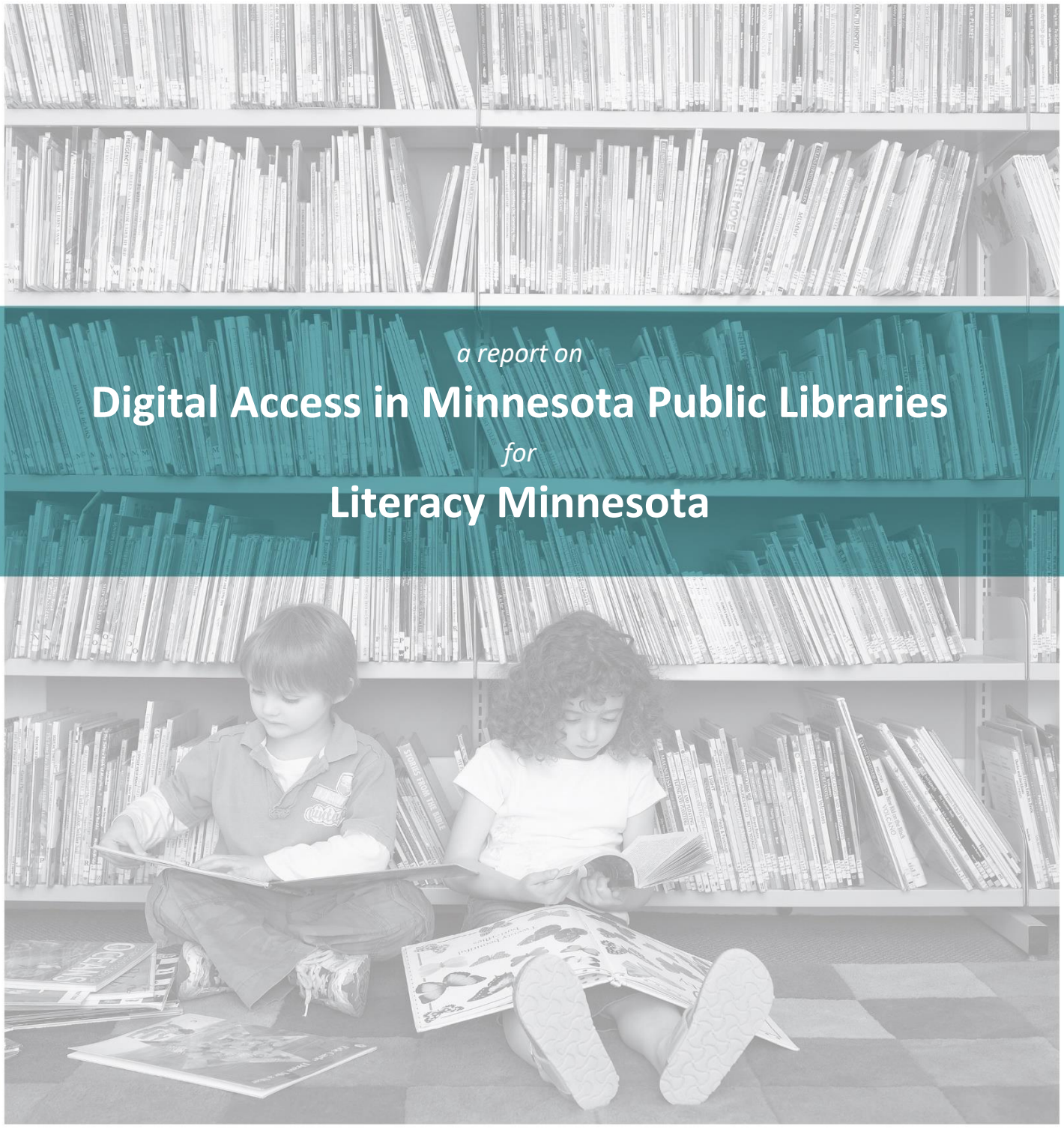
LIBRARY STRATEGIES



a report on

Digital Access in Minnesota Public Libraries

for

Literacy Minnesota

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INTRODUCTION | PROJECT BACKGROUND

Minnesota Literacy is currently collaborating with the Minnesota Department of Education on a broad-based scan of Minnesota's digital access ecosystem. Made possible by CARES Act funding, this holistic audit will allow MDE to pinpoint unmet and under-met needs in different parts of the state.

Digital access is an elastic and constantly evolving term. For present purposes, the concept encompasses three things (a "three-pronged model"):

1. Internet Access
2. Device Availability
3. Tech Skill Development

As one component of this wide-ranging review, Minnesota Literacy subcontracted with Library Strategies Consulting Group to gather, present and contextualize select data on the role of *public libraries* in providing digital access. Library Strategies is a Minnesota-based consulting firm, and versed in the varied library funding and service landscape that informs this question.

At a granular level, Minnesotans are served by more than 140 public library entities, which collectively operate 355 brick-and-mortar library locations (to say nothing of their combined *virtual* presence). Documenting and analyzing complete digital access metrics for *each* would require considerable original research efforts – and, quite possibly, a cross-institution working group to operationalize such a study.

Such a detailed evaluation is outside the scope of the scan at hand. For this reason, and the concomitant factors of time and budget, Literacy Minnesota specified that Library Strategies focus its attentions around data sets and other sources that:

(a) are already available (i.e., require no original research or new, branch-level data collection);

(a) relate to all portions of the state; and,

(b) are recent and at least reasonably comprehensive

Although not truly exhaustive, the picture that "in-scope" data paints leaves no doubt that:

(a) libraries are a crucial player in today's digital access landscape; and,

(b) library-enabled access differs, in some cases acutely, across different portions of the state

PUBLIC LIBRARIES' COMMITMENT TO DIGITAL ACCESS

Across nearly all its guiding documents, the American Library Association stresses the central role of digital access in the modern public library's value proposition. Notes the so-called Library Bill of Rights:

> "Digital resources and services are integral to libraries' mission in the twenty-first century. Libraries are important points of access to many digital resources and services, including but not limited to computers, the internet, and digital resources and tools... Digital resources, services, training, and networks provided directly or indirectly by the library should be readily and equitably accessible to all."[1]

Digital access – particularly as it relates to under-resourced communities – is likewise core to the mandate of the federal Institute of Museum and Library Services. As a prominent and persistent part of its platform, "IMLS supports projects that increase digital inclusion, broadband access, and digital literacy, giving communities access to information on a wide spectrum of topics."[2]

On the state level, the field's commitment to providing e-resources and bridging the digital divide is perhaps most clearly evinced by the Library Services & Technology Act (LSTA). Administered by IMLS, the LSTA program is the single largest conduit by which federal dollars reach America's public libraries.

Put succinctly, LSTA's raison d'être is to advance technology infrastructure and digital offerings across the nation's libraries. As a prerequisite for those dollars, IMLS requires that every State Library Administrative Agency (SLAA) commit to these principles with written, five-year frameworks that outline *where* needs are most acute and *how* progress will be achieved.

For the State of Minnesota, the annual LSTA allotment is $2.7 million per year, and the SLAA is State Library Services (SLS) – part of the Department of Education. Against the operating revenue allocated to public libraries by counties and cities, (a number that topped $250 million in 2018), this figure is modest. However, IMLS/LSTA is an important piece of background for two reasons.

(a) Its existence underscores the important, undeniable link between digital access and public libraries. Libraries are far more than a static repository for print materials, and are making strides to adapt as patron needs continually evolve.

[1] Source: http://www.ala.org/advocacy/intfreedom/librarybill/interpretations/digital
[2] Source: https://www.imls.gov/our-work/priority-areas/digital-initiatives

(b) Information collected for, or because of, IMLS/LSTA offers is an excellent entry point for looking at digital access across Minnesota's libraries. This is true on the face of it, but also because data sources that fit the parameters of this examination are relatively few.

DATA SOURCES

Public Library Survey. In addition to dispensing LSTA funds, IMLS collaborates with each state's SLAA every year on the so-called Public Libraries Survey (PLS). This is currently the *only* tool that collects data from *all* 9,000 library systems (representing some 17,000 brick-and-mortar outlets) across the country.

Information collected by PLS runs the gamut – from the size of a library's collections and annual circulation metrics, to basic programming outputs, to a snapshot of staffing and other expenditures. In total, IMLS requires that every SLAA provide 102 points of data for every public library system in that state. In turn, SLAAs (in Minnesota, State Library Services) require tracking and periodic reports from all public libraries operating in their jurisdiction.

This yearly PLS exercise is known as the Minnesota Public Library Annual Report (MPLAR).

In addition, Minnesota is among the majority of states that uses its annual PLS obligations to query libraries for additional information *not* specifically required by IMLS. Typically called "State-Added Elements," these fields either parse apart IMLS-mandated information (ex. quantity of adult-oriented vs. children's programs, rather than just a total figure), or address areas that are simply absent from the core PLS. Minnesota's questionnaire includes just over 200 such fields (including pre-populated or auto-calculated data points).

Appendix A lists all MPLAR data points that appear directly or indirectly relevant to the digital access questions here under consideration. Some are specific to each physical library location,[3] while others are relevant only at the administrative/system level.[4] Others apply to both.[5]

[3] Ex.: "Category 6 or Better Wiring within Library" (F17m); "Typical Internet Download Speed for Public Computers" (F19m)
[4] Ex.: "Collection Expenditures - Electronic Materials - Electronic Books" (E05); "Downloadable Audio and Video Circulation" (P18)
[5] "Annual Public Internet Computer Sessions" (P08); "Wireless Sessions" (P10)

PLS and the "Three-Pronged Model." In 2018-19, analytics firm Ithaka S+R conducted a comprehensive review of the 8,837(!) state-added data elements appended to the PLS across the country. Funded through an IMLS grant, the chief goals of this herculean review included identifying commonalities, and articulating potential best practices, for the benefit of all parties involved with the Public Library Survey.[6] (See Appendix C for a full list.) Ithaka S+R's efforts ultimately identified 15 "high level categories," and 67 subcategories within these.

Three-Pronged Model:

- **Internet Access**
- **Device Availability**
- **Tech Skill Development**

Unsurprisingly, given the library field's stated commitment to digital access, Digital Literacy is prominent among the latter. Sixteen states ask a combined 43 questions on the topic. [7] Representative examples include:

- Illinois: Does your library provide instruction (workshops, classes) to patrons on the use of the internet?
- Kansas: Which of these computer and technology skills topics does your library provide? [Select all that apply: Basic computer use/skills; Employment; eGovernment; Mobile device use; Electronic resources; Connections and communications]
- Missouri: Does your library offer one-on-one computer training to the public?

Unfortunately for present purposes, Minnesota is *not* among the states that asks PLS respondents for this kind of data. MPLAR reporting requirements emphasize the targeted demographic of all programs/classes, but do not prioritize *content* classification. By extension, this key data set is of limited utility when trying to understand the tech skill programming available to Minnesota library patrons.

(This is not to say that libraries do not "deliver" on this pillar of the digital access model. In 2018 alone, libraries held a reported 72,239 programs and classes, including 22,053 geared towards adults. Many had a digital literacy bent. In the current data paradigm, these are simply difficult to parse apart from other entertainment and educational offerings.)

In contrast, the MPLAR is a superb repository for information about the other two tenets of the three-pronged model for digital access – namely, internet access and device availability.

[6] IMLS Grant# RE-00-16-0181-16 – put forward as part of the federal agency's role in the ongoing Measures That Matter (MtM) coalition

[7] Arkansas, Colorado, Florida, Iowa, Illinois, Kansas, Missouri, Mississippi, North Carolina, Nebraska, Nevada, New York, Ohio, South Dakota, Virginia, and Vermont

Other Data Sources. Other, independently curated data sets exist which theoretically encompass the library field in similar fashion. Some place a greater focus on digital service questions than does the base IMLS PLS tool. However, all fail to meet two or all three of the criteria laid out on Page 1.

In the interest of fully understanding the constantly evolving data landscape (and by extension, "information gray areas" in digital access), a few should nevertheless be touched on in brief.

> **Public Library Data Service (PLDS).** Coordinated by the Public Library Association (PLA), this annual questionnaire overlapped considerably with the annual PLS (with which it should not be confused). It did, however, go into greater detail on several relevant digital metrics. Most notable is a question set asking after the availability of circulating tablets, laptops, and e-readers, etc. – and even MP3 players and video game consoles. Unfortunately, the PLDS was *voluntary* in nature, and input solicited disproportionately from PLA members. Consequently, it covers only about 1,800 libraries (compared against the 9,000 systems and 17,000 total locations reported on the PLS). Moreover, PLA's evaluation and assessment committee sunset the tool effective with FY19 data. PLDS may eventually be revived in some other form, more focused around (in their words) "trending activities, such as technology."[8]
>
> **Digital Inclusion Survey.** Administered by the ALA Office for Research and Statistics, the Digital Inclusion Survey and its long-running predecessor (the Public Library Funding & Technology Access Study, or PLFTAS) was consciously conceptualized as a supplement to the PLS. Both tools probed internet access, digital literacy, and other topics germane to the digital access question. Like the PLDS, the Digital Inclusion Survey sought to poll a fairly representative sampling of library outlets, but could not reach all – or even the majority. In its last year, the Digital Inclusion Survey received input for just over 2,300 of the nation's 17,000+ physical libraries.[9] Furthermore, the coalition behind this effort discontinued the survey after its October 2015 report for lack of continued grant funding. Given the rapid growth and evolution within the digital sphere, the latest available set of data from the Digital Inclusion Survey is therefore partial *and* already fairly outdated.
>
> **Measures that Matter (MtM).** While this data landscape review is not exhaustive, it should make abundantly clear that there is great inconsistency within the library industry with respect to what service and performance metrics are reported (not to mention *how* or *where*). Moreover, the data gathering programs that most deeply probe digital access have not proven sustainable – at least on the national level, and with the obvious exception of the core question set in the government-mandated PLS.

[8] Source: http://www.ala.org/pla/resources/publications/plds
[9] Source: https://digitalinclusion.umd.edu/

In recognition of these facts, and the obvious merit in demonstrating the value and vitality of America's libraries, IMLS and the Chief Officers of State Library Agencies (COSLA) are currently spearheading a coalition dedicated to perfecting a new National Public Library Data Framework. Launched in 2016, the "Measures that Matter" initiative has not yet adopted a structure or implementation game plan for future data collection. Its groundwork has nevertheless been encouraging, and will surely reap dividends in future years when trying to understand and quantify libraires' integral role in the digital access ecosystem.[10]

LIBRARIES + INTERNET ACCESS

Access Gaps and Challenges. According to the state Department of Employment and Economic Development, 92.19 percent of Minnesota households are in areas that can be served by a broadband connection with a speed of 25 Mbps (download) and 3 Mbps (upload). However, only 87.64 percent can access speeds exceeding 100 Mbps (download) and 20 Mbps (upload).[11]

Unsurprisingly, accessibility discrepancies are most acute when evaluating rural areas. As of April 2020, 82.4 percent of rural households are within reach of a wireline broadband service; 93.9 percent are within reach of a fixed, non-mobile broadband service. These data points, calculated at the 25 Mbps (download) and 3 Mbps (upload) tiers, effectively demonstrate the continued presence of disadvantaged rural households in our ever-more connected society.

The same figures also belie *underserved* households. In rural areas, only about 72.3 percent of households can enjoy wireline broadband service that surpasses *100/20 Mbps*, and only 85.2 percent can be served by a fixed, non-mobile broadband service that meets that speed threshold.[12]

Naturally, monthly cost considerations amplify service gaps considerably. Americans pay some of the highest internet fees in the developed world.[13] According to an April 2020 study, 28 percent of households polled reported anxiety about paying home internet bills (particularly against the backdrop of the COVID-19 pandemic and the resultant economic fallout).[14]

[10] Source: https://www.cosla.org/MtM
[11] Source: https://mn.gov/deed/assets/household-bb-various-speeds_tcm1045-297687.pdf
[12] Source: https://mn.gov/deed/assets/bb-speed-tiers-county-fixed-nonmobile_tcm1045-190760.pdf
[13] Source: https://www.pewresearch.org/internet/fact-sheet/internet-broadband/
[14] Source: https://www.newamerica.org/oti/reports/cost-connectivity-2020/focus-on-the-united-states

Public libraries are a lifeline for Minnesotans in areas where the current infrastructure does not allow for reliable and reasonably fast home internet access, as well as those who cannot afford home internet.

Under Minnesota State Statute Ch. 134, which prescribes the circumstances under which a public library can be founded and operated, the governing body in any Minnesota city or county can establish a library for the benefit of its residents. In practice, library governance in Minnesota is a true patchwork. The majority are operated by cities, some by counties, and still others are multijurisdictional. Nearly all are also associated with regional library systems that coordinate reciprocal and consortial benefits.[15] For present purposes, sufficient to say that this framework has allowed for the establishment of at least one public library in all 87 of Minnesota's counties.

Indeed, only 18 of the 87 counties are served by *just one* library,[16] and nearly half (41 of 87) are served by *three or more* brick-and-mortar locations.[17]

All but two of these facilities report offering no-cost WiFi access to their patrons. Exceptions are the small Taylor Falls Public Library in Chisago County and Marble Public Library in Itasca County.

Internet Speeds. Nearly all library outlets in Minnesota reported their connection speeds as part of the MPLAR.[18] Two thirds of reporting libraries currently offer download speeds ≥ 50.1 Mbps.

[15]For a primer on the layered and varied governance and funding landscape underpinning Minnesota's public libraries, see MDE's *Public Library Trustee Handbook* (ed. 2017), which overviews this material nicely. https://education.mn.gov/mdeprod/idcplg?IdcService=GET_FILE&dDocName=MDE070681&RevisionSelectionMethod=latestReleased&Rendition=primary

[16] Becker, Benton, Clearwater, Cook, Douglas, Freeborn, Grant, Hubbard, Kanabec, Kittison, Koochiching, Lake of the Woods, Mahnomen, Marshall, Norman, Rock, Wadena, Wilkin

[17] Counties with ≤ 3 libraries: *Footnote 11* + Aitken, Beltrami, Big Stone, Carlton, Cottonwood, Crow Swing, Dodge, Isanti, Jackson, Lac qui Parle, Lake, Mille Lacs, Murray, Nicollett, Nobles, Pennington, Pine, Pipestone, Rice, Roseau, Sherburne, Steele, Stevens, Swift Wabasha, Winona, Yellow Medicine.

[18] Nonresponses, alphabetical by county, are: Hanska Community Library (Brown County); Moose Lake Public Library (Carlton County); Blue Earth Community Library (Faribault County); Albert Lea Public Library (Freeborn County); the Eden Prairie, Franklin, and Arvonne Fraser branches of Hennepin County Library; La Crescent Public Library and Hokah Public Library (Houston County); Lake Benton Public Library (Lincoln County); Minneota Public Library (Lyon County); the Fairmount, Truman, Sherburn and Trimont branches (Martin County); Lamberton Public Library and Morgan Public Library (Redwood County); Kinney Public Library (Saint Louis County); the Shakopee Branch Library (Scott County).

Minnesota Library Internet Speeds

Tier[19]	Download Speed	Upload Speed
Up to 1.4 Mbps	**2**	**9**
1.6 Mbps - 4.9 Mbps	**3**	**5**
5.0 Mbps - 9.9 Mbps	**8**	**21**
10.0 Mbps - 15.0 Mbps	**8**	**25**
15.1 Mbps - 20.0 Mbps	**18**	**13**
20.1 Mbps - 50.0 Mbps	**83**	**65**
50.1 Mbps - 100 Mbps	**117**	**102**
100.1 Mbps - 500 Mbps	**74**	**74**
500.1 Mbps - 1 Gbps	**36**	**35**
Greater than 1 Gbps	**1**	**1**

It bears noting that the above are liable to change incrementally, but positively, over the next several MPLAR reporting periods.

Expanded internet reach, and increased connection speeds, are a shared goal articulated in the current Minnesota LSTA Five-Year Plan (2018-2022). SLS, as the state's SLAA, identifies "infrastructure development" as one of five chief focus areas for the IMLS funds allotted to Minnesota over this period. State Library Services also administers state appropriations (most notably, the Regional Library Telecommunications Aid) which buttress local efforts to build and maintain library infrastructure networks that are "comprehensive, reliable, and secure."[20]

Nevertheless, as the above download/upload speeds table makes clear, coverage *today* falls somewhat short of that long-range ideal. Given the DEED statistics cited earlier, it is unsurprising that library infrastructure is ordinarily weakest in the most rural pockets of the state – precisely those communities that, in the main, need this service point most.

In addition to listing each library's legal service area, and the population of the county in which each of Minnesota's libraries is located, the MPLAR further contextualizes each library's community by listing its Rural-Urban Continuum Code. Devised by the U.S. Department of Agriculture, this classification scheme distinguishes urban/suburban counties by that metro area's population size, and *non*metropolitan counties by degree of urbanization and *proximity* to the nearest metro area.[21] Each of the country's 3,000+ counties can be mapped firmly on this spectrum of 1 to 9. See the next page for a definition of each code, and a list of which Minnesota counties fall within each.

[19]Speed "tiers" are specified by SLS as the SLAA for Minnesota. Frequency calculated from the raw 2019 MPLAR data set, using pivot tables and =COUNTIF formulas in MS Excel and SQL Converter.
[20]Source: https://webcache.googleusercontent.com/search?q=cache:1cj0FUiLjyIJ:https://www.crplsa.info/wp-content/uploads/2019/02/RLTA-Backgrounder-2.11.19.docx.pdf+&cd=5&hl=en&ct=clnk&gl=us
[21] https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation/

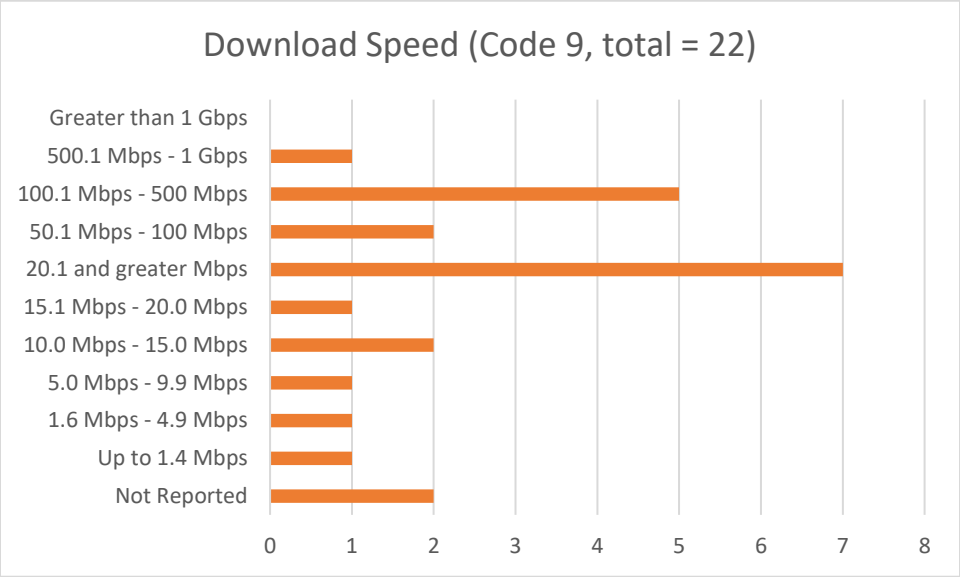
Rural-Urban Continuum Code
Definitions and Minnesota County Designations

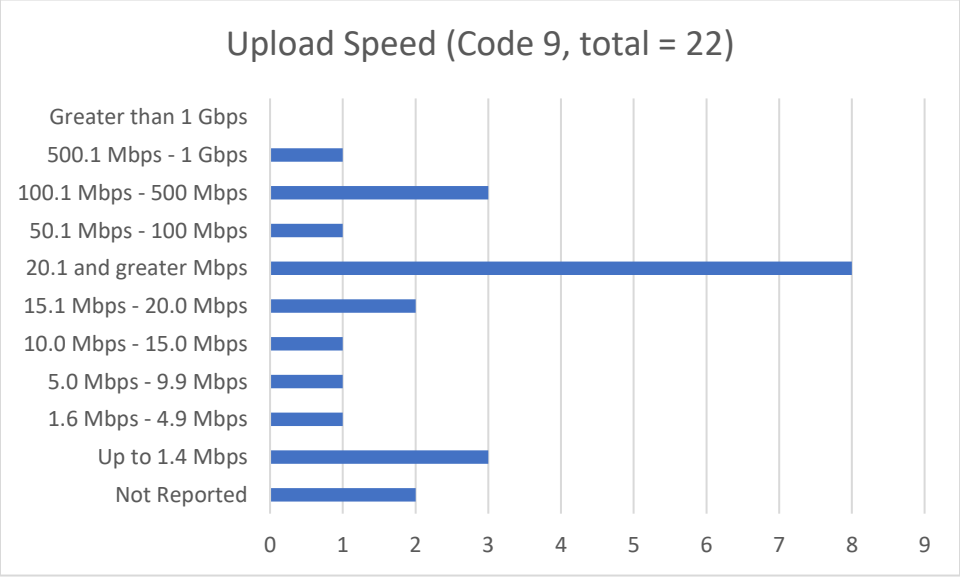
METRO COUNTIES
Code 1 | Counties in metro areas of 1 million population or more **(ct. 14)**
Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Le Sueur, Mille Lacs, Ramsey, Scott, Sherburne, Sibley, Washington, Wright
Code 2 | Counties in metro areas of 250,000 to 1 million population **(ct. 2)**
Carlton, St. Louis
Code 3 | Counties in metro areas of fewer than 250,000 population **(ct. 11)**
Benton, Blue Earth, Clay, Dodge, Fillmore, Houston, Nicollet, Olmsted, Polk, Stearns, Wabasha
NONMETRO COUNTIES
Code 4 | Urban population of 20,000 or more, adjacent to a metro area **(ct. 6)**
Crow Wing, Goodhue, Kandiyohi, Mower, Rice, Winona
Code 5 | Urban population of 20,000 or more, not adjacent to a metro area **(ct. 1)**
Steele
Code 6 | Urban population of 2,500 to 19,999, adjacent to a metro area **(ct. 20)**
Becker, Brown, Douglas, Faribault, Itasca, Kanabec, Koochiching, Lake, McLeod, Meeker, Morrison, Otter Tail, Pennington, Pine, Pipestone, Rock, Todd, Waseca, Watonwan, Wilkin
Code 7 | Urban population of 2,500 to 19,999, not adjacent to a metro area **(ct. 14)**
Beltrami, Chippewa, Cottonwood, Freeborn, Hubbard, Jackson, Lyon, Martin, Nobles, Redwood, Roseau, Stevens, Swift, Wadena
Code 8 | Completely rural or less than 2,500 urban population, adjacent to a metro area **(ct. 8)**
Aitkin, Clearwater, Mahnomen, Marshall, Norman, Pope, Red Lake, Renville
Code 9 | Completely rural or less than 2,500 urban population, not adjacent to a metro area **(ct. 11)**
Big Stone, Cass, Cook, Grant, Kittson, Lac qui Parle, Lake Of The Woods, Lincoln, Murray,[22] Traverse, Yellow Medicine

[22]Murray County (home to two libraires, in Slayton and Fulda) is listed variously as Code 7 and 9 in the raw MPLAR data set. USDA's database clarifies that it is Code 9.

Rural-Urban Continuum codes are a useful benchmark against which to gain a broad but accurate understanding of how internet speeds vary by geography and urban character. Contrast is starkest between “1” metro counties and “9” nonmetro counties, and it may be illustrative to pull out these groupings for further attention.

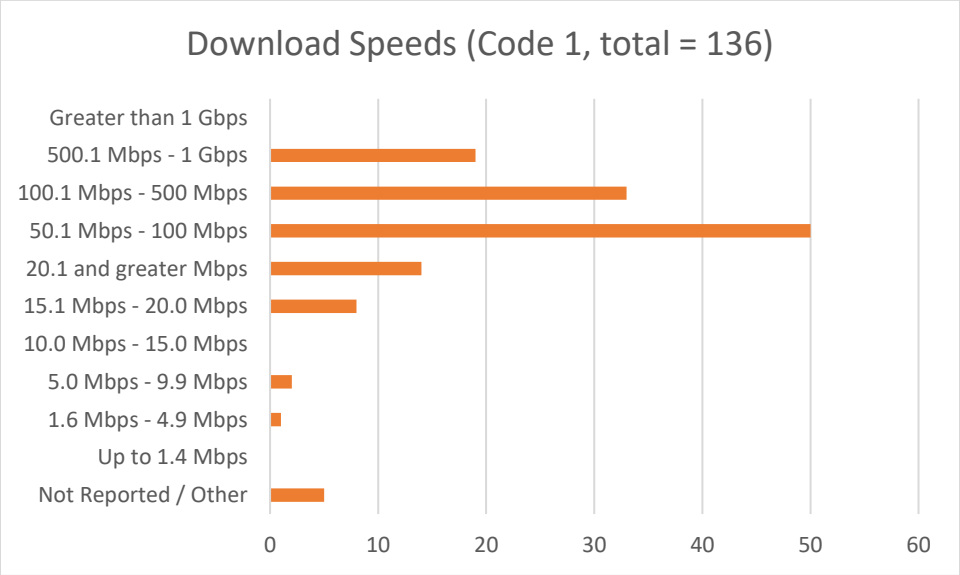
Download/Upload Speeds in “Code 9” Libraries

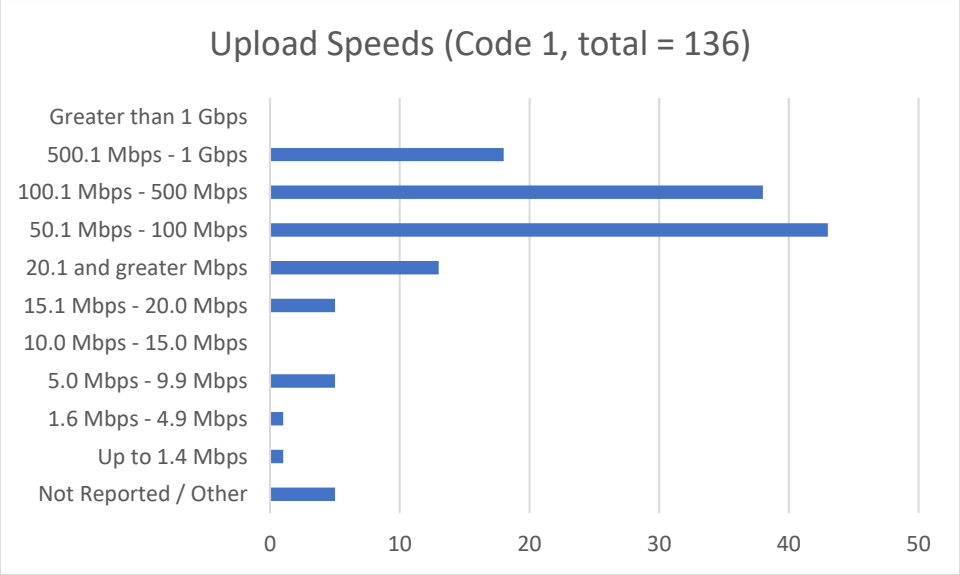




In total, 23 public libraries serve eight counties classified as *9's* (i.e., "completely rural or less than 2,500 urban population, not adjacent toa metro area.") Among this subset, the average download and upload speeds are in the 20.1 - 50 Mbps tier. Only one library in these counties (the Grand Marais Public Library) claims speeds greater than 500 Mbps.

Download/Upload Speeds in "Code 1" Libraries





Public libraires in counties classed as *1's* under the USDA Continuum Code (i.e., "counties in metro areas of 1 million population or more") report notably higher speeds.

Within that subset – and excluding bookmobiles and administrative buildings not open to the public – 135 facilities serve communities across 14 counties. Their average download speed falls within the 50.1 Mbps - 100 Mbps tier (ct. 50), and the average upload speed within this same range (ct. 43). Fifty-two facilities report download speeds ≥ the 100.1 Mbps threshold. Nonreporting outlets notwithstanding, it appears that only 3 outlets report download speeds ≤ 9.9 Mbps.

Internet Usage. Internet is not just an *available* at Minnesota's libraries. It is *used*, as well.

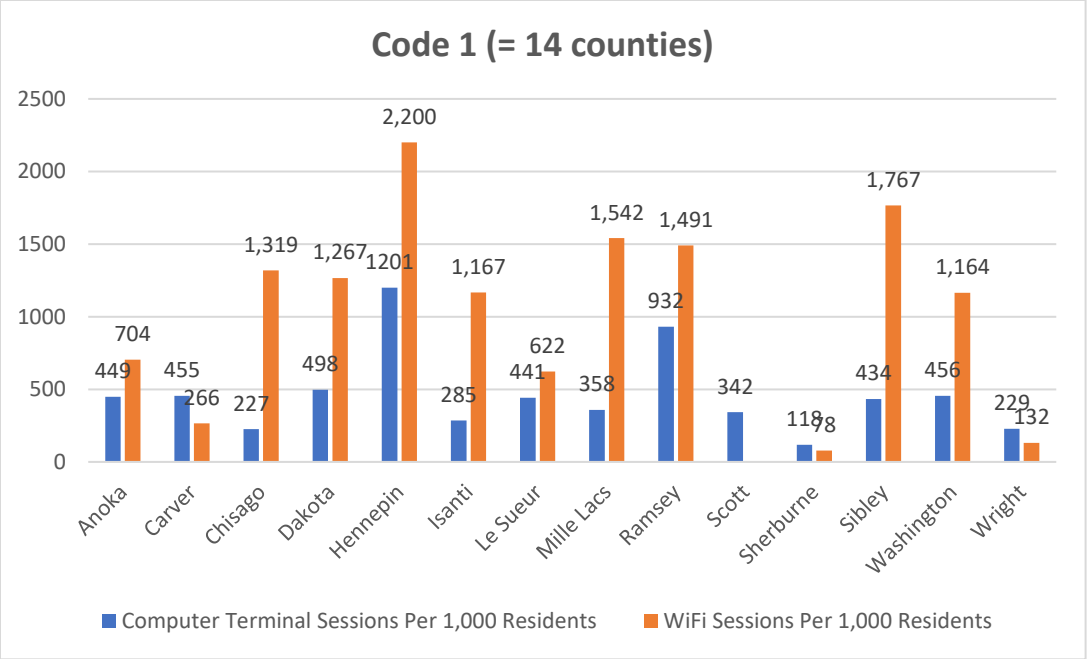
According to the most recent PEW Research Center study on the subject (2016), 48 percent of American adults aged 16+ had visited a library or bookmobile in person over the preceding year. Of those users, 29 percent utilized WiFi and/or accessed an on-premises computer.[23] This comports with data-confirmed trends in Minnesota. Last year, library visitors logged a cumulative *10.5 million* use sessions across patron-owned and library-owned devices.[24]

Fortunately, those two usage categories are fairly easy to parse apart further. As part of its PLS initiative, IMLS collects statistics on WiFi usage and patron computer sessions in America's libraries. The former is a relatively new addition to the annual requirements.[25]

Appendix D details 2019 usage of library computers (and other internet-enabled devices offered to patrons). It also tracks distinct WiFi connections – excepting only a handful of branches who did not report this metric as part of the most recent MPLAR. In that appendix, all 87 counties are listed first alphabetically, and then alongside peers as defined by the USDA Rural-Urban Continuum matrix.

What follows is a deeper look at per capita trends through the lens of that classification scheme.

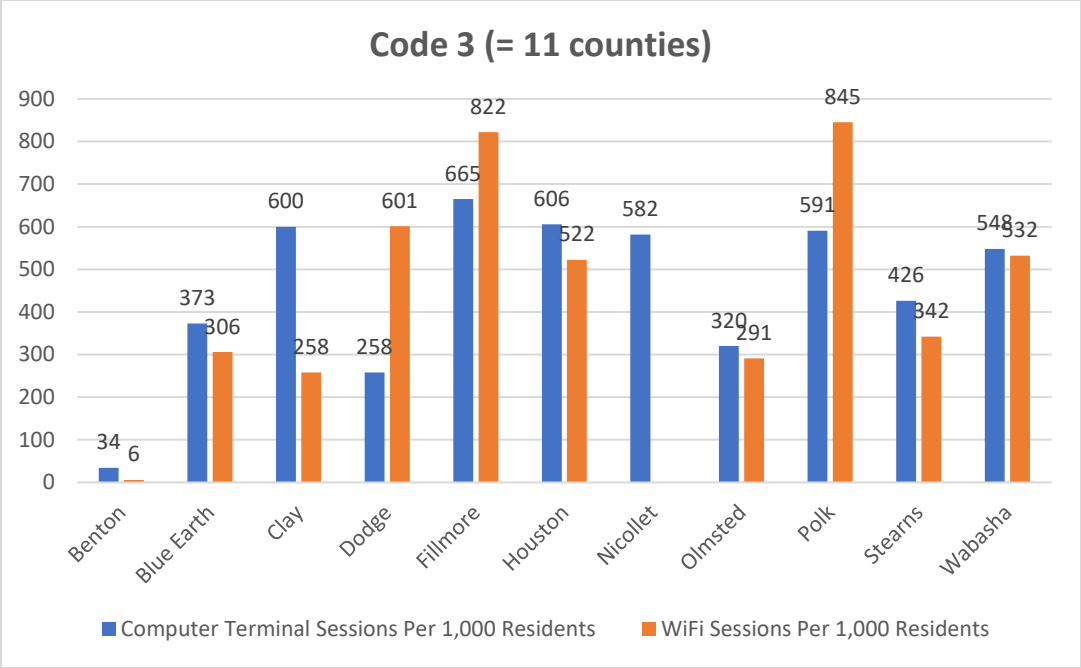
[23] Source: https://www.pewresearch.org/internet/2016/09/09/library-usage-and-engagement/
[24] Source: https://education.mn.gov/MDE/dse/Lib/sls/stat/
[25] IMLS first introduced its WiFi data element in FY2013. However, due to reporting errors and high nonresponse rates, IMLS did not make collected data available until the FY2018 report.



Code 1 counties are those "in metro areas of 1 million population or more." They range in population from Hennepin (1,279,981) to Sibley (14,899). Hennepin logged the most per capita sessions on library computers/devices (1,201 per 1,000 residents), and Sherburne the fewest (118 per 1,000 residents). With the exception of Carver, all libraries in all counties contributed WiFi figures to the MPLAR. Among the reporting subset, Hennepin reported the highest number of WiFi sessions per capita (2,200 per 1,000 residents), and Sherburne reported the lowest with just 78 per 1,000 residents.

Only two counties in the northeast corner of the state are classified as Code 2 (i.e., "in metro areas of 250,000 to 1 million population). WiFi use statistics are not available for Carlton County or large portions of Saint Louis. In this case, then, no graph is required to understand the reported data:

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Carlton	2	35,935	15,299	426		
St. Louis	2	199,661	145,632	729		



Code 3 counties are those "in metro areas of fewer than 250,000 population." They range in population from Olmsted (160,431) to Houston (18,626). Fillmore logged the most per capita sessions on library computers/devices (665 per 1,000 residents), and Benton the fewest (34 per 1,000 residents). With the exception of Nicollet, all public libraries in all Code 3 counties contributed WiFi figures to the MPLAR. Among the reporting subset, Polk reported the highest number of WiFi sessions per capita (845 per 1,000 residents), followed closely by Fillmore – and Benton reported the lowest with just 6 per 1,000 residents.

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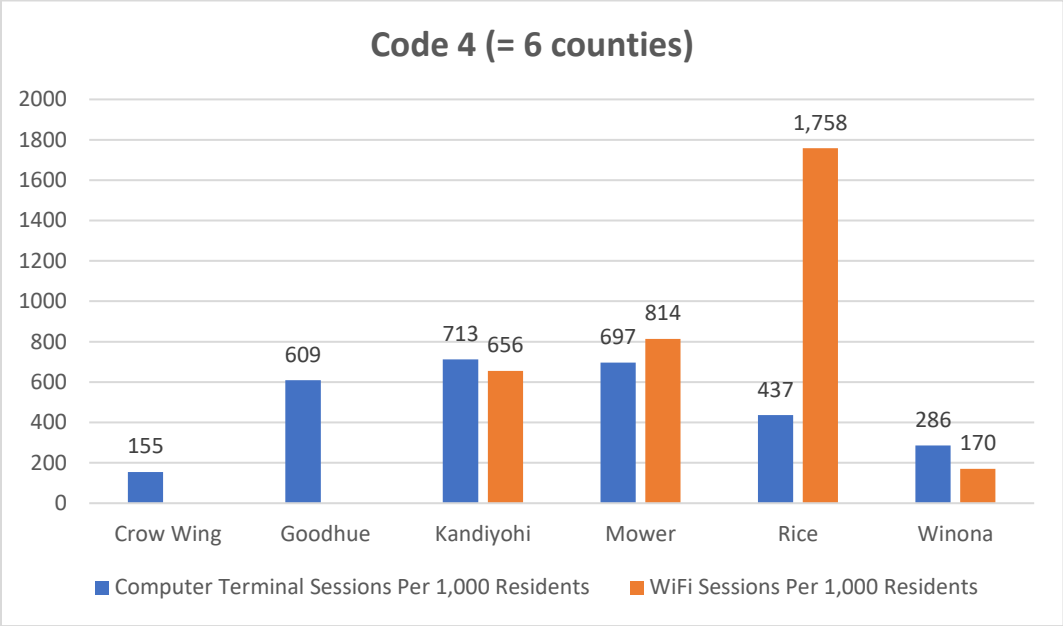
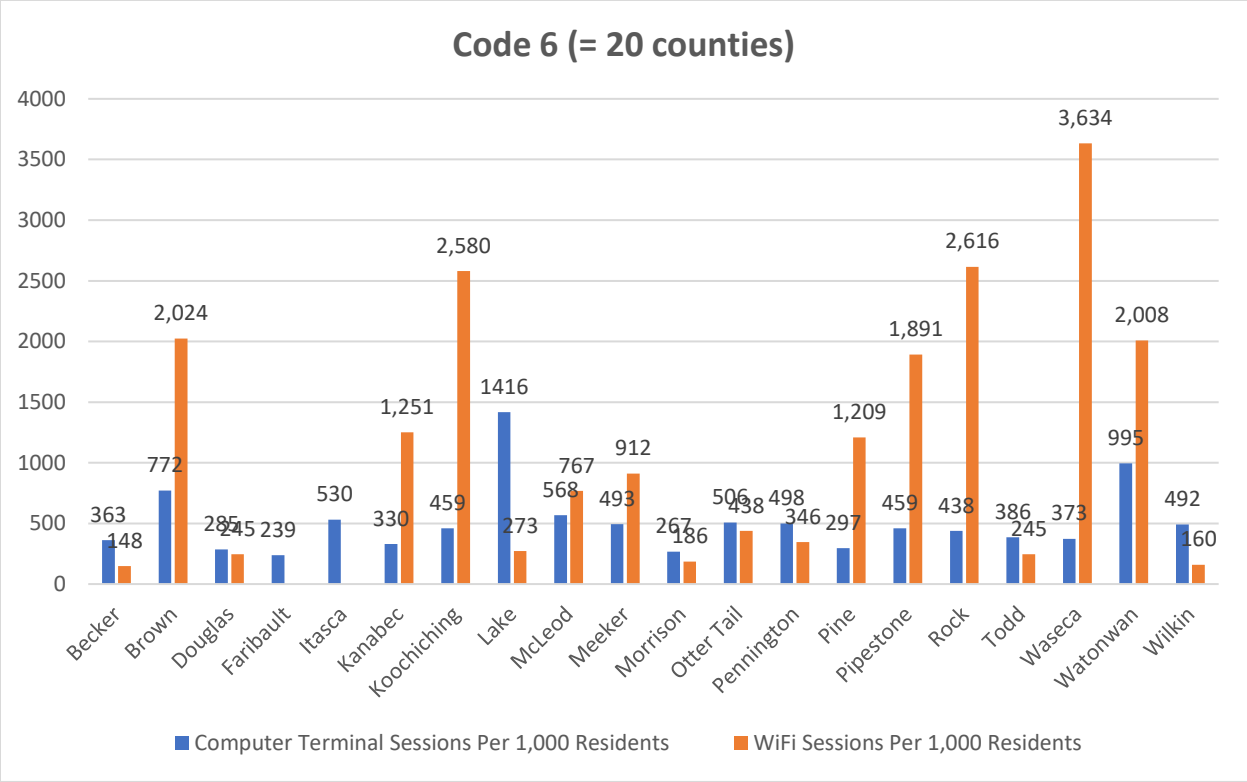


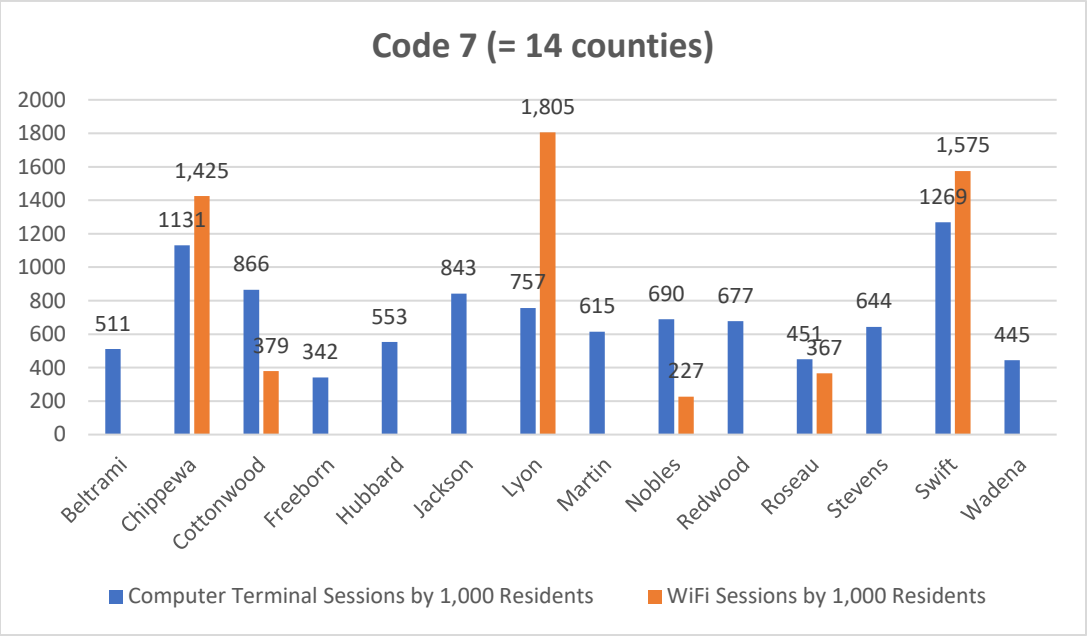
Code 4 counties are those with "an urban population of 20,000 or more, adjacent to a metro area." They range in population from Rice (66,853) to Mower (40,124). Kandiyohi logged the most per capita sessions on library computer/devices (713 per 1,000 residents), and Crow Wing reported the fewest (155 per 1,000 residents). Branch-specific WiFi data figures for the libraries in Brainerd and Zumbrota are not available from the 2019 MPLAR, barring an accurate per capita measure for Crow Wing and Goodhue counties respectively. Among the four Code 4 counties for which complete WiFi metrics *are* available, Rice reported the highest number of WiFi sessions per capita by a significant margin (1,758 per 1,000 residents), and Winona registered the lowest with 170 per 1,000.

Steele is the only county classified as Code 5 ("urban population of 20,000 or more, not adjacent to a metro area.").

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Steele	5	37,112	79,559	2144	369,712	9,962

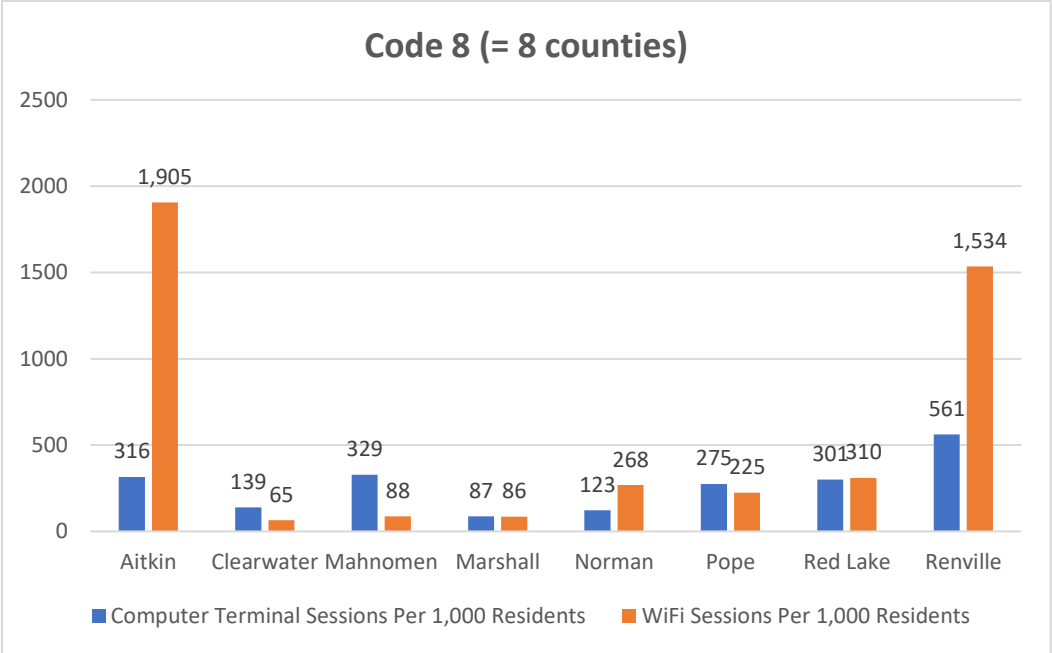


Code 6 counties are those with "an urban population of 2,500 to 19,999, adjacent to a metro area." Approximately one in five Minnesota counties fit under this description. These range in population from Otter Tail (58,734) to Wilkin (6,226). Lake County logged the most per capita sessions on library computers/devices (1,416 per 1,000 residents), and Faribault County reported the fewest (239 per 1,000 residents). Blue Earth Community Library did not report a WiFi figure to the 2019 MPLAR, nor did several locations in Itasca County (Calumet, Coleraine and Grand Rapids). Consequently, complete per capita measurements are not available for Faribault or Itasca counties. Among the eighteen Code 6 counties for which complete WiFi numbers *are* available, Waseca reported the highest per capita (3,634 per 1,000 residents), and Becker the lowest with just 148 per 1,000.

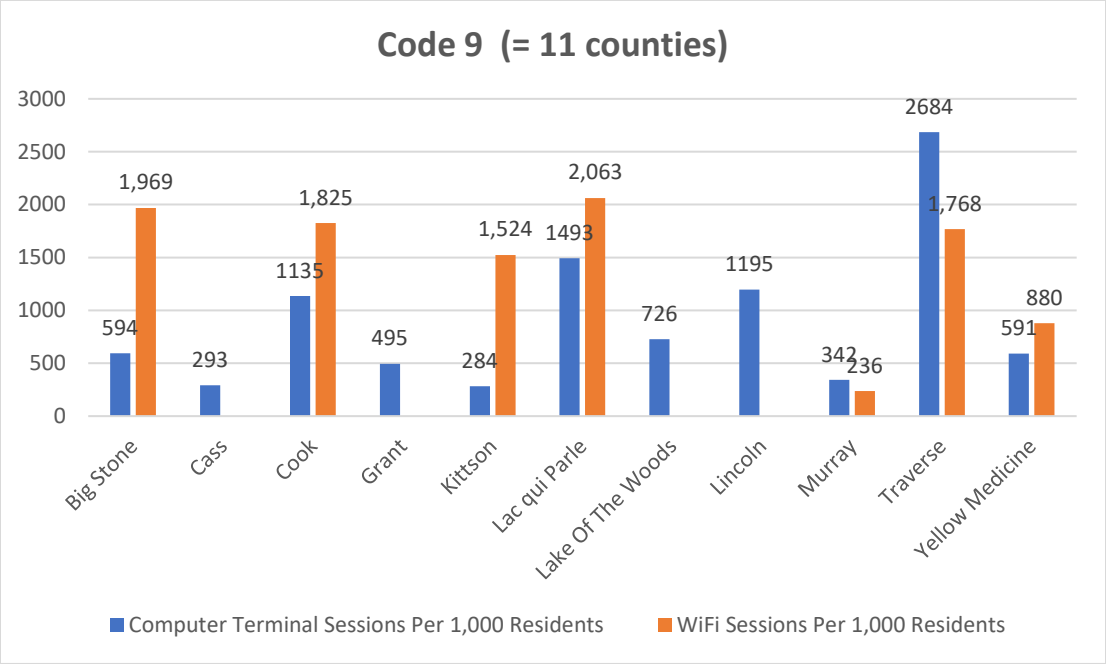


Code 7 counties are those with "an urban population of 2,500 to 19,999, not adjacent to a metro area." They range in population from Beltrami (47,184) to Swift (9,367). Swift logged the most per capita sessions on library computers/devices (1,269 per 1,000 residents), and Freeborn reported the fewest (342 per 1,000 residents).

Of the 14 counties classed as Code 7, the 2019 MPLAR lacks a WiFi metric for at least one public library in fully half of them. Reporting limitations are attributable to Beltrami (Bemidji and Blackduck), Hubbard (Park Rapids), Jackson (Heron Lake, Jackson, Lakefield), Redwood (Morgan), and Wadena (Wadena), among others. Of those for which comprehensive countywide data *is* available, Lyon reported the highest number of WiFi sessions per capita (1,805 per 1,000 residents), and Nobles reported the lowest with 227 per 1,000 residents.



Code 8 counties are those that are “completely rural or have a less than 2,500 urban population, adjacent to a metro area.” They range in population from Aiktin (15,870) to Red Lake (4,050). Renville logged the most per capita sessions on library computers/devices (561 per 1,000 residents), and Marshall reported the fewest (87 per 1,000 residents). Aitkin reported the highest number of WiFi sessions per capita (1,905 per 1,000 residents), and Clearwater registered the lowest with just 65 per 1,000.



Code 9 counties are those that are "completely rural, or have less than an 2,500 urban population, not adjacent to a metro area." They range in population from Cass (29,754) to Traverse (3,263). Traverse logged the most per capita sessions on library computers/devices (2,684 per 1,000 residents), and Kittson reported the fewest (284 per 1,000 residents).

MPLAR lacks a WiFi metric for at least one library in several of these counties, including Cass (Pine River, Walker, Cass Lake), Lake of the Woods (Baudette), and Lincoln (Hendricks). Of those for which comprehensive countywide data *is* available, Lac qui Parle reported the highest number of WiFi sessions per capita (2,063 per 1,000 residents), and Murray reported the lowest with 236 per 1,000 residents.

DEVICE AVAILABILITY

The percentage of Americans who own at least one WiFi- enabled device has grown precipitously over the past 5-8 years.[26] Nevertheless, access to on-site devices remains a core piece of libraries' value, as well.

In 2019, Minnesota's public library systems offered patrons 5,652 computer terminals, plus 1,067 mobile internet devises, for on-site use.

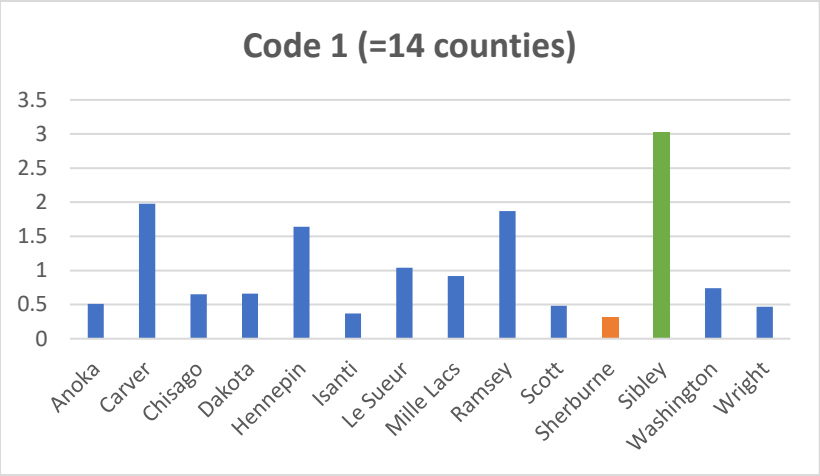
As with just about every output under consideration in this report, access distribution of those assets is not consistent across the state. Disparities, where they exist, are often attributable in part to particularities of governance and budge. Given the complex administrative landscape underpinning Minnesota's public library network (see Page 9), it is cleanest and more appropriate to the study at hand to center analysis at the *county* level.

As the most populous by far of all 87, Hennepin County (pop. 1,279,981) logically has the most in-service, on-premises devices (2,097 ct., or 1.64 per 1,000 residents). Red Lake County (pop. 4,030), one of Minnesota's three smallest, brings the smallest number of computers (3 ct., or .75 per 1,000 residents). Obviously, the makeup of two such dissimilar communities makes it difficult to draw meaningful conclusions from those data points.

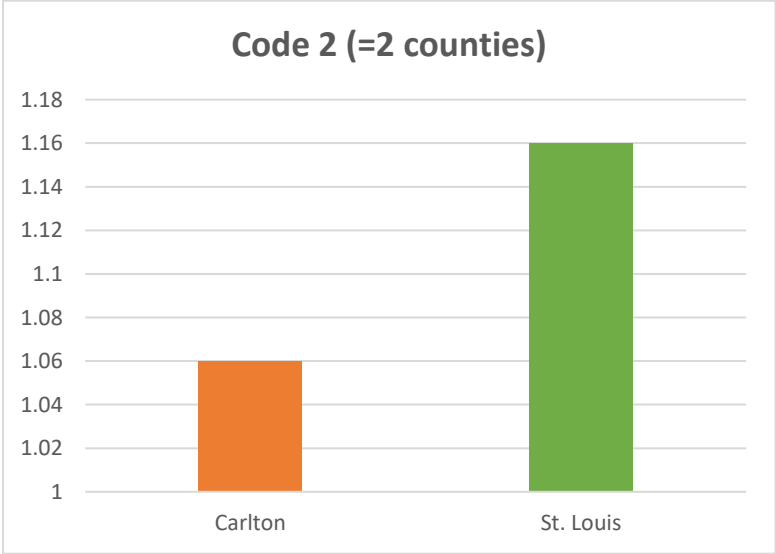
As with the breakdown of in-library internet speeds and WiFi usage trends, the Rural-Urban Continuum matrix offers a useful heuristic against which to evaluate a library's assets against those of its peers.

Appendix E charts each Minnesota county's 2019 figures for available desktop computers and on-site (non-loanable) portable devices – and computes per capita prevalence. Each county is listed alphabetically, and then alongside "peers" in population and urban character (as defined, again, by the Rural-Urban Continuum).

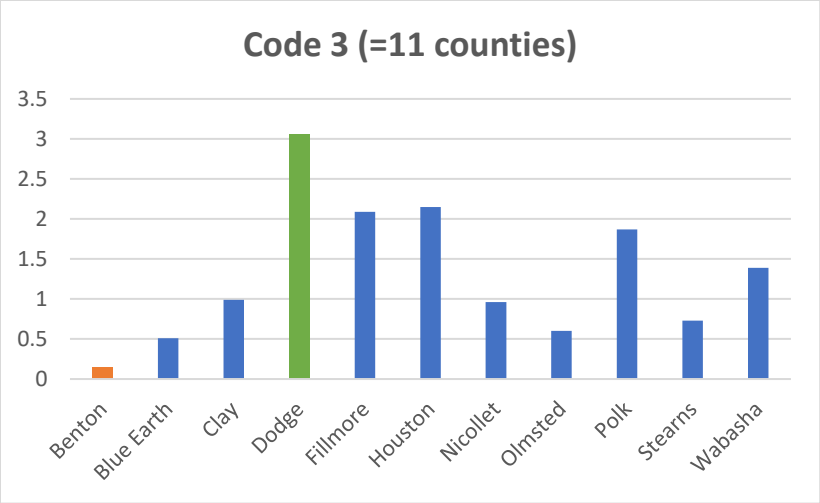
[26]Source: https://www.pewresearch.org/internet/fact-sheet/mobile/



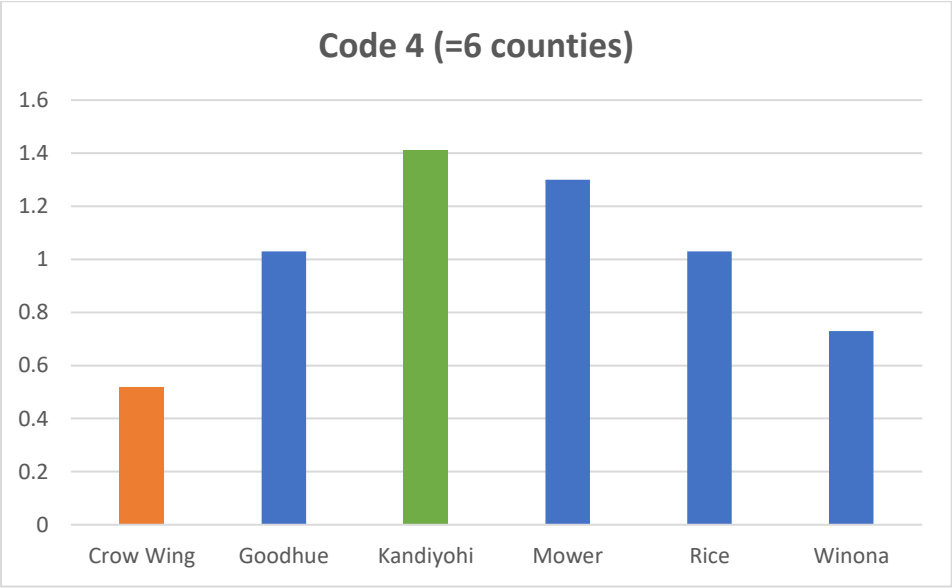
Code 1 counties are those "in metro areas of 1 million population or more." They range in population from Hennepin (1,279,981) to Sibley (14,899). On average, these 14 metro counties average 1.05 computers per 1,000 residents, and the median figure is 0.7. Within this subset, Sibley offers the most computers/devices (3.02 per 1,000 residents) and Sherburne the fewest (.32 per 1,000 residents).



Carlton and Saint Louis are the only two counties in Minnesota that fall under Code 2 ("in metro areas of 250,000 to 1 million population"). St. Louis Park offers 231 devices, or 1.06 internet-enabled devices per 1,000 residents. (Duluth Public Library accounts for 68 of this tally.) Carlton offers 35, which equates to 1.06 per 1,000 residents.



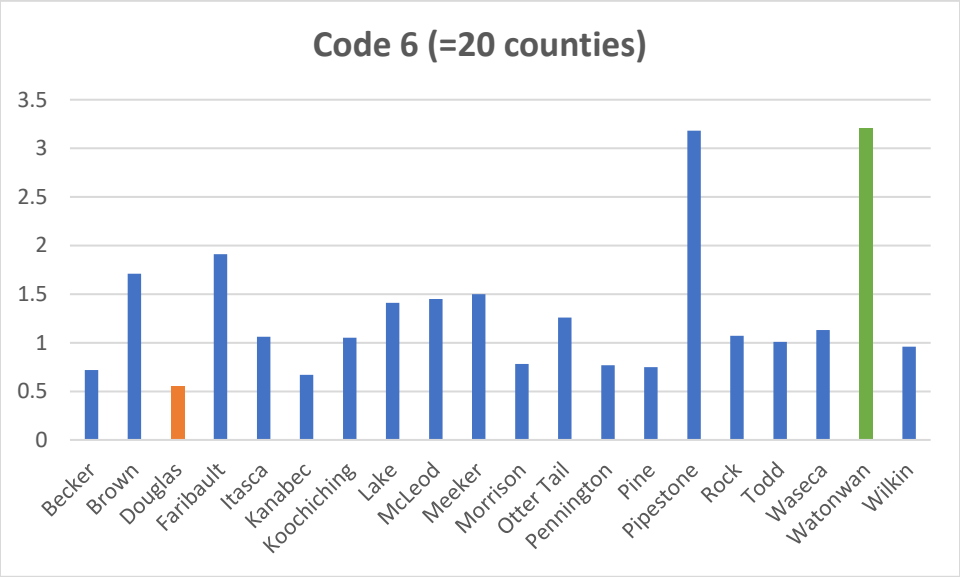
Code 3 counties are those "in metro areas of fewer than 250,000 population." They range in population from Olmsted (160,431) to Houston (18,626). These 11 metro counties average 1.32 computers per 1,000 residents, with a median figure of .99 per 1,000 residents. Within this subset, Dodge offers the most computers/devices (3.06 per 1,000 residents) and Benton offers the fewest (.15 per 1,000 residents).



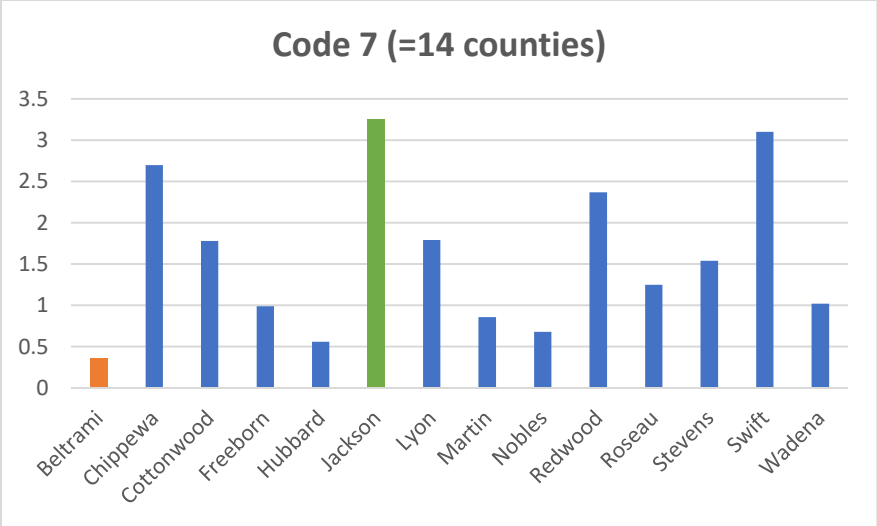
Code 4 counties are those with "an urban population of 20,000 or more, adjacent to a metro area." They range in population from Rice (66,853) to Mower (40,124). These six nonmetro counties average 1 device per 1,000 residents, and the median figure is 1.03. Within this subset, Kandiyohi offers the most devices (1.41 per 1,000 residents), while Goodhue and Rice offer the fewest (1.03 per 1,000 residents).

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Steele	37	18	55	37,112	5	1.48

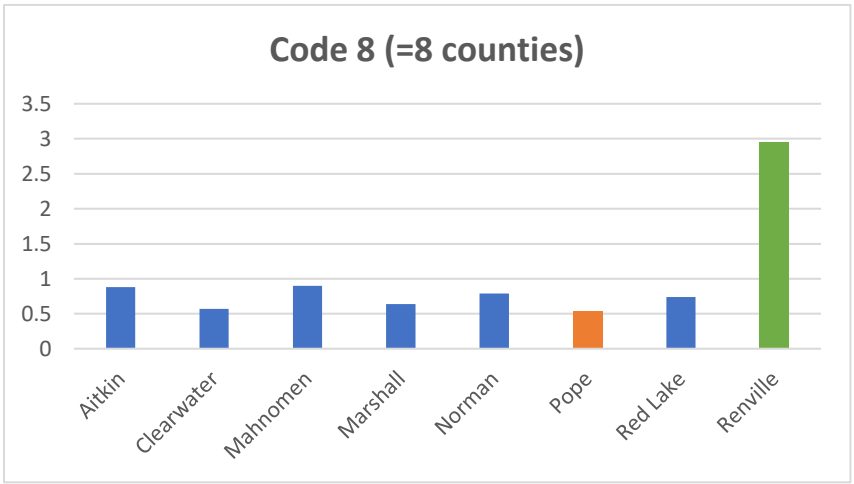
Steele is the only county classified as Code 5 ("urban population of 20,000 or more, not adjacent to a metro area.").



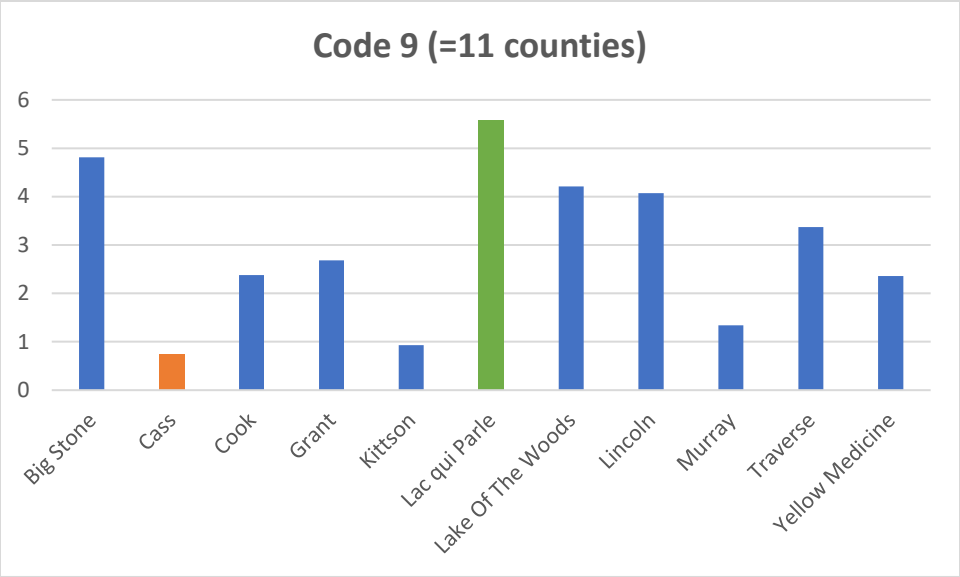
Code 6 counties are those with "an urban population of 2,500 to 19,999, adjacent to a metro area." They range in population from Otter Tail (58,734) to Wilkin (6,226). These 20 nonmetro counties average 1.31 computers/devices per 1,000 residents, and the median figure is 1.07. Within this subset, Watonwan offers the most devices (3.2 per 1,000 residents), while Wilkin offers the fewest (.55 per 1,000 residents).



Code 7 counties are those with "an urban population of 2,500 to 19,999, not adjacent to a metro area." They range in population from Beltrami (47,184) to Swift (9,367). These 14 nonmetro counties average 1.59 devices per 1,000 residents, and the median figure is 1.4. Within this subset, Jackson offers the most computers/devices (3.25 per 1,000 residents), while Beltrami offers the fewest (.36 per 1,000 residents).



Code 8 counties are those that are "completely rural or have a less than 2,500 urban population, adjacent to a metro area." They range in population from Aiktin (15,870) to Red Lake (4,050). These eight nonmetro counties average 1 device per 1,000 residents, and a median figure of 0.77. Within this subset, Jackson offers the most computers/devices (2.95 per 1,000 residents), and Pope offers the fewest (.54 per 1,000 residents).



Code 9 counties are those that are "completely rural, or have less than an 2,500 urban population, not adjacent to a metro area." They range in population from Cass (29,754) to Traverse (3,263). These 11 rural counties average 2.95 devices per 1,000 residents, and the median figure is 2.68. Within this subset, Lac qui Parle offers the most computers/devices (5.58 per 1,000 residents), and Cass offers the fewest (.74 per 1,000 residents).

(continued)

DIGITAL CONTENT

Any discussion of the digital *access* afforded by public libraries should also include a high-level overview of the digital *content* available through libraries. Last year alone, Minnesota's public libraries loaned out 7,765,650 electronic materials!

According to an IMLS report on FY2017, that PLS data period may mark something of a watershed moment for the field. Nationwide, for the first time, books and other print materials accounted for ostensibly "less than half of all public library collection materials." At the same time, 464 million cumulative e-book offerings (that's 1.5 per resident), together with 260 million downloaded audio materials, grew electronic assets to within one percentage point of that level.[27]

While comprehensive, nationwide data for 2019 is not yet available, it is likely that digital exceeded print holdings within that window. (Furthermore, the ongoing COVID-19 pandemic – and its repercussions for print circulation – have surely provided an additional boost to digital browsing and circulation.)

As with every other element of library operations, considerable variability exists between *and within* states with respect to the array of digital resources on offer to patrons.[28] Of the state's 140 library administrative units, 84 report spending >$1,000 on electronic expenditures in 2019.[29]

In Minnesota, a wealth of virtual materials are available to *all* libraries (or more to the point, their patrons) under the auspices of state-level support organizations. Chief among these are Department of Education and Minitex. The latter is a joint venture of the Minnesota Office of Higher Education and the University Minnesota. Minitex coordinates the interlibrary loan of physical materials across the state's public and academic libraries, but also administers several invaluable e-resource platforms that all Minnesotans can access.

[27] Source: https://www.imls.gov/sites/default/files//publications/documents/publiclibrariesintheunitedstatessurveyfiscalyear2017volume1.pdf

[28] Clear, county-level statistics are not easily obtainable from the MPLAR for this area of inquiry. This is due chiefly to the patchwork of service models and jurisdiction arrangements in operation across the state. Libraries report e-circulation and expenditures on digital materials at the administrative unit ("AE") level, but the service area of a given AE may cover multiple counties, and the boundaries of a given library system's service area may not be coterminous with county borders.

[29] MPLAR data point "E08. Collection Expenditures - Electronic Materials Total"

Resources of particular note include:

- Ebooks Minnesota: As the name suggests, Ebooks Minnesota is an online collection open to all Minnesotans – and interoperable over a wide range of internet-enabled devices. This repository spans nearly 50 category areas, and is particularly strong in its representation from Minnesota publishers and authors. New acquisitions occur under the oversight of a Collection Development Task Force housed within Minitex.

- ELibrary Minnesota (ELM): Courtesy of the same legislative appropriations that make EBooks Minnesota possible, ELM offers Minnesota residents unrestricted access to the content housed in 54 online databases. These include products from popular and trusted vendors like Britannica, Capstone, EBSCO, Gale, OCLC and ProQuest. Media run the gamut from newspapers and popular magazines, to scholarly periodicals, to audiovisual materials. Without the consortial buying rates that ELM makes possible, these in-demand resources would simply be beyond the budgetary means of a large swathe of Minnesota libraries.

- Minnesota Digital Library (MDL): In a nutshell, MDL is a digital storehouse for artifacts relating to Minnesota history and culture. It currently offers unrestricted access to digitized copies of more than 55,000 letters, photographs, maps, and oral histories. Its upkeep and growth involve partnerships with libraries and historical societies across the state. MDL is made possible through the Minnesota Arts and Cultural Heritage Fund, with additional financial sponsorship from Minitex.

APPENDIX A: MPLAR DATA POINTS ON DIGITAL ACCESS

Below are data points collected from Minnesota libraries as part of the annual PLS/MPLAR that are germane (directly or indirectly) to the digital access conversation. lists all MPLAR data points that appear directly or indirectly relevant to the digital access questions here under consideration.

Italics indicate data points available at the branch or system administration level, but not both. For a list of all 350+ fields included as part of the MPLAR, see Worksheet 1 in Appendix B.

OUTLET (aka BRANCH) LEVEL DATA FIELDS

- Annual Public Internet Computer Sessions (P08m)
- Public Internet Computer Other Uses (P09m)
- Wireless Sessions (P10m)
- Public Internet Stationary Computers (F13m)
- Public Internet Mobile Devices for On-Site Use (F14m)
- Total Public Internet Computers/Devices (F15m)
- *Fiber Optic to Library Building (F16m)*
- *Category 6 or Better Wiring within Library (F17m)*
- *Typical Internet Download Speed for Public Computers (F19m)*
- *Typical Internet Upload Speed for Public Computers (F21m)*
- *Wi-Fi Available to Public (F22m)*

ADMINISTRATIVE ENTITY (AE) LEVEL DATA FIELDS

- Annual Public Internet Computer Sessions (P08)
- Public Internet Computer Other Uses (P09)
- Wireless Sessions (P10)
- *Downloadable E-books and E-serials Circulation (P17)*
- *Downloadable Audio and Video Circulation (P18)*
- *Total Downloadable Circulation (P19)*
- *Number of Information Retrievals from Electronic Collections (P29)*
- *Electronic Content Use (P30)*
- Public Internet Stationary Computers (F13)
- Public Internet Mobile Devices for On-Site Use (F14)
- Total Public Internet Computers/Devices (F15)
- *Number of outlets (branches) with Wi-Fi available to Public (F22)*
- *Electronic Serial Subscriptions, Licensed Locally, Downloadable (C08)*
- *Electronic Serial Subscriptions, Licensed Regionally, Downloadable (C09)*
- *Total Electronic Serial Subscriptions (C10)*
- *Electronic Books Licensed Locally (C11)*
- *Electronic Books Licensed Regionally (C12)*
- *Electronic Books Licensed Statewide (C13)*

- *Total Electronic Books (C14)*
- *Audio Downloadable Units, Licensed Locally (C15)*
- *Audio Downloadable Units, Licensed Regionally (C16)*
- *Total Audio - Downloadable Units (C17)*
- *Video - Downloadable Units, Licensed Locally (C18)*
- *Video - Downloadable Units, Licensed Regionally (C19)*
- *Total Video - Downloadable Units (C20)*
- *Electronic Collections Licensed Locally (C21)*
- *Electronic Collections Licensed Regionally (C22)*
- *Total Licensed Electronic Collections, Local/Regional/Other Cooperative Agreement (C24)*
- *Electronic Collections Licensed Statewide (C25)*
- *Total Licensed Electronic Collections (C26)*
- *Technology Plan (D06)*
- *Federal Library Services and Technology Act (R16)*
- *Regional Library Telecommunications Aid (R13)*
- *Collection Expenditures - Electronic Materials - Electronic Books (E05)*
- *Collection Expenditures - Electronic Collections (E06)*
- *Collection Expenditures - Electronic Materials Expenditures Total (E08)*
- *Federal Government Capital Revenue – Library Services and Technology Act (R44)*

APPENDIX B: 2019 MDE PUBLIC IBRARY ANNUAL REPORT (MPLAR)

See the attached .xls spreadsheet.

APPENDIX C: INVENTORY OF STATE-ADDED DATA ELEMENTS

See the attached .xls spreadsheet.

APPENDIX D: COMPUTER/WIFI USE STATISTICS – BY COUNTY + CODE

Alphabetically by County

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi [30]Sessions Per 1,000 Residents
Aitkin	8	15,870	5,010	316	30,233	1,905
Anoka	1	362,648	162,980	449	255,284	704
Becker	6	34,545	12,553	363	5,110	148
Beltrami	7	47,184	24,129	511		
Benton	3	40,895	1,396	34	227	6
Big Stone	9	4,993	2,964	594	9,832	1,969
Blue Earth	3	68,583	25,550	373	21,014	306
Brown	6	25,119	19,385	772	50,853	2,024
Carlton	2	35,935	15,299	426		
Carver	1	107,179	48,745	455	28,535	266
Cass	9	29,754	8,710	293		
Chippewa	7	11,858	13,417	1131	16,894	1,425
Chisago	1	56,613	12,873	227	74,671	1,319
Clay	3	64,591	38,751	600	16,670	258
Clearwater	8	8,808	1,225	139	573	65
Cook	9	5,462	6,199	1135	9,968	1,825
Cottonwood	7	11,216	9,715	866	4,256	379
Crow Wing	4	65,274	10,125	155		
Dakota	1	433,302	215,983	498	548,897	1,267
Dodge	3	20,943	5,400	258	12,579	601
Douglas	6	38,220	10,893	285	9,382	245
Faribault	6	13,580	3,244	239		
Fillmore	3	21,060	14,005	665	17,310	822
Freeborn	7	30,364	10,393	342		
Goodhue	4	46,449	28,289	609		
Grant	9	5,967	2,953	495		
Hennepin	1	1,279,981	1,537,636	1201	2,816,542	2,200
Houston	3	18,626	11,290	606	9,731	522
Hubbard	7	21,494	11,882	553		
Isanti	1	40,566	11,549	285	47,353	1,167

[30] Gray fields denote counties in which one or more public libraries has not reported 2019 wifi usage metrics for the PLS.

Itasca	6	45,203	23,955	530		
Jackson	7	9,858	8,307	843		
Kanabec	6	16,310	5,383	330	20,398	1,251
Kandiyohi	4	43,193	30,781	713	28,338	656
Kittson	9	4,299	1,219	284	6,551	1,524
Koochiching	6	12,430	5,710	459	32,067	2,580
Lac qui Parle	9	6,629	9,896	1493	13,674	2,063
Lake	6	10,632	15,057	1416	2,901	273
Lake Of The Woods	9	3,798	2,756	726		
Le Sueur	1	28,894	12,753	441	17,977	622
Lincoln	9	5,648	6,752	1195		
Lyon	7	25,635	19,407	757	46,261	1,805
Mahnomen	8	5,529	1,818	329	488	88
Marshall	8	9,342	815	87	807	86
Martin	7	19,752	12,141	615		
McLeod	6	35,963	20,426	568	27,592	767
Meeker	6	23,256	11,475	493	21,215	912
Mille Lacs	1	26,227	9,377	358	40,432	1,542
Morrison	6	33,368	8,901	267	6,210	186
Mower	4	40,124	27,983	697	32,675	814
Murray	9	8,222	2,811	342	1,944	236
Nicollet	3	34,323	19,969	582		
Nobles	7	21,976	15,170	690	4,992	227
Norman	8	6,367	782	123	1,704	268
Olmsted	3	160,431	51,361	320	46,748	291
Otter Tail	6	58,734	29,729	506	25,720	438
Pennington	6	14,355	7,145	498	4,968	346
Pine	6	29,526	8,761	297	35,697	1,209
Pipestone	6	9,132	4,190	459	17,272	1,891
Polk	3	31,524	18,622	591	26,644	845
Pope	8	11,139	3,068	275	2,505	225
Ramsey	1	558,248	520,115	932	832,469	1,491
Red Lake	8	4,030	1,213	301	1,249	310
Redwood	7	15,204	10,286	677		
Renville	8	14,588	8,191	561	22,379	1,534
Rice	4	66,853	29,208	437	117,548	1,758
Rock	6	9,359	4,096	438	24,486	2,616
Roseau	7	15,242	6,876	451	5,599	367
Scott	1	148,458	50,719	342		
Sherburne	1	97,520	11,551	118	7,606	78
Sibley	1	14,899	6,465	434	26,330	1,767

St. Louis	2	199,661	145,632	729		
Stearns	3	160,211	68,292	426	54,775	342
Steele	5	37,112	79,559	2144	369,712	9,962
Stevens	7	9,766	6,292	644		
Swift	7	9,367	11,889	1269	14,757	1,575
Todd	6	24,665	9,516	386	6,043	245
Traverse	9	3,263	8,758	2684	5,770	1,768
Wabasha	3	21,614	11,835	548	11,488	532
Wadena	7	13,744	6,110	445		
Waseca	6	18,648	6,960	373	67,768	3,634
Washington	1	262,748	119,791	456	305,860	1,164
Watonwan	6	10,923	10,869	995	21,936	2,008
Wilkin	6	6,226	3,062	492	994	160
Winona	4	50,830	14,548	286	1,799	35
Wright	1	138,531	31,656	229	18,270	132
Yellow Medicine	9	9,729	5,750	591	8,559	880
Total	N/A	5,669,198	**3,868,302**	682	**6,636,157**	

By Rural-Urban Continuum Code

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Anoka	1	362,648	162,980	449	255,284	704
Carver	1	107,179	48,745	455	28,535	266
Chisago	1	56,613	12,873	227	74,671	1,319
Dakota	1	433,302	215,983	498	548,897	1,267
Hennepin	1	1,279,981	1,537,636	1201	2,816,542	2,200
Isanti	1	40,566	11,549	285	47,353	1,167
Le Sueur	1	28,894	12,753	441	17,977	622
Mille Lacs	1	26,227	9,377	358	40,432	1,542
Ramsey	1	558,248	520,115	932	832,469	1,491
Scott	1	148,458	50,719	342		
Sherburne	1	97,520	11,551	118	7,606	78
Sibley	1	14,899	6,465	434	26,330	1,767
Washington	1	262,748	119,791	456	305,860	1,164
Wright	1	138,531	31,656	229	18,270	132

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Carlton	2	35,935	15,299	426		
St. Louis	2	199,661	145,632	729		

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Benton	3	40,895	1,396	34	227	6
Blue Earth	3	68,583	25,550	373	21,014	306
Clay	3	64,591	38,751	600	16,670	258
Dodge	3	20,943	5,400	258	12,579	601
Fillmore	3	21,060	14,005	665	17,310	822
Houston	3	18,626	11,290	606	9,731	522
Nicollet	3	34,323	19,969	582		
Olmsted	3	160,431	51,361	320	46,748	291
Polk	3	31,524	18,622	591	26,644	845
Stearns	3	160,211	68,292	426	54,775	342
Wabasha	3	21,614	11,835	548	11,488	532

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Crow Wing	4	65,274	10,125	155		
Goodhue	4	46,449	28,289	609		
Kandiyohi	4	43,193	30,781	713	28,338	656
Mower	4	40,124	27,983	697	32,675	814
Rice	4	66,853	29,208	437	117,548	1,758
Winona	4	50,830	14,548	286	1,799	35

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Steele	5	37,112	79,559	2144	369,712	9,962

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Becker	6	34,545	12,553	363	5,110	148
Brown	6	25,119	19,385	772	50,853	2,024
Douglas	6	38,220	10,893	285	9,382	245
Faribault	6	13,580	3,244	239		
Itasca	6	45,203	23,955	530		
Kanabec	6	16,310	5,383	330	20,398	1,251
Koochiching	6	12,430	5,710	459	32,067	2,580
Lake	6	10,632	15,057	1416	2,901	273
McLeod	6	35,963	20,426	568	27,592	767
Meeker	6	23,256	11,475	493	21,215	912
Morrison	6	33,368	8,901	267	6,210	186
Otter Tail	6	58,734	29,729	506	25,720	438
Pennington	6	14,355	7,145	498	4,968	346
Pine	6	29,526	8,761	297	35,697	1,209
Pipestone	6	9,132	4,190	459	17,272	1,891
Rock	6	9,359	4,096	438	24,486	2,616
Todd	6	24,665	9,516	386	6,043	245
Waseca	6	18,648	6,960	373	67,768	3,634
Watonwan	6	10,923	10,869	995	21,936	2,008
Wilkin	6	6,226	3,062	492	994	160

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Beltrami	7	47,184	24,129	511		
Chippewa	7	11,858	13,417	1131	16,894	1,425
Cottonwood	7	11,216	9,715	866	4,256	379
Freeborn	7	30,364	10,393	342		
Hubbard	7	21,494	11,882	553		
Jackson	7	9,858	8,307	843		
Lyon	7	25,635	19,407	757	46,261	1,805
Martin	7	19,752	12,141	615		
Nobles	7	21,976	15,170	690	4,992	227
Redwood	7	15,204	10,286	677		
Roseau	7	15,242	6,876	451	5,599	367
Stevens	7	9,766	6,292	644		
Swift	7	9,367	11,889	1269	14,757	1,575
Wadena	7	13,744	6,110	445		

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Aitkin	8	15,870	5,010	316	30,233	1,905
Clearwater	8	8,808	1,225	139	573	65
Mahnomen	8	5,529	1,818	329	488	88
Marshall	8	9,342	815	87	807	86
Norman	8	6,367	782	123	1,704	268
Pope	8	11,139	3,068	275	2,505	225
Red Lake	8	4,030	1,213	301	1,249	310
Renville	8	14,588	8,191	561	22,379	1,534

County	Code	Population	Computer Terminal Use Sessions	Use Sessions Per 1,000 Residents	Logged WiFi Sessions	WiFi Sessions Per 1,000 Residents
Big Stone	9	4,993	2,964	594	9,832	1,969
Cass	9	29,754	8,710	293		
Cook	9	5,462	6,199	1135	9,968	1,825
Grant	9	5,967	2,953	495		
Kittson	9	4,299	1,219	284	6,551	1,524
Lac qui Parle	9	6,629	9,896	1493	13,674	2,063
Lake Of The Woods	9	3,798	2,756	726		
Lincoln	9	5,648	6,752	1195		
Murray	9	8,222	2,811	342	1,944	236
Traverse	9	3,263	8,758	2684	5,770	1,768
Yellow Medicine	9	9,729	5,750	591	8,559	880

APPENDIX E: ON-SITE DEVICE AVAILABILITY BY COUNTY + USDA CODE

Alphabetically by County

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Aitkin	14	0	14	15,870	8	0.88
Anoka	160	26	186	36,2648	1	0.51
Becker	16	9	25	34,545	6	0.72
Beltrami	17	0	17	47,184	7	0.36
Benton	6	0	6	40,895	3	0.15
Big Stone	11	13	24	4,993	9	4.81
Blue Earth	35	0	35	68,583	3	0.51
Brown	36	7	43	25,119	6	1.71
Carlton	27	11	38	35,935	2	1.06
Carver	151	61	212	107,179	1	1.98
Cass	22	0	22	29,754	9	0.74
Chippewa	21	11	32	11,858	7	2.70
Chisago	37	0	37	56,613	1	0.65
Clay	58	6	64	64,591	3	0.99
Clearwater	5	0	5	8,808	8	0.57
Cook	10	3	13	5,462	9	2.38
Cottonwood	20	0	20	11,216	7	1.78
Crow Wing	22	12	34	65,274	4	0.52
Dakota	255	31	286	433,302	1	0.66
Dodge	19	45	64	20,943	3	3.06
Douglas	18	3	21	38,220	6	0.55
Faribault	22	4	26	13,580	6	1.91
Fillmore	43	1	44	21,060	3	2.09
Freeborn	30	0	30	30,364	7	0.99
Goodhue	44	4	48	46,449	4	1.03
Grant	15	1	16	5,967	9	2.68
Hennepin	1,864	233	2,097	1,279,981	1	1.64
Houston	35	5	40	18,626	3	2.15
Hubbard	10	2	12	21,494	7	0.56
Isanti	15	0	15	40,566	1	0.37
Itasca	48	0	48	45,203	6	1.06
Jackson	26	6	32	9,858	7	3.25
Kanabec	11	0	11	16,310	6	0.67
Kandiyohi	46	15	61	43,193	4	1.41
Kittson	4	0	4	4,299	9	0.93
Koochiching	7	6	13	12,430	6	1.05

Lac qui Parle	21	16	37	6,629	9	5.58
Lake	13	2	15	10,632	6	1.41
Lake of the Woods	7	9	16	3,798	9	4.21
Le Sueur	28	2	30	28,894	1	1.04
Lincoln	18	5	23	5,648	9	4.07
Lyon	46	0	46	25,635	7	1.79
Mahnomen	5	0	5	5,529	8	0.90
Marshall	6	0	6	9,342	8	0.64
Martin	17	0	17	19,752	7	0.86
McLeod	33	19	52	35,963	6	1.45
Meeker	23	12	35	23,256	6	1.50
Mille Lacs	24	0	24	26,227	1	0.92
Morrison	26	0	26	33,368	6	0.78
Mower	43	9	52	40,124	4	1.30
Murray	11	0	11	8,222	9	1.34
Nicollet	31	2	33	34,323	3	0.96
Nobles	15	0	15	21,976	7	0.68
Norman	5	0	5	6,367	8	0.79
Olmsted	83	13	96	160,431	3	0.60
Otter Tail	52	22	74	58,734	6	1.26
Pennington	11	0	11	14,355	6	0.77
Pine	22	0	22	29,526	6	0.75
Pipestone	21	8	29	9,132	6	3.18
Polk	41	18	59	31,524	3	1.87
Pope	6	0	6	11,139	8	0.54
Ramsey	801	245	1,046	558,248	1	1.87
Red Lake	3	0	3	4,030	8	0.74
Redwood	33	3	36	15,204	7	2.37
Renville	25	18	43	14,588	8	2.95
Rice	55	14	69	66,853	4	1.03
Rock	9	1	10	9,359	6	1.07
Roseau	19	0	19	15,242	7	1.25
Scott	71	0	71	148,458	1	0.48
Sherburne	31	0	31	97,520	1	0.32
Sibley	41	4	45	14,899	1	3.02
St. Louis	196	35	231	199,661	2	1.16
Stearns	117	0	117	160,211	3	0.73
Steele	37	18	55	37,112	5	1.48
Stevens	9	6	15	9,766	7	1.54
Swift	20	9	29	9,367	7	3.10
Todd	25	0	25	24,665	6	1.01
Traverse	10	1	11	3,263	9	3.37
Wabasha	29	1	30	21,614	3	1.39
Wadena	11	3	14	13,744	7	1.02
Waseca	18	3	21	18,648	6	1.13
Washington	157	37	194	262,748	1	0.74

Watonwan	35	0	35	10,923	6	3.20
Wilkin	6	0	6	6,226	6	0.96
Winona	28	9	37	50,830	4	0.73
Wright	65	0	65	138,531	1	0.47
Yellow Medicine	13	10	23	9,729	9	2.36
Total	5,652	1,069	6,721	5,669,198	N/A	1.19

By Rural-Urban Continuum Code

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Anoka	160	26	186	362,648	1	0.51
Carver	151	61	212	107,179	1	1.98
Chisago	37	0	37	56,613	1	0.65
Dakota	255	31	286	433,302	1	0.66
Hennepin	1,864	233	2,097	1,279,981	1	1.64
Isanti	15	0	15	40,566	1	0.37
Le Sueur	28	2	30	28,894	1	1.04
Mille Lacs	24	0	24	26,227	1	0.92
Ramsey	801	245	1,046	558,248	1	1.87
Scott	71	0	71	148,458	1	0.48
Sherburne	31	0	31	97,520	1	0.32
Sibley	41	4	45	14,899	1	3.02
Washington	157	37	194	262,748	1	0.74
Wright	65	0	65	138,531	1	0.47

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Carlton	27	11	38	35,935	2	1.06
St. Louis	196	35	231	199,661	2	1.16

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Benton	6	0	6	40,895	3	0.15
Blue Earth	35	0	35	68,583	3	0.51
Clay	58	6	64	64,591	3	0.99
Dodge	19	45	64	20,943	3	3.06
Fillmore	43	1	44	21,060	3	2.09
Houston	35	5	40	18,626	3	2.15
Nicollet	31	2	33	34,323	3	0.96
Olmsted	83	13	96	160,431	3	0.6
Polk	41	18	59	31,524	3	1.87
Stearns	117	0	117	160,211	3	0.73
Wabasha	29	1	30	21,614	3	1.39

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Crow Wing	22	12	34	65,274	4	0.52
Goodhue	44	4	48	46,449	4	1.03
Kandiyohi	46	15	61	43,193	4	1.41
Mower	43	9	52	40,124	4	1.3
Rice	55	14	69	66,853	4	1.03
Winona	28	9	37	50,830	4	0.73

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Steele	37	18	55	37,112	5	1.48

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Becker	16	9	25	34,545	6	0.72
Brown	36	7	43	25,119	6	1.71
Douglas	18	3	21	38,220	6	**0.55**
Faribault	22	4	26	13,580	6	1.91
Itasca	48	0	48	45,203	6	1.06
Kanabec	11	0	11	16,310	6	0.67
Koochiching	7	6	13	12,430	6	1.05
Lake	13	2	15	10,632	6	1.41
McLeod	33	19	52	35,963	6	1.45
Meeker	23	12	35	23,256	6	1.5
Morrison	26	0	26	33,368	6	0.78
Otter Tail	52	22	74	58,734	6	1.26
Pennington	11	0	11	14,355	6	0.77
Pine	22	0	22	29,526	6	0.75
Pipestone	21	8	29	9,132	6	3.18
Rock	9	1	10	9,359	6	1.07
Todd	25	0	25	24,665	6	1.01
Waseca	18	3	21	18,648	6	1.13
Watonwan	35	0	35	10,923	6	**3.2**
Wilkin	6	0	6	6,226	6	0.96

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Beltrami	17	0	17	47,184	7	0.36
Chippewa	21	11	32	11,858	7	2.7
Cottonwood	20	0	20	11,216	7	1.78
Freeborn	30	0	30	30,364	7	0.99
Hubbard	10	2	12	21,494	7	0.56
Jackson	26	6	32	9,858	7	**3.25**
Lyon	46	0	46	25,635	7	1.79
Martin	17	0	17	19,752	7	0.86
Nobles	15	0	15	21,976	7	0.68
Redwood	33	3	36	15,204	7	2.37
Roseau	19	0	19	15,242	7	1.25
Stevens	9	6	15	9,766	7	1.54
Swift	20	9	29	9,367	7	3.1
Wadena	11	3	14	13,744	7	1.02

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Aitkin	14	0	14	15,870	8	0.88
Clearwater	5	0	5	8,808	8	0.57
Mahnomen	5	0	5	5,529	8	0.9
Marshall	6	0	6	9,342	8	0.64
Norman	5	0	5	6,367	8	0.79
Pope	6	0	6	11,139	8	**0.54**
Red Lake	3	0	3	4,030	8	0.74
Renville	25	18	43	14,588	8	**2.95**

County	Library Computers	Other Devices	Tot. Digital Devices	Population	Code	Per Capita
Big Stone	11	13	24	4,993	9	4.81
Cass	22	0	22	29,754	9	**0.74**
Cook	10	3	13	5,462	9	2.38
Grant	15	1	16	5,967	9	2.68
Kittson	4	0	4	4,299	9	0.93
Lac qui Parle	21	16	37	6,629	9	**5.58**
Lake Of The Woods	7	9	16	3,798	9	4.21
Lincoln	18	5	23	5,648	9	4.07
Murray	11	0	11	8,222	9	1.34
Traverse	10	1	11	3,263	9	3.37
Yellow Medicine	13	10	23	9,729	9	2.36

APPENDIX F: SELECT, RELEVANT LSTA SUBGRANTS, 2018-2020

In its role as SLAA for Minnesota and conduit for statewide IMLS funding, State Library Services issues competitive subgrants aligned with Library Services & Technology Act (LSTA) priorities. Every year, K-12 and university libraries, as well as special collection facilities, are eligible for consideration as part of LSTA's so-called "Grants to States" program. However, much of the $2.7 million apportioned to Minnesota is ultimately routed to public libraries.

A brief overview of pertinent project abstracts from recent years illustrates the innovation, adaptability, and importance of public libraries within the larger digital access equation.

Synopses come verbatim from the Minnesota Department of Education website.[31]

2020

Carver County Library. The primary audiences of this program are low-income citizens in the city of Chaska, and rural residents in the service area of the Norwood Young America and Watertown libraries. This project addresses the needs of these communities where access to high-speed internet is lacking. The overall goal of the project is to create more digital access. The primary activity will be to implement a program for checking out mobile hotspots in these three communities.

The expected benefit would be to provide those without high-speed internet access an "on ramp" to increase academic achievement and improve workplace success. While a citizen would need to be 18 years old to check out the hotspot, caregivers could check out the hotspots for the youth to help with their academic success.

Douglas County Library. The primary audience benefiting from the Tech Savvy Seniors program is people 65 years or older living within the Viking Library System which includes the counties of Douglas, Grant, Otter Tail, Pope, Stevens, and Traverse.

Classes will build competency in independent use of email, smartphone, search engines, social media, My Heritage and more. As a result, those participating will feel safer and more connected to loved ones and to their finances, and have increased self-esteem and confidence. Students will be able to actively engage with online education, news and entertainment.

Metropolitan Library Service Agency. **"**Extending Our Reach: Metro Public Libraries Lending Mobile Hotspots" is a program that lends internet access to library users wherever and whenever they need it. Lending hotspots supports remote access to a variety of library programming and services (homework help, early literacy, job skills training, job searching and more), in addition to other programs and services such as online healthcare, unemployment and other government benefits, and connecting with friends, family, and community.

[31] https://education.mn.gov/MDE/dse/Lib/sls/LSTA/

Though the metro area generally offers sufficient high-speed internet access, there are pockets of low coverage, primarily in depressed areas, along with a digital divide between those who can afford data plans and those who cannot. This program will address both barriers.

2019

Douglas County Library. The Memory Loss Resource Center serves people living with dementia, their informal caregivers, and family members in Viking Library System's Douglas, Grant, Otter Tail, Pope, Stevens, and Traverse counties. It provides dementia-related resources in a safe and welcoming environment, on- and off-site memory cafes and social events, topical education events with regional and state experts, statewide staff training in serving dementia patrons, and mobile resources to reach the homebound or isolated.

Fergus Falls Public Library. A part-time Digital Media Lab and Makerspace Coordinator will work with library staff, volunteers, and community partners to develop innovative library classes and events, outreach services, and program promotion that provide digital inclusion for all ages in the Fergus Falls area. The recently remodeled and expanded library includes a new Digital Media Lab (DML) and makerspace. The coordinator will maximize community use of this space by training existing library staff and community volunteers in creating and implementing a digital literacy curriculum to target all ages, with some classes specifically targeted to seniors and those with low to moderate digital literacy skills.

2018

Ramsey County Library. Library Makerspaces and other STEAM programs at the Ramsey County Library have traditionally served the teen and youth population. Programming that targets adults will introduce adult patrons to new technological tools and ideas, encourage informal learning within the adult makerspace, and build a familiarity with the technology that adults can use to incorporate into their own digital storytelling. The goal is to provide adult patrons exposure to new and emerging technology, such as virtual reality, film making, and analog-to-digital conversion, with a series of workshops and classes to help them gain fluency in new areas of digital literacy. Integrating the use of technology into the traditional act of storytelling will allow patrons to create and share their own personal narratives and experiences.

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