

# **Simmons** UNIVERSITY

**School of Library and Information Science** 

# The State of Broadband Connectivity and Related IT Infrastructure in Montana's Public Libraries

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# The State of Broadband Connectivity and Related IT Infrastructure in Montana's Public Libraries

#### **Executive Summary**

This report presents findings from an analysis of data gathered in 2019 by Saddle Peak Technologies<sup>1</sup> working with 115 of Montana's 117 public libraries to complete the Internet2 Toward Gigabit Libraries Toolkit.<sup>2</sup> The Toolkit was created with funding from the U.S. Institute of Museum and Library Services (award #: RE-00-15-0110-15) to support library staff in better understanding their library's broadband connections and related IT infrastructure.

The Montana State Library (MSL) invited researchers at the Simmons University School of Library and Information Science, led by Dr. Colin Rhinesmith to assist with the data analysis. The Montana State Library asked the research team at Simmons to help answer questions about the libraries' broadband connectivity and related IT infrastructure using the Toolkit data collected. In this report, the following questions are answered:

#### Research Questions

- How does public library broadband connectivity and related IT infrastructure in Montana compare with national standards?
- Which public libraries in Montana have the fastest and slowest broadband speeds?
- Which libraries need a computer hardware refresh?
- What do ISPs in the communities with the slowest and fastest speeds provide when it comes to Internet access?
- Are there any trends especially geographic common needs that might be teased out? What are they and where are they?
- In which communities is the public library the only source of free WiFi?

The research team at Simmons University reviewed the Federal Communications Commission's E-Rate Modernization Order<sup>3</sup> to determine the national standards for bandwidth targets in all public libraries in the U.S. The Order states that public libraries serving fewer than 50,000 people should have broadband download speeds of at least 100 Mbps and all public libraries serving 50,000 people or more should have broadband download speeds of at least 1 Gbps.

These benchmarks were applied to only 70 of the 115 public libraries in Montana that participated in the Toward Gigabit Libraries Toolkit data collection process. This is because there were issues and inconsistencies with the broadband speeds reported at 45 of the public libraries where data were gathered. In order to ensure confidence in the research findings, the research team at Simmons University decided to move ahead with the analysis of these 70 public libraries found in this report. However, the researchers' analysis of the related IT infrastructure (i.e., public access computers and WiFi connectivity) included data from all 115 public libraries that participated in Toolkit data collection in 2019.

<sup>&</sup>lt;sup>1</sup> https://saddlepeaktechnologies.com

<sup>&</sup>lt;sup>2</sup> https://www.internet2.edu/research-solutions/community-projects/toward-gigabit-libraries/

<sup>&</sup>lt;sup>3</sup> https://www.fcc.gov/general/summary-e-rate-modernization-order

#### Summary of Key Findings

- The Billings Public Library MSU Branch was the only public library, among the three public libraries in Montana that serve more than 50,000 people, that was closest to reaching its bandwidth download target of 1 Gbps. For those libraries serving fewer than 50,000 people, there were only two libraries that reported broadband speeds higher than the bandwidth download target of 100 Mbps, using Speedtest.net. These libraries were the Glendive Public Library and the Broadwater School and Community in Townsend. In other words, 98% of the public libraries serving less than 50,000 people, that used Speedtest.net to measure their download speeds, reported speeds below the FCC's national bandwidth target of 100 Mbps.
- The 10 public libraries in Montana with the slowest download speeds, using data collected from Speedtest.net, reported speeds of less than 5 Mbps. These 10 libraries included: Ekalaka Public Library; Judith Basin County Free Library; Lewis and Clark Library Augusta Branch; Lewis and Clark Library Lincoln Branch; Lewis and Clark Library East Helena Branch; Belgrade Community Library; Mineral County Public Library Alberton Branch; Big Horn County Public Library; Philipsburg Public Library; and Moore Memorial Public Library.
- 13% (or 15) of the public libraries that participated in this study had the most urgent need of a computer hardware refresh (i.e., libraries with computers more than 5 years old). These included the following: Missoula Public Library Seeley Lake Branch; Opheim Community Library; Glacier County Library Browning Branch; Glacier County Library; ImaginelF Marion; ImaginelF Columbia Falls; Thompson Falls Public Library; St Ignatius School-Community Library; Ronan Library District; Lolo School and Community Library; Meagher County/City Library; Roundup School-Community Library; Red Lodge Carnegie Library; Hearst Free Library; and Dorothy Asbjornson Community Library.
- 24% (or 28) of the public libraries in the state reported being the only source of free WiFi in their communities. Other available WiFi locations in communities, according to library staff, included the following: coffee shops/cafes (31 communities); restaurants/deli/bistro/sandwich (20 communities); bars (13 communities); McDonalds (7 communities); laundromats (3 communities); and hospitals (3 communities).
  - Other available public sources of WiFi, according to library staff, included the following: schools limited to adults; visitor's centers; Chambers of Commerce; churches; Town Halls; WiFi parks; senior citizens center; rest areas; and youth centers.

#### **Section I. Broadband Connectivity**

#### Overview

In this first section of the report, public libraries in Montana with the fastest and slowest download and upload speeds, *based on data collected one time at each library in 2019 using Speedtest.net*, are presented. Each figure is followed by a table, which provides additional details including the zip codes where each library is located, broadband connection type, and broadband provider for each library listed. The data for all 70 public libraries included in this study are listed in Appendix A.

#### Download Speeds

Figure 1. Public Libraries in Montana with the Fastest Download Speeds

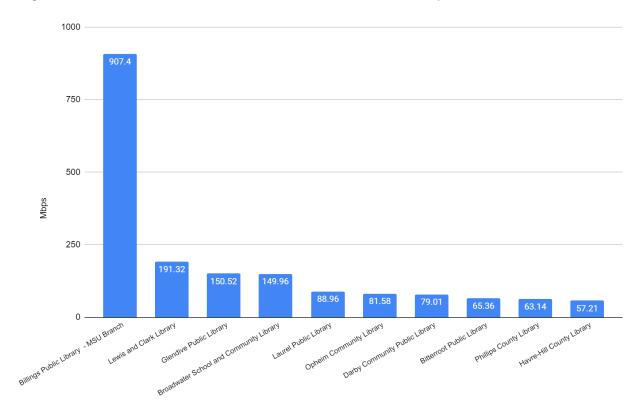


Figure 1 shows that the top 10 libraries with the fastest download speeds, based on data collected one time at each library in 2019 using Speedtest.net, include the following beginning with the fastest download speed: (1) Billings Public Library - MSU Branch; (2) Lewis and Clark Library; (3) Glendive Public Library; (4) Broadwater School and Community Library; (5) Laurel Public Library: (6) Opheim Community Library; (7) Darby Community Public Library; (8) Bitterroot Public Library; (9) Phillips County Library; and (10) Havre-Hill County Library.

**Note**: See Appendix I for a comparison between the recorded download speeds at the Billings Public Library - MSU Branch and the Billings Main Library.

Table 1. Public Libraries in Montana with the Fastest Download Speeds

#	Library Name	Zip Code	Broadband Connection(s)	Broadband Provider	Speedtest Download (Mbps)
1	Billings Public Library - MSU Branch	59101	Fiber	MSU-Billings	907.4
2	Lewis and Clark Library	59601	Wireless	Montana Internet Corporation (MIC)	191.32
3	Glendive Public Library	59330	Cable	Mid-Rivers Communications	150.52
4	Broadwater School and Community Library	59644	*	*	149.96
5	Laurel Public Library	59044	Cable	Charter/Spectrum Communications	88.96
6	Opheim Community Library	59250	Fiber	Nemont Telephone Cooperative	81.58
7	Darby Community Public Library	59829	Fiber	CenturyLink	79.01
8	Bitterroot Public Library	59840	Cable	Charter/Spectrum Communications	65.36
9	Phillips County Library	59538	Fiber	Triangle Communications	63.14
10	Havre-Hill County Library	59501	Fiber	Triangle Communications	57.21

<sup>\*</sup> Broadband connection type and service provider data were not collected for this public library.

As Table 1 shows, 5 of the top 10 public libraries in Montana with the fastest download speeds include fiber connections. The public library with the fastest reported speed test had MSU-Billings as their internet service provider. 3 of the 10 public libraries with the fastest download speeds had cable broadband connections (2 Charter and 1 Mid-River Communications) and only 1 library, the Lewis and Clark Library was connected by Fixed Wireless via the Montana Internet Corporation. The broadband provider for Broadwater School and Community Library in 2019 was not reported.

Figure 2. Public Libraries in Montana with the Slowest Download Speeds

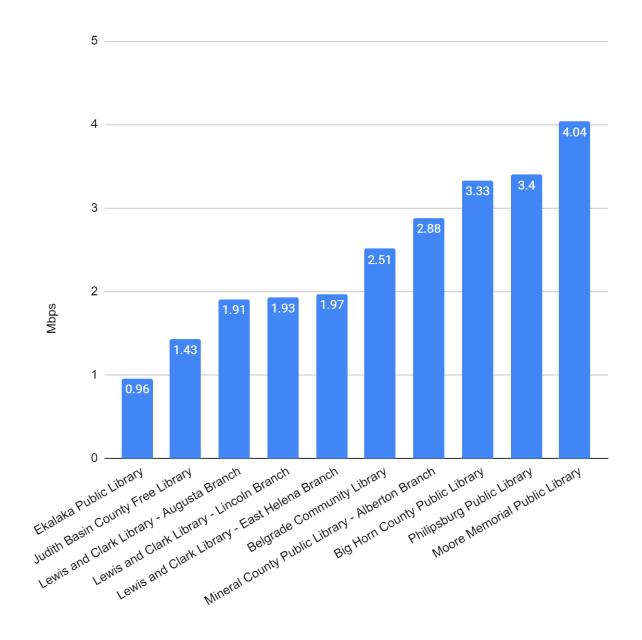


Figure 2 shows the top 10 public libraries with the slowest download speeds, based on data collected one time at each library in 2019 using Speedtest.net. These include the following beginning with the slowest download speed: (1) Ekalaka Public Library; (2) Judith Basin County Free Library; (3) Lewis and Clark Library - Augusta Branch; (4) Lewis and Clark Library - Lincoln Branch; (5) Lewis and Clark Library - East Helena Branch; (6) Belgrade Community Library; (7) Mineral County Public Library - Alberton Branch; (8) Big Horn County Public Library; (9) Philipsburg Public Library; and (10) Moore Memorial Public Library.

Table 2. Public Libraries in Montana with the Slowest Download Speeds

#	Library Name	Zip Code	Broadband Connection(s)	Broadband Provider	Speedtest Download (Mbps)
1	Ekalaka Public Library	59324	Fiber	Mid-Rivers Communications	0.96
2	Judith Basin County Free Library	59479	DSL	Triangle Communications	1.43
3	Lewis and Clark Library - Augusta Branch	59410	Fiber	3 Rivers Communications	1.91
4	Lewis and Clark Library - Lincoln Branch	59639	Fiber	Lincoln Telephone Company (reselling VisionNet?)	1.93
5	Lewis and Clark Library - East Helena Branch	59635	Cable	Charter/Spectrum Communications	1.97
6	Belgrade Community Library	59714	Cable	Charter/Spectrum Communications	2.51
7	Mineral County Public Library - Alberton Branch	59820	*	Blackfoot Communications	2.88
8	Big Horn County Public Library	59034	*	CenturyLink	3.33
9	Philipsburg Public Library	59858	DSL	Blackfoot Communications	3.4
10	Moore Memorial Public Library	59464	DSL	Triangle Communications	4.04

<sup>\*</sup> Broadband connection type data was not collected for this library's internet service.

As the data presented in Table 2 show, interestingly 3 of the top 5 slowest speeds include fiber connections. The public library with the slowest reported speed test had Mid-Rivers Communications as their internet service provider. 3 of the 10 libraries with the slowest recorded speeds had DSL connections and 2 of the 10 libraries had cable broadband connections. 2 of the top 10 libraries with the slowest reported download speeds did not include their broadband connection type in the Toolkit data gathering.

#### **Upload Speeds**

The libraries with the fastest and slowest upload speeds, based on data collected one time at each library in 2019 using Speedtest.net, are now presented.

Figure 3. Public Libraries in Montana with the Fastest Upload Speeds

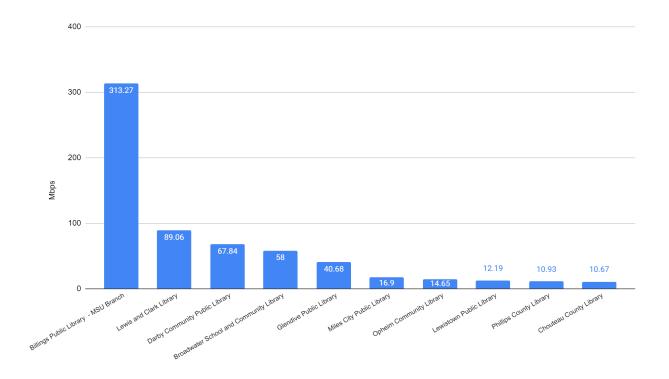


Figure 3 shows the top 10 libraries with the fastest upload speeds, *based on data collected one time at each library in 2019 using Speedtest.net*. These include the following beginning with the fastest upload speed: (1) Billings Public Library - MSU Branch; (2) Lewis and Clark Library; (3) Darby Community Public Library; (4) Broadwater School and Community Library; (5) Glendive Public Library; (6) Miles City Public Library; (7) Opheim Community Library; (8) Lewistown Public Library; (9) Phillips County Library; and (10) Chouteau County Library.

Table 3. Public Libraries in Montana with the Fastest Upload Speeds

#	Library Name	Zip Code	Broadband Connection(s)	Broadband Provider	Speedtest Upload (#2)
1	Billings Public Library – MSU Branch	59101	Fiber	MSU-Billings	313.27
2	Lewis and Clark Library	59601	Wireless	Montana Internet Corporation (MIC)	89.06
3	Darby Community Public Library	59829	Fiber	CenturyLink	67.84
4	Broadwater School and Community Library	59644	*	*	58
5	Glendive Public Library	59330	Cable	Mid-Rivers Communications	40.68
6	Miles City Public Library	59301	Cable	Mid-Rivers Communications	16.9
7	Opheim Community Library	59250	Fiber	Nemont Telephone Cooperative	14.65
8	Lewistown Public Library	59457	DSL	Lewistown Online	12.19
9	Phillips County Library	59538	Fiber	Triangle Communications	10.93
10	Chouteau County Library	59442	Fiber	Triangle Communications	10.67

<sup>\*</sup> Broadband connection type and service provider data were not collected for this public library.

As the data presented in Table 2 show, the library with the fastest upload speed (Billings Public Library - MSU Branch) is also the same library with the fastest download speed. 5 of the top 10 libraries with the fastest upload speeds had fiber internet connections, 2 libraries had cable internet connections, 1 library had DSL, and 1 library had a fixed wireless internet connection. 1 library did not report their connectivity type in the Toolkit data collected for this study.

Figure 4. Public Libraries in Montana with the Slowest Upload Speeds

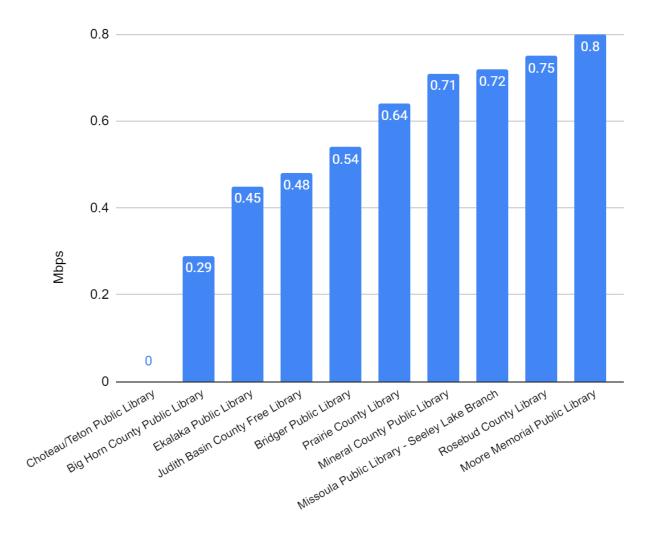


Figure 4 shows the top 10 libraries with the slowest upload speeds, based on data collected one time at each library in 2019 using Speedtest.net. These include the following, beginning with the slowest upload speed: (1) Choteau/Teton Public Library; (2) Big Horn County Public Library; (3) Ekalaka Public Library; (4) Judith Basin County Free Library; (5) Bridger Public Library; (6) Prairie County Library; (7) Mineral County Public Library; (8) Missoula Public Library - Seeley Lake Branch; (9) Rosebud County Library; and (10) Moore Memorial Public Library.

Table 4. Public Libraries in Montana with the Slowest Upload Speeds

#	Library Name	Zip Code	Broadband Connection(s)	Broadband Provider	Speedtest Upload (Mbps)
1	Choteau/Teton Public Library	59422	DSL	3 Rivers Communications	0
2	Big Horn County Public Library	59034	*	CenturyLink	0.29
3	Ekalaka Public Library	59324	Fiber	Mid-Rivers Communications	0.45
4	Judith Basin County Free Library	59479	DSL	Triangle Communications	0.48
5	Bridger Public Library	59014	DSL	CenturyLink	0.54
6	Prairie County Library	59349	DSL	Mid-Rivers Communications	0.64
7	Mineral County Public Library	59872	DSL	Blackfoot Communications	0.71
8	Missoula Public Library - Seeley Lake Branch	59868	DSL	Blackfoot Communications	0.72
9	Rosebud County Library	59327	DSL	Range Telecommunications	0.75
10	Moore Memorial Public Library	59464	DSL	Triangle Communications	0.8

<sup>\*</sup> Broadband connection type data was not collected for this library's internet service.

As the data presented in Table 4 show, the library with the slowest upload speed (Choteau/Teton Public Library) had a DSL connection at the time the data were collected. In fact, only 1 of the 10 libraries in the table had a fiber connection; the rest had DSL connections, and 1 library did not report their connectivity type in the Toolkit data collected for this study.

#### Section II: Related IT Infrastructure

#### **Overview**

Those public libraries, included in the 115 that participated in this study, that were in need of a hardware refresh at the time the data were gathered in 2019 are detailed in this next section. This hardware included both public access and staff computers that were more than 5 years old at this time. This section also includes a description of those libraries that were the only source of free public WiFi in their communities, as reported by the staff at each of the libraries.

Public Access and Staff Computers

**Table 5. Public Libraries in Urgent Need of Hardware Refresh** (100% of Computers were older than 5 years)

Library Name	# of Public Access Computers Connected to Internet	# of Staff Computers Connected to Internet	Percent of Computers > 5 years Old?
Missoula Public Library - Seeley Lake Branch	4	1	100
Opheim Community Library	0	0	100
Glacier County Library - Browning Branch	6	1	100
Glacier County Library	7	5	100
ImagineIF Marion	1	0	100
ImagineIF Columbia Falls	8	3	100
Thompson Falls Public Library	8	3	100
St Ignatius School-Community Library	8	1	100
Ronan Library District	10	5	100
Lolo School and Community Library	4	1	100
Meagher County/City Library	9	1	100
Roundup School-Community Library	14	3	100
Red Lodge Carnegie Library	16	2	100

Hearst Free Library	17	4	100
Dorothy Asbjornson Community Library	2	1	100

**Table 6. Public Libraries in Urgent Need of Hardware Refresh** (55% of Computers were older than 5 years)

Library Name	# of Public Computers Connected to Internet	# of Staff Computers Connected to Internet	Percent of Computers > 5 years Old?
Glendive Public Library	11	5	94
Sheridan County Library	7	3	90
Phillips County Library	4	4	88
Henry A Malley Memorial Library	5	2	83
ImagineIF Kalispell	25	30	80
Joliet Public Library	5	4	80
Blaine County Library	8	2	80
Hobson Community Library	5	1	80
Garfield County Free Library	2	2	75
Wibaux Public Library	5	3	75
Big Horn County Public Library	13	4	75
Thompson-Hickman Madison County Library	6	5	73
Lincoln County Public Libraries - Troy Branch	5	2	71
Prairie County Library	4	2	67
Daniels County Library	5	1	66
Chouteau County Library - Geraldine Branch	2	1	66
Belgrade Community Library	11	10	66
Glasgow City-County Library	6	6	60
Fairfield/Teton Public Library	8	2	60
Chouteau County Library	8	5	55

### Public Wireless Internet Access

Table 7. Public Libraries Listed as the Only Source of Free Public WiFi in their Communities

Library Name	Do you offer WiFi outside or surrounding your library building?	If yes, how many hours a day is WiFi available outside?	Do other organizations or businesses in your community offer free public WiFi?
Missoula Public Library - Potomac Branch	Yes	24	No
Prairie County Library	Yes	24	No
George McCone Memorial County Library	Yes	24	No
Garfield County Free Library	Yes		No
Glendive Public Library - Richey Branch	Yes	24	No
Roosevelt County Library - Froid Branch	Yes	24	No
Opheim Community Library	No		No
Dutton/Teton Public Library	Yes	24	No
Toole County Library	Yes	24	No
Lewis and Clark Library - East Helena Branch	Yes	24	No
North Jefferson County Library District Montana City Library	Yes	24	No
North Jefferson County Library District Clancy Library	Yes	24	No
Swan Valley Community Library - Missoula	Yes	24	No
Mineral County Public Library	Yes	24	No
Frenchtown School and Community Library	No		No

Library Name	Do you offer WiFi outside or surrounding your library building?	If yes, how many hours a day is WiFi available outside?	Do other organizations or businesses in your community offer free public WiFi?
Mineral County Public Library - Alberton Branch	Yes	24	No
Lolo School and Community Library	No		No
North Valley Public Library	Yes	24	No
Joliet Public Library	Yes	24	No
Rosebud County Library - Bicentennial Library of Colstrip	Yes	24	No
Lewis and Clark Library - Lincoln Branch	Yes	24	No
Butte-Silver Bow Public Library - Melrose Branch	No		No
Blaine County Library	Yes	24	No
Harlem Public Library	Yes	5	No
Petroleum County School- Community Library	Yes	24	No
Judith Basin County Free Library	Yes	24	No
Hobson Community Library	Yes	24	No
Madison Valley Public Library	Yes	24	No

#### Alternative WiFi Locations

24% (or 28) of the public libraries in the state reported being the only source of free WiFi in their communities. Other available WiFi locations in communities, according to library staff, included the following: coffee shops/cafes (31 communities); restaurants/deli/bistro/sandwich (20 communities); bars (13 communities); McDonalds (7 communities); laundromats (3 communities); and hospitals (3 communities).

 Other available public sources of WiFi, according to library staff, included the following: schools limited to adults; visitor's centers; Chambers of Commerce; churches; Town Halls; WiFi parks; senior citizens center; rest areas; and youth centers.

#### Section III: Recommendations

#### Overview

In this final section, the authors provide recommendations to the Montana State Library based on data about the broadband connectivity and related IT infrastructure in the public libraries included in this report.

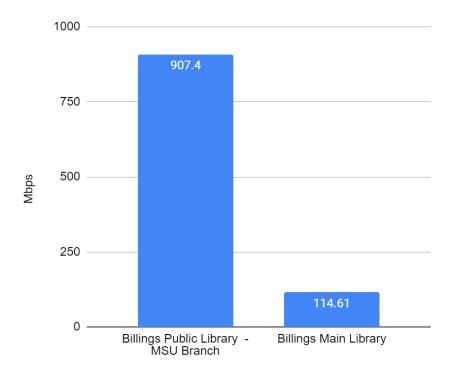
#### **Broadband Connectivity**

- The report showed that the Billings Public Library MSU Branch was the only public library, among the three public libraries in Montana that serve more than 50,000 people, that was closest to reaching its bandwidth download target of 1 Gbps. Therefore, more robust internet connectivity is needed at the Lewis and Clark Library and the Missoula Public Library to meet the FCC's national standards for the population served in these two communities.
- 98% of the public libraries that serve fewer than 50,000 people reported speeds below the FCC's national bandwidth target of 100 Mbps. Therefore, more robust internet connections are needed in those public libraries across the state of Montana that are not reaching this national standard. Put another way, 63% of the 70 public libraries in this report that serve fewer than 50,000 people reported speeds below 50 Mbps or 50% of the FCC's national bandwidth target.
- 10 public libraries in Montana with the slowest download speeds reported speeds of less than 5 Mbps. These 10 public libraries are in urgent need of more robust internet connectivity, including the following: Ekalaka Public Library; Judith Basin County Free Library; Lewis and Clark Library Augusta Branch; Lewis and Clark Library Lincoln Branch; Lewis and Clark Library East Helena Branch; Belgrade Community Library; Mineral County Public Library Alberton Branch; Big Horn County Public Library; Philipsburg Public Library; and Moore Memorial Public Library.
- Appendix I provides a list of all 70 public libraries that were included in the broadband data analysis for this report. This list should be consulted to gain a better sense of the geographic areas where upgrades to broadband networks are needed across the state of Montana.

#### Related IT Infrastructure

• 13% (or 15) of the public libraries that participated in this study had the most urgent need of a computer hardware refresh (i.e., libraries with computers more than 5 years old). The following public libraries in Montana should receive computer upgrades: Missoula Public Library - Seeley Lake Branch; Opheim Community Library; Glacier County Library - Browning Branch; Glacier County Library; ImaginelF Marion; ImaginelF Columbia Falls; Thompson Falls Public Library; St Ignatius School-Community Library; Ronan Library District; Lolo School and Community Library; Meagher County/City Library; Roundup School-Community Library; Red Lodge Carnegie Library; Hearst Free Library; and Dorothy Asbjornson Community Library.

Appendix I. Billings Library Branch Download Speed Comparisons



Appendix I shows a comparison of the download speeds between the Billings Public Library - MSU Branch and the Billings Main Library. The purpose here is to show the difference in download speeds available at each of the libraries. This comparison also shows that the Billings Main Library does not have the broadband capacity needed to serve its population, and as a result *this branch fails to meet the FCC's download target of 1 Gbps for its population size*, which is over 50,000 people.

Appendix II. 70 Public Libraries Included in the Broadband Data Analysis

Library Name	Zip Code	Broadband Connection(s)	Broadband Provider(s)	Speedtest Download (Mbps)
Billings Public Library - Community Library at MSUB City College Campus	59101	Fiber	MSU-Billings	907.4
Lewis and Clark Library	59601	Wireless	Montana Internet Corporation (MIC)	191.32
Glendive Public Library	59330	Cable	Mid-Rivers Communications	150.52
Broadwater School and Community Library	59644	*	*	149.96
Laurel Public Library	59044	Cable	Charter/Spectrum Communications	88.96
Opheim Community Library	59250	Fiber	Nemont Telephone Cooperative	81.58
Darby Community Public Library	59829	Fiber	CenturyLink	79.01
Bitterroot Public Library	59840	Cable	Charter/Spectrum Communications	65.36
Phillips County Library	59538	Fiber	Triangle Communications	63.14
Havre-Hill County Library	59501	Fiber	Triangle Communications	57.21
North Valley Public Library	59870	Cable, Fiber	CenturyLink and Charter/Spectrum Communications	54.89
Red Lodge Carnegie Library	59068	DSL	Charter/Spectrum Communications	49.96
Glacier County Library	59427	Cable	Charter/Spectrum Communications	48.81
Stillwater County Library	59019	DSL	Charter/Spectrum Communications	47.22
Meagher County/City Library	59645	Fiber	Triangle Communications	30.91
Henry A Malley Memorial Library	59317	DSL	Range Telecommunications	30.17

Manhattan Community School Library	59741	Cable	Charter/Spectrum Communications	29.95
Miles City Public Library	59301	Cable	Mid-Rivers Communications	29.01
Dorothy Asbjornson Community Library	59489	DSL	Triangle Communications	28.71
Thompson Falls Public Library	59873	DSL	Blackfoot Communications	26.87
Dillon Public Library	59725	Cable	Charter/Spectrum Communications	25.64
Madison Valley Public Library	59729	DSL	3 Rivers Communications	25.29
Chouteau County Library	59442	Fiber	Triangle Communications	22.26
Glacier County Library - Browning Branch	59417	DSL	3 Rivers Communications	21.95
Chouteau County Library - Geraldine Branch	59446	DSL	Triangle Communications	21.72
Butte-Silver Bow Public Library - Melrose Branch	59743	DSL	3 Rivers Communications	20.97
Wedsworth Memorial Library	5942	DSL	CenturyLink	20.28
Lewistown Public Library	59457	DSL	Lewistown Online	20.22
Butte-Silver Bow Public Library	59701	Fiber	Zayo Bandwidth	19
Liberty County Library	59522	Fiber	Triangle Communications	18.23
Harlem Public Library	59526	Fiber	Triangle Communications	17.08
Swan Valley Community Library - Missoula	59826	*	Blackfoot Communications	15.59
Joliet Public Library	59041	DSL	CenturyLink	15.36
St Ignatius School-Community Library	59865	Fiber	Access Montana	13.24
Toole County Library	59474	DSL	3 Rivers Communications	12.8
Thompson-Hickman Madison County Library	59755	Fiber	3 Rivers Communications	12.01

Bridger Public Library	59014	DSL	CenturyLink	11.98
Wibaux Public Library	59353	DSL	Mid-Rivers Communications	11.72
Preston Library		Fiber	Hotspring Telephone	11.36
Toole County Library - North Branch	59482	*	Northern Telephone Cooperative	11.28
Blaine County Library	59523	Fiber	Triangle Communications	11.15
Plains Public Library District		DSL	Blackfoot Communications	11.09
Carnegie Public Library	59011	DSL	Triangle Communications	10.9
Chouteau County Library - Big Sandy Branch	59520	Fiber	Triangle Communications	10.24
Rosebud County Library	59327	DSL	Range Telecommunications	9.82
Dutton/Teton Public Library	59433	Wireless	Softworx Incorporated - Microwave line of sight	9.75
Garfield County Free Library	59337	Fiber	Mid-Rivers Communications	9.53
Missoula Public Library - Seeley Lake Branch	59868	DSL	Blackfoot Communications	8.64
Roosevelt County Library - Froid Branch	59226	DSL	Nemont Telephone Cooperative	8.46
Mineral County Public Library	59872	DSL	Blackfoot Communications	7.84
Roosevelt County Library - Culbertson Branch	59218	DSL	Nemont Telephone Cooperative	7.55
Daniels County Library	59263	Fiber	Nemont Telephone Cooperative	7.49
Prairie County Library	59349	DSL	Mid-Rivers Communications	6.82
Sheridan County Library	59254	Fiber	Nemont Telephone Cooperative	6.49
Sheridan Public Library	59749	Fiber	3 Rivers	6.38

			Communications	
Choteau/Teton Public Library	59422	DSL	3 Rivers Communications	5.67
William K. Kohrs Memorial Library	59722	Cable	Charter/Spectrum Communications	5.46
Denton Public Library	59430	DSL	Triangle Communications	5.09
Glasgow City-County Library	59230	DSL	Nemont Telephone Cooperative	4.76
Lincoln County Public Libraries - Troy Branch	59935	DSL	Frontier Communications	4.44
Moore Memorial Public Library	59464	DSL	Triangle Communications	4.04
Philipsburg Public Library	59858	DSL	Blackfoot Communications	3.4
Big Horn County Public Library	59034	*	CenturyLink	3.33
Mineral County Public Library - Alberton Branch	59820	*	Blackfoot Communications	2.88
Belgrade Community Library	59714	Cable	Charter/Spectrum Communications	2.51
Lewis and Clark Library - East Helena Branch	59635	Cable	Charter/Spectrum Communications	1.97
Lewis and Clark Library - Lincoln Branch	59639	Fiber	Lincoln Telephone Company (reselling VisionNet?)	1.93
Lewis and Clark Library - Augusta Branch	59410	Fiber	3 Rivers Communications	1.91
Judith Basin County Free Library	59479	DSL	Triangle Communications	1.43
Ekalaka Public Library	59324	Fiber	Mid-Rivers Communications	0.96

<sup>\*</sup> Broadband connection type and/or service provider data were not collected for this public library.