



Utah State Library
Division

2024 Utah Library Technology Inventory Report

January 14, 2025

Dear Utah Education Community:

On behalf of the Utah Education Network (UEN) and the Utah State Library Division (USL), we are excited to present the results of the first statewide Utah State Library Inventory Campaign (USLIC). Building on UEN's successful work to identify the types and distribution of technology in Utah's K-12 schools, our organizations have collaborated with Connected Nation to gather input from staff at public libraries throughout Utah.

This inventory successfully collected 1,830 data points across 60 Utah libraries. Questions focused on Wi-Fi networks, coverage, and hardware, including the age of hardware, content filtering methods, and computing devices.

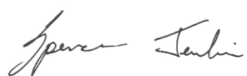
As the first of its scope for Utah public libraries, this inventory provides a snapshot that may be used to better understand where and what types of technology resources are available in local communities. It also provides a baseline to measure against when leaders decide how to spend funds to improve library offerings.

Our findings included several interesting insights:

- Equipment for Wi-Fi and wired technology is aging. Nearly one-third (30%) of main branch libraries have Wi-Fi equipment that is four or more years old, and nearly one-half (48.3%) of wired equipment at Utah main library branches is four years old or older.
- Most library systems (55%) say their main branch libraries experience 1 to 4 Wi-Fi outages per year.
- More than 1 in 4 library main branches (26.7%) do not offer any computing devices for their patrons to check out.

UEN exists to serve the technology needs of learners statewide, and USL develops, leads, and delivers exceptional library services while optimizing Utah's investment in libraries. This inventory will inform our future work so that Utah's libraries can continue to provide access to key resources for lifelong learning and opportunity to people throughout the state.

Sincerely,



Spencer Jenkins

CEO/Executive Director
Utah Education and Telehealth Network



Cara Rothman

State Librarian, Division Director
Utah State Library Division





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I. Executive Summary & Key Findings



EXECUTIVE SUMMARY

Technology is crucial in libraries as it transforms them into critical hubs for learning, community engagement, and information access.

In today's digital age, libraries play a vital role in bridging the Digital Divide by providing access to technology for those who may not have it at home. Libraries offer resources such as free internet, computer access, digital collections, online learning tools, research databases, and device loan programs, which are invaluable for students, job seekers, and lifelong learners. Additionally, libraries enhance digital literacy by providing training and support, empowering individuals to navigate an increasingly complex digital world.

To assess the state of technology in Utah libraries, the Utah Education Network (UEN) and the Utah State Library Division (USL) collaborated to conduct a comprehensive technology inventory of the state's 60 main¹ public libraries in 2024. The purpose of this inventory was to assess the current technology infrastructure in these libraries and evaluate how well that infrastructure meets the needs of their communities. UEN also partnered with Connected Nation (CN), a longstanding collaborator in conducting technology inventories, to support this data collection and analysis.

¹ "Main" is a term used for libraries to designate the primary branch of operations. A library system might have multiple locations called branches, but it will have one main branch. For library systems that have only one location, that location is the main branch.





EXECUTIVE SUMMARY

BACKGROUND

Since 2015, UEN has worked closely with CN to conduct the Utah Statewide K-12 School Technology Inventory biennially. With the lofty goal of obtaining a detailed inventory of every Utah public school's technology assets, this collaboration has been highly successful, with 100% participation since its launch. Over the years, UEN and CN have used myriad data collection, assessment, and communications techniques to gather information and conduct robust data analysis. The subsequent findings have played a key role in informing decision-makers about technology needs and funding in public schools. Most notably, the School Technology Inventory was leveraged to inform the deployment of Utah's American Rescue Plan Elementary and Secondary School Emergency Relief (ARP ESSER) funds of 2021 to ensure students had access to devices and high-speed connectivity after the onset of the COVID-19 pandemic.

Building on this success, UEN partnered with the Utah State Library Division (USL) to undertake a similar inventory focusing on public libraries. In August

2024, UEN and USL developed and disseminated a survey to the 60 main libraries throughout the state. By engaging library directors, technology coordinators, and community stakeholders, they achieved an impressive 100% participation rate from all libraries included in the inventory. The methodology for the Library Technology Survey involved a systematic collaboration between UEN and USL to plan, develop, and deploy the technology inventory across Utah's libraries, as well as for CN to analyze the data and produce the final report.

The data and information gathered from this inventory are intended to facilitate an assessment of the existing technological infrastructure within main libraries across Utah. This process will provide state and local leaders with the necessary insights to make informed decisions regarding funding and library strategies for technology deployment and use, thereby ensuring that investments in technology are strategically allocated to address the areas of greatest need.





KEY FINDINGS



- **The average number of patrons that main libraries serve is over 47,000.** Urban libraries tend to serve a larger number of patrons, serving an average of 85,119 individuals, in contrast to rural libraries, which serve an average of 7,169 patrons.
- **Statewide, main libraries in Utah offer 1.36 computing devices available for use on site per 1,000 patrons.** In addition, they have an average of 0.72 devices per 1,000 patrons available to be checked out.
- **Every main library in Utah has computing devices available for patron use in the library.** More than 1 in 4 main libraries (26.7%) have no computing devices for their patrons to check out.
- **Most library systems (55%) say their main libraries experience 1 to 9 Wi-Fi outages per year.** Rural libraries are less likely to report that their main libraries experience these outages.
- **More than 3 out of 5 Utah library systems say their main libraries have total Wi-Fi coverage inside.** Slightly more than 1 in 5 library systems (21.7%) say the entirety of the outdoor area at their main libraries have Wi-Fi available for patrons — outdoor Wi-Fi is more common at rural libraries (27.6%) than urban libraries (16.1%). Statewide, 1 in 6 library systems (16.7%) say their main libraries offer no Wi-Fi outside the library walls.





KEY FINDINGS



- **Equipment for Wi-Fi and wired technology is aging.** Nearly one-third (30%) of main libraries have Wi-Fi equipment that is four or more years old, and nearly one-half (48.3%) of wired equipment at Utah main libraries is four years old or older. Rural library systems tend to have older wired equipment at their main libraries, with more than half (51.7%) of their wired hardware being four years old or more.
- **Desktop computers running Windows operating systems are the most popular computing device that main libraries** make available for their patrons to use at the library. The largest share of computing devices available at main libraries for checkout are laptop computers with Windows operating systems.

The 2024 Utah Library Technology Inventory survey results underscore technology's critical role in empowering Utah's communities through library services. By identifying strengths and areas that need improvement, this inventory provides a clear pathway for future investments in library technology. These insights will guide state and library leaders in addressing connectivity gaps, modernizing equipment, and enhancing digital resources to serve patrons better statewide. As libraries continue to adapt to the evolving needs of their communities, ongoing support for technological advancements will ensure that Utah's libraries remain vibrant centers for learning, connectivity, and community engagement well into the future.



The background of the slide features a photograph of Park City High School, a large brick building with a central tower. The school is set against a backdrop of a hill covered in trees with vibrant yellow autumn foliage. In the foreground, there are more trees with yellow leaves. The image is partially obscured by a dark blue diagonal shape on the left and a red diagonal shape at the bottom.

II. Inventory Overview & Methodology



INVENTORY OVERVIEW & METHODOLOGY

This report is the first Library Technology Inventory modeled after the K-12 Statewide Education Technology Inventories produced in collaboration with CN in 2015, 2017, 2019, 2021, and 2023, with 100% school participation in each period.

UEN and USL created a seamless data collection process through this collaborative methodology. The resulting report will empower Utah's libraries with the information they need to advance their technology resources and better serve their communities.

THE FOLLOWING STEPS OUTLINE THE SURVEY PREPARATION, DEPLOYMENT, AND SUPPORT PROCESSES

- **Development of the Libraries Data Collection Portal:**
UEN developed a custom, secure, user-friendly web-based data collection portal for inventory purposes. USL then provided UEN with foundational library data to prepopulate the portal, which included the library name, FSCS code number, location, and the designated point of contact. That sample includes 31 urban main libraries and 29 rural main libraries. Each library's designated point of contact was invited to create unique login credentials, ensuring secure and exclusive access to the inventory platform. Overall, the portal provided user-friendly functions, such as a feature that allowed users to save partial responses and return to finish them later, as well as pre-populated data wherever possible to minimize the data-entry burden on library staff.

(continued)





INVENTORY OVERVIEW & METHODOLOGY



- **Survey Development and Customization:** UEN and USL engaged with library stakeholders to develop a list of questions to capture key technology data points across Utah's libraries. This survey addressed technology aspects such as:
 - Computing devices and other hardware available for staff and patrons
 - Internet and network connectivity and reliability
 - Software and other technology resources in use at the library

THE FINALIZED QUESTIONS WERE THEN INTEGRATED INTO THE PORTAL FOR STANDARDIZED DATA COLLECTION.

- **Data Collection and Review:** UEN and USL oversaw the portal launch and management, as well as outreach to libraries to launch and execute the inventory. The designated libraries' points of contact submitted the inventory with one-on-one support from USL staff between August 1 and October 4, 2024.
- **Analysis:** CN launched the analysis by conducting a preliminary review to identify any inconsistencies or incomplete responses, coordinating follow-ups as needed with USL to ensure data integrity, and then performing a comprehensive analysis of the inventory.
- **Report Development:** CN worked with UEN and USL to compile the final report presented in February 2025. This process also included developing one-page summaries for each of the participating libraries.





INVENTORY OVERVIEW & METHODOLOGY



2024 TIMELINE FOR UTAH LIBRARY TECHNOLOGY INVENTORY STUDY

Phase 1.

April – August 2024

- Library Point of Contact Identification
- Portal and Survey Question Preparation

Phase 2.

August – October 2024

- Portal Launch
- Data Collection

Phase 3.

October – January 2025

- Compilation and Summary of Finding

Phase 4.

February 2025

- Presentation to the UEN and USL Boards





III. Inventory Results

- a. Library Profiles
- b. Wi-Fi Networks
- c. Hardware in Libraries



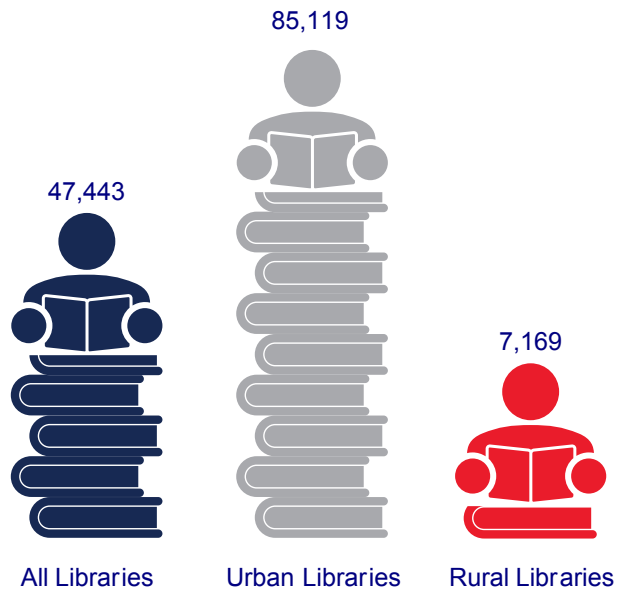
INVENTORY RESULTS : LIBRARY PROFILES



POPULATION INSIGHTS

Figure 01 below illustrates the average number of individuals Utah's main libraries serve in urban areas, rural areas, and statewide. On average, main libraries provide services to 47,443 residents in their respective regions. Main libraries in urban areas serve more individuals on average (85,119) than main libraries in rural areas (7,169).

Figure 01. Average Population Served



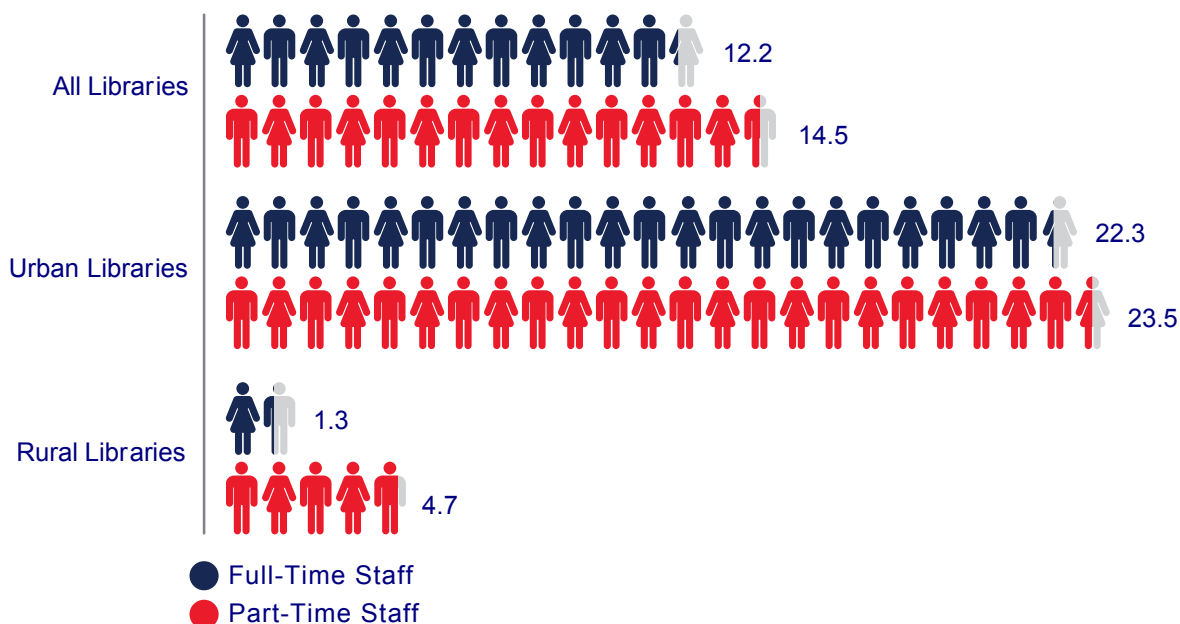


INVENTORY RESULTS : LIBRARY PROFILES

NUMBER OF STAFF

Main libraries vary considerably in terms of the number of staff members they employ. Statewide, main libraries employ an average of 12.2 full-time staff members (Figure 02). Main libraries in urban areas have more full-time staff members (22.3) than those in rural areas (1.3). This difference is due in part to the number of patrons served at urban vs. rural libraries.

Figure 02. Average Number of Library Staff



A similar pattern exists for part-time staff members. Main libraries across the state employ an average of 14.5 part-time staff members. Main libraries in urban areas employ more part-time staff (23.5) than main libraries in rural areas (4.7). That said, main libraries in rural areas employ more part-time staff as a proportion of overall staff than main libraries in urban areas, which rely more on full-time staff members. Nine rural main libraries only employ part-time staff and have no full-time staff.





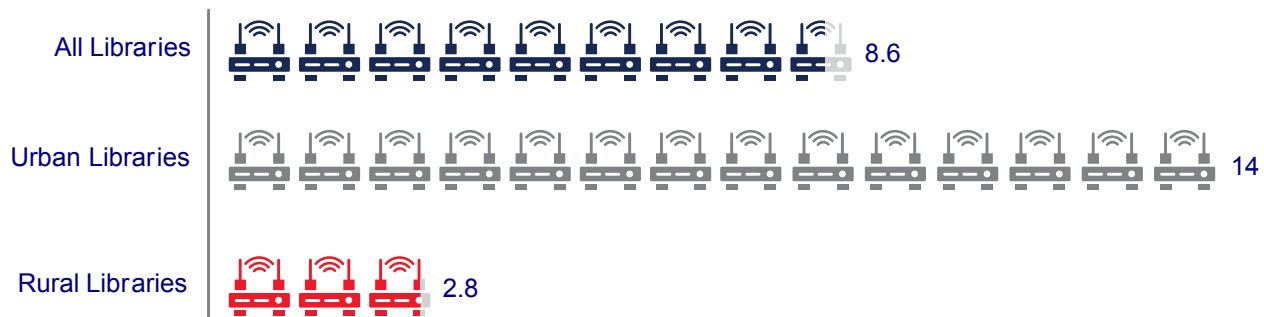
INVENTORY RESULTS : WI-FI NETWORKS

NUMBER OF ACCESS POINTS

Access points allow Wi-Fi devices to connect to a wired network. The number and placement of access points can enable networks to scale their connectivity to improve coverage to allow more users to access the network.

Overall, main libraries have an average of 8.6 access points on their networks. Main libraries in urban areas have more wireless access points (14) than libraries in rural areas (2.8). This may reflect the fact that rural main libraries tend to have less square footage (5,403 ft² on average in rural main libraries, compared to 32,732 ft² in urban main libraries) and fewer rooms (5.2, compared to 16.7 in urban main libraries) than their urban counterparts.

Figure 03. Number of Wi-Fi Access Points





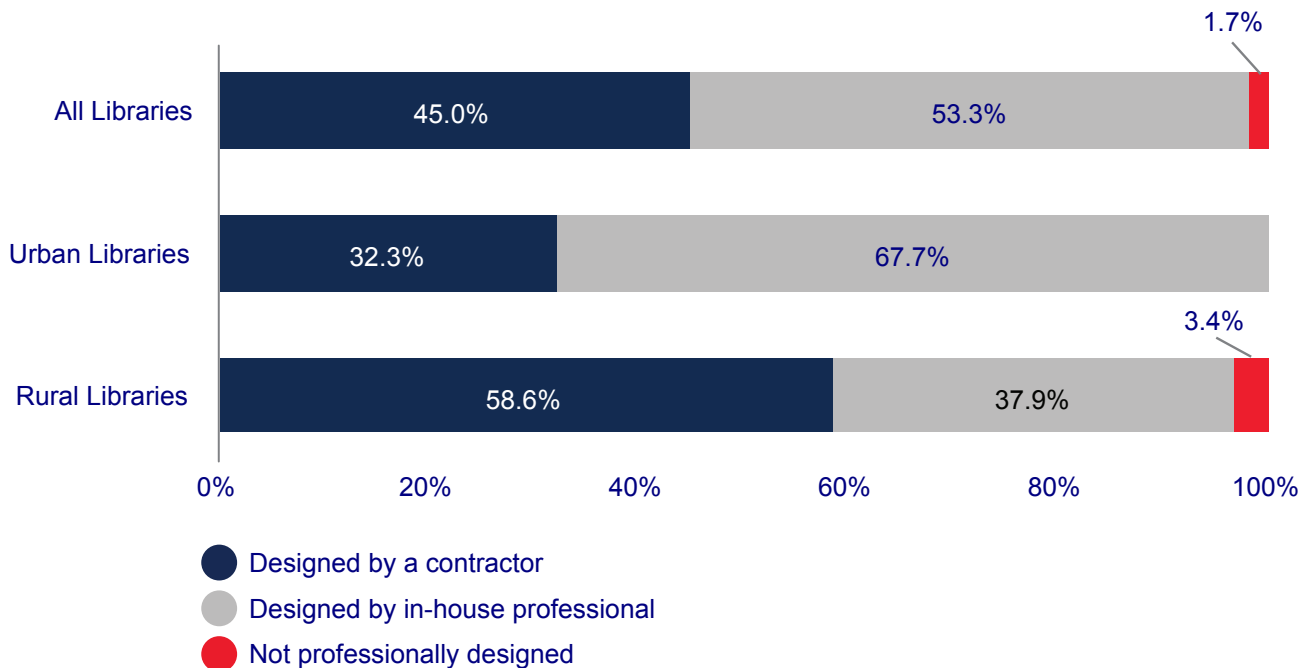
INVENTORY RESULTS : WI-FI NETWORKS

NETWORK DESIGN

Figure 04 below illustrates how these Wi-Fi networks at the main libraries were designed. Most networks (53.3%) were designed by in-house professionals. Another 45% of main libraries had their networks set up by contractors. Only a small fraction (1.7%) did not have their networks professionally designed and installed.

In urban areas, over two-thirds of main libraries (67.7%) had their networks designed and installed by in-house professionals, and the remaining 32.3% had their networks designed and installed by a contractor. In rural main libraries, the trends are different. Just over 1 in 3 of these libraries (37.9%) had their networks designed by an in-house professional; meanwhile, nearly 3 in 5 rural main libraries (58.6%) had their networks designed by a contractor, and the remaining 3.4% did not have their access points professionally designed and installed.

Figure 04. How Wi-Fi Networks Were Designed





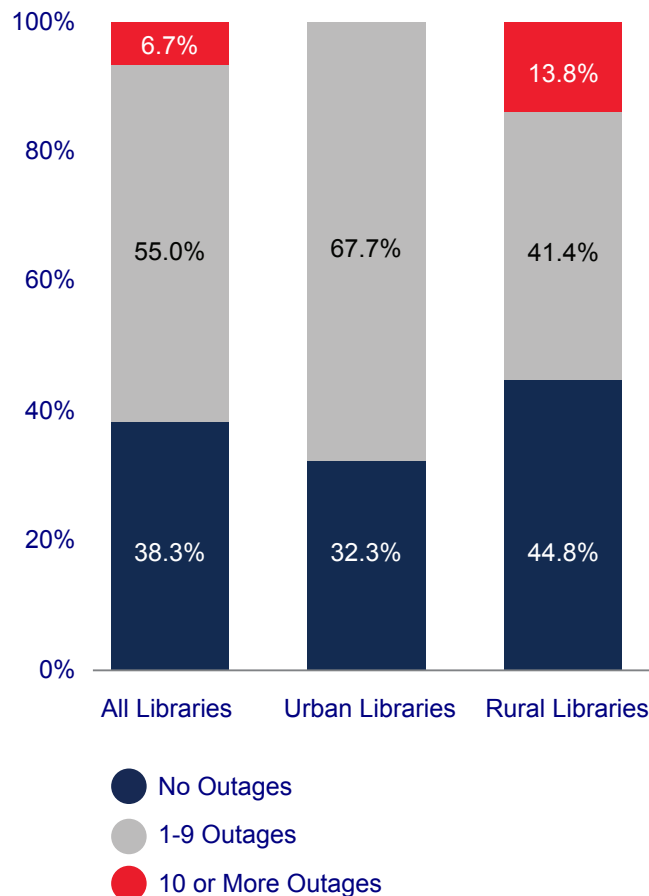
INVENTORY RESULTS : WI-FI NETWORKS

OUTAGES PER YEAR

Figure 05 at right depicts how frequently main libraries experience Wi-Fi outages each year. Most main libraries (55%) report that they experience 1 to 9 outages each year. Another 2 in 5 main libraries (38.3%) do not experience Wi-Fi outages. The remaining 6.7% of libraries surveyed report 10 or more outages each year. All the main libraries reporting 10-plus outages are in rural areas.

About two-thirds of main libraries in urban areas (67.7%) experience 1 to 9 Wi-Fi outages each year — more than the statewide average. The remaining 1 in 3 libraries (32.3%) experience no outages. Main libraries in rural areas exhibit a different pattern. Over 2 out of 5 libraries (41.4%) experience 1 to 9 outages a year. More of these libraries (44.8%) experience no outages at all.

Figure 05. Wi-Fi Outages per Year





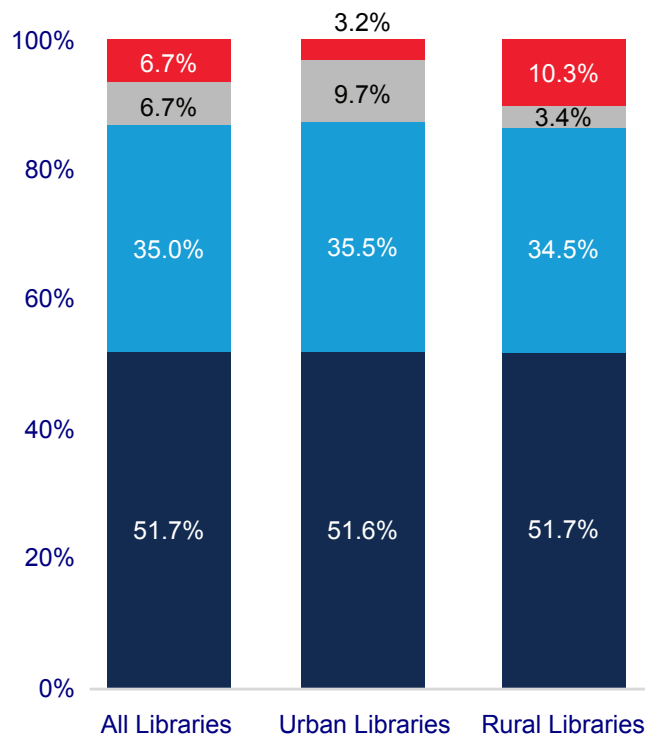
INVENTORY RESULTS : WI-FI NETWORKS

SLOWDOWNS PER YEAR

As for the number of Wi-Fi slowdowns each year, over half of main libraries statewide (51.7%) report no experience (see Figure 06). Another 1 in 3 main libraries (35%) experience about 1 to 4 slowdowns each year. Smaller proportions of main libraries experience 5 to 9 slowdowns (6.7%) or 10 or more slowdowns (6.7%) each year.

Roughly equal proportions of urban and rural main libraries experience no slowdowns (51.6% vs. 51.7%) or 1 to 4 slowdowns (35.5% vs. 34.5%) each year. Rural main libraries are more likely to report 10 or more slowdowns (10.3%) each year than urban main libraries (3.2%).

Figure 06. Wi-Fi Slowdowns per Year



- No Slowdowns
- 1-4 Slowdowns
- 5-9 Slowdowns
- 10 or More Slowdowns





INVENTORY RESULTS : WI-FI NETWORKS

WI-FI COVERAGE INSIDE

All the state's main libraries have some form of Wi-Fi coverage inside their buildings (Figure 07). More than 3 out of 5 main libraries (63.3%) have 100% Wi-Fi coverage inside their buildings. Another 3 in 10 (28.3%) of these libraries report having 80% to 99% coverage inside their buildings. The remaining 8.3% of main libraries report having less than 80% coverage within their walls.

Slightly more urban main libraries (67.7%) have 100% Wi-Fi coverage within their buildings than rural main libraries (Figure 08). However, urban main libraries are also more likely to have less than 80% Wi-Fi coverage inside (9.7%) compared to rural main libraries (6.9%).

Figure 07. Wi-Fi Coverage inside Utah Main Libraries

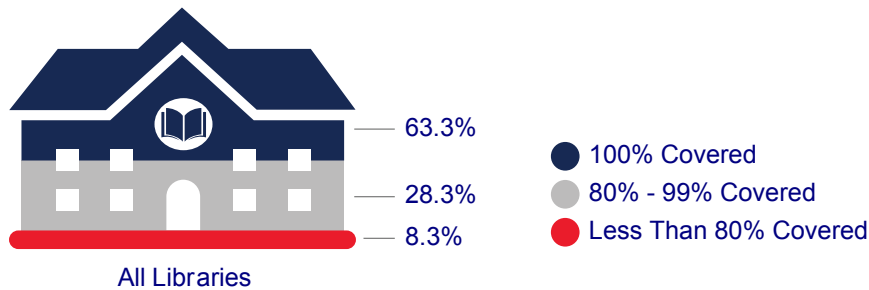
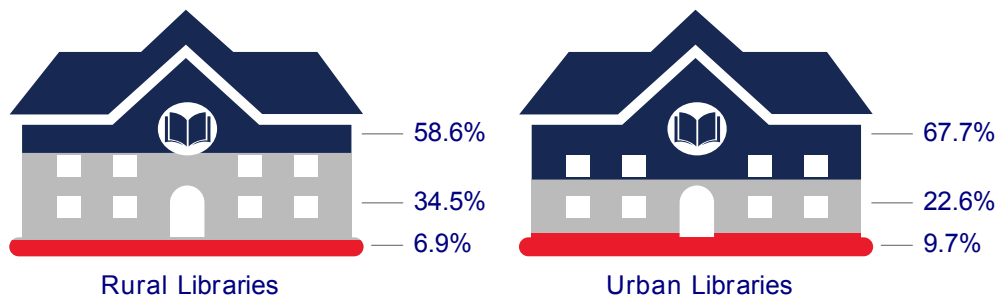


Figure 08. Wi-Fi Coverage in Urban and Rural Main Libraries





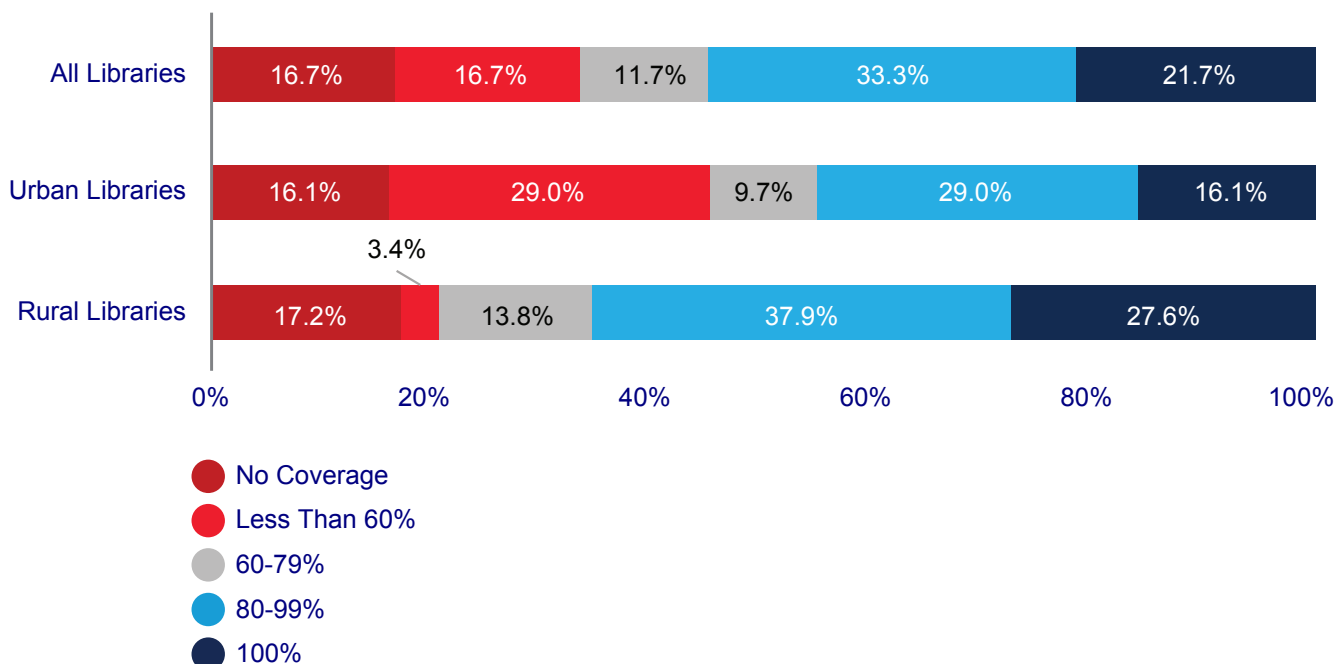
INVENTORY RESULTS : WI-FI NETWORKS

WI-FI COVERAGE OUTSIDE

While the state's libraries have good inside coverage, fewer have good Wi-Fi coverage outside their buildings. Statewide, only 1 in 5 main libraries (21.7%) have full Wi-Fi coverage on their property outside the building itself; this coverage would include parking lots, outdoor spaces, gardens, or other exterior areas used by the library. The largest share of main libraries (33.3%) report having 80% to 99% coverage outside their buildings. Another 1 in 10 main libraries (11.7%) report having 60% to 79% coverage outside their walls. The remaining libraries have less than 60% coverage (16.7%) or no coverage (16.7%) outside their buildings.

Fewer than 1 in 5 main libraries in urban areas (16.1%) have full coverage outside their walls. Most urban main libraries report having 80% to 99% coverage (29.0%) or less than 60% outside coverage (29.0%). As for main libraries in rural areas, most of them have 80% to 99% coverage outside (37.9%). Another 1 in 4 rural main libraries (27.6%) have full Wi-Fi coverage outside their buildings. While a similar percentage of rural main libraries have no coverage outside their walls (17.2%) compared to urban main libraries (16.1%), significantly fewer report less than 60% coverage (only 3.4% of rural main libraries).

Figure 09. Wi-Fi Coverage Outside





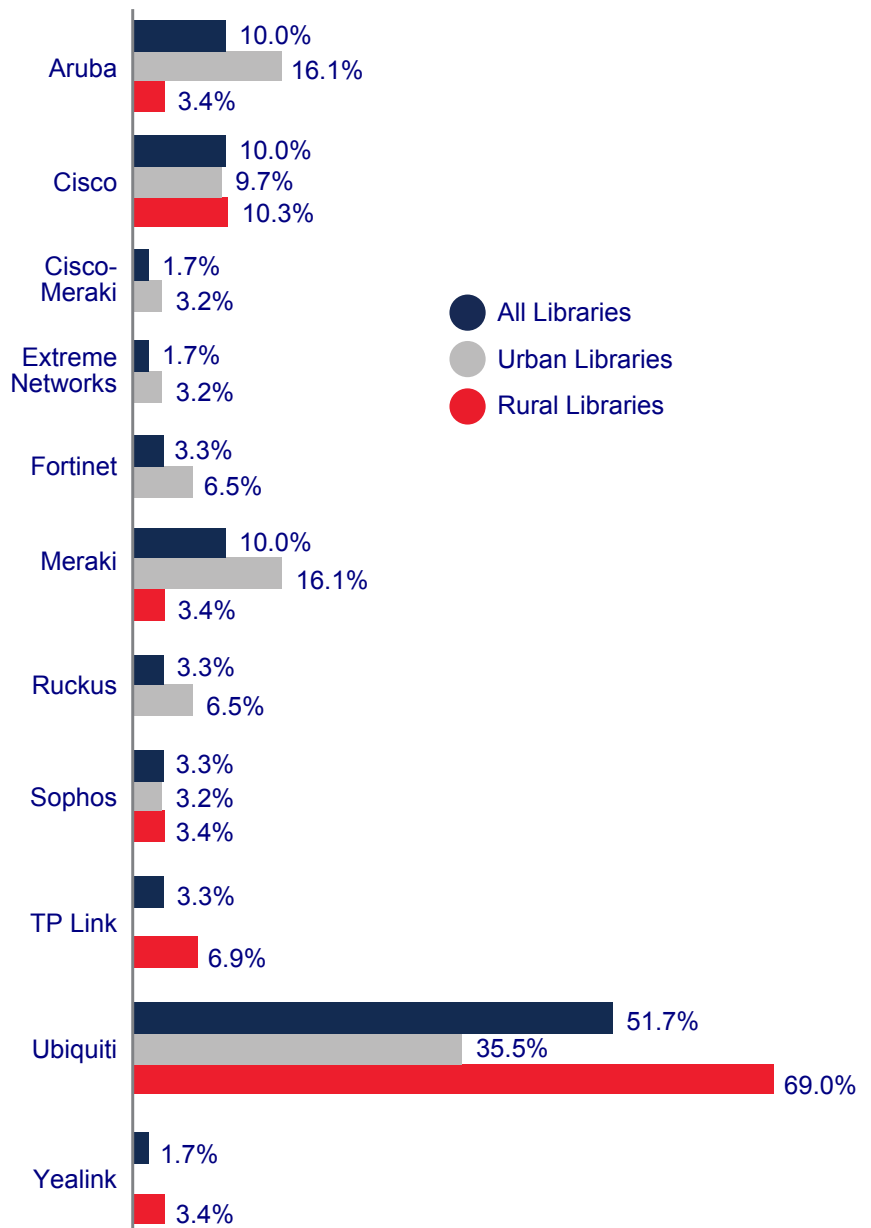
INVENTORY RESULTS : WI-FI NETWORKS

DOMINANT VENDOR FOR WI-FI HARDWARE

Figure 10 illustrates the dominant Wi-Fi vendor across Utah's main libraries. The dominant Wi-Fi vendor is Ubiquiti (51.7% of libraries use it as their vendor); this is true for both urban main libraries (35.5%) and rural main libraries (69%).

Other commonly utilized Wi-Fi vendors include Meraki (10% of all main libraries; 16.1% of urban main libraries), Cisco (10% of all main libraries), and Aruba (10% of all main libraries; 16.1% of urban main libraries).

Figure 10. Dominant Wi-Fi Vendor



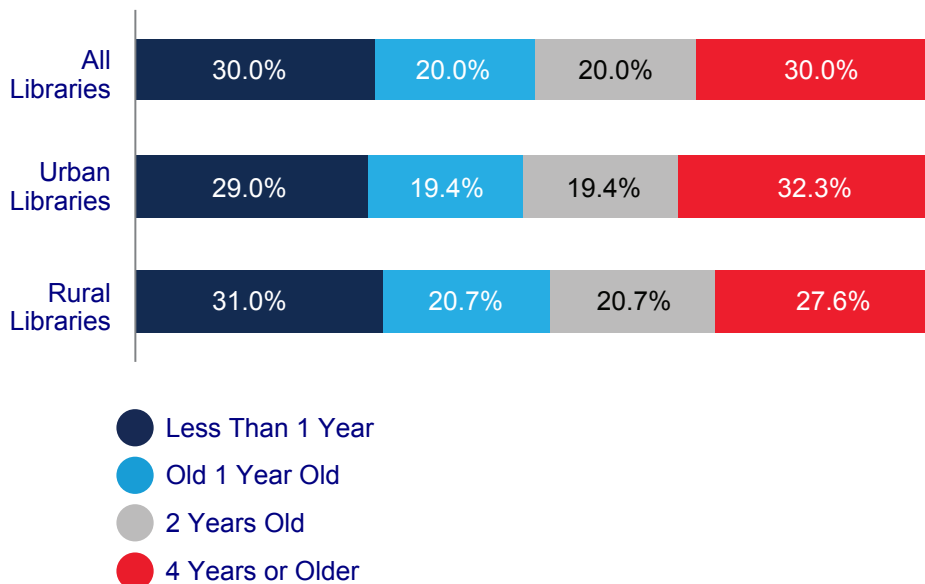


INVENTORY RESULTS: HARDWARE IN LIBRARIES

AVERAGE AGE OF WI-FI

Figure 11 depicts the average age of Wi-Fi equipment in Utah's main libraries. Overall, the age of Wi-Fi equipment across all main libraries is equal in urban and rural areas. Nearly a third of all main libraries (30%) have Wi-Fi equipment that is less than a year old, while another third (30%) reports having Wi-Fi equipment that is over four years old. Urban main libraries have slightly older Wi-Fi equipment than rural main libraries.

Figure 11. Average Age of Wi-Fi Equipment





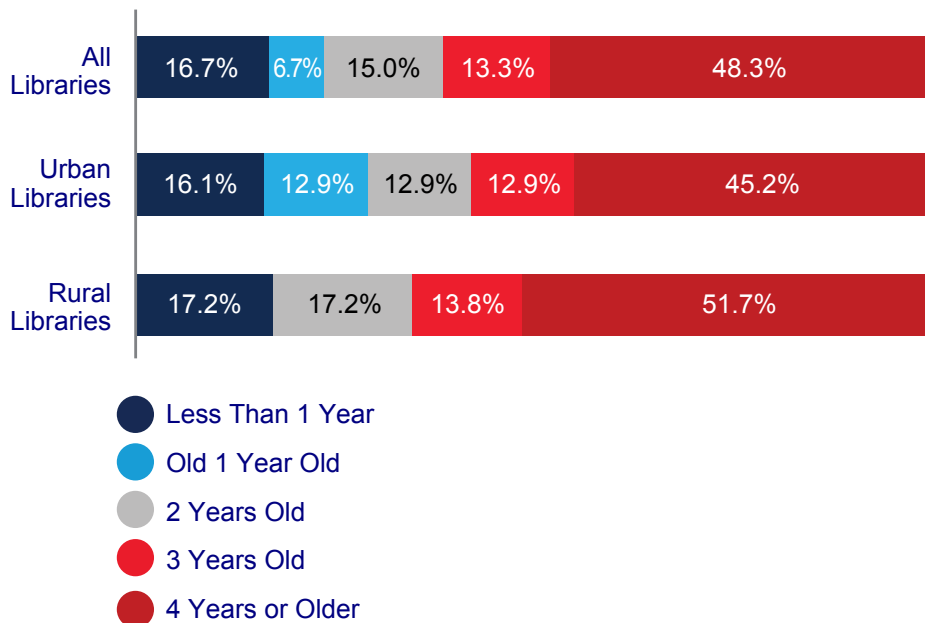
INVENTORY RESULTS: HARDWARE IN LIBRARIES

AVERAGE AGE OF WIRED EQUIPMENT

The average age of wired networking equipment across the state's main libraries is older than the average age of its wireless equipment. Nearly one-half (48.3%) of wired equipment at Utah's main libraries is four years old or older. Rural library systems, on average, have slightly older wired equipment at their main branches, with over half (51.7%) of their wired hardware being four years old or more. Urban main libraries, on the other hand, have newer equipment, with over a quarter (29%) of their wired hardware being one year old or less; meanwhile, only 17.2% of rural main libraries have equipment a year old or newer (see Figure 12).

These results suggest that many of Utah's main libraries use aging wired equipment and could benefit from new hardware.

Figure 12. Average Age of Wired Equipment



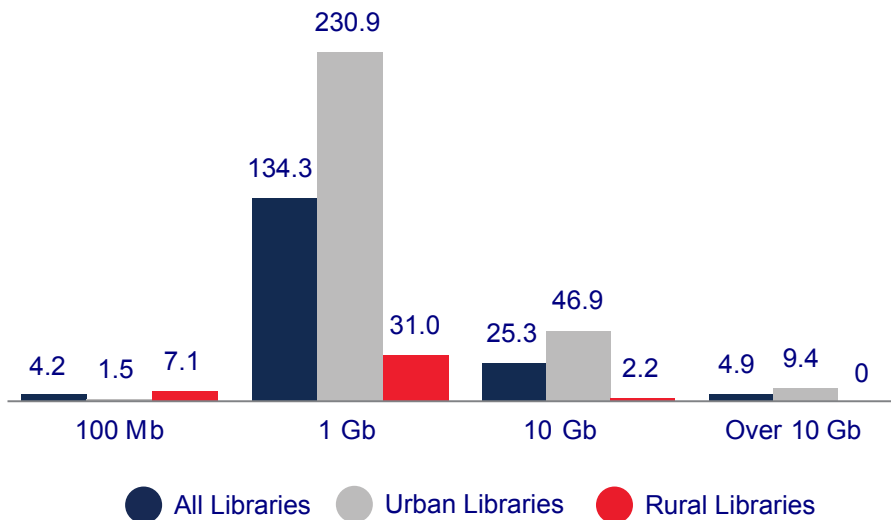


INVENTORY RESULTS: HARDWARE IN LIBRARIES

NUMBER OF SWITCH PORTS INSTALLED

Figure 13 illustrates the number of switch ports installed at main libraries. Most switch ports used at main libraries provide burst speeds of 1 gigabit (Gb) or faster. These switch ports mean that these facilities are equipped with a network infrastructure capable of delivering a high-quality user experience that can support modern applications and accommodate potential future growth. However, very few main libraries in rural areas have switch ports that provide burst speeds greater than 1 Gb, and none have switch ports with burst speeds over 10 Gb.

Figure 13. Number of Switch Ports Installed



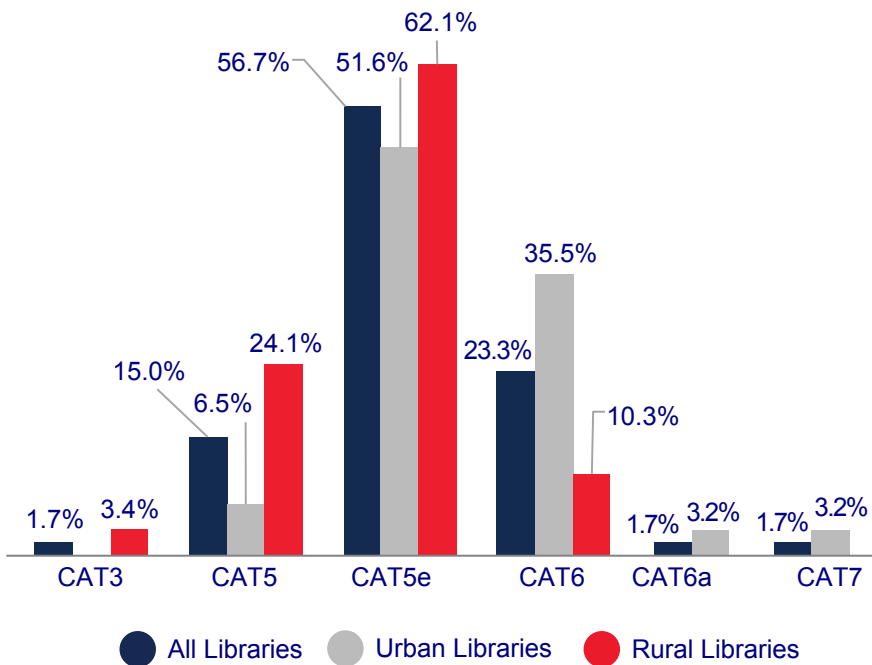


INVENTORY RESULTS: HARDWARE IN LIBRARIES

PRIMARY LAN WIRING INFRASTRUCTURE

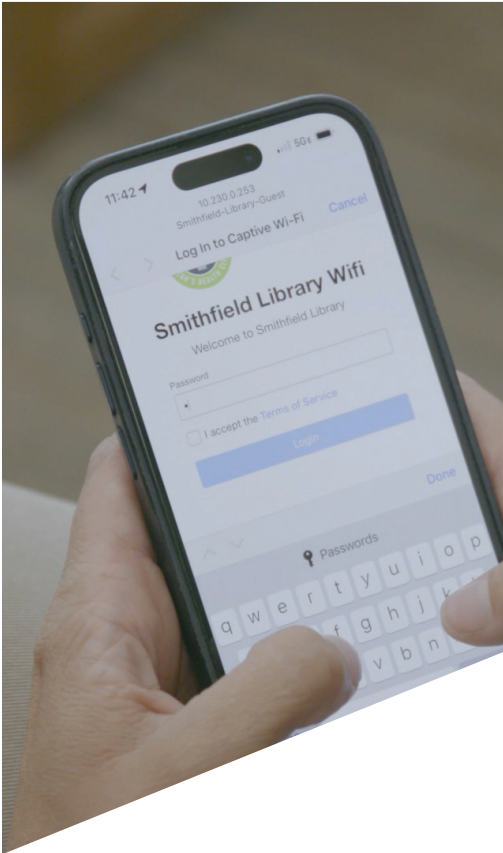
Local area network (LAN) wiring infrastructure connects devices to one another — enabling communication and data sharing. Upgrading a library’s LAN infrastructure could improve internet speed, make connections more reliable, and prevent cyberattacks. As illustrated by Figure 14, the primary LAN wiring infrastructure among main libraries in Utah is CAT5e (56.7%), followed by CAT6 (23.3%) and CAT5 (15%). Main libraries in urban areas indicated having more modern wiring technology (greater than CAT5e) than main libraries in rural areas.

Figure 14. Primary LAN Wiring Infrastructure





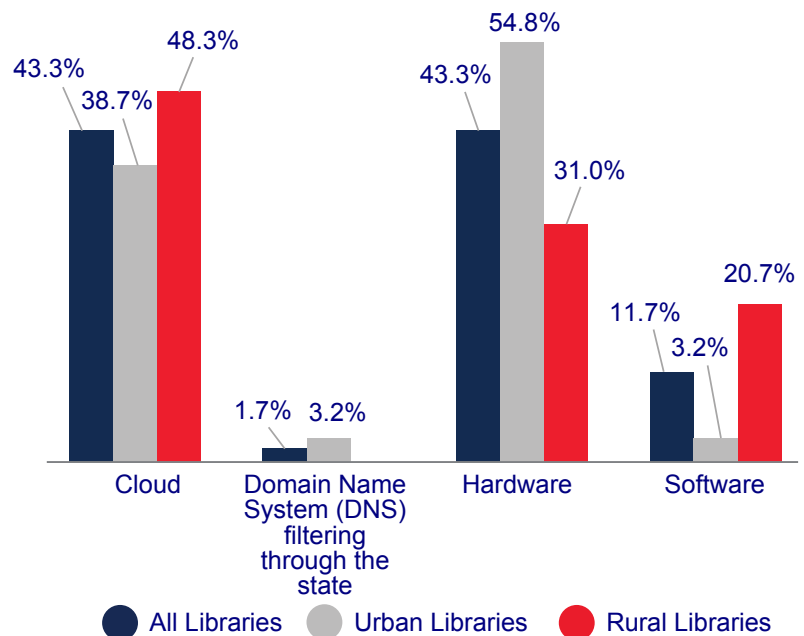
INVENTORY RESULTS: HARDWARE IN LIBRARIES



INTERNET CONTENT FILTERING SOLUTIONS

Content filtering keeps library patrons safe while using the internet. The largest share of Utah's main libraries rely on either cloud- or hardware-based content filters (Figure 15). Main libraries in urban areas rely more on hardware-based content filters (54.8%) and cloud-based content filters (38.7%), while main libraries in rural areas rely on content filters that are cloud-based (48.3%), hardware-based (31%), and software-based (20.7%).

Figure 15. Content Filters





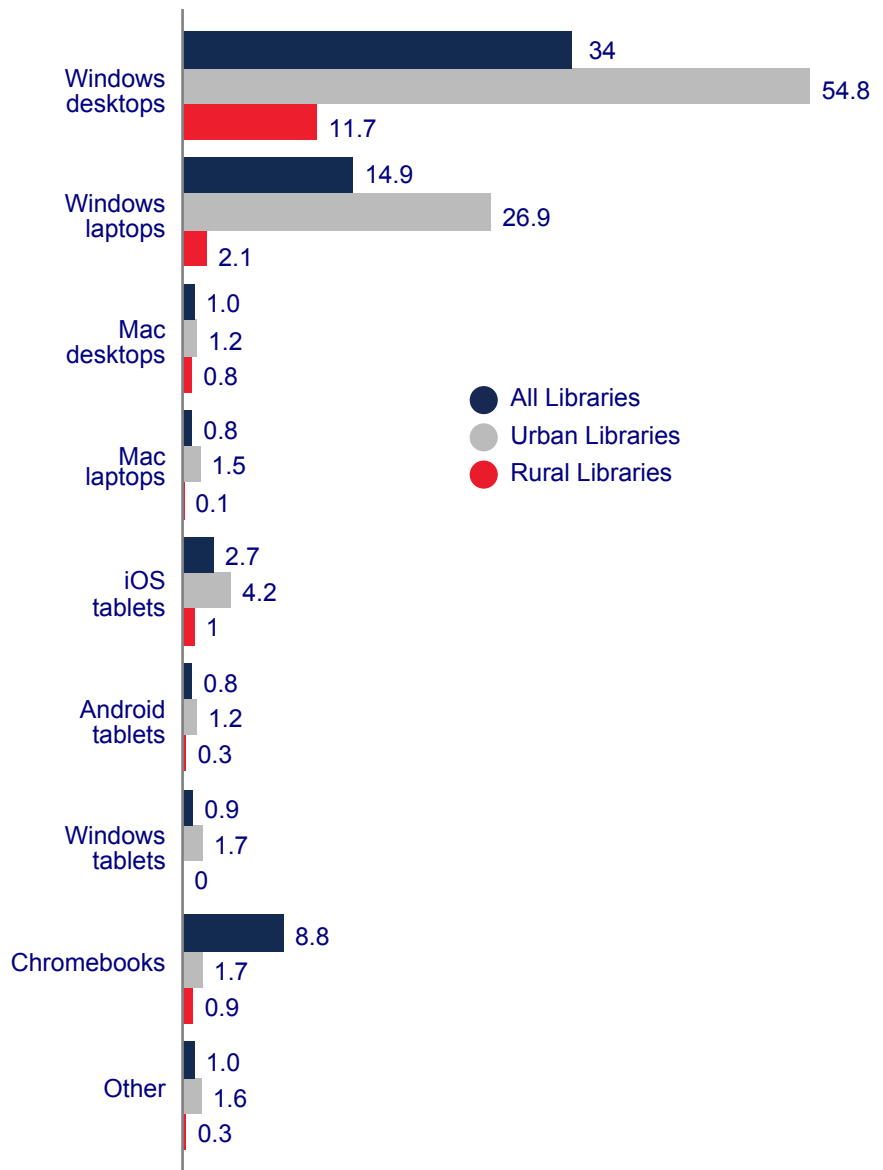
INVENTORY RESULTS: HARDWARE IN LIBRARIES

COMPUTING DEVICES AVAILABLE FOR PATRON USE IN THE LIBRARY

Utah's main libraries offer a variety of computing devices for patrons to use in the library. The top computing devices available to use at main libraries are Windows desktops, followed by Windows laptops, Chromebooks, and iOS tablets. Main branches of urban library systems have significantly more computing devices available for patrons than main branches of rural library systems. For example, the average number of Windows desktops available for patrons to use at the library is 54.8 at urban main libraries but only 11.7 at rural main libraries.

Other technologies commonly available at Utah's main libraries include printers, document scanners, and fax machines. Altogether, main libraries in Utah offer 1.36 computing devices available for use at the library per 1,000 patrons, and every main library has some computing devices available for use.

Figure 16. Average Number of Computing Devices Available to Patrons and Staff





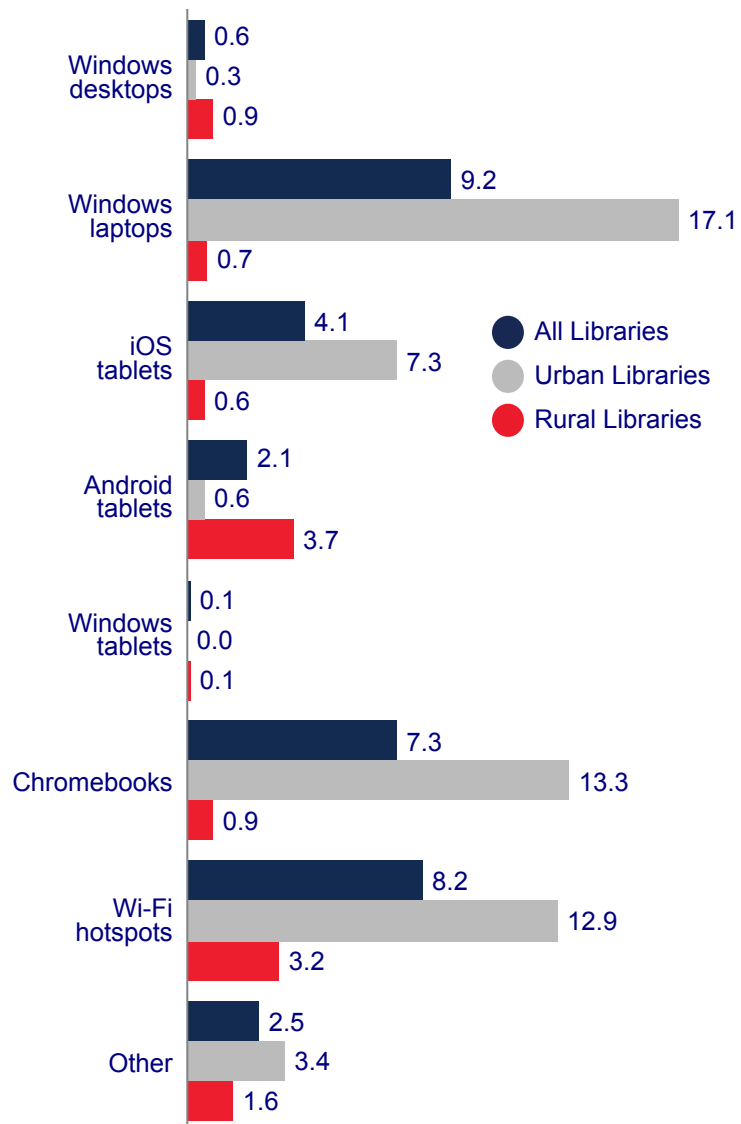
INVENTORY RESULTS: HARDWARE IN LIBRARIES

COMPUTING DEVICES AVAILABLE FOR CHECKOUT

The top computing devices available for patrons to check out from main libraries are Windows laptops, Wi-Fi hotspots, Chromebooks, and iOS tablets. On average, main libraries of urban library systems have more devices available to check out than main libraries of rural library systems.

Statewide, Utah's main libraries have an average of 0.72 devices per 1,000 patrons available for checkout. However, 16 libraries (26.7% of all main libraries in the state) do not have any computing devices available to check out.

Figure 17. Average Number of Computing Devices Available for Checkout



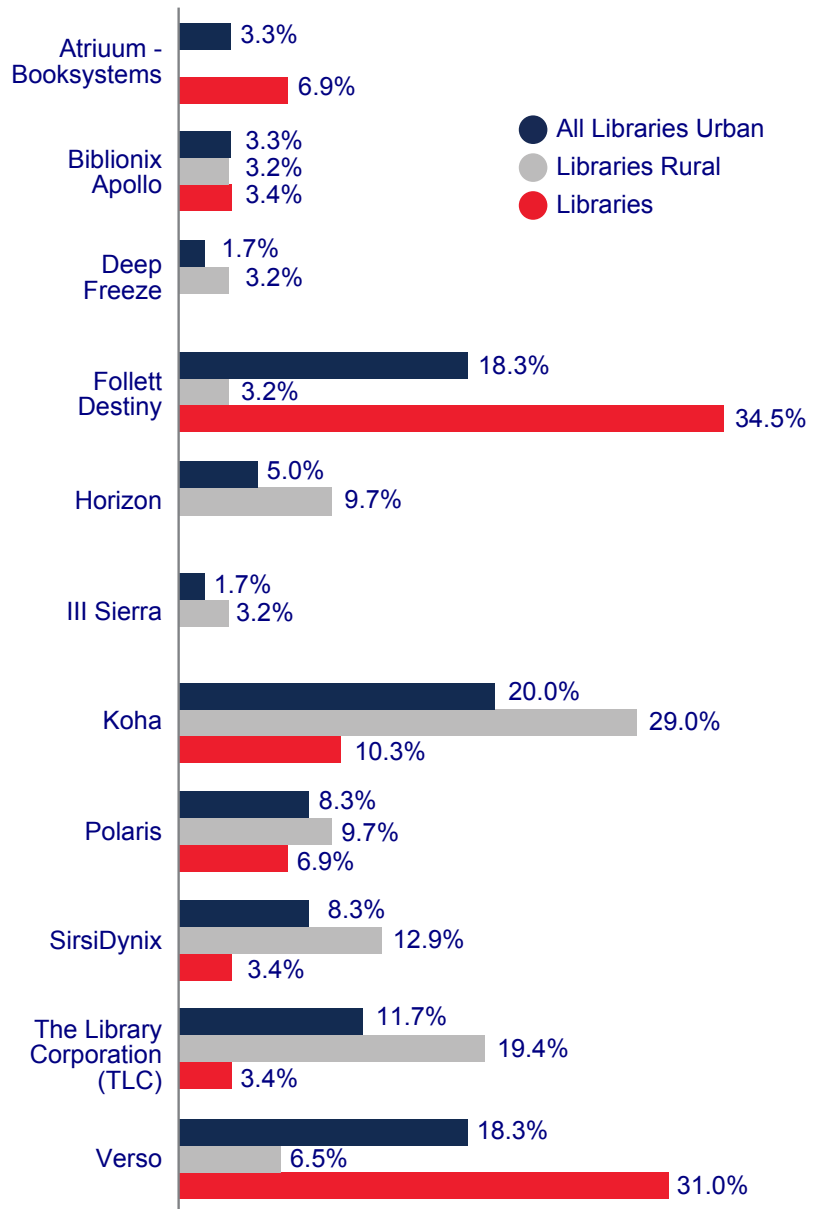


INVENTORY RESULTS: HARDWARE IN LIBRARIES

SOFTWARE USED FOR INTEGRATED LIBRARY MANAGEMENT SYSTEM (ILMS)

The primary integrated library management system (ILMS) used among rural main libraries is Follett Destiny. Over one-third of rural main libraries (34.5%) use Follett Destiny as their ILMS software option, followed by Verso (31%). In contrast, the primary ILMS software used among urban main libraries is Koha (29%), followed by The Library Corporation (see Figure 18 at right).

Figure 18. Software Used for Integrated Library Management Systems (ILMS)





IV. Conclusion

Through UEN, Utah has been a leader in education technology by prioritizing this type of data collection since 2015. This important work provides valuable information and analysis for lawmakers, school leaders, and the public. The partnership between UEN and USL represents a strategic effort to harness that expertise to strengthen Utah's library infrastructure and improve access to technology across the state.

Through the bipartisan passage of the 2021 Infrastructure Investment and Jobs Act by Congress, unprecedented federal funding has been devoted to improving digital access and equity across the United States. Tools like this technology inventory and the data collection that powered it make Utah uniquely poised to make informed decisions and create meaningful changes to equip community anchor institutions such as libraries.

By conducting this technology inventory and others in the future, UEN and USL are empowering libraries to serve as effective digital access points — supporting education, community engagement, and lifelong learning for all Utah residents.

