Rural Public Libraries in Maine:

Getting Ready for Broadband Infrastructure and Online Life

by Amy Stone

INTRODUCTION

Are rural Maine public libraries ready to provide support and service for broadband internet access to residents learning how to safely navigate a life online? Small and rural public libraries have had long-term success providing public computers and internet access using building-based services and both public and philanthropic funding. Yet, even with historic legislated federal investment in broadband infrastructure, innovative quasi-governmental planning, coordination, and implementation at the state level, there is still a gap in digital access and skills in Maine, particularly in rural areas, that local public libraries can fill.

There is a clear need for one-on-one help for people who have historically used in-person transactions and print processes for everyday tasks. One-on-one help, however, requires human resources, but it is critical for full access to essential online services for those without the most basic digital skills. Maine public libraries hold a unique place in rural communities, as truly grassroots institutions historically established by local residents and maintained over generations by local funds. As trusted third spaces, public libraries are often where people go when they have a question or need help. The large disparity in funding and resources between larger and smaller communities means the digital divide is sharp; to provide equitable access, we need additional funding focused on rural communities to support public libraries in their work.

Residents of all demographics and in all communities need to conduct everyday life online. According to Rhinesmith and Prasad (2025: 11) "while health care, education, and workforce programs can address some portion of digital support needs (complementary), people still need a trusted place to go for on-demand support (core). Complementary programs might serve a narrow base of clients (e.g., students, patients, residents of affordable housing), core programs can provide technology support to all comers." People face many barriers to access, including the speed and reliability of internet connections, skill levels, and affordability of devices and internet access. Meanwhile, applications and benefits management for government services at the federal, state, and local level are moving online. Rural hospitals and medical practices are closing, and telehealth is becoming the only option for a growing number of rural residents (Hollifield et al. 2003). And rural public libraries are ensuring individual online access to essential government services, educational and workforce opportunities, and telehealth.

This article includes a brief overview of the history of federal- and state-level policy and funding. Preliminary original data collection and findings demonstrate the role of public libraries in rural communities and how library workers are meeting the technology assistance needs of library users. There are further research opportunities related to public libraries and public funding policy, technology use and training, and the impact of technology on rural life. Maine public libraries are working to meet the needs of their community members, but professional development and technology support are critical to their success.

METHODOLOGY

The literature review for this study focused on three key areas: internet and broadband infrastructure policy and funding, public library federal and state funding, and digital inclusion and access education and training. For the survey, I used a combination of qualitative and quantitative research and worked with the Greater Portland Council of Governments and the Maine Connectivity Authority to identify core questions for library staff. We designed the "Technology in Public Libraries" snapshot survey and distributed it through the statewide public library listserv that includes library directors, staff, and trustees of all types of libraries (academic, public, school, and special libraries). Of the 261 public libraries included in the Maine State Library dataset for 2023, 34 library staff members from public libraries, covering 13 of 16 counties, completed the survey.[1] A 13 percent response rate can only be viewed as an indicator and is not statistically valid for quantitative measures. The data

collected included type and frequency of technology assistance, staffing, funding, age demographics of those seeking assistance, digital literacy skills of staff and library users, and open-ended qualitative responses.

The dataset from our library snapshot survey confirms that public libraries, particularly small and rural libraries, rely on partner organizations and agencies for a wide variety of programs and services, especially digital access and skills training. A smaller, secondary survey was sent to organizations and state agencies working on digital access and inclusion through the Digital Inclusion Working Group established by the Maine Connectivity Authority in 2022. As external stakeholders, their perspective was important to include as we consider rural digital access through public libraries. Of the 40 original members of this working group, 5 responded to the smaller, related survey. The 12.5 percent response rate, again, should only be viewed as an indicator. The data collected included type of organization, time spent supporting public libraries, expectations of public library technology resources, expectations of types of public library services related to technology, and open-ended qualitative responses.

There was no statistical software used for data analysis. Future research should measure the expectations of digital access and skills support from public libraries, as well as the resources needed for the hands-on, one-on-one support required for people with less-than-basic digital literacy.

LITERATURE REVIEW

Historically, federal support for broadband programming has come through several channels. It is important to look at the funding sources to understand the complexity of the investments at the federal and state level over many years, which led to libraries being the source for reliable public computers and internet access, particularly for rural communities (LaRose et al. 2014). Without this public investment, there was no economic benefit for businesses to provide internet access to places with small populations, especially if the residents face disproportionate economic challenges.

Public access computers and free, reliable internet access at public libraries started with federal and philanthropic funding in the late 1990s. In 1996 the Federal Communications Commission (FCC) established, and Congress funded, the E-Rate Universal Service Program for Schools and Libraries (FCC 2025) . In 1996, most internet access required dial-up modems through telephone lines, and many schools and libraries did not have internet service. That same year, the Library Services Act was updated to the Library Services and Technology Act (LSTA), and the Institute of Museum and Library Services (IMLS) was created with the Museum and Library Services Act (Farrell 2012).

In 1998, the Bill and Melinda Gates Foundation made computers available to libraries through a grant program. So libraries now had telephone lines with dial-up internet along with computers for public internet access. Even libraries that could not fund these things on their own could offer these services and resources to the public. Through the lifecycle of this program, the Bill and Melinda Gates Foundation installed 47,000 computers in 11,000 libraries in all 50 states (Palmer 2005).

These three national-level things, two from the federal government and one from a foundation, shaped the expectations the public currently has about library services and fundamentally changed what librarians needed to know to provide access to information to their communities. As Borbély (2022) realized, "The future roles and responsibilities of librarians will differ significantly from those of librarians today. The biggest challenge for university librarians of the future, and presumably for those working in other libraries, will be to manage the rapidly changing technology in addition to their traditional responsibilities."

Federal agencies that provide support for broadband programming include the Federal Communications Commission (FCC), the National Telecommunications and Information Administration (NTIA), the US Department of Agriculture (USDA), and the US Treasury (UST). Broadly speaking, these agencies administer broadband deployment and program adoption. At the state level, funding for broadband deployment and programs comes from the Maine Telecommunications Education Access Fund and the Maine Connectivity Authority, a quasi-governmental agency that originated with ConnectME by legislative authority. These are built upon the success of the Maine Learning Technology Initiative (Silvernail et al. 2003). Support infrastructure is provided by the Maine School and Library Network and Maine InfoNet, both quasi-governmental agencies.

While investing in capital infrastructure was the first step, investing in people to provide service is critical. Public libraries are reliable third spaces for offering technology assistance to everyone who walks through their door. But do rural public library staff have adequate resources to provide this next level of service? Are there professional development opportunities for rural public library staff and volunteers?

TABLE 1: **Major Public Investments in Internet Access and Broadband Deployment at National and State Levels**

Investment	Funding Source
Connect America Fund	Federal Communications Commission (FCC)
Lifeline (subsidized internet)	FCC
Rural Digital Opportunity Fund	FCC
CARES Act	US Treasury
Broadband Bond	National Telecommunications and Information Administration (NTIA)
Maine Telecommunications Education Access Fund	
E-Rate Universal Service Program for School and Libraries	FCC
American Rescue Plan Act Maine Jobs and Recovery Plan	FCC
Consolidated Appropriations Act Emergency Broadband Benefit Program	FCC
Infrastructure Investment and Jobs Act Broadband Equity, Access, and Deployment Program Affordable Connectivity Program Digital Equity Act	FCC NTIA FCC NTIA

MAINE RURAL COMMUNITIES AND PUBLIC LIBRARIES

There are 261 public libraries included in the 2023 Maine State Library Annual Report (MSL 2024). Maine residents take pride in local control and in local choices, and the grassroots history of many town and village public libraries is part of our heritage. With no state-level funding distributed directly to all public libraries, the libraries have different types of organizational structure (municipal, nonprofit, and quasi-municipal), different levels and types of funding (local tax dollars, individual donors, grant funding based on availability), different staffing levels (all-volunteer, solo staff person, full staff with departments), and widely varying hours open to the public per week, which all leads to deep disparities between the programs, services, and support offered at public libraries throughout Maine.

The Maine State Library does provide several services that fill the resource gaps. As part of Maine's regional library system, three large libraries (Bangor, Augusta, and Portland) provide centralized resource and reference services, including processing interlibrary requests, answering informational reference questions, and providing access to digital collections for residents in their designated service areas. The Maine State Library provides Books by Mail to residents who live in unincorporated areas and those who do not have a local public library in their incorporated area. Qualified Maine residents may also have home delivery of large print books, braille materials, and Talking Books (special device for audiobooks) through the Maine State Library Outreach Services.[2]

The top three states with the highest rates of rural libraries are in New England. Maine has the second highest level of small and rural libraries in the United States. While 73.4 percent of Maine public libraries are classified as rural libraries (20 miles from an urban center), 98.6 percent are classified as small libraries that serve resident populations of 20,000 or under (Swan et al. 2013). Vermont is the highest, with 98.7 percent, and New Hampshire has the same percentage as Maine. Not all small libraries are rural libraries, but all rural libraries are small in Maine. The highest poverty rates in Maine are also in the most rural places,[3] and yet, community members and other partner organizations have expectations of consistent resources and services available at all public libraries throughout the state.

> *I work with 18 public libraries in Kennebec County. Each library is different in what and how they offer tech help...I believe that tech help should be primarily located at libraries on a regular schedule, with drop-in times available, either offered by paid employees or a network of volunteers in each local community.*
>
> —Community Partner, Prison Education, Kennebec County, Maine

Library staffing levels also need to be considered when discussing programs and services provided in Maine public libraries. From the 2023 Maine State Library Annual Report (MSL 2024): 9 percent of Maine public libraries have no paid employees; 24 percent have one paid staff; and 47 percent have less than 1.0 full-time equivalent paid employee. On the other hand, 99 percent of Maine public libraries reported providing essential access to reference services, public access computers, and wireless internet access.

> *Technology help is one of the most frequently used services at our library and makes up a large majority of our reference questions, as a library*

that serves a predominantly senior community.

—Public Library Director, Lincoln County, Maine

Technology assistance, particularly one-on-one, is a deeper level of service that Maine public libraries are providing as community needs have evolved. With limited budgets, Maine public library workers not only continue to provide print resources and answer reference questions, they also teach people how to access government applications for benefits and assistance, connect with healthcare providers, register children for school, and make online utility payments. Library staff are proctoring online certification exams, downloading an app for pacemakers to a person's smart phone, and teaching people online safety and how to recognize scams and fraud. All of this work takes training and time and requires consistent, equitable funding.

TECHNOLOGY ASSISTANCE AND COMMUNITY NEED

A framework established by UNESCO explains the levels of digital literacy needed to access online resources and use technology. *Digital Literacy Framework* (Law 2018) includes information and data from over 40 countries, and identifies the following competencies:

- fundamentals of hardware and software
- information and data literacy
- communication and collaboration
- digital content creation
- safety
- problem solving
- career-related competencies

Using this framework, Maine rural public libraries, while providing support for all levels, are heavily supporting the fundamentals of hardware and software skills. The complexity of tasks increases from there. So, while there is the promise of telehealth, workforce development (Hancks 2012), and online educational opportunities (McClure et al. 2010) for all residents, what Maine public library staff and volunteers are seeing are people who need help with the most basic use of devices. This requires time, repetition, and an immense sense of trust (Law et al. 2018).

"Some people tell us it is too hard for them to understand and so they come to the library for help... it is why we need library workers trained in technology to interact with the patrons or public.

—Public Library Director, Kennebec County, Maine

From our Technology in Public Libraries snapshot survey of Maine public library staff, we have learned that 97 percent of them are providing support on how to use a public access computer; 97 percent are providing support for joining a personal device to a Wi-Fi network; and 87 percent are providing assistance on how to use a mobile phone. The snapshot also demonstrated that those who are not digital natives rely most heavily on public libraries for assistance. We asked library staff to estimate the age of people coming to their libraries asking for technology assistance:

- 3 percent of respondents reported people ages 5–12
- 6 percent of respondents reported people ages 13–17
- 9 percent of respondents reported people ages 18–24
- 55 percent of respondents reported people ages 25–44
- 88 percent of respondents reported people ages 45–64
- 97 percent of respondents reported people ages 65+

PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR PUBLIC LIBRARY STAFF

Not all Maine public libraries have the staff expertise, technology training, or funding to provide this critical, emerging service. From the snapshot survey of public library staff, we found:

- 24 percent of public library survey respondents are unsure whether they can satisfy the community demand for technology assistance.
- 38.2 percent need to pay for a consultant as needed, outside of their regular operating budget.
- 58.8 percent do not have library staff to provide computer and network support in their operating budget.
- 62 percent of public library survey respondents rely on other partners to provide workshops or assistance.
- 62 percent refer library users to online workshops and trainings, but to use these trainings, patrons need internet access and need to understand how to use their device.

I find that far too often, people who don't work in libraries think that digital literacy instruction can be effectively delivered via a digital solution (an app or website). This is not, in my experience, true, at least not until patrons reach a certain plateau of digital literacy already so they are comfortable navigating such a tool. More in-person, human-focused, compassionate one-on-one or small group instruction is needed to get people over that hump.

—Reference Librarian, Penobscot County

So there are two parts to professional development needs for library workers in Maine: maintaining the library's hardware, software, and

network; and learning to provide hands-on training for library users. Since 58.8 percent of survey respondents reported not having staff for computer and network support in their operating budgets, professional development opportunities should include hardware and network maintenance, as well as troubleshooting techniques. If something goes wrong with public access computers, internet connections, or wireless hubs, downtime is compounded by the need to find and schedule a consultant if one is even available in the area. With such a high rate of respondents relying on partner organizations and online workshops to meet the information needs of their library users, training opportunities are a priority. In order for library workers to provide needed hands-on services, professional development needs to include computer and online security and safety as well as training on individual instruction techniques.

Understanding how technology works is one thing, teaching other people how to use it is another. Public library staff need both sets of skills in order to support the needs of their users. Maine public library workers recognize that they need to fill this essential role in their communities, but they face limited access to professional development opportunities, time, and funding.

FURTHER RESEARCH OPPORTUNITIES

The initial Technology in Public Libraries survey was designed to be a snapshot of a few key data points, but data collection was neither comprehensive nor statistically significant. There are further research opportunities related to public libraries and public funding, technology use and training, and the impact of technology on rural life. Qualitative research could also measure expectations of digital access and skills support from public libraries, as well as the resources needed to support hands-on, one-on-one support for people with less-than-basic digital literacy.

Further research should also focus on developing and implementing effective pathways for professional development for small and rural public library staff members. Access to technology, opportunities, and paid work time all need to be considered. While this was the focus of the Maine State Digital Equity Plan, federal funding has been terminated (MCA 2025). The work, however, still needs to be done, and Maine's public libraries are the community anchor institutions expected to continue providing improved access for Maine residents.

CONCLUSIONS

Maine public libraries are community places where all residents have access to computers and the internet. While still providing traditional library services, public libraries are also helping move people forward through online interactions (government services and benefits access, utility payments, healthcare appointment booking, public school registration and student records). The investment in capital (buildings, internet access, internal networking, and computers) requires maintenance and repair, along with people to provide the programs and services for those with no experience using computers, tablets, and smart phones.

Maine residents have a deep sense of pride in local control. It is a defining aspect of how our municipalities have made local decisions for generations and gives residents a sense of ownership in their community spaces, including their local public libraries. This is part of Maine libraries' resilience, adapting to the needs of our residents and providing the programs and services library users need. However, from a policy perspective, we cannot ignore the gaping disparity in resources between the urban or suburban areas and the smallest and most rural places.

According to Byrne et al. (2024: 109), "To fully support communities across Maine and the nation, libraries need reliable and accessible funding and to be considered an integral part of state- and local-level planning." When it comes to the programs, services, and availability of library staff to provide the essential and time-intensive one-on-one technology help needed to complete the most basic of everyday tasks, policymakers need to support Maine public libraries. Libraries need technology, professional development, and time, all of which require consistent and reliable funding.

NOTES

1 "Directory of Public Libraries," Maine State Library, https://www.maine.gov/msl/libs/directories/public.shtml

2 "Maine Regional Library System (MRLS)," Maine State Library, https://www.maine.gov/msl/libs/districts/index.shtml; "Interlibrary Loan Service (ILL)," Maine State Library, https://www.maine.gov/msl/libs/interlib/index.shtml; "Homebound Services," Maine State Library, https://www.maine.gov/msl/outreach/homebound/index.shtml

3 "HDPulse: An Ecosystem of Minority Health and Health Disparities Resources. National Institute on Minority Health and Health Disparities," https://hdpulse.nimhd.nih.gov

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