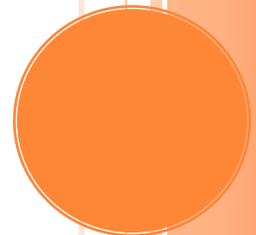# THE NORTH CAROLINA LIBRARY EDGE INITIATIVE

Statewide assessment results, 2014

Keeping up with our communities' needs for access to technology is becoming increasingly difficult for our public libraries in today's economic environment. The Edge Initiative provided the technology assessments, plans for action, and tools of persuasion to North Carolina's public libraries in early 2014. The results outlined in this report showed us where our libraries are in three categories: Community Value, Community Engagement, and Organizational Management.

Prepared by: Joyce Chapman

7/10/2014

Introduction

Keeping up with our communities' needs for access to technology is becoming increasingly difficult for our public libraries in today's economic environment.   We're seeing reductions in library staff and services hours despite evidence that our communities need us, and use us, more than ever for things like job searching, resume writing, and education.   Public libraries need a way to determine where they are in terms of public access to technology, where they want to be in the future, and how to persuade their funders to help them get there.

The Edge Initiative provided the technology assessments, plans for action, and tools of persuasion to North Carolina's public libraries in early 2014.   Seventy five of 80 libraries participated. The results outlined in this report showed us where our libraries are in three strategic areas: Community Value, Community Engagement, and Organizational Management. The results also show a particular statewide need for improvement in strategy and evaluation, devices and bandwidth, and technology inclusiveness.

For the 75 NC libraries participating in the Edge Initiative, the assessment is only the beginning of a process that may take years to complete. Using tools like the Edge Initiative we can better analyze the technology services we are providing to users, identify gaps, create action plans to target unmet needs, and strengthen the role our libraries play in supporting the technology needs of our communities. The results are in. The real work is ahead of us!

North Carolina's 2014 Library Edge Initiative

As of June 1 2014, 94% (75 of 80) of North Carolina public libraries had completed the Library Edge assessment, part of the Edge Initiative developed by a national coalition of library and local government organizations, led by the Urban Libraries Council, and funded by the Bill and Melinda

Distribution of total Edge scores

Figure 1

Gates Foundation. The Edge Initiative is a suite of tools, including an initial assessment, which supports libraries in making strategic decisions and identifying areas for improvement around library technology and digital literacy.[1] North Carolina was one of seven states that piloted the tool in 2013. When the tool was opened to the public in 2014, the State Library encouraged all North Carolina libraries to participate with the hopes that resulting data would show areas of need that the State Library could address with statewide programs or assistance.
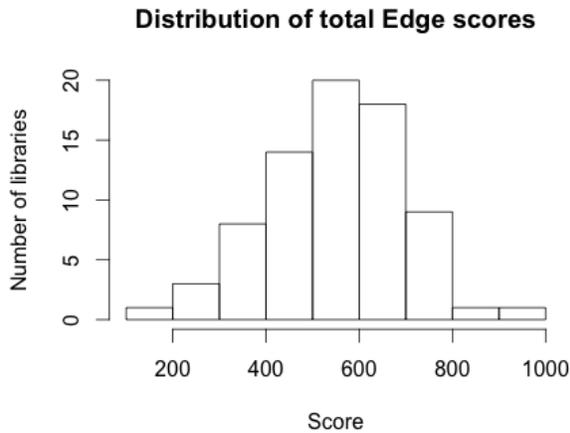
Statewide scores for North Carolina in the three strategic areas[2] set out by Edge are shown in Figure 2. We received the highest score in *Community value*, an analysis of how libraries provide programs and services that enable the community to get value from the use of technology. The second

2014 NC Edge Assessment
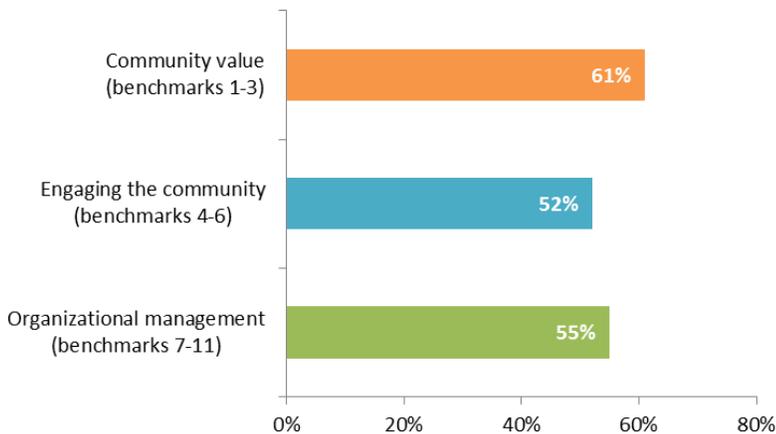**Statewide scores in strategic areas**
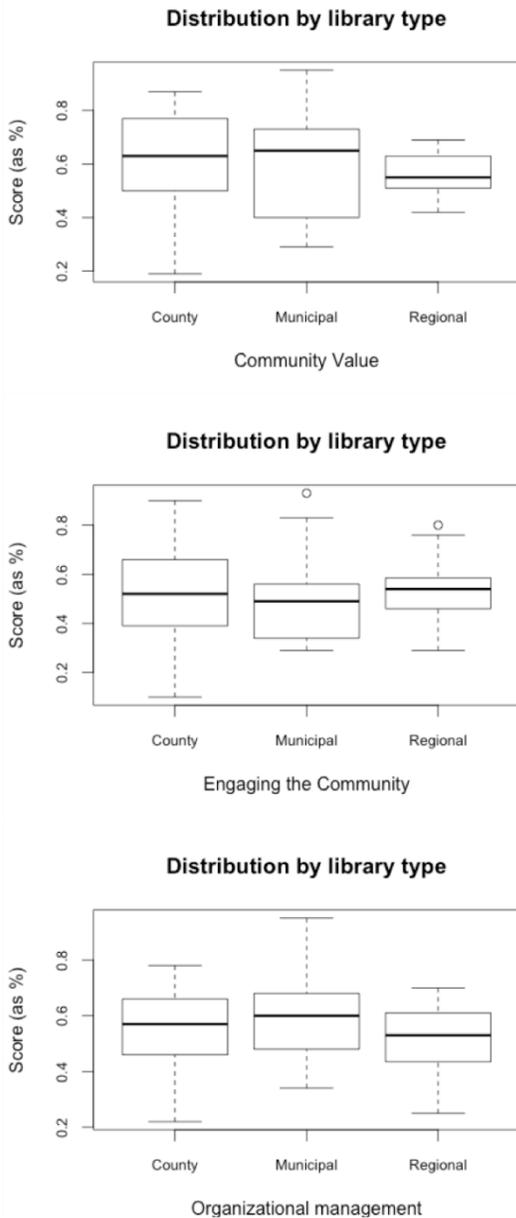
Figure 2

highest scoring area, *Organizational management*, is an analysis of how libraries integrate public access technology into planning and policies. We were weakest in the area of *Engaging the community,* an analysis of involvement in the community that allows libraries to gather feedback on technology needs from a variety of stakeholders and leverage this information to align their digital technologies offerings and goals with the needs of their communities.

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[1] For more information, see http://www.libraryedge.org/
[2] These three strategic areas parallel the three categories of the North Carolina Public Library Standards

Figure 1 shows the distribution of libraries' total scores out of 1,000. We can see that there is an extremely large range of scores among the libraries: from those achieving only 10-20% of possible points to those achieving above 90% of possible points. To uncover factors that may influence libraries' high or low scores in various areas, distribution was analyzed by library type (Figure 3) using boxplots.[3]

Distribution by library type

Analyzing *Community value* scores by library type shows us that Regional libraries' scores in particular were clustered quite closely, and none of the libraries had extremely low or high scores. Regional libraries actually have the smallest range for all three strategic areas, though this is most pronounced for *Community value*. County libraries and Municipal libraries still show a huge range of scores, but this range is particularly pronounced in the lowest-scoring 50% of libraries.

Analysis of *Engaging the community* scores by library type again shows a huge range particularly for county libraries. County libraries struggle more than other types of libraries in this strategic area, as shown by the first quartile.

Analysis of *Organizational management* by library type shows that municipal libraries scored better overall than other types of libraries, though the interquartile range for all libraries types were fairly close in value (meaning the middle 50% of libraries in each category did about as well as those in the other categories).

Figure 3

Figure 4 contains a breakdown of statewide scores for each of the eleven benchmarks. The three benchmarks for which we received the lowest statewide scores were *4. Strategy & Evaluation, 9. Devices & Bandwidth,* and *11. Technology Inclusiveness*. The three benchmarks for which we received the highest statewide scores were 2. *Digital Tools & Resources, 8. Staff Expertise,* and *10. Technology Management.*

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[3] How to read a boxplot: http://flowingdata.com/2008/02/15/how-to-read-and-use-a-box-and-whisker-plot/

2014 North Carolina Edge Assessment
North Carolina statewide Edge scores

Community value: benchmarks 1-3
Engaging the community: benchmarks 4-6
Organizational management: benchmarks 7-11

Figure 4

For each benchmark, libraries assessed themselves against a number of "indicators," and each indicator contained a number of "attributes," or questions to which the library responded. The four answer choices for each attribute are:

- "Yes" (meaning the library is currently providing the service or technology in question)
- "No, but plan to do so in the next year"
- "No, would like to but cannot at this time"
- "No, we have no plans to do so at this time"

Analysis by strategic area

Community Value

Statewide, North Carolina achieved 61% of possible points in *Community value*. Out of the three strategic areas, our state performed the best in this category. The distribution of the 75 libraries' scores is shown in Figure 5. There are three benchmarks in *Community value*, and our performance statewide in each of these benchmarks is shown in Figure 6.
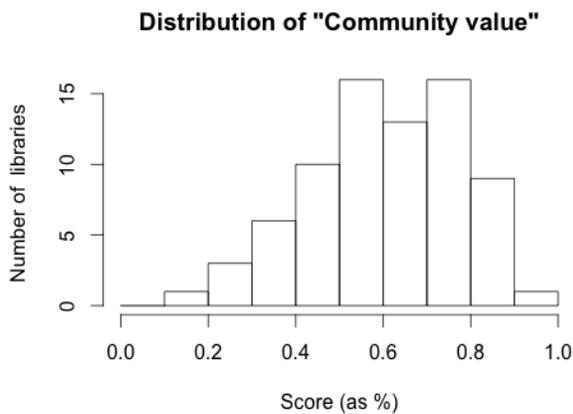
Distribution of "Community value"

Figure 5

Benchmark 3 — Digital literacy — 58%

Benchmark 2 — Digital tools & resources — 64%

Benchmark 1 — Meeting key community needs — 60%

Figure 6

Benchmark 1. Digital literacy

Statewide, North Carolina achieved 60% of possible points for benchmark 1. For indicator 1.1, *The library has curricula for and provides regularly scheduled digital literacy training,* the state achieved a somewhat low score of 52%. The indicator asks whether libraries are teaching classes in seven key areas. A full 72% of libraries currently teach classes in at least one location in basic computer skills (the highest of scores among class topics taught). 61% teach classes in Microsoft office software and Internet searching, and 59% offer in-person training for patron-owned devices. On the lower end of the scale, only 12% of all libraries are teaching technology classes in a language other than English. Only 25% of libraries are teaching classes

Benchmark 1, scores by indicator

52% — Indicator 1.1. Provides regular digital literacy training in 7 areas

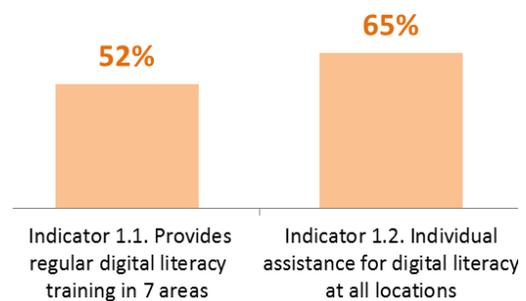65% — Indicator 1.2. Individual assistance for digital literacy at all locations

Figure 7

in multi-media (e.g., Photoshop, video editing), though 36% more would like to in the future. Only 32% teach digital literacy classes on privacy and security.

For indicator 1.2, *The library provides individual assistance for digital literacy at all locations,* the state fared better, receiving 65% of possible points. On the high end, 81% of libraries are already offering one-on-one technology help for patrons on-demand for at least 10 minute sessions at all locations, as well as providing one-on-one help on-demand or by appointment for patron-owned devices in at least one location. The state fared poorest in offering one-on-one technology help in languages other than English: only 20% of libraries offer such services,[4] and many (43%) have no plans to offer such services.

Benchmark 2. Digital tools/ resources

Statewide, North Carolina achieved 64% of possible points. For indicator 2.1, *The library supports the creation of digital content on public access computers,* the state achieved 59% of possible points. Notably, 99% of libraries allow patrons to retrieve data from and store data to portable devices while using public computers, and make office productivity software available at all locations. Only 25% of libraries make photo editing software available in at least 50% of locations, and only 20% make video/audio

Benchmark 2, scores by indicator

Figure 8

software available in at least one location. Only 5% currently make web development software (such as Dreamweaver) available; furthermore, 55% have no plans to make such software available in the future.
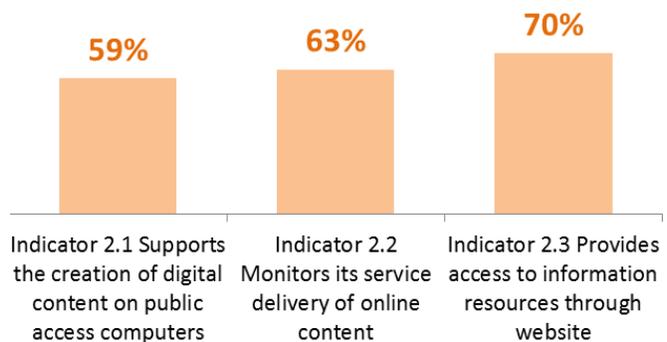
For indicator 2.2, *The library monitors its service delivery of online content*, the state achieved 63% of possible points. Between 60-70% of libraries check website links and update content monthly, and review web analytics and subscription content usage reports at least quarterly. Another 15-17% of libraries plan to begin doing these activities in the next year. 53% of our libraries perform a web content inventory annually.

For indicator 2.3, *The library provides access to information resources through its website,* the state achieved a very high score: 70% of possible points. We scored particularly high on two items: 88% provide ebooks to be downloaded through the library's website and 84% of libraries provide downloadable audiobooks.[5] Fewer than half of libraries (47%) select and organize online resources to help patrons learn digital literacy skills (e.g., how-to-guides and videos, tutorials, practice activities) or offer access to online interactive language learning tools. However, 25% of libraries plan to begin

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[4] We have not analyzed the percentage of non-English speaking populations in these libraries' service areas.

[5] 100% of NC libraries make ebooks and audiobooks available to patrons through NC LIVE. It is unclear how libraries responded to this question: some may have counted NC LIVE and some may not have because patrons must leave the library's website to access the NC LIVE ebooks.

selecting resources to teach digital literacy skills within the next year. 53% of libraries provide real-time reference services through twitter, IM, Skype, or texting.

Benchmark 3. Meeting key community needs

Statewide, North Carolina achieved 58% of possible points. Libraries scored particularly low in the area of offering classes on various topics.

Benchmark 3, scores by indicator
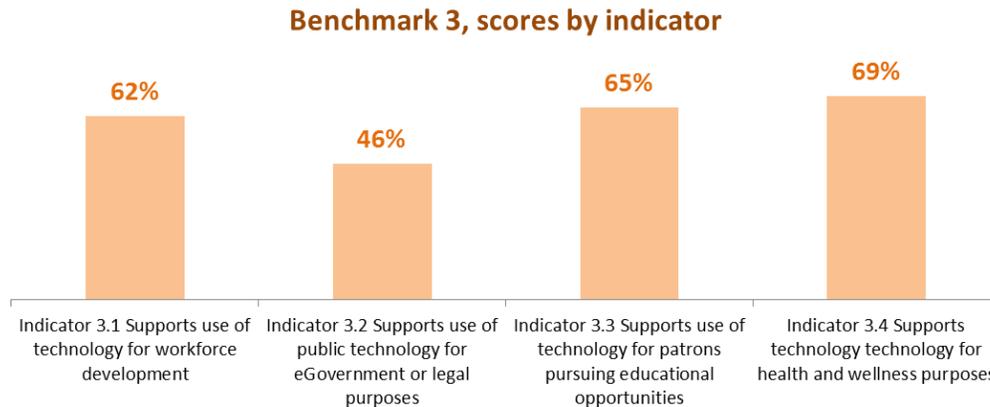
Figure 9

For indicator 3.1, *The library supports use of public technology for workforce development and entrepreneurship*, the state achieved 58% of possible points. All libraries offer access to online career testing preparation tools through NC LIVE, though only 92% of libraries reported that they have access to such tools. Additionally, 72% select and organize online resources for job seeking. Half of libraries report that they select/organize resources for small businesses, and only a third offer quarterly classes on job seeking and small business development (though an additional 37% would like to offer such classes but cannot at this time).

For indicator 3.2, *The library supports use of public technology for eGovernment or legal purposes,* the state achieved only 46% of possible points. Close to two-thirds of all libraries select and organize online links to eGovernment resources and offer access to electronic legal and law-related research information. Only 7% of libraries offer quarterly classes on navigating eGovernment resources; 44% would like to but are not able to.

For indicator 3.3, *The library supports use of public technology for patrons pursuing educational opportunities,* the state achieved 65% of possible points. All libraries have access to educational testing preparation through NC LIVE, though only 89% of libraries reported that they have access to such tools. 76% of libraries report they provide early literacy games/tablets and that they select and organize resources for homework help and research. Two-thirds of libraries provide proctoring of exams for online learners. Slightly less than half of our libraries provide resources on college selection and financial aid, and only 15% offer quarterly classes on navigating educational resources.

> "Only 17% of NC libraries are designated community access points for health and human services information."

The state achieved a high score of 69% for indicator 3.4, *The library supports use of public technology for health and wellness purposes*. NC LIVE provides medical databases as well as resources for learning about medical issues for all libraries. Only 17% of libraries are designated community access points for health and human services information (211 assistance), and only 8% of libraries host quarterly classes on how to navigate health resources. 43% wanted to offer such classes but could not at this time.

Engaging the Community

Statewide, North Carolina achieved 52% of possible points in the second strategic area of Edge. Out of the three areas, our state performed the poorest in this category – though not by much. The distribution of libraries' scores in this strategic area is shown in Figure 10. This strategic area includes three benchmarks, and statewide performance by benchmark is shown in Figure 11.
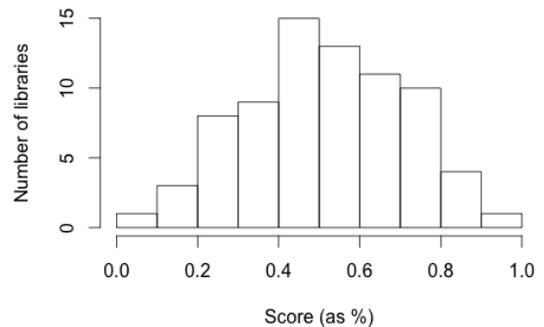

Figure 10

Figure 11

Benchmark 4. Strategy and evaluation

Statewide, North Carolina achieved 50% of possible points. For indicator 4.1, *The library has leaders who maintain ongoing relationships with community leaders*, the state achieved a very high score: 78% of possible points. 97% of libraries have leaders that attend meetings of local governing bodies and 91%

have a leader from a community organization serving on a library board. 89% maintain a list of local media contacts and conduct outreach to local media quarterly. On the low end of the spectrum, only a third of libraries maintains or participates in a community advisory board that develops digital inclusion and technology plans.[6]
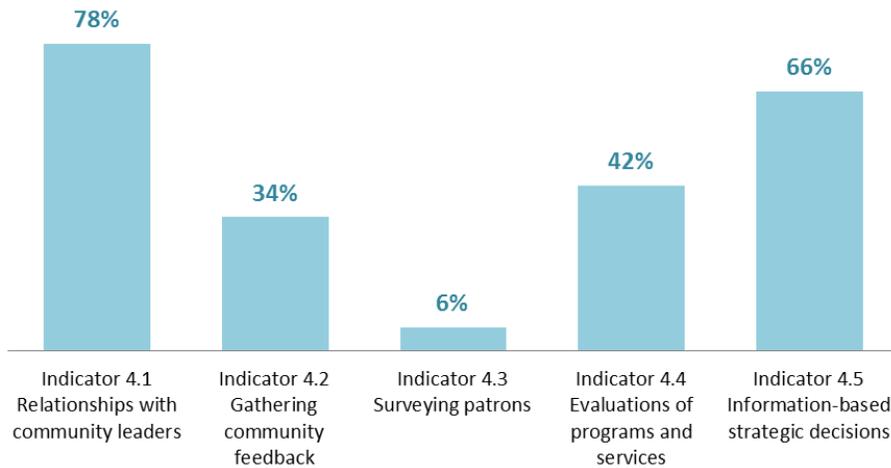
Benchmark 4, scores by indicator

Figure 12

Overall we had poor performance on indicator 4.2, *The library gathers feedback from the community about its public technology need,* for which we achieved only 34% of possible points. While 71% of libraries conduct an analysis of the social and economic community conditions as part of strategic planning, the remainder of the attributes in 4.2 had low current participation but many libraries indicated they would like to offer such services if possible. Fewer than 10% of libraries hold forums on the community's technology needs, conduct technology community needs assessment in a language other than English, or conduct such needs assessments for people with disabilities. Only a quarter of the libraries reported that technology-related questions are included in local government surveys, and 44% said questions about technology are included in library-sponsored needs assessment surveys.

For indicator 4.3, *The library surveys its patrons about technology use in strategic purpose areas*, NC scored extremely poorly overall, with only 6% of possible points. 9% of libraries survey patrons annually about public technology use and outcomes in the areas of workforce development and education; 4% in eGovernment, and 5% in health and wellness.

> "Fewer than 10% of libraries hold forums on the community's technology needs, conduct technology community needs assessment in a language other than English, or conduct such needs assessments for people with disabilities."

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[6] The percentage of communities that have such advisory boards is unknown.

For indicator 4.4, *The library evaluates its technology programs and services,* NC scored 42% of possible points. 59% of libraries use web analytics to evaluate online usage, but only 36% evaluate the effectiveness of digital literacy programs, 43% the effectiveness of outreach, and 39% the effectiveness of partnerships.

NC fared better on indicator 4.5, *The library makes strategic decisions based on information about community needs and priorities,* scoring 66% of possible points. Between 68-73% of libraries include digital inclusion goals in the strategic plan, review and update technology goals annually, and align technology services with community needs. Only 52% of libraries have staffing plans that reflect community needs related to digital inclusion.

Benchmark 5. Strategic partnerships

Statewide, North Carolina achieved 53% of possible points. For indicator 5.1, *The library develops and maintains partnerships that amplify the library's reach, avoid duplication of effort, aid the library in planning or advocacy, or are otherwise mutually beneficial,* the state achieved 63% of possible points. Slightly fewer than half (48%) of libraries have strategies for strengthening existing partnerships and developing new partnerships to advance digital inclusion and innovation goals. High numbers of libraries engage in various resource-sharing partnerships with various organizations, including workforce development organizations (60%), government or social service organizations (72%), educational organizations (81%), health and wellness organizations (59%). Additionally, 72% lend devices or space to community organizations for technology-related training in the library. Only 32% of libraries maintain mobile training equipment for library-sponsored technology training in partner facilities. Quite a few libraries (65%) collaborate on grants or other funding opportunities with community organizations.

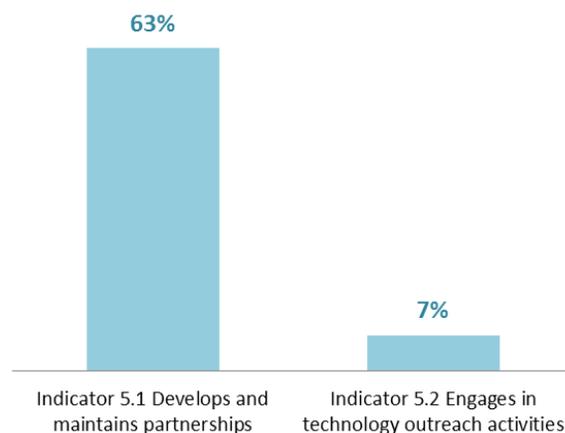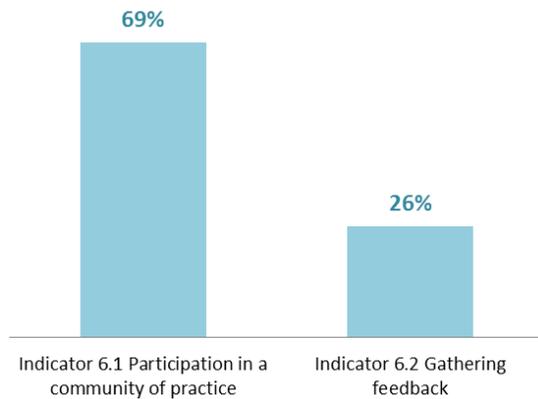### Benchmark 5, scores by indicator

Figure 13

For indicator 5.2, *The library engages in technology outreach activities*, we received only 38% of points possible statewide, but a number of libraries were planning to undertake some of these activities in the next year. Only 37% of libraries maintain a list of community organizations to distribute information about library technology services, but 27% plan on doing so in the next year. 40% of libraries maintain lists of community organizations that offer technology services as a resource for patrons, and 21% plan to do so in the coming year. 51% of libraries track emerging technology trends in the community, but only 25% of libraries maintain a plan to provide technology services to the community in the event of a disaster.

Benchmark 6. Sharing best practices

North Carolina achieved 56% of possible points. The state scored fairly high on benckmark 6.1, and low on benchmark 6.2. For indicator 6.1 *The library participates in a community of practice and shares public*

Benchmark 6, scores by indicator

- 69% — Indicator 6.1 Participation in a community of practice
- 26% — Indicator 6.2 Gathering feedback

Figure 14

access technology knowledge, resources, and other tools, the state scored 69%. 91% report that existing resources (such as TechSoup, WebJunction) are used to help improve library technology management and 96% report that the library participates in peer learning through technology programs. Close to 60% of libraries loan technology devices out for staff development and share training resources/curricula with other libraries or community organizations. Only 12% of libraries participates in or facilitates a technology mentorship program, though 43% would like to. Only 35% of libraries host a dedicated computer development environment for staff, and another third would like to.
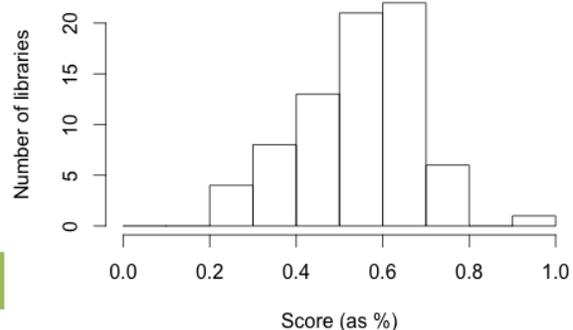
Organizational Management

Statewide, North Carolina achieved 55% of possible points in the third strategic area of Edge. The distribution of statewide scores is shown in figure 15. This strategic area includes five benchmarks, and the statewide scores for these benchmarks are shown in Figure 16.

Distribution of "Organizational management"

Figure 15

Benchmark 11	Technology inclusiveness	39%
Benchmark 10	Technology management	63%
Benchmark 9	Devices and bandwidth	45%
Benchmark 8	Staff expertise	68%
Benchmark 7	Planning and policies	57%

Figure 16

Benchmark 7. Planning / policies

North Carolina achieved 57% of possible points. For indicator 7.1, *The library maintains technology and patron data management policies,* the state scored 57%. The highest scoring areas were the following: 69% of libraries have a patron privacy plan including ways to ensure the security of patron data and 64% of libraries have a hardware replacement cycle of 3-5 years. About half of all libraries have 3-5 year software upgrade cycles, a technology management plan that includes practices for updating web applications and browsers, and processes for system recovery in the event of a catastrophic technology failure.

Benchmark 8. Staff expertise

Statewide, North Carolina achieved 57% of possible points. For indicator 8.1 *The library provides staff with work time to engage in technology related learning activities,* the state scored quite high, at 79%. 93% of libraries allow public service staff time to engage in technology-related learning activities, and 88% cross-train key staff to perform technology-related duties. 53% of libraries give staff the opportunity to attend annual training during work time in the

Benchmark 8, scores by indicator

Figure 15

areas of workforce development and education; 44% allow staff this opportunity in the area of eGovernment, and 61% in the area of health and wellness. 83% of libraries allow staff work time for hands-on learning with new devices. Three-fourths of libraries provide key staff with opportunity to attend training in the area of digital content creation and 59% in the area of instructional design.
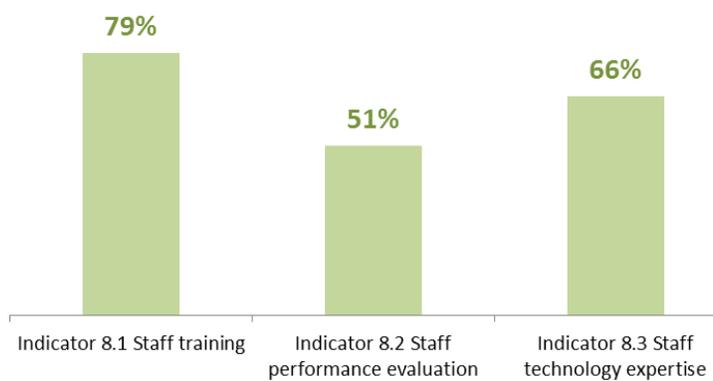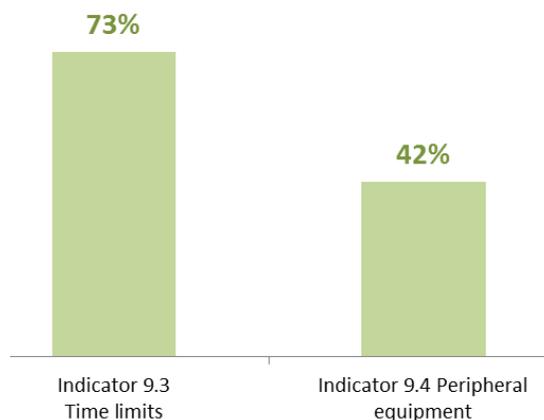
Benchmark 9, scores by indicator

Figure 18

For indicator 8.2, *Library staff assigned to assist patrons are responsible for maintaining technology competencies,* the state scored 51% of points overall. Job descriptions for public services staff contain technology competencies at 60% of libraries, 40% of such staff's annual evaluations include a review of technology-related performance, and annual goal setting contains expectations for technology performance at 43% of libraries. For all three of these attributes, between 20-30% of libraries plan to implement the attribute in the next year.

For indicators 8.3, *Staff assigned to assist patrons are able to answer patrons' technology questions,* two-

thirds of libraries report that all public services staff are able to answer patrons' basic technology questions, 76% report that at least a quarter of public services staff can answer intermediate technology questions, and 53% of libraries report that at least 10% of public services staff can answer advanced technology questions.

Benchmark 9. Devices and bandwidth

Indicators 9.1 and 9.2 address the issue of devices per hour and bandwidth speed at library branches. Analysis of this data begins on page 15. Indicator 9.3, *The library assures adequate time for patrons to complete tasks,* was a mixed bag. Only 3% of libraries loan internet-enabled devices for use outside the library and only 29% loan such devices within the library for extended sessions. However, 93% of libraries have session management software for computers and empower staff with the ability to extend a patron's computer session.

For indicator 9.4, *The library provides peripheral equipment that enables patrons to complete tasks*, only 5% of libraries accommodate patron needs for privacy by installing privacy screens for computers, 25% have installed partitions between workstations, 24% have public computers available in private rooms, and 20% place computer monitors so they can't be viewed by other patrons. 60% of libraries make headphones available to patrons. 53% allow patrons to scan documents, only 19% have wireless printers available for use with patron-owned devices (though 40% would like to make these available if they had the resources). Only 11% of libraries make video conference equipment available and only 8% have multimedia production equipment (e.g. digital cameras, audio recorders, video cameras) available for public use. 75% have presentation equipment available for public use.
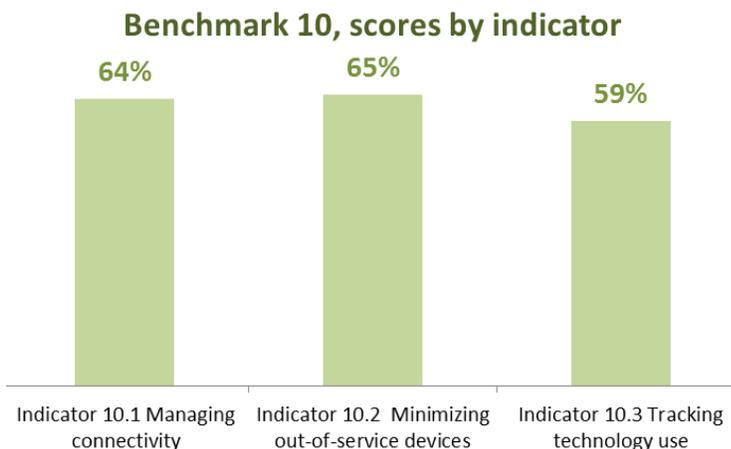
Benchmark 10, scores by indicator

Indicator 10.1 Managing connectivity	Indicator 10.2 Minimizing out-of-service devices	Indicator 10.3 Tracking technology use
64%	65%	59%

Figure 19

Benchmark 10. Technology management

Statewide, NC scored 63% of possible points for benchmark 10. For indicator 10.1, *The library actively manages Internet connectivity,* almost all libraries (91%) know their maximum available bandwidth speed, and 85% of libraries perform speed tests to compare advertised and actual bandwidth. 68% of libraries currently receive alerts about connectivity problems in real time. 48% of libraries continuously monitor connectivity and network traffic, and 52% allocate bandwidth for library staff and the public through separate data circuits.

For indicator 10.2, *The library minimizes out-of-service devices,* 93% of libraries have a lockdown software program installed on computers. In 85% of libraries, there is access to personnel with sufficient IT expertise to maintain the library's technology systems. 69% of libraries use a master image deployment and recovery system for public computers. In 59% of libraries, staff has access to a troubleshooting guide for network devices and peripherals, and 55% of libraries have at least one staff member located onsite with sufficient IT expertise to maintain the library's network and public technology.

For indicator 10.3, *The library tracks key measures about public technology services for planning purposes,* only 83% of libraries report continuously tracking the number of attendees at technology classes and only 57% report tracking requests for one-on-one technology assistance, even though this tracking became mandatory at a statewide level in July 2013 for statewide annual reporting purposes. 79% track the number of hours that public devices are in use by patrons, 29% track average wait times for public computers, and 47% count the number of wireless sessions.

Benchmark 11. Technology inclusiveness

For indicator 11.1, *The library accommodates users with disabilities*, NC libraries received only 39% of possible points. Statewide, we performed poorly in this area with the exception of the ability to accommodate a wheelchair for at least one computer terminal, which 91% of libraries can do. Only 5% of libraries provide staff with annual training to serve patrons with disabilities, only 12% include specific accessibility goals in the strategic plan, and only 8% make at least one public terminal available at each location that can be converted

"Only 5% of libraries provide staff with annual training to serve patrons with disabilities."

with assistive technology to facilitate usage by people with motor and dexterity impairments. 35% of libraries have at least one public terminal with assistive technology that enable use by the visually impaired at each location and a library website that is compliant with World Wide Web Consortium disability standards.

Devices and hours

Bandwidth per user

This indicator recognizes three levels of bandwidth availability. The first level is libraries that provide at least 512 kbps of bandwidth per user; according to Edge, this is the minimum amount of bandwidth users need to complete most instrumental tasks like applying for jobs or filling out government forms. The second level comprises libraries that provide 768 kbps of bandwidth per user; this amount of bandwidth is approximately what is needed to watch relatively low-quality video on Netflix. The highest level recognizes libraries that provide at least 1 mbps of bandwidth per user; this is the amount usually sufficient for higher quality video and most web applications, though this amount will probably be considered low in the not-to-distant future.

Figure 20
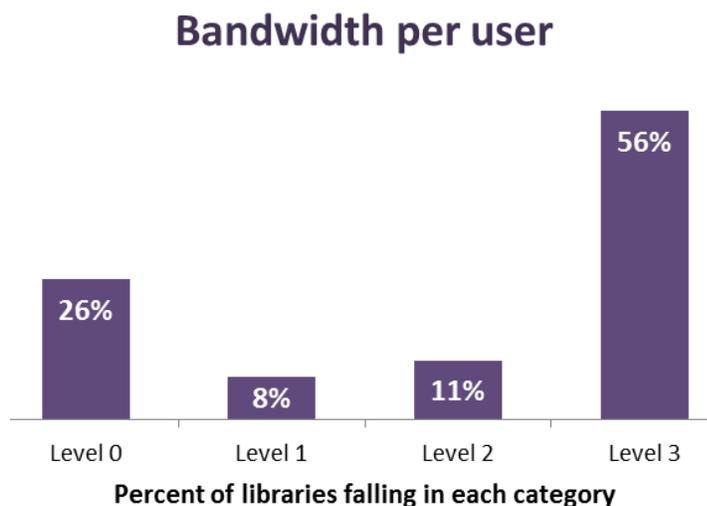
26% of NC branch libraries did not even meet the minimum requirements for level 1, meaning library patrons cannot count on the bandwidth provided at the library to consistently complete basic online tasks such as applying for jobs or filling out government forms. **On the other hand, 56% of branches were level 3**, meaning they provide the highest level of bandwidth recognized by Edge. Together, these two groups account for more than 80% of branches, as shown in Figure 20.
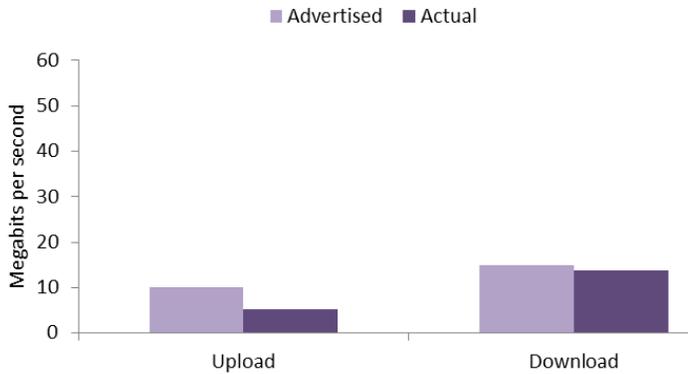
Opening hours

The mean number of hours open during the week (Monday-Friday) was 40.6 and the median number was 44.5. The mean number of hours open during the weekend (Saturday-Sunday) was 5.6 and the median number was 5. **Nineteen percent of library locations had no opening hours on the weekend at all.** The maximum number of hours open Monday-Friday was 69 at Sheppard Memorial Library in Greenville, followed by Carteret County Public Library with 63.5 and Greensboro Public Library at 60. The maximum number of hours open on the weekend was 17 at Southern Pines Public Library, followed by Orange County Public Library at 15. Three library systems had one or more locations with 14 opening hours on the weekends, including Alamance County Public Library, Chapel Hill Public Library, and Charlotte Mecklenburg Library.
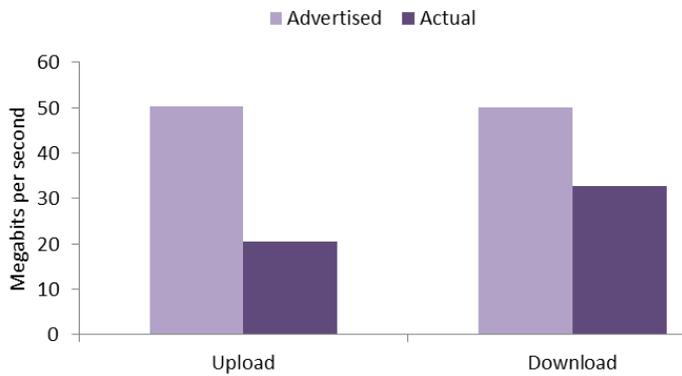
Computing and wireless

Median advertised v. actual speed

■ Advertised ■ Actual

The mean number of public desktop computers available at a branch is 16, and the median is 10. The mean number of laptops or tablets available to patrons at a branch is 1.7 and the median is zero. **73% of NC branch libraries have no laptop or tablet devices available to patrons.** 94% of library locations have wireless available for patrons.

Mean advertised v. actual speed

■ Advertised ■ Actual

When broadband speed was compared for Internet service providers' advertised speed versus the actual upload and download speeds at the library, large gaps were found. **Advertised speeds were consistently faster than what the service actually provided**. The *mean* advertised upload speed was 50.3 megabits per second (Mbps), while the mean actual upload speed was 20.5Mbps. The *median* advertised upload speed was 10 Mbps, while the median actual upload speed was 5.2 Mbps. The story was the same for download speed: the *mean* advertised speed was 50.1 Mbps while the actual speed was 32.8 Mbps, and the *median* advertised speed was 15 Mbps versus a 13.7 Mbps median actual download speed.

Device Hours

According to Edge, device hours is a measure that combines the number of hours a library is open with the total number of computers and laptops available in the library for public use in order to determine the amount of access the library is providing to its community as a whole. The device hours per capita is a measure of the number of device hours available to each resident in a library's service area, if each person used the library's computers equally. Statewide, **North Carolina had a device hours per capita rate of 1.8,** meaning we can provide each member of our community with 1.8 hours of computer time per year.