for extension as "last-mile" networks to residences and businesses.

Palo Alto is therefore pleased that NTIA, through the RFI, has sought comment on revisions to the BTOP requirements in these (and other) areas.

**A. The Application and Review Process.**

Palo Alto agrees with the RFI that the first-round NOFA information requirements for infrastructure grant applicants were more tailored to preexisting private sector businesses and not well-suited to public sector applicants or to newly-formed entities, including public-private partnerships, formed for the purpose of building new broadband networks.

As an initial matter, Palo Alto reiterates its comments in response to the first-round NOFA concerning the unique financing requirements that apply to municipalities and thus

municipal broadband applicants.<sup>5</sup> In particular, NTIA should construe the 20% matching requirement flexibly in the case of municipal grant applicants to take into account the municipal bond process.

In addition, municipalities do not have the same sort of historical financial statement information that private sector businesses do. For that reason, the second-round NOFA should permit municipal applicants to demonstrate their financial qualifications in other, more flexible ways, such as relying on bond ratings, budgets, and public formal commitments to the project by elected officials.

**B. Policy Issues.**

1. Funding Priorities and Objectives.

Palo Alto supports the RFI's proposal to focus more on anchor institution networks in the second-round NOFA, although it does not believe that Round 2 infrastructure grant funding should be limited to only those types of projects. Moreover, absent some change in the program definitions (*see* Part II(B)(2) below), giving priority to anchor institution networks could actually prove to be counterproductive to NTIA's and the ARRA's objectives.

As the RFI notes, "middle mile 'comprehensive community' projects" linking anchor institutions within a community would serve a dual role and offer dual benefits. First, such networks, by linking public safety organizations, schools, colleges, libraries, hospitals and medical facilities and other key anchor institutions, would promote new education, health care, and public safety applications, as well as greater intercommunication and coordination among those anchor institutions. These hold the potential of yielding enormous benefits in terms of

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<sup>5</sup> Comment of the City of Palo Alto, California, *American Recovery and Reinvestment Act Broadband Initiative*, Docket No. 090309298-9299-01, at Part II(E), pp. 18-19 (filed April 13, 2009) ("Palo Alto First-Round Comments").



improved health care, education and emergency preparedness. Those benefits, in turn, would create new economic growth and development and new jobs.

Second, such community anchor-institution networks would serve as a bridge to new last-mile FTTP networks reaching residences and small businesses. Put a little differently, they would provide a new in-place broadband platform from which last-mile end-user broadband networks could be extended at lower cost.

Palo Alto's proposed FTTP network provides an example of how both of these benefits could be achieved. As a first step, the City's existing fiber ring could be extended to connect more than 20 key anchor institutions in the City, including public and private primary and secondary schools, several medical facilities, the JPA's media center, and City emergency and first-responder locations. Each of these locations would receive, at a minimum, 200 Mbps, symmetric capacity.

This high-capacity anchor institution network would provide enormous economic, education, public health and safety benefits. It would enable new state-of-the-art, bandwidth intensive applications to be used to improve the quality and efficiency of the delivery of health care, education, utility, and public safety services.

The anchor institutions network would also serve as a platform for the next step: extending Palo Alto's proposed FTTP network to every home and business in the City. Because the City's network would be an "open" one, it would enable multiple competitors to provide broadband services to Palo Alto homes and businesses.

Under the rules of the first-round broadband NOFA, however, the benefits of such an anchor institution, community network could not be achieved through the BTOP. The primary reason is that the current BTOP/BIP broadband definitions – a minimum of 768 Kbps

downstream and 200 Kbps upstream – makes no sense in the context of an anchor institution network.

Whether or not the 768/200 Kbps “broadband” definition makes sense as a measuring stick in the context of end-user, residential networks,<sup>6</sup> it is entirely inappropriate for anchor institution networks. By definition, the broadband needs of anchor institutions are far different from, and far greater than, those of most residential end-users. To be able to provide the benefits of new broadband health care, education, and public safety applications, anchor institutions will require far greater broadband capacity – on the order of 100 Mbps to 1 Gbps. Nor should anchor institution networks be arbitrarily tied to whether or not 768/200 Kbps residential service is available in the area where one of the anchor institutions on the network happens to be located, or whether or not the first-round NOFA’s definition of “underserved” is satisfied in the area where one of those anchor institution happens to be located.

Many, if not all, of the benefits to a community from an anchor institution network – in terms of economic development, jobs, and improved education, health care and public safety – do not depend on where the anchor institutions are located. The education, health care and job-creating benefits of connecting Stanford University and its Medical Center to an anchor institution network, for example, extend to far more residents than those who happen to live in the census blocks where those facilities are located.

Accordingly, Palo Alto urges that NTIA to adopt a new, separate “broadband” definition test for anchor institution networks grant applications than for proposed end-user network applications. Palo Alto proposes that an anchor institution network should provide a minimum of 200 Mbps, symmetrical service to all anchor institutions. Further, if any anchor institution to

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<sup>6</sup> As noted in Part II(B)(2) below, Palo Alto does not think so, at least as the standard in our nation’s more urban high-tech corridors.

be served by the anchor institution network lacks current, affordable access to a minimum of 200 Mbps, symmetrical service, then that network should be eligible for a second-round NOFA broadband infrastructure grant.

## 2. Program Definitions.

Palo Alto believes that some adjustments to the BTOP definitions of “broadband” and “underserved” are needed. As a practical matter, the low-threshold, 768/200 Kbps, first-round NOFA “broadband” definition, especially as it ties into the “underserved” definition, largely had the effect of rendering ineligible almost all infrastructure grant applications for our nation’s cities and major suburban areas. The problem is exacerbated by the first-round NOFA’s reliance on “advertised speeds” to determine whether the “broadband” definition is met.

Although the more rural-oriented focus of the first-round NOFA might be understandable, it would, in Palo Alto’s view, be a serious mistake for NTIA to overlook in the second-round NOFA the critical importance of promoting next-generation broadband infrastructure for our nation’s cities and high-tech corridors. Consigning those areas to DSL or cable modem service-level broadband service will consign our nation to losing out to other nations in the world economy, with substantial adverse effects on future job creation.

Accordingly, Palo Alto recommends the following revisions to the BTOP definitions:

*First*, in the case on “anchor institution” networks, there should be a separate “broadband” definition than for residential networks, and it should be actual capacity equal to or greater than 200 Mbps, symmetrical in each direction. The RFI notes that some stakeholders have “argued that [the first NOFA’s “broadband” definition is] inadequate to support many advanced broadband applications, especially the needs of large institutional users.” These stakeholders are unquestionably correct. As noted above, anchor institution networks require next-generation, ultra-high capacity broadband networks, both to meet those institutions’ own

specialized needs and, in addition, to have adequate capacity left over to serve as a platform from which residential, last-mile broadband networks can be built. A minimum capacity of 200 Mbps in each direction is needed for an anchor institution network to fulfill both of those roles. Moreover, BTOP anchor institution network applicants should be rewarded for proposing networks with greater capacity than that.

*Second*, the BTOP “broadband” and “underserved” definitions also should be revised in the case of proposed residential broadband networks as well. As noted in Palo Alto’s First-Round Comments (at 16-17 & 21-22), the 768/200 Kbps “broadband” definition is inappropriate for our nation’s cities and high-tech corridors. Those areas are also in need of the stimulative, job-creating benefits that BTOP was intended to provide. Yet the first-round NOFA definition largely precluded those communities from reaping any benefits at all from the program’s broadband infrastructure grants.

Palo Alto recommends that, for proposed residential broadband networks in cities and high-technology corridors, any area that lacks access to at least 50 Mbps, with at least 25 Mbps upstream and downstream, be considered “underserved.” *See* Palo Alto First-Round Comments at 21-22.

*Third*, Palo Alto urges NTIA to abandon the “advertised speed” definition and replace it with actual, verifiable speeds. The “advertised” speed standard creates entirely the wrong incentive: It rewards incumbents for advertising greater broadband speeds than most of their subscribers actually can obtain from those incumbents.

### **III. CONCLUSION.**

The second-round NOFA furnishes NTIA with the opportunity to go beyond the more rural-oriented focus of the first-round NOFA and to use the BTOP as a catalyst to help our nation

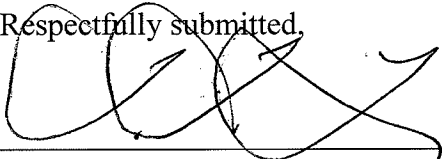
catch up with our international competitors in terms of broadband infrastructure. That will be essential to future job-growth and the future economic and health care well being of our nation.

NTIA cannot move our nation toward that goal, however, unless it revises, and tailors, the second-round NOFA move to achieve that goal, rather than being a “me-too” sibling of the RUS BIP program. NTIA should revise BTOP to “raise the bar” in our nation’s critical high-technology centers that are currently underserved in terms of their unique broadband needs. The goal should be to “raise the bar” significantly, in terms of broadband speed, in high-technology corridors that currently have only DSL or cable modem speeds available.

Palo Alto accordingly urges the NTIA to revise the second-round BTOP NOFA infrastructure grant application requirements in a manner that (1) is more amenable to applications by municipalities, other public sector applicants, and newly-formed public/private partnerships; (2) creates a separate “anchor institution network” infrastructure grant category with its own unique “broadband” definition of at least 200 Mbps symmetrical service; (3) establishes a separate “underserved” definition for our nation’s high-tech corridors of at least 25 Mbps symmetrical service; and (4) for purposes of both the “broadband” and “underserved” definitions, replaces “advertised” speeds with actual verifiable speeds.

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Respectfully submitted,



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