

## Executive Summary

With their nearly ubiquitous presence across the country, public libraries provide their communities with a wide array of essential public access technologies and Internet-enabled services. Through these services and technologies, public libraries help to build digitally inclusive communities by serving as gateways to broadband and computers, offering digital literacy instruction, providing critical information content, and facilitating e-government and employment services. More specifically, public libraries provide:

- **Public Access Computers.** Libraries reported an average of 16.4 public access computers, up slightly from 16.0 public access computers in 2010-2011 and 14.2 public access computers in 2009-2010.
- **Broadband Connectivity.** Libraries reported increased connectivity speeds, with 69.7 percent of libraries reporting connectivity speeds of greater than 1.5Mbps, up from 60.3 percent in 2010-2011 and 51.8 percent in 2009-2010. Over 31 percent (31.2 percent) of libraries report having connectivity speeds of 10Mbps or greater, up from 24.9 percent in 2010-2011.
- **Wireless (Wi-Fi) Access.** Libraries reported an increase in providing Wi-Fi access to the Internet, with 88.5 percent of public library branches offering wireless Internet access, as compared to 85.7 percent in 2010-2011 and 82.2 percent in 2009-2010.
- **Databases, E-Books, and Devices.** Libraries continued to offer access to a number of digital resources, including licensed databases (99.2 percent, nearly identical to the 99.8 percent reported in 2010-2011 and up from 95.0 percent in 2009-2010); e-books (76.1 percent, up from 67.2 percent in 2010-2011 and 65.9 percent in 2009-2010 and 55.4 percent in 2008-2009); and 39.1 percent provide access to e-readers for accessing e-books (new question for 2011-2012).
- **Technology training.** Most public libraries offer technology training, with 44.3 percent offering formal technology training classes (up from 38.0 percent in 2010-2011), 34.8 percent offering one-on-one technology training sessions by appointment (up from 28.1 percent in 2010-2011), and 82.7 percent offering informal point-of-use training assistance (up from 78.8 percent in 2010-2011).
- **Social media use.** A vast majority – 78.6 percent – of public libraries reported using social media (e.g., Facebook, hi5) to communicate with the public and for marketing purposes (new question for 2011-2012).
- **Employment support.** 92.2 percent of libraries reported providing access to jobs databases and other job opportunity resources (up from 90.1 percent in 2010-2011 and 88.2 percent in 2009-2010), and 76.0 percent of libraries reported providing patrons with assistance in completing online job applications (up from 71.9 percent in 2010-2011 and 67.1 percent in 2009-2010). In addition, 77.5 percent of libraries reported offering software and other resources to help patrons create resumes and other employment materials (up from 74.5 percent in 2010-2011 and 68.9 percent in 2009-2010).
- **E-government.** 96.6 percent of libraries reported providing assistance to patrons applying for or accessing e-government services (up considerably from 80.7 percent in 2010-2011 and 78.7 percent in 2009-2010), and 70.7 percent of libraries reported that staff provide assistance to patrons for completing government forms (up from 67.8 percent in 2010-2011 and 63.3 percent in 2009-2010). Nearly all public libraries – 91.8 percent – reported providing assistance to the public for understanding how to access and use e-government websites (up from 89.7 percent in 2010-2011 and 88.8 percent reported in 2009-2010).

But while libraries have made gains in terms of public access technologies, broadband, and Internet-enabled services, libraries also continued to indicate that they face challenges in supporting their public access technology services and resources in important areas:

- **Sufficiency.** Though libraries reported increases in public access computers and bandwidth, 41.7 percent of libraries (down from 44.9 percent in 2010-2011 and 45.1 percent in 2009-2010) reported that their connection speeds are insufficient some or all of the time and 65.4 percent of libraries (down from 76.2 percent in 2010-2011 and 73.5 percent in 2009-2010) reported that they had fewer public access computers to meet demand some or all of the time.
- **Staff.** Libraries reported challenges with adequate staff for providing e-government and employment support, as well as with access to technology staff. 59.5 percent of rural libraries report that it is the library director that provides IT support, as compared to 58.3 percent of urban libraries that report IT support provided by system-level IT staff.<sup>1</sup>
  - More significantly, 23.2 percent of public libraries reported a decrease in staff over the last three years, with 71.9 percent of libraries reporting reductions indicating that these staff decreases are permanent. Urban public libraries reported the largest average decrease in staff over the last three years, with a reduction from 149.0 average FTEs to 133.6.
- **Reduced hours.** Libraries also reported a reduction in hours open, with 21.5 percent reporting a reduction in hours over the last three years. Of the libraries reporting reduced hours, 78.5 percent indicated that the reductions were due to budget cuts and 42.7 percent indicated that the reductions were due to reductions in staff. Urban public libraries reported the largest average drop in hours open, from an average of 10,960.2 hours per year three years ago to an average of 10,894.4 today.
- **Costs.** Libraries reported cost factors (77.9 percent, about the same from the 78.8 percent reported in 2010-2011 and down slightly from 79.8 percent reported in 2009-2010) as a challenge in maintaining, sustaining, and enhancing their public access technology infrastructure.
- **Budgets.** A majority of libraries – 53.2 percent – reported an increase in operating budgets over the last three years, with a majority of those (21.2 percent) reporting increases of up to 2 percent. 30.3 percent of libraries, however, reported decreases in operating budgets over the last three years, while 12.5 percent reported that their operating budgets stayed the same. When one factors in inflation over the last three years, a majority of public libraries have witnessed reduced budgets over the last three years.

The results from the 2011-2012 survey continue to demonstrate that libraries provide and enhance their public access services where possible, but have experienced reductions in staff, hours, and budgets. Thus, public libraries are increasingly unable to fully meet demand as they are increasingly challenged to build digitally inclusive communities through digital literacy, employment, e-government, and Internet-enabled services and resources.

### Extended Summary and Overview of Survey Findings

The national survey offers insights into the current state of public access technology and Internet-enabled services that public libraries provide to the communities that they serve. These data inform the discussion

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<sup>1</sup> The 2011-2012 survey modified the IT support question, thus direct comparisons to previous surveys are not possible.

regarding the role of public libraries in building digitally inclusive literate communities. The following 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>.

## Digital Literacy and Inclusion

An increasing percentage of public libraries – 44.3 percent – offer formal technology training classes (see Figure 19). This rises to 63.2 percent for urban public libraries, followed by 54.5 percent for suburban libraries, and 31.8 percent for rural libraries. This represents an overall increase from the 38.0 percent reported in the 2010-2011 survey. Also, 34.8 percent of public libraries reported providing one-on-one technology training sessions by appointment (up from 28.1 percent in 2010-2011), and 82.7 percent offering informal point-of-use training assistance (up from 78.8 percent in 2010-2011). Of those libraries offering formal technology training classes:

- 87.0 percent offer general computer skill classes;
- 86.5 percent offer general Internet use classes;
- 75.6 percent offer general online and Web searching classes;
- 73.3 percent offer general software use (e.g., word processing, spreadsheets, presentation) classes;
- 49.2 percent offer accessing online job seeking and career-related information classes; and
- 39.4 percent offer social media (e.g., blogging, twitter, Facebook, YouTube) classes.

In all, 36.3 percent of public libraries reported that the use of patron technology training classes increased since last year (see Figure 9).

In addition, public libraries offer access to a wide range of online services and resources (see Figure 22), including:

- Licensed databases (99.2 percent, nearly identical to the 99.8 percent reported in 2010-2011 and up from 95.0 percent in 2009-2010);
- E-books (76.1 percent, up from 67.2 percent in 2010-2011 and 65.9 percent in 2009-2010 and 55.4 percent in 2008-2009);
- Homework resources (81.8 percent, down from 87.0 percent in 2010-2011 and 88.2 percent in 2009-2010);
- Audio content, such as podcasts and audiobooks (82.9 percent, versus 82.8 percent in 2010-2011 and 82.5 percent in 2009-2010);
- Access to mobile devices (e.g., netbooks/laptops) (49.0 percent); and
- Access to e-readers for accessing e-books (39.1 percent).<sup>2</sup>

Overall, 58.2 percent of libraries reported an increase in the use of their electronic resources over the last year (see Figure 10), indicating substantial demand.

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<sup>2</sup> Mobile device questions were new to the 2011-2012 survey.

### **Moving into Web 2.0 Technologies**

While 61.8 percent of libraries (see Figure 21) indicate that they provide access to a range of social media services and resources, the 2011-2012 explored in depth the use of social media and other Web 2.0 technologies to reach the public (see Figures 45 and 49). In all:

- 70.7 percent of public libraries report using social networking tools (e.g., Facebook, Hi5) to connect with library users, the general public, and for marketing purposes;
- 45.6 percent of public libraries report using communication tools (e.g., Blogger, WordPress, Vox, Twitter) to reach the public;
- 37.3 percent report using photography sites (e.g., Flickr, Zoomr); and
- 27.5 percent use video sharing tools (e.g., YouTube, Vimeo, and Openfilm).

In addition, libraries are starting to make use of mobile technologies, with 14.2 percent of libraries reporting that their Websites are optimized for mobile devices, 11.8 percent reporting that they use scanned codes (e.g., QR Codes) for access to library services and content, and 7.2 percent indicate that they developed smartphone apps for access to library services and content. Not surprisingly, adoption of these new technologies and resource/service development approaches is considerably higher in urban public libraries as opposed to suburban and rural libraries.

### **Connecting Communities through Public Access Technologies**

Underlying innovative and leading edge services that public libraries offer their communities are their public access technology and Internet infrastructure. The survey findings show that public libraries provide a substantial variety and foundational 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. Responding libraries, however, reported challenges in terms of the availability of computers and adequate broadband capacity. Though progress continues, therefore, public libraries do manifest challenges in meeting the demand for their services.

### **Community Public Access**

Public libraries are key community-based providers of public access computing and Internet access:

- 100 percent of public library branches offer public Internet access (see Figure 2), consistent with the 99.3 percent reported in 2010-2011 and 99.0 percent reported in 2009-2010.
- 62.1 percent of library branches report that they are the only provider of free public computer and Internet access in their communities (see Figure 3), down slightly from the 64.5 percent reported in 2010-2011 and 66.6 percent reported in 2009-2010.
- Overall, public library branches report an average of 16.4 public access computers (see Figure 4), up slightly from the 16.0 reported in 2010-2011 and 14.2 in 2009-2010. Rural libraries reported an average of 107 public access computers, up from the 9.6 computers reported in 2010-2011 and 9.2 reported in 2009-2010. Suburban libraries reported an average of 20.1, up from the 19.6 public access computers reported in 2010-2011 and 15.8 computers reported in 2009-2010. Urban libraries reported an average of 27.9 public access computers, essentially unchanged from the 28.0 reported in 2010-2011 and up from an average of 25.4 computers in 2009-2010.

- 88.5 percent of public libraries offer wireless Internet access, up from 85.7 percent reported in 2010-2011 and 82.2 percent reported in 2009-2010 (see Figure 13).
- 38.5 percent of libraries report public access connection speeds of 1.6Mbps-10Mbps (up from 33.4 percent reported in 2010-2011), followed by 16.5 percent reporting public access connection speeds of 1.5Mbps (down from 22.7 percent reported in 2010-2011), 15.8 percent reporting public access connection speeds of 10.1Mbps-30Mbps (up from 12.8 percent in 2010-2011), 15.4 percent reporting public access connection speeds of greater than 30Mbps (up from 12.1 percent reported in 2010-2011), and 6.9 percent reporting public access connection speeds of less than 1.5Mbps (down from 12.0 percent in 2010-2011) (see Figure 11). 31.1 percent of rural libraries report public access speeds of 1.5Mbps or less (down from 43.0 percent reported in 2010-2011), while 83.8 percent of urban libraries (down somewhat from the 86.3 percent reported in 2010-2011 and up from 77.2 percent in 2009-2010) and 72.7 percent of suburban libraries (up from 65.1 percent in 2010-2011 and 55.4 percent in 2009-2010) reported public access speeds of greater than 1.5Mbps.<sup>3</sup>

This infrastructure serves as the core public access technology upon which public libraries build their public access services and resources.

### ***Public Access Technology Infrastructure Enhancements and Challenges***

As with previous surveys, the 2011-2012 survey asked libraries to identify issues regarding the ability of public libraries to provide and maintain their public access Internet and technology services. Respondents reported a range of challenges in broad areas of costs; 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:

- **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. Just as with the 2009-2010 and 2008-2009 surveys, libraries reported cost factors highly (77.9 percent, about the same from the 78.8 percent reported in 2010-2011), followed by space limitations (62.2 percent, a reduction from 77.2 percent in 2010-2011). 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 (4.2 out of 5 for cost factors and 4.1 out of 5 for availability of space, with 5 being most important) (see Figure 40).<sup>4</sup>
- **Technology Support Staff.** Public libraries in general rely on non-technical staff to support their public access computers and Internet access. This is especially true for rural public libraries, as urban public libraries are more likely to have access to technology staff (see Figure 44). As such, 59.5 percent of rural libraries report that it is the library director that provides IT support, as

<sup>3</sup> Direct comparisons to the 2010-2011 survey are difficult due to the change in broadband categories adopted for the 2011-2012 survey.

<sup>4</sup> Direct comparisons to the 2010-2011 survey are difficult due to the change in how questions regarding challenges and technology support were asked in the 2011-2012 survey.

compared to 58.3 percent of urban libraries that report IT support provided by system-level IT staff.<sup>4</sup>

- **Keeping computers in service.** Nearly half of libraries (47.7 percent, down from 52.1 percent in 2010-2011) reported that it takes two or more days to get a public access computer back into service when it goes down (versus 52.1 percent in 2010-2011 and 47.2 percent in 2009-2010). A clear majority of urban libraries had a turn around time of two or less days (69.2 percent, but this is down from 78.5 percent reported in 2010-2011). 71.8 percent of suburban libraries report a turn around time of 71.8 percent, nearly unchanged from the 71.7 percent reported in 2010-2011 (see Figure 5).<sup>4</sup>
- **Increased Usage of Library Infrastructure and Services.** In all (see Figures 7-9), 60.2 percent of public libraries reported increased use of public access computers (on top of the 69.8 percent increase reported in 2010-2011 and 75.7 percent of libraries in 2009-2010); 74.1 percent reported an increased use of Wi-Fi, (on top of the 75.3 percent reported in 2010-2011 and 71.1 percent in 2009-2010); 36.3 percent reported an increased use of training services (on top of the 27.6 percent reported in 2010-2011 and 26.3 percent in 2009-2010); and 58.2 percent reported an increase in the use of electronic resources (on top of the 49.8 percent reported in 2010-2011 and 45.6 percent reported in 2009-2010).
- **Increased wireless (Wi-Fi) access.** Libraries reported an increase in providing Wi-Fi access to the Internet, with 88.5 percent of public library branches offering wireless Internet access, as compared to 85.7 percent in 2010-2011 and 82.2 percent in 2009-2010 (see Figure 13).
- **Increased Broadband.** 38.5 percent of libraries report public access connection speeds of 1.6Mbps-10Mbps (up from 33.4 percent reported in 2010-2011), followed by 16.5 percent reporting public access connection speeds of 1.5Mbps (down from 22.7 percent reported in 2010-2011), 15.8 percent reporting public access connection speeds of 10.1Mbps-30Mbps (up from 12.8 percent in 2010-2011), 15.4 percent reporting public access connection speeds of greater than 30Mbps (up from 12.1 percent reported in 2010-2011), and 6.9 percent reporting public access connection speeds of less than 1.5Mbps (down from 12.0 percent in 2010-2011) (see Figure 11). 31.1 percent of rural libraries report public access speeds of 1.5Mbps or less (down from 43.0 percent reported in 2010-2011), while 83.8 percent of urban libraries (down somewhat from the 86.3 percent reported in 2010-2011 and up from 77.2 percent in 2009-2010) and 72.7 percent of suburban libraries (up from 65.1 percent in 2010-2011 and 55.4 percent in 2009-2010) reported public access speeds of greater than 1.5Mbps.<sup>5</sup>
- **Broadband Congestion Remains.** Even with the increase in bandwidth, 41.4 percent of libraries (down from 44.9 percent reported in 2010-2011 and 45.1 percent reported in 2009-2010) reported that their connection speed is insufficient some or all of the time (see Figure 12).

These data 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 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,

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<sup>5</sup> Direct comparisons to the 2010-2011 survey are difficult due to the change in broadband categories adopted for the 2011-2012 survey.

and resources suggest that added library capacity has not resolved the needs of communities that libraries serve.

### ***Indicators of Public Access Quality***

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):

- 41.4 percent of libraries (down from 44.9 percent reported in 2010-2011 and 45.1 percent reported in 2009-2010) reported that their connection speed is insufficient some or all of the time (see Figure 12). Urban libraries (55.8 percent, versus 55.0 percent in 2010-2011 and 47.6 percent reported in 2009-2010) are less likely than suburban libraries (62.5 percent, up from 56.7 percent in 2010-2011 and 57.9 percent reported in 2009-2010) and rural libraries (43.1 percent, down from 53.1 percent in 2010-2011 and 54.3 percent reported in 2009-2010) to report that their connection speeds are sufficient to meet patron needs at all times.
- Nearly two-thirds of public libraries – 65.4 percent – reported insufficient numbers of workstations some or all of the time (down from 76.2 percent in 2010-2011, versus 73.5 percent in 2009-2010) (see Figure 6). This is in spite of a slight increase in the average number of public access computers reported by libraries.
- 82.3 percent of public libraries report that their wireless connections share the same bandwidth as their public desktop computers (up from the 79.7 percent reported in 2010-2011 and 79.3 percent reported in 2009-2010), though 25.2 percent (up slightly from the 23.9 percent reported in 2010-2011 and 23.2 percent reported in 2009-2010) indicate that they use bandwidth management techniques (see Figure 14).

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, the quality of the public's experience is constrained due to inadequate computers and bandwidth at least at some times during the day. Though the provision of Wi-Fi has alleviated some congestion in terms of computer availability, Wi-Fi adds additional network traffic. Rural public libraries (67.9 percent, with only 17.9 percent reporting that they use traffic management techniques) have particular constraints. The data also show that urban libraries in particular are struggling to meet demand with higher percentages of inadequate public access computer availability and inadequate bandwidth – though in terms of numbers of workstations and reported connectivity speeds, urban public libraries outpace their suburban and rural counterparts.

### **Forward Progress in Connectivity and Public Access**

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:

- 35.5 percent of public libraries have a workstation/laptop replacement schedule.<sup>6</sup> Of significance, however, is that 30.6 percent of libraries report that the replacement frequency is every 5 years, followed by 26.2 percent reporting a frequency of every 3 years, and 25.9% reporting a frequency of every 4 years (see Figure 36).
  - In all 31.2 percent of libraries reported that they are able to maintain their replacement schedule, while 49.9 percent indicated that they are able to maintain their schedule but do not know how many public access computers or laptops they will replace (see Figure 37).
  - On average, libraries reported that they will replace 19.5 public access computers or laptops in the coming year, with urban libraries reporting an average of 70.5 replacements, suburban libraries reporting an average of 21.6 replacements, and rural libraries reporting an average of 8.4 replacements (see Figure 37).
- 14.6 percent of public libraries plan to add more public access computers within the next year.<sup>6</sup> Urban public libraries report a greater percentage of additions (22.3 percent), as compared to 14.6 percent of rural public libraries and 13.4 percent of suburban public libraries (see Figure 38). On average, libraries will add 9.0 computers, with urban libraries reporting an average of 41.8, suburban libraries an average of 7.3, and rural libraries an average of 5.1.
- 3.9 percent libraries plan to add wireless access within the next year. If they do so, by the end of 2012 92.4 percent of public libraries will offer wireless access (see Figure 13). Wireless access is rapidly approaching ubiquity within the public libraries, and has done so in a very short 4-year period.

These data demonstrate that public libraries consider the need for continual upgrades and replacements to their public access technology infrastructure. It also appears to be the case that upgrades and replacements are occurring over a longer period of time with 55.6 percent of libraries reporting a four or five year replacement time horizon.

### **Connecting Communities to Employment and E-government**

Public libraries are critical providers of employment and e-government services, resources, and support. Libraries indicated that they provide a number of resources and services to assist individuals seek employment, apply for employment, and interact with government agencies. These service roles are growing as governments and employers increasingly require online interactions – and underlying these services are the essential digital inclusion and literacy services public libraries offer discussed earlier. Often, an applicant for social services requires a range of computer and Internet training and assistance, and the public library is the community's free provider of public access technologies, training, and assistance.

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<sup>6</sup> Direct comparisons to the 2010-2011 survey are difficult due to the change in 2011-2012 survey regarding public access computer replacement and/or addition.

### ***Employment and Job Seeking Support***

Public libraries support job seekers in numerous ways (see Figures 30-34):

- 92.2 percent (up from the 90.9 percent reported in 2010-2011 and 88.2 percent in 2009-2010) of reporting libraries provide access to jobs databases and other job opportunity resources;
- 77.1 percent (unchanged from the 77.0 percent reported in 2010-2011 survey and up from the 74.9 percent in 2009-2010) of reporting libraries provide access to civil service examination materials;
- 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;
- 77.5 percent (up slightly from the 76.0 percent reported in 2010-2011 and the 71.9 percent reported in 2009-2010) of reporting libraries provide patrons with assistance in completing online job applications;

In providing these job-seeking services, nearly half of libraries – 49.8 percent – reported (down from the 55.9 percent reported in 2010-2011 and 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 41.3 percent (down from the 43.4 percent reported in 2010-2011 and 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 digital government services and resources through a range of e-government services. These include (see Figures 25-29):

- 96.6 percent (up substantially from the 80.7 percent reported in 2010-2011 and the 78.7 percent reported in 2009-2010) of reporting libraries provide assistance to patrons applying for or accessing E-government services;
- 91.8 percent (up from the 89.7 percent reported in 2010-2011 and 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;
- 70.7 percent (up from the 67.8 percent reported in 2010-2011 and 63.3 percent reported in 2009-2010) of reporting libraries indicate that staff provide assistance to patrons for completing government forms;
- 30.9 percent (up from 24.7 percent reported in 2010-2011 and 20.5 percent reported in 2009-2010) of reporting libraries indicate that the library partnered with government agencies, non-profit organizations, and others to provide e-government services. This percentage increases to 43.1 percent for urban public libraries; and
- 31.4 (up from 29.4 percent reported in 2010-2011 and similar to 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;

In providing these services, 47.9 percent (down from the 55.7 percent reported in 2010-2011 and 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. In addition, 44.9 percent (down from the 50.5 percent reported

in 2010-2011 and 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.

### **Challenges and Divides**

Public libraries face a number of challenges as they enhance their public access technologies, services, and resources:

- 21.5 percent of libraries reported a reduction in hours over the last three years (see Figure 62). Of the libraries reporting reduced hours, 78.5 percent indicated that the reductions were due to budget cuts and 42.7 percent indicated that the reductions were due to reductions in staff. Urban public libraries reported the largest average drop in hours open, from an average of 10,960.2 hours per year three years ago to an average of 10,894.4 today.
- 23.2 percent of public libraries reported a decrease in staff over the last three years, with 71.9 percent of libraries reporting reductions indicating that these staff decreases are permanent (see Figure 61). Urban public libraries reported the largest average decrease in staff over the last three years, with a reduction from 149.0 average FTEs to 133.6.
- 30.3 percent of libraries reported decreases in operating budgets over the last three years, while 12.5 percent reported that their operating budgets stayed the same (see Figure 60). When one factors in inflation over the last three years, a majority of public libraries have witnessed reduced budgets over the last three years.
- Half of public libraries – 50.4 percent – rely on the library director to support their public access technology, a figure that rises to 59.5 percent for rural public libraries (see Figure 44).
- 58.1 percent (versus 68.4 percent reported in 2010-2011 and 62.5 percent in 2009-2010) of public library branches have no plans to add workstations in the next year (see Figure 38).
- 41.4 percent of libraries (down from 44.9 percent reported in 2010-2011 and 45.1 percent reported in 2009-2010) reported that their connection speed is insufficient some or all of the time (see Figure 12).
  - Urban libraries (55.8 percent, versus 55.0 percent in 2010-2011 and 47.6 percent reported in 2009-2010) are less likely than suburban libraries (62.5 percent, up from 56.7 percent in 2010-2011 and 57.9 percent reported in 2009-2010) and rural libraries (43.1 percent, down from 53.1 percent in 2010-2011 and 54.3 percent reported in 2009-2010) to report that their connection speeds are sufficient to meet patron needs at all times.

At the same time that all public libraries face a range of challenges regarding their public access technologies and services, there is a growing divide between libraries.

Although the survey data have consistently shown differences between urban and rural public libraries in the areas of budgets, hours open, public access technology infrastructure, staffing, and the range of public access services offered, these differences have existed primarily on a scale and capacity level, rather than quality issue – that is, urban public libraries are simply larger and have access to more resources. The current survey shows an emerging trend of rural libraries not keeping up with significant emerging technologies, and this can affect the ability of rural public libraries to contribute to building digitally inclusive communities. For example:

- 73.6 percent of urban public libraries, as compared to 37.0 percent of rural public libraries, report using communication tools (e.g., Blogger, WordPress, Vox, Twitter) to reach the public.
- 57.2 percent of urban public libraries, as compared to 33.8 percent of rural public libraries, report using photography sites (e.g., Flickr, Zoomr).
- 49.0 percent of urban public libraries, as compared to 21.2 percent of rural public libraries, report using video sharing tools (e.g., YouTube, Vimeo, and Openfilm).
- 36.1 percent of urban public libraries, as compared to 9.3 percent of rural public libraries, report that their websites are optimized for mobile devices.
- 31.9 percent of urban public libraries, as compared to 6.5 percent of rural public libraries, report that the library uses scanned codes (e.g., QR Codes) for access to library services and content.
- 27.8 percent of urban public libraries, as compared to 3.7 percent of rural public libraries, report that the library has developed a smartphone app for access to library services and content.

Thus, although all public libraries face challenges in key areas of public access technologies, services, and resources, there is a growing disparity between rural and urban public libraries in terms of the use and adoption of emerging technologies and Internet-enabled service.

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. 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), will have an impact on the numbers of public access computers and broadband connectivity of selected libraries (see Figures 53 and 54), but the full impact of these grants are still emerging. 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.

The results from the 2011-2012 survey continue to demonstrate that libraries provide and enhance their public access services where possible, but have experienced reductions in staff, hours, and budgets. This constrained environment has not kept public libraries from offering innovative public access services and resources — indeed, public libraries continue to serve as essential community access points that build digitally inclusive communities.

## Survey Methodology

The 2011-2012 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 social media and mobile technology use, 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 status<sup>7</sup> (urban, suburban or rural).

The study team used the 2009 public library dataset available from the U.S. Institute of Museum and Library Services (IMLS) as a sample frame, which was the most recent public release file available in June 2011. Bookmobile and Books by Mail service outlets were removed from the file, leaving 16,776 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 8,790 outlets stratified and proportionate by state and metropolitan status state.

The survey employed the 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.

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 2011 and November 2011. After a number of follow-up reminders and other strategies, the survey received

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<sup>7</sup> 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.

a total of 7,252 responses for a response rate of 82.5 percent. 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 2,909 system/administrative responses out of a sample of 4,998 for a response rate of 58.2 percent. The 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 (questions focusing on E-rate applications, BTOP/BIP grant applications, mobile technologies, 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 20 of the survey explored outlet-level issues (e.g., Internet connectivity, speed of connection, workstations, employment and e-government services, etc.). Questions 21 through 44 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 20 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. The analysis of system- and outlet-level data required different approaches, considerations and weighting schemes for national and state analysis.

## Data Analysis

The survey used weighted analysis to generate national and state data estimates. As such, the analysis uses the responses from the 7,260 library outlets from which a completed survey was received to estimate to all public library outlets (minus bookmobiles and books by mail) in the aggregate as well as by metropolitan status designations. The same process is used for analyzing and estimating state level data. The key difference is that the weighting process is limited to the metropolitan status and aggregate library designations for the state. The data reported have a margin of error of plus or minus 2.0 percent.

**Figure M-1: Public Library Outlets and Survey Responses by Metropolitan Status**

	Responding Facilities as a Proportion of Survey Respondents	Facilities as a Proportion of National Population
<b>Metropolitan Status</b>		
Urban	21.5% (1,563 of 7,260)	17.3% (2,896 of 16,776)
Suburban	31.2% (2,264 of 7,260)	34.8% (5,836 of 16,776)
Rural	47.3% (3,433 of 7,260)	47.9% (8,044 of 16,776)
Overall	<b>100.0%</b> (7,260 of 7,260)	<b>100.0%</b> (16,776 of 16,776)
Overall Response Rate = 82.5%*		
*This response rate is calculated based on sampled library responses to the survey. Additional surveys from libraries that are Bill & Melinda Gates Foundation Opportunity Online hardware and broadband grant recipients were also used in the data analysis; these libraries participated in the survey as a grant requirement.		