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Public Libraries in the United States Survey

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Cover Photos

Left: The Omaha Public Library's Florence Branch Library and Recreation Center hosts a Veterans Day ceremony, photo by Erin O'Brien. Middle: The Summer Reading Kickoff festival at Virginia's Chesterfield County Public Library. Right: Washington's King County Library System, photo by Patrick Bennet

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Introduction

Public libraries provide learning and information resources for individuals, families, businesses, and nonprofit organizations. In their role as community anchor institutions, they create opportunities for people of all ages through access to collections and technology. Public libraries support community improvement by providing programming that addresses the health, education, and workforce development needs of local residents. Libraries are places where people can gain assistance with research and information needs from knowledgeable library staff. In communities across the nation, local public libraries complement commercial development activity and provide attractive neighborhood amenities in residential settings.

The Public Libraries in the United States Survey (PLS) examines when, where, and how library services are changing to meet the needs of the public. These data, supplied annually by more than 97.0 percent of public libraries across the country, provide information that policymakers and practitioners can use to make informed decisions about the support and strategic management of libraries.

This report has three parts: *Public Libraries in the United States, Public Library Indicators,* and *State Profiles*.

Part One: *Public Libraries in the United States* provides a national-level analysis that aggregates data from all 50 states and the District of Columbia to provide national estimates and trends. This year, for the first time, we also used statistical modeling to examine the relationship between investment in and use of public libraries. In addition, we examined whether the relationship we observed between investment and use in individual libraries was consistent for all libraries. In most cases, we found that when investment increases, use increases, and when investment decreases, use decreases.

Part Two: *Public Library Indicators* was introduced in the FY 2010 report. The indicators provide an overall level of performance for key metrics and serve as a gauge to evaluate important changes in public library use, services, and resources. Indicators are calculated as per-capita estimates, so they provide a way to compare performance across libraries. Results for each indicator are also broken out for examination at the region, state, and local levels.

Part Three: State Profiles (online only) provides public library statistics for individual states, including each of the 50 states, the District of Columbia, and Puerto Rico. The profiles contrast public library statistics at the state level to corresponding regional and national statistics. The state profiles are available online at www.imls.gov/PLS2011.

Data and Analysis

The PLS is a universe survey, which means that information is collected from all public libraries in the United States. When information is available from an entire population, estimates are made by summing units to the population or subpopulation. In the present report, national estimates are aggregate totals based on summing data across all public libraries to the national level. For estimates based on subpopulations, such as state, region, or locale, data are summed up to the level of the subpopulation.

A public library is established under state laws or regulations to serve a community, district, or region. In this document, we report only on public libraries that meet all criteria in the definition of a public library developed by the Federal-State Cooperative System (FSCS). Under this definition, a public library provides, at a minimum, the following:

- An organized collection of printed or other library materials, or a combination thereof;
- Paid staff;
- An established schedule in which services of the staff are available to the public;
- Facilities necessary to support such a collection, staff, and schedule; and
- Supported in whole or in part with public funds.

A community may have only one public library or a public library system, which may have a central library and multiple branches or bookmobiles. Any reference to a public library in this report refers to the administrative entity,[1] which may be a single-outlet library or a multiple-branch library system. References to outlets refer to central libraries, branch libraries, and bookmobiles.

In this report, we examine trends across time and across subgroups. In some cases, it might appear that one estimate is larger than another. However, a test may reveal that the apparent difference is not a statistical difference. In cases where there is no statistical difference, the difference is not reported as such. In the analyses of the data for this report, we used a variety of statistical tests, including analyses of variance, correlation, and multilevel modeling to examine change over time. Significance was set at an alpha level of .01.

All calculations in the PLS report are based on unrounded estimates. At times, the reader may find a calculation, such as a percentage change, is not identical to the calculation obtained by using the rounded values shown in the report or supplemental tables.

[1] In the PLS, an administrative entity is defined as the agency that is legally established under local or state law to provide public library service to the population of a local jurisdiction.

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Part One: Public Libraries in the United States

National Level Data and Trends

Over the past two decades, public library services have experienced constant change. Communities grow, technologies get faster, and people expect their local service providers to keep pace. The demand for print books is shifting, with e-books capturing more market share every day. Public libraries must continue to change to meet the needs of the communities they serve. Just a decade ago, people needed access to computer terminals. In FY 2011, the ubiquity of smartphones and tablets has shifted these needs to broadband access and e-books. Despite all of these changes, public libraries have remained uniquely positioned to meet the public's information needs for years to come.

In addition to keeping pace with changes in culture and technology, libraries continue to address a core set of informal learning functions in their communities. Public libraries promote reading, provide access to information, and serve as anchors for their communities. Libraries are the first community institutions to provide a child with learning resources, the first and largest homework help center in the community, and often first responders in times of personal crisis or natural disasters, providing a safe place and access to government resources. Libraries deliver access to information and bridge the digital divide. By helping people gain skills and find jobs, they serve as an economic engine. In a world where there are multiple demands on the public attention, from movies and video games to social networking, the library serves as a dynamic community center where people can gather together and discover new things about the world in which they live.

Across the nation, public libraries are important community-based institutions that provide valuable resources and services to the public. In fiscal year 2011 (FY 2011), there were 8,956 public libraries in the United States[1] (**Figure 1**), more public libraries than there are in any other country in the world. Public libraries provided access to information and resources through 17,110 branches and bookmobiles. Collectively, they served most Americans, with 299.9 million people living within a library service area, or 95.3 percent of the US population. This translates to approximately 3.0 public libraries and 5.7 outlets for every 100,000 people.

Public libraries are found in almost every community across the country. Almost half of the public libraries in the United States (46.8 percent) are located in rural areas. In FY 2011, there were 483 public libraries in cities, 2,058 in suburban areas, 2,225 in towns, and 4,190 in rural areas. Most public libraries (76.6 percent) served a population area of fewer than 25,000.[2] Only 6.1 percent of libraries had a service area of 100,000 people or more.

In this analysis, we looked at public libraries as a group and as individual entities. First, we described several measures of library use and investment in aggregated form, including how these measures have changed over time. After the measures were described, we examined the relationship between investments and use. To do this, we used multilevel growth modeling, which estimates patterns in the relationships between measures of public library investment and use.

There are many indicators for the use of public library resources and services. In this report, we focused on four metrics of **library use**: visitation, circulation, program attendance, and uses of public-access computers. For **public library investments**, we have examined revenue and expenditures. In addition, we have included **services and resources**, which show more specifically how expenditures have been directed toward meeting community needs. The resources reported here parallel the indicators of use: staff size, collection size, number of programs, and number of public-access computers. Each of these—use and investments alike—are described in aggregate to provide a national estimate, in order to answer how many visits there were to public libraries across the U.S. We also provided information about how much these estimates have changed from previous years.

Public Library Use

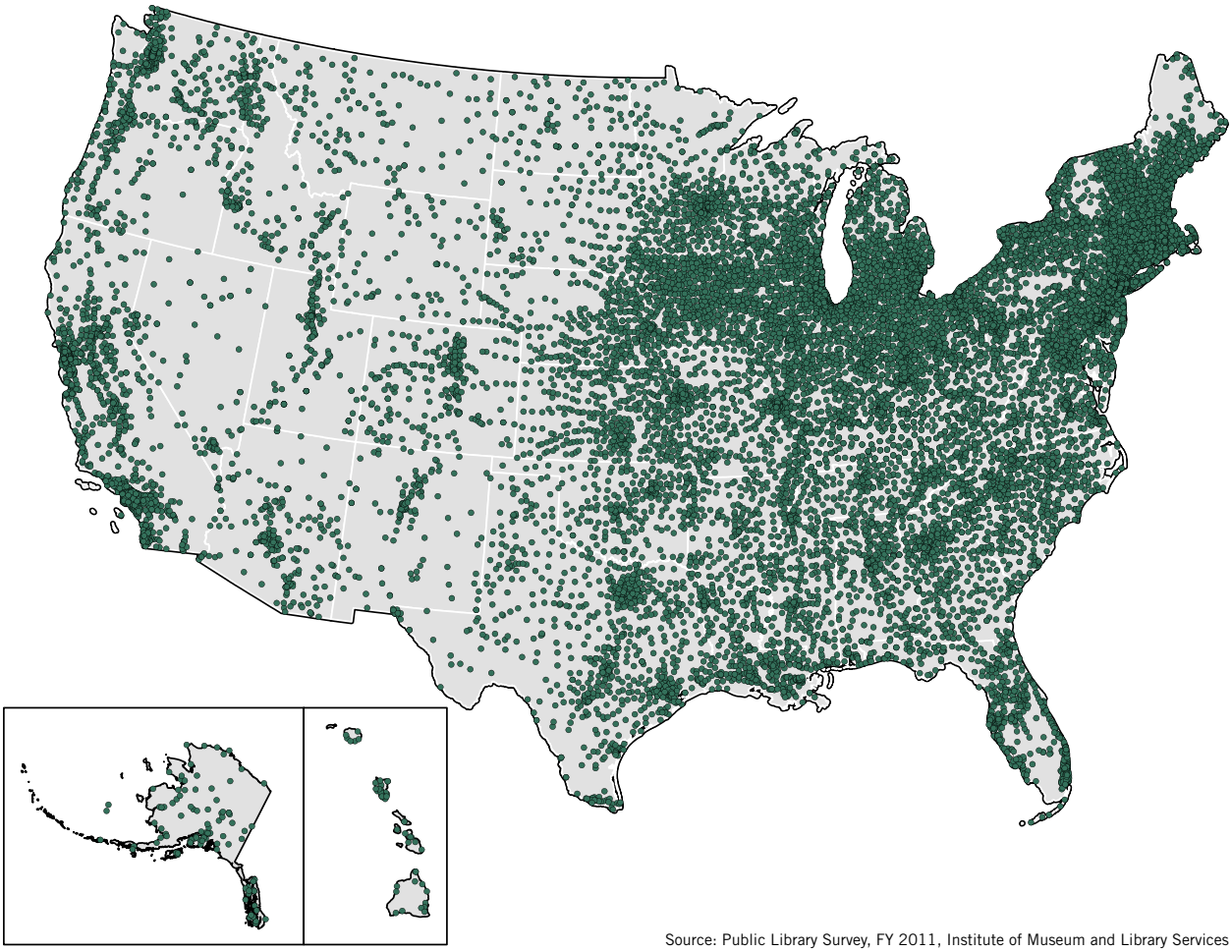
Visits

In FY 2011, there were 1.52 billion visits to public libraries across the United States – the equivalent of over 4.2 million daily visits! Although this is a 10-year increase of 23.0 percent, recent years have seen a decrease in physical visitation. In-person visitation to public libraries has experienced a 2-year decrease of 3.9 percent the first decline in 10 years. When looking at current visitation patterns, it is important to interpret with caution. Although the PLS collects data on in-person visits to public libraries, virtual visitation is

[1] Data reported here are based on values reported from the 50 states and the District of Columbia. Data from the outlying territories are available in the PLS data file.

[2] For this report, the categorization of public libraries by size used the legal service area population (POPU_LSA). In order to calculate aggregated statistics, such as visitation per capita, the unduplicated population of the legal service area (POPU_UND) was used to prevent double counting across libraries which might have overlapping service areas. When using the unduplicated population to classify library size, 77.1 percent of libraries served fewer than 25,000 people.

Figure A: Public Library Outlets in the United States, FY 2011



Source: Public Library Survey, FY 2011, Institute of Museum and Library Services

not included. Like retailers and other businesses, public libraries are meeting the demands of their users by increasing their virtual resources and services.[3]

Circulation

Public libraries have varied collections they share with the public, including print books, audio books, DVDs, and e-books. Circulation is the combined number of materials that are checked out for use. Public libraries circulated 2.44 billion materials in FY 2011, one-third of which (34.5 percent) were children's materials. This represents a 10-year increase of 29.0 percent. There were 1.6 materials circulated for each visit.

Program Attendance

Libraries also serve as learning spaces in their local communities, where people come together for a variety of activities. People go to public libraries for computer training, homework help, speaker series, story hour, and more. There were over 89.0 million attendees[4] who participated in library programs in FY 2011, an 8-year increase of 32.3 percent.[5] Most attendees (70.0 percent) who participated in a library program were there for children's programming. Per capita attendance has increased by 24.7 percent since FY 2004, with 296.8 attendees per 1,000 people. Aggregated across all public libraries, average attendance was 23.4 attendees per program.[6]

3 Zickuhr, K., Rainie, L., & Purcell, K. (2013). *Library services in the digital age.* Report of the Pew Research Center's Internet & American Life Project. Washington, DC.

4 The number of attendees is not an accounting of individual people, but rather may include multiple incidences of people who participated in more than one program

5 The PLS first collected data on total number of programs and attendance at all public library programs in FY 2004.

6 This is based on over 3.8 million programs offered across all libraries.

Public-Access Internet Computer Use Sessions

Access to the Internet is one of the many valuable resources public libraries provide. The PLS provides a metric for the use of this resource: the number of uses (sessions) of public-access Internet computers. Across all libraries, there were 341.5 million uses of public-access computers at public libraries in FY 2011, a decrease of 7.2 percent since FY 2006. There were 223.88 computer uses per 1,000 visits to the library, a decrease of 7.4 percent since FY 2006. Many libraries offer broadband, which can be accessed not only through library-provided computer resources, but also through patrons' personal devices. Although the uses of public-access Internet computers may be decreasing, we will explore how to capture the many other ways people use public library wireless access in future surveys.

Investments in Public Libraries

Public Investments allow libraries to provide access to many popular services and resources. Financial investments are made by the public at the local, state, and federal levels. Public libraries direct these revenues to be spent in ways that support their local communities through services and resources. Although services may vary from place to place, most library expenditures are used to provide public resources including the collection of materials for loan, varied programming, digital access, and knowledgeable staff. The PLS collects key measures of investment in public libraries: revenue, operating expenditures, collection size, the number of programs, the number of public-access Internet computers, and staff size.

Revenue

The vast majority of public libraries receive part or all of their revenue from public sources, often including money from local, state, and federal government. In FY 2011, the public invested over $11.4 billion in public libraries, a 10-year increase of 8.5 percent after adjusting for inflation (**Figure 2**).[7] Most revenue (84.8 percent) came from local government, with smaller portions originating from state (7.5 percent) and federal (0.5 percent) government. This money was used to build collections, including books and e-books; to deliver programming to adults, teens, and children; and to provide Internet-accessible public-access computers. In addition to these resources, revenues for public libraries support the library workforce, including librarians, who connect people with critical information, support research skills, and develop rich programming to meet community needs. Revenue streams to public libraries have decreased since the recession, experiencing a 3.8 percent decrease since FY 2008. The largest decreases have been seen in state sources of revenue, which exhibited a 3-year decrease of 16.4 percent.[8]

Operating Expenditures

Whereas revenue describes the sources of public library funding, operating expenditures show how libraries allocate these funds towards resources and services in order to meet the needs of their communities. Public libraries spent $10.74 billion in operating expenditures in FY 2011, a 10-year increase of 9.2 percent after adjusting for inflation. Like revenues, expenditures experienced a post-recessionary decline, showing a 3.9 percent decrease from FY 2008. The bulk of public library expenditures (67.0 percent) went to support the workforce through salaries and benefits. This percentage has remained relatively stable, with a three-year change of 1.9 percent. Expenditures on electronic materials were $174.9 million, an increase of 68.0 percent since FY 2003. Electronic materials accounted for 14.3 percent of expenditures on library collections in FY 2011.

Public Library Resources

Collections – Number of Items

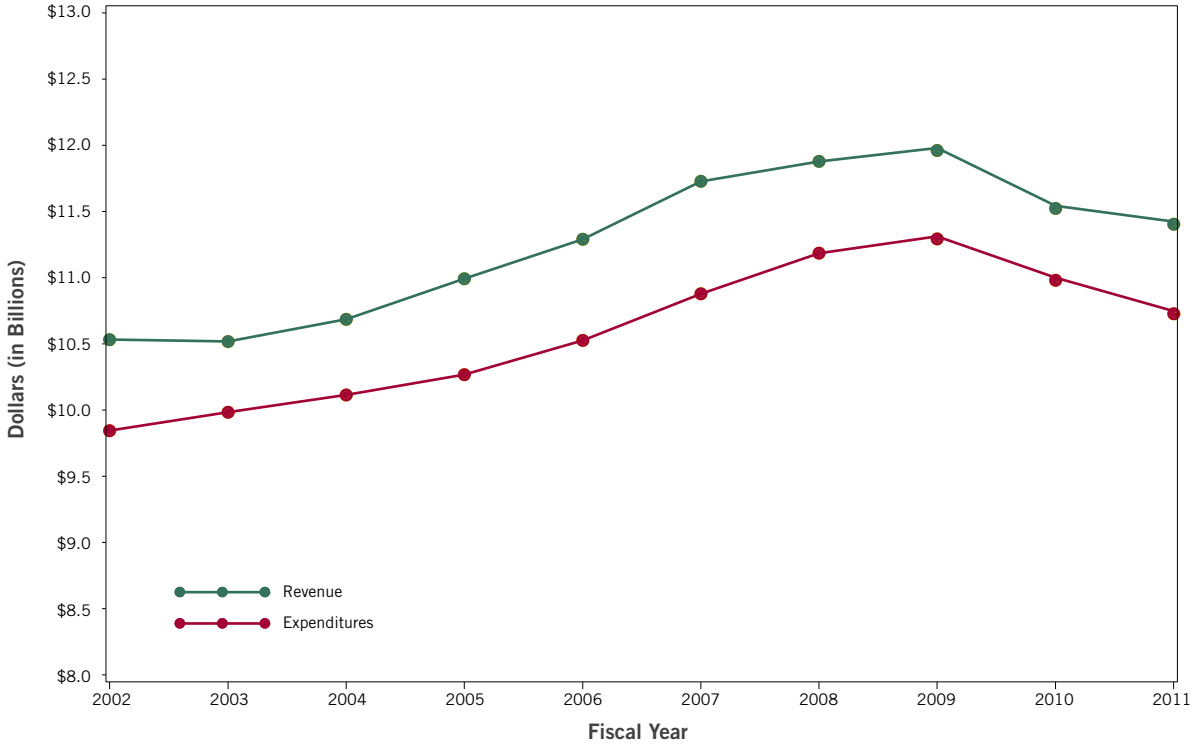
Librarians and other library staff develop the collections of materials at public libraries to meet the information needs of the people in their communities. Public library collections include both physical and digital materials—print books, e-books, CDs, and DVDs. Across material types[9]—print and downloadable—public libraries had 948.9 million items available for public use, an increase of 12.3 percent since FY 2002. Although most of these items (83.4 percent) are print materials, and in particular, books, public libraries have seen decreases each year in the proportion of the overall collection that their print material holdings comprise. In FY 2011, libraries had 35.0 million e-books available to lend, a one-year increase of 89.4 percent. E-books comprised 3.7 percent of the total collection in FY 2011.

7 All financial trends reported are adjusted for inflation using a GDP deflator. For more information, see the Technical Notes in the Appendix.

8 Financial analysis of State Library Administrative Agencies shows a decline in state funding. For more information: Swan, D.W., Grimes, J., Owens, T., Miller, K., & Bauer, L. (2014). *State Library Administrative Agency Survey: Fiscal Year 2012* (IMLS-2014-SLAA-01). Institute of Museum and Library Services: Washington, DC.

9 For this metric, we have combined print materials, which includes books, e-books, audio (physical and downloadable) and video (physical and downloadable).

Figure B: Total Operating Revenue and Expenditures, FY 2002–2011 (in Constant 2011 Dollars)



Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Number of Public Programs

Public libraries provide opportunities for learning experiences that inspire people throughout their lifetime. Programs vary from story time for young children to afterschool homework support and maker spaces for teens and young adults, to digital literacy and job training for adults. Libraries offered 3.81 million programs in FY 2011, an increase of 46.7 percent since FY 2004. Of all library programming, 60.5 percent was geared toward children and 8.8 percent toward young adults. There were 12.7 programs offered for every 1,000 people, an 8-year increase of 38.3 percent.

A core function of public libraries is to make available the resources needed to ensure open access to information and ideas. In the 21st century, public libraries accomplish this by providing public access to computers and the Internet, serving as technology access points for their communities. Public libraries provided 261,413 public-access Internet computers, a 10-year increase of 86.2 percent. Per capita, libraries provide 4.4 computers per 1,000 people.

Number of Full-Time Equivalent Staff

Although library materials and computers are valuable resources, one of the most important assets found in public libraries is the knowledgeable library workforce. Public library services were supported by 137,103 full-time equivalent (FTE) employees on staff in FY 2011, one-third of whom held the position of librarian. These staff members supported library services at all levels and worked in a wide variety of positions, such as library paraprofessionals who serve as clerks and technicians, as well as employees who support library operations in maintenance, security, IT, and administration. The recession has had a negative impact on the public library workforce. Public library staff has decreased by 5.5 percent since FY 2008; the number of librarians fell by 2.5 percent during the same period.

Summary of National-level Estimates of Public Library Use and Investments

Although research has shown increases in public library use over the past 10 years, in the past few years, there

has been evidence of decreases in common metrics such as physical visitation. Investments in public libraries have shown concomitant decreases, particularly since the recession in 2008. Decreases in revenue, most significantly at the state level, have been accompanied by less pronounced decreases in resources and services. In recent years, libraries have found ways to do more with less, continuing to provide valuable services to the community in the face of shrinking budgets.[10]

We have seen changes over time for these metrics, but we have not yet examined how these different measures relate to one another. Specifically, we do not know how changes in resources affect changes in use. What are the critical elements of public library resources that drive use? Do resources and use fluctuate in the same manner? Are resources interdependent? Although there is widespread belief that resource investment affects use, we know of no other analysis that has explicitly examined this in an empirical manner using existing data. The analysis in this report serves to fill that gap. To address these questions, we need a different kind of analysis to explore these relationships. In this report, we have used multilevel modeling to identify the significant predictors that affect the growth or decline in public library use over time.

The Effect of Investment on Public Library Use

Although it is valuable to look at the percent of change in public library use, as we do in the descriptive information above and in the public library indictors in Part Two of this report, the analysis that follows identifies the factors that influence the growth or decline in use over time. For these analyses, we examined the effect of public investment in libraries and the resources provided by public libraries on the use by patrons[11]. We tested the model of the effect of investment on use (**Figure 3**). To do this, we estimated four multilevel growth models, one for each of the metrics of use described above: visitation, circulation, program attendance, and computer use. For each model, we determined which measures of public library investments are significant predictors of use.

For the analysis, we no longer focus on the aggregated estimate of the national picture, but rather examine the relationship of investments on use for individual libraries. For each library, we estimated a separate trajectory of how use has changed over time. Then we examined how different investments relate to changes in use *at the level of the individual library*. For example, although visitation has shown an overall increase with a recent decrease at the aggregate level, this pattern may be different for different libraries. Thus, some libraries may have experienced decreases prior to the recession, while other libraries have seen no decline and continue to report increasing visitation numbers. In other words, what happens at the national level, aggregated across all libraries, may obscure the experience of individual libraries throughout the nation. Multilevel growth modeling provides a method for modeling the change that occurs for each library, thereby capturing the variation of library use.

We focused on four key metrics of public library use: physical visitation to public libraries, circulation of materials, program attendance, and uses of public-access computers. We also focused on the effect of specific investments on use, including revenue, the number of books and other print materials available for use, the number of e-books available, the total number of programs offered, the number of publicly-available Internet computers, and the number of staff[12] at the library.

This is the first analysis that shows a direct relationship between library investment and use. It also shows that this relationship persists over time. Findings include:

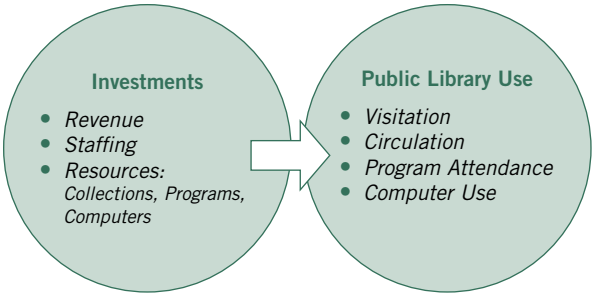
- *Increases in book and e-book volume, programs, public-access computers, and staffing were associated with increased levels of visitation.*
- *Increases in collections and programs were related to increases in circulation.*
- *Increases in the number of public-access Internet computers were related to increases in computer use.*
- *Increases in programs and staffing were related to higher levels of program attendance.*

10 Swan, D.W., Grimes, J., Owens, T., Vese, Jr., R.D., Miller, K., Arroyo, J., Craig, T., Dorinski, S., Freeman, M., Isaac, N., O'Shea, P., Scotto, J. (2013). *Public Libraries Survey: Fiscal Year 2010* (IMLS-2013-PLS-01). Institute of Museum and Library Services: Washington, DC.

11 We used multilevel models to analyze trends and relationships between public library investments and use. The level of significance for fixed and random effects was set at $\alpha = .01$. For the public library use we examined: visitation, circulation, program attendance, and uses of public access computers. More information on these models, including the estimates for each model and an explanation of the technique, can be found in Appendix C.

12 All numbers referring to staff, including number of staff and librarians, are based on full-time equivalent (FTE). One FTE is based on a 40-hour work week. For example, if two people each work 20-hour per week, this is equivalent to 1.0 FTE.

Figure C: The Effect of Investments on Public Library Use



Visitation

One of the strongest indicators of the use of public libraries is visitation. The Public Libraries Survey (PLS) measures visitation as a count of the total number of people who physically entered a library during a given year. In FY 2011, there were 1.52 billion visits to public libraries. Although this is a 10-year increase of 23.0 percent, recent years have seen a decrease in physical visitation. After a peak in FY 2008, there has been a significant decline in physical visitation to public libraries.

To examine the relationship of investments on visitation, we tested eight different investments as predictors: revenue, book volume, e-book volume, number of public-access Internet computers, number of programs offered, number of staff FTEs, expenditures on electronic materials, and hours open. In addition, we also examined the effect of time—not only how visitation changed over time, but also how the relationship of the investments on visitation changed. In addition to time, all eight investment metrics were significantly related to public library visitation.

Although the post-recessionary downturn in visitation was significant, much of this change can be explained by the changes in libraries' resources and investments. With the exception of expenditures on electronic materials, all of the library investments examined had a positive effect on visitation. While some resources—public-access computers, e-books, and the number of programs— have continued to increase in availability, other critical resources, such as staffing and revenue, have declined. For example, for each additional full-time position (FTE) on staff, a library will see, on average, a 3371.8 increase in visits for any given year. Similarly, with each decrease in staff, there was a decrease of the same magnitude in visitation. Like visitation, each of these metrics of investment changes over time. Although the specific relationship may change for individual libraries, on average, these positive effects on library visitation persist across time.

In contrast to other investments, the amount libraries spent on electronic materials was a significant negative predictor, indicating that the more a library spent on electronic materials, such as e-books, the lower the physical visitation. It is important to remember that this is a measure of physical visitation. With the increased proliferation of digital media and devices, more and more people are beginning to visit their public libraries not only in person, but also virtually. As libraries invest more money in building their electronic collections, patrons are able to complete whole transactions—from finding, checking out, and returning an e-book to paying overdue fines, without setting foot in a physical building. By serving the public need for increased access to digital materials, libraries may see a decrease in physical visitation that does not fully reflect the many different ways patrons use library services. Because the PLS does not collect information on virtual visitation, we cannot explore this possible explanation with the current data.

Circulation

Circulation is another important metric for public library usage. In the PLS, circulation measures the total number of materials of all formats that have been checked out for use outside the library. In FY 2011, libraries circulated 2.4 billion materials, 34.5 percent of which were children's materials. There was a significant increase in circulation at public libraries over the past 10 years.

To examine the effect of investments on circulation, we tested seven predictors: visitation, revenue, book volume, e-book volume, the number of public-access Internet computers, the number of programs offered, and the number of staff. We also examined how circulation changed over time.

Circulation was positively related to all seven of the predictors examined. As the investment in each of these resources increased, so did circulation. For every 100 e-books available, 345 additional items circulated. Program offerings also had a positive effect. For each additional program offered, there was an increase of 61.2 items circulated.

Uses of Public-Access Computers

Internet computer access is one of the many valuable resources public libraries provide. The PLS provides a metric for the use of this specific resource: the number of uses of public-access Internet computers. Across all libraries, there were 341.5 million uses of public-access computers at public libraries in FY 2011, a decrease of 7.2 percent since FY 2006.[13] Adjusting separately for service population and visitation, public libraries reported 1.1 PC uses per capita and 223.9 PC uses per 1,000 visits.

For use of public-access Internet computers, in addition to change over time, we examined the effect of five predictors: visitation, revenue, the number of public-access Internet computers, the number of programs offered, and the number of staff. Only three of the investment predictors were significantly related to public-access Internet computer use.

Use of public-access Internet computers at public libraries was predicted by the number of public-access Internet computers, library visits, and total number of library staff. As each of these investments increased, so did PC usage. Similarly, as these resources decreased, so did computer use. It is critical to keep in mind the difference between the aggregated national estimate, which is decreasing, and the relationships that are being examined in a multilevel model. Although the national estimate is decreasing, in some libraries the use of public-access Internet computers has been increasing. Multilevel modeling allows us not only to see and explicitly examine these differences across libraries, but also shows how these differences in usage trends are related to resource investments.

Use of public-access computers implies that people are at the library to use them, which means that visitation is a necessary predictor of computer use. For every 100 visitors, there was a 13.6 increase in computer uses. Similarly, the number of computers is also positively related to their use—as the availability increases, so does their use. For every additional public-access Internet computer terminal available, there was an increase of 474 uses. As digital information resources have increased and computing devices have become ubiquitous, library professionals have kept pace. People come to public libraries not only to use computers, but to learn more about how to use their devices and to improve their information search skills. For each FTE staff member, there was a 374 user session increase in computer use.

As access to these resources change over time, so does their use. Even though the number of user sessions has been decreasing in many libraries, the positive relationship between resources and use is still present. Furthermore, even as smartphones and other portable digital devices proliferate, increased availability of public-access computers leads to increased use.

Attendance at Library Programs

Public libraries offer a wide variety of programs for audiences of all ages. Library programs include digital literacy classes, tax assistance, parenting workshops, career coaching, e-book workshops and more. These programs may be taught by library staff, local volunteers, or by staff from local community organizations or public agencies. In FY 2011, public libraries offered 3.8 million programs, or 10,400 programs a day, every day of the year. This figure represents a 7-year increase of 46.7 percent. There were 89.0 million attendees at library programs in FY 2011, an increase of 32.3 percent since FY 2004. Most (60.5 percent) of these programs, such as summer reading and afterschool programs were targeted to children

Attendance at library programs was examined for change over the eight years for which we have data, FY 2004 to 2011. In addition to the change over time, we examined four investments as predictors of attendance: revenue, number of programs offered, number of public-access Internet computers, and number of staff. All of the predictors examined were significant.

Programs continue to be a popular service of public libraries, with a significant increase in program attendance over time. The more programs a library offered, the more attendees came to those programs. For every additional program, there was an average increase of 10 attendees. Increases in other resource investments—computers and staffing—also predicted an increase in program attendance. Computer-based classes are one of many programs offered at libraries. For each additional computer, there was an increase in program attendance of 52.4 people. Programs are often staff-intensive investments, and the model suggests that they are a good investment. Beyond the average attendance, each additional staff person is related to an increase of 95.2 in program attendance.

[13] FY 2006 was the first year this metric was collected on the PLS.

Summary

In this section, we examined whether the level of investments affected the use of public library services and resources. Using multilevel growth models, we examined not only whether there is an effect of investment on use, but also whether this relationship persists over time. For each of the four metrics of public library use—visitation, circulation, uses of public-access computers, and program attendance—we found that for most investments there was a positive effect.

Revenue was a positive predictor for visitation, circulation, and program attendance. As revenue increases, so do these metrics of use. However, in recent years we have seen the converse: cuts in revenue have led to decreases in visitation, circulation, and attendance. Although revenue is an important piece of the puzzle, it is by no means the only investment that explains changes in library use. Visitation is affected by the many resources that illustrate how people use the library—collections, programs, and Internet access. Despite shrinking budgets, these resources continue to drive traffic to public libraries.

Conclusion

Over the past 10 years, use of public libraries has increased. Visitation has increased overall, even though recent years have shown a decrease in physical visits. Circulation and program attendance have also increased. During this time, we have also seen 10-year increases in many library investments, including revenue, collection size, the number of public-access computers, and the number of programs. However, each of these investments has experienced decreases in recent years—particularly revenue.

More importantly, this report provides empirical evidence of the strong relationship between the investments made in public libraries and the use of public library resources and services. We examined not only how public library use has changed over the past 10 years, but how it changed in relation to changes in investments in public libraries over the same time. We found that as investments, such as revenue, staffing, and programs, increased, so did critical use measures, such as visitation and circulation. In the same way, as investments were reduced, mostly in reaction to post-recessionary budgetary reductions, we saw decreases in library use. Another important finding is that even though investments might have declined, any decreases in use did not drop by the same magnitude.

People continue to use their local public libraries—for access to books and information and for gathering as a community.

This is the first analysis that shows the direct relationship between investment and use. For example, holding constant the effects of time and revenue, resources such as collections and programs have a positive effect on library visitation. Furthermore, it shows that this relationship of investment on use persists over time. Because we were able to employ advanced analytic techniques, we could see each of these relationships as they changed over time, and to demonstrate this relationship empirically.

As with any analysis, there are limitations. First, although the PLS is a rich dataset of detailed information about all public libraries for 20 years, there are some services that are not captured with the current survey. In particular, there is not a data element that captures e-visitation. Technology has changed, providing many opportunities. Public libraries have kept pace with these changes, providing access to more e-books and databases to meet the demand of the public. In today's digital world, it is possible to check out an e-book from the local public library all from the comfort of your own home. Previously, this would have required a physical visit. This creates a limitation for the PLS because, given the current data, we cannot tell whether the decline in physical visitation is a true decline or if it is the direct result of increased online and digital services.

A second limitation of this analysis is that is focuses solely on the PLS data. Much more could be learned by incorporating other data, such as information on population demographics, poverty, and community characteristics. The PLS is particularly amenable to this kind of analysis. Since FY 2008, the datasets have been geocoded, providing information on latitude and longitude, as well as county identifiers. The merging of other data with the richness of the PLS would open doors to explore questions about the level of library resources as a function of target populations or community need. As much as it is a limitation here, it also presents a ripe opportunity for others in the field.

This report provides 13 indicators, each providing a snapshot of the status of public libraries on use and investments. The national level analysis echoes the findings of the public library indicators. Although there have been declines in recent years, particularly since the recession, these indicators tell a consistent story—people are still using public libraries. Furthermore,

the indicators dig a little deeper, looking at variability based on state, population, or geographic differences across libraries.

It is clear is that the public still has a high demand for the resources and services provided by their local public libraries. Taken together, the measures of public library use have shown an increased demand for library services over the past 10 years. Furthermore, these analyses elucidate the nature of the relationship between the investments made in public libraries and their use. As the public, through tax dollars and donations, continues to invest in the resources which public libraries make available, such as the public-access computers, program offerings, and library staff, we see a pattern of continued use of these valuable services. Furthermore, it seems critical that the investment continues not only with concrete resources, such as print materials and computer terminals, but in addressing the strong need for human resources provided by the highly-trained library workforce.

Part Two: Public Library Indicators

Section 1. Use of Public Library Services

Indicator 1. Visitation per Capita

Indicator 2. Circulation of Materials per Capita

Indicator 3. Program Attendance per Capita

Indicator 4. Public Access Computer Usage per Capita

Indicator 5. Reference Transactions per Capita

This section contains indicators relating to the usage of public library services. These indicators include public library visitation, circulation of public library materials, attendance at public programming, usage of public access computers, and reference transactions. Each indicator provides a detailed look at how public libraries are used by the people they serve.

In FY 2011, there were one-year decreases at the national level in visitation per capita, circulation per capita, usage of public access computers per capita, and reference transactions per capita. Interlibrary loan requests per capita and program attendance per capita increased. Program attendance per capita increased across all programming categories measured: children, young adults, and total.

Public Library Use	FY 2011	1-year change	10-year change*
Indicator 1. Visitation per Capita	5.1	-3.6%	+13.4%
Indicator 2. Circulation per Capita	8.1	-1.6%	+13.8%
Indicator 3. Program Attendance per Capita (per 1,000)	296.8	+2.0%	+24.7%
Indicator 4. Use of Public-Access Internet Computer per Capita	1.1	-8.1%	-1.7%
Indicator 5. Reference Transactions per Capita	1.0	-5.8%	-10.1%

*Note: Because not all data elements have been collected for 10 years, the "10-year change" in the figure provides the longest trend information available on the PLS. For Program Attendance per 1,000 people, it is a 7-year change (first collected in FY 2004); for use of public-access Internet computers, a 5-year change (FY 2006).

Indicator 1. Visitation per Capita

Visitation per capita for public libraries was 5.1 in FY 2011, a one-year decrease of 3.6 percent.

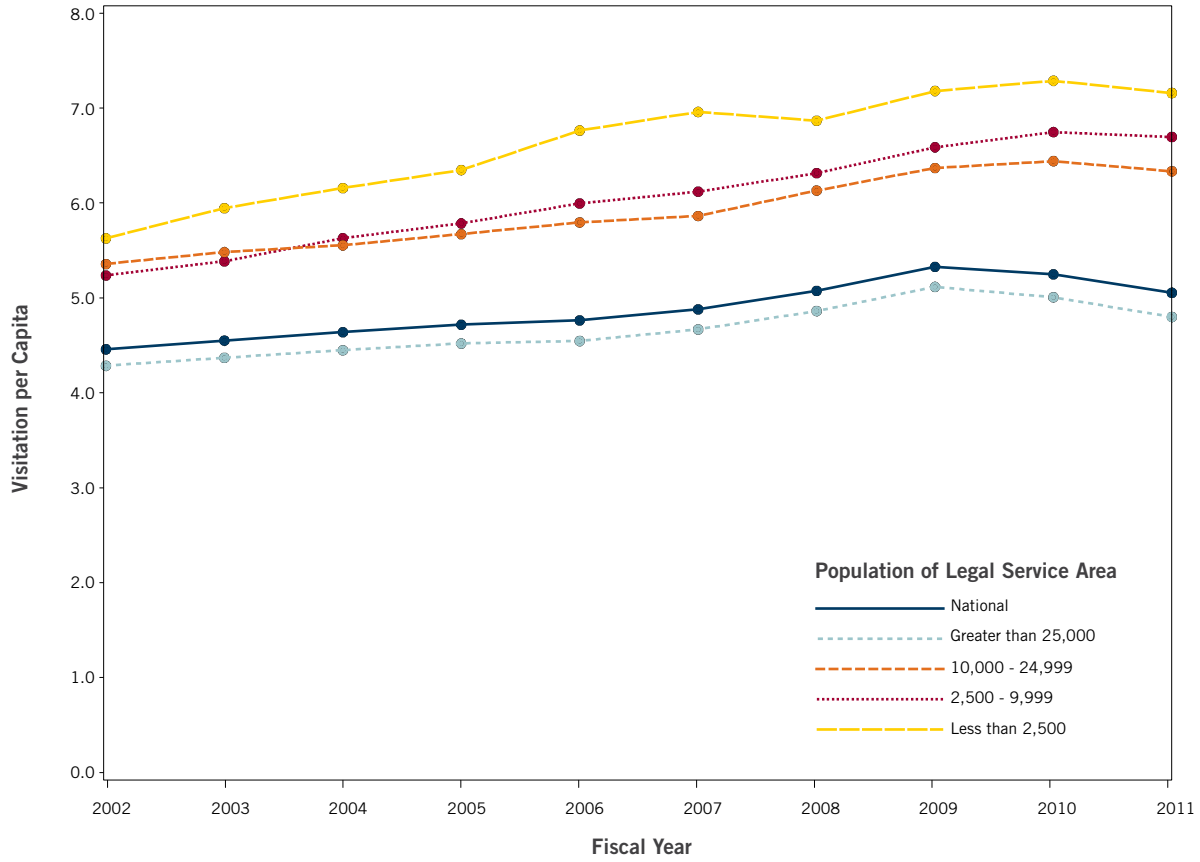
Public library visitation is a count of the total number of people who physically entered a public library during a given year.[1] Visitation per capita is the ratio of total number of visits to a public library to individuals within the library legal service area during a given year. Public library visitation per capita is one of the traditional performance metrics for understanding and evaluating the usage of public libraries and public library services.

In FY 2011, public libraries were visited 1.53 billion times, which was a decrease of 45.73 million visits (2.9 percent) from FY 2010. Per capita visitation across all public libraries was 5.1 in FY 2011 (**Figure 1-1**), which is a decrease of 3.6 percent from FY 2010, the second consecutive year that this metric has decreased. Visitation per capita has increased by 13.4 percent over 10 years.

Visitation per capita differs by the size of library service area. Visitation per capita in small libraries (serving fewer than 2,500 people) was 7.2; in public libraries serving 25,000 or more people, it was 4.8 (**Figure 1-1**). In comparison to other libraries, visitation per capita was significantly lower at the smallest (serving fewer than 2,500 people) libraries. Visitation per capita was significantly higher at libraries that served 2,500 to 10,000 people.[2]

The decline in visitation per capita is occurring in all localities. Overall, public libraries serving cities (5.0), suburbs (5.6), towns (4.6), and rural areas (4.5) experienced a one-year decrease in visitation per capita. When comparing visitation per capita across locales,

Figure 1-1: Visitation per Capita by Population Size of Legal Service Area, FY 2002–2011



Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

[1] This metric is based on a count of the number of people who have entered a library. It is not based on individual people, but rather includes counts of people who have visited a library on multiple occasions.

[2] Significant differences across groups were determined by Games-Howell post-hoc test for size groupings and locale.

only libraries in cities and towns were not significantly different.

Visitation per capita among states was more variable (**figure 1-2**), ranging from a high of 8.0 (New Hampshire) to a low of 3.2 (West Virginia). Five states had visitation per capita greater than 7.0: New Hampshire, Ohio (7.7), Illinois (7.1), Utah (7.1), and Vermont (7.0). Between FY 2010 and FY 2011, most states (44) saw a decrease in visitation per capita. Lower levels of visitation per capita were concentrated in states in the Southeast region.

Seven states saw a one-year increase in visitation per capita: Arkansas (3.8 percent), Mississippi (1.8 percent), South Dakota (1.8 percent), Utah (1.3 percent), Maine (1.1 percent), Illinois (1.0 percent), and Ohio (0.9 percent). Four states saw one-year decreases greater than 10 percent: Delaware (14.5 percent), Georgia (13.8 percent), Hawaii (13.4 percent), and Oklahoma (13.2 percent). Although all regions[3]experienced a one-year decrease in visitation per capita, the Southeast (5.7 percent) and the Southwest (5.4 percent) regions were the largest.

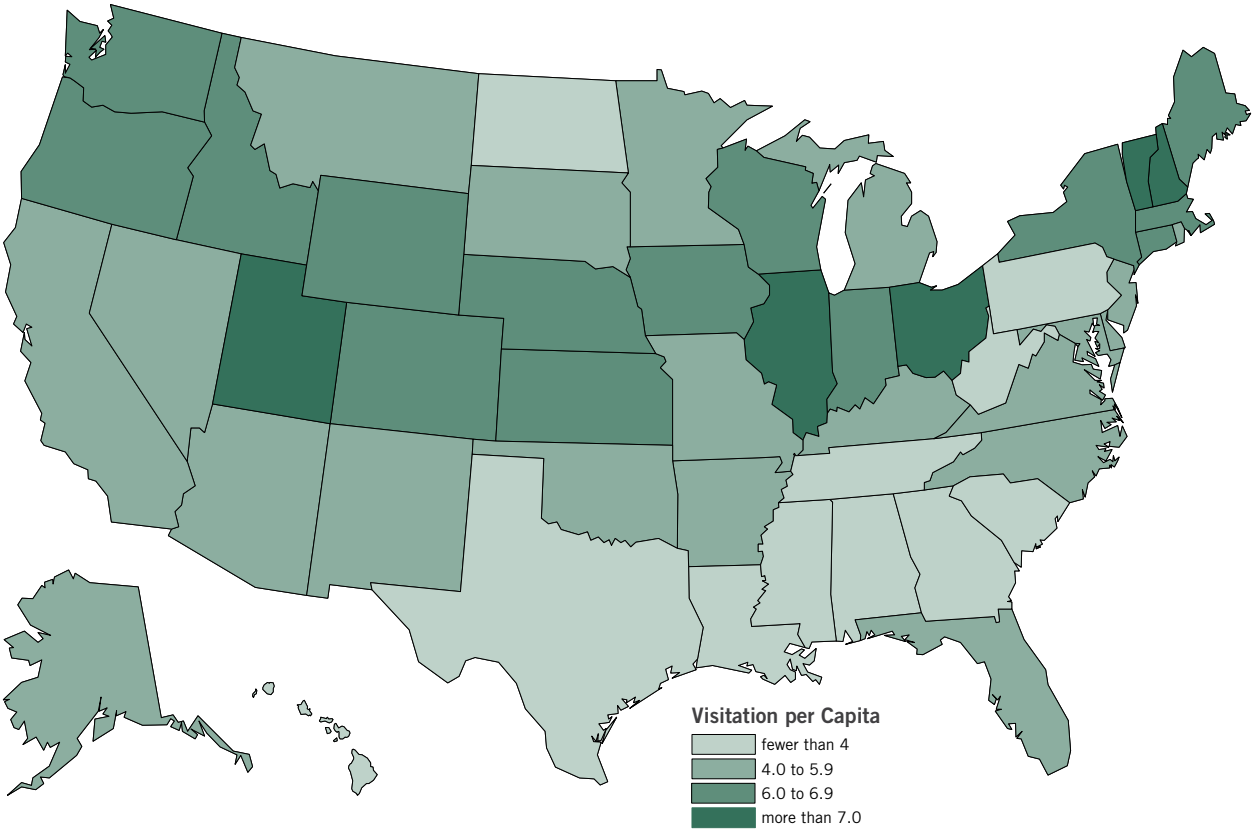
Public library visitation is affected by many internal and external factors, such as the availability of resources, services, hours of operation, revenue, and staff size. Between FY 2010 and FY 2011, many of these factors remained stable, with the exception of public library revenue. Public library revenue per capita has a strong positive relationship with public library visitation per capita.[4] Since FY 2009, revenue per capita has fallen from $40.43 in FY 2009 to $38.09 in FY 2011, a decrease of 5.8 percent. This decline in revenue is most likely the result of budget cuts and readjustments from the most recent recession (December 2007-June 2009).

Another possible explanation for the decline in public library visitation per capita may be a limitation of the indicator itself. In the PLS, the metric for visitation captures only physical visits, which is used as a proxy for other types of public library use. Access to and demand for electronic materials in public libraries have increased in recent years. It may be that the increased usage of library services is not adequately captured through the current metric because patrons are not required to be physically present to benefit from public library virtual offerings, such as e-books, databases, and downloadable audio and video services. The PLS does not currently collect data for online visits or online transactions, so it is not possible to determine whether the decline in visitation is an actual decline in library use or a change in the way people use their public libraries.

[3] Regional designations are based on definitions from the Bureau of Economic Analysis. For more information, see Appendix B.

[4] Swan, D.W., Grimes, J., Owens, T., Vese, Jr., R.D., Miller, K., Arroyo, J., Craig, T., Dorinski, S., Freeman, M., Isaac, N., O'Shea, P., Schilling, P., Scotto, J. (2013). *Public Libraries Survey: Fiscal Year 2010* (IMLS-2013-PLS-01). Institute of Museum and Library Services: Washington, DC.

Figure 1-2: Visitation per Capita by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Indicator 2. Circulation of Materials per Capita

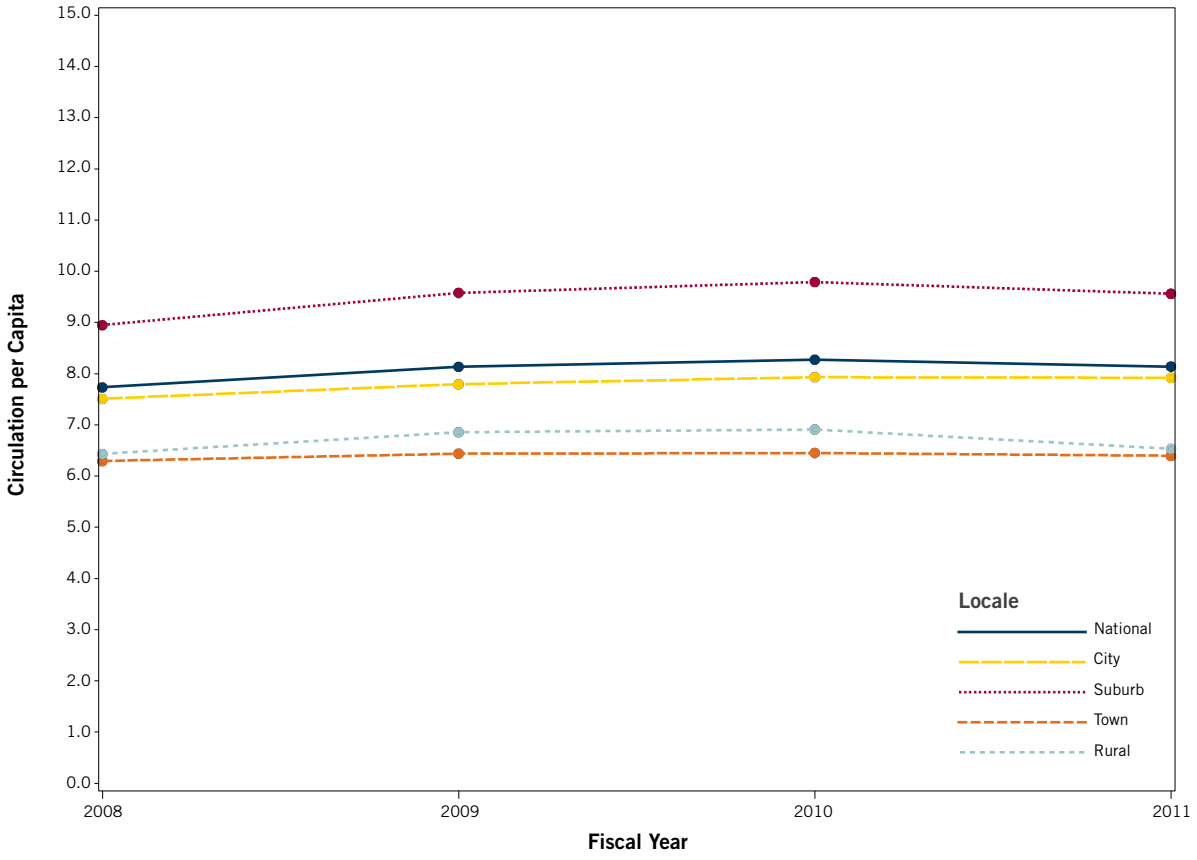
Circulation per capita was 8.1 in FY 2011, a one-year decrease of 1.6 percent.

Circulation per capita, like visitation (per capita), is a traditional performance metric for public libraries. Circulation per capita is the ratio of the total number of circulation transactions of all materials to the number of people in the library service area. Circulation per capita was 8.1 in FY 2011 (**Figure 2-1**). This is a 10-year increase of 18.8 percent, but a oneyear decrease of 1.6 percent. This is the first recorded decrease in total circulation per capita in the last ten years.

In addition to circulation per capita, the PLS also captures the number of children's materials that were circulated, which allows for an examination of how public libraries serve the needs of children. Two metrics of interest are circulation of children's materials per capita and the ratio of circulation of children's materials to total circulation. In FY 2011, circulation of children's material per capita was 2.8, a 10-year increase of 13.8 percent.[5] The circulation of children's materials comprised 34.5 percent of total circulation, a ratio that has remained stable for the previous 10 years.

There were differences in circulation per capita across locales. When looking at libraries in the aggregate, circulation per capita was highest in the suburbs (9.6) and lowest in town (6.4) and rural (6.5) libraries; circulation per capita in cities (7.9) was similar to the national level. All four locales experienced a decrease in this metric from FY 2010. In an examination of group differences taking into account individual variability, the average circulation per capita was significantly higher in suburban libraries (mean circulation

Figure 2-1: Circulation per Capita by Locality, FY 2008–2011



Source: Public Library Survey, Institute of Museum and Library Services

[5] Per capita metrics for children's materials is based on overall population counts, not adjusted for the population of children within a specific service area.

per capita of 10.6) than city (mean = 9.1), town (7.9), or rural (8.7) libraries.[6]

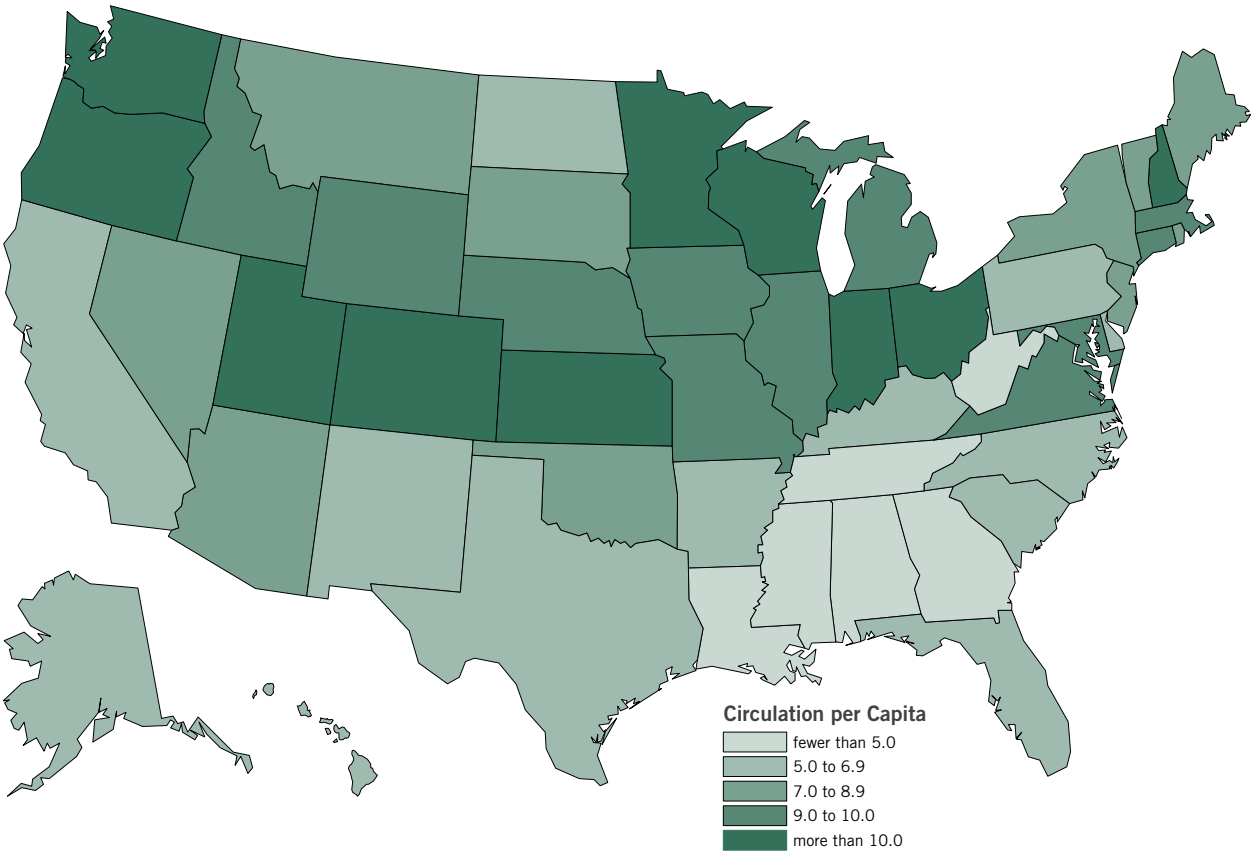
Circulation per capita was variable across states (**Figure 2-2**), ranging from 17.2 (Oregon) to 2.9 (Mississippi). Five states reported circulation per capita rates higher than 13: Oregon (17.2) Ohio (16.6), Utah (13.8), Indiana (13.6), and Colorado (13.1). Two-thirds (34) of states reported a decrease in circulation per capita from the previous year. Delaware experienced the largest decrease, 48.3 percent from FY 2010. In contrast, District of Columbia (9.8 percent), South Dakota (6.9 percent), and Oregon (5.6 percent) all experienced a one-year increase in circulation per capita of 5.0% or greater.

Circulation per capita is strongly related to expenditures on collections, and moderately related to book volume.[7]

Decreases in circulation per capita may be the result of decreases in collection expenditures or collection materials (book volume or total physical collections). Expenditures on collection materials per capita decreased 5.0 percent from FY 2010 and 16.1 percent from FY 2008. Similarly, book volume per 1,000 people decreased 2.9 percent from FY 2010 and 4.5 percent from FY 2008.

Circulation is also strongly related to visitation. Decreases in visitation may explain some of the decrease we have observed in circulation per capita. In FY 2011, circulation per 1,000 visits was 1600.2, a one-year increase of 2.1 percent. This indicator suggests that even though total circulation is has decreased overall, circulation activity has increased among those people who have visited a public library.

Figure 2-2: Circulation per Capita by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

[6] Group differences were determined by Games-Howell post-hoc tests.
[7] Correlation between circulation per capita and expenditures on collections per capita ($r = .59$), book volume per capita ($r = .37$), visitation per capita ($r = .72$) are all statistically significant.

Indicator 3. Program Attendance per Capita

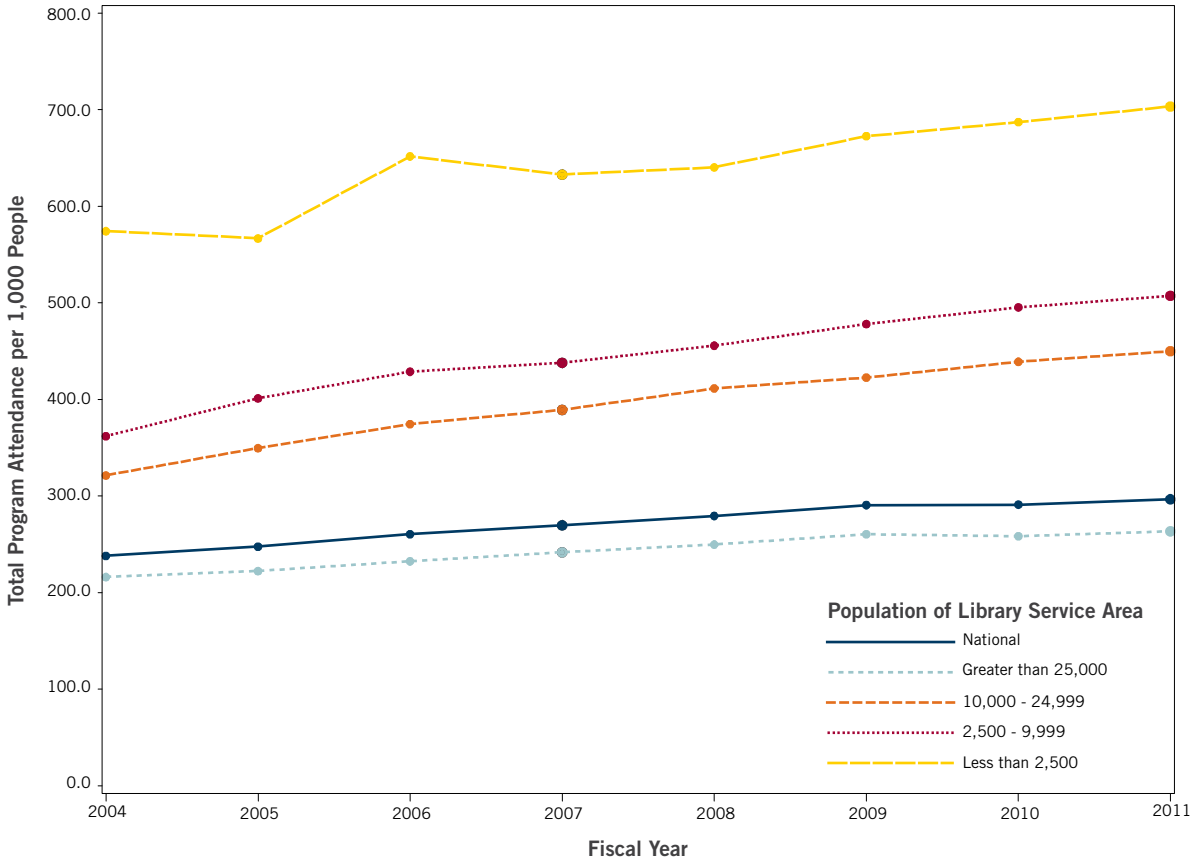
Program attendance per 1,000 people was 296.8 in FY 2011, an increase of 24.7 percent since FY 2004.

Public library program attendance per capita is a measure of the attendance of public library programs by the size of the population served. Public libraries provide many different programs targeted to a variety of audiences. In addition to total attendance, the PLS measures attendance at programs that are targeted to two specific audiences: children (under the age of 11) and young adults (ages 12-18).

In FY 2011, total attendance for all public library programming was 89.0 million. Attendance for children's program was 62.3 million and attendance for young adult programming was 5.32 million. Program attendance per 1,000 people was 296.8, an increase of 2.0 percent from FY 2010 (**Figure 3-1**). Attendance for children's programs per 1,000 people[8] was 207.8, a one-year increase of 2.2 percent. Attendees at children's programs accounted for 70.0 percent of all program attendance. Attendance for young adult programs per 1,000 people was 17.7, and young adults accounted for 6.0 percent of all program attendees.

Program attendance was different across public libraries of different size (**Figure 3-1**). Libraries that served the smallest populations (fewer than 2,500 people in the legal service area) had the highest level of program attendance per capita, with 703.3 per 1,000 people, a one-year increase of 2.4 percent. For libraries serving 25,000 or more people, program attendance per 1,000 people was 263.6, a one-year increase of 2.0 percent.

Figure 3-1: Total Program Attendance per 1,000 People by Population Size of Library Service Area, FY 2004–2011



Source: Public Library Survey, FY 2004–2011, Institute of Museum and Library Services/National Center for Education Statistics.

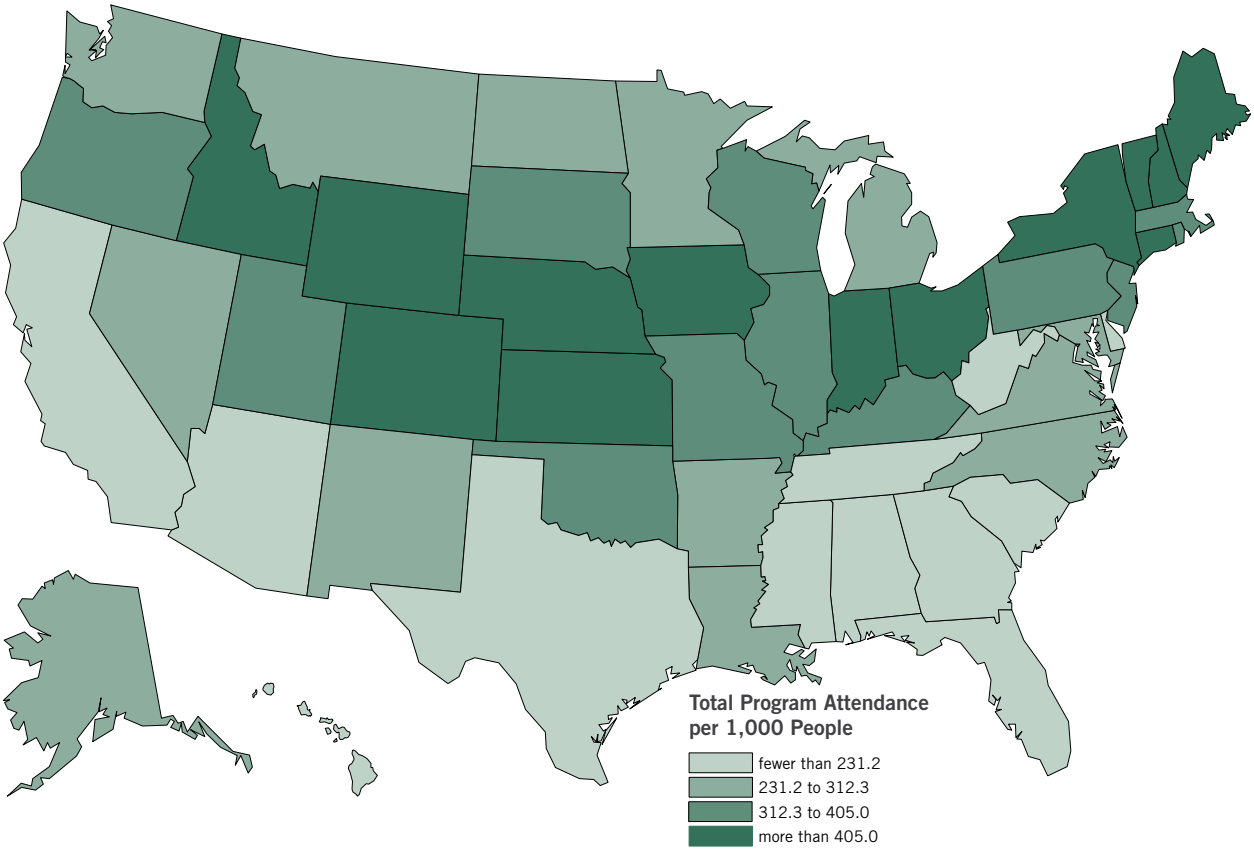
[8] Per capita estimates for program attendance is based on total unduplicated population in a library service area. The population in the denominator is not adjusted for child or young adult population.

Indicator 3. Program Attendance per Capita

Program attendance per capita differed significantly across all locales. Public libraries in rural areas had the highest levels of per capita attendance (325.6), followed by suburban (313.4), town (308.2), and city (263.7) libraries. City libraries saw 263.7 attendees per 1,000 people in the service area, with the largest one-year increase of 3.3 percent. Suburban (313.4) and town (308.2) libraries also saw increases from the previous year.

Program attendance varied by state (**Figure 3-2**). Thirty states experienced increases in program attendance per capita from FY 2010. High program attendance per capita was more prevalent in states in the New England and Rocky Mountain regions, with the highest rates in Vermont (672.3), New Hampshire (660.3), and Wyoming (633.1). Lower levels of per capita program attendance were in the Southeast and Southwest. The lowest program attendance per capita was in Tennessee (171.1), Hawaii (175.5), Georgia (176.8), and Arizona (185.0). The largest decreases were seen in Nevada (13.9 percent) and Delaware (10.2 percent).

Figure 3-2: Total Program Attendance per 1,000 People by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Indicator 4. Public Access Computer Usage per Capita

In FY 2011, there were 341.5 million user sessions on public access computers in public libraries, resulting in 1.1 user sessions per capita, a one-year decrease of 7.9 percent.

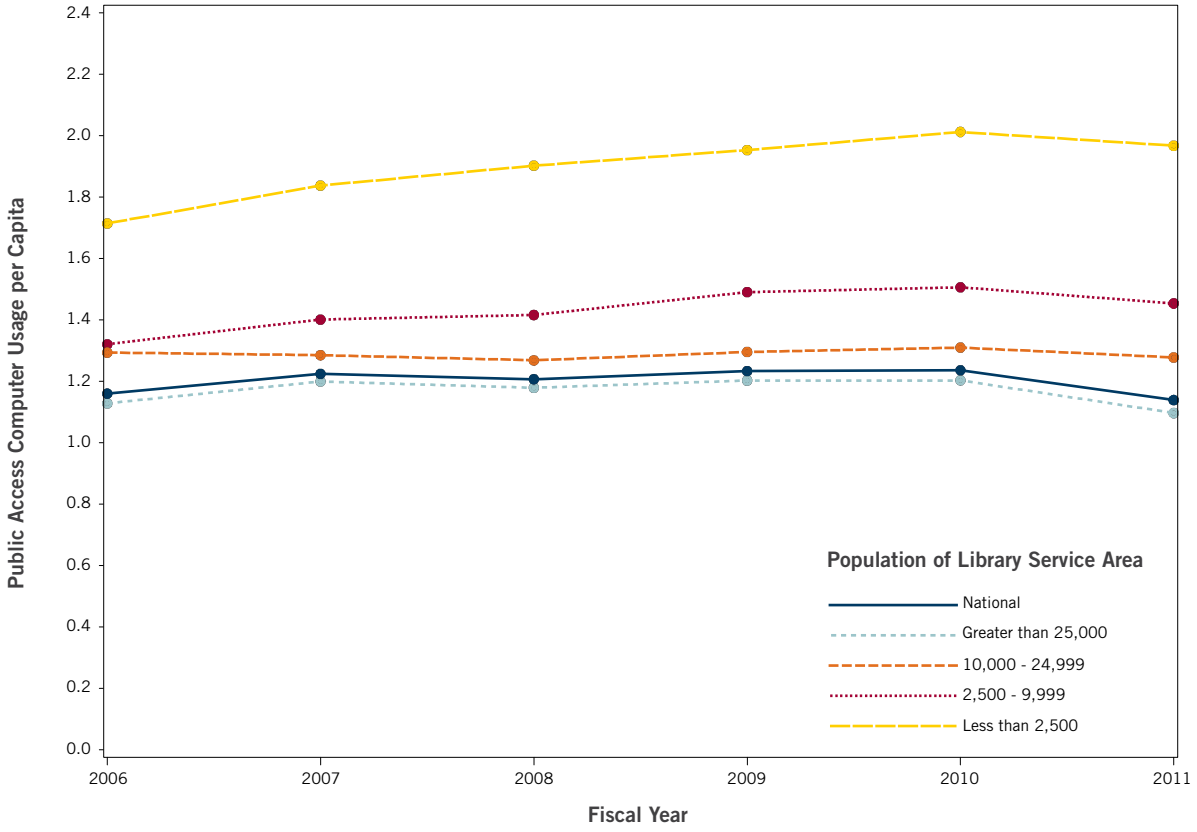
Public libraries play an in important role as their communities' source for public access to computers and the Internet. Public access computer usage per capita measures the ratio of the number of user sessions on public access Internet computers to the number of people in the library legal service area. Public access computer usage per capita demonstrates demand for public access computers and highlights the role of public libraries as community anchor institutions.

In FY 2011 there were 341.5 million user sessions on public access computers. This translated to 1.1 public access computer user sessions per capita, a decrease of 7.9 percent from FY 2010 (**Figure 4-1**).

Public access computer usage per capita varied across locality. Public libraries in rural areas (246.4 uses per capita) and in cities (230.7) experienced public access computer uses per capita above the national rate. Compared to the previous year, each locality saw a decline in public access computer usage per capita. Declines were seen in public libraries in cities (9.0 percent) and suburbs (9.9 percent), with the biggest change in midsized suburban (decrease of 31.4 percent) and midsized city (11.9 percent) libraries.

Forty states had a decrease in use of public access computer per capita from the previous year (**Figure 4-2**), with six states experiencing a decrease of 15 percent or more. Kansas and Nevada experienced one-year decreases of 35.5 percent and 27.5 percent, respectively. In contrast, South Dakota (19.5 percent), Delaware (24.8 percent), and the District of Columbia (217.2 percent) all experienced increases in the usage of public access computer per capita.

Figure 4-1: User Sessions of Public Access Computers per Capita by Population Size of Legal Service Area, FY 2006–2011



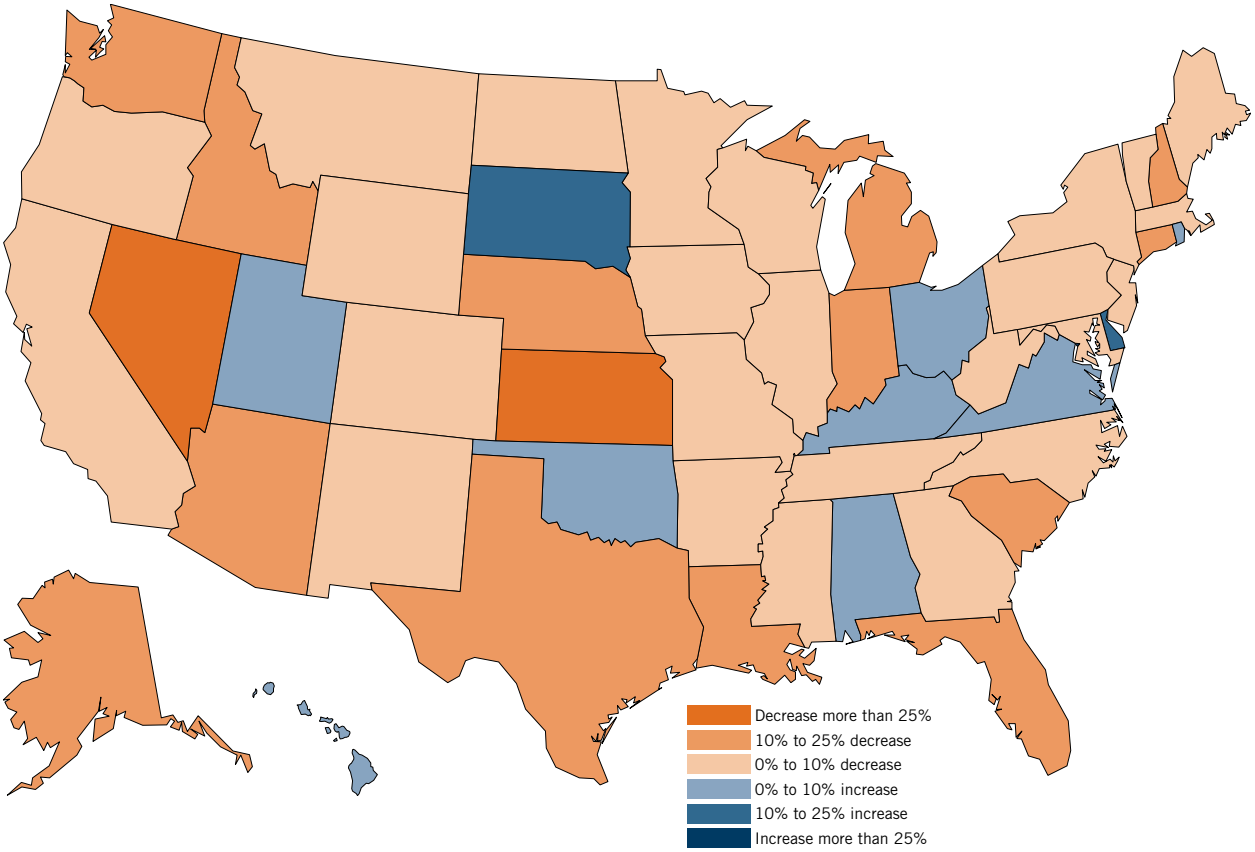
Source: Public Library Survey, FY 2006–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Indicator 4. Public Access Computer Usage per Capita

Public computer usage per capita is strongly correlated with public library visitation per capita.[9] This might be expected, since a person needs to be physically present to use a public access computer. Given that we have seen a decrease in public library visitation, a decrease in public access computer usage per capita might be expected. However, this cannot explain all of the decrease, as public access computer use per visit also decreased during this time. In FY 2011, public computer usage per 1,000 visits was 223.9, a one-year decrease of 4.4 percent.

Another explanation may be related to the general proliferation of personal digital devices, such as smartphones and tablets.[10] As the consumer market for these devices grows, the need for hardware may decline, though demand for digital resources and services such as e-books and online reference services will increase. Many libraries offer access to the Internet not only through public-access computers, but also through broadband connectivity. Although this use of public library resource is not available on the PLS, we are looking for ways to measure this in future surveys.

Figure 4-2: Change in PC User Sessions per Capita by State, FY 2010–2011



Source: Public Library Survey, FY 2010–2011, Institute of Museum and Library Services

[9] Public access computer uses per capita had a strong positive correlation with visitation per capita ($r = .62$, $p < .0001$).

[10] Rainie, L. & Smith, A. (2013). *Tablet and E-reader Ownership Update.* Pew Research Center, Internet and American Life Project: Washington, DC.; Smith, A. (2010). *Americans and their gadgets.* Pew Research Center, Internet and American Life Project: Washington, DC.

Indicator 5. Reference Transactions per Capita

In FY 2011, there were 293.1 million reference transactions at public libraries. This resulted in reference transactions per capita of 0.98, a one-year decrease of 5.7 percent.

A reference transaction is an information contact that involves the knowledge, use, recommendations, interpretation, or instruction in the use of one or more information sources by a member of the library staff. Reference transactions per capita is the ratio of reference transactions to the number of people in the library service area. This metric helps to describe patterns in the use of, and demand for, library staff reference services and to indicate the need for and use of the professional human resources of public libraries.

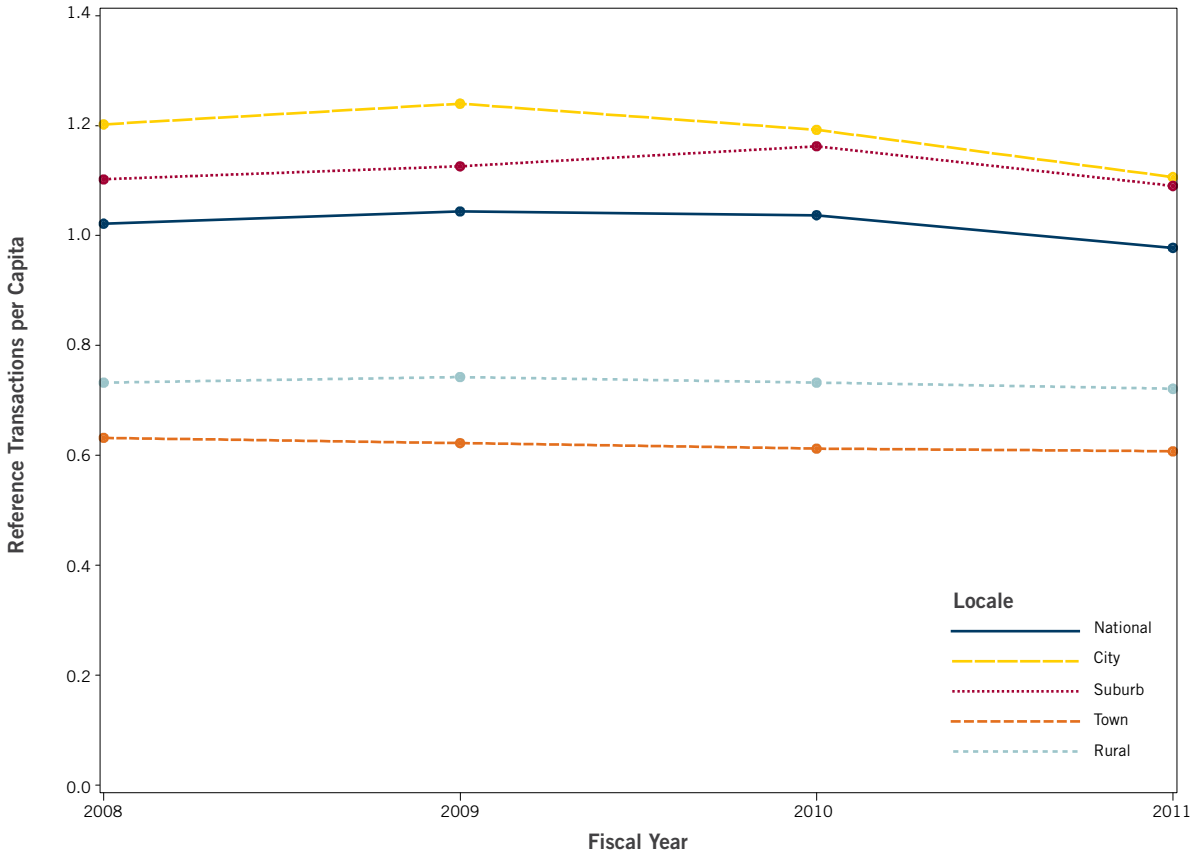
Reference transactions per capita were 0.98 in FY 2011, a one-year decrease of 5.7 percent. Reference transactions per capita have persisted at about 1.0 reference transactions per capita for more than 10 years (**Figure 5-1**).

Reference transactions per capita varied by locale (**Figure 5-1**). In FY 2011, public libraries in cities (1.11) and suburbs (1.09) provided more reference transactions per capita than libraries in town (0.61) or rural (0.72) areas. All locales experienced a one-year decrease in reference transactions per capita: cities (4.1 percent), suburbs (4.1 percent), rural (2.1 percent), and town (3.4 percent).

Reference transactions per capita also differed based on the size of the library service area. Libraries serving fewer than 2,500 people provided 0.93 reference transactions per capita, a oneyear increase of 2.2 percent. However, libraries serving 10,000 to 25,000 (0.79) and more than 25,000 (1.01) saw decreases in this metric of 1.2 percent and 6.5 percent, respectively.

By state, reference transactions per capita ranged from 0.42 (West Virginia) to 1.76 (Ohio). Two-thirds of states (34) saw a decrease in reference transactions per capita between FY 2010 and FY 2011 (**Figure 5-2**). Nine states experienced a reduction in reference transactions per capita which were greater than 10 percent, including California (23.3 percent), Delaware (29.9 percent) and Louisiana (42.9 percent).

Figure 5-1: Reference Transactions per Capita by Locality, FY 2008–2011



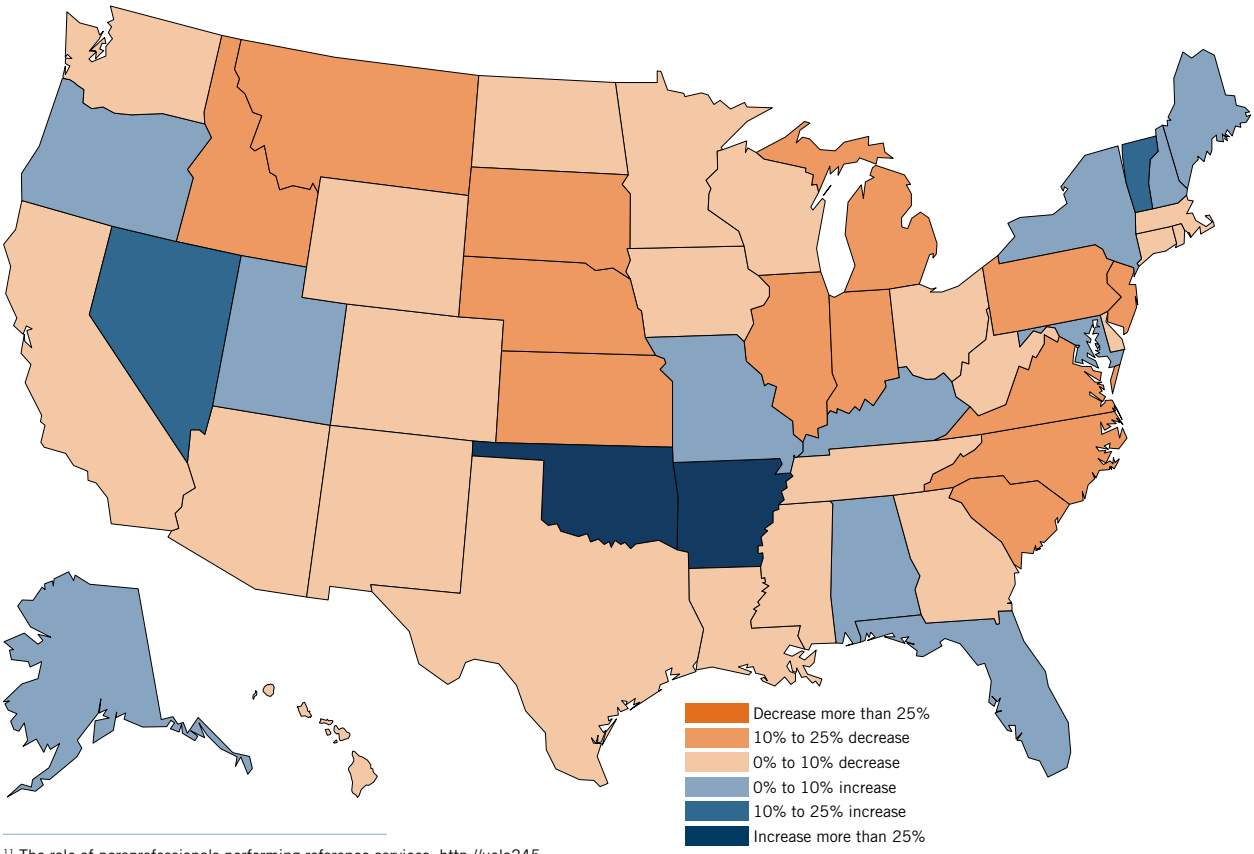
Source: Public Library Survey, FY 2008–2011, Institute of Museum and Library Services

These changes in reference transactions per capita may be related to changes in library resources. Three possible explanations are: (1) a decrease in the number of librarians,[11] (2) a decline in revenue or staff-related expenditures,[12] and (3) the increased use of online resources in lieu of in-person reference transactions.

The first two possible explanations are both related to staffing—the training and funding for staff, particularly librarians. However, this is unlikely to be the main reason for the decrease in reference transactions per capita. There is only a weak relationship between reference transactions and the number of librarians with a master of library science degree from an institution accredited by the American Library Association ALA-MLS).13 Similarly, the relationship of reference transactions per capita to the number of librarians and to total staff is small. Reference transactions per capita are neither related to total revenue per capita nor staffing expenditures per capita. These findings run counter to the assumptions that more trained professional librarians or better funded libraries are able to field more reference transactions.

The third possible explanation is that the reduction in reference transactions could be related to an increased use of online resources to answer questions in a way that would either supplement or replace typical reference transactions. The PLS does not collect information about the ways that patrons use online resources and digital devices in a way that would allow for an empirical test of this hypothesis. However, other research[14] does indicate that these personal digital devices, such as smartphones and tablets, are more common and that online search skills are on the rise.

Figure 5-2: Change in Reference Transactions per Capita by State, FY 2010–2011



Source: Public Library Survey, FY 2010–2011, Institute of Museum and Library Services

[11] The role of paraprofessionals performing reference services: http://ucla245.pbworks.com/w/page/8751461/Paraprofessionals%20%28in%20reference%20service%29

[12] There has been speculation that a correlation between reference transactions and expenditures per capita may suggest that better funded libraries are more able to staff for reference needs: http://walt.lishost.org/2012/09/reference-transactions-such-as-they-are/

[13] Correlation coefficients for the relationship of reference transaction s per capita to: ALA-MLS Librarians per capita (r = .161), Librarians per capita (r = .236), Total Staff per capita (r = .301), Total Revenue (r = .055), and Expenditures on Staffing (r = .056).

[14] Pew Research Center (2014). *From Distant Admirers to Library Lovers: A typology of public library engagement in America.* Available at: http://libraries.pewinternet.org/2014/03/13/typology/

Part Two: Public Library Indicators

Section 2. Financial Health of Public Libraries

Indicator 6. Revenue per Capita

Indicator 7. Operating Expenditure per Capita

This section contains metrics for understanding the financial stability of public libraries. Most public library services and resources are dependent on how public libraries receive and spend money. The metrics include revenue per capita and expenditures per capita. These indicators focus solely on operating revenue and expenditures, excluding capital expenses.

Both total operating expenditures and total operating revenue per capita decreased from FY 2010 to 2011.

Public Library Financials	FY 2011	1-year Change	10-Year Change
Indicator 6. Revenue per Capita	$38.09	-1.8%	-0.2%
Revenue per Capita from Local Government	$32.28	-1.8%	+7.0%
Revenue per Capita from State Government	$2.87	+4.8%	-35.6%
Revenue per Capita from Federal Government	$0.19	+5.6%	-9.5%
Indicator 7. Operating Expenditure per Capita	$35.83	-3.1%	+0.5%
Expenditure per Capita on Staffing	$24.00	-3.0%	+4.1%
Expenditure per Capita on Collections	$4.09	-5.1%	-20.6%

Indicator 6. Revenue per Capita

Operating revenue per capita for public libraries in FY 2011 was $38.09, a one-year decrease of 1.8 percent after adjusting for inflation.

In FY 2011, the total operating revenue for all public libraries in the United States was $11.40 billion. Revenue per capita was $38.09, which is a decrease of 1.8 percent from FY 2010.

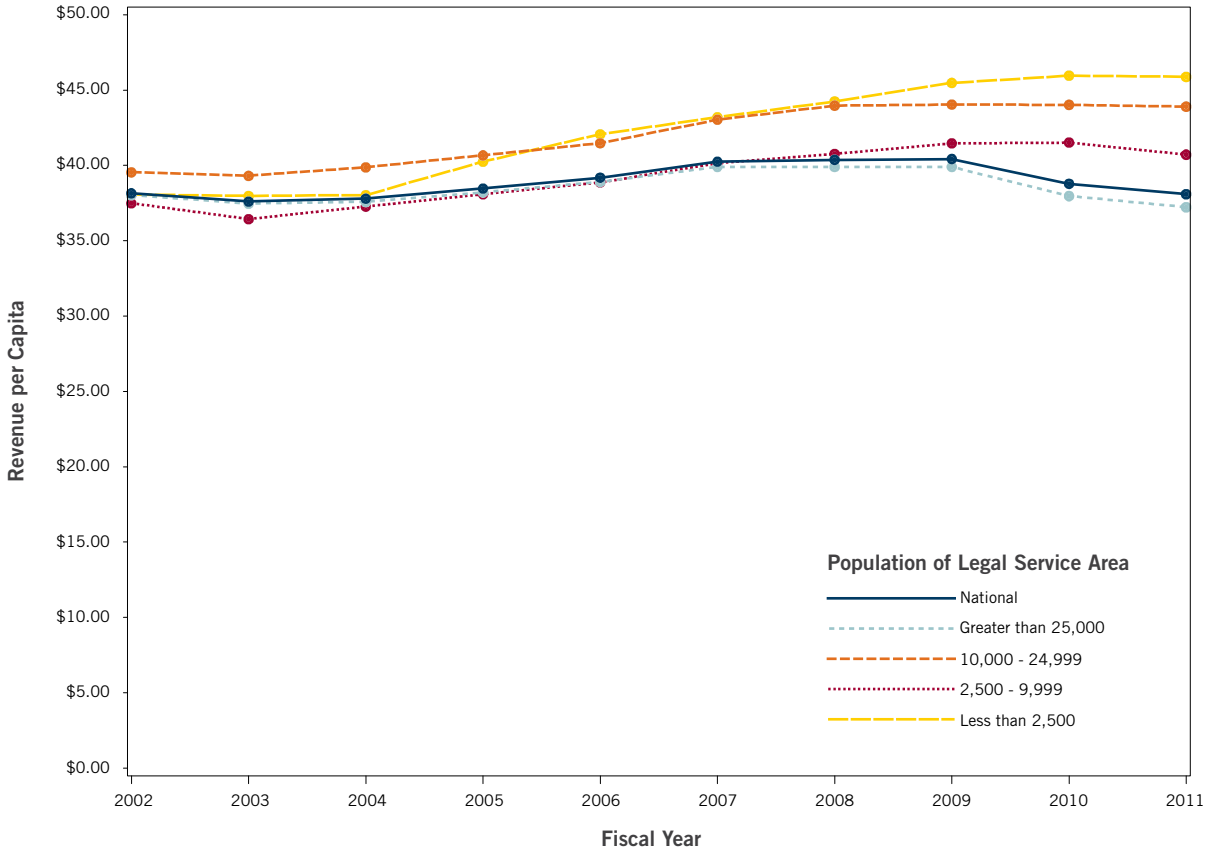
As seen in **Figure 6-1**, revenue per capita aggregated across all public libraries has evidenced a post-recessionary decline. However, when looking at differences across library size, based on the service area, this is not the pattern for all libraries. Public libraries serving 25,000 or more people show a similar post-recessionary decline in revenue per capita. However, revenue per capita for libraries serving fewer than 25,000 has either held stable or increased over the years since the recession.

Revenue per capita varies by locality. In FY 2011, revenue per capita in public libraries was highest in cities ($40.06)and suburbs ($43.01). From FY 2010 to 2011, total operating revenue decreased in suburbs (3.5 percent), towns (1.7 percent), and rural areas (3.0 percent).

Public library revenue is derived from four primary sources: local government, state government, federal government, and other sources. Historically, the majority of public library revenue comes from local government sources, with state government, federal government, and other sources providing a smaller source of overall public library revenue.

Although this still remains true, there has been a shift over the last decade (since FY 2002) in the proportional distribution of sources of public library revenue. In particular, decreases in state government funding

Figure 6-1: Operating Revenue per Capita by Population Size of Library Service Area, FY 2002–2011 (in Constant 2011 Dollars)



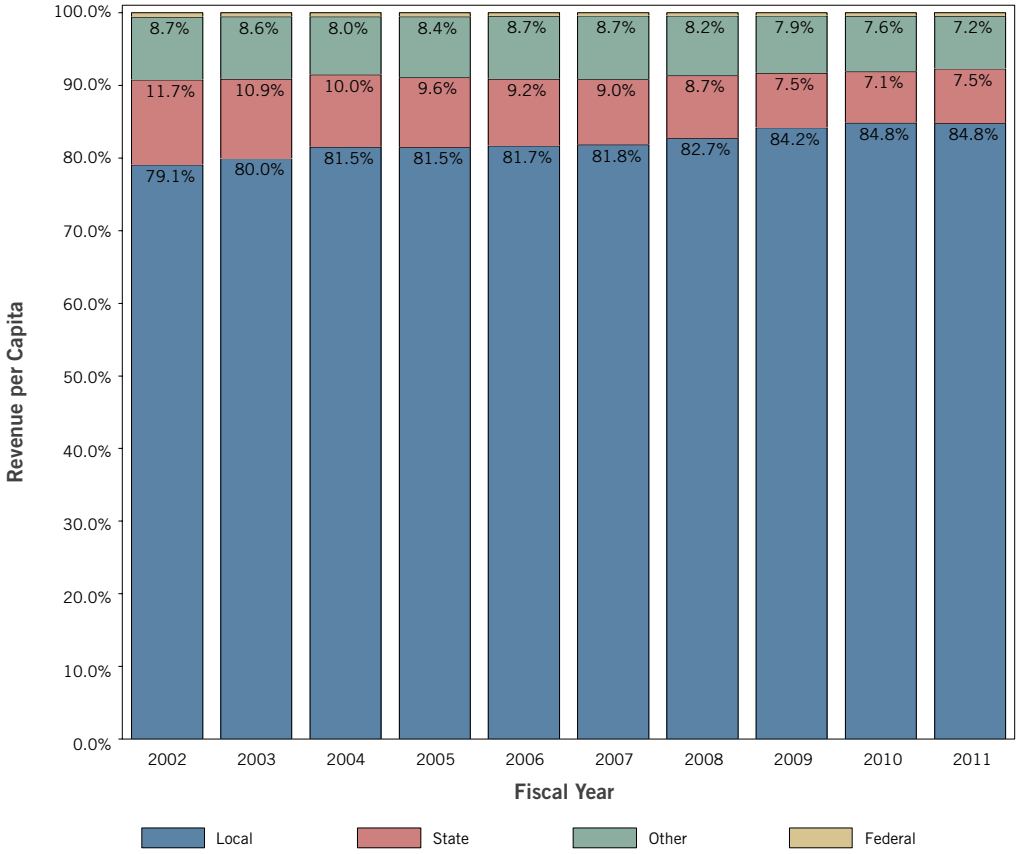
Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

and other sources have led to the need for local governments to contribute more to overall revenue in order to make up for shortfalls in income (**Figure 6-2**).

The breakout of revenue per capita (**Table 6-1**) shows how the distribution of revenue by source has changed, over the short- and long-term. It clearly shows to what degree recent cuts in state funding for public libraries have changed the inter-related funding patterns for this valuable resource.

Public library operating revenue per capita varied by state (**Figure 6-3**). Revenues per capita ranged from as high as $67.68 (Ohio) to a low of $16.61 (Mississippi). Four states had revenue per capita above $60: Ohio, Illinois ($65.15), New York ($63.28), and the District of Columbia ($60.70). In contrast, four states had revenue per capita below $20: Mississippi, Tennessee ($17.07), Georgia ($18.55), and Texas ($19.65). In FY 2011, most states (40) saw a decrease in revenue per capita. The largest decreases from FY 2010 were seen in Delaware (19.0 percent) and Florida (14.6 percent). However, several states (11) experienced a oneyear increase in revenue per capita, most notably including Ohio (10.9 percent) and New York (8.8 percent).

Figure 6-2: Percentage of Operating Revenue per Capita by Source, FY 2002–2011

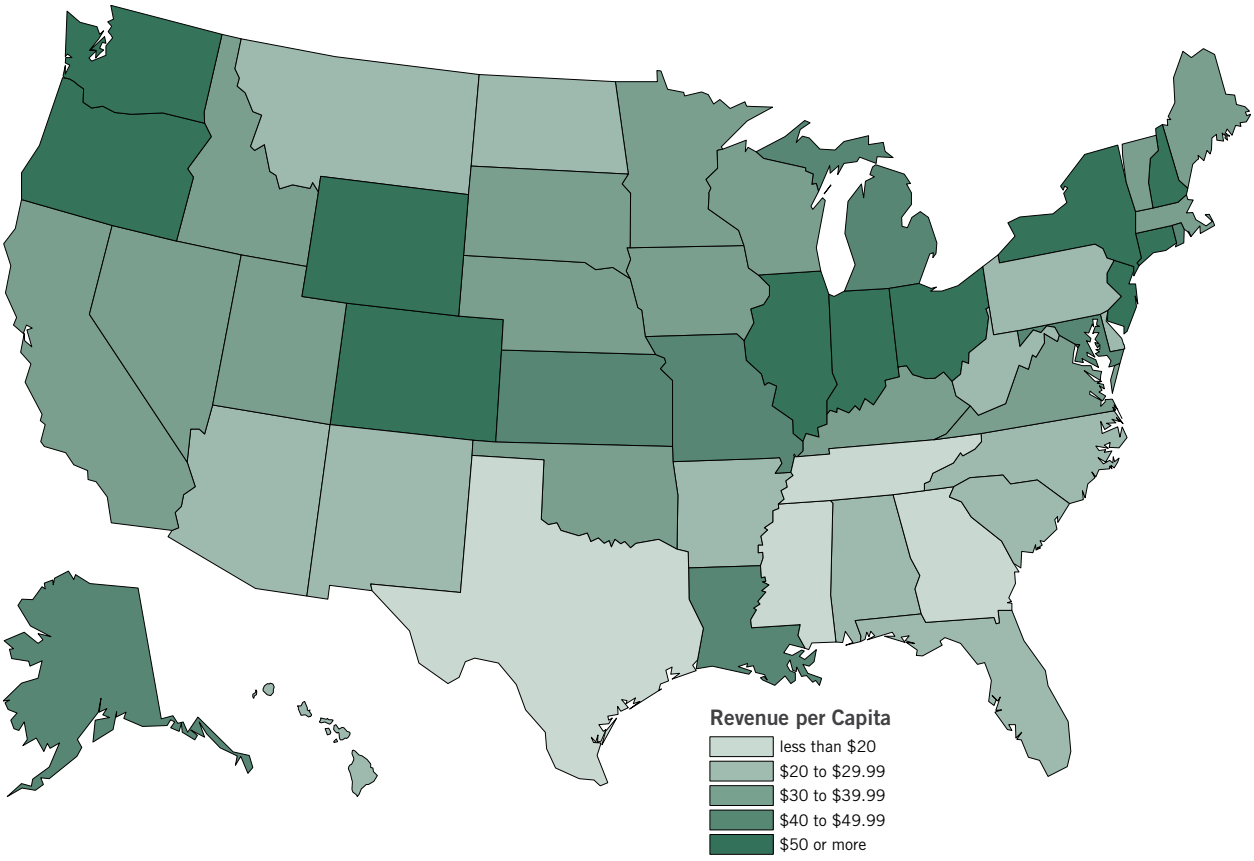


Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Table 6-1: Revenue per Capita by Source, FY 2002 - 2011 (in Constant 2011 Dollars)

Revenue per Capita	FY 2002	FY 2010	FY 2011	% Change FY10-11	% Change FY02-11
Local	$30.17	$32.89	$32.28	▼ -1.9%	▲ +7.0%
State	$4.46	$2.74	$2.87	▲ +4.7%	▼ -35.7%
Federal	$0.21	$0.18	$0.19	▲ +5.9%	▼ -9.5%
Other	$3.30	$2.96	$2.74	▼ -7.4%	▼ -17.0%
Total	$38.15	$38.78	$38.09	▼ -1.8%	▼ -0.7%

Figure 6-3: Operating Revenue per Capita by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Indicator 7. Operating Expenditure per Capita

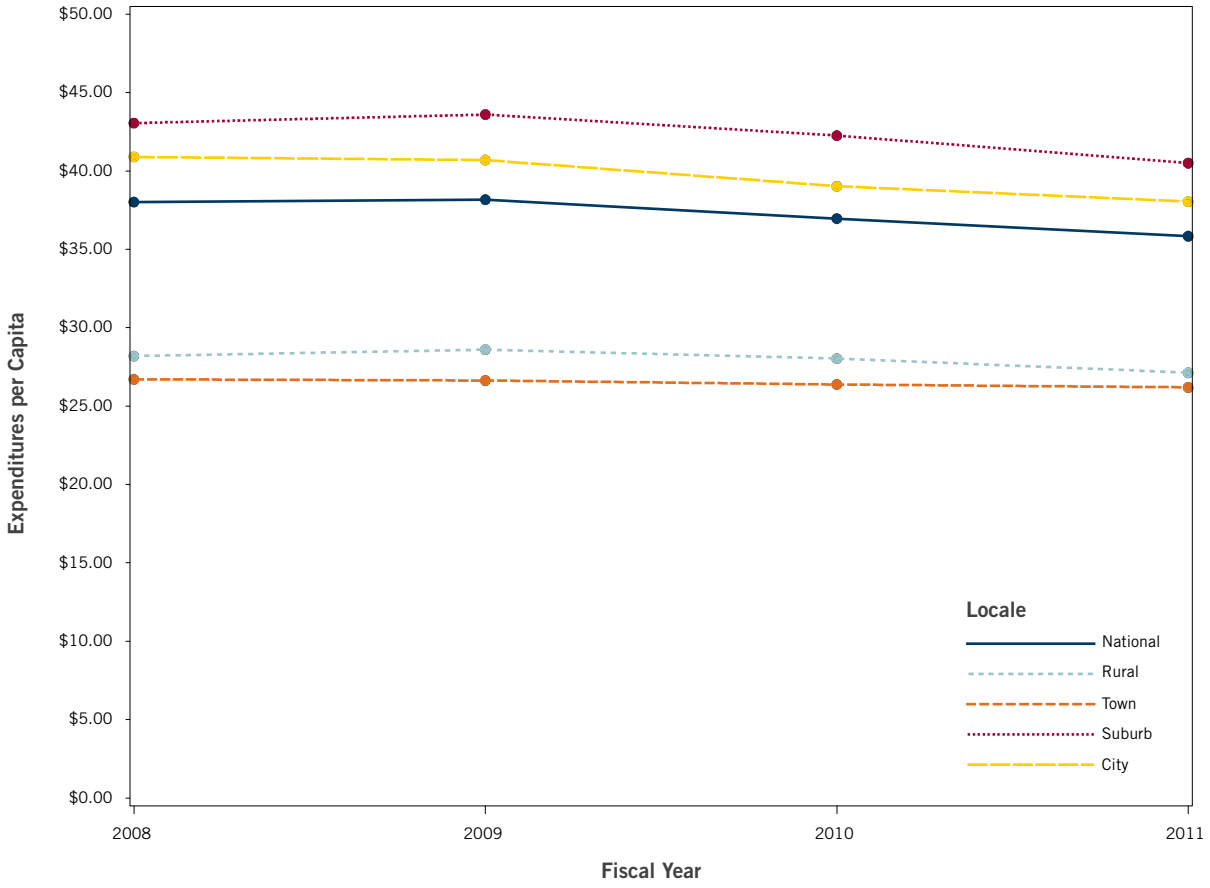
Public library operating expenditures are the monies spent in the service of the current and recurrent costs necessary to support library services. In FY 2011 total operating expenditures for public libraries nationally were $10.7 billion. Operating expenditures per capita were $35.83, a one-year decrease of 3.1 percent.

Operating expenditures per capita in public libraries differed across locality (**Figure 7-1**). Expenditures per capita were highest for public libraries in suburbs ($40.49) and cities ($38.04), followed by rural areas ($27.13) and towns ($26.19).[1] All locales have experienced a decrease in expenditures per capita since FY 2008. Although the largest decreases were in city (7.0 percent) and suburban (5.9 percent) public libraries, rural (3.8 percent) and town (1.9 percent) public libraries also saw declines.

In the PLS, public library operating expenditures are separated into three major expense categories: collection (including print, electronic, and other materials); staffing (salary and benefits); and other expenditures. Between FY 2010 to FY 2011 there were decreases nationally across all major expense categories: staff, collection, and other (**Figure 7-2**). Only staff benefits and electronic materials expenditures increased from the previous year.

Figure 7-3 shows the proportion of public library operating expenditures spent on each category. Approximately two-thirds ($0.67) of each dollar is spent on staffing expenses. The remaining amount is divided between collection and other expenses.

Figure 7-1: Expenditures per Capita by Locality, FY 2008–2011 (in Constant 2011 Dollars)



Source: Public Library Survey, FY 2008–2011, Institute of Museum and Library Services.

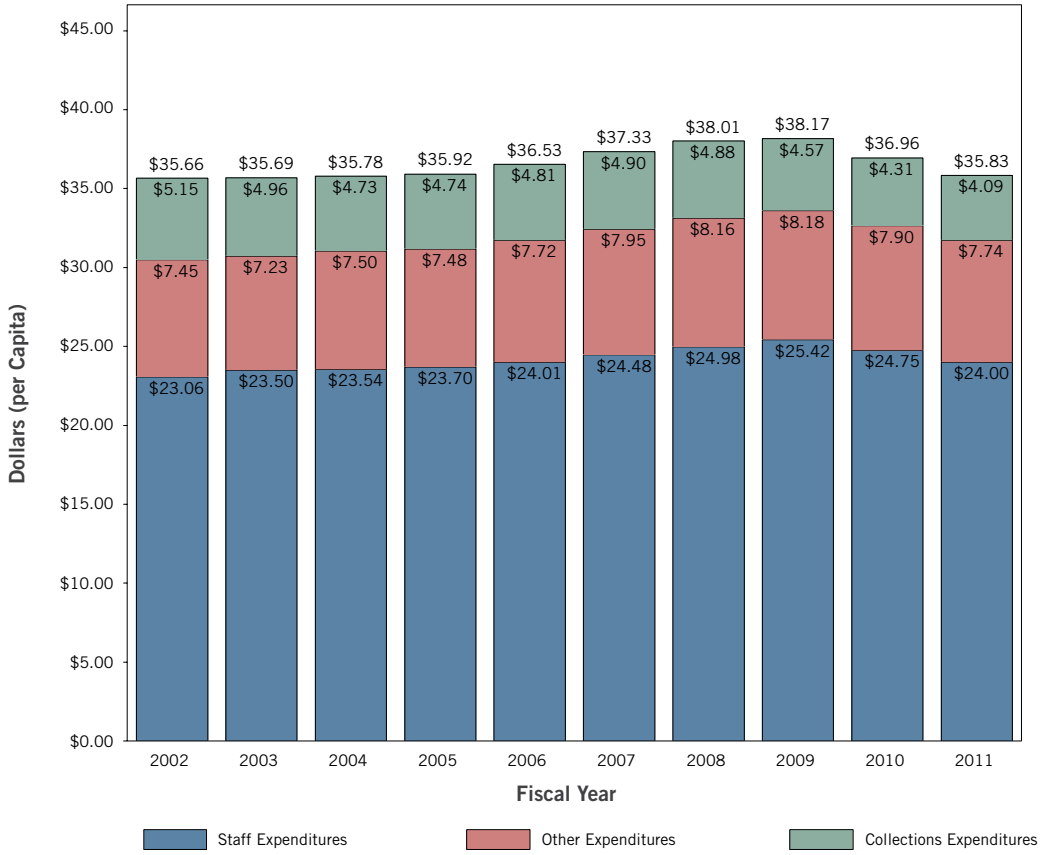
[1] Operating expenditures per capita were significantly different across locales, examined by Games-Howell post hoc tests.

Over the prior 10 years, the proportions of operating expenditure have shifted. Between FY 2002 and FY 2011, collection expenditures decreased as a part of overall operating expenditures from 14.4 percent to 11.4 percent, whereas staff expenditures increased proportionally from 64.7 percent to 67.0 percent.

Expenditures on collections include monies spent on physical items and electronic items. Expenditures on print materials include book and other print acquisitions. Other materials include physical, non-print media, such as microfilm, CDs, and DVDs. Expenditures on electronic materials include monies spent on digital materials, including e-books, databases, and downloadable services for audio and video. Between FY 2002 and FY 2011, the proportion of collection expenditures has changed. Electronic and other material expenditures have increased, while print material expenditures have continued to decrease.

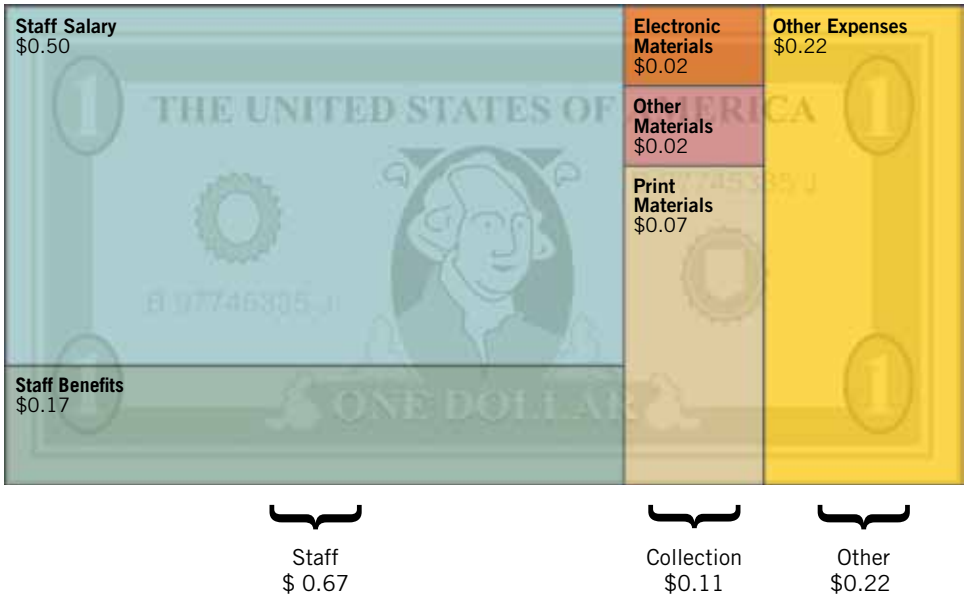
Public library operating expenditures per capita differed by state (**Figure 7-4**), with a range of $60.42 (District of Columbia) to $15.68 (Mississippi). Most states (39) saw a one-year decrease in total operating expenditures per capita. Four states saw declines greater than 10 percent: Delaware (15.7 percent), District of Columbia (12.7 percent), Florida (12.1 percent), and South Carolina (10.3 percent).

Figure 7-2: Operating Expenditures per Capita by Category, FY 2002–2011 (in Constant 2011 Dollars)



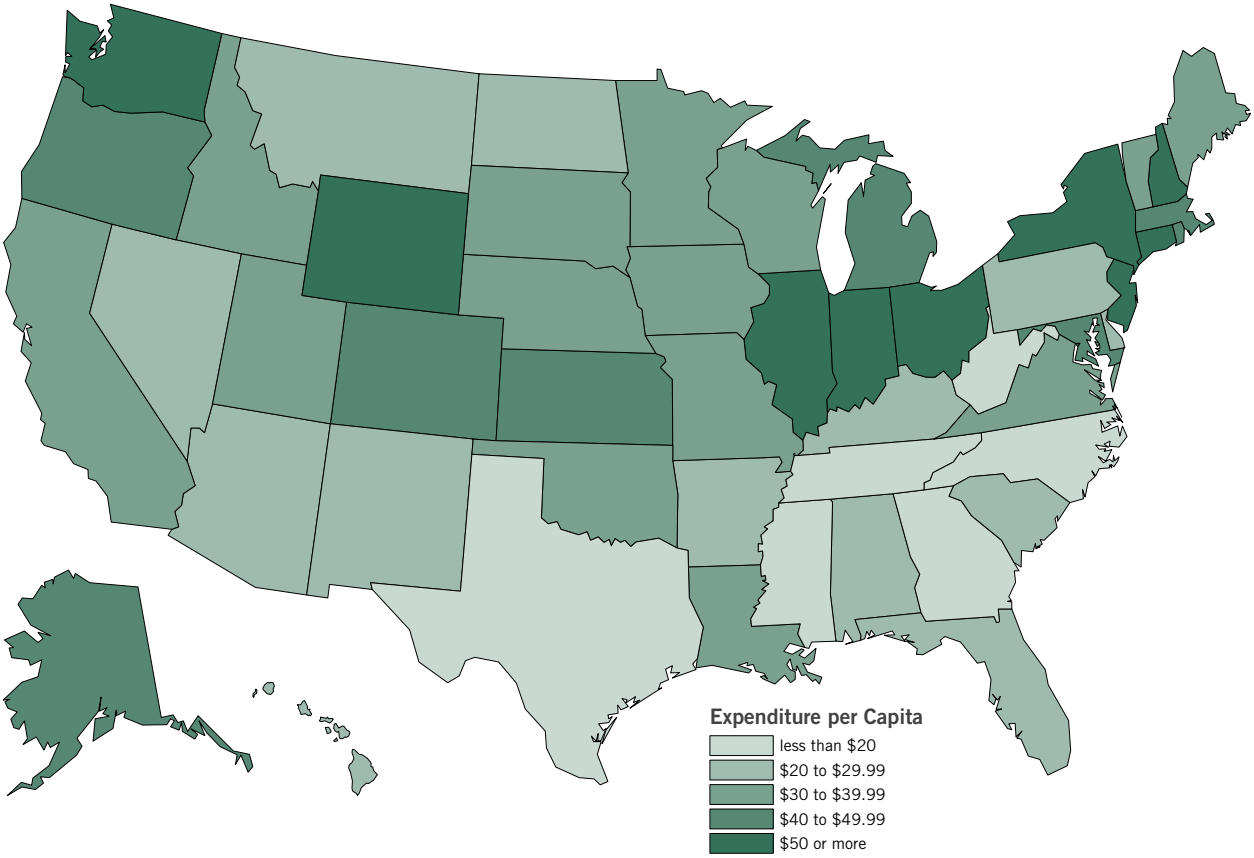
Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Figure 7-3: Proportion of Operating Expenditures by Expenditure Type, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Figure 7-4: Expenditure per Capita by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Public Libraries Survey: **Indicators**

Section 3. Public Library Resources

Indicator 8. Collection Materials per Capita

Indicator 9. Programs per Capita

Indicator 10. Public Access Computers per Capita

This section contains indicators relating to resources and services that are provided by public libraries. These resource indicators include a public library's collection (books, e-books, audio materials, video materials, and databases), program offerings, and public access computers. These are some of the resources that drive demand in public libraries.

Total collection per 1,000 people increased between FY 2010 to FY 2011. FY 2011 experienced a continued trend in the decline of print materials and the growth of e-books (and non-print materials). Although e-book growth has increased nationally, e-book availability is not evenly distributed across all public libraries. E-book availability and offerings are particularly low in public libraries in rural areas.

Public Library Resources	FY 2011	1-Year Change	10-Year Change
Indicator 8. Collection Materials per Capita (1,000)	3,164.0	+0.7%	+3.3%
Indicator 9. Programs per Capita (1,000)	12.7	+0.6%	--
Indicator 10. Public Access Computers per Capita (5,000)	4.4	+6.1%	+71.6%

Indicator 8. Collection Materials per Capita

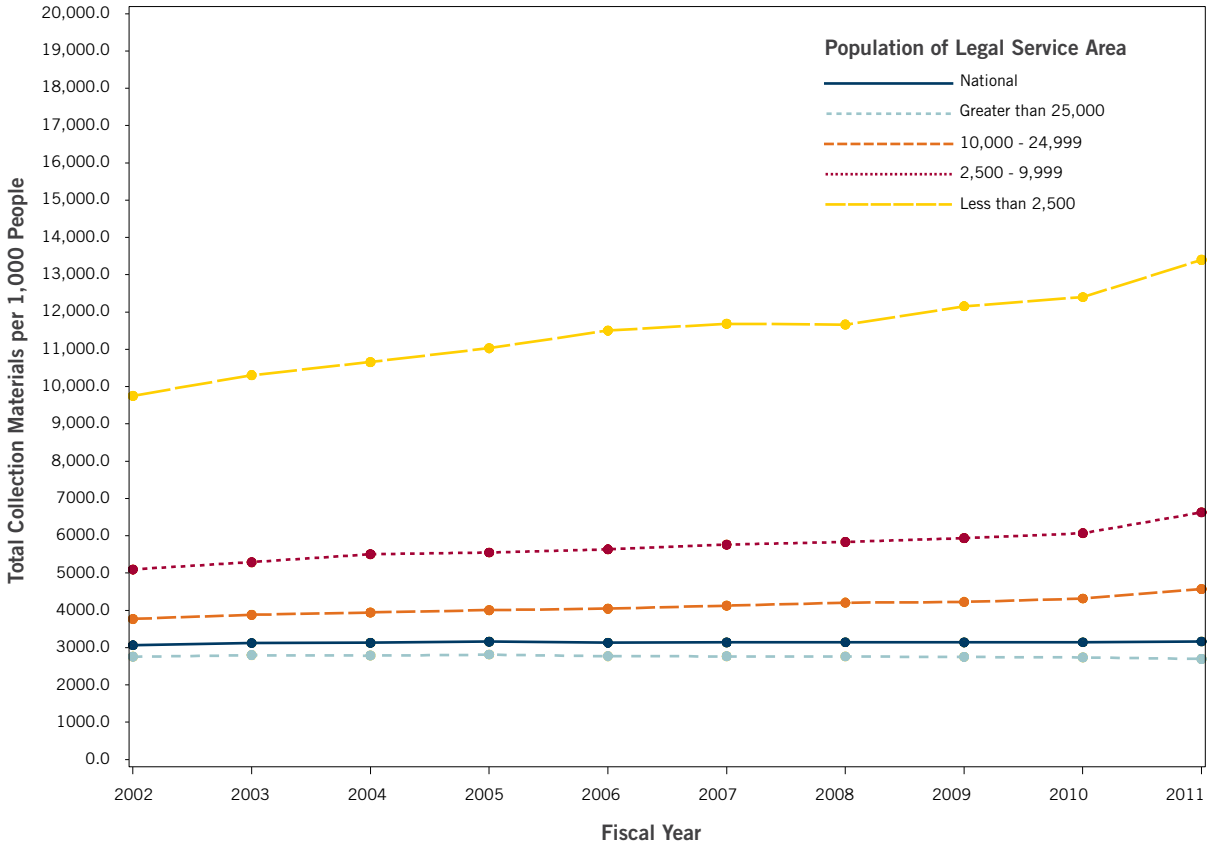
At the heart of every public library is the collection. One of the primary purposes of a public library is to provide access to information. A public library has many ways to deliver content to the public: print materials, physical non-print materials (such as physical audio and video materials), and digital materials (such as e-books, audio/video downloadable materials).

In FY 2011, there were 791.2 million print books, 35.0 million electronic books (e-books), 66.4 million audio materials and 56.2 million video materials for a total of 948.9 million collection materials in all public libraries in the United States. This translates to 3,164.1 collection materials per 1,000 people, which is a one year increase of 0.7 percent (**Figure 8-1**). Between FY 2010 to FY 2011 all materials except books increased (**Table 8-1**).

The overall composition of materials has changed in the last decade (**Figure 8-2**). Although the majority of a public library collection is and has been historically composed of print materials (83.4 percent of the total collection in FY 2011), there has been a shift in the composition of the collection. Most noticeable is the decline in print materials and growth of digital and non-print materials. In FY 2003, print materials composed 91.5 percent of the total public library collection but in FY 2011 print materials composed only 83.4 percent. In contrast, e-books composed 0.5 percent of the total collection in FY 2003 but composed 3.8 percent in FY 2011.

Collections per capita also showed differences across locale. Public libraries in city and suburbs experienced a decrease in total collections per 1,000 people between FY 2010 and FY 2011, whereas public libraries in town and rural areas experienced an increase. All locales experienced a decrease in books per 1,000 people and an increase in e-books per 1,000 people (**Table 8-2**). Public libraries in cities and suburbs experienced a decline in total collection.

Figure 8-1: Total Collection per 1,000 People by Population Size of Library Service Area, FY 2002–2011



Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Indicator 8. Collection Materials per Capita

Table 8-1: Changes in Materials per 1,000 People by Type, FY 2010–2011

	FY 2010	FY 2011	% Change from FY10-11
Books per 1000 people	2716.1	2638.3	-2.9%
e-Books per 1000 people	62.2	116.8	88.0%
Audio Materials per 1000 people	185.0	221.5	19.8%
Video Materials per 1000 people	178.8	187.5	4.9%
Total Collection Materials per 1000 people	3142.0	3164.1	0.7%

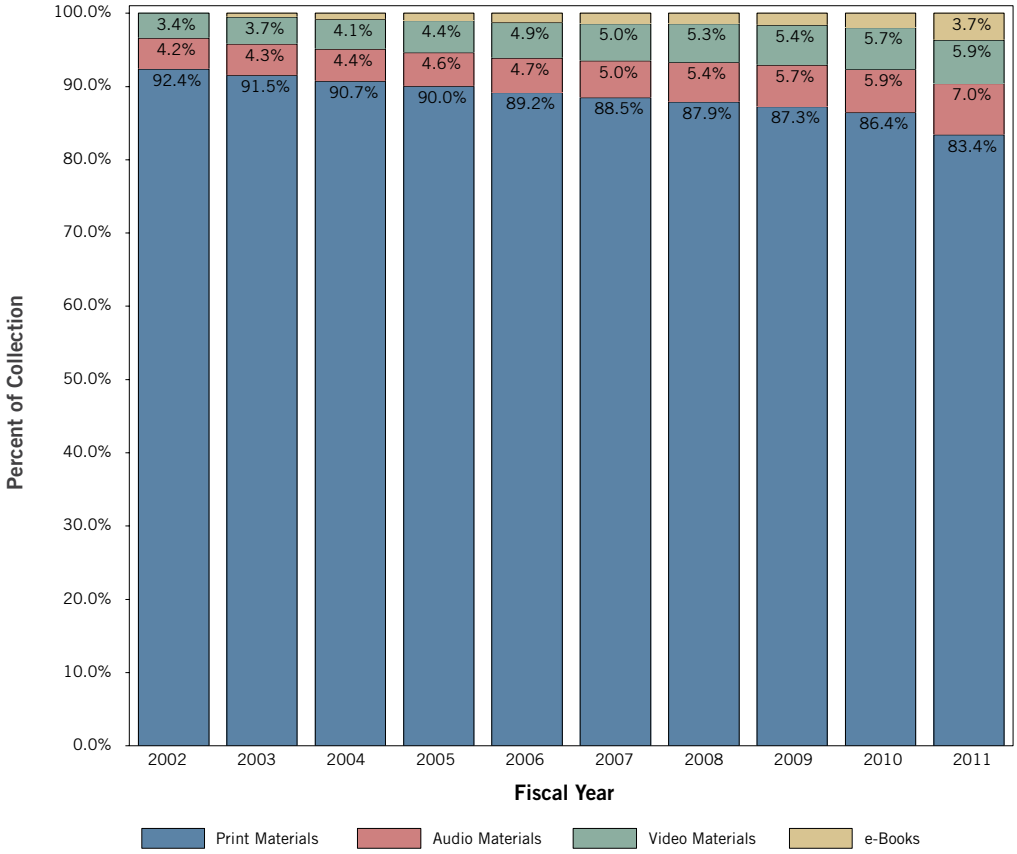
Table 8-2: Collection Materials per 1,000 by Locality, FY 2008–2011

		2008	2009	2010	2011	FY 10 to FY11
City	Total Collection	3007.6	2966.5	2921.3	2880.2	▼ -1.4%
	Book	2686.6	2634.3	2577.9	2496.2	▼ -3.2%
	e-book	17.7	19.8	23.5	39.7	▲ 69.3%
Suburb	Total Collection	3004.8	3011.9	3032.6	3020.6	▼ -0.4%
	Book	2602.8	2594.2	2581.5	2481.6	▼ -3.9%
	e-book	39.8	44.1	56.4	107.2	▲ 90.0%
Town	Total Collection	3202.4	3227.3	3272.8	3385.5	▲ 3.4%
	Book	2835.9	2829.3	2840.7	2798.2	▼ -1.5%
	e-book	66.2	75.9	96.1	187.0	▲ 94.6%
Rural	Total Collection	3883.5	3928.7	3936.0	4134.8	▲ 5.1%
	Book	3384.7	3381.6	3358.5	3323.5	▼ -1.0%
	e-book	114.3	131.8	148.4	278.7	▲ 87.8%
National	Total Collection	3143.0	3140.2	3142.0	3164.1	▲ 0.7%
	Book	2763.2	2740.2	2716.1	2638.3	▼ -2.9%
	e-book	45.1	51.0	62.2	116.8	▲ 88.0%

There were also changes in collections per capita across states. More than half of states (28) experienced an increase in total collection materials per 1,000 people between FY 2010 to FY 2011. Most states (43) saw a decrease in book volume between FY 2010 to FY 2011. District of Columbia (25.0 percent) and Delaware (22.5 percent) experienced larger than 10 percent declines in book volume per 1,000 people.

Overall, while there is national growth in e-book materials, it should be noted that e-book availability is not evenly distributed across all public libraries. Half of all public libraries (51.3 percent) reported no e-book holdings in FY 2011. The majority of city and suburb public libraries reported having some e-book offerings; more than half of all public libraries in town (54.7 percent) and rural areas (64.8 percent) reported having no e-book offerings. Almost all states reported at least some e-books (**Figure8-3**).[1] Moreover, 39.1 percent of all public libraries and more than half of all rural libraries (53.4 percent) reported no expenditures for electronic materials in FY 2011 (**Table 8-3**). In many of these cases, patrons often have access to state-provided electronic materials through statewide and consortial purchasing.

Figure 8-2: Total Collection Materials per 1,000 People by Material Type, FY 2002–2011



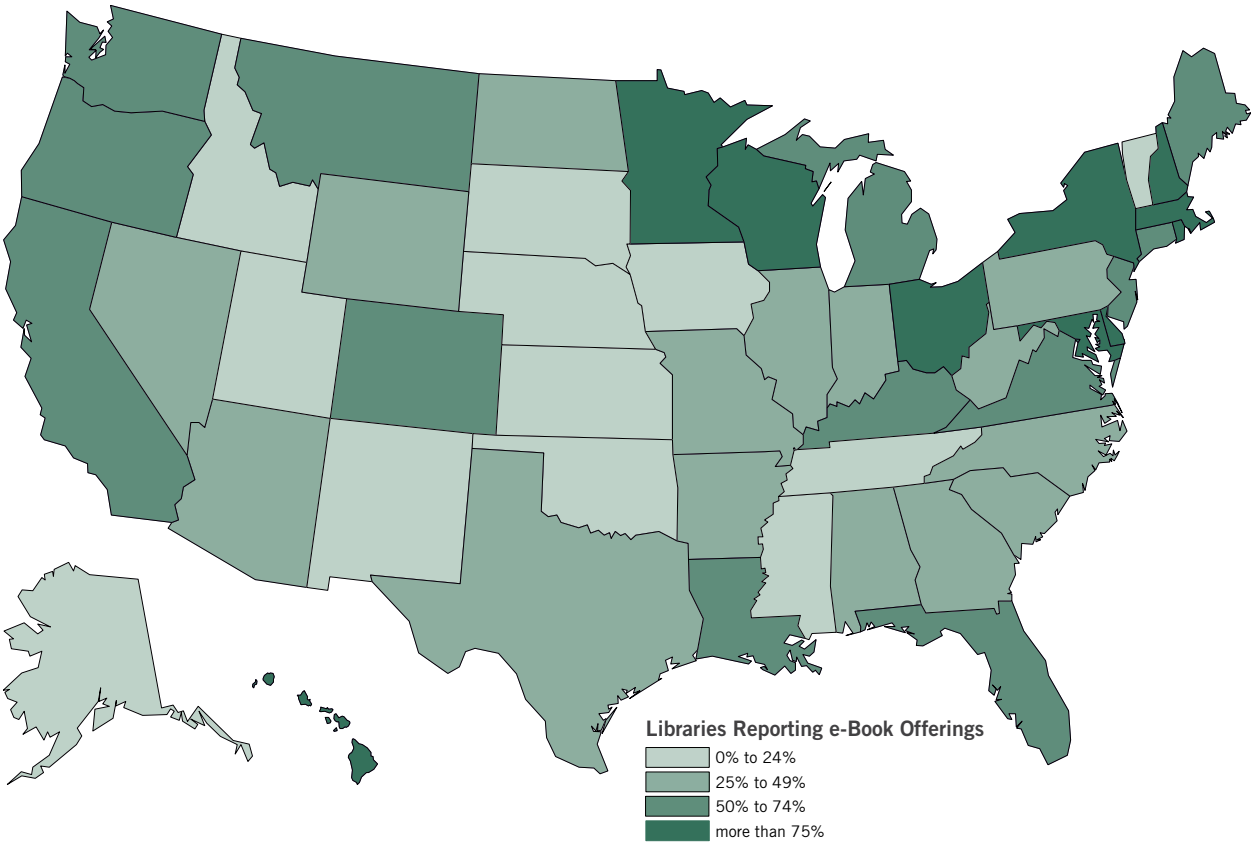
Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

[1] Overdrive reports 90% penetration of e-books in public libraries: "Are digital libraries a 'winner-takes-all' market? OverDrive hopes so," *Forbes*, November 18, 2013. www.forbes.com/sites/avaseave/2013/11/18/are-digital-libraries-a-winner-takes-all-market-overdrive-hopes-so/

Table 8-3: Distribution of Electronic Materials Expenditures by Public Library by Locality, FY 2011

Locale	Libraries reporting electronic materials expenditures	Percentage
City	455	94.2%
Suburb	1639	79.6%
Town	1404	63.1%
Rural	1952	46.6%
Total	5450	60.9%

Figure 8-3: Percentage of Libraries Reporting E-Books by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

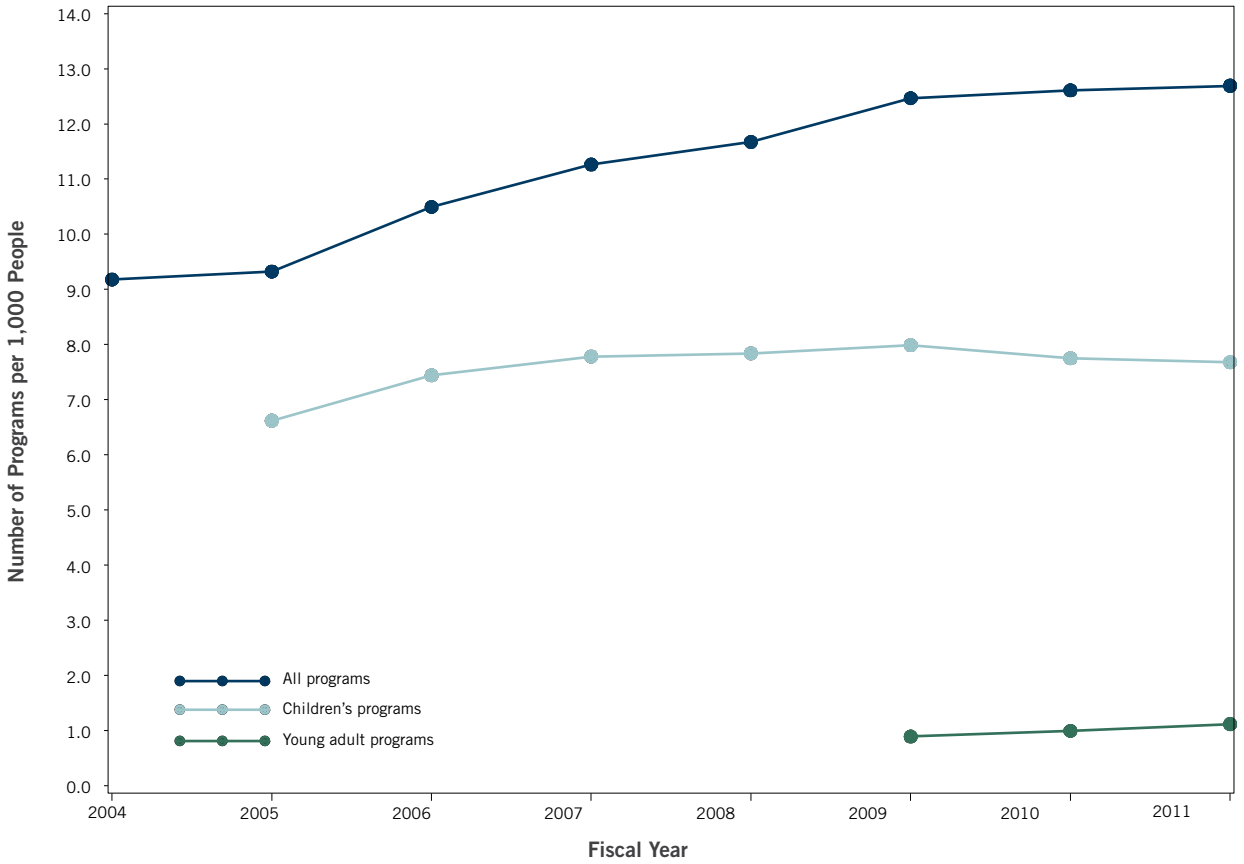
Indicator 9. Program Offerings per Capita

A public library program is an event that provides cultural, recreational, or educational information through an activity or service which is provided by the public library and often designed to meet a specific social need. Libraries serve as valuable learning spaces, providing programs such as maker spaces, lectures, story hours, English as a Second Language (ESL) courses, citizenship classes, and book discussions. In addition to total number of programs, the PLS also captures information on the number of programs offered to two target populations: children (under the age of 11) and young adults (ages 12-18). The programs per capita metric relates to the number and availability of program offerings per population of the library legal service area.

In FY 2011, there were 3.81 million programs. Of those, 60.5 percent were children's programs and 8.8 percent were designed for young adults). In FY 2011, there were 12.7 programs per 1,000 people with 7.7 children's programs per 1,000 people, and 1.1 young adult programs per 1,000 people. The total number of programs per 1,000 people increased 0.7 percent from FY 2010 to FY 2011. During this same time, children's programs decreased 0.9 percent and young adult programs per 1,000 people increased 12.5 percent (**Figure 9-1**).[2]

Programs per capita were different across locality (**Figure 9-2**). All locales except public libraries in cities saw an increase in total programs per 1,000 people between FY 2010 and FY 2011. Public library programs in cities decreased 2.7 percent as compared to those in suburbs, towns, and rural areas which experienced increases of 2.0 percent, 2.1 percent, and 1.8 percent

Figure 9-1: Programs Offered per 1,000 People, FY 2004–2011



Source: Public Library Survey, FY 2004–2011, Institute of Museum and Library Services/National Center for Education Statistics.

[2] Data for total number of programs was first collected in FY 2004; for children's programs in FY 2005; and for young adult programs in FY 2009.

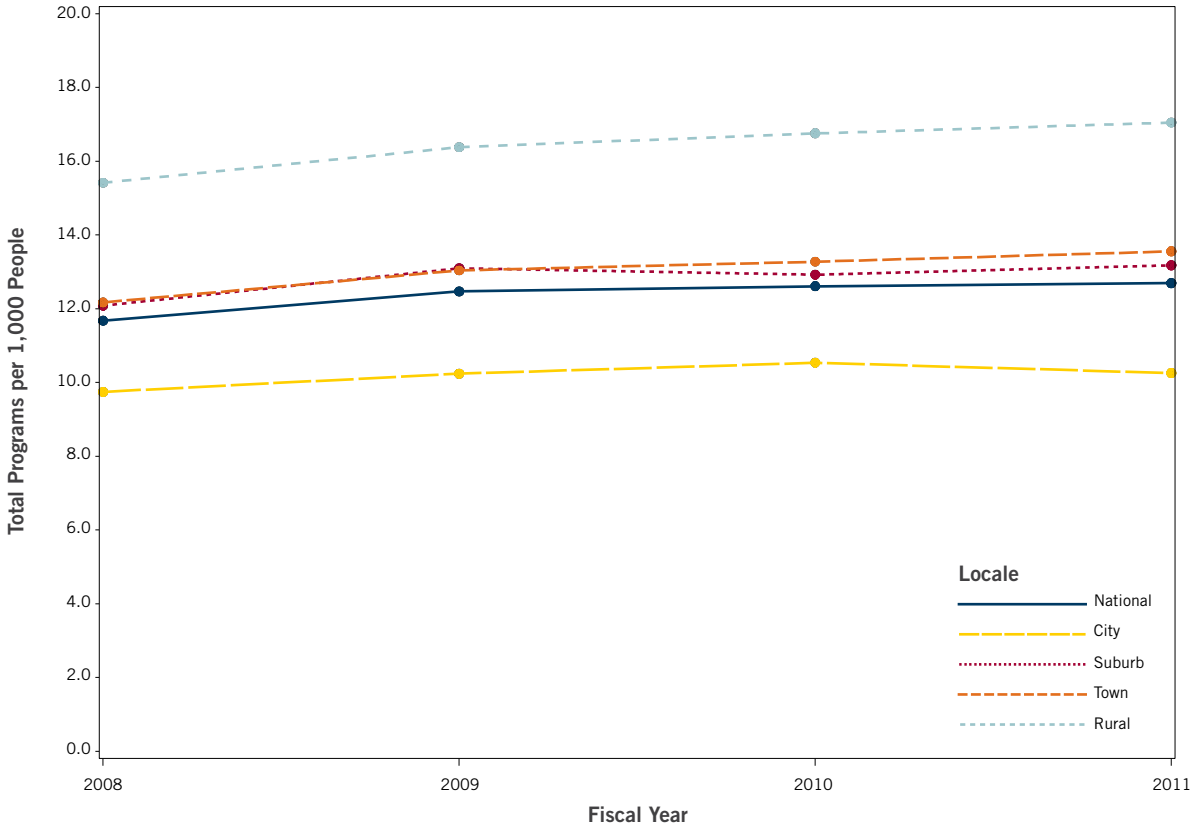
respectively during this time. For children's programs, public libraries in cities (4.4 percent) and public libraries in suburbs experienced declines (0.8 percent) in children's programs per 1,000 people.

There was wide variability across states for program offerings per 1,000 people, ranging from 39.38 (Vermont) to 5.76 (Tennessee). More than half of states (31) experienced an increase in total programs per 1,000 people between FY 2010 and FY 2011. States that experienced increases in total programs per capita larger than 10 percent included Missouri (14.8 percent), Arizona (13.8 percent), Utah (13.4 percent), Louisiana (12.7 percent), and New Mexico (10.2 percent). States that experienced decreases larger than 10 percent were Nevada (10.9 percent), Delaware (11.1 percent), and California (15.6 percent).

Half of all states (25) experienced some decrease in children's programs per 1,000 people between FY 2010 and FY 2011. States that experienced decreases larger than 10 percent were North Carolina (11.3 percent), Delaware (17.0 percent), and California (19.8 percent). States that experienced increases larger than 10 percent were Virginia (101.6 percent), Hawaii (56.0 percent), and Nevada (12.7 percent).

The inclusion of young adult programs in FY 2009 could explain the decline in the number of children's program per 1,000 people that began in FY 2010. It is possible that programs that would now be classified as young adult programs may have been previously classified as children's programs. This could represent a reclassification of service, rather than a change or decline in service.

Figure 9-2: Total Programs Offered per 1,000 People by Locality, FY 2008–2011



Source: Public Library Survey, FY 2008–2011, Institute of Museum and Library Services

Indicator 10. Public-Access Computers

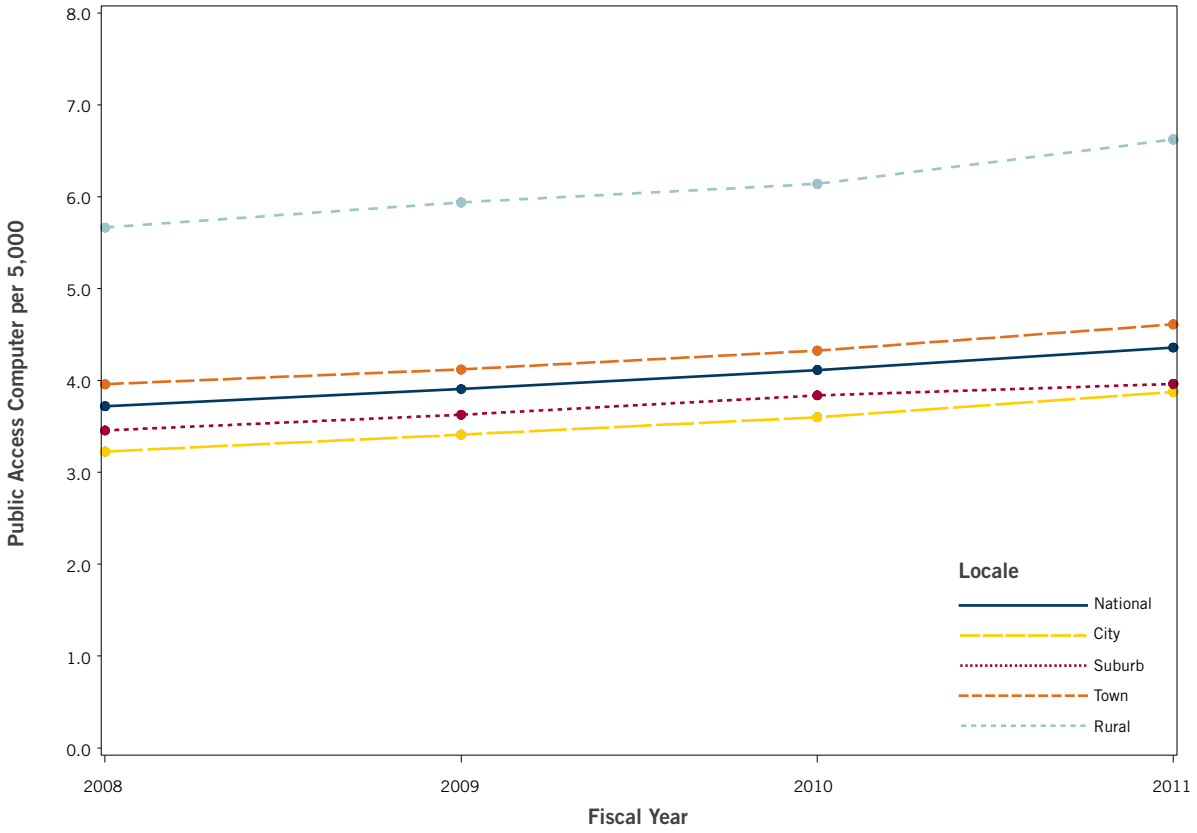
Public libraries are increasingly playing a larger role in their communities as the provider of public access to computers and the Internet. The public access computer per 5,000 people metric helps to indicate the overall availability of public access computers. Increases in this metric indicate that there were more increases in public-access computers than increases in population.

In FY 2011, there were 261,413 public-access Internet computers available at public libraries across the United States. There were 4.4 public-access computers per 5,000 people in FY 2011, a one-year increase of 6.0 percent, part of a decade long increase in public-access Internet computers (**Figure 10-1**).

The availability of public-access Internet computers is higher in public libraries in rural areas than public libraries in other locales. Across all locales, public access computer availability has increased every year since FY 2008.

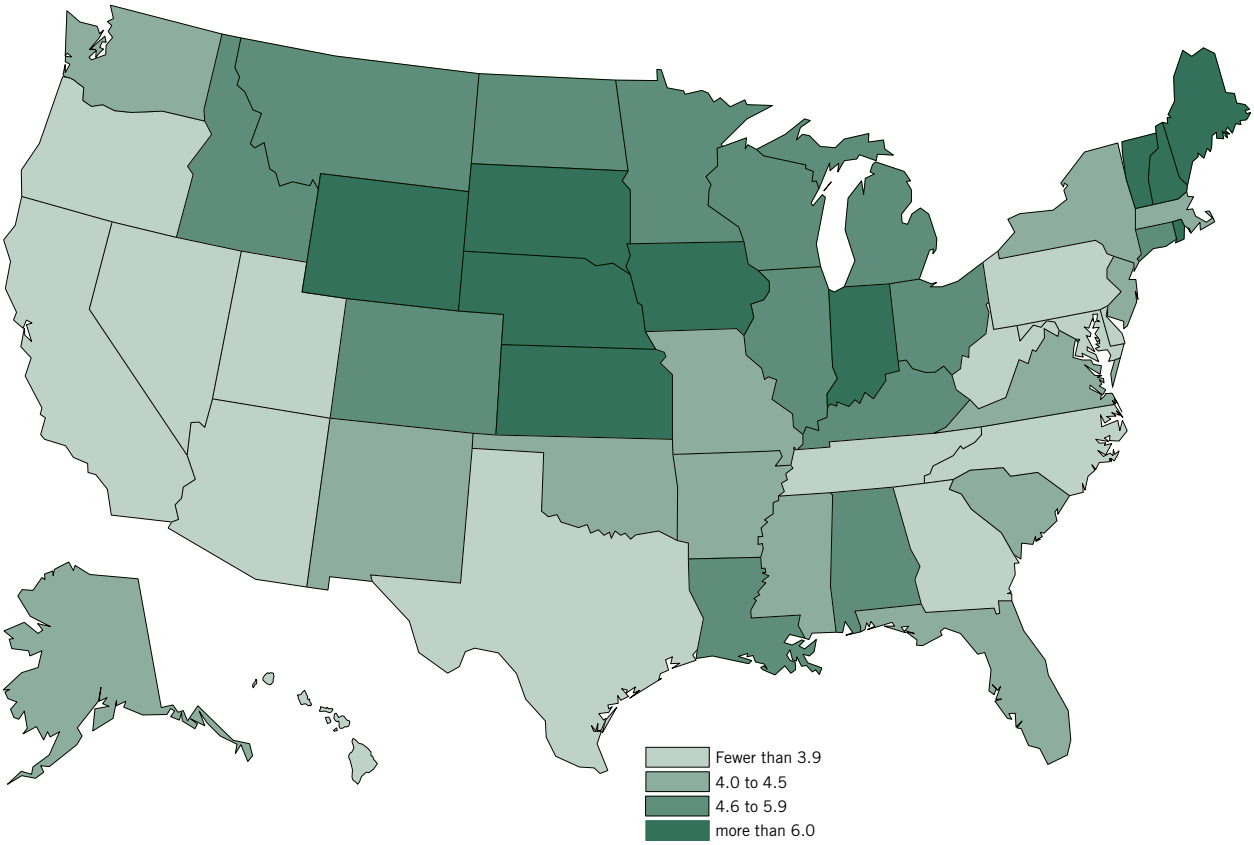
Public access computer availability varied by state (**Figure 10-2**) with some states' public computer offerings as low 1.28 public-access computers per 5,000 people (Hawaii) and as high as 9.12 (Vermont). High public access computer availability is mostly concentrated in the Plains (5.9), Great Lakes (5.9), and the New England (5.6) region. Low public access computer availability is mostly concentrated in Far West region (3.0). In comparison to FY 2010, the majority of states (42) saw an increase in public access computer per 5,000 people.

Figure 10-1: Public Access Computer per 5,000 by Locality, FY 2008–2011



Source: Public Library Survey, FY 2008–2011, Institute of Museum and Library Services

Figure 10-2: Public Access Computers per 5,000 People by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Public Libraries Survey: **Indicators**

Section 4. Public Library Staffing

Indicator 11. Staffing per Capita

Indicator 12. Librarians per Capita

Indicator 13. Percent of Librarians with ALA-Accredited MLS

This section contains indicators relating to the public library workforce. Public library staff help ensure that the resources, services, and the facilities are accessible, available, and well managed. Moreover, beyond collection development and resource management, library staff help address information needs by providing programming, answering reference questions, supporting research, etc. In the PLS, public library staff is measured in full-time equivalents (FTE) and consists of three categories: librarians, ALA-MLS librarians, and other paid staff. Indicators associated with public library staffing are staff per 25,000 people, public librarians per 25,000 people, and the distribution and ratio of public librarians with American Library Association (ALA) accredited masters of library and information studies (MLS) degrees. These metrics help to indicate whether or not there is enough staffing to address the needs of the population and measures professionalism in librarianship.

Staffing per 25,000 people decreased from FY 2010 to FY 2011, continuing a trend that began in FY 2007. This overall decrease is largely the result of a decrease in other paid staff. The number of librarians per 25,000 people has remained stable over a ten year period.

Public Library Resources	FY 2011	1-Year Change	10-Year Change
Indicator 11. Staffing per Capita (25,000)	11.4	-2.4%	-7.1%
Indicator 12. Librarians per Capita (25,000)	3.9	-1.3%	-3.9%
Indicator 13. Percent of Librarians with ALA-accredited MLS	67.6%	-0.8%	-0.4%

Indicator 11. Staffing per Capita

Staffing, as reported on the PLS, accounts for all of the positions funded in a library's budget, whether or not those positions are filled. Staffing is measured using full-time employment (FTE).[1] The total number of staff at a library is comprised of librarians and other paid staff, which may include people employed in positions as paraprofessionals, IT, operations, and maintenance. Staffing per 25,000 people is a per-capita indicator defined as the total number of staff divided by 25,000 people.

Changes in staffing per 25,000 people are important because decreases in staffing per 25,000 people may indicate that there is not sufficient library staff to meet the demands of the population served. In FY 2011, total staff per 25,000 people was 11.4, a one-year decrease of 2.4 percent. Total staff per capita has decreased since the recession (**Figure 11-1**). Initial decreases in FY 2009 affected non-librarian employees, a trend that has persisted since. There was a decrease in the number of people who held the title of librarian in both FY 2010 and 2011. About one-third (24.0 percent) of total staff hold the title of librarian.

By locality, public libraries across all locales experienced some decrease in staff positions in the last few years (**Table 11-1**). Between FY 2010 to FY 2011, public libraries in suburbs and rural areas experienced the largest decreases in total staffing. There are even larger differences by the size of library service area. Aggregated across all of the smallest libraries, serving a population of fewer than 2,500 people, there were 23.1 staff FTEs per 25,000 people. In comparison, for libraries with service areas of 25,000 people or greater, there

Table 11-1: Staffing (FTEs) per 25,000 People by Locality, FY 2008–2011

		2008	2009	2010	2011	FY 10 to FY11
City	Total Staff	12.1	11.8	11.2	11.0	▼ (-1.6%)
	Librarians	3.5	3.4	3.3	3.3	▼ (-0.4%)
	Other Paid Staff	8.6	8.3	7.9	7.7	▼ (-2.1%)
Suburb	Total Staff	13.2	13.1	12.6	12.1	▼ (-3.4%)
	Librarians	4.2	4.3	4.2	4.0	▼ (-2.8%)
	Other Paid Staff	9.0	8.9	8.4	8.1	▼ (-3.7%)
Town	Total Staff	11.0	10.8	10.8	10.7	▼ (-0.9%)
	Librarians	4.1	4.1	4.1	4.1	▲ (+0.9%)
	Other Paid Staff	6.8	6.8	6.7	6.6	▼ (-2.0%)
Rural	Total Staff	12.1	12.0	11.9	11.5	▼ (-3.3%)
	Librarians	5.2	5.2	5.1	5.0	▼ (1.4%)
	Other Paid Staff	6.9	6.8	6.8	6.5	▼ (-4.6%)
National	Total Staff	12.3	12.2	11.7	11.4	▼ (-2.4%)
	Librarians	4.1	4.0	3.9	3.9	▼ (-1.2%)
	Other Paid Staff	8.3	8.1	7.8	7.5	▼ (-2.9%)

[1] To ensure comparable data across all libraries, FTE is defined as 40 hours per week. Thus, 60 hours per week of work completed by several employees working in part-time status within a specific staff category, such as librarian, equals 1.50 FTEs.

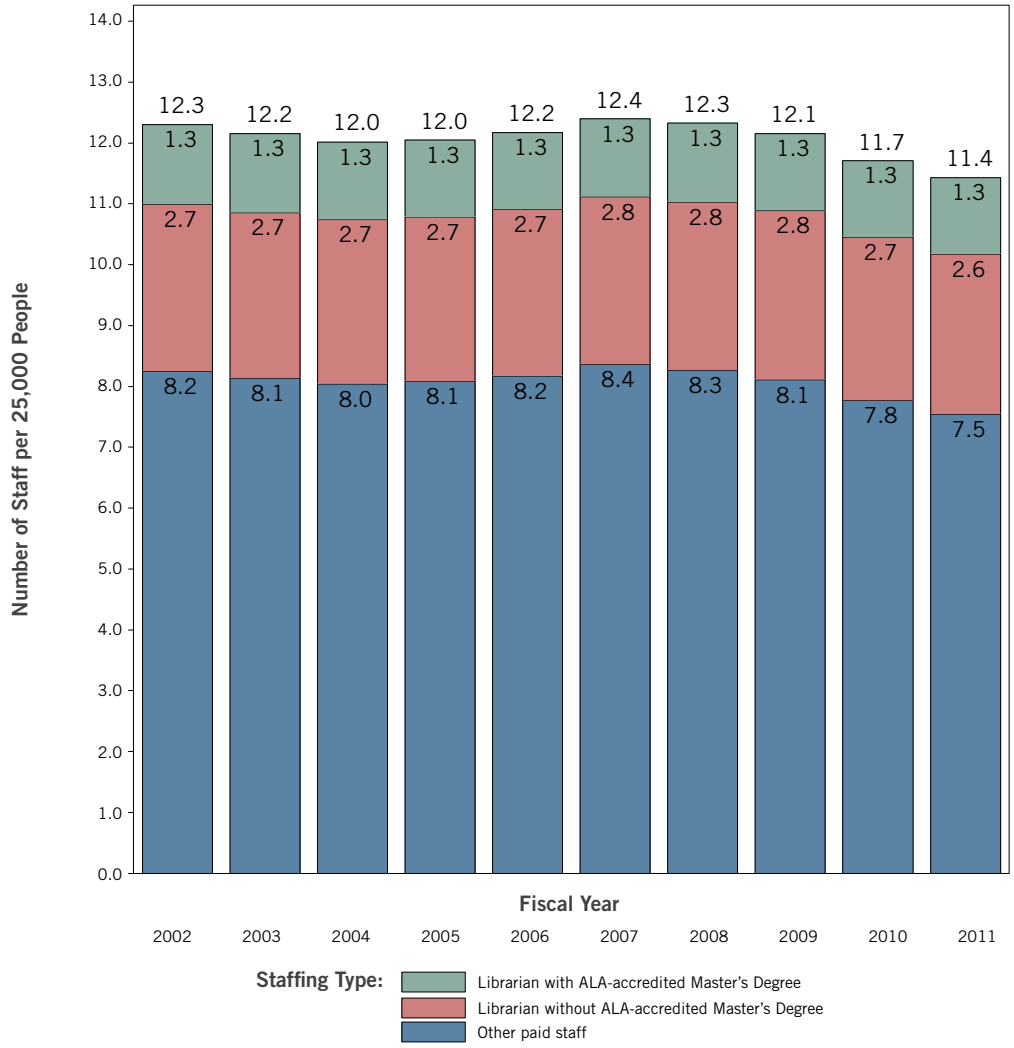
were 10.6 staff per 25,000 people. In smaller, more remote areas, one librarian might serve a few people who are geographically dispersed, whereas in more densely populated cities and suburbs, one librarian may serve many people. Public libraries must respond to the particular challenges of the communities they serve, and staffing is one of the key ways they meet the needs of the public.

Levels of staffing at public libraries varied across states. For total staff per 25,000 people, the differences range from 20.6 (New Hampshire) to 6.9 (Tennessee).

Most states (39) saw a decrease in staffing per 25,000 people between FY 2010 to FY 2011.

Staffing is a critical component of library service delivery, and has a strong relationship with resources and usage.[2] For example, there is a strong positive correlation between total number of staff per 25,000 people and both circulation per capita and visitation per capita. In addition, there are moderate positive correlations between staffing and resources per capita, such as the number of programs offered and public access computers.

Figure 11-1: Number of FTE staff per 25,000 people, FY 2002–2011



Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

[2] Correlation between total staffing per capita and usage: circulation per capita ($r = 0.52$, $p < .0001$), visitation per capita ($r = .58$, $p < .0001$). Correlation between total staffing per capita and resources: public access computers ($r = .57$, $p < .0001$) and total number of programs offered per capita ($r = .47$, $p < .0001$).

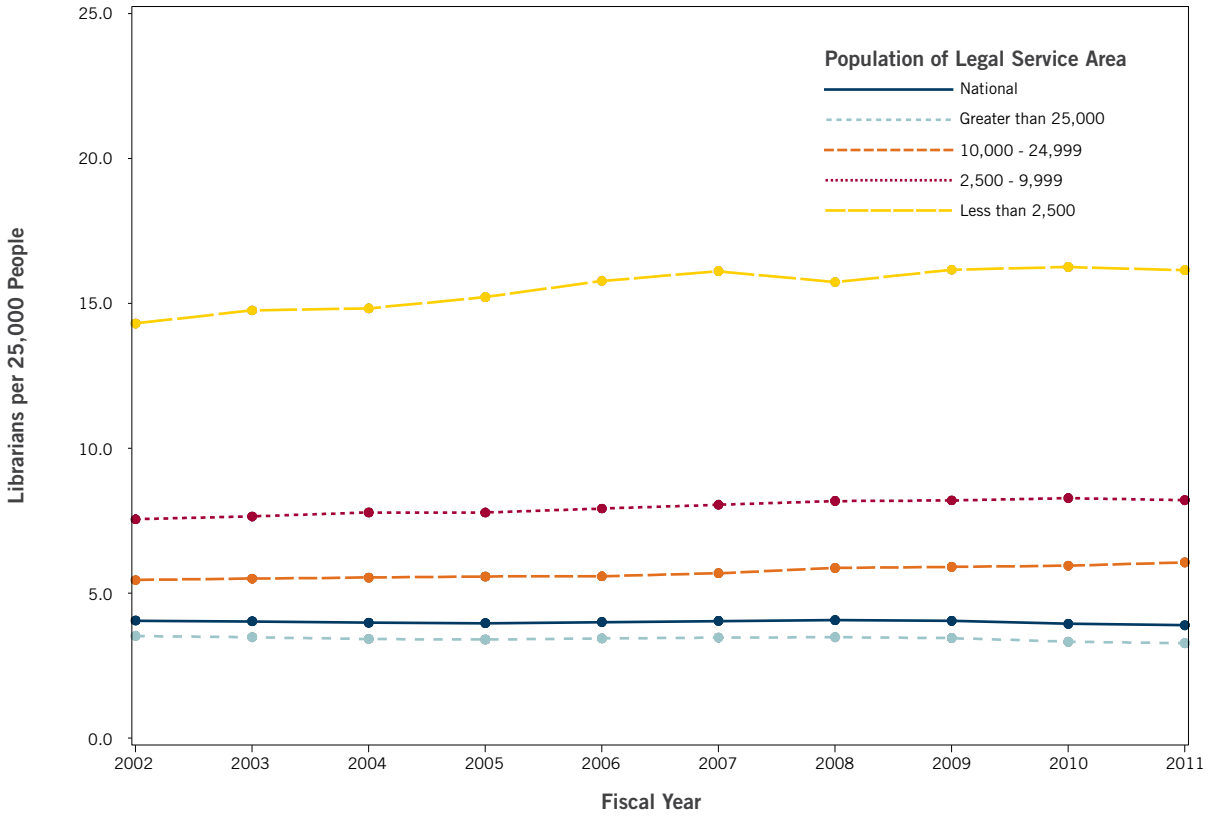
Indicator 12. Librarians per Capita

Public librarians are people who do paid work that usually requires professional training and skills in the theoretical or scientific aspects of library work, or both, as distinct from the profession's mechanical or clerical aspect. Librarians curate materials, promote materials through book clubs and events, and provide programs that support reading and learning for patrons of all ages. Library work encompasses the creation, communication, identification, selection, acquisition, organization, description, storage, retrieval, preservation, analysis, interpretation, evaluation, synthesis, dissemination, and management of information.

Librarians made up one-third (34.0 percent) of all public library staff and almost all public libraries (98.5 percent) had a public librarian on staff in FY 2011. The total number of librarians per 25,000 people was 3.9 in FY 2011, virtually the same level as FY 2010.

By locality, the number of librarians per 25,000 was higher in public libraries in rural areas and lower in public libraries in cities. Although this may seem counterintuitive, a single librarian in a citiy library may serve more people because of the density of the population, whereas a librarian in a rural library may serve fewer people because they are geographically dispersed. Similarly, there were more librarians per capita in smaller libraries than in larger libraries (**Figure 12-1**). There were more librarians per capita in the smallest libraries, with 16.1 librarians per 25,000 people in libraries with a legal service area of fewer than 2,500 people.

Figure 12-1: Librarians per 25,000 People by Population Size, FY 2002–2011



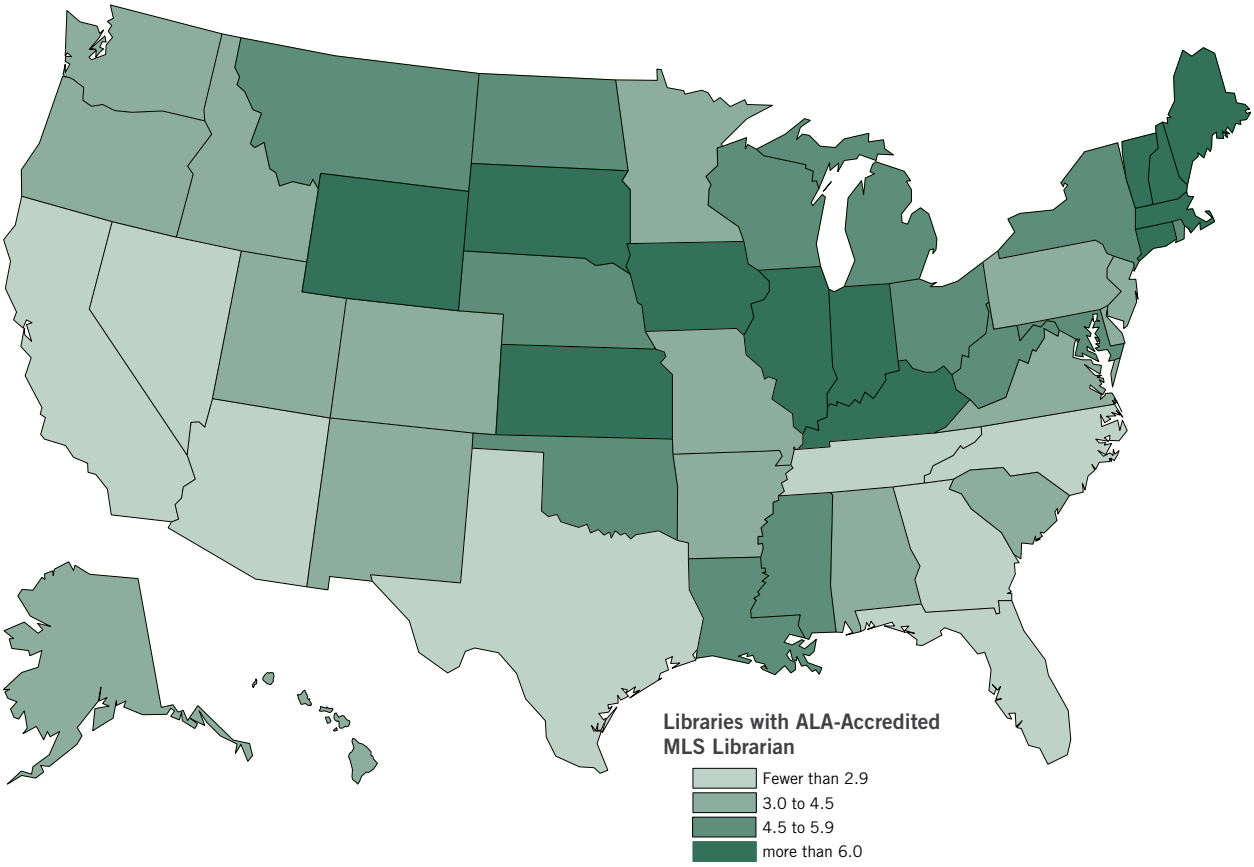
Source: Public Library Survey, FY 2002–2011, Institute of Museum and Library Services/National Center for Education Statistics.

Indicator 12. Librarians per Capita

The number of public librarians per 25,000 people varied by state (**Figure 12-2**) from as high as 11.6 (New Hampshire) and as low as 1.7 (Georgia). High numbers of public librarians per 25,000 people were concentrated in the New England (7.2) region. The majority of states (34) saw a decrease in librarians per 25,000 people from FY 2010 to FY 2011. Arkansas saw a one-year increase of 61.3 percent, whereas New Jersey (13.6 percent) and Nebraska (13.3 percent) saw one-year decreases.

Much like staffing overall, there is a strong relationship between librarians and resources and usage.[3] There is a strong relationship between librarians per capita, programs per capita, and book volumes per capita. Although librarians play an important role in delivering public library service, not all public libraries are fully staffed with an adequate number of librarians. In FY 2011, 23.8 percent of all public libraries had less than one full time librarian and 43.6 percent of all public libraries had 1 or fewer FTE public librarians.

Figure 12-2: Librarians per 25,000 People by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

[3] Correlation between librarians per 25,000 and: Programs per 1,000 ($r = .50$); Book volume per 1,000 ($r = .73$).

Indicator 13. Ratio of ALA Accredited MLS Librarians

Within the library community, there is debate about the library profession's role of paraprofessionals, the deprofessionalization of librarianship, and the need for advanced and accredited training programs. Because of this, the distribution and ratio of librarians with American Library Association (ALA) accredited masters of library and information studies (MLS) degrees are important issues to the library profession.[4]

Two-thirds (67.6 percent) of all public librarians in the United States have MLS degrees from an institutional program accredited by the ALA (**Figure 13-1**). Although this is a decrease of 0.8 percent from FY 2010, the ratio of ALA accredited MLS librarians to all librarians has largely remained stable over the previous 10 years.

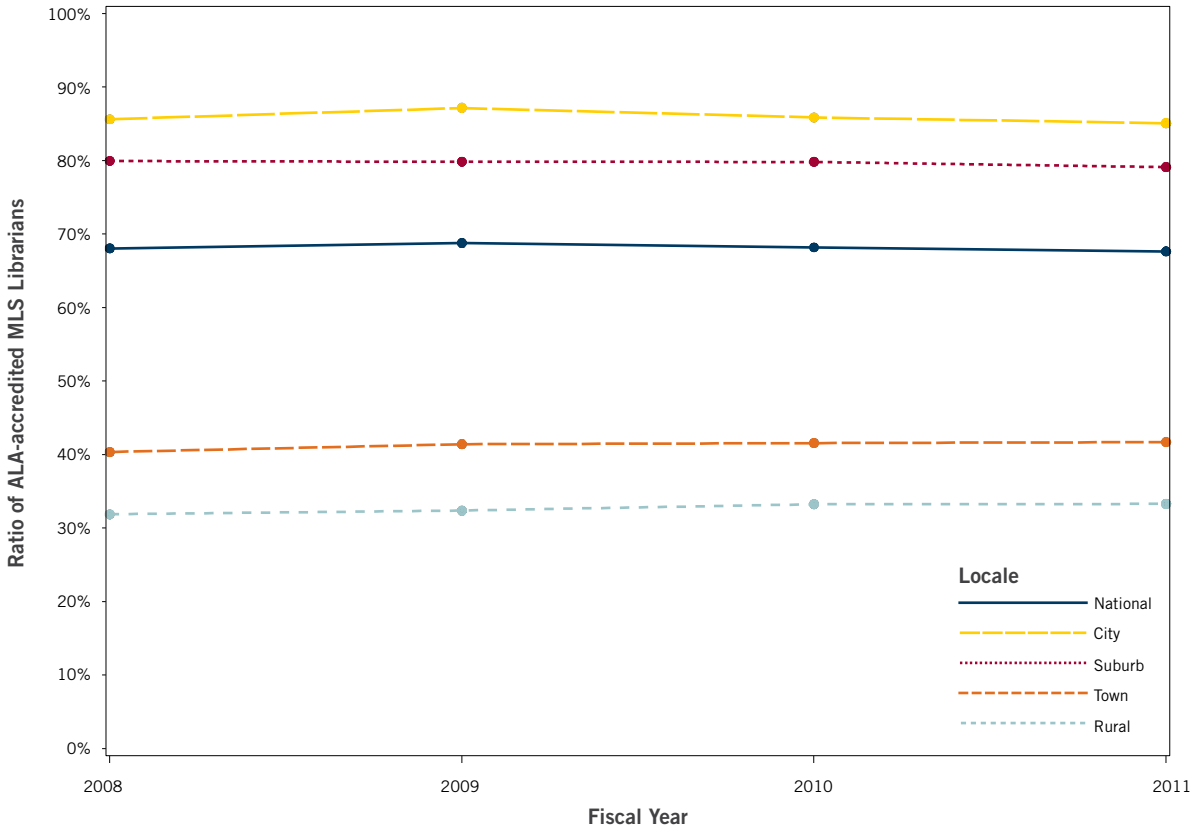
The distribution of ALA-MLS accredited librarians varies across locale. These highly educated professionals are more likely to live in well-populated areas, such as cities and suburbs.

Although two-thirds of public librarians have an ALA accredited MLS degree, only half (51.3 percent) of all public libraries have an ALA-MLS accredited librarian on staff, a 2.0 percent increase from FY 2010. The number of public libraries with ALA-MLS accredited librarians has increased over the past 10 years by 9.2 percent.

The distribution of libraries with ALA-MLS accredited librarians varies among locale (**Table 13-1**). Public libraries in more populated and urbanized areas are more likely to have ALA-MLS accredited librarian on staff. Virtually all public libraries in cities (99.0 percent) have an ALA-MLS accredited librarian, whereas only a one fourth of public libraries in rural areas (25.3 percent) have an ALA-MLS accredited librarian on staff.

By state, the number of public libraries with ALA-MLS accredited librarians greatly varies (**Figure 13-2**). In two states, Georgia and the District of Columbia, all librarians have ALA-MLS degrees. In contrast, other states

Figure 13-1: Ratio of ALA-Accredited MLS Librarians to All Librarians by Locality, FY 2008-2011



Source: Public Library Survey, FY 2008–2011, Institute of Museum and Library Services

[4] There are also regionally accredited MLS degrees, but these are not captured in the PLS.

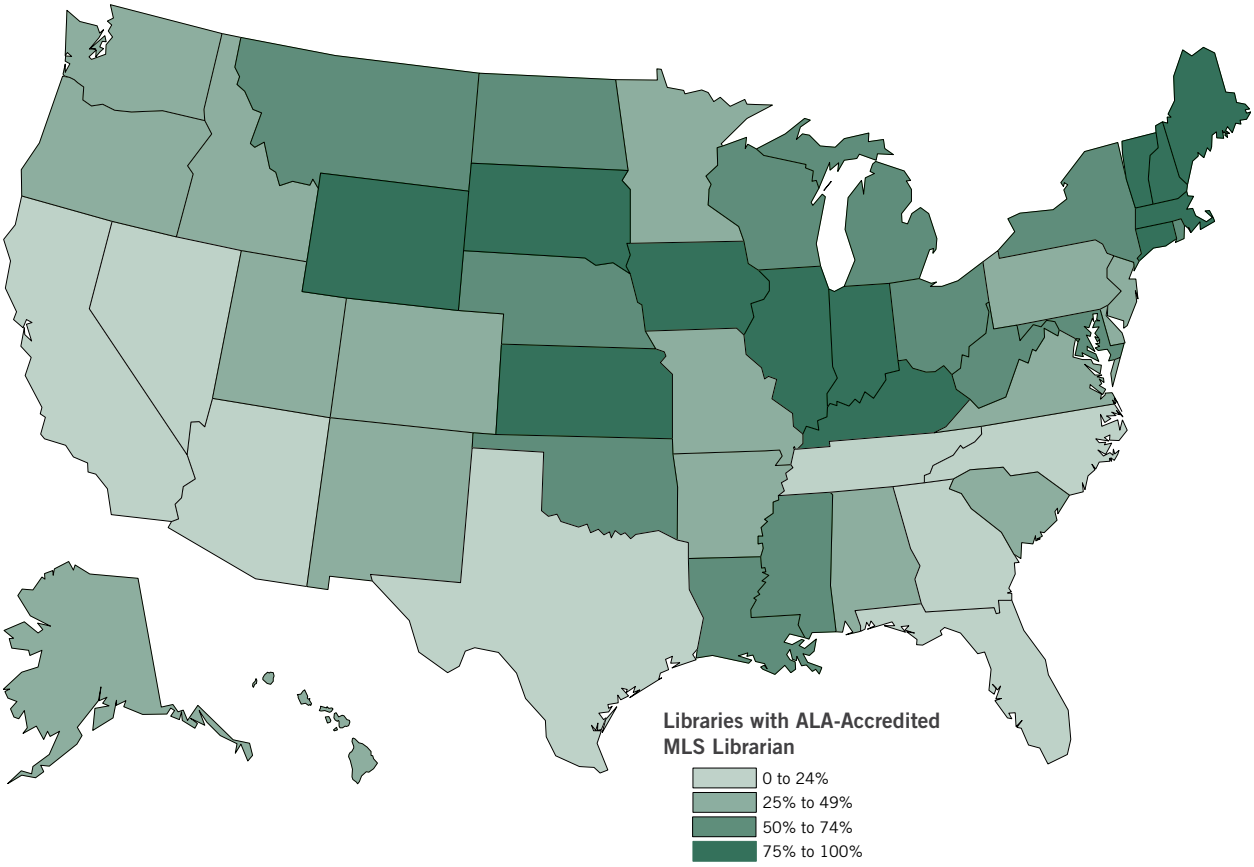
Table 13-1: Public Libraries with an ALA-MLS Accredited Librarian on Staff by Locality

Locale	Public libraries with an ALA MLS librarian	Percentage
City	478	99.0%
Suburb	1797	87.3%
Town	1257	56.5%
Rural	1059	25.3%
Total	4591	51.3%

have rates as low as 21.5 percent (Mississippi). These state differences appear to be concentrated in regions. The Far West (70.0 percent) and Mid-east (64.0 percent) experience high percentages of libraries with ALA-MLS accredited librarians, and the Plains (21.7 percent), Rocky Mountains (38.6%) and the Southwest (41.2%) exhibit low percentages.

There are several possible explanations for the differences across states regarding requirements for public libraries with ALA-MLS accredited librarian. One critical explanation is that state library administrative agencies have different standards with regards to librarian accreditation. In some states, such as Georgia, anyone holding the position of librarian must hold an ALA-MLS degree. A related reason may be a lack of access to ALA-accredited library and information studies (LIS) programs within some states. In other words, states with lower percentages of ALA-MLS accredited librarians may have few or no ALA-accredited LIS programs, creating a barrier to training. Another reason may be that it is easier to attract highly educated professionals, such as librarians with ALA-MLS degrees, to more urban areas, which could explain why cities and suburbs have higher rates. Finally, another barrier could be cost, since salaries for ALA-MLS librarians tend to be higher, even after adjustments for local cost of living.

Figure 13-2: Percentage of Libraries with ALA Accredited MLS Librarians by State, FY 2011



Source: Public Library Survey, Institute of Museum and Library Services

Public Libraries Survey: Appendix

Appendix A. About the Public Libraries Survey

Appendix B. Technical Notes

Appendix C. Estimates for Multilevel Models

Appendix A. About the Public Libraries Survey

About the Public Libraries Survey

The Public Libraries Survey (PLS) is a voluntary survey conducted annually by the Institute of Museum and Library Services (IMLS). IMLS collects these data under the mandate in the Museum and Library Services Act of 2010 as stated in Section 210. The U.S. Census Bureau is the data collection agent for IMLS. The fiscal year (FY) 2011 survey is the 24th in the series.

Survey Purpose and Data Items Included in This Report

The PLS provides a national census of public libraries and their public service outlets (see *Key Library Terminology* below). These data are useful to federal, state, and local policymakers; library and public policy researchers; and the public, journalists, and others.

This report provides summary information about public libraries in the 50 states and the District of Columbia for state FY 2011.[1] It covers service measures such as number of uses (sessions) of public Internet computers, number of Internet computers used by the general public, reference transactions, interlibrary loans, circulation, library visits, children's program attendance, and circulation of children's materials. It also includes information about size of collection, staffing, operating revenue and expenditures, type of legal basis, and number and type of public library service outlets. This report is based on the final data file.

The PLS is designed as a universe survey. The survey frame consists of 9,291 public libraries (9,233 public libraries in the 50 states and the District of Columbia and 58 public libraries in the outlying areas of Guam, the Northern Mariana Islands, Puerto Rico and the Virgin Islands), as identified by state library agencies. Public libraries in one outlying area, American Samoa, are not included in the survey frame because their state library administrative agency has never responded to the request for participation in the survey.

The survey frame includes 291 public libraries that do not meet all the criteria in the FSCS Public Library Definition (see item 203 of the Administrative Entity definitions for the criteria). These libraries are included in the data files because they qualify as public libraries under state law. However, beginning with the FY 2011 report the 291 non-FSCS libraries are excluded from the tables for a total of 8,951 public libraries in the 50 states and the District of Columbia.

A total of 9,085 of the 9,291 public libraries in the survey frame responded to the FY 2011 PLS (including Guam, Puerto Rico, and the non-FSCS libraries), for a unit response rate of 97.8 percent. Item response rates are included in the tables in this report.[2] The data were submitted over the Internet via a web-based reporting system. (See Data Collection in Appendix B, Note 3, for more information.)

Congressional Authorization

Two separate laws cover the protection of the confidentiality of individually identifiable information collected by the Institute of Museum and Library Services—the Privacy Act of 1974 and the E-Government Act of 2002. The Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Institute of Museum and Library Services are prepared under the Treasury and General Government Appropriations Act for Fiscal Year 2001, Section 515(b).

IMLS collects this data as authorized by its congressional mandate, the Museum and Library Services Act of 2010, as stated in 20 U.S.C. Section 9108 (Policy research, analysis, data collection, and dissemination):

20 U.S.C. Section 9108. Policy research, analysis, data collection, and dissemination

(a) In general
The Director shall annually conduct policy research, analysis, and data collection to extend and improve the Nation's museum, library, and information services.

(b) Requirements
The policy research, analysis, and data collection shall be conducted in ongoing collaboration (as determined appropriate by the Director), and in consultation, with—**(1)** State library administrative agencies;
(2) National, State, and regional library and museum organizations;
(3) Other relevant agencies and organizations.

[1] The fiscal year reporting period varies among states and among local jurisdictions in some states. Please see *Reporting Period* in Appendix B, Note 3, for more information.

[2] The item response rates in the total line of the tables do not include the outlying areas or libraries that do not meet FSCS criteria.

(c) Objectives
The policy research, analysis, and data collection shall be used to—
(1) Identify national needs for and trends in museum, library, and information services;
(2) Measure and report on the impact and effectiveness of museum, library, and information services throughout the United States, including the impact of Federal programs authorized under this chapter;
(3) Identify best practices; and
(4) Develop plans to improve museum, library, and information services of the United States and to strengthen national, State, local, regional, and international communications and cooperative networks.

(d) Dissemination
Each year, the Director shall widely disseminate, as appropriate to accomplish the objectives under subsection (c), the results of the policy research, analysis, and data collection carried out under this section.

IMLS library survey activities will be designed to address high-priority library data needs; provide consistent, reliable, complete, and accurate indicators of the status and trends of state and public libraries; and report timely, useful, and high-quality data to the U.S. Congress, the States, other education policymakers, practitioners, data users, and the general public.

Key Library Terminology[3]

- **Public library.** A public library is an entity that is established under state enabling laws or regulations to serve a community, district, or region, and that provides at least the following: (1) an organized collection of printed or other library materials, or a combination thereof; (2) paid staff; (3) an established schedule in which services of the staff are available to the public; (4) the facilities necessary to support such a collection, staff, and schedule; and (5) is supported in whole or in part with public funds.
- **Administrative entity.** An administrative entity is the agency that is legally established under local or state law to provide public library service to the population of a local jurisdiction. The administrative entity may have a single public library service outlet, or it may have more than one public library service outlet (Note: In this report, the term public library means an administrative entity) .
- **Public library service outlet.** Public libraries can have one or more outlets that provide direct service to the public. The three types of public library service outlets included in this report are central library outlets, branch library outlets, and bookmobile outlets. Information on a fourth type of outlet, books-by-mail-only outlets, was collected but omitted from this report because these outlets are not open to the public. The four outlet types are defined in Appendix C in item 709 of the definitions. Table 3 reports data concerning public library service outlets.

Supplemental Tables

As a supplement to this report, IMLS has provided 80 tables to make available additional data about the findings in this report. These tables offer statistics at both the national and state level for variables presented in this report, as well as additional variables found in the PLS data files. Tables 1 through 1B provide overview data by state about the number of public libraries and population of legal service area. Tables 2 through 31 are in sets of two each. The base table in each set (Tables 2 through 31) displays data for the nation as a whole and for each of the 50states and the District of Columbia. The "A" table in each set displays the same data by 11 ranges of population of legal service area. Tables 30 through 33 include data about square footage. Tables A1 through A13 are state rankings on key variables. The supplemental tables are available only online: www.imls.gov/PLS.

Survey Questionnaire and Data Elements

The questionnaire for the PLS is developed in partnership between IMLS and its stakeholders in the library community, specifically the Library Statistics Working Group and the State Data Coordinators. The questionnaire used in the FY 2011 survey is published in the data documentation, *Data File Documentation: Public Libraries Survey: Fiscal year 2011* (IMLS-2013–PLS-02), available online at www.imls.gov/PLS. In addition to the survey, the data documentation provides definitions of items, including those used in this report.

[3] More detailed definitions of the terms used in this report can be found in the data documentation, IMLS publication IMLS-2012-PLS-01, *Data File Documentation: Public Libraries Survey: Fiscal Year 2010*. The data documentation is available for download from the IMLS website: www.imls.gov/PLS.

Appendix A. About the Public Libraries Survey

History of the Public Libraries Survey

In 1985, the National Center for Education Statistics (NCES) and the American Library Association (ALA) conducted a pilot project in 15 states to assess the feasibility of a federal-state cooperative program for the collection of public library data. The project was jointly funded by NCES and the U.S. Department of Education's former Library Programs (LP) office. In 1987, the project's final report recommended the development of a nationwide data collection system. The Hawkins-Stafford Elementary and Secondary School Improvement Amendments of 1988 (P.L. 100-297) charged NCES with developing a voluntary Federal-State Cooperative System (FSCS) for the annual collection of public library data.[4] To carry out this mandate, a task force was formed by NCES and the National Commission on Libraries and Information Science (NCLIS), and the FSCS was established in 1988.

The first survey report in this series, *Public Libraries in 50 States and the District of Columbia: 1989*, which included data from 8,699 public libraries in 50 states and the District of Columbia, was released by NCES in 1991. A data file and survey report have been released annually since then. The states have always submitted their data electronically, via customized personal computer survey software through FY 2004, and via a web-based application beginning in FY 2005.

On October 1, 2007 the survey was transferred from NCES to IMLS. The FY 2006 survey was collected by NCES and released by IMLS. The FY 2011 survey is the fifth PLS data collection and release by IMLS.

[4] This was superseded by the National Education Statistics Act of 1994 (P.L. 103-382) and, more recently, by the Education Sciences Reform Act of 2002.

Note 1. Commonly Used Measures

In this report we present statistics for metrics related to aspects of financial, operational, and service activities in public libraries in the United States. National level summaries of these metrics are presented for FY 2010, and 10-year trends are presented for many metrics from FY 2001 through FY 2010. Some data elements, such as the number of children's programs offered, were added to the survey more recently. For analyses of these metrics, changes were reported based on the fiscal year in which the data element was introduced. In the indicators, metrics are also broken out and presented by state, region or locality.

Per Capita

For long-term trends, statistics are often presented in per capita metrics, which controls for population growth and allows for standardized comparison of metrics over time. For this, we used the unduplicated population of the legal service area served by each public library.[5] In addition to analyses based on per-person in a public library's service area, trends in services are sometimes examined in terms of the number of visitors. By examining both per-capita and per-visit trends, we can see not only the role that public libraries play in their communities at-large, but also how people who come to public libraries use the resources available.

Locale

Federal agencies use a variety of ways to classify various community types. In this report, libraries were classified using a system of locale codes developed by the National Center for Education Statistics (NCES). Working with the U.S. Census Bureau, NCES revised these codes by using improved geocoding technology and the 2000 Office of Management and Budget (OMB) definitions of metro areas. Thus, the locale codes rely on proximity to an urbanized area, rather than population size and county boundaries.

Beginning with the FY 2008 data file, locale codes have been added to the outlet and administrative entity datasets for the PLS. Locale codes identify general characteristics about where a public library is situated. The codes allow users to quickly identify which library outlets and administrative entities are located in cities, suburbs, towns, or rural areas. The locale codes are based on an address's proximity to an urbanized area, defined as a densely settled core with densely settled surrounding areas.

The locale code system classifies a territory into four major categories: urban, suburban, town, and rural (**Table B-1-1**). Each category has three sub-categories. For urban and suburban areas, gradations are based on population size: large, medium, or small. Towns and rural areas are sub-categorized based on their distance from an urbanized area: fringe, distant, or remote. The coding methodology was developed by the Census Bureau as a way to identify the location of public schools for the Common Core of Data, a survey collected by NCES.

These locale codes provide a new way to analyze library services in the United States. By incorporating objective measures of rurality and urbanicity into the data files, researchers and practitioners can benchmark services in a fundamentally different way by basing comparisons on community attributes as well as the attributes of the libraries themselves. In other words, library services in rural remote areas can now be compared to library services in other rural remote areas within the same state or across the country by using a standardized rurality/urbanicity metric that is applied consistently to each library in the country. Once communities of interest have been selected, comparisons can be made to any data that are available in the PLS, whether they are related to aspects of finance, operations, or service.

As of FY 2008, each library outlet and administrative entity in the survey has been assigned one of the 12 locale codes. Starting with the FY 2009 survey data files, bookmobiles and books-by-mail only outlets were assigned locale codes. For the FY 2011 data file, all records were re-coded for geography.

Geographic Region

Analyses in this report are also presented by geographic region. The PLS uses the geographic regional classification developed by the Bureau of Economic Analysis (BEA). The classification is comprised of eight geographic regions: New England, Mid-East, Great Lakes, Plains, Southeast, Southwest, Rocky Mountains, and Far West (**Table B-1-2**).

Full Time Equivalent (FTE)

In analyses of the workforce, information on employment is classified according to full-time equivalent (FTE). FTE is a unit that measures the workload of an employed person. It is used to aid in comparisons of workload across contexts. An FTE of 1.0 indicates that the person is the

[5] Details about the unduplicated population can be found in the data documentation, *Data File Documentation: Public Libraries Survey: Fiscal year 2011* (IMLS-2013-PLS-02), available online at www.imls.gov/PLS.

equivalent to a full-time worker, usually 40 hours per week. An FTE of 0.5 indicate a person works half-time. So, if a library reports that they have 2.0 FTE, it may refer to 2 full-time employees or 4 part-time employees (each working approximately 20 hours per week).

Table B-1-1: Urban-Centric Locale Categories

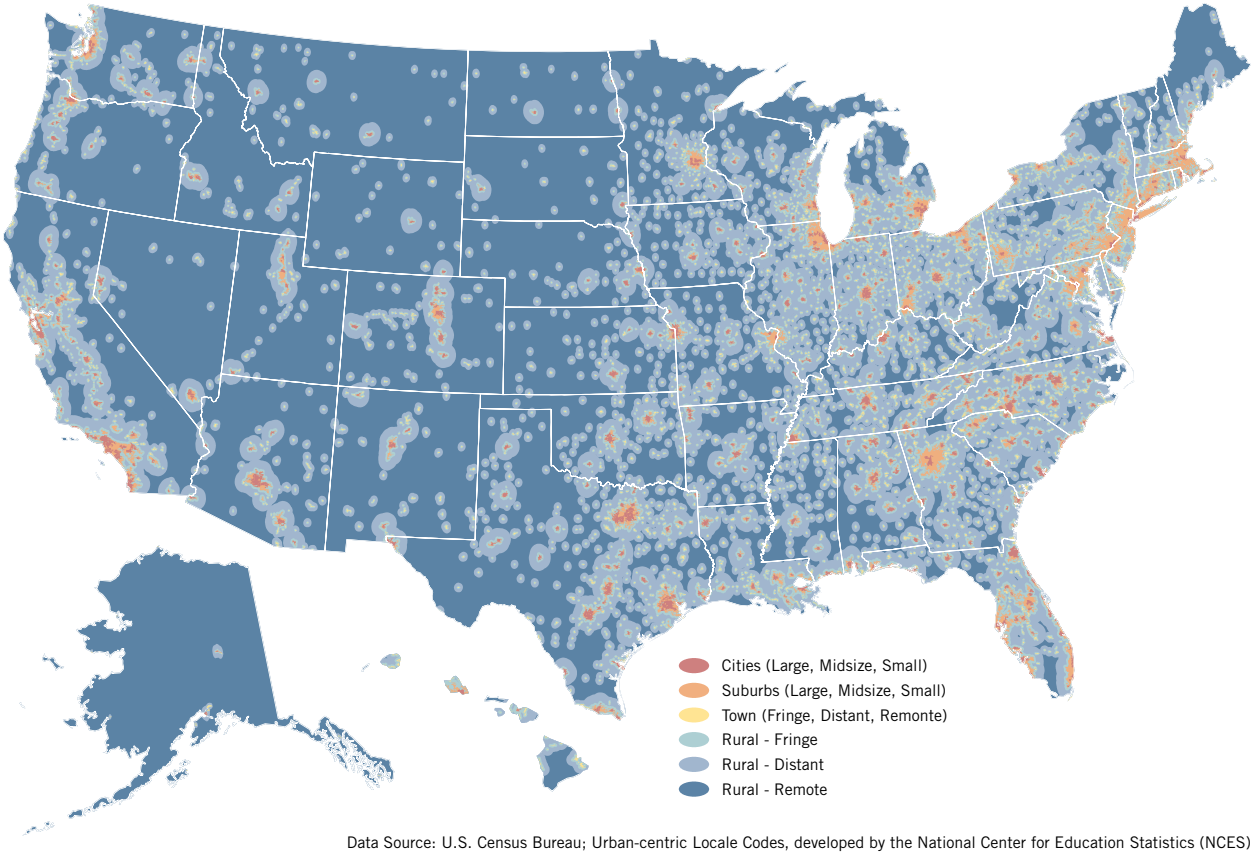
City
Large: Territory inside an urbanized area and inside a principal city with population of 250,000 or more
Midsize: Territory inside an urbanized area and inside a principal city with population less than 250,000 and greater than or equal to 100,000
Small: Territory inside an urbanized area and inside a principal city with population less than 100,000
Suburb
Large: Territory outside a principal city and inside an urbanized area with population of 250,000 or more
Midsize: Territory outside a principal city and inside an urbanized area with population less than 250,000 and greater than or equal to 100,000
Small: Territory outside a principal city and inside an urbanized area with population less than 100,000
Town
Fringe: Territory inside an urban cluster that is less than or equal to 10 miles from an urbanized area
Distant: Territory inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area
Remote: Territory inside an urban cluster that is more than 35 miles from an urbanized area
Rural
Fringe: Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster
Distant: Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster
Remote: Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster

Source: U.S. Department of Education, National Center for Education Statistics (NCES), Common Core of Data (CCD), Identification of Locale Codes, from http://nces.ed.gov/ccd/rural_locales.asp

Table B-1-2: Regional Designations Used in the PLS, from Bureau of Economic Analysis

Region	States
New England	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
Mid-East	Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania
Great Lakes	Illinois, Indiana, Michigan, Ohio, Wisconsin
Plains	Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota
Southeast	Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, West Virginia
Southwest	Arizona, New Mexico, Oklahoma, Texas
Rocky Mountains	Colorado, Idaho, Montana, Utah, Wyoming
Far West	Alaska, California, Hawaii, Nevada, Oregon, Washington
Outlying Areas	American Samoa, Guam, Northern Mariana Islands, Puerto Rico, Virgin Islands

Figure B-1-1: Locale Map: Rural, Town, Suburban and City Locales in the United States, FY 2012



Data Source: U.S. Census Bureau; Urban-centric Locale Codes, developed by the National Center for Education Statistics (NCES)

Note 2. Adjusting for Inflation: Financial Indicators and Calculations

For financial trends that report dollar amounts over time, such as 10-year revenue trends, metrics are presented in constant dollars. Constant dollars are an adjusted value of currency that accounts for inflation. We use this adjustment in order to compare monetary values from one period to another. For the present analyses, inflation was accounted for using a GDP (gross domestic product) deflator,[6] as shown in Equation 1.In general, a real value is one in which the effect of inflation have been taken into account, and a nominal value is one in which the effect have not. Thus, the Real GDP is the value of all the goods and services produced in the United States expressed relative to some base year, and the Nominal GDP is the value of the same goods and services expressed in current prices.

To calculate the value in constant dollars for a target year, multiply a value from a base year by a ratio of the GDP Deflators from the base year and the target year. For example, to calculate the amount of revenue from the year 2002 in 2011 constant dollars, multiply the original value of revenue in 2000 by the ratio of the deflators from year 2011 to 2002 (see Equation 2).

$$\text{GDP Deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \quad (1)$$

$$\text{Value}_{\text{constant2011dollars}} = \text{Value}_{2002} \times \frac{\text{Nominal Deflator 2011}}{\text{Nominal Deflator 2012}} \quad (2)$$

[6] Information on US GDP was obtained from the Bureau of Economic Analysis (www.bea.gov).

Note 3. Public Libraries in the United States Survey, FY 2011

Survey Universe

The PLS is designed as a universe survey. The survey frame consists of 9,291 public libraries (9,233 public libraries in the 50 states and the District of Columbia and 58 public libraries in the outlying areas of Guam, the Northern Mariana Islands, Puerto Rico and the Virgin Islands), as identified by state library agencies.[7] The survey frame includes 291 public libraries that do not meet all the criteria in the FSCS Public Library Definition (see item 203 of the Administrative Entity definitions for the criteria). The non-FSCS libraries were included in the imputation process for non-response. These libraries are included in the data files because they qualify as public libraries under state law. However, in the FY 2011 report the non-FSCS libraries are excluded from the tables for a total of 8,956 public libraries in the 50 states and the District of Columbia. Military libraries that provide public library service and libraries that serve residents of institutions are not included.

Survey Response

Unit response. A total of 9,085 of the 9,291 public libraries in the survey frame responded to the FY 2011 PLS (including Guam, Puerto Rico and the 291 non-FSCS libraries), for a unit response rate of 97.8 percent. Public libraries are defined as respondents if they reported: population of the legal service area and at least three of the five following items: total paid employees, total operating revenue, total operating expenditures, print materials, and total circulation (Note: Some individual survey items, such as population of legal service area, service outlets, and type of legal basis have a 100.0 percent response rate for their state because the state library agency provided these data for all public libraries in their state) .

Total response. The base for calculating response rates to individual survey items is the total number of libraries in the survey frame, including unit nonrespondents.

Data file and publication response rates. The total response rates on the data file differ from the total response rates in the published report because the nonresponding outlying areas of the Northern Mariana Islands and the Virgin Islands and the non-FSCS libraries are included on the data file, but are not included in the publication. The responding outlying areas of Guam and Puerto Rico are included in the data file. However, only Guam is included in the publication due to low response rates in Puerto Rico. The response rates for the outlying territories are not included in the national totals in the publication.

Reporting period. The FY 2011 PLS requested data for state fiscal year 2011. Most state fiscal years are either a calendar year or July-June. In some states, the FY reporting period varies among local jurisdictions. These states are listed in the *Other* column in **Table B-3-1**. Regardless, each public library provided data for a 12-month period. The FY starting date and ending date of *each* public library are included on the data file.

Calculations Included in the Tables

Percentages, rather than raw numbers, are used in some tables to provide a clearer picture of data patterns. Percentage distributions may not sum to 100 due to rounding. To obtain a raw number from a percentage distribution table, multiply the percentage for the item by the total for the item. (The total may be in a different table.) For example, in Table 5, the number of public libraries in the 50 states and the District of Columbia with municipal government as their legal basis is 4,717 (8,951 x 0.527). The percentages are rounded, so multiplying a percentage by a total may not give an exact count for a desired category.

Selected tables include *per capita* values for some items and *per 1,000 population*or *per 5,000 population* values for others (e.g., Tables 8 and 11). Scales (per capita, per 1,000, etc.) were selected to provide the clearest display of differences across categories in the data. The calculations are based on the total *unduplicated* population of legal service areas (instead of the total population of legal service areas) in order to eliminate duplicative reporting due to overlapping service areas. The state population estimate was not used as the basis for the calculations because some states have unserved populations. See *Population items* below for more information.

Questionnaire

The questionnaire used in the FY 2011 survey is published in the data documentation, *Data File Documentation: Public Libraries Survey: Fiscal year 2011* (IMLS-2013–PLS-02), available online at www.imls.gov/PLS. In addition to the survey, the data documentation provides definitions of items, including those used in this report. A few key survey items are discussed below.

[7] Public libraries in one outlying area, American Samoa, are not included in the survey frame because their state library agency has never responded to the request for participation in the survey. Because their public libraries have not been identified, they are not included in the response rate calculations.

Library visits and reference transactions. Public libraries reported annual library visits and annual reference transactions based on actual counts, if available. Otherwise, annual estimates were provided based on a typical week in October, multiplied by 52.

Population items. The PLS has three population items: (1) Population of Legal Service Area for each public library, (2) Total Unduplicated Population of Legal Service Areas for each state, and (3) State Total Population Estimate. The population data are provided by the state library agency. The methods of calculation of the first two items vary significantly among states, and the state reporting periods also vary. The Total Unduplicated Population of Legal Service Areas does not include unserved areas and may vary from data provided by sources using standard methodology (e.g., the Census Bureau).

The total Population of Legal Service Area for all public libraries in a state may exceed the state's Total Unduplicated Population of Legal Service Areas or the State Total Population Estimate. This happens in states where there are overlaps in population of legal service areas served by individual libraries, resulting in the same population being counted twice. Twenty-seven states had such overlapping service areas in FY 2011 (**Table B-3-2**).

To enable meaningful state comparisons using total Population of Legal Service Area data (for example, the number of print materials per capita), the Population of Legal Service Area data were adjusted to eliminate duplicative reporting due to overlapping service areas. The Public Library Data File includes a derived unduplicated population of legal service area figure for *each library* for this purpose (the variable is called POPU_UND). This value was prorated for each library by calculating the ratio of a library's Population of Legal Service Area to the state's total Population of Legal Service Area and applying the ratio to the state's Total Unduplicated Population of Legal Service Areas. (The latter item is a single, state-reported figure found on the Public Library State Summary/State Characteristics Data File; the variable is called POPU_UND on this file also.)

Paid Full-Time-Equivalent (FTE) Staff. Paid staff were reported in FTEs (Table 17). To ensure comparable data, 40 hours was set as the measure of full-time employment (for example, 60 hours per week of part-time work by employees in a staff category divided by the 40-hour measure equals 1.50 FTEs). FTE data were reported to two decimal places (rounded to one decimal place in the tables).

Data Collection

The FY 2011 PLS was released to the states over the Internet on December 20, 2011. States were placed into one of three reporting groups (with survey due dates of April 11, August 1, or August 22, 2012), based on their fiscal cycles or claim of extraordinary reporting hardship. States reported their data over the Internet via a web-based reporting system called WebPLUS (Web Public Library Universe System). WebPLUS was developed by the Census Bureau (the data collection agent). Edit follow-up was completed in November of 2012. The editing process is described below.

Caveats for Using the Data

The data include imputations, at the unit and item levels, for nonresponding libraries. See the *Imputation* section for a discussion of the imputation methodology. Comparisons to data prior to FY1992 should be made with caution, as earlier data do not include imputations for nonresponse, and the percentage of libraries responding to a given item varied widely among the states.

State data comparisons should be made with caution because of differences in reporting periods (see Table B-3-1) and adherence to survey definitions. The definitions used by some states in collecting data from their public libraries may not be consistent with the PLS definitions.

The District of Columbia, while not a state, is included in this report. Special care should be used in comparing data for a city to state data. Caution should also be used in comparing Hawaii's data to other states as all public library data are reported under one entity, the Hawaii State Public Library System.

Editing

State level. The respondent generates an edit report following direct data entry or import of their data into WebPLUS. The edit report, which can be viewed on-screen or printed, is used to identify and correct any errors, and to confirm the accuracy of data that generated edit warnings but required no change, before submitting the final file to the Census Bureau. In the FY 2011 PLS, four types of edit checks were performed:

1. *Relational edit checks.*
2. *Out-of-range edit checks.*
3. *Arithmetic edit checks.*
4. *Blank, zero, or invalid data edit checks.*

For more information on edit checks, see the *PLS FY 2011 Data Documentation*.

The WebPLUS application generates state summary tables (showing state totals for all numeric data items) and single-library tables (showing data for individual public libraries in a state). State item response tables are also generated. Respondents were encouraged to review the tables for data quality issues before submitting their data to IMLS. State data submissions also included a signed form from the Chief Officer of the State Library Agency certifying the accuracy of the data.

National level. The Census Bureau and IMLS reviewed and edited the state data submissions, working closely with the PLS State Data Coordinators.

Imputation

Imputation is a procedure for estimating a value for a specific data item where the response is missing. This section describes the imputation methods that were used to fill in the missing data items for the FY 2011 survey year. A total of 51 items were imputed.

The responding and nonresponding libraries were sorted into imputation cells based on OBE region code (Bureau of Economic Analysis region code, formerly Office of Business Economics) and the size of the population. Each state is assigned an OBE region code (e.g., 01-New England (CT ME MA NH RI VT)). The cumulative root frequency method[8] was used to determine the imputation cells.

The imputation for nonresponding libraries was performed using the data calculated from respondents in their imputation cells. Item imputation was performed on each record with nonresponsive variables. Following are descriptions of each imputation method used for the Public Libraries Survey (PLS).

Imputations were performed in two stages. In the first stage, imputations were carried out for nearly all missing values using the following methods: prior year times mean growth rate, adjusted cell mean, cell mean, prior year ratio, cell median ratio, direct substitution of prior year data, cell median, and special imputations. In the second stage, imputed values are adjusted for some missing values (based on the variable) using the following methods: obtained value by relationship of total to detail items, raking, special imputations, and consistency checks.

Nonsampling Errors

Because all units in the universe are surveyed, the data are not subject to sampling error, but they are subject to nonsampling errors, such as errors in response, nonresponse errors, coverage errors arising from an incomplete listing of public libraries, coding errors, or processing errors.

Every effort is made to mitigate such errors. The editing efforts described above are designed to decrease the number of errors due to inaccurate response or due to processing problems. Imputation lessens the effect of nonresponse. Efforts are made to obtain complete listings of public libraries from the state library agencies. Although such efforts are made, some nonsampling error likely remains in the data.

Note: Errors in response to the audio and video downloadables data were confirmed by some states. The data were incorrectly reported as ‘units’ instead of ‘titles’. The incorrect data for these states were deleted from the data files.

[8] For more information on cumulative root frequency method, see Cochran, W. (1977) *Sampling Techniques, 3rd edition*. John Wiley & Sons, Inc.

Table B-3-1: Reporting Periods of Public Libraries: Fiscal Year 2011

July 2010 through June 2011	January 2011 through December 2011	Other[1]
Arizona	Arkansas	Alabama[2]
California	Colorado	Alaska[3]
Connecticut	Indiana	District of Columbia[2]
Delaware	Kansas	Florida[2]
Georgia	Louisiana	Idaho[2]
Hawaii	Minnesota	Illinois[11]
Iowa	North Dakota	Maine[5]
Kentucky	New Jersey	Michigan[6]
Maryland	Ohio	Mississippi[2]
Massachusetts	South Dakota	Missouri[7]
Montana	Washington	Nebraska[4]
Nevada	Wisconsin	New Hampshire[8]
New Mexico	Puerto Rico	New York[9]
North Carolina		Pennsylvania[8]
Oklahoma		Texas[10]
Oregon		Utah[8]
Rhode Island		Vermont[4]
South Carolina		Guam[2]
Tennessee		
Virginia		
West Virginia		
Wyoming		

[1] The reporting period varies among localities for the states in this column; however, each public library provided data for a 12-month period.
[2] October 2010 to September 2011.
[3] January 2010 to June 2011.
[4] January 2010 to December 2011.
[5] April 2010 to December 2011.
[6] December 2009 to September 2011.
[7] October 2009 to December 2011.
[8] July 2010 to December 2011.
[9] March 2010 to December 2011.
[10] February 2010 to December 2011.
[11] October 2009 to June 2011.

Source: Institute of Museum and Library Services, Survey of Public Libraries in the United States, Fiscal Year 2011.

Table B-3-2. States with Public Libraries with Overlapping Service Areas: Fiscal Year 2011

Arkansas	Massachusetts	Pennsylvania
Arizona	Michigan	Rhode Island
California	Minnesota	South Dakota
Colorado	Mississippi	Tennessee
Connecticut	Montana	Texas
Florida	Nebraska	Utah
Iowa	New Hampshire	Vermont
Indiana	New Jersey	Virginia
Louisiana	New York	Puerto Rico
Maine	Ohio	

Source: Institute of Museum and Library Services, Survey of Public Libraries in the United States, Fiscal Year 2011.

Appendix C. Estimates for Multilevel Models of Public Library Use

We used multilevel models to examine the relationship between public library use and the resource investments made into libraries. **Multilevel models**, also called nested or hierarchical models, are appropriate when data are organized at more than one level. The unit of analysis, such as libraries (at the lower level) is nested within a contextual or aggregate unit, such as a state (at a higher level). Because units at the lower-level are clustered into groups at the higher-level, it is important to account for this clustering of data. For example, because of state-level factors that affect funding and policies, libraries in one state are more alike each other than they are to libraries in another state. Multilevel models adjust the model estimates to account for the similarities within groups.

For these analyses, we examined how libraries changed over time, an approach called **growth modeling**. In multilevel growth modeling, time is at the lower-level and the entity is at the higher-level.The Public Libraries Survey (PLS) provides data from individual libraries for multiple years. For example, the PLS contains data reported on visitation, circulation, and revenue for DC Public Libraryfor each of the 10 years between Fiscal Years 2002 and 2011. In the growth models reported in this report, time is nested in libraries. For each model equation, there were 10 measurements of the outcome, public library use, one for each year included in the model (FY 2002 to 2011). In the growth model, time (the year) is the predictor. For each library and each year, there is a measure of public library use, such as visitation. Looking at no other predictor than the passage of time, we observed changes in visitation. In the analysis, the change is estimated for each library, and the pattern of change for each library is averaged across all libraries, resulting in an estimate which describes the general pattern of how use has changed over time for libraries in general. Although some libraries may have seen more or less change, the model provides a picture of the overall change.

When estimating the models, a separate model is estimated for each library to examine change in the outcome over time. Thus, each library has a slope that describes the trajectory of the change over time. Then that slope is averaged across all libraries, resulting in an overall estimated slope that describes the change in time for all libraries—an average slope based on the average slopes for each library.

Although time is a key predictor to examine change in each of the measures of public library use, we also examined the effect of public library investments, such as revenue and programs, on use. For this, we were benefited by the repeated collection of data. For each year, we had not only a measure of the outcome of use, but also measures for investments, such as revenue, staff, and the number of programs. Because these predictors also changed over time, we put them into the model equations as time-varying predictors. Thus, we empirically examined whether, as investments increased or decreased over time, library use also increased or decreased.

When looking at the tables of results below, there are a few terms of interest. The results of a multilevel analysis include a parameter coefficient (also called an estimate), which indicates the direction and magnitude of the relationship of investment to use. For example, in Table C-1 below, the coefficient for time is 2750.3; for each year from FY 2002 to 2011, holding every other predictor constant, there was an increase in physical visitation to libraries of 2750.3 visits. To aid in interpretation, time is centered at FY 2011. Thus, the intercept can be interpreted as the visitation in FY 2011, holding all other variables constant.

We estimated four multilevel growth models for different measures of public library use: visitation, circulation, attendance at programs, and uses of public-access computers. For each metric, we estimated an unconditional growth model to examine change in the outcome variable over time.Then, we estimated a conditional growth model, in which we included not only time, but also several measures of public library investment: revenue, the total number of staff, the number of print materials (book volume), the number of eBooks, the number of programs, and the number of public-access computers.

Visitation: Physical Visitation to Public Libraries

In the unconditional model, there was a significant positive linear trend and a significant negative quadratic trend. This indicates that overall there is an upward trend, but there was a change in the direction. For most libraries, this changed occurred after FY 2009.

The amount libraries spent on electronic materials was a significant negative predictor, indicating that the more a library spent on electronic materials, such as e-books, the lower the physical visitation. In many ways, this might be as expected as those factors that increase visitation. This is a metric of physical visitation. However, with the increased proliferation of digital media and devices, more and more people are beginning to visit their public libraries not only in person, but also virtually. As

libraries invest more money into building their electronic collections, patrons are able to complete whole transactions, from finding, checking out, and returning an e-book to paying overdue fines, without stepping foot into a physical building.

Finally, although the post-recessionary downturn in visitation was significant, the effect was better explained by the changes in the resources and investments, rather than simply the passage of time. Although some of these resources – public-access computers, e-books, and the number of programs – have continued to increase in availability, other critical resources, such as staffing and revenue, have declined. Once these predictors were entered into the model, the quadratic effect of time was no longer significant.

Table C-1: Estimates for Change in Physical Visitation to Public Libraries

	Estimate	Standard Error	*p*-value
Unconditional Model			
Fixed Effects:			
Intercept	174019.0	6155.14	< .0001
Time	2750.3	469.33	< .0001
$Time^2$	-177.4	50.23	.0004
Conditional Model			
Fixed Effects:			
Intercept	-13233.0	3754.65	.0004
Time	7.2	576.39	.9900
$Time^2$	-93.1	79.92	.2443
Revenue, in thousands (adj.)	18.8	0.58	< .0001
Book Volume, in hundreds	18.5	0.72	< .0001
E-Book Volume, in hundreds	34.2	10.74	.0015
Number of Internet PCs	1688.6	19.64	< .0001
Total number of Programs offered	38.2	19.64	< .0001
Total number of Staff	3371.8	51.44	< .0001
Expenditures on Electronic Materials, in thousands	-41.3	10.31	< .0001
Hours Open per week	716.9	73.99	< .0001
Random Effects:			
Library	3.64×10^{10}	6.22×10^{8}	< .0001
Year	8.82×10^{9}	51836861	< .0001

Change in fit from unconditional linear growth model (change of conditional minus unconditional):
Change in -2LL = -564268; Change in AIC = -564254
ICC (Intraclass correlation) = .224

Circulation: Total circulation

Circulation is another important metric for public library usage. In the PLS, circulation measures the total number of materials of all formats that have been checked out for use outside of the library. Across public libraries, there was a significant increase in circulation over the past 10 years. Circulation was positively related total number of visits, revenue, book volume, e-books, number of programs, and number of public-access computers. It was also positively related to total number of staff FTE, but the estimate for this predictor changed to negative once other predictors were entered into the model, suggesting that the variance explained by staffing was also explained by another, similarly related predictor.Overall, the finding that the predictors were positively related means that as the investment in each of these resources increased, so did physical visitation to public libraries.

In FY 2011 public libraries circulated 841.2 million children's materials, overall accounting for 34.5 percent of all circulated materials. Circulation of children's materials has significantly increased over the past 10 years (23.5 percent). Circulation of children's materials was also positively related to the number of children's programs offered, indicating that libraries that offered more children's programs also circulated more children's materials.

Table C-2: Estimates for Change in Total Circulation of Materials

	Estimate	Standard Error	*p*-value
Unconditional Model			
Fixed Effects:			
Intercept	273925.0	9927.93	< .0001
Time	7586.6	189.64	< .0001
Conditional Model			
Fixed Effects:			
Intercept	26813.0	4794.59	< .0001
Time	-701.6	199.30	.0004
Visits	0.6	0.01	< .0001
Revenue, in thousands (adj.)	17.7	0.72	< .0001
Book Volume, in hundreds	7.9	1.02	< .0001
E-Book Volume, in hundreds	345.0	13.07	< .0001
Number of Internet PCs	2712.6	25.54	< .0001
Total number of Programs offered	61.2	1.05	< .0001
Total number of Staff	-283.0	66.05	< .0001
Random Effects:			
Library	1.93×10^{11}	3.06×10^{9}	< .0001
Year	1.26×10^{10}	73643137	< .0001

Change in fit from unconditional linear growth model (change of conditional minus unconditional):
Change in -2LL = -600150; Change in AIC = -600086

PC Usage: Uses of Public-Access Internet Computers

Internet computer access is one of the many valuable resources public libraries provide. The PLS provides a metric for the use of this specific resource: the number of **uses of public-access Internet computers**. Across all libraries, there were 341.5 million uses of public-access computers at public libraries in FY 2011, a significant decrease of 7.2 percent since FY 2006.[9] Adjusting separately for service population and visitation, public libraries reported 1.1 PC uses per capita and 223.9 PC uses per 1,000 visits.

Use of public-access PCs at public libraries was predicted by the number of public-access internet PCs, library visitation, attendance at library programs, and total number of library staff. As each of these increases, so does PC usage. Use of public-access computers implies that people are at the library to use them, so visitation is a necessary predictor of PC use. Similarly, the number of computers is also positively related to their use – as the availability increases, so does their use. The use of public access computers is also positively related to attendance at library programs. People may come to the library for a program, and then use the computers afterward, or even come to the library for a computing-focused program. Finally, as digital information resources have increased and computing devices have become ubiquitous, library professionals have kept pace. People come to public libraries not only to use computers, but to learn more about how to use their devices and to improve their information search skills.

Table C-3: Estimates for Change in the Uses of Public-Access Computers

	Estimate	Standard Error	*p*-value
Unconditional Model			
Fixed Effects:			
Intercept	38367.0	1795.09	< .0001
Time	-2063.40	747.29	.0058
Time^2	-464.8	143.47	.0012
Conditional Model			
Fixed Effects:			
Intercept	-4310.0	957.48	< .0001
Time	-2038.9	750.82	.0066
Time^2	-222.7	144.05	.1221
Visits, hundreds	13.6	0.27	< .0001
Number of Internet PCs	473.9	14.76	< .0001
Total number of Staff	374.3	27.56	< .0001
Random Effects:			
Library	2.17×10^9	50791753	< .0001
Year	6.91×10^9	46364402	< .0001

Change in fit from unconditional linear growth model (change of conditional minus unconditional):
Change in -2LL = -17715; Change in AIC = -17707

[9] FY 2006 was the first year this metric was collected on the PLS.

Program Attendance: Total Attendance at Library Programs

Public libraries offer a wide variety of programs for audiences of all ages. Library programs include book clubs, computer classes, tax assistance, parenting workshops, career coaching, e-book workshops and more. These programs may be taught by library staff, local volunteers, or by staff from local community organizations or public agencies. In FY 2011, public libraries offered 3.8 million programs, which is equivalent to 10,400 a day—every day of the year. This figure represents a 7-year increase of 46.7 percent. These programs were attended by 89.0 million people, an increase of 32.3 percent since FY 2004. Most of these programs (60.5 percent) were targeted to children, such as summer reading and after-school programs. Although there were many differences across libraries, there were also similarities.

Attendance at library programs was predicted by the number of programs offered, the number of public-access computers, total number of staff, and revenue. As expected, the more programs a library offered, the more people came to those programs. Increases in other resource investments—computers and staff—also predicted an increase in program attendance.

Table C-4: Estimates for Change in Attendance at Library Programs

	Estimate	Standard Error	*p*-value
Unconditional Model			
Fixed Effects:			
Intercept	9996.2	304.89	< .0001
Time	327.57	12.35	< .0001
Conditional Model			
Fixed Effects:			
Intercept	1542.1	107.97	< .0001
Time	70.0	9.97	< .0001
Revenue, in thousands (adj.)	0.9	0.03	< .0001
Number of Internet PCs	52.4	1.13	< .0001
Total number of Programs offered	10.0	0.05	< .0001
Total number of Staff	95.2	2.92	< .0001
Random Effects:			
Library	83876140	112.55	< .0001
Year	33047090	191894	< .0001

Change in fit from unconditional linear growth model (change of conditional minus unconditional):
Change in -2LL = -87644; Change in AIC = -87636

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