

Before the  
**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Telecommunications and Information Administration**  
Washington, D.C. 20230

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In the Matter of	)	
Implementation of the Broadband	)	Docket No. 090309296-9299-01
Technology Opportunities Program	)	
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**COMMENTS OF THE BILL & MELINDA GATES FOUNDATION**

*Executive Summary.* Since 1997, the Bill & Melinda Gates Foundation has worked to help communities gain access to high-speed Internet connections and online opportunities in partnership with the nation’s public libraries. The foundation has invested nearly \$400M to create access to computers and the Internet in more than 11,000 public libraries across the country. Today, millions of Americans rely on their public library for access to online economic, educational, and social opportunities which might otherwise be out of reach.

Despite this progress, millions of Americans do not have access to quality high-speed broadband, often because libraries and other community institutions, such as elementary and secondary schools, and community colleges, do not have the necessary resources to upgrade their Internet connections. For more than a decade the foundation has invested in the idea that ‘if you can get to a library, you can get to the Internet.’ Today, although 99 percent of public libraries are connected to the Internet, many find the speed of their connections insufficient to meet patron demand.

As a nation, we are at risk of permitting a persistent digital divide to exist. However, we believe the National Telecommunications and Information Administration’s (NTIA) Broadband Technology Opportunities Program (BTOP) presents an unprecedented opportunity to increase broadband access for ‘unserved’ and ‘underserved’ communities across the United States and to decisively close the digital divide in this country. We believe public libraries and other anchor community institutions are well-positioned to help NTIA deliver on its mandate to accelerate the deployment, adoption, and use of broadband for more Americans. Although the American Recovery & Reinvestment Act (ARRA) allocated significant funding (\$7.2B) in pursuit of these goals, it is insufficient to create broadband access for all American households. However, it is well within NTIA’s reach to create universal broadband access through the nation’s public libraries, elementary and secondary schools, and community colleges for all American adults, youth, and children. NTIA should deploy broadband to these community institutions as the first installment in a long-term national broadband strategy.

We believe NTIA should pursue a goal of connecting all public libraries, elementary and secondary schools, and community colleges to ultra high-speed connections (100 megabits per second or Mbps) using easily upgradable technologies that enable these institutions to upgrade their connectivity over time in response to advances in technology and increases in user demand. These anchor institutions are ubiquitous and well-used by NTIA's targeted beneficiaries. They have organizational missions aligned with the broad purposes of the BTOP. Finally, they are equipped to promote the adoption of broadband by helping people use the Internet to improve their lives. For these reasons, we believe investment in the nation's public libraries, elementary and secondary schools, and community colleges would represent the highest and best use of the ARRA broadband funds and would support the most equitable distribution of benefits to the intended beneficiaries of the Act.

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**We encourage NTIA to make available the broader pool of BTOP funds to public libraries, schools, and community colleges beyond the \$200M allocated in the ARRA to “expand public computer center capacity” given the ability of these community institutions to reach large segments of individuals who do not have broadband access at home.**

Access to broadband remains available to only a fraction of the U.S. population today. While 65 percent of American adults have access to the Internet at home (55 percent have broadband access and another 10 percent have dial-up connections), the balance of Internet users rely on community institutions—with varying Internet connections speeds—for online access. Not surprisingly, people lacking broadband in the United States are more likely to be less-educated, lower-income, older people and people of color<sup>1</sup>.

In the next five years, projections suggest that 77 percent of all homes will have broadband connections<sup>2</sup>. However, the balance of the population will continue to rely on community institutions for the high-speed access to the Internet required to benefit from the economic, educational, and social opportunities available online<sup>3</sup>.

Public libraries are prime locations to support increased broadband deployment and adoption through BTOP funds for three primary reasons:

- ***Public libraries are ubiquitous.*** Located in virtually every town in America, public libraries are within easy reach of the populations NTIA is most eager to serve: low-income, job-seeking Americans without access to broadband services. There are 16,000 public libraries in the United States serving urban, suburban, and rural communities in all 50 states. Of the 37 million people living under the federal poverty line, 27 million have geographic access to a public library<sup>4</sup>. Furthermore, like schools and community colleges, libraries are long-standing, well-recognized community institutions that are sustained by their local municipalities, states, and the federal government.

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<sup>1</sup> Pew Internet & American Life Project, 2008.

<sup>2</sup> IDC, 2007. This obviously does not consider the impact of the broadband portion of the stimulus bill.

<sup>3</sup> Gates Foundation / Community Attributes Analysis, 2008.

<sup>4</sup> Gates Foundation / Community Attributes Analysis, 2006.

- ***Public libraries are recognized Internet access points, and library sustainability is directly linked to their ability to provide quality broadband services.*** In nearly three-quarters of communities, the public library represents the only free access to the Internet<sup>5</sup>. At the same time, a 2006 study commissioned by the Gates Foundation found that 71 percent of people using public libraries cite the library as their primary source of access to a computer and the Internet<sup>6</sup>. Indeed, recent surveys show that with the exception of books, library patrons cite Internet access as the *most* recognized service offered by public libraries<sup>7</sup>. It is broadly acknowledged in the library field that, over the last decade, the availability of the Internet at libraries has actually contributed to a rise in usage of the public library across the country and an increasing reliance by many on the technology services they provide. (In 1998, 1.1 billion individuals visited a public library. In 2005, this figure grew to 1.4 billion visits<sup>8</sup>.)
- ***Public libraries drive the adoption and purposeful use of online information and services.*** The most common uses of the Internet in public libraries are employment searches, access to online educational opportunities, and access to government services.<sup>9</sup> Recently, public libraries across the country report that the economic downturn is spurring sharp increases in library use, with especially high demand for computer and Internet services<sup>10</sup>. People are surging to Internet workstations at libraries to look for jobs, write resumes, and access ESL, pre-GED, general technology skills coursework and other community-relevant classes. Furthermore, for many Americans, the public library is a point of access to online government services and information, from taxes to immigration to social services.

Like public libraries, elementary and secondary schools, and community colleges are sustainable, recognized points of access to educational information and opportunity, and are therefore also prime locations to support increased broadband deployment and adoption through BTOP funds.

- ***Schools are points of access for disadvantaged students.*** There are over 87,000 public elementary and secondary schools serving over 48 million students in urban, suburban, and rural communities<sup>11</sup>. Schools are already helping to bridge the digital divide by providing disadvantaged students with their sole connection to the Internet. Among the group of students who access the Internet at only one location (20 percent of students), 60 percent are from families in poverty, and 63 percent are children of parents who have not earned at least a high school credential. This at-risk student population is a segment of the ‘unserved’ and ‘underserved’ communities the BTOP program is designed to target. Interested schools could use BTOP support to not only provide better connectivity for

<sup>5</sup> American Library Association / Florida State University, *Library Internet Study*, 2008.

<sup>6</sup> Hart Research, March 2006.

<sup>7</sup> Online Computer Library Center (OCLC), *Awareness to Funding: A study of library support in America*, 2008.

<sup>8</sup> NCES, U.S. DOE; Parthenon Analysis, May 2008.

<sup>9</sup> American Library Association / Florida State University, *Library Internet Survey*, 2008.

<sup>10</sup> As a representative sample: New York libraries report a 42 percent increase in circulation; Michigan – 37 percent; Maryland – 40 percent and Utah – 26 percent. Source: NBC Nightly News with Brian Williams, December 10, 2008.

<sup>11</sup> National Center for Education Statistics 2006-2007 Common Core Data.

these students (building on the strong foundation laid by the E-rate), but could also use BTOP funding to position themselves to serve students' families and other members of the community who do not have access to broadband.

- ***Schools already serve as community-wide institutions, meeting the needs of not only students, but also broader community segments.*** Many elementary and secondary schools provide adult education, family involvement and support services, and community development opportunities. For example, 43 percent of adults who took GED preparatory or basic skills courses took these courses in a school or school district environment<sup>12</sup>. Forty-six percent of adult ESL students report taking ESL classes at an elementary school, junior high, high school, or adult learning center. These types of existing community-wide programs provide a model for opening schools after hours for community broadband access and otherwise using schools as hubs for extending broadband access to ‘unserved’ and ‘underserved’ communities.
- ***Community colleges are serving greater numbers of post-secondary students through distance education.*** According to the Instructional Technology Council, enrollments for distance education courses in community colleges increased 11 percent in 2007, compared to an overall national enrollment increase of less than two percent. This growth suggests that distance learning is a growing means of access to educational opportunities for many individuals. Over 80 percent of community college respondents report that their institutions offer both exclusively online and blended learning courses (a hybrid of in-classroom and online learning).

**NTIA should prioritize funding for grant applications that propose broadband solutions which support ‘unserved’ and ‘underserved’ populations.** NTIA would be well-served to disburse funds to applicants that serve people most likely to be without broadband access either because of a lack of available high-speed connectivity and/or economic status. ‘Unserved’ populations would be defined by the demonstrated need for broadband access due to a lack of available service or a service cost that is prohibitive. ‘Underserved’ populations would be defined by either 1) an inability to pay due to low income or employment status (indicated by poverty rates, free & reduced lunch rates, unemployment or similar indicators) or 2) a lack of available high-speed (i.e.  $\geq 100$  Mbps) service. This dual approach will help ensure a more equitable distribution of grant funds to rural areas and tribal communities (which presumably are more likely to have availability challenges-- ‘the unserved’) and urban centers (which presumably have more concentrated populations with an inability to pay for access-- ‘the underserved’). As an example, if NTIA could provide broadband access at 100 Mbps for even one-half of public libraries, broadband access would be available to 102 million Americans, 13 million of whom live under the federal poverty line<sup>13</sup>. If NTIA could reach 80 percent of all public libraries, broadband access would be available to 163 million people, 21 million of whom live in poverty.

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<sup>12</sup> National Center for Education Statistics, Adult Education Survey of the 2005 National Household Education Surveys Program.

<sup>13</sup> Community Attributes Impact Model, 2008.

**NTIA should require projects to connect public libraries, elementary and secondary schools, and community colleges to ultra high-speed connections (100 Mbps) or the fastest Internet connections possible using easily upgradable technologies that enable institutions to upgrade over time.** NTIA should invest in projects that respond to community demand for ever-increasing bandwidth and therefore will serve generations to come. Short-term solutions to create or expand broadband access without adaptable technology are of limited use in a rapidly changing technology environment. Connecting community institutions is also a cost-efficient way to spur local demand and facilitate connections to other municipal facilities, households, and local community organizations, often with a resulting economic benefit.

Although 99 percent of all public libraries are connected to the Internet, approximately 43 percent have a connection at or below 1.5 Mbps (20 percent have less than a 1.5 Mbps connection and another 23 percent are currently at 1.5 Mbps). Only three percent of all public libraries currently have 100 Mbps connections<sup>14</sup>. More than 50 percent of public libraries report that their Internet speed is too slow to support patron needs, indicating that many libraries with connections faster than 1.5 Mbps find them to be inadequate<sup>15</sup>. Similarly, studies indicate that while up to 98 percent of U.S. schools have basic connectivity, the quality is often insufficient to meet the educational needs of 21<sup>st</sup> century classrooms. In fact, broadband speeds in schools are typically slower than connectivity in broadband-connected households<sup>16</sup>.

As an aspirational goal, priority should be given to projects that can achieve 100 Mbps connections for public libraries and other anchor community institutions. However, we acknowledge that some communities may not be able to initially sustain the ongoing cost of ultra high-speed broadband (see comments below on how federal E-rate funds can alleviate this) and may need to accept slower connections today with the ability to upgrade in the future. To achieve this goal, NTIA must provide grants to facilitate ‘middle mile’ (core network), ‘last mile’ (access network), and equipment upgrades able to move public libraries, schools, and other community institutions to 100 Mbps connections. We anticipate that a bulk of the funds requested would go to support ‘last mile’ connections and that a minority of projects will also require the build-out of the ‘middle mile’.

Finally, we would encourage NTIA to give preference to projects that offer discounted or favorable service rates for public libraries, schools and community colleges. Reduced service rates will allow these community institutions to ensure the sustainability of broadband access to their users over time (see related section on sustainability below).

**NTIA should reward applicants who come forward with comprehensive approaches to supporting access to AND adoption of broadband for its users** rather than accept stand-alone proposals which encourage either broadband access *or* the adoption and use of broadband. Broadband access is not an end in and of itself, but a way to access information and opportunity.

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<sup>14</sup> 1.5 Mbps is a common benchmark for public access computers in libraries and is considered by many to be the minimum acceptable connectivity speed for small public libraries (defined as fewer than six computers), although faster speeds are desirable where sustainable. It is widely agreed that 1.5 Mbps is far too slow for larger libraries (those with many computers on the network).

<sup>15</sup> American Library Association / Florida State University, *Library Internet Study*, 2008.

<sup>16</sup> State Education Technology Directors Association, *High Speed Broadband for All Kids: Breaking Through the Barriers Report*, 2008.

Applicants should be required to articulate how they will not just provide access, but also support the adoption and purposeful use of broadband technology. Merely delivering ‘a pipe’ to a community is insufficient to support intended beneficiaries of the BTOP, who will presumably require assistance to learn how to use broadband access to improve their lives.

Public libraries, elementary and secondary schools, and community colleges are well positioned to address a full range of community needs if they can acquire sufficient bandwidth. These institutions can serve as community access points to broadband – places where new Internet users can be supported by a librarian, teacher, or trained instructor. Requiring or rewarding applicants that present a comprehensive approach to expanding broadband access and adoption would also encourage collaboration among providers, government entities, and community technology organizations. Finally, it may have the additional benefit of stimulating local demand and increasing household adoption by users who have become aware of the benefits of broadband access via these anchor community institutions.

**NTIA should give priority to proposals that demonstrate how an entity will sustain broadband service for communities.** NTIA should require applicants to show how broadband service will be financially sustained for its beneficiary population, whether by market economics, government support, or other sources of funding. For public libraries and elementary and secondary schools, the Universal Service Fund’s E-rate program can support sustainable service and is a complementary source of funding that can write-down the cost of an annual broadband subscription.

**NTIA should encourage the submission of large, coordinated, and collaborative applications with a single entity serving as an intermediary for all sub-applicants.** Our grantmaking experience at the Bill & Melinda Gates Foundation suggests that it is beneficial to encourage a small number of intermediaries to coordinate and aggregate numerous high-quality applications from sub-grantees. We find this approach prevents redundant efforts at the local level, encourages programmatic synergies, and creates administrative efficiencies for the grantor. Given this experience, we advise NTIA to work with a small set of intermediaries that can support its grantmaking broadly within or across states. An intermediary might be defined as a government agency (for example, a state library agency or state education agency) or an umbrella organization (for example, a national non-profit representing libraries, schools, or community colleges) that represents its sub-applicants and can disburse funds to these parties on behalf of NTIA. An intermediary would also be accountable to NTIA for the timely and effective use of BTOP funds easing the burden of oversight of the project exponentially.

A state may choose to submit a single application for BTOP funds on behalf of several sub-applicants (including public libraries, elementary and secondary schools, or community colleges), but we would encourage NTIA to neither designate the state as the exclusive channel for applications nor the final arbiter of grant awards. NTIA should absolutely retain its authority to make awards. By retaining this authority NTIA removes the possibility that state and local politics interfere with grant decisions and ensures all proposals are judged wholly based on NTIA’s established criteria.

**Finally, we encourage NTIA to clearly identify execution and impact measures for the BTOP and to share its progress and success with Congress and the public throughout the program.** NTIA should consider itself accountable for disbursing BTOP funds along three dimensions: efficacy, equity, and impact. The first is a measure of Congress's mandate to disburse ARRA funds in a timely and efficient way – tracking the disbursement of these dollars over time and by appropriate categories (deployment and adoption/use). The second dimension (equity) will require NTIA to think about equity across states as well as to define metrics to ensure that both 'unserved' and 'underserved' populations have new or improved broadband access. Evaluating impact is probably the most complex and challenging. As a start, we recommend NTIA consider impact metrics such as: new miles of broadband infrastructure deployed; number of new community institutions connected at 100 Mbps; and, the numbers of low-income populations served with broadband as a result of NTIA funded projects. Given our experience in this arena, the foundation would be pleased to advise NTIA on how best to capture the impact of the BTOP program.

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We recognize the daunting challenge that NTIA faces in administering the BTOP program – an endeavor that will, no doubt, require difficult choices and tradeoffs. We strongly encourage NTIA to strive to use the BTOP funds to impact the greatest number of people who lack access to the opportunities that broadband service provides. We hope you will strongly consider public libraries, elementary and secondary schools, and community colleges as key partners in your work to reach this goal.

Respectfully Submitted,



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