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PUBLIC LIBRARY FUNDING AND
TECHNOLOGY ACCESS SURVEY:
SURVEY FINDINGS AND RESULTS

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Executive Summary

Public libraries are critical community access points for public access technologies and Internet-enabled services:

- **Public Access Computers.** Libraries reported an average of 16.0 public access computers, up from 14.2 public access computers in 2009-2010 and 11.0 in 2008-2009.
- **Broadband Connectivity.** Libraries reported increased connectivity speeds, with 60.3 percent of libraries reporting connectivity speeds of greater than 1.5Mbps, up from 51.8 percent in 2009-2010 and 44.5 percent in 2008-2009. Nearly 25 percent (24.9 percent) of libraries report having connectivity speeds of 10Mbps or greater.
- **Wireless (Wi-fi) Access.** Libraries reported an increase in providing Wi-fi access to the Internet, with 85.7 percent of public library branches offering wireless Internet access, as compared to 82.2 percent in 2009-2010 and 76.4 percent in 2008-2009.
- **Databases, Homework Resources, E-Books, and Content.** Libraries continued to offer access to a number of digital resources, including licensed databases (99.8%, up from 95.0 percent in 2009-2010 and 89.6 percent in 2008-2009); homework resources (87.0 percent, down slightly from 88.2 percent 2009-2010 but up from 79.6 percent in 2008-2009); audio content, such as podcasts and audiobooks (82.8 percent, about the same as the 82.5 percent reported in 2009-2010 and up from 72.9 percent in 2008-2009); digital reference (76.9 percent, up from 72.3 percent in 2009-2010 and 62.4 percent in 2008-2009); e-books (67.2 percent, up from 65.9 percent in 2009-2010 and 55.4 percent in 2008-2009); social media tool use (e.g., blogs, Flixter, and Goodreads) – 60.1 percent of libraries report using social media technologies.
- **Employment support.** 90.1 percent of libraries reported providing access to jobs databases and other job opportunity resources (up from 88.2 percent in 2009-2010), and 71.9 percent of libraries reported providing patrons with assistance in completing online job applications (up from 67.1 percent in 2009-2010). In addition, 74.5 percent of libraries reported offering software and other resources to help patrons create resumes and other employment materials (up from 68.9 percent in 2009-2010).
- **E-government.** 80.7 percent of libraries reported providing assistance to patrons applying for or accessing e-government services (up from 78.7 percent in 2009-2010), and 67.8 percent of libraries reported that staff provide assistance to patrons for completing government forms (up from 63.3 percent in 2009-2010). Nearly all public libraries – 89.7 percent – reported providing assistance to the public for understanding how to access and use e-government websites (up from 88.8 percent reported in 2009-2010).

Libraries also continued to indicate that they face challenges in supporting their public access technology services and resources in key areas:

- **Sufficiency.** Even with the increase in public access computers and bandwidth, 44.9 percent of libraries (down slightly from 45.1 percent in 2009-2010) reported that their connection speeds are insufficient some or all of the time and 76.2 percent of libraries (up from 73.5 percent in 2009-2010) reported that they had fewer public access computers to meet demand some or all of the time.
- **Cost.** Libraries reported cost factors (78.8 percent, down slightly from 79.8 percent reported in 2009-2010) as a challenge in maintaining, sustaining, and enhancing their public access technology infrastructure.

- **Buildings.** Library buildings continue to 1) lack adequate electrical outlets to support either the addition of workstations or support user-owned laptops; 2) lack cabling to wire/connect more workstations; and 3) are at space capacity and challenged to add more public access computers without decreasing collections.
- **Staff.** Libraries reported challenges with adequate staff for providing e-government and employment support, as well as with access to technology staff. 47.6 percent (up from 43.7 percent in 2009-2010) of rural libraries report that it is the library director that provides IT support, as compared to 75.5 percent (essentially unchanged from 75.3 percent reported in 2009-2010) of urban libraries that report IT support provided by system-level IT staff.
- **Reduced hours.** Libraries also reported a reduction in hours open, with 15.9 percent reporting a reduction in hours (this is on top of 14.5 percent reporting a reduction in hours in 2009-2010). Nearly 32 percent (31.7 percent) of urban libraries reported a reduction in hours open (an increase from 23.7 percent reported in 2009-2010), impacting the public's access to public access technologies, services, and resources.

The results from the 2010-2011 survey continue to show a trend that surfaced with the 2008-2009 survey: libraries provide and enhance their public access services where possible, but remain unable to fully meet demand as they are increasingly challenged by meeting employment and e-government service demands; reduced hours, now cumulative over three years due to economic recession; staff expertise and availability constraints; and continued reduced funding.

Extended Summary and Overview of Survey Findings

The national survey provided insights into issues related to the current state of public access technology and Internet-enabled services that public libraries provide to the communities that they serve. The following discussion presents selected findings from the survey and their implications. The discussion is not exhaustive, but rather highlights a number of findings from the survey and discusses their implications. The complete set of data tables, as well as findings from previous surveys, are available at <http://www.plinternetsurvey.org>.

Public Access Connectivity and Infrastructure

Public libraries offer a range of public access technology and Internet access services to the public. Libraries employ a range of strategies to maintain, upgrade, and make available public access resources and services. The survey findings show that public libraries provide an impressive array of public access technology and Internet-enabled services and resources across a range of key areas such as public access computers, broadband, and wireless (Wi-fi). Libraries report progress in the average number of workstations, provision of Wi-fi, and broadband capacity. And yet, libraries responding to the survey reported challenges in terms of the availability of computers and adequate broadband capacity – indicating that the enhancements over the last three years still fall short of meeting demand and needs.

Community Public Access

Public libraries continue to provide important public access computing and Internet access in their communities:

- 99.3 percent of public library branches offer public Internet access (see Figure 3), consistent with the 99.0 percent reported in 2009-2010 and 98.7 percent in 2008-2009.
- 64.5 percent of library branches report that they are the only provider of free public computer and Internet access in their communities (see Figure 4), down slightly from the 66.6 percent reported in 2009-2010 and 71.4 percent reported in 2008-2009.
- Overall, public library branches report an average of 16.0 public access computers (see Figure 5), up from 14.2 in 2009-2010 and 11.0 in 2008-2009. Rural libraries reported an average of 9.6 public access computers, up slightly from 9.2 computers reported in 2009-2010 and from 7.6 workstations in 2008-2009. Suburban libraries reported an average of 19.6 public access computers, up from 15.8 computers in 2009-2010 and 12.7 computers reported in 2008-2009. Urban libraries reported an average of 28.0 public access computers, up from an average of 25.4 computers in 2009-2010 and 18.7 reported in 2008-2009.
- 85.7 percent of public library branches offer wireless Internet access, up from 82.2 percent reported in 2009-2010 and 76.4 percent reported in 2008-2009 (see Figure 26).
- 33.4 percent of libraries report public access connection speeds of 1.6Mbps-10Mbps (identical to the percentage reported in 2009-2010), followed by 22.7 percent that report public access connection speeds of 1.5Mbps (down from 27.4 percent reported in 2009-2010), 12.8 percent 10.1Mbps-30Mbps (up from 9.0 percent reported in 2009-2010), 12.1 percent greater than 30Mbps (up from 9.4 reported in 2009-2010), and 12.0 percent less than 1.5Mbps (down from 14.8 reported in 2009-2010) (see Figure 32). 43.0 percent of rural libraries report public access speeds of 1.5Mbps or less (down from 53.0 percent reported in 2009-2010, marking the first time that more rural libraries – 48.6 percent – reported connectivity speeds of greater than 1.5Mbps), while 86.3 percent of urban libraries (up from 77.2 percent in 2009-2010) and 65.1 percent of suburban

libraries (up from 55.4 percent in 2009-2010) reported public access speeds of greater than 1.5Mbps.¹

It is upon this core infrastructure of public access computers, broadband, and Wi-fi that public libraries are able to build their public access services and resources.

Progress and Challenges with Public Access Technology Infrastructure

The 2010-2011 survey asked libraries to identify issues regarding the ability of public libraries to provide and maintain their public access Internet and technology services. As with the 2008-2009 and 2009-2010 surveys, respondents reported a range of challenges with their costs; buildings; staff; maintaining and supporting their public access technology infrastructure; and keeping up with demand. Respondents also reported mixed results in terms of progress in the areas of public access computer and broadband sufficiency. Figures 10-24 show the challenges and progress regarding public library public access technologies:

- **Cost and Space.** Respondents continued to indicate that funding workstation replacements, upgrades, bandwidth enhancements, and a range of other services related to public Internet access and technologies was a challenge (see Figures 10-13). Just as with the 2009-2010 and 2008-2009 surveys, libraries reported cost factors more highly (78.7 percent, versus 79.8 percent in 2009-2010 and 77.4 percent in 2008-2009) than space limitations (77.2 percent, versus 75.1 percent in 2009-2010 and 75.9 percent in 2008-2009). It is important to note, however, that space and costs converging as the two most significant factors affecting the ability of public libraries to augment their provision of public access computers, with libraries rating those as the most important issues (4.3 out of 5 for cost factors and 4.2 out of 5 for availability of space, with 5 being most important).
- **Building Infrastructure Inadequacy.** Respondents reported that library buildings lack 1) cabling to wire/connect more workstations, and 2) adequate electrical outlets to support either the addition of workstations or support user-owned laptops (see Figures 10-13).
- **Technology Support Staff.** Public libraries in general rely on non-technical staff to support their public access computers and Internet access. This is particularly true for rural public libraries, though urban public libraries are more likely to have access to technology staff (see Figure 15). As such, 47.6 percent of rural libraries report that it is the library director that provides IT support (versus 43.7 percent in 2009-2010 and 47.2 percent in 2008-2009), as compared to 75.5 percent of urban libraries that report IT support provided by system-level IT staff (versus 75.3 percent in 2009-2010 and 72.2 percent in 2008-2009).
- **Keeping computers in service.** Slightly more than half of libraries (52.1 percent) reported that that it takes two or more days to get a public access computer back into service when it goes down (versus 47.2 percent in 2009-2010 and 48.5 percent in 2008-2009). A clear majority of urban and suburban libraries had a turn around time of two or less days (78.5 percent for urban libraries and 71.7 percent for suburban libraries), but nearly a third (31.8 percent) of rural libraries indicated that it could take two or more days to get a computer back into service (see Figure 14).
- **More Usage of Library Infrastructure and Services.** In all (see Figures 17-20), 69.8 percent of public libraries reported increased use of public access computers (versus 75.7 percent of libraries

¹ Direct comparisons to the 2008-2009 survey are difficult due to the change in broadband categories adopted for the 2009-2010 and 2010-2011 surveys. However, in general, libraries reported higher connectivity speeds.

in 2009-2010), 75.3 percent reported increased use of Wi-fi, (versus 71.1 percent in 2009-2010), 27.6 percent reported increased use of training services (versus 26.3 percent in 2009-2010), and 49.8 percent reported increased use of electronic resources (versus 45.6 percent in 2009-2010).

- **More Computer Congestion.** More libraries in 2010-2011 reported insufficient numbers of workstations some or all of the time (76.2 percent, versus 73.5 percent in 2009-2010) (see Figure 15). This is in spite of an increase in the average number of public access computers reported by libraries, but consistent with the increased computer usage reported.
- **More wireless (Wi-fi) access.** Libraries reported an increase in providing wi-fi access to the Internet, with 85.7 percent of public library branches offering wireless Internet access, as compared to 82.2 percent in 2009-2010 and 76.4 percent in 2008-2009 (see Figure 26).
- **More Broadband.** 33.4 percent of libraries report public access connection speeds of 1.6Mbps-10Mbps (identical to the percentage reported in 2009-2010), followed by 22.7 percent that report public access connection speeds of 1.5Mbps (down from 27.4 percent reported in 2009-2010), 12.8 percent 10.1Mbps-30Mbps (up from 9.0 percent reported in 2009-2010), 12.1 percent greater than 30Mbps (up from 9.4 reported in 2009-2010), and 12.0 percent less than 1.5Mbps (down from 14.8 reported in 2009-2010) (see Figure 32). 43.0 percent of rural libraries report public access speeds of 1.5Mbps or less (down from 53.0 percent reported in 2009-2010, marking the first time that more rural libraries – 48.6 percent – reported connectivity speeds of greater than 1.5Mbps), while 86.3 percent of urban libraries (up from 77.2 percent in 2009-2010) and 65.1 percent of suburban libraries (up from 55.4 percent in 2009-2010) reported public access speeds of greater than 1.5Mbps.²
- **Still Broadband Congestion.** Even with the increase in public access computers and bandwidth, 44.9 percent of libraries (down slightly from 45.1 percent in 2009-2010) reported that their connection speed is insufficient some or all of the time (see Figure 24).

Together, these data further support the trend reported since the 2007-2008 survey regarding the challenges that public libraries face in maintaining their public access technology and Internet access services. Though clearly libraries continue to enhance their capacity through more public access computers, increased broadband, and the continued addition of Wi-fi, the reported increased usage across key areas of computers, Wi-fi, services, and resources suggest that added library capacity is being outpaced by demand.

Quality of Public Access

The survey provides indicators of the quality of the public access that libraries provide. Quality of access is multidimensional and can encompass the numbers of public access computers available, speed of connectivity, availability of Wi-fi, and the number of simultaneous users and uses of resources and services, to name a few. Even though libraries added public access computers overall, they report an increase in their inability to meet demand; adding broadband capacity did decrease slightly the connectivity congestion reported. As with previous survey findings, libraries continue to report that their connection speeds and numbers of public access computers do not meet their needs – even with increases in connectivity speeds (as reported in the Libraries as Community Access Computing and Internet Access Points section previously and in Figures 20 and 36):

² Direct comparisons to the 2008-2009 survey are difficult due to the change in broadband categories adopted for the 2009-2010 and 2010-2011 surveys. However, in general, libraries reported higher connectivity speeds.

- 44.9 percent of libraries reported that their connection speed is insufficient some or all of the time (down slightly from 45.1 percent in 2009-2010, and down substantially from 59.6 percent in 2008-2009) (see Figure 24). Urban libraries (55.0 percent, versus 47.6 percent reported in 2009-2010) are slightly less likely than suburban libraries (56.7 percent, versus 57.9 percent reported in 2009-2010) and rural libraries (53.1 percent, versus 54.3 percent reported in 2009-2010) to report that their connection speeds are sufficient to meet patron needs at all times.
- 29.4 percent (nearly identical to the 29.5 percent reported in 2009-2010 and up from 22.9 percent in 2008-2009) of libraries reported that though they have an interest in increasing their current Internet speed, they cannot afford to do so (see Figure 25).
- 76.2 percent of libraries (up slightly from 73.5 percent in 2009-2010, but down from the 81.2 percent reported in 2008-2009) reported that they had fewer public access computers to meet demand some or all of the time (see Figure 15). This is despite libraries having added an average of 1.8 computers since 2009-2010 and an average of five computers since 2008-2009.
- 79.7 percent (nearly identical to the 79.3 percent reported in 2009-2010, and down slightly from the 82.4 percent reported in 2008-2009) of public libraries report that their wireless connections share the same bandwidth as their public desktop computers, though 23.9 percent (nearly the same as the 23.2 percent reported in 2009-2010) indicate that they use bandwidth management techniques (see Figure 27).

Overall, these data indicate that although public libraries have improved their infrastructure by adding public access computers, increasing bandwidth, and continuing to provide Wi-fi access, libraries continue to struggle to keep up with demands on public access services and resources. The data show that urban libraries in particular are struggling to meet demand. Also, libraries continue to diminish the quality of public access through the sharing of bandwidth with wireless connectivity in order to accommodate more users. Though the provision of Wi-fi has alleviated some congestion in terms of computer availability, public libraries are affecting the quality of their public access technology environment through network congestion – as indicated both by the still high reported broadband congestion and reported sharing of the library’s connection with the Wi-fi connection – particularly in the rural libraries (68.9 percent, with only 15.9 percent reporting that they use traffic management techniques).

Helping Communities Get Back to Work and Supporting E-government

Libraries offer substantial and critical support to those seeking employment and engaging in E-government activities. Responding libraries indicated that they provide a number of resources and services to assist individuals seek employment, apply for employment, and interact with government agencies.

Providing essential scaffolding through which employment and E-government services is a range of technology and Internet training content and classes (see Figures 32 and 33). Nearly 80 percent (78.8 percent, up from the 76.6 percent reported in 2009-2010) of libraries report providing point-of-use technology training, while 38.0 percent (up slightly from the 37.0 percent reported in 2009-2010) provide formal training classes (58.8 percent of urban libraries, down slightly from the 59.2 percent reported in 2009-2010). In terms of libraries that report offering formal classes:

- 92.9 percent provide general computer skills training;
- 93.5 percent provide general Internet use training;
- 81.9 percent provide general online/Web searching training; and
- 79.5 percent provide general software (e.g., word processing, spreadsheets, presentation) training.

Employment and Job Seeking Support

Public libraries support job seekers in a number of ways, including (see Figures 43-47):

- 90.9 percent (up from the 88.2 percent in 2009-2010) of reporting libraries provide access to jobs databases and other job opportunity resources;
- 77.0 percent (up from the 74.9 percent in 2009-2010) of reporting libraries provide access to civil service examination materials, a figure that increases to 90.1 percent (up from 85.7 percent in 2009-2010) in urban libraries;
- 74.5 percent (up from the 68.9 percent in 2009-2010) of reporting libraries provide software and other resources to assist patrons create resumes and employment material, a figure that increases to 84.8 percent (up from the 81.2 percent in 2009-2010) in urban libraries;
- 71.9 percent (up from the 67.1 percent in 2009-2010) of reporting libraries provide patrons with assistance in completing online job applications;
- In providing these job-seeking services, 55.9 percent (down from the 58.6 percent reported in 2009-2010) of libraries reported that the library did not have enough staff to effectively help patrons with their job seeking needs and 43.4 percent (down from the 46.0 percent reported in 2009-2010) reported that the library staff did not have the necessary expertise to meet patron job seeking needs.

E-government Support

Public libraries support the public's interaction with government services and resources through a range of E-government services, such as (see Figures 38-42):

- 89.7 percent (up slightly from 88.8 percent reported in 2009-2010) of reporting libraries provide as-needed assistance to patrons for understanding how to access and use E-government websites;
- 80.7 percent (up from the 78.7 percent reported in 2009-2010) of reporting libraries provide assistance to patrons applying for or accessing E-government services;
- 67.8 percent (up from the 63.3 percent reported in 2009-2010) of reporting libraries indicate that staff provide assistance to patrons for completing government forms;
- 29.4 percent (down from the 31.5 percent reported in 2009-2010) of urban libraries indicate that at least one staff member has significant knowledge and skills in the provision of E-government services;
- 55.7 percent (down from the 58.9 percent reported in 2009-2010) of libraries reported that the library did not have enough staff to effectively help patrons with their E-government needs and 50.5 percent (down from the 52.7 percent reported in 2009-2010) reported that the library staff did not have the necessary expertise to meet patron E-government needs.

Extensive Range of Library Services Provided

Public libraries intermediate and/or provide access to a wide range of online services and resources (see Figure 34), including:

- Licensed databases (99.8 percent, versus 95.0 percent in 2009-2010 and 89.6 percent in 2008-2009);
- Homework resources (87.0 percent, versus 88.2 percent in 2009-2010 and 79.6 percent in 2008-2009);

- Audio content, such as podcasts and audiobooks (82.8 percent, versus 82.5 percent in 2009-2010 and 72.9 percent in 2008-2009);
- Digital reference (76.9 percent, versus 72.3 percent in 2009-2010 and 62.4 percent in 2008-2009); and
- E-books (67.2 percent, versus 65.9 percent in 2009-2010 and 55.4 percent in 2008-2009).

Libraries seem to be holding steady, and in some cases increasing, access to digital content and resources, while ensuring the availability of access in a time of increased usage, bandwidth, infrastructure, necessary to support these services for millions of library users.

Moving Connectivity and Public Access Forward

Public libraries continue to hold the line, and in some cases increase, their public access Internet services, resources, and infrastructure. The survey shows, however, that the ability of libraries to do so is waning. Moreover, one needs to look at the ability of libraries to offer their communities quality public access technology services in the context of the cumulative affect of the economic downturn – libraries are now reporting successive years of budget cuts and reduced hours all precisely at the same time that they report increased usage and demand.

Enhancing Public Access Infrastructure

Public libraries plan to add, replace, or upgrade workstations and make other enhancements to their public access computing and Internet access services in the coming year:

- 22.7 percent (up from 13.3 percent reported in 2009-2010 and 16.7 percent reported in 2008-2009) of public library branches plan to add more public access computers within the next year. Slightly more rural libraries (24.4 percent) report that they will be adding public access computers than urban and suburban libraries (22.8 percent and 20.3 percent, respectively (see Figure 9);
- 22.9 percent of public libraries have a workstation/laptop replacement schedule that essentially occurs every three years (as compared to 27.3 percent in 2009-2010 and 15.9 percent in 2008-2009), 36.4 percent of public libraries have a workstation/laptop replacement schedule that occurs every four years (up from 28.8 percent in 2009-2010 and 18.4 percent in 2008-2009), and 27.6 percent of public libraries have a workstation/laptop replacement schedule that occurs every five years (down from 31.6 percent in 2009-2010 and up from 14.2 percent reported in 2008-2009) (see Figure 7); and
- 5.9 percent of libraries plan to add wireless access within the next year, which means that if they do so, by the end of 2011 about 91 percent of public libraries will offer wireless access (see Figure 26). Thus, wireless access is rapidly approaching ubiquity within the public libraries and becoming a core service.

These data demonstrate that libraries do consider the need for continual upgrades and replacements to their public access technology infrastructure. The data indicate, however, that planning, addition, and replacement horizons are overall increasing, while firm upgrades and replacements are slipping and that time horizons are extending. The data, therefore, show that libraries intend to keep their existing public access infrastructure in use for longer time periods, a likely situation due to budget decreases and/or anticipated budget decreases.

Challenges Remain

Challenges remain as public libraries enhance their public access computing and Internet access services:

- 15.9 percent (versus 14.5 percent in 2009-2010) of libraries reported a decrease in hours open since last year, with 31.7 percent (a substantial jump from 23.7 percent reported in 2009-2010) of urban libraries reporting a decrease in hours open, 17.1 percent (versus 16.3 percent in 2009-2010) of suburban libraries reporting a decrease in hours open, and 9.5 percent (versus 10.1 percent in 2009-2010) of rural libraries reporting a decrease in hours open (see Figure 2);
- 68.4 percent (versus 62.5 percent in 2009-2010) of public library branches have no plans to add workstations in the next year (see Figure 9), largely due to cost factors (78.7 percent reported as important or most important), space factors (77.2 percent reported as important or most important), and the availability of electrical outlets, cabling, or other infrastructure (54.4 percent reported as important or most important);
- 44.9 percent of libraries reported that their connection speeds are insufficient some or all of the time (down slightly from 45.1 percent in 2009-2010, and down substantially from 59.6 percent in 2008-2009) (see Figure 24). Urban libraries (55.0 percent, versus 47.6 percent reported in 2009-2010) are slightly less likely than suburban libraries (56.7 percent, versus 57.9 percent reported in 2009-2010) and rural libraries (53.1 percent, versus 54.3 percent reported in 2009-2010) to report that their connection speeds are sufficient to meet patron needs at all times;
 - Just 22.0 percent (down from 23.2 percent reported in 2009-2010) of libraries reported an increase in connectivity speeds in the last year, while 76.4 percent (down from 74.6 percent reported in 2009-2010) of libraries reported that their connection speed stayed the same (see Figure 23). Urban libraries (27.0 percent) were more likely than suburban (22.1 percent) and rural (20.2 percent) to report an increase in connection speed. Connectivity enhancements are therefore largely occurring in few, mostly urban, public libraries. Important to note, however, is that the connection speed increases are pushing libraries increasingly beyond the more predominant 1.5Mbps connectivity speed reported just a few years ago.
- 19.4 percent (versus 20.7 percent in 2009-2010 and 26.0 percent in 2008-2009) of respondents reported that their current connection is the maximum speed that they can acquire, 29.4 percent (versus 29.5 percent in 2009-2010 and 22.9 percent in 2008-2009) cannot afford to increase their bandwidth, and 16.0 percent (versus 16.1 percent in 2009-2010 and 14.7 percent in 2008-2009) indicated that they could increase their bandwidth but had no plans to do so (see Figure 25).

Thus, public libraries continue to report that they are unable to meet patron demands for services due to inadequate technology infrastructure, costs associated with operating and maintaining that infrastructure, and bandwidth quality/availability issues – but not for lack of trying to maintain and enhance their services.

Decreases in several essential areas — funding; hours open; staff fully trained in the services users require; and ability to upgrade equipment, bandwidth speed and infrastructure — all contribute to the inability of libraries to keep up with demand, both current and future. These constraints, particularly regarding bandwidth and public access computers, occur in the context of the \$7.2 billion distributed in 2010 and 2011 as part of the Broadband Technology Opportunity Program (BTOP) and Broadband Initiative Program (BIP) grants/loans as administered by the Department of Commerce's National Telecommunications Information Administration (NTIA) and Department of Agriculture's Rural Utilities Service (RUS), respectively. Some public libraries – either as part of statewide, regional, or individual

initiatives – were beneficiaries of these grants and loans that could include broadband enhancements as well as public access computers. Depending on the project scope, it may be that library infrastructure improves substantially, but at little to no cost to the public libraries.

Survey Methodology

The 2010-2011 survey resides within a larger public library study regarding public access technology use and funding. In this context, the survey employed a multi-approached sampling strategy to meet the following objectives:

- Provide outlet (branch)-level national data regarding public library Internet connectivity and use;
- Provide outlet (branch)-level state data (including the District of Columbia) regarding public library Internet connectivity and use; and
- Provide system (administrative)-level data (including the District of Columbia) regarding E-rate use and library operating and technology funding and expenditures.

The survey had the additional objectives of obtaining data to conduct analysis using the variables of metropolitan status³ (urban, suburban or rural). The survey also included assessment questions for selected public libraries recipients of the Bill & Melinda Gates Foundation's Opportunity Online hardware and broadband grants.

The survey team received a list of Opportunity Online hardware and broadband grant recipient libraries. The Bill & Melinda Gates Foundation selected the libraries for its grant program according to its own criteria, and participating libraries were required to complete the survey as part of the grant program. So as not to skew the survey data or create any response biases, the survey team created a master state and national sampling frame that incorporated the grant libraries. From that sampling frame, the survey team drew a stratified "proportionate to size sample" that created an overall balanced sample within the grant library states, but also ensured a proportionate national sample. This sampling approach ensured high quality data that could be generalized within the states analyzed, nationally, and across and within the metropolitan status and poverty strata.

As a sample frame, the study team used the 2008 public library dataset available from the U.S. Institute of Museum and Library Services (IMLS), which was the most recent public release file available in June 2010. Bookmobile and Books by Mail service outlets were removed from the file, leaving 16,745 library outlets. From these totals, the researchers used SPSS Complex Samples software to draw the sample for the study. The sample needed to provide the study team with the ability to analyze survey data at the state and national levels along the poverty and metropolitan status strata discussed above. The study team drew a sample with replacement of 6,311 outlets. This sample was in addition to the libraries in the Opportunity Online hardware and broadband grant programs.

³ Metropolitan status was determined using the official designations employed by the Census Bureau, the Office of Management and Budget, and other government agencies. These designations are used in the study because they are the official definition employed by the Institute of Museum and Library Services (IMLS), which allows for the mapping of public library outlets in the study.

The study team developed the survey questions through an iterative and collaborative effort involving the researchers, representatives of the funding agencies and members of the Public Access Technology & Funding Study Advisory Committee. The study team pre-tested the initial surveys with the project's advisory committee, public librarians and the state data coordinators of the state library agencies and revised the survey based on their comments and suggestions (see Appendix A for the final survey).

The survey asked respondents to answer questions about specific library outlets and about the library system to which each respondent outlet belonged. Respondents completed the survey between September 2010 and November 2010. After a number of follow-up reminders and other strategies, the survey received a total of 5,462 responses for a response rate of 86.5 percent. Another 2,971 Opportunity Online hardware and broadband grant library responses were added for a total of 8,433 responses for analysis purposes.⁴ Figure 1 shows that the responses are representative of the population. Together, the high survey response rate and representativeness of responses demonstrate the high quality of the survey data and the ability to generalize to the public library population.

The survey employed a parallel sampling approach regarding library systems and their administrative entities. About 15 percent of public libraries have multiple service outlets (or branches). The survey received 3,601 system/administrative responses out of a sample of 5,005 for a response rate of 71.9 percent. The high response rate, combined with a representative response, indicate that the data are valid and reliable.

Outlet (Branch) Versus System

The survey deployed a two-stage approach that included questions regarding sampled outlets (branches) and questions regarding an entire library system (administrative questions focusing on E-rate applications, BTOP/BIP grant applications, and operating and technology budgets). For roughly 85 percent of public libraries, there is no distinction between outlet and system, as these are single facility systems (e.g., one outlet, one system). The remaining roughly 15 percent of public libraries, however, do have multiple outlets. There was a need to separate outlet- and system-level questions, as some of the survey questions were point-of-service delivery questions (e.g., number of workstations, bandwidth and training), whereas others were administrative in nature (e.g., E-rate applications, operating budgets and technology budgets).

Questions 1 through 29 of the survey explored outlet-level issues (e.g., Internet connectivity, speed of connection, workstations, employment and e-government services, etc.). Questions 30 through 42 posed questions regarding the entire library system (e.g., E-rate applications, funding for information technology, operating expenses and income, etc.). Upon completion of questions 1 through 29 for all sampled outlets, respondents were taken to the system-level questions. Given that the actual respondent for the system data might be different than for the outlet data, respondents were permitted to leave and re-enter the Web-based survey for completion. Upon completing the system/administrative questions, Opportunity Online hardware and broadband grant recipients were asked an additional set of questions regarding the grant program. The analysis of system- and outlet-level data required different approaches, considerations and weighting schemes for national and state analysis.

⁴ If applicable, not all branches of a library system were part of the Opportunity Online grant programs. The online survey system enabled the respondents to complete surveys for all of their branches if they so desired, and a number of responding libraries did so.