EXECUTIVE SUMMARY

The national survey identified a number of issues related to the current state of public access computing and Internet services provided by public libraries to the communities they serve. The following presents selected key findings from the survey and their implications. The discussion is not exhaustive. Rather, it highlights a range of findings and implications that the survey identified. The complete set of data tables and findings from previous surveys are available at http://www.ii.fsu.edu/plinternet.

PUBLIC ACCESS CONNECTIVITY AND INFRASTRUCTURE

Public libraries offer a range of public access computing and Internet access services at no charge to users. As community-based public access venues, libraries employ a range of strategies to maintain, upgrade and make available public access resources and services. The findings indicate that, though public libraries provide substantial public access services and resources across a range of areas, they continue to be challenged in their ability to do so successfully—particularly in their ability to maintain, enhance and grow public access technology services. Indeed, the findings suggest that even as public libraries add more capacity such as increased broadband and wireless (Wi-Fi), such enhancements still fall short of meeting growing demand and needs. Moreover, in the case of public access workstations, public libraries have scaled back to the average numbers of workstations reported in the 2006–2007 survey, although reasons for this are unclear.

Libraries as Community Access Computing and Internet Access Points

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

- More than 98 percent of public library outlets offer public Internet access (Figure C4), nearly identical to the percentage found in the 2007–2008 survey (98.9 percent).
- More than 71 percent of library outlets report that they are the only provider of free public computer and Internet access in their communities (Figure C5), a number consistent with and within the margin of error of the number reported in 2007–2008 (72.5 percent).
- Overall, public library outlets report an average of 11 public access workstations, down from 12 in 2007–2008 (Figure C6), but consistent with figures reported in the 2006–2007 survey).1 Rural libraries offer an average of 7.6 (nearly identical to the 7.5 reported in 2007–2008) public computers; suburban libraries an average of 12.7 computers (down from 13.9 reported in 2007–2008); and urban libraries an average of 18.7 (down from 21 reported in 2007–2008).
- Slightly more than 76 percent of public library outlets offer wireless Internet access, up from 65.9 percent reported in 2007–2008 (Figure C18).

Infrastructure Challenges

The 2008–2009 survey asked libraries to identify issues related to their ability to maintain public access Internet and computing services. The responses offer insights into libraries’ capacity and capabilities. As in the 2007–2008 survey, respondents report that they face a range of challenges with their buildings, costs and staffs. This year’s survey identified additional challenges that libraries face in terms of maintaining and supporting their public access technology infrastructure:

- **Cost:** Respondents indicate that funding workstation replacements, upgrades, bandwidth enhancements and a range of other services related to public Internet access and computing (e.g., online access to databases) are difficult and increasingly problematic (Figures C11 and C12). Importantly, the 2008–2009 survey marks the first survey in which libraries report cost as more of a factor than space limitations in influencing library decisions to add workstations/laptops (77.4 percent and 75.9 percent, respectively).

- **Buildings:** Library buildings remain an issue. Libraries are: 1) out of space and unable to support more workstations; 2) insufficiently wired to support more cable drops; and 3) insufficiently wired for the power requirements of desktop computers and patron-provided laptops (Figures C11 and C12).

- **Staff:** By and large, public libraries rely on non-technical staff to support their public access computers and Internet access. This is particularly true for rural public libraries (Figure C15). In fact, in nearly half of rural public libraries (47.2 percent) it is the library director who provides IT support, compared to 72.2 percent of urban libraries that report IT support provided by system-level IT staff.

A new question in the 2008–2009 survey explores the number of IT full-time equivalents (FTEs), whether true IT specialists or non-technical staff providing IT support (Figure C16). Overall, libraries have access to few IT FTEs, ranging from an average of .53 FTEs to 3.9 FTEs. It is important to note, however, that by and large, rural libraries report FTEs in the .5 to 1.8 range, with a majority of rural libraries deriving their IT support from non-technical staff (predominantly public service staff or the library director). Urban and suburban libraries, in contrast, tend to derive technical support from system-level IT staff, though public service staff also provide IT support. Urban and suburban library technical support FTEs ranged from .75 to 6 and .36 to 3.9, respectively.

- **Keeping workstations in service:** New to the 2008–2009 survey is a question about how long it takes to get a public access computer that has stopped working back into service (Figure C14). In general, nearly a quarter of libraries (23.9 percent to 24.6 percent) report that it takes one, two, or more than two days. In general, urban and suburban libraries have a turn-around time of two or fewer days, but nearly one-third of rural libraries (31.2 percent) indicate that it can take two or more days to get a computer back into service.

Together, these data further support a trend regarding the management of public access technology resources identified in the 2007–2008 survey, while expanding our understanding of the issues that public libraries confront in maintaining their public access computing and Internet access services.

In a continuing trend reported in the 2007–2008 survey, libraries are accelerating their attempts to add more public technology services. For example, the percentage of libraries that now provide wireless access increased to 76.4 percent, up from 65.9 percent from last year (see Figure C18). Unfortunately, as Figure C19 shows, this wireless service simply has been added to the existing telecommunication connection: 74.8 percent of libraries indicate that the wireless connection shares the library’s existing connection (consistent with the 74.9 percent in 2007–2008); although 24.9 percent do indicate that they are using some type of bandwidth management technique to accommodate the wireless connection.
Quality of Public Access
As with previous survey findings, public libraries continue to provide substantial public access Internet and computing services. However, what is notable about the survey’s findings this year is that even with increases in bandwidth, libraries continue to report that their connection speeds do not meet their needs. Direct comparisons to previous year bandwidth reporting is not possible due to the changes in speed groupings. However, where possible, reasonable comparisons are made:

- More than 79 percent of public libraries report connection speeds greater than 769 kbps, up from 73 percent in 2007–2008 (Figure C17). Of all libraries, 44.5 percent of libraries report connection speeds greater than 1.5 Mbps, up from 25.7 percent in 2007–2008. This represents a significant increase in bandwidth.
- At the same time, 59.6 percent (up from 57.5 percent in 2007–2008) of respondents report that their connectivity speed is insufficient some or all of the time (Figure C20). Though this reported increase is within the margin of error, it is significant to note that essentially the same percentage of libraries report inadequate bandwidth for their public access patrons even with the reported increases in bandwidth.
- Nearly 23 percent of libraries report that though they have an interest in increasing their current Internet speed, they cannot afford to do so (Figure C21).
- Slightly more than 81 percent of libraries report that they have insufficient availability of workstations some or all of the time, about the same (82.5 percent) as reported last year (Figure C8).
- Nearly 75 percent of public libraries report that their wireless connections share the same bandwidth as their public desktop computers, though 24.9 percent indicate that they use bandwidth management techniques. This is nearly identical (74.9 percent) to libraries that reported a shared connection in 2007–2008 (Figure C19).
- Consistent with 2007–2008 findings, over 90 percent (94.1 percent) of libraries have time limits on the use of their public access workstations (Figure C22). Of those, 22.4 percent have time limits up to 30 minutes, 45.2 percent have time limits of 31–60 minutes, and only 6 percent have time limits of greater than 60 minutes. Only 17 percent of libraries report that they had unlimited time limits so long as no one is waiting to use the workstations. As was found last year, over 40 percent (43.5 percent) of libraries manage the user sessions manually (Figure C25), imposing a burden on staff.

Together, these data point to a technology infrastructure that struggles to keep up with the demands of the networked environment—even when improvements are made to the infrastructure. Indeed, libraries continue to limit their resource availability using time limits, and by sharing bandwidth with wireless connectivity in order to accommodate more users. In doing so, libraries are adversely affecting the quality of their public access technology environment.

Extensive Range of Library Services Provided
The data from the survey show that public libraries continue to provide a range of Internet-based services. As Figure C26 shows, 35 percent of libraries offer formal technology training classes, and 52.6 percent offer informal point-of-use assistance. Of the libraries that offer formal training classes, 92.8 percent offer general Internet use training classes, 91.3 percent offer general computer skills training classes, 76.9 percent offer general online/Web searching classes, and 70.5 percent offer general software use (such as word processing, spreadsheets and presentation) training classes (Figure C27).

As Figure C31 indicates, and consistent with the 2007–2008 survey findings, public libraries provide an impressive array of services that are critical to the communities they serve. Of greatest importance are the
education resources and databases purchased for K–12 students (78.6 percent), services for job-seekers (65.9 percent) and educational resources for adult/continuing education students (49.5 percent).

More specifically, libraries broker and provide access to a wide range of Internet services and resources (Figures C28 and C29), including:

- Licensed databases (89.6 percent, up 1.9 percent from 2007–2008, but within the margin of error).
- Homework resources (79.6 percent, down 2.7 percent, but within the margin of error).
- Audio content, such as podcasts and audiobooks (72.9 percent, up from 71.2 percent, but within the margin of error).
- Digital reference (62.4 percent, nearly identical to the 62.5 percent reported in 2007–2008).
- E-books (55.4 percent, up 3.6 percent from 51.8 percent).

As Figure C29 depicts, public libraries continue to incorporate peripheral technologies into their public technology services, allowing users to:

- Access and store content on USB storage devices (e.g., flash drives, portable drives) or other devices (81.4 percent, up from 72 percent in 2007–2008).
- Access to gaming consoles, software or Web sites (57.2 percent, nearly identical to the 57.7 percent reported in 2007–2008).
- Connect digital cameras and manipulate content (47.9 percent, up from 37.4 percent in 2007–2008).
- Burn CDs/DVDs (42.9 percent, up from 34.7 percent in 2007–2008).

An emerging and increasingly significant service that public libraries provide involves e-government—that is, access to, use of and instruction related to federal, state and local government information, forms and services (Figure 32). A vast majority of public libraries—80.5 percent (up from 74 percent in 2007–2008)—indicate that their staff members provide as-needed assistance to patrons for understanding how to access and use government Web sites, programs and services. Another 54.1 percent of public libraries (up from 51.9 percent in 2007–2008) report that staff provide assistance to patrons applying for or accessing e-government services, and 32.1 percent (up from 28.6 percent in 2007–2008) of libraries provide immigrants with assistance in locating immigration-related information, Web sites, and other services and resources.

The challenge for public librarians is the extent to which they can maintain and/or expand upon these Internet services while ensuring the bandwidth, infrastructure and trained staff necessary to support the services for millions of library users.

**Moving Connectivity and Public Access Forward**

Public libraries are struggling to prepare for the future of their public access Internet services, resources and infrastructure. Public libraries continue to face a range of challenges as they seek to enhance and/or maintain their public access technology services and resources.

**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:

- Slightly less than 17 percent (up less than 1 percent from 2007–2008) of public library outlets plan to add more workstations within the next year, while 16.3 percent of public library outlets (down sharply from 26.1 percent) are considering doing so (Figure C9).
Nearly 62 percent of public libraries have a workstation/laptop replacement schedule that essentially replaces hardware every three (15.9 percent), four (18.4 percent), or five (14.2 percent) years (Figure C10).

About 9 percent plan to add wireless access within the next year; if they do so, more than 85 percent of public libraries will offer wireless access by the end of 2009 (Figure C18). Wireless access is rapidly approaching the same percentage of libraries that offer public Internet access, thus becoming a core service.

These data demonstrate that library public access technologies reside within an evolving context that requires continued upgrades, replacements and enhancements. Libraries, however, continue to adopt strategies that rely on user devices (e.g., wireless, the use of USB devices, etc.) to extend library infrastructure. While adding a level of convenience for users, this also places stress on the existing library infrastructure through shared connections for wireless and public access workstations.

Library Infrastructure Continues to Experience Stress

There are significant challenges to the improvement of libraries’ public access computing environment and Internet access services:

- Nearly 60 percent (up from 57.5 percent in 2007–2008) of public library outlets indicate that their connection speeds are inadequate to meet user demands some or all of the time (Figure C20). This is particularly significant as overall public access library bandwidth increased substantially since 2007–2008 (Figure C17).

- Slightly more than 80 percent (up from 75.1 percent in 2007–2008) of libraries indicate that they will not be increasing their bandwidth for a range of reasons—affordability, ability, interest or availability (Figure C21). Specifically, 26 percent (up from 17.1 percent in 2007–2008) of respondents report that their current connection is the maximum speed that they can acquire, 22.9 percent (up from 21.2 percent in 2007–2008) cannot afford to increase their bandwidth, 16.8 percent (down from 19.7 percent in 2007–2008) indicated that they have no interest in increasing their bandwidth and 14.7 percent (down from 17.1 percent in 2007–2008) indicate that they could increase their bandwidth but have no plans to do so.

- Sixty-one percent (up from 56.1 percent in 2007–2008) of public library outlets have no plans to add workstations in the next year (Figure C9), largely due to cost factors (77.4 percent), space factors (75.9 percent), and the availability of electrical outlets, cabling or other infrastructure (34 percent) (Figure C11).

- Overall, libraries have access to few IT FTEs, ranging from an average of .53 FTEs to 3.9 FTEs (Figure C16). Libraries with multiple IT staff tend to be in urban or suburban service areas.

- Rural public libraries, compared to suburban and urban libraries, face a range of challenges in a number of key areas, such the number of hours open (38.2 hours per week, compared with 49.4 for suburban and 50.3 for urban libraries), average number of workstations (7.6 as compared to 12.7 in suburban libraries and 18.7 in urban libraries), bandwidth available (31 percent of rural libraries have less than T1 speeds, compared with 16 percent of suburban and 7.1 percent of urban libraries), and the availability of formal training classes (24.1 percent), compared to 42.1 percent of suburban and 52.5 percent of urban libraries (Figures C2, C6, C17 and C26).

- Libraries that do not offer technology services or offer limited Internet services (e.g., databases, e-books) also indicate that they cannot afford to purchase and/or support the services (58.9 percent, down from 63.6 percent in 2007–2008), library computer hardware/software will not support the services (55.4 percent, up from 46.3 percent in 2007–2008), or library policy restricts the provision of the services (33.2 percent, down from 42.8 percent) (Figure C30).
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—all the while trying to enhance their services.

What is unclear is how libraries will maintain their levels of public access computer and Internet services, much less extend and augment them given the current economic downturn. The American Recovery and Reinvestment Act of 2009 (ARRA) does include $7.2 billion for broadband investments in rural and underserved communities, and a minimum of $200 million for public access centers, including libraries. These investments have the potential to improve library public access infrastructure.
INTRODUCTION

This section of the report to the American Library Association (ALA) presents national and state data from the survey portion of the 2008–2009 Public Library Funding & Technology Access Study. The 2008–2009 survey (see Appendix A) also provides longitudinal data from the 2006–2007 and 2007–2008 surveys, continuing the research of previous surveys conducted by John Carlo Bertot and Charles R. McClure, with others, since 1994. The 2008–2009 survey also explored new areas of library network-based services, e-government roles of public libraries, and issues associated with maintaining, upgrading and replacing a range of public access technologies.

The data collected by this annual survey provide national and state policymakers, library advocates, practitioners, researchers, government and private funding organizations, and a range of other stakeholders, with a better understanding of the issues and needs of libraries associated with providing Internet-based services and resources. The data also can help public librarians better plan for and deliver Internet-based services and resources to their users and advocate for public library public access technology roles, needs and services to the communities they serve.

The 2008–2009 survey is part of the larger Public Library Funding & Technology Access Study, funded by the American Library Association (ALA) and the Bill & Melinda Gates Foundation to gain a better understanding of public library technology access and funding. The study presents national and state data gathered through three integrated approaches: a national survey that collected information about public library Internet connectivity, use, services, funding and sustainability issues; a questionnaire sent to the Chief Officers of State Library Agencies (COSLA); and focus groups and site visits held in two states: Indiana and Wisconsin. The 2008–2009 national survey’s primary focus is to obtain comprehensive data related to these topics and explore the issues that public libraries encounter when planning for, implementing and operating their public access technology components (e.g., workstations, bandwidth, services and resources).

SURVEY OBJECTIVES

The main objectives for this survey are to provide data that inform policy makers, researchers, practitioners and others about the extent to which public libraries:

- Serve as high quality public Internet access venues within the libraries’ communities for content, resources, services and technology infrastructure (e.g., workstations and bandwidth).
- Offer, sustain and plan for public access Internet services and resources that meet community public access needs.
- Install, maintain and upgrade the technology infrastructure required to provide public access Internet services and resources.
- Serve as community-based technology and Internet-enabled resource/service training centers.
- Identify issues that public libraries encounter in maintaining and enhancing their public access technology infrastructure and services.

Serve as providers of and access points to e-government services.
- Fund their information technology investments.

The findings detailed in this report address these objectives as well as other related topics and issues.

**METHODOLOGY**

The 2008–2009 survey resides within a larger public library study regarding public access technology use and funding as well as a particular public access technology grant by the Bill & Melinda Gates Foundation to selected states and libraries. 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-level state data (including the District of Columbia) regarding public library Internet connectivity and use.
- Provide system (administrative)-level national data (including the District of Columbia) regarding E-rate use and library operating and technology funding and expenditures.
- Include assessment questions for selected public libraries that are recipients of the Bill & Melinda Gates Foundation’s Opportunity Online hardware grants.

The survey has the additional objectives of obtaining data to conduct analysis using the variables of metropolitan status and poverty level.

The survey team received a list of Opportunity Online hardware grant recipient libraries that included 1,906 libraries in 22 states. 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 22 grant states, but also ensured a proportionate national sample. This sampling approach ensured high quality and 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 2005 public library dataset available from the U.S. National Center for Education Statistics (NCES), the most recent file at the time the geocoding process began. The study team employed the services of the GeoLib database (http://www.geolib.org/PLGDB.cfm) to geocode the NCES public library universe file in order to calculate the poverty rates for public library outlets. Given the timeframe of the study, GeoLib was able to geocode 16,620 library outlets. This is an increase of 163 outlets compared to the 2007–2008 survey. From these totals, the researchers used SPSS Complex Samples  

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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.


5. Geocoding is the process by which all public library buildings are mapped to determine their physical location. Census data are then overlaid to determine the poverty rate of the population served.
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 5,907 outlets. This sample was in addition to the 1,906 libraries in the Opportunity Online hardware grant program.

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.

The survey asked respondents to answer questions about specific library outlets and about the library system to which each respondent outlet belonged. Respondents answered the survey between September 2008 and November 2008. After a number of follow-up reminders and other strategies, the survey received a total of 4,303 responses for a response rate of 72.8 percent. Another 1,808 Opportunity Online hardware grant library responses were added for a total of 6,111 responses for analysis purposes. Figure C1 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 3,777 system/administrative responses out of a sample of 5,000 for a response rate of 75.5 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 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 14 of the survey explored outlet-level issues (e.g., Internet connectivity, speed of connection, workstations, etc.). Questions 15 through 21 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 though 14 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 grant recipients were asked an additional 12 questions regarding the grant program. (See Appendix A for a print version of the survey.) The analysis of system- and outlet-level data required different approaches, considerations and weighting schemes for national and state analysis.

DATA ANALYSIS

The survey uses weighted analysis to generate national and state data estimates. As such, the analysis uses the actual responses from the 6,111 library outlets from which a completed survey was received to estimate
to all geocoded outlets. For example, Anchor Point Public Library in Anchor Point, Alaska, is coded as a rural library outlet with less than 20 percent poverty. Anchor Point Public Library’s responses (and all others designated rural with less than 20 percent poverty) are weighted by 3.4 to general an estimate for all rural outlets with less than 20 percent poverty.

The same process is used for analyzing and estimating state level data. The key difference is that the weighting process is limited to the poverty and metropolitan status library designations for the state. The data reported have a margin of error of plus or minus 3 percent.

**IMPORTANCE OF THE SURVEY**

The survey provides data that describe public library public access technology services, issues and sustainability that can be used longitudinally to track trends and issues. The findings inform the library, government, research and other communities about the significance of public library contributions to the communities they serve in providing open access to a range of computer and Internet technologies. The data uniquely identify not only the services and resources that public libraries offer their communities, but also issues in sustaining and enhancing the public access technologies as important community access points to networked services and resources. In short, the survey data provide a comprehensive view of public library involvement with and use of the Internet through their public access technology infrastructure.

**NATIONAL OUTLET-LEVEL DATA**

The ensuing section presents selected findings from national outlet-level data. A full set of data tables and analysis is available at http://www.ii.fsu.edu/plinternet. Figures C1–C13 present data regarding survey data quality, average hours open, and basic public access technology infrastructure (i.e., average number of workstations and replacement schedules).