

Internet Access Services: Status as of June 30, 2024

Industry Analysis Division
Office of Economics and Analytics
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INTRODUCTION

This report summarizes information about Internet access in the United States as of June 30, 2024, as collected by FCC Form 477 and the Broadband Data Collection (BDC). For purposes of this report, Internet access is defined as a service that allows information to be sent to or received from the Internet with a speed of at least 200 kilobits per second. See the Technical Notes at the end of this report for more-detailed information about these data collections and the meaning of terms used in this report.

Section 1 of this report presents an overview of the information collected by FCC Form 477 and the BDC. Section 2 of this report presents statistics on Internet access availability and the remainder of the report includes data on total and residential Internet access connections by downstream and upstream speed, by technology, by geography, and over time. Section 3 of the report presents nationwide statistics, Section 4 provides state-level data, and Section 5 includes data on the subscribership differences among counties and census tracts.¹ In addition, Section 6 of the report includes an analysis of the correlations between subscribership ratios and various demographic measures.

The National Broadband Map displays where internet access services are available across the United States and can be viewed online at broadbandmap.fcc.gov. Additional maps depicting the number of fixed connections per 1,000 households by census tract are available online at fcc.gov/internet-access-services-reports. Other publicly available data that are too voluminous to include in this report are available online at fcc.gov/general/fcc-form-477-additional-data.

¹ The Commission began collecting census tract-level data for data as of December 31, 2008. See *High-Speed Services for Internet Access: Status as of December 31, 2008* (February 2010) at 1-4, available at fcc.gov/encyclopedia/high-speed-services-internet-access-reports (December 2008 High-Speed Report).

**SECTION 1
OVERVIEW & HIGHLIGHTS**

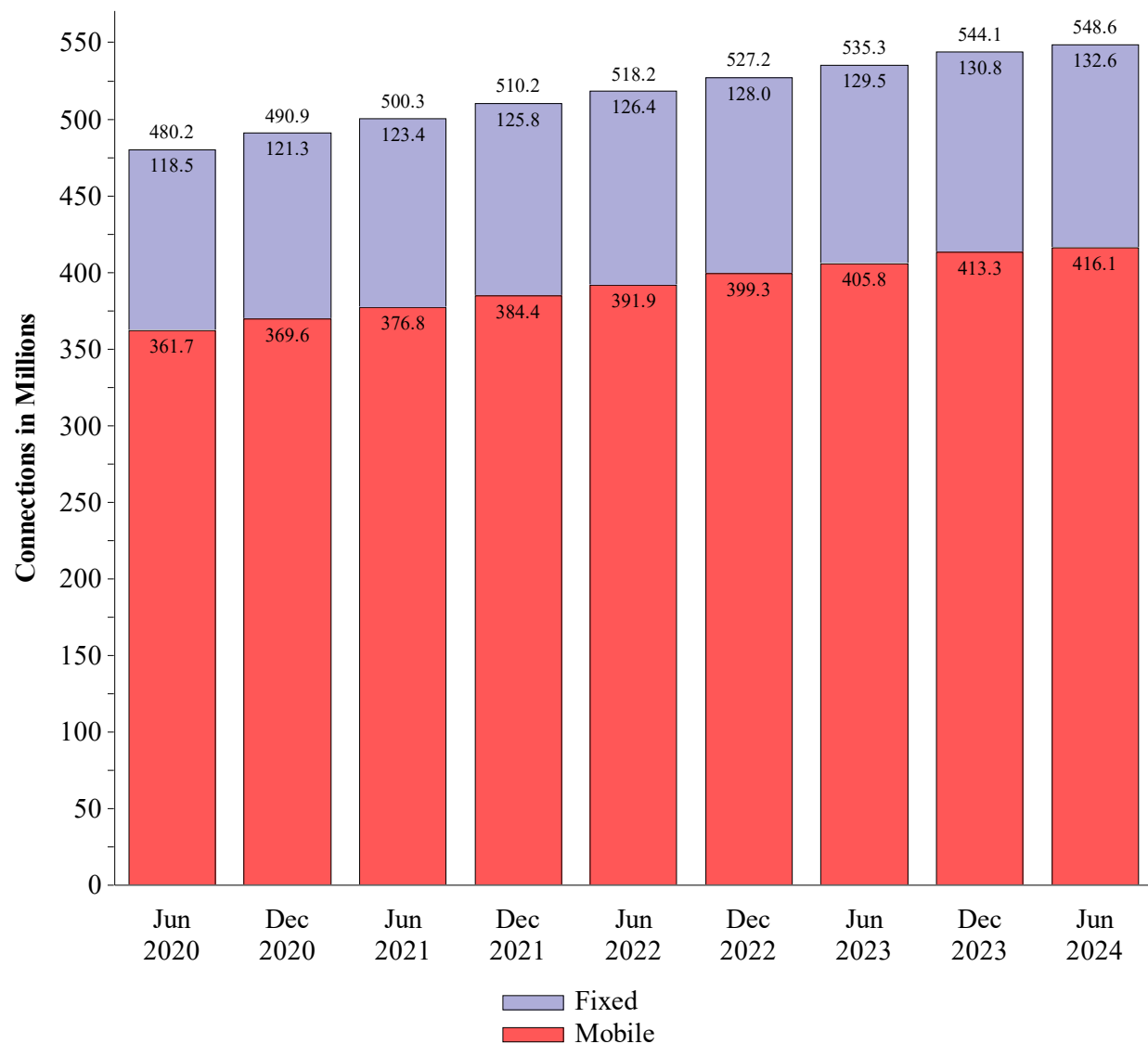
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Total Connections

As shown in Figure 1, total connections increased by about 2.5% between June 2023 and June 2024 to 549 million. Mobile connections increased 2.5% year-over-year to 416 million in June 2024, while fixed connections grew to 133 million – up about 2.3% from June 2023.

Figure 1
Fixed and Mobile Connections 2020-2024



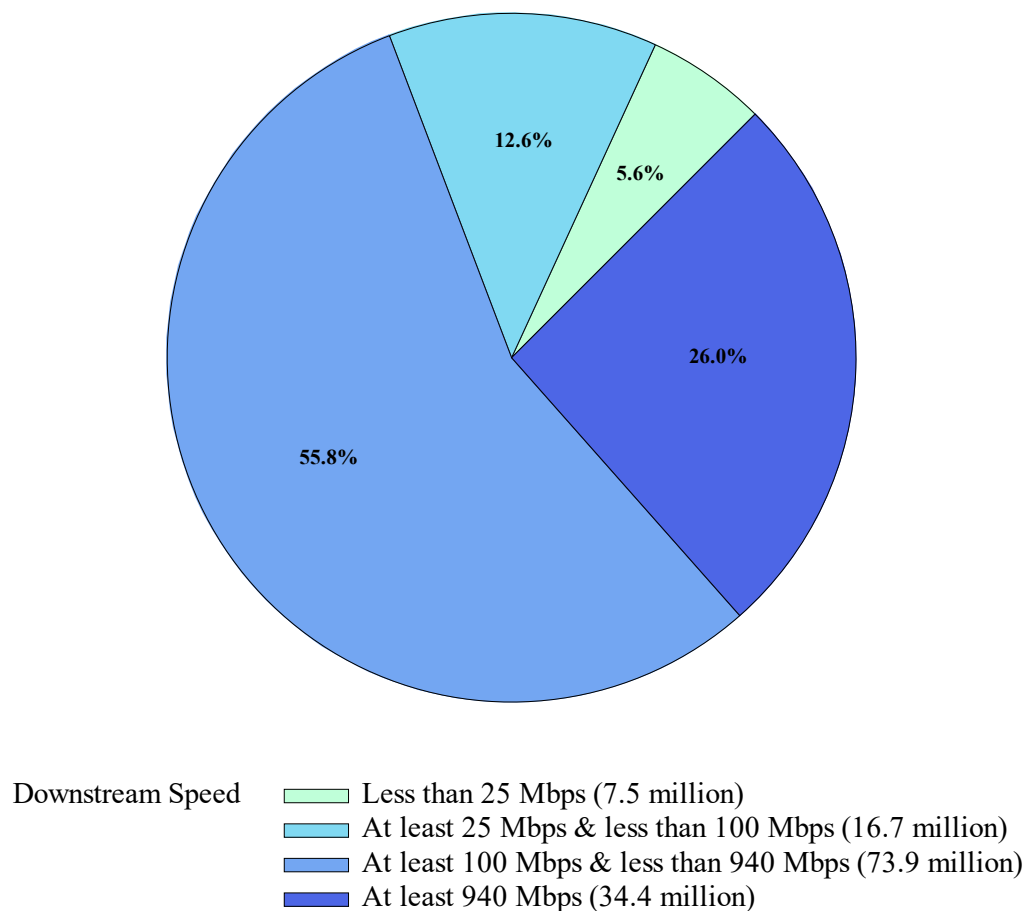
Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding. Connections include both residential and business connections.

Source: FCC Form 477.

Fixed Connections - Downstream Speeds

Figure 2(a) illustrates how the 133 million fixed connections reported for June 2024 were distributed across four groups of downstream speeds defined by breakpoints at 25 Mbps, 100 Mbps, and 940 Mbps. See Figure 14 for more detail.

Figure 2(a)
Distribution of Fixed Connections by Downstream Speed
as of June 30, 2024

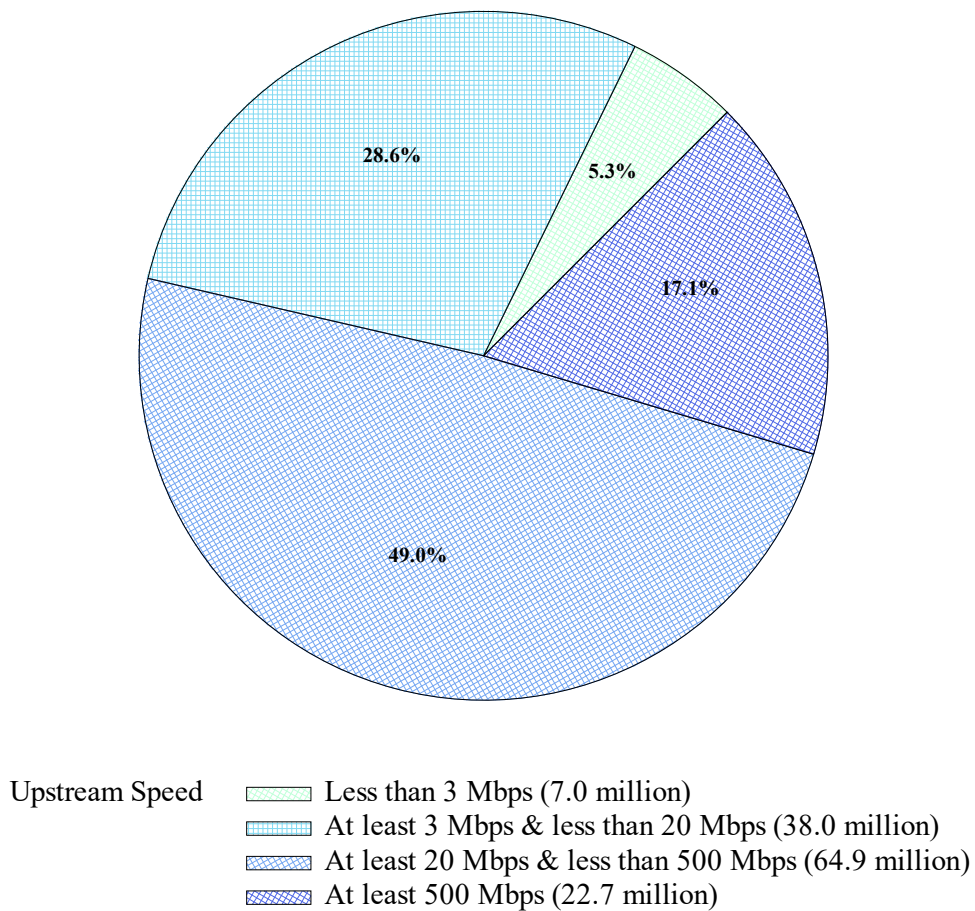


Note: Numbers may not sum to total due to rounding.
Source: FCC Form 477.

Fixed Connections - Upstream Speeds

Figure 2(b) illustrates how the 133 million fixed connections reported for June 2024 were distributed across four groups of upstream speeds defined by breakpoints at 3 Mbps, 20 Mbps, and 500 Mbps. See Figure 14 for more detail.

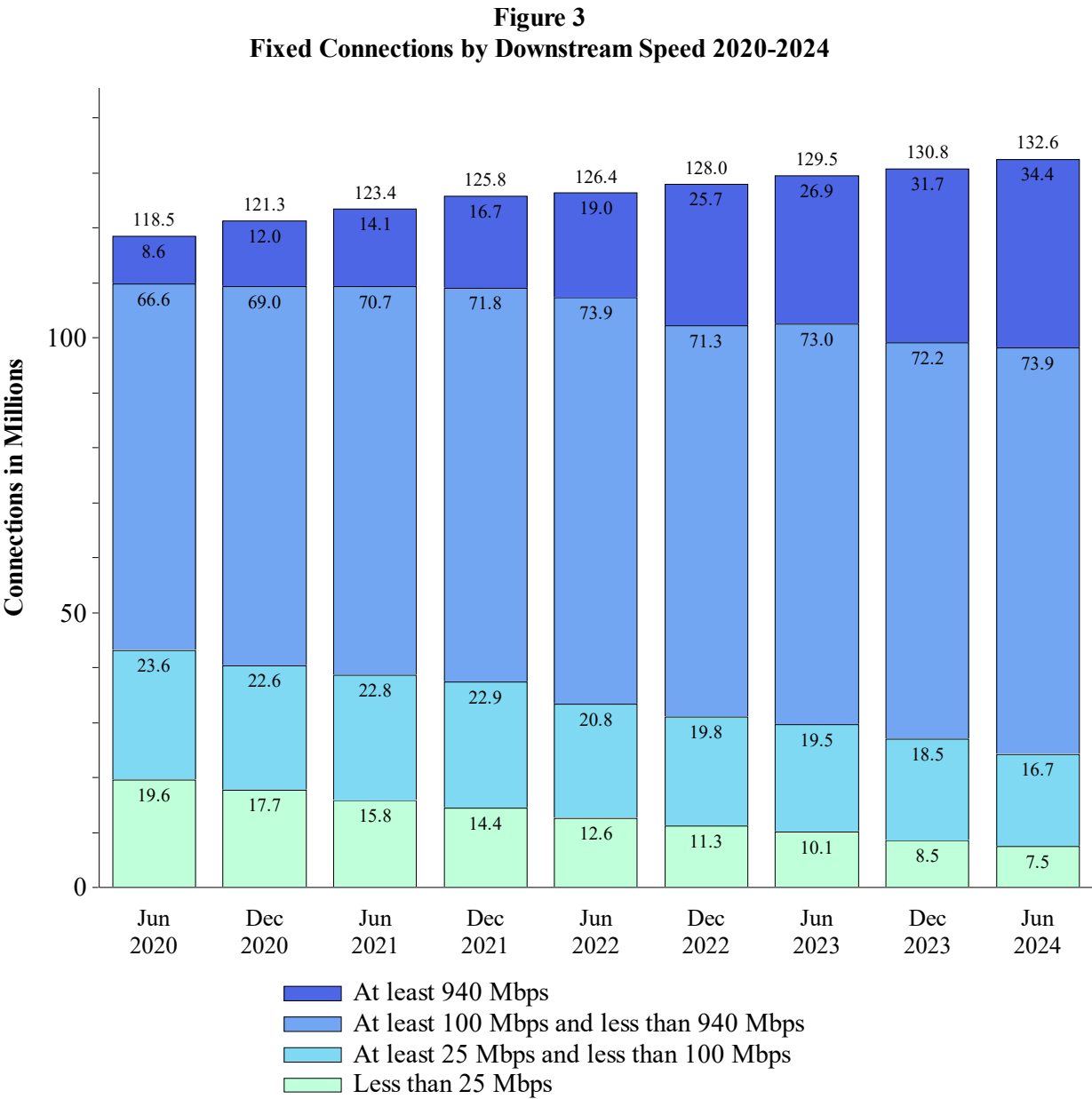
Figure 2(b)
Distribution of Fixed Connections by Upstream Speed
as of June 30, 2024



Note: Numbers may not sum to total due to rounding.
Source: FCC Form 477.

Fixed Connections - Downstream Speed Over Time

Figure 3 illustrates how the composition of total fixed connections by different downstream speed groups has changed from 2020 to 2024.



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.
Source: FCC Form 477.

The percentage of fixed connections with a downstream speed of at least 100 Mbps has grown from 64% (or 75 million connections) in June 2020 to 82% (or 108 million connections) in June 2024. Over the same period, the percentage of fixed connections with downstream speeds of less than 25 Mbps has decreased from 17% (or 20 million connections) in June 2020 to about 6% (or about 7 million connections) in June 2024.

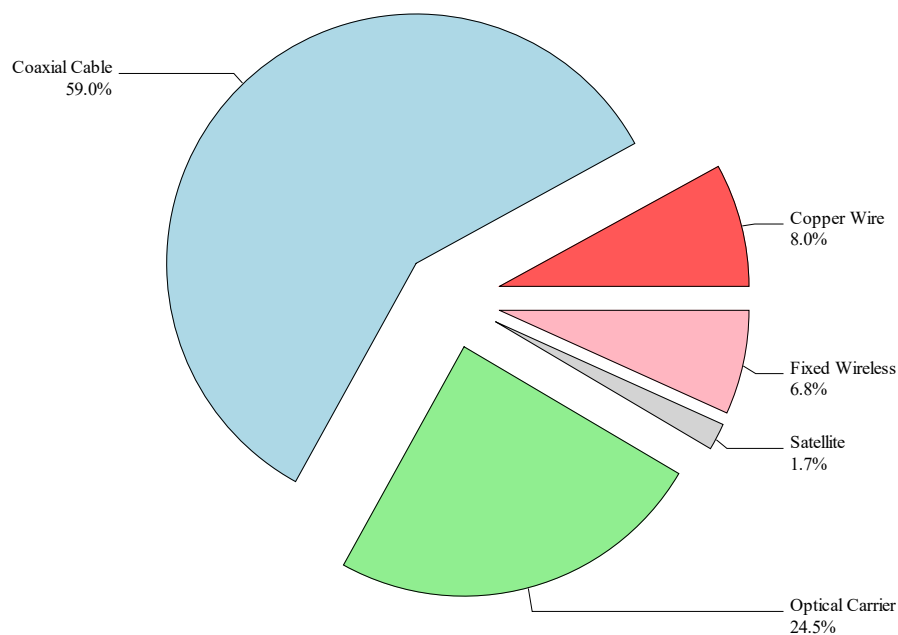
Fixed Connections by Technology

In addition to bandwidths, Form 477 also collects the technology used to deliver services to the end-user's location. Beginning with data as of June 30, 2022, Form 477 classifies all fixed connections into six mutually exclusive technology categories:

- Copper Wire
- Coaxial Cable (hybrid fiber-coaxial)
- Optical Carrier (fiber to the premises)
- Satellite
- Fixed Wireless
- Other

Figure 4 illustrates how fixed connections are distributed across technologies for data as of June 2024. Throughout this report, connections reported as 'Other' are aggregated with the 'Copper Wire' category for confidentiality reasons and for ease of reporting. See Technical Notes at the end of this report for a description of each technology and how these categories have changed over time.

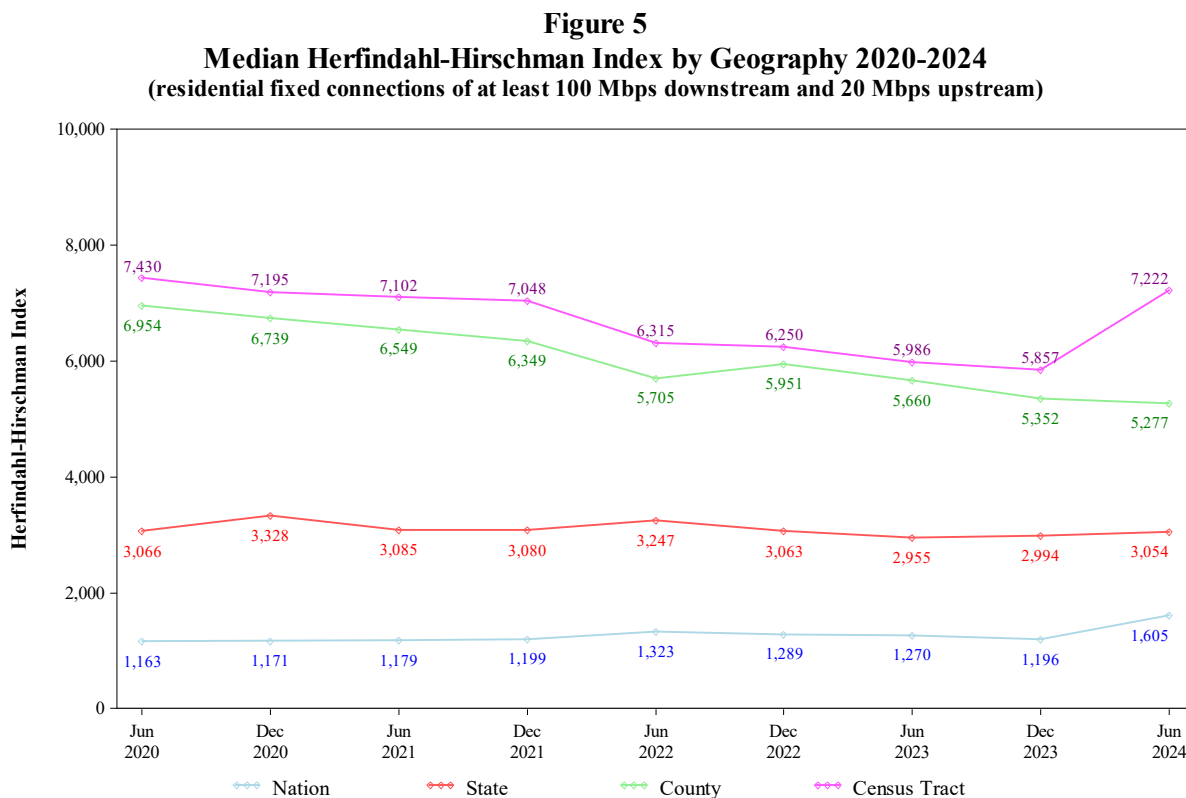
Figure 4
Fixed Connections by Technology as of June 30, 2024



Note: Other is summarized with Copper Wire for confidentiality reasons.
Source: FCC Form 477.

Concentration by Geography

Figure 5 presents the national, median state-, median county-, and median tract-level Herfindahl-Hirschman Index (HHI) for residential fixed connections of at least 100 Mbps downstream and 20 Mbps upstream from 2020 to 2024. To calculate the HHI for a specific geographic area, we take the share of fixed connections reported by each provider in that area, square those shares, and then sum the resulting value over all providers in the area.¹



Note: Areas without at least one connection are excluded from this analysis. Some previously published data may have been revised.
Source: FCC Form 477.

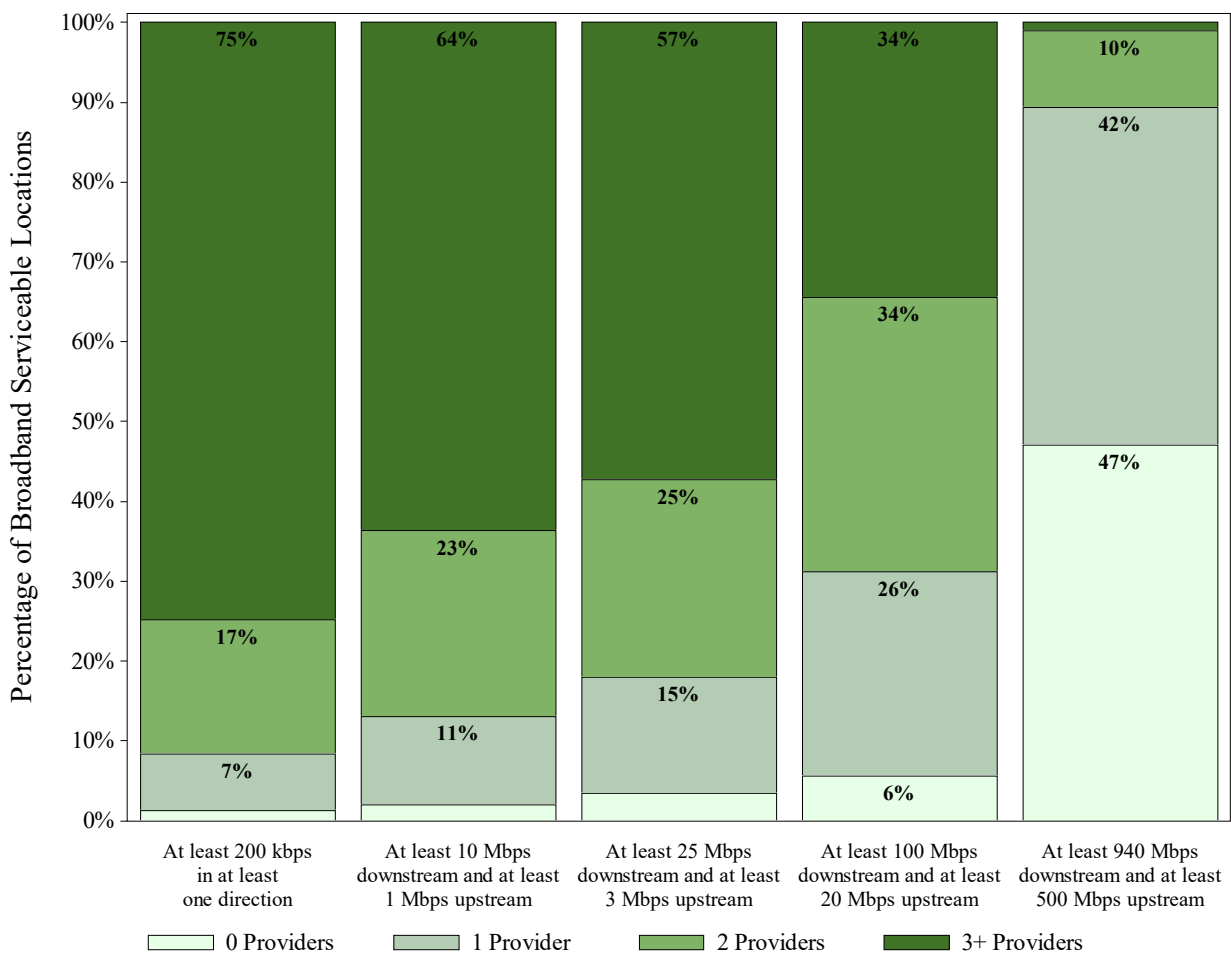
For the period shown above, the median HHI for census tracts has declined by almost 3% while the median across counties has declined by 24%. In June 2024, the median HHI for census tracts is about 37% larger than that of counties and 136% larger than that of states. These differences suggest that many providers are regional and serve relatively small geographic areas. The nationwide HHI and the median state HHIs have been relatively constant, reflecting a relative stability in the distribution of market shares across broad geographic areas.

¹ HHIs can range from 0 to 10,000 with larger HHIs implying higher levels of concentration and smaller HHIs implying lower levels of concentration.

Number of Providers by Location

In Figure 6, we show the percentage of Broadband Serviceable Locations (BSLs) with zero, one, two, or three or more fixed broadband providers offering Internet access services at different speeds in June 2024. This figure is based on fixed broadband availability data reported to the FCC through the Broadband Data Collection (BDC). Additional information about the BDC can be found in the Technical Notes section of this report. Individuals can download the underlying data and explore the National Broadband Map here: broadbandmap.fcc.gov.

Figure 6
Percentage of Broadband Serviceable Locations in which Providers Reported Availability of Fixed Broadband as of June 30, 2024



Note: Satellite services are excluded from this analysis. Satellite service providers report offering Internet access at bandwidths of at least 25 Mbps downstream and 3 Mbps upstream to 100% of locations, bandwidths of at least 100 Mbps downstream and 20 Mbps upstream to 100% of locations, and bandwidths of at least 940 Mbps downstream and 500 Mbps upstream to 0% of locations. Numbers may not sum to totals due to rounding.

Source: FCC Broadband Data Collection.

As of June 2024, approximately 94% of BSLs had at least one provider report the availability of a terrestrial fixed broadband service with speeds of at least 100 Mbps downstream and 20 Mbps upstream. Alternatively, about 3% of locations did not have any provider report offering terrestrial fixed broadband with speeds of at least 25 Mbps downstream and 3 Mbps upstream.

Other Highlights Include:

Typical Speeds

- The median downstream speed of all reported fixed connections was 300 Mbps and the median upstream speed was 20 Mbps. For residential fixed connections, the median downstream speed was 500 Mbps and the median upstream speed was 20 Mbps. See Figures 35 and 36.
- The median downstream speed of all reported mobile connections was 34 Mbps and the median upstream speed was 3 Mbps. For residential mobile connections, the median downstream speed was 34 Mbps and the median upstream speed was 3 Mbps. See Figures 37 and 38.

Residential Connections

- Residential fixed connections increased by about 2.4% between June 2023 and June 2024, to about 123 million. See Figure 12.
- Residential (non-business) mobile connections on mobile devices with data plans for full Internet access increased by about 1.6%, to 340 million, between June 2023 and June 2024. See Figure 12.
- Approximately 97% of residential fixed connections had a speed of at least 10 Mbps downstream and 1 Mbps upstream in June 2024, while 94% had a speed of at least 25 Mbps downstream and 3 Mbps upstream. About 66% of all residential fixed connections had a speed of at least 100 Mbps downstream and 20 Mbps upstream. See Figure 15.
- As a national average in June 2024, there were about 93 residential fixed connections with speeds of at least 10 Mbps downstream and 1 Mbps upstream per 100 households; 90 residential fixed connections with speeds of at least 25 Mbps downstream and 3 Mbps upstream per 100 households; and 63 residential fixed connections with speeds of at least 100 Mbps downstream and 20 Mbps upstream per 100 households. See Figure 43.

Census tract and county shares of households with residential fixed connections

- We estimate the share of households with residential fixed connections in individual census tracts and counties as of June 30, 2024, and continue to observe substantial variation among these estimates. See Figures 48 and 51.

Household subscribership rates and demographics

- The report includes charts that illustrate correlations between household subscribership rates and demographic measures. We update charts based on income, household density, education and age. The data indicate that some demographic variables are correlated with Internet access subscribership rates. See Figures 54-59.

SECTION 2
SUMMARY STATISTICS: BROADBAND AVAILABILITY

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Figure 7
Fixed Broadband Availability Measured by Location and Block as of June 30, 2024
(Locations in thousands. Includes services of at least 100 Mbps downstream and 20 Mbps upstream)

<i>Technology</i>	<i>Total Locations</i>	<i>Aggregation By Location</i>		<i>Aggregation By Block</i>		<i>Difference</i>	
		<i>Locations Covered</i>	<i>Ratio</i>	<i>Locations Covered</i>	<i>Ratio</i>	<i>Difference</i>	<i>Ratio</i>
Any Technology	115,631	115,603	1.00	115,621	1.00	18	0.00
Satellite	115,631	115,234	1.00	115,387	1.00	153	0.00
Terrestrial	115,631	109,097	0.94	112,747	0.98	3,650	0.03
Fixed Wireless	115,631	54,396	0.47	85,599	0.74	31,203	0.27
Licensed	115,631	47,259	0.41	81,363	0.70	34,104	0.29
Unlicensed	115,631	18,095	0.16	23,380	0.20	5,285	0.05
Wireline	115,631	104,984	0.91	109,083	0.94	4,099	0.04
Copper Wire ¹	115,631	4,259	0.04	18,996	0.16	14,737	0.13
Coaxial Cable	115,631	94,843	0.82	99,754	0.86	4,910	0.04
Optical Carrier	115,631	58,895	0.51	73,670	0.64	14,775	0.13

¹ Other is summarized with Copper Wire.

Note: The Aggregation by Location columns sum the number of locations reported with terrestrial fixed broadband service of at least 100 Mbps downstream and 20 Mbps upstream. The Aggregation by Block columns attempt to replicate the methodology used prior to the BDC where an entire block was counted as served if at least one location in that block was reported as served. The Difference column shows the number of locations without service that would have been counted as served using the block-level methodology. Numbers may not sum due to rounding.

Source: FCC Broadband Data Collection.

Figure 8
Availability of Fixed Broadband by Speed and Technology as of June 30, 2024

<i>Technology</i>	<i>Share of Broadband Serviceable Locations with speeds of at least</i>				
	<i>200 kbps in at least One Direction</i>	<i>10 Mbps Down and 1 Mbps Up</i>	<i>25 Mbps Down and 3 Mbps Up</i>	<i>100 Mbps Down and 20 Mbps Up</i>	<i>940 Mbps Down and 500 Mbps Up</i>
Any Technology	100.0	100.0	100.0	100.0	53.0
Satellite	100.0	100.0	100.0	99.7	0.0
Terrestrial	98.7	98.0	96.6	94.3	53.0
Fixed Wireless	86.4	75.3	70.3	47.0	3.8
Licensed	83.3	70.2	64.3	40.9	0.5
Unlicensed	27.6	26.3	24.9	15.6	3.6
Wireline	94.6	93.3	91.9	90.8	50.9
Copper Wire ¹	42.5	32.5	20.5	3.7	0.0
Coaxial Cable	82.3	82.3	82.3	82.0	4.7
Optical Carrier	51.0	51.0	51.0	50.9	49.3

¹ Other is summarized with Copper Wire.

Source: FCC Broadband Data Collection.

Figure 9
Availability of Terrestrial Fixed Broadband by State as of June 30, 2024
(Locations in thousands)

<i>State</i>	<i>Locations</i>	<i>At least 200 kbps in at least One Direction</i>		<i>At least 10 Mbps Down and 1 Mbps Up</i>		<i>At least 25 Mbps Down and 3 Mbps Up</i>		<i>At least 100 Mbps Down and 20 Mbps Up</i>		<i>At least 940 Mbps Down and 500 Mbps Up</i>	
		<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>
Alabama	2,171	2,087	0.96	2,040	0.94	1,965	0.91	1,894	0.87	1,076	0.50
Alaska	284	260	0.92	251	0.88	228	0.80	206	0.73	11	0.04
American Samoa	9	9	1.00	9	1.00	9	1.00	2	0.20	0	0.00
Arizona	2,686	2,666	0.99	2,647	0.99	2,616	0.97	2,550	0.95	873	0.32
Arkansas	1,351	1,316	0.97	1,291	0.96	1,265	0.94	1,215	0.90	836	0.62
California	10,235	10,170	0.99	10,159	0.99	10,126	0.99	10,005	0.98	4,446	0.43
Colorado	1,971	1,949	0.99	1,940	0.98	1,928	0.98	1,861	0.94	888	0.45
Connecticut	1,091	1,089	1.00	1,089	1.00	1,087	1.00	1,086	1.00	838	0.77
Delaware	406	404	1.00	404	0.99	402	0.99	398	0.98	212	0.52
District of Columbia	123	123	1.00	123	1.00	123	1.00	123	1.00	106	0.86
Florida	7,420	7,369	0.99	7,319	0.99	7,233	0.97	7,135	0.96	3,716	0.50
Georgia	3,802	3,750	0.99	3,710	0.98	3,641	0.96	3,558	0.94	2,035	0.54
Guam	38	38	1.00	38	1.00	38	1.00	37	0.98	9	0.24
Hawaii	320	314	0.98	313	0.98	309	0.97	309	0.97	203	0.63
Idaho	753	740	0.98	735	0.98	723	0.96	667	0.89	286	0.38
Illinois	4,143	4,118	0.99	4,106	0.99	4,058	0.98	3,956	0.95	1,444	0.35
Indiana	2,729	2,707	0.99	2,684	0.98	2,644	0.97	2,571	0.94	1,577	0.58
Iowa	1,368	1,364	1.00	1,362	1.00	1,345	0.98	1,302	0.95	786	0.57
Kansas	1,201	1,195	0.99	1,190	0.99	1,177	0.98	1,132	0.94	782	0.65
Kentucky	1,851	1,813	0.98	1,783	0.96	1,723	0.93	1,650	0.89	1,356	0.73
Louisiana	1,866	1,779	0.95	1,744	0.93	1,703	0.91	1,635	0.88	745	0.40
Maine	628	616	0.98	612	0.98	597	0.95	567	0.90	243	0.39
Maryland	1,852	1,842	0.99	1,837	0.99	1,829	0.99	1,813	0.98	1,147	0.62
Massachusetts	1,957	1,952	1.00	1,951	1.00	1,948	1.00	1,947	0.99	949	0.49
Michigan	4,032	3,957	0.98	3,909	0.97	3,846	0.95	3,752	0.93	1,269	0.31
Minnesota	2,098	2,080	0.99	2,069	0.99	2,031	0.97	1,980	0.94	1,392	0.66
Mississippi	1,310	1,233	0.94	1,197	0.91	1,139	0.87	1,100	0.84	771	0.59
Missouri	2,513	2,490	0.99	2,468	0.98	2,440	0.97	2,336	0.93	1,427	0.57
Montana	486	468	0.96	456	0.94	434	0.89	390	0.80	137	0.28
Nebraska	793	789	0.99	785	0.99	773	0.97	742	0.94	529	0.67

Figure 9 - Continued
Availability of Terrestrial Fixed Broadband by State as of June 30, 2024
(Locations in thousands)

State	Locations	At least 200 kbps in at least One Direction		At least 10 Mbps Down and 1 Mbps Up		At least 25 Mbps Down and 3 Mbps Up		At least 100 Mbps Down and 20 Mbps Up		At least 940 Mbps Down and 500 Mbps Up	
		Locations	Ratio	Locations	Ratio	Locations	Ratio	Locations	Ratio	Locations	Ratio
Nevada	995	993	1.00	992	1.00	990	1.00	986	0.99	912	0.92
New Hampshire	513	510	0.99	508	0.99	502	0.98	499	0.97	284	0.55
New Jersey	2,584	2,579	1.00	2,577	1.00	2,571	1.00	2,568	0.99	1,693	0.66
New Mexico	857	847	0.99	835	0.98	815	0.95	768	0.90	349	0.41
New York	4,701	4,654	0.99	4,639	0.99	4,615	0.98	4,599	0.98	3,163	0.67
North Carolina	4,333	4,280	0.99	4,235	0.98	4,145	0.96	4,035	0.93	2,104	0.49
North Dakota	335	334	1.00	334	1.00	332	0.99	330	0.99	228	0.68
Northern Mariana Isl	11	11	0.99	11	0.99	11	0.99	2	0.20	2	0.16
Ohio	4,516	4,475	0.99	4,450	0.99	4,405	0.98	4,323	0.96	2,336	0.52
Oklahoma	1,711	1,698	0.99	1,688	0.99	1,664	0.97	1,596	0.93	932	0.54
Oregon	1,514	1,491	0.98	1,476	0.97	1,439	0.95	1,388	0.92	706	0.47
Pennsylvania	4,896	4,830	0.99	4,775	0.98	4,711	0.96	4,653	0.95	2,463	0.50
Puerto Rico	1,178	1,176	1.00	1,173	1.00	1,171	0.99	1,165	0.99	741	0.63
Rhode Island	340	338	1.00	338	0.99	337	0.99	336	0.99	270	0.79
South Carolina	2,166	2,154	0.99	2,143	0.99	2,122	0.98	2,080	0.96	1,105	0.51
South Dakota	394	391	0.99	388	0.99	382	0.97	371	0.94	222	0.56
Tennessee	2,738	2,702	0.99	2,673	0.98	2,638	0.96	2,599	0.95	1,818	0.66
Texas	10,094	10,010	0.99	9,967	0.99	9,857	0.98	9,709	0.96	7,142	0.71
Utah	1,030	1,022	0.99	1,020	0.99	1,009	0.98	992	0.96	665	0.65
Vermont	280	279	1.00	274	0.98	261	0.93	237	0.85	139	0.49
Virgin Islands	34	34	1.00	34	1.00	34	1.00	34	1.00	1	0.03
Virginia	2,911	2,836	0.97	2,793	0.96	2,741	0.94	2,690	0.92	1,706	0.59
Washington	2,555	2,520	0.99	2,489	0.97	2,421	0.95	2,313	0.91	943	0.37
West Virginia	897	813	0.91	799	0.89	737	0.82	699	0.78	260	0.29
Wisconsin	2,299	2,265	0.99	2,230	0.97	2,178	0.95	1,976	0.86	948	0.41
Wyoming	262	253	0.96	250	0.95	246	0.94	231	0.88	75	0.29
Total	115,631	114,185	0.99	113,311	0.98	111,713	0.97	109,097	0.94	61,295	0.53

= Rounds to Zero.

Note: Satellite services are excluded from this analysis. Numbers may not sum to totals due to rounding.

Source: FCC Broadband Data Collection.

Figure 10
Availability of Mobile Broadband by State as of June 30, 2024
(Locations in thousands)

<i>State</i>	<i>Locations</i>	<i>At least 3G (200 Kbps Down and 50 Kbps Up)</i>		<i>At least 4G LTE (5 Mbps Down and 1 Mbps Up)</i>		<i>At least 5G-NR (7 Mbps Down and 1 Mbps Up)</i>		<i>At least 5G-NR (35 Mbps Down and 3 Mbps Up)</i>	
		<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>	<i>Locations</i>	<i>Ratio</i>
Alabama	2,171	2,163	1.00	2,163	1.00	2,012	0.93	1,839	0.85
Alaska	284	264	0.93	255	0.90	212	0.75	174	0.61
American Samoa	9	9	1.00	9	1.00	9	0.97	9	0.96
Arizona	2,686	2,681	1.00	2,680	1.00	2,592	0.97	2,566	0.96
Arkansas	1,351	1,331	0.99	1,331	0.99	1,249	0.92	1,126	0.83
California	10,235	10,197	1.00	10,197	1.00	10,089	0.99	9,953	0.97
Colorado	1,971	1,949	0.99	1,947	0.99	1,873	0.95	1,829	0.93
Connecticut	1,091	1,087	1.00	1,087	1.00	1,052	0.96	984	0.90
Delaware	406	404	1.00	404	1.00	401	0.99	386	0.95
District of Columbia	123	123	1.00	123	1.00	123	1.00	123	1.00
Florida	7,420	7,412	1.00	7,412	1.00	7,368	0.99	7,177	0.97
Georgia	3,802	3,796	1.00	3,796	1.00	3,613	0.95	3,356	0.88
Guam	38	37	0.99	37	0.99	32	0.84	29	0.76
Hawaii	320	315	0.99	315	0.99	311	0.97	300	0.94
Idaho	753	740	0.98	740	0.98	712	0.95	695	0.92
Illinois	4,143	4,141	1.00	4,141	1.00	4,058	0.98	3,914	0.94
Indiana	2,729	2,726	1.00	2,726	1.00	2,629	0.96	2,507	0.92
Iowa	1,368	1,365	1.00	1,365	1.00	1,318	0.96	1,205	0.88
Kansas	1,201	1,200	1.00	1,200	1.00	1,152	0.96	1,078	0.90
Kentucky	1,851	1,798	0.97	1,798	0.97	1,538	0.83	1,408	0.76
Louisiana	1,866	1,861	1.00	1,861	1.00	1,803	0.97	1,720	0.92
Maine	628	606	0.97	606	0.97	528	0.84	425	0.68
Maryland	1,852	1,845	1.00	1,845	1.00	1,828	0.99	1,766	0.95
Massachusetts	1,957	1,953	1.00	1,953	1.00	1,905	0.97	1,820	0.93
Michigan	4,032	4,004	0.99	4,004	0.99	3,807	0.94	3,618	0.90
Minnesota	2,098	2,091	1.00	2,091	1.00	2,011	0.96	1,903	0.91
Mississippi	1,310	1,305	1.00	1,305	1.00	1,172	0.89	1,006	0.77
Missouri	2,513	2,501	1.00	2,501	1.00	2,386	0.95	2,223	0.88
Montana	486	471	0.97	470	0.97	444	0.91	428	0.88
Nebraska	793	791	1.00	791	1.00	727	0.92	667	0.84

Figure 10 - Continued
Availability of Mobile Broadband by State as of June 30, 2024
(Locations in thousands)

State	Locations	At least 3G (200 Kbps Down and 50 Kbps Up)		At least 4G LTE (5 Mbps Down and 1 Mbps Up)		At least 5G-NR (7 Mbps Down and 1 Mbps Up)		At least 5G-NR (35 Mbps Down and 3 Mbps Up)	
		Locations	Ratio	Locations	Ratio	Locations	Ratio	Locations	Ratio
Nevada	995	993	1.00	993	1.00	988	0.99	983	0.99
New Hampshire	513	504	0.98	504	0.98	415	0.81	343	0.67
New Jersey	2,584	2,582	1.00	2,582	1.00	2,569	0.99	2,521	0.98
New Mexico	857	848	0.99	846	0.99	811	0.95	790	0.92
New York	4,701	4,647	0.99	4,647	0.99	4,490	0.96	4,271	0.91
North Carolina	4,333	4,293	0.99	4,293	0.99	4,026	0.93	3,670	0.85
North Dakota	335	334	1.00	334	1.00	312	0.93	290	0.86
Northern Mariana Isl	11	11	0.99	11	0.99	9	0.83	9	0.81
Ohio	4,516	4,497	1.00	4,497	1.00	4,435	0.98	4,326	0.96
Oklahoma	1,711	1,707	1.00	1,707	1.00	1,664	0.97	1,578	0.92
Oregon	1,514	1,499	0.99	1,499	0.99	1,453	0.96	1,406	0.93
Pennsylvania	4,896	4,855	0.99	4,855	0.99	4,701	0.96	4,561	0.93
Puerto Rico	1,178	1,176	1.00	1,176	1.00	1,169	0.99	1,131	0.96
Rhode Island	340	339	1.00	339	1.00	335	0.99	323	0.95
South Carolina	2,166	2,164	1.00	2,164	1.00	2,081	0.96	1,974	0.91
South Dakota	394	391	0.99	391	0.99	371	0.94	347	0.88
Tennessee	2,738	2,700	0.99	2,700	0.99	2,475	0.90	2,288	0.84
Texas	10,094	10,082	1.00	10,081	1.00	9,905	0.98	9,715	0.96
Utah	1,030	1,026	1.00	1,026	1.00	1,015	0.99	1,008	0.98
Vermont	280	261	0.93	261	0.93	157	0.56	121	0.43
Virgin Islands	34	34	1.00	34	1.00	33	0.96	20	0.59
Virginia	2,911	2,870	0.99	2,870	0.99	2,648	0.91	2,455	0.84
Washington	2,555	2,531	0.99	2,531	0.99	2,465	0.96	2,377	0.93
West Virginia	897	797	0.89	797	0.89	712	0.79	640	0.71
Wisconsin	2,299	2,280	0.99	2,280	0.99	2,097	0.91	1,903	0.83
Wyoming	262	258	0.98	258	0.98	229	0.87	214	0.82
Total	115,631	114,844	0.99	114,828	0.99	110,514	0.96	105,498	0.91

= Rounds to Zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Broadband Data Collection.

SECTION 3 SUMMARY STATISTICS: THE NATION

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Figure 11
Connections over 200 kbps in at Least One Direction 2020-2024
(in thousands)

<i>Technology</i>	<i>2020</i>		<i>2021</i>		<i>2022</i>		<i>2023</i>		<i>2024</i>
	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>
Total	480,200	490,890	500,260	510,200	518,222	527,228	535,310	544,102	548,612
Mobile	361,740	369,640	376,840	384,420	391,868	399,258	405,795	413,257	416,059
Fixed	118,460	121,250	123,430	125,780	126,354	127,969	129,515	130,845	132,553

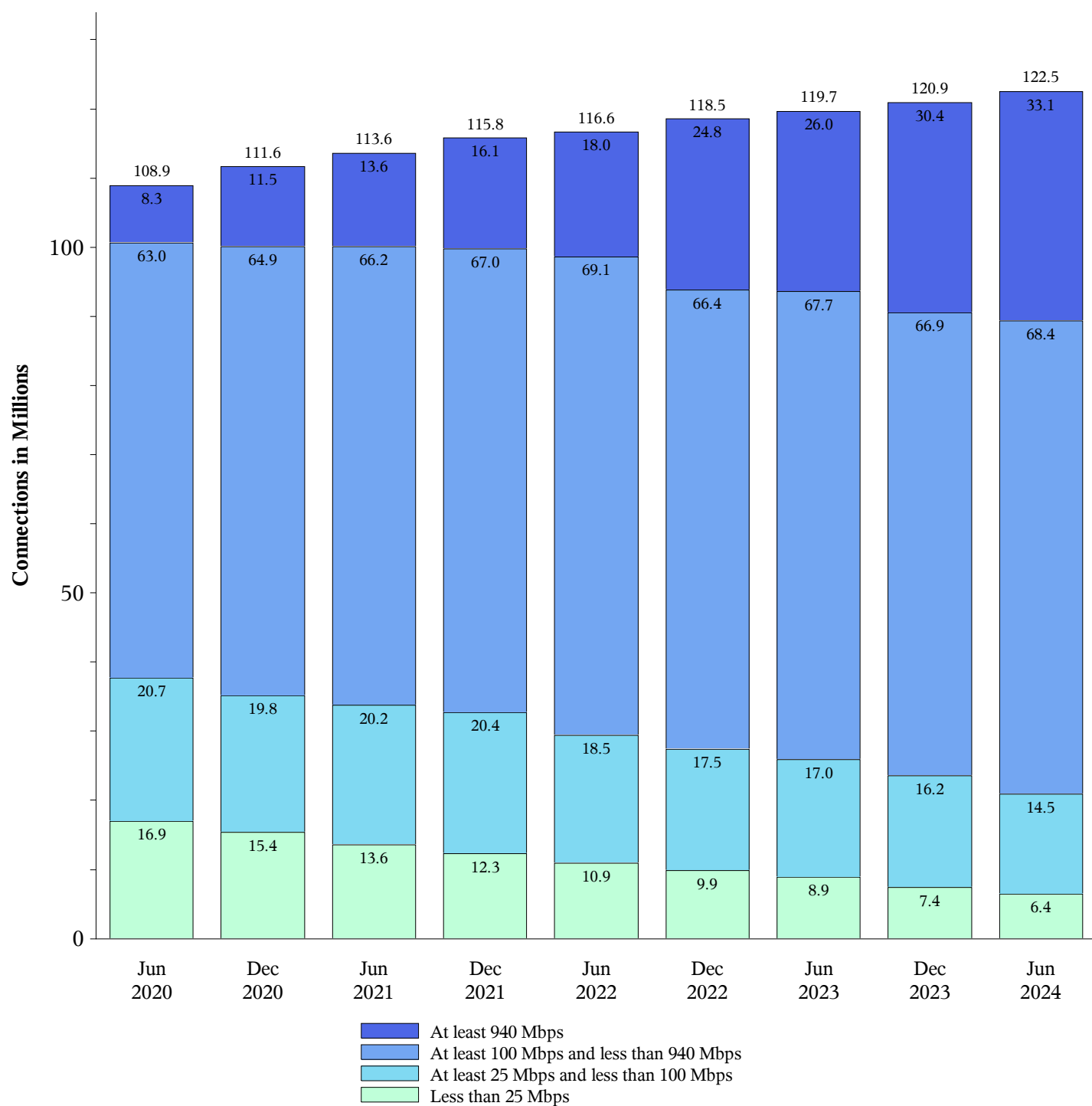
Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.
Source: FCC Form 477.

Figure 12
Residential Connections over 200 kbps in at Least One Direction 2020-2024
(in thousands)

<i>Technology</i>	<i>2020</i>		<i>2021</i>		<i>2022</i>		<i>2023</i>		<i>2024</i>
	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>
Total	403,230	407,650	415,260	436,580	442,430	448,595	454,237	460,428	462,374
Mobile	294,300	296,030	301,680	320,780	325,823	330,065	334,583	339,544	339,868
Fixed	108,920	111,620	113,580	115,790	116,607	118,529	119,654	120,884	122,506

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.
Source: FCC Form 477.

Figure 13
Residential Fixed Connections by Downstream Speed 2020-2024
(in millions)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.
Source: FCC Form 477.

Figure 14
Distribution of Fixed Connections over 200 kbps in at Least One Direction as of June 30, 2024
(Connections in thousands)

<i>Upstream Speed</i>	<i>Downstream Speed</i>					<i>Total</i>
	<i>Less than 10 Mbps</i>	<i>At least 10 Mbps and less than 25 Mbps</i>	<i>At least 25 Mbps and less than 100 Mbps</i>	<i>At least 100 Mbps and less than 940 Mbps</i>	<i>At least 940 Mbps</i>	
Less than 1 Mbps	1,682	477	1	0	7	2,166
At least 1 Mbps & Less than 3 Mbps	1,293	2,895	610	4	#	4,802
At least 3 Mbps & Less than 20 Mbps	131	854	14,586	22,375	15	37,961
At least 20 Mbps & Less than 500 Mbps	71	79	1,542	46,493	16,755	64,940
At least 500 Mbps	#	1	1	5,036	17,647	22,685
Total	3,177	4,306	16,739	73,908	34,424	132,553

Percentages						
Less than 1 Mbps	1.3	0.4	0.0	0.0	0.0	1.6
At least 1 Mbps & Less than 3 Mbps	1.0	2.2	0.5	0.0	0.0	3.6
At least 3 Mbps & Less than 20 Mbps	0.1	0.6	11.0	16.9	0.0	28.6
At least 20 Mbps & Less than 500 Mbps	0.1	0.1	1.2	35.1	12.6	49.0
At least 500 Mbps	0.0	0.0	0.0	3.8	13.3	17.1
Total	2.4	3.2	12.6	55.8	26.0	100.0

= Rounds to zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 15
Distribution of Residential Fixed Connections over 200 kbps in at Least One Direction as of June 30, 2024
(Connections in thousands)

<i>Upstream Speed</i>	<i>Downstream Speed</i>					<i>Total</i>
	<i>Less than 10 Mbps</i>	<i>At least 10 Mbps and less than 25 Mbps</i>	<i>At least 25 Mbps and less than 100 Mbps</i>	<i>At least 100 Mbps and less than 940 Mbps</i>	<i>At least 940 Mbps</i>	
Less than 1 Mbps	1,393	445	#	0	7	1,845
At least 1 Mbps & Less than 3 Mbps	1,119	2,525	423	4	#	4,070
At least 3 Mbps & Less than 20 Mbps	109	733	12,887	20,530	15	34,273
At least 20 Mbps & Less than 500 Mbps	67	49	1,196	43,038	16,257	60,607
At least 500 Mbps	#	1	1	4,856	16,853	21,710
Total	2,688	3,753	14,506	68,427	33,132	122,506

<i>Percentages</i>						
Less than 1 Mbps	1.1	0.4	0.0	0.0	0.0	1.5
At least 1 Mbps & Less than 3 Mbps	0.9	2.1	0.3	0.0	0.0	3.3
At least 3 Mbps & Less than 20 Mbps	0.1	0.6	10.5	16.8	0.0	28.0
At least 20 Mbps & Less than 500 Mbps	0.1	0.0	1.0	35.1	13.3	49.5
At least 500 Mbps	0.0	0.0	0.0	4.0	13.8	17.7
Total	2.2	3.1	11.8	55.9	27.0	100.0

= Rounds to zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 16
Connections over 200 kbps in at Least One Direction by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	480,200	490,890	500,260	510,200	518,222	527,228	535,310	544,102	548,612
Mobile	361,740	369,640	376,840	384,420	391,868	399,258	405,795	413,257	416,059
Fixed	118,460	121,250	123,430	125,780	126,354	127,969	129,515	130,845	132,553
Copper Wire ¹	20,174	19,327	18,620	17,412	15,644	14,687	13,236	11,848	10,586
Coaxial Cable	75,986	77,909	79,330	80,232	80,022	80,110	79,466	78,969	78,184
Optical Carrier	18,459	19,945	21,120	23,338	24,984	26,294	28,292	30,104	32,526
Satellite	1,993	1,931	1,910	1,873	2,031	2,039	2,026	2,128	2,308
Fixed Wireless	1,853	2,140	2,445	2,923	3,671	4,839	6,496	7,797	8,949
Licensed	-	-	-	-	1,954	3,213	4,887	6,255	7,446
Unlicensed	-	-	-	-	1,718	1,626	1,609	1,542	1,504

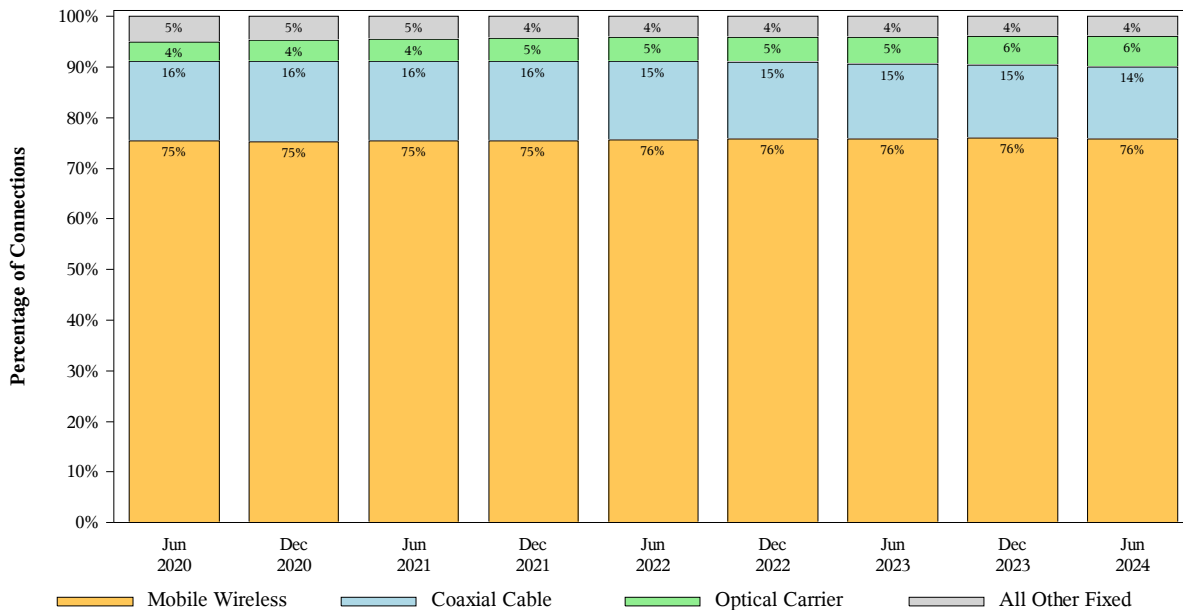
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

* = Data withheld for confidentiality reasons. # = Rounds to zero. - = Data was not collected.

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 17
Connections over 200 kbps in at Least One Direction 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 18
Residential Connections over 200 kbps in at Least One Direction by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	403,230	407,650	415,260	436,580	442,430	448,595	454,237	460,428	462,374
Mobile	294,300	296,030	301,680	320,780	325,823	330,065	334,583	339,544	339,868
Fixed	108,920	111,620	113,580	115,790	116,607	118,529	119,654	120,884	122,506
Copper Wire ¹	17,718	16,983	16,344	15,269	13,978	13,089	11,857	10,625	9,523
Coaxial Cable	70,710	72,543	73,844	74,599	74,442	74,533	73,896	73,387	72,685
Optical Carrier	16,986	18,384	19,414	21,531	22,941	24,457	26,254	28,005	30,305
Satellite	1,815	1,752	1,728	1,692	1,841	1,949	1,929	2,037	2,174
Fixed Wireless	1,694	1,959	2,251	2,701	3,406	4,502	5,716	6,831	7,819
Licensed	-	-	-	-	1,841	3,022	4,258	5,436	6,464
Unlicensed	-	-	-	-	1,565	1,480	1,458	1,395	1,355

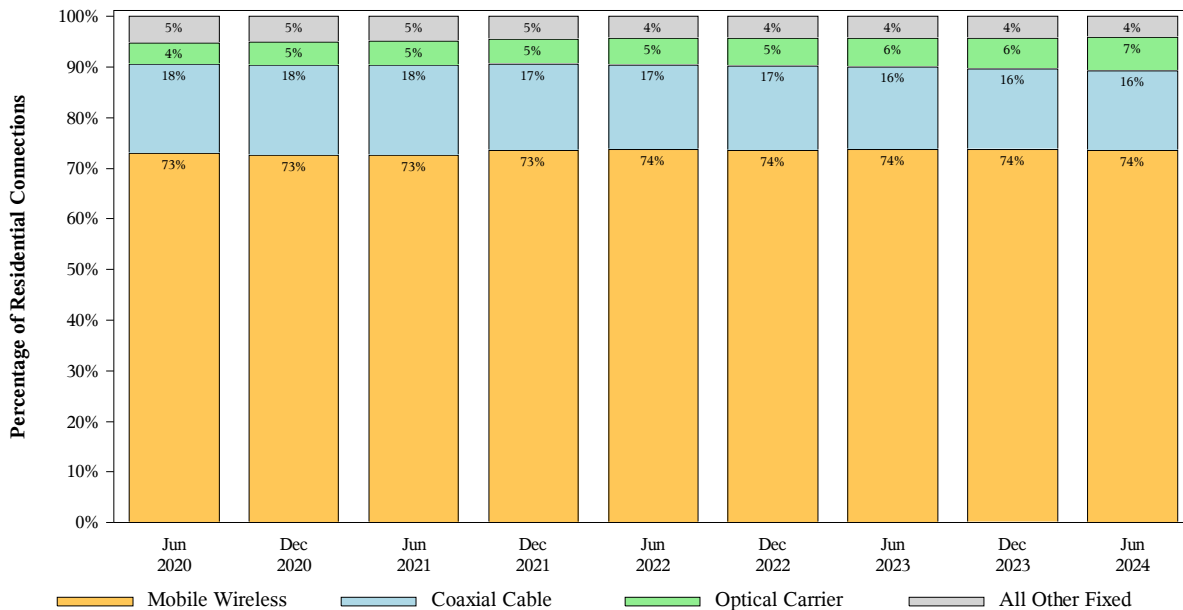
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Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 19
Residential Connections over 200 kbps in at Least One Direction 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 20
Fixed Connections at Least 10 Mbps Downstream and 1 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	109,180	112,450	115,770	118,770	120,369	122,624	124,665	126,657	128,892
Copper Wire ¹	12,735	12,086	12,347	11,681	10,683	10,317	9,425	8,569	7,731
Coaxial Cable	75,391	77,513	79,035	79,956	79,676	79,819	79,288	78,856	78,037
Optical Carrier	18,008	19,555	20,813	23,058	24,820	26,155	28,164	29,985	32,426
Satellite	1,778	1,727	1,717	1,700	1,863	1,935	1,929	2,049	2,235
Fixed Wireless	1,263	1,564	1,860	2,379	3,327	4,399	5,859	7,197	8,463
Licensed	-	-	-	-	1,907	3,052	4,599	5,951	7,205
Unlicensed	-	-	-	-	1,420	1,348	1,261	1,246	1,257

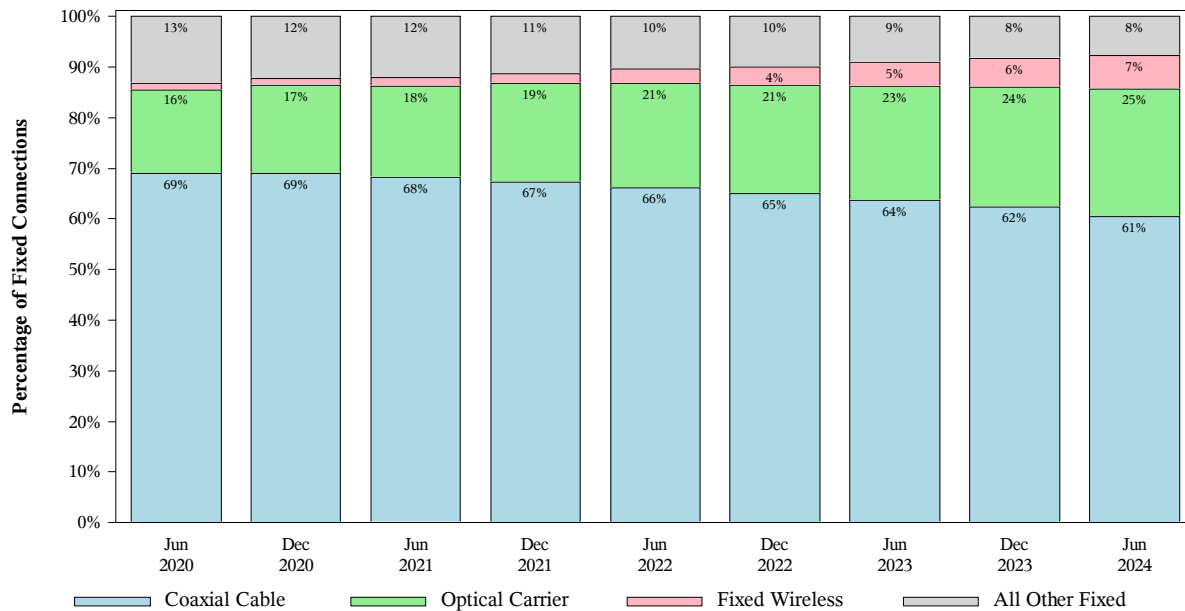
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Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 21
Fixed Connections at Least 10 Mbps Downstream and 1 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 22
Residential Fixed Connections at Least 10 Mbps Downstream and 1 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	101,220	104,200	107,210	109,980	111,497	113,890	115,433	117,234	119,366
Copper Wire ¹	11,440	10,818	11,066	10,441	9,652	9,273	8,532	7,760	7,069
Coaxial Cable	70,299	72,215	73,611	74,386	74,147	74,295	73,755	73,303	72,572
Optical Carrier	16,581	18,042	19,145	21,286	22,803	24,344	26,152	27,905	30,222
Satellite	1,745	1,691	1,676	1,656	1,806	1,884	1,869	1,991	2,133
Fixed Wireless	1,151	1,434	1,714	2,206	3,089	4,094	5,125	6,275	7,369
Licensed	-	-	-	-	1,798	2,871	3,989	5,153	6,241
Unlicensed	-	-	-	-	1,291	1,223	1,136	1,122	1,128

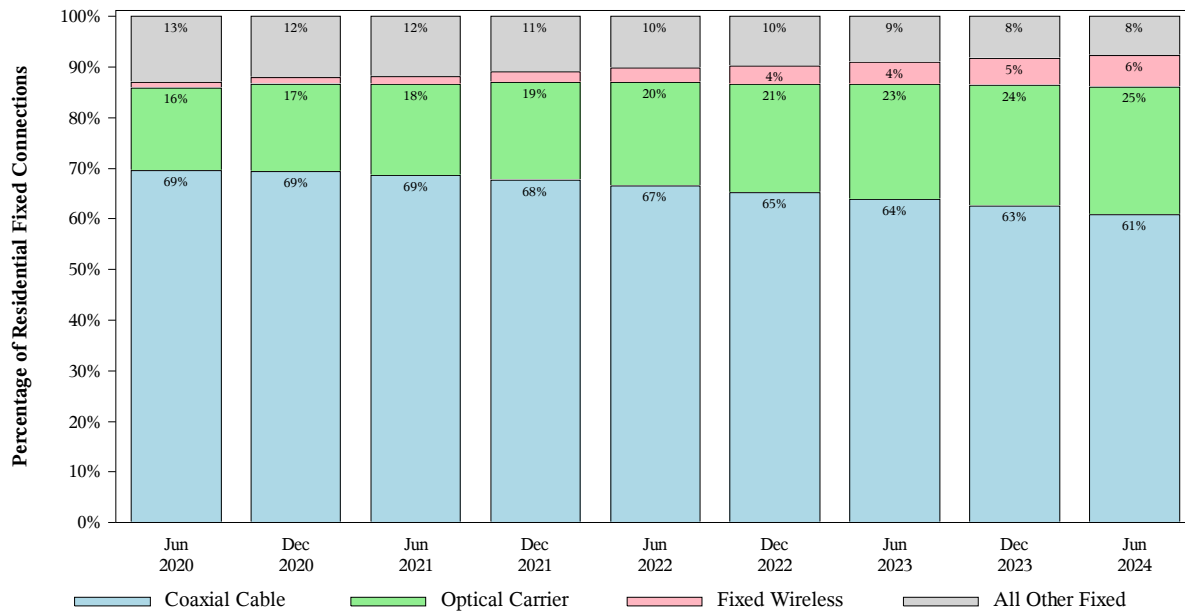
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

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Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 23
Residential Fixed Connections at Least 10 Mbps Downstream and 1 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 24
Fixed Connections at Least 25 Mbps Downstream and 3 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	97,000	101,630	106,790	110,630	113,047	116,156	118,856	121,683	124,449
Copper Wire ¹	*	*	6,688	6,538	6,010	6,089	5,519	5,110	4,674
Coaxial Cable	71,856	74,169	77,502	78,656	78,599	78,985	78,554	78,490	77,731
Optical Carrier	17,091	18,840	20,171	22,459	24,282	25,725	27,886	29,748	32,226
Satellite	*	*	1,328	1,353	1,552	1,685	1,734	1,889	2,109
Fixed Wireless	571	805	1,105	1,620	2,604	3,672	5,163	6,446	7,708
Licensed	-	-	-	-	1,797	2,801	4,358	5,623	6,829
Unlicensed	-	-	-	-	808	871	806	823	879

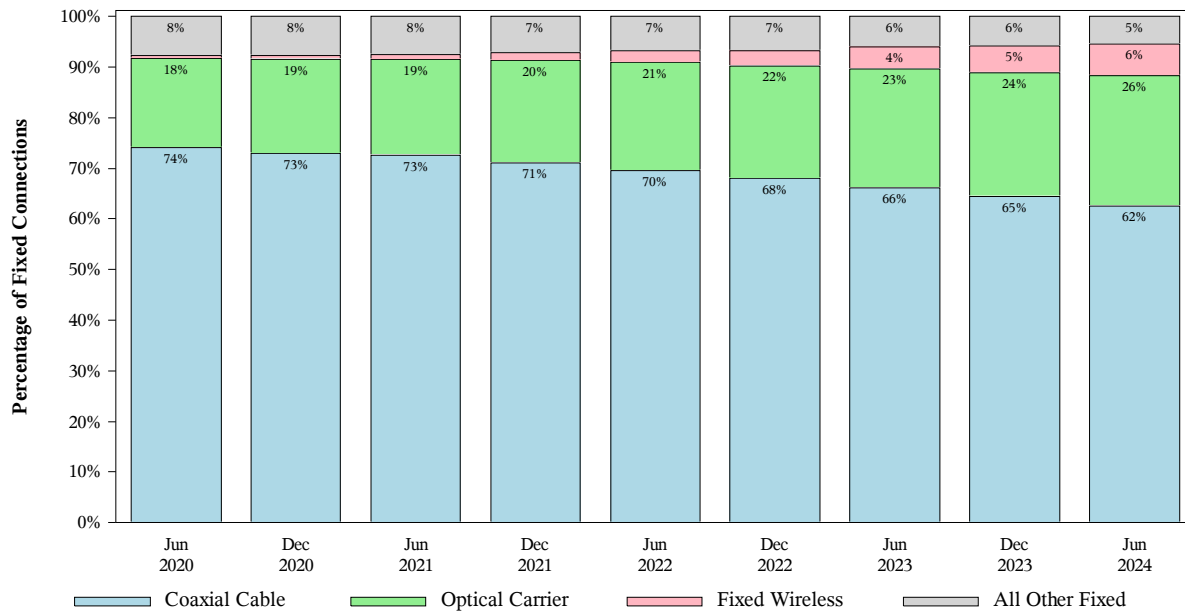
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

* = Data withheld for confidentiality reasons. # = Rounds to zero. - = Data was not collected.

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 25
Fixed Connections at Least 25 Mbps Downstream and 3 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 26
Residential Fixed Connections at Least 25 Mbps Downstream and 3 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	90,185	94,451	99,254	102,800	104,993	108,158	110,311	113,017	115,632
Copper Wire ¹	*	*	6,068	5,930	5,511	5,541	5,104	4,730	4,373
Coaxial Cable	67,017	69,098	72,268	73,262	73,214	73,557	73,111	73,007	72,331
Optical Carrier	15,796	17,445	18,615	20,795	22,354	23,999	25,932	27,720	30,075
Satellite	*	*	1,288	1,311	1,497	1,637	1,677	1,831	2,032
Fixed Wireless	512	727	1,015	1,506	2,417	3,423	4,489	5,729	6,820
Licensed	-	-	-	-	1,698	2,637	3,764	4,993	6,039
Unlicensed	-	-	-	-	719	787	725	736	781

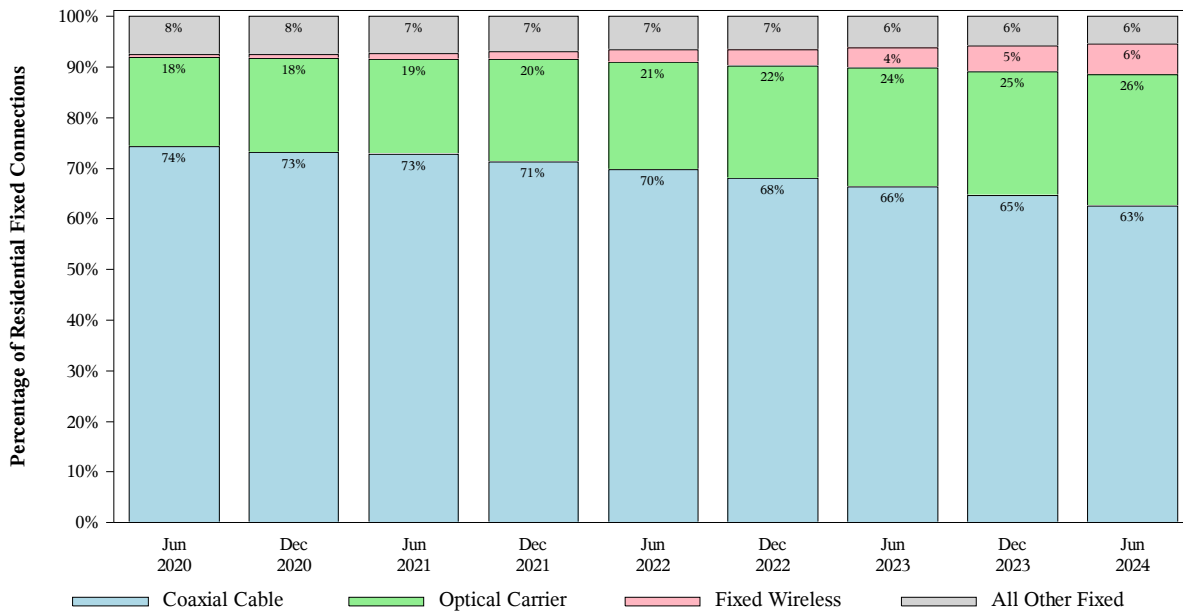
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

* = Data withheld for confidentiality reasons. # = Rounds to zero. - = Data was not collected.

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 27
Residential Fixed Connections at Least 25 Mbps Downstream and 3 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 28
Fixed Connections at Least 100 Mbps Downstream and 20 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	29,570	34,493	38,563	43,352	52,836	58,369	62,073	69,175	85,931
Copper Wire ¹	*	*	*	*	*	*	*	*	*
Coaxial Cable	15,496	18,420	20,924	23,298	29,953	33,392	34,407	38,477	52,118
Optical Carrier	13,086	14,933	16,373	18,705	20,982	22,974	25,365	27,879	30,501
Satellite	*	*	*	*	*	*	*	*	*
Fixed Wireless	116	143	180	239	500	880	1,395	1,955	2,464
Licensed	-	-	-	-	302	675	1,209	1,730	2,210
Unlicensed	-	-	-	-	198	205	186	226	254

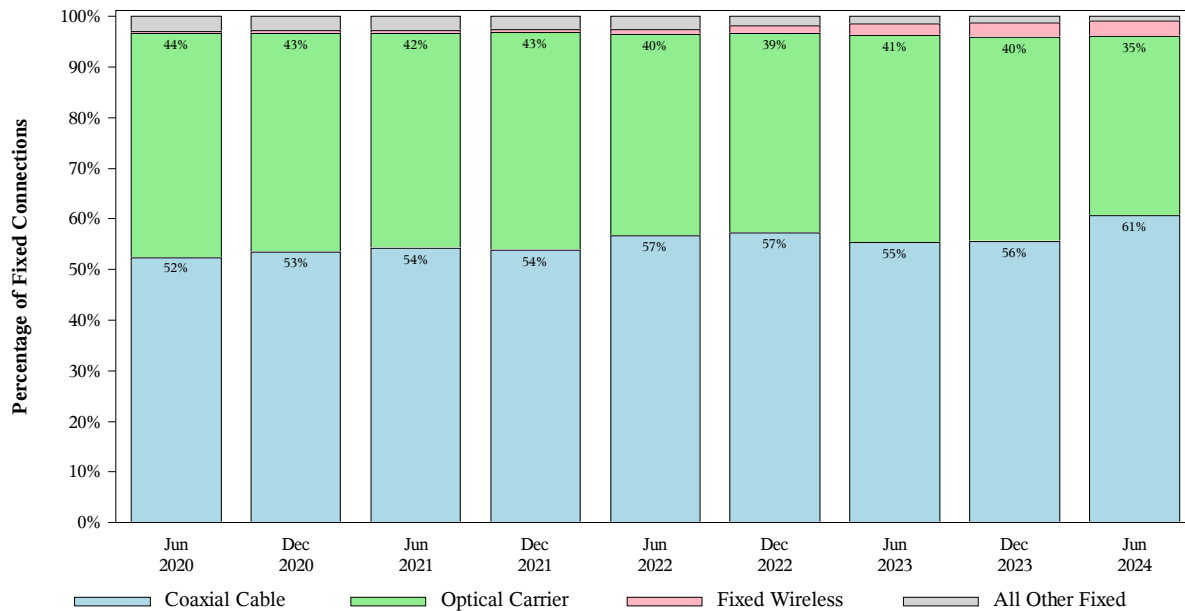
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

* = Data withheld for confidentiality reasons. # = Rounds to zero. - = Data was not collected.

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 29
Fixed Connections at Least 100 Mbps Downstream and 20 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 30
Residential Fixed Connections at Least 100 Mbps Downstream and 20 Mbps Upstream by Technology 2020-2024
(in thousands)

Technology	2020		2021		2022		2023		2024
	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun
Total	27,179	31,773	35,456	39,921	49,009	54,472	57,837	64,446	81,004
Copper Wire ¹	*	*	*	*	*	*	*	*	*
Coaxial Cable	14,157	16,843	19,128	21,298	27,827	31,087	31,953	35,758	49,403
Optical Carrier	12,303	14,055	15,329	17,537	19,508	21,673	23,811	26,170	28,667
Satellite	*	*	*	*	*	*	*	*	*
Fixed Wireless	98	118	158	215	450	801	1,261	1,752	2,186
Licensed	-	-	-	-	277	616	1,095	1,555	1,967
Unlicensed	-	-	-	-	173	185	166	198	219

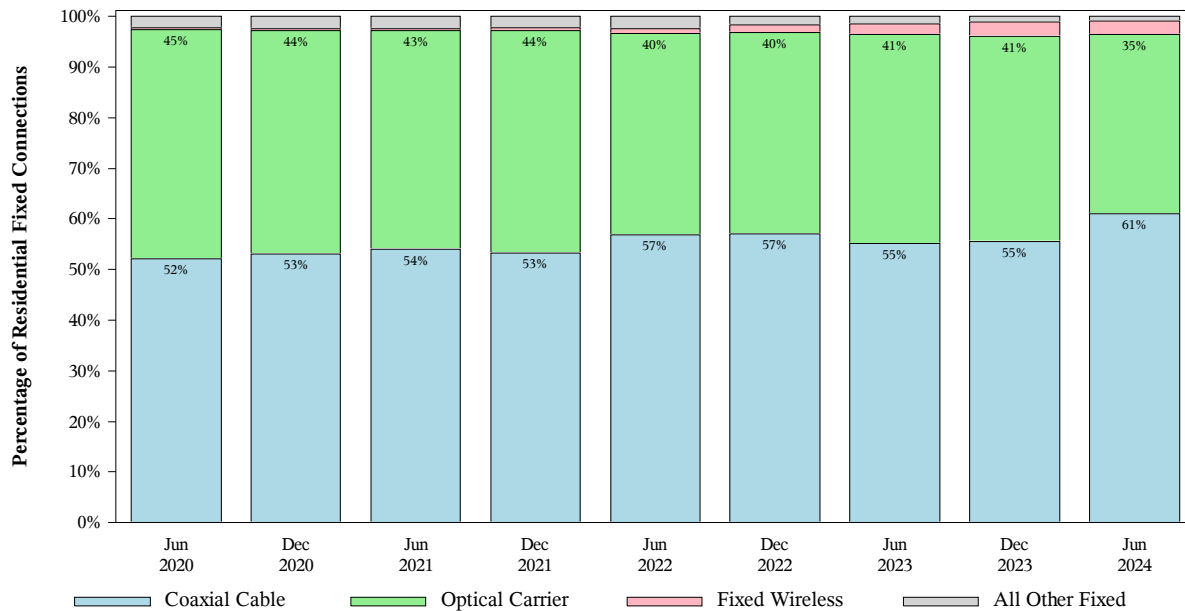
¹ Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

* = Data withheld for confidentiality reasons. # = Rounds to zero. - = Data was not collected.

Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

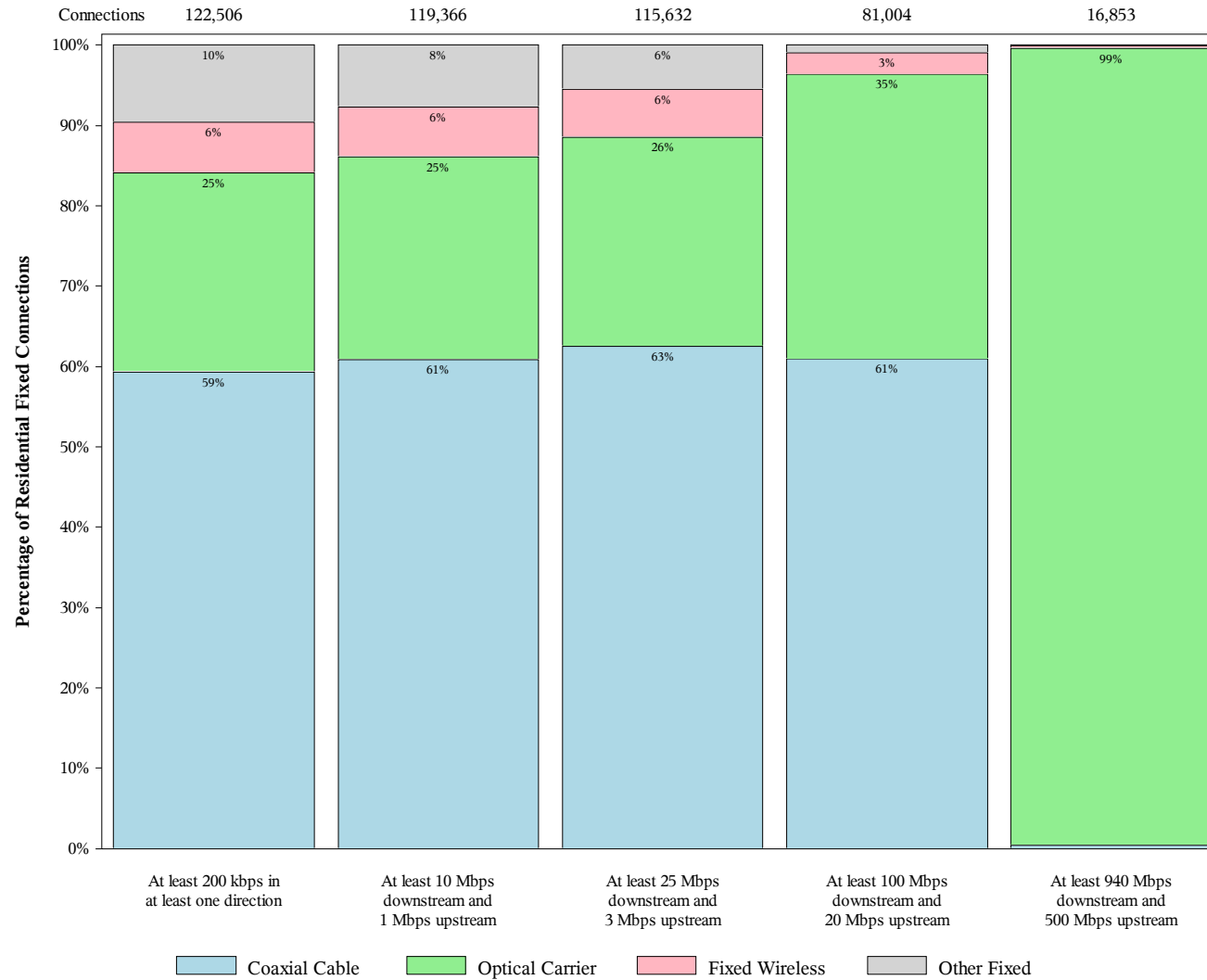
Figure 31
Residential Fixed Connections at Least 100 Mbps Downstream and 20 Mbps Upstream 2020-2024
(Shares of selected technologies)



Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 32
Residential Fixed Connections by Technology as of June 30, 2024
 (Shares of selected technologies for selected speeds, connections in thousands)



Note: Numbers may not sum to totals due to rounding.
 Source: FCC Form 477.

Figure 33
Fixed Connections by Downstream Speed Tier and Technology as of June 30, 2024
(Connections in thousands)

<i>Technology</i>	<i>Downstream Speed</i>					<i>Total</i>
	<i>Less than 10 Mbps</i>	<i>At least 10 Mbps and less than 25 Mbps</i>	<i>At least 25 Mbps and less than 100 Mbps</i>	<i>At least 100 Mbps and less than 940 Mbps</i>	<i>At least 940 Mbps</i>	
Total	3,177	4,306	16,739	73,908	34,424	132,553
Copper Wire ¹	2,382	3,138	4,117	941	9	10,586
Coaxial Cable	146	252	4,943	56,347	16,496	78,184
Optical Carrier	90	190	1,393	13,066	17,787	32,526
Satellite	*	*	*	*	0	2,308
Fixed Wireless	*	*	*	*	133	8,949

<i>Percentages</i>						
Total	2.4	3.2	12.6	55.8	26.0	100.0
Copper Wire ¹	1.8	2.4	3.1	0.7	0.0	8.0
Coaxial Cable	0.1	0.2	3.7	42.5	12.4	59.0
Optical Carrier	0.1	0.1	1.1	9.9	13.4	24.5
Satellite	*	*	*	*	0.0	1.7
Fixed Wireless	*	*	*	*	0.1	6.8

¹ Other is summarized with Copper Wire for confidentiality reasons.

* = Data withheld for confidentiality reasons. # = Rounds to Zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 34
Residential Fixed Connections by Downstream Speed Tier and Technology as of June 30, 2024
(Connections in thousands)

<i>Technology</i>	<i>Downstream Speed</i>					<i>Total</i>
	<i>Less than 10 Mbps</i>	<i>At least 10 Mbps and less than 25 Mbps</i>	<i>At least 25 Mbps and less than 100 Mbps</i>	<i>At least 100 Mbps and less than 940 Mbps</i>	<i>At least 940 Mbps</i>	
Total	2,688	3,753	14,506	68,427	33,132	122,506
Copper Wire ¹	2,012	2,781	3,844	879	8	9,523
Coaxial Cable	111	191	4,055	52,309	16,018	72,685
Optical Carrier	74	138	1,097	12,019	16,978	30,305
Satellite	*	*	*	*	0	2,174
Fixed Wireless	*	*	*	*	128	7,819

<i>Percentages</i>						
Total	2.2	3.1	11.8	55.9	27.0	100.0
Copper Wire ¹	1.6	2.3	3.1	0.7	0.0	7.8
Coaxial Cable	0.1	0.2	3.3	42.7	13.1	59.3
Optical Carrier	0.1	0.1	0.9	9.8	13.9	24.7
Satellite	*	*	*	*	0.0	1.8
Fixed Wireless	*	*	*	*	0.1	6.4

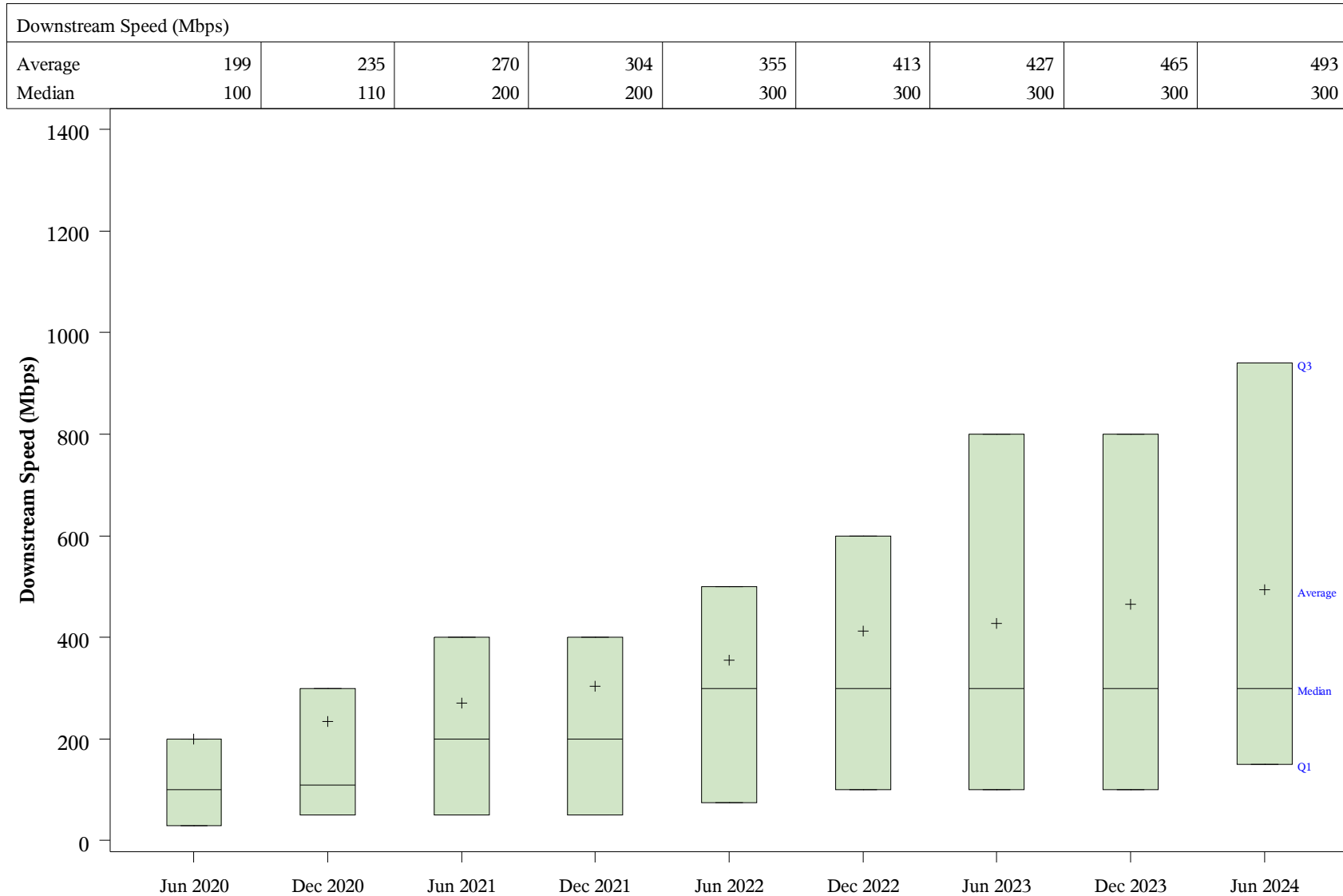
¹ Other is summarized with Copper Wire for confidentiality reasons.

* = Data withheld for confidentiality reasons. # = Rounds to Zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

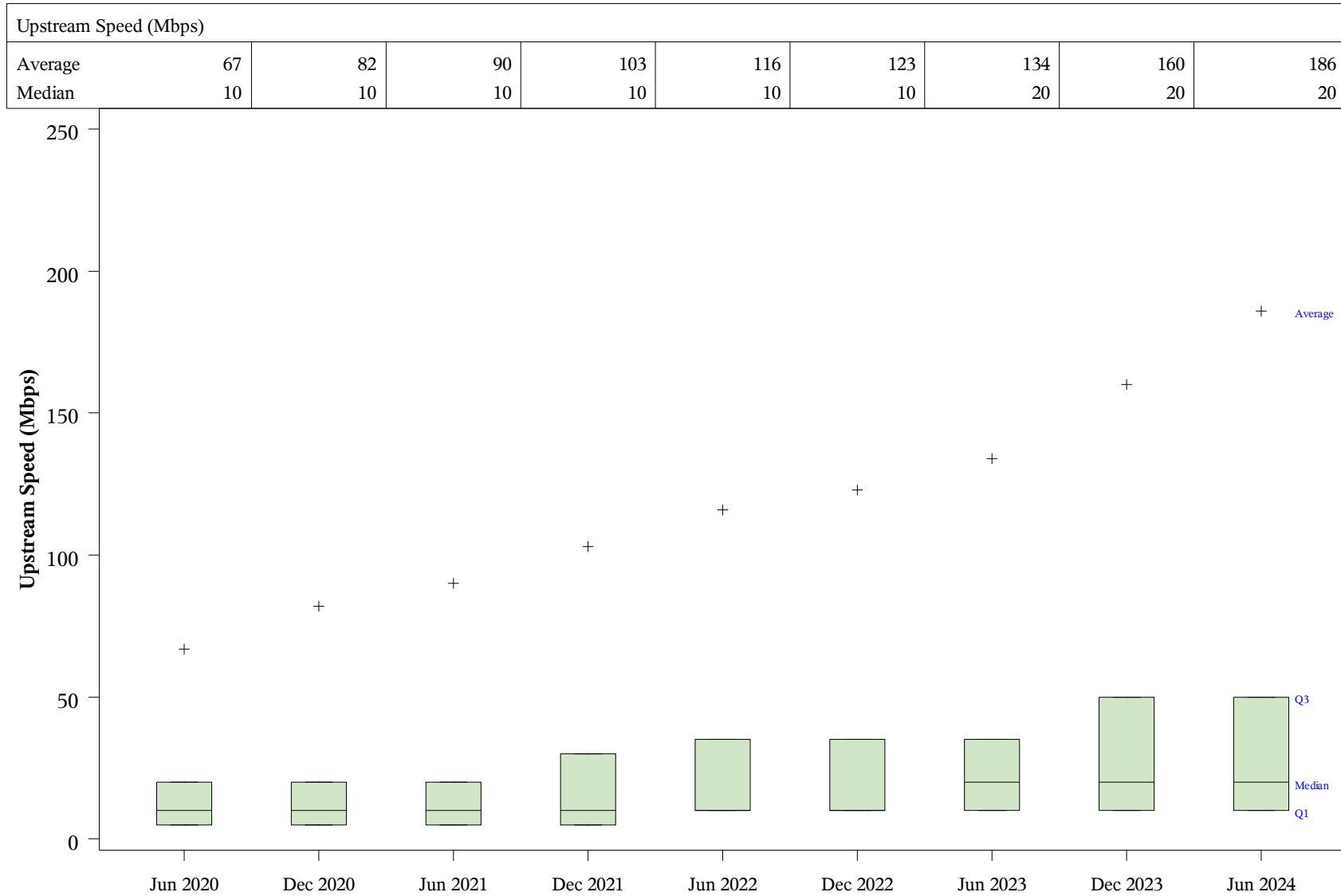
Figure 35
Distribution of Downstream Speeds of Fixed Connections 2020-2024



Note: Each box represents the Interquartile Range where the top line indicates the 75th percentile of downstream speeds, the middle line indicates the median downstream speed, the bottom line indicates the 25th percentile of downstream speeds, and the + denotes the position of the average downstream speed. Some previously published data may have been revised.

Source: FCC Form 477.

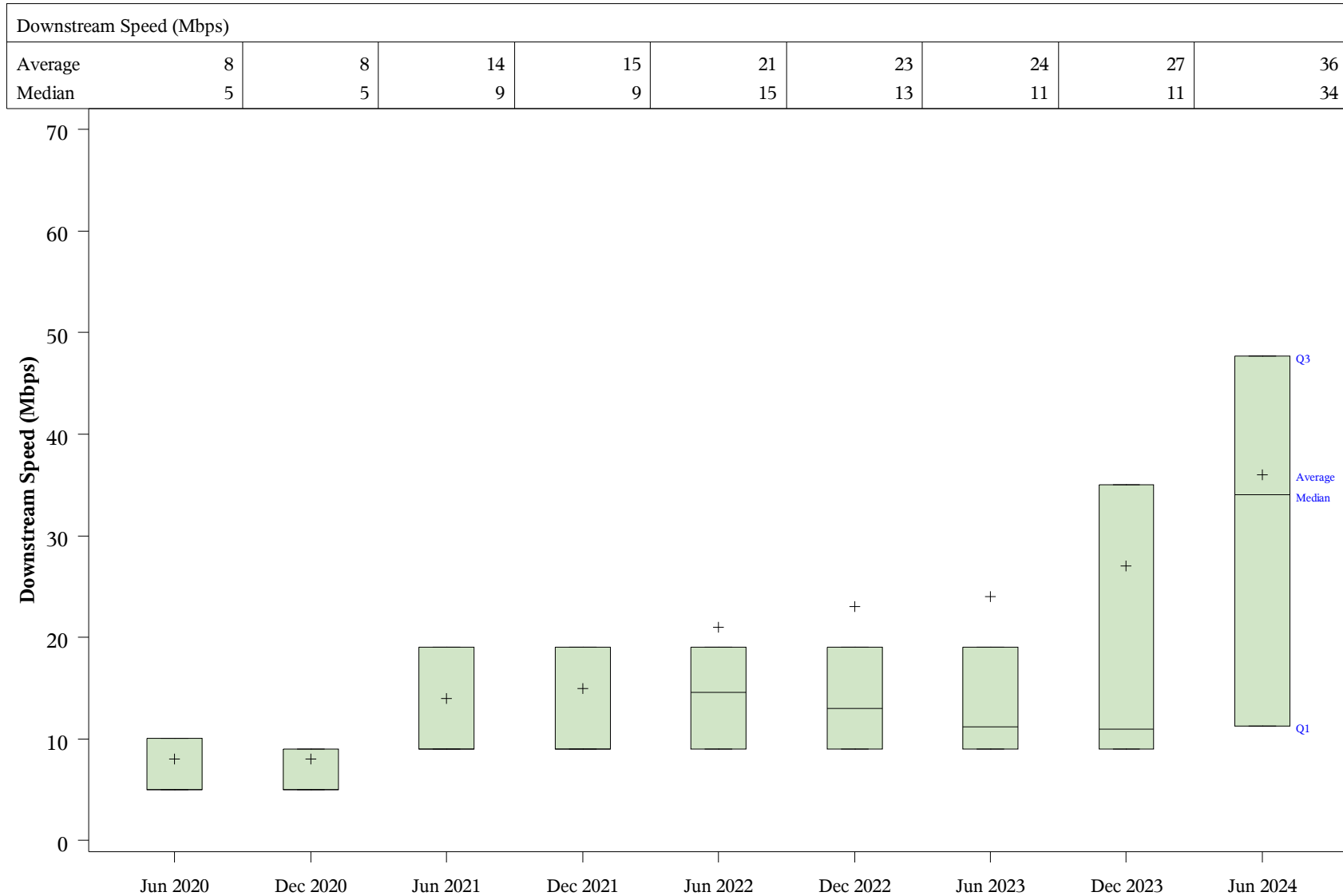
Figure 36
Distribution of Upstream Speeds of Fixed Connections 2020-2024



Note: Each box represents the Interquartile Range where the top line indicates the 75th percentile of upstream speeds, the middle line indicates the median upstream speed, the bottom line indicates the 25th percentile of upstream speeds, and the + denotes the position of the average upstream speed. Some previously published data may have been revised.

Source: FCC Form 477.

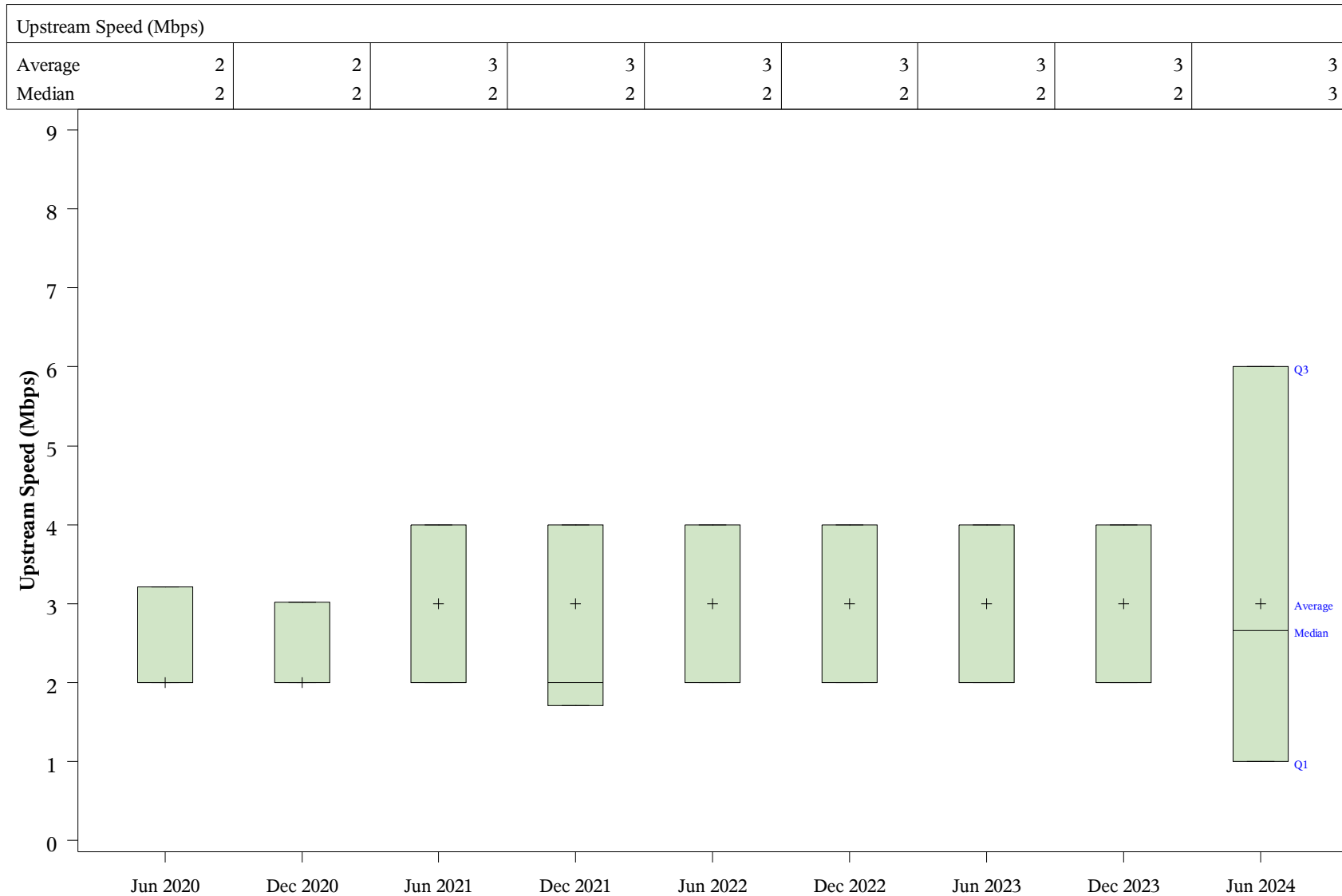
Figure 37
Distribution of Downstream Speeds of Mobile Connections 2020-2024



Note: Each box represents the Interquartile Range where the top line indicates the 75th percentile of downstream speeds, the middle line indicates the median downstream speed, the bottom line indicates the 25th percentile of downstream speeds, and the + denotes the position of the average downstream speed. Some previously published data may have been revised.

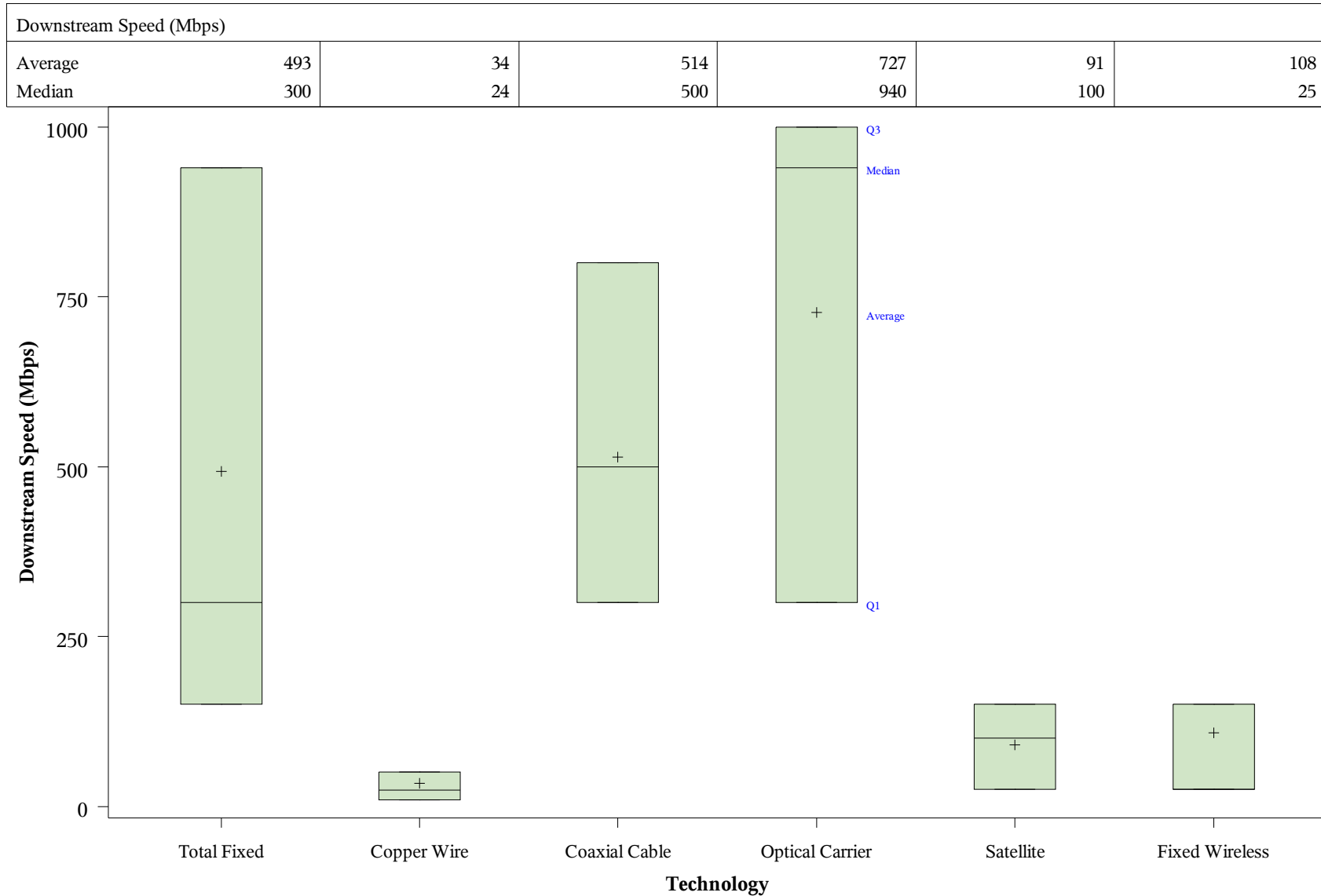
Source: FCC Form 477.

Figure 38
Distribution of Upstream Speeds of Mobile Connections 2020-2024



Note: Each box represents the Interquartile Range where the top line indicates the 75th percentile of upstream speeds, the middle line indicates the median upstream speed, the bottom line indicates the 25th percentile of upstream speeds, and the + denotes the position of the average upstream speed. Some previously published data may have been revised.
Source: FCC Form 477.

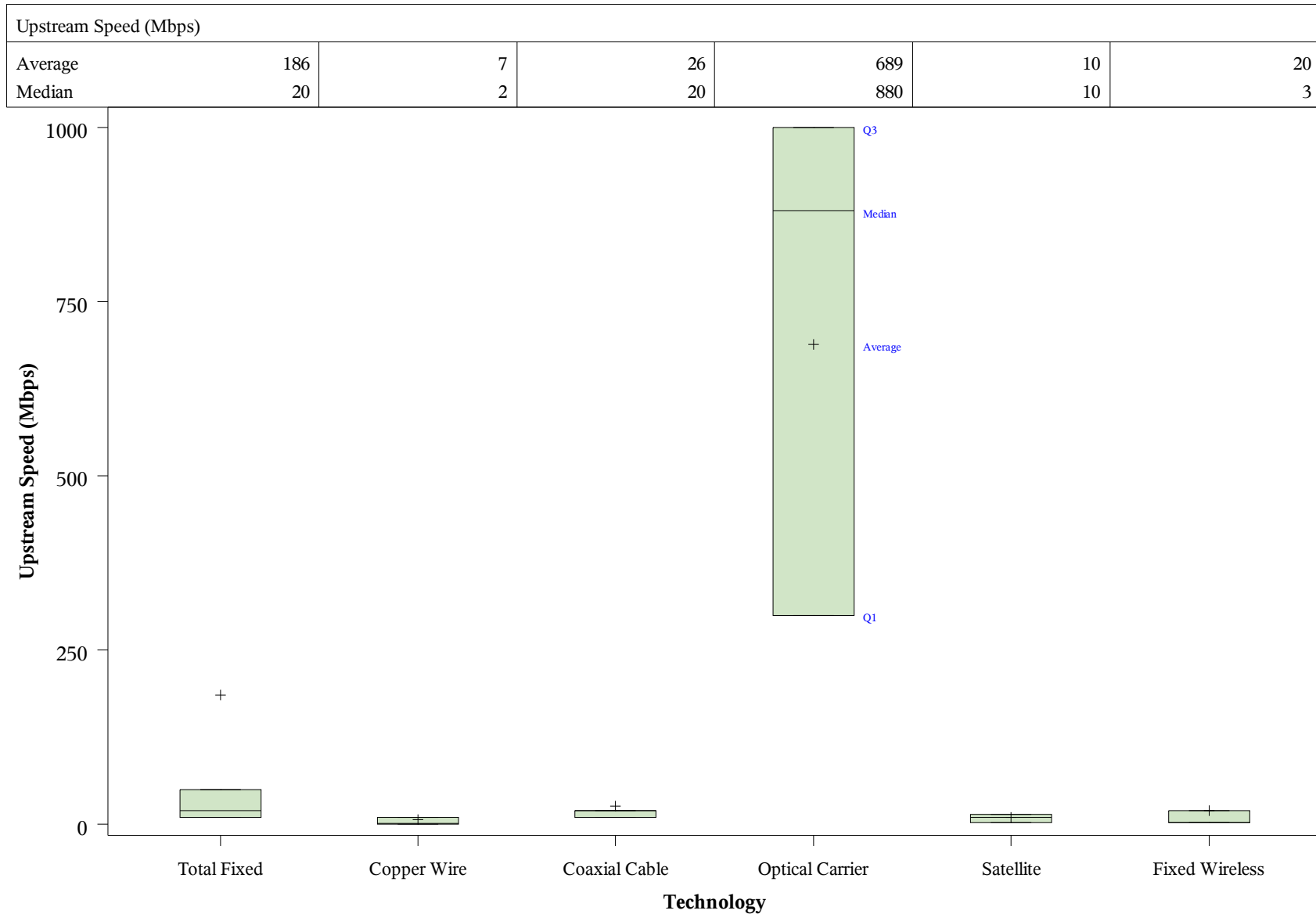
Figure 39
Distribution of Downstream Speeds of Fixed Connections by Technology as of June 30, 2024



Note: Other is summarized with Copper Wire for confidentiality reasons. Each box plot shows the distribution of downstream speeds for a particular technology. Each box represents the Interquartile Range where the top line indicates the 75th percentile of downstream speeds, the middle line indicates the median downstream speed, the bottom line indicates the 25th percentile of downstream speeds, and the + denotes the position of the average downstream speed.

Source: FCC Form 477.

Figure 40
Distribution of Upstream Speeds of Fixed Connections by Technology as of June 30, 2024



Note: Other is summarized with Copper Wire for confidentiality reasons. Each box plot shows the distribution of upstream speeds for a particular technology. Each box represents the Interquartile Range where the top line indicates the 75th percentile of upstream speeds, the middle line indicates the median upstream speed, the bottom line indicates the 25th percentile of upstream speeds, and the + denotes the position of the average upstream speed. Source: FCC Form 477.

Figure 41
Nationwide Number of Providers of Connections over 200 kbps in at Least One Direction
by Technology 2020-2024

<i>Technology</i>	<i>2020</i>		<i>2021</i>		<i>2022</i>		<i>2023</i>		<i>2024</i>
	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>	<i>Dec</i>	<i>Jun</i>
Total	2,281	2,382	2,392	2,384	2,251	2,292	2,254	2,228	2,211
Mobile	64	64	63	62	58	57	56	53	52
Fixed	2,266	2,371	2,378	2,371	2,242	2,283	2,245	2,221	2,204
Copper Wire ¹	797	773	755	743	594	571	547	525	503
Coaxial Cable	365	368	362	352	311	306	311	306	293
Optical Carrier	1,380	1,442	1,477	1,505	1,475	1,524	1,546	1,567	1,570
Satellite	5	6	6	5	4	4	4	4	4
Fixed Wireless	1,313	1,397	1,383	1,359	1,236	1,255	1,204	1,177	1,157
Licensed	-	-	-	-	299	358	378	400	407
Unlicensed	-	-	-	-	1,132	1,143	1,091	1,068	1,048

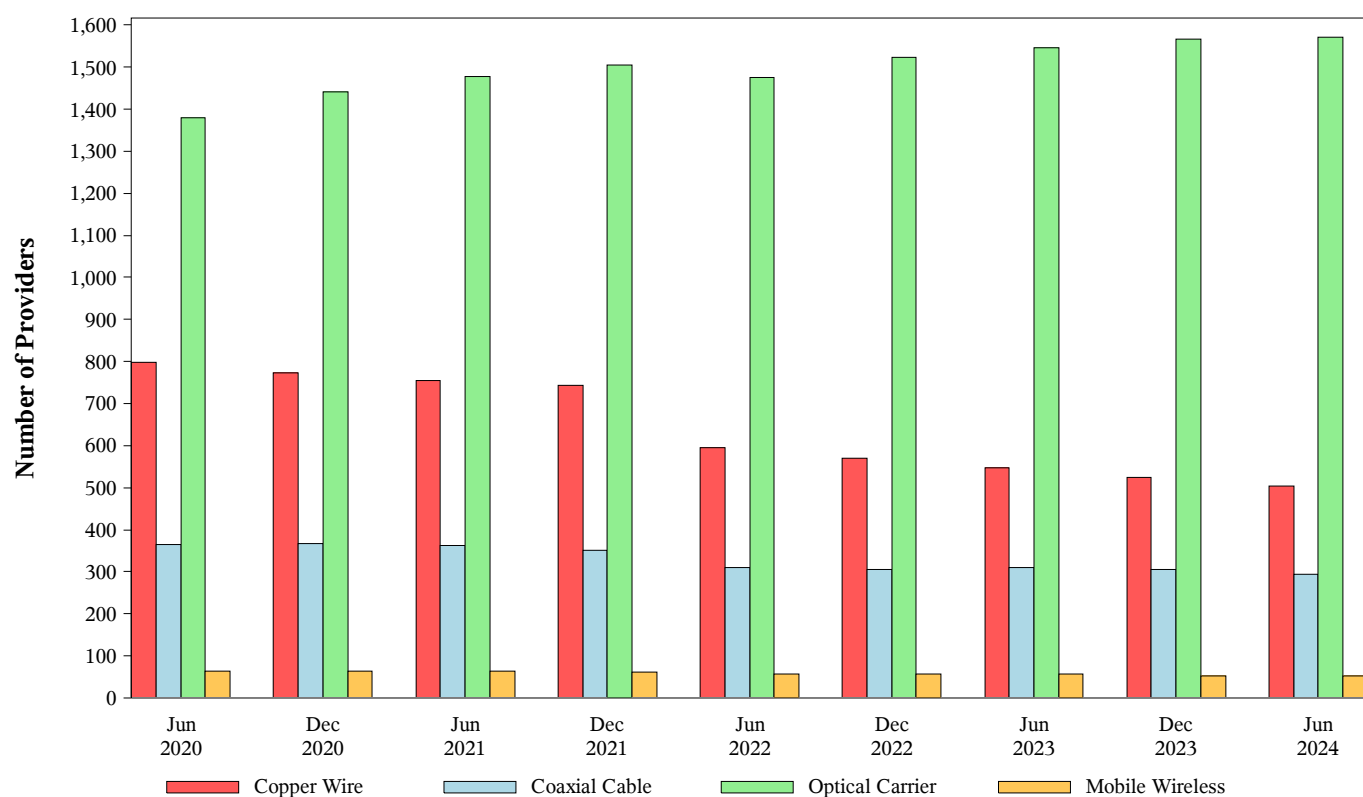
¹ Prior to June 2022, Power Line is summarized with Other for confidentiality reasons.

* = 1 - 3 providers. - = Data not collected.

Note: Multiple FCC Form 477 filers within a holding company structure count as one provider. Some previously published data may have been revised.

Source: FCC Form 477.

Figure 42
Nationwide Number of Providers of Connections over 200 kbps in at Least One Direction
Selected Technologies 2020-2024



Note: Multiple FCC Form 477 filers within a holding company structure count as one provider. Some previously published data may have been revised.
Source: FCC Form 477.

SECTION 4
SUMMARY STATISTICS: THE STATES

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Figure 43
Residential Fixed Connections and Households by State as of June 30, 2024
(Connections and households in thousands)

State	Households	At least 200 kbps in at least One Direction		At least 10 Mbps Down and 1 Mbps Up		At least 25 Mbps Down and 3 Mbps Up		At least 100 Mbps Down and 20 Mbps Up		At least 940 Mbps Down and 500 Mbps Up	
		Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio
Alabama	1,969	1,787	0.91	1,715	0.87	1,643	0.83	1,035	0.53	231	0.12
Alaska	268	250	0.93	244	0.91	216	0.81	125	0.47	1	0.00
American Samoa	10	*	*	*	*	*	*	0	0.00	0	0.00
Arizona	2,797	2,675	0.96	2,577	0.92	2,469	0.88	1,553	0.56	164	0.06
Arkansas	1,189	1,048	0.88	994	0.84	930	0.78	654	0.55	121	0.10
California	13,435	13,160	0.98	12,925	0.96	12,568	0.94	8,179	0.61	1,048	0.08
Colorado	2,326	2,375	1.02	2,304	0.99	2,214	0.95	1,761	0.76	205	0.09
Connecticut	1,420	1,362	0.96	1,350	0.95	1,323	0.93	1,119	0.79	160	0.11
Delaware	396	419	1.06	415	1.05	415	1.05	379	0.96	*	*
District of Columbia	322	289	0.90	287	0.89	286	0.89	254	0.79	*	*
Florida	8,551	8,849	1.03	8,708	1.02	8,552	1.00	6,181	0.72	917	0.11
Georgia	4,008	3,851	0.96	3,755	0.94	3,629	0.91	2,822	0.70	594	0.15
Guam	42	35	0.82	33	0.79	30	0.72	*	*	*	*
Hawaii	489	511	1.04	505	1.03	496	1.01	*	*	*	*
Idaho	694	719	1.04	673	0.97	608	0.88	416	0.60	48	0.07
Illinois	5,002	4,354	0.87	4,237	0.85	4,057	0.81	3,117	0.62	245	0.05
Indiana	2,682	2,447	0.91	2,363	0.88	2,261	0.84	1,694	0.63	271	0.10
Iowa	1,304	1,180	0.91	1,122	0.86	1,047	0.80	794	0.61	142	0.11
Kansas	1,161	1,056	0.91	1,026	0.88	979	0.84	665	0.57	208	0.18
Kentucky	1,792	1,647	0.92	1,585	0.88	1,514	0.85	923	0.51	184	0.10
Louisiana	1,783	1,651	0.93	1,587	0.89	1,517	0.85	882	0.49	160	0.09
Maine	589	584	0.99	559	0.95	520	0.88	181	0.31	11	0.02
Maryland	2,340	2,227	0.95	2,204	0.94	2,191	0.94	1,942	0.83	*	*
Massachusetts	2,762	2,660	0.96	2,631	0.95	2,626	0.95	2,235	0.81	556	0.20
Michigan	4,040	3,736	0.92	3,635	0.90	3,509	0.87	2,325	0.58	135	0.03
Minnesota	2,283	2,171	0.95	2,103	0.92	2,002	0.88	1,427	0.63	132	0.06
Mississippi	1,132	972	0.86	920	0.81	841	0.74	676	0.60	223	0.20
Missouri	2,485	2,239	0.90	2,141	0.86	2,023	0.81	1,287	0.52	355	0.14
Montana	453	437	0.97	415	0.92	378	0.83	136	0.30	13	0.03
Nebraska	787	716	0.91	694	0.88	665	0.85	437	0.55	62	0.08

Figure 43 - Continued
Residential Fixed Connections and Households by State as of June 30, 2024
(Connections and households in thousands)

State	Households	At least 200 kbps in at least One Direction		At least 10 Mbps Down and 1 Mbps Up		At least 25 Mbps Down and 3 Mbps Up		At least 100 Mbps Down and 20 Mbps Up		At least 940 Mbps Down and 500 Mbps Up	
		Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio	Connections	Subscribership Ratio
Nevada	1,183	1,160	0.98	1,132	0.96	1,099	0.93	795	0.67	101	0.08
New Hampshire	551	547	0.99	537	0.97	522	0.95	427	0.78	7	0.01
New Jersey	3,478	3,310	0.95	3,282	0.94	3,269	0.94	3,020	0.87	*	*
New Mexico	825	744	0.90	698	0.85	643	0.78	438	0.53	31	0.04
New York	7,669	6,970	0.91	6,913	0.90	6,837	0.89	4,601	0.60	1,849	0.24
North Carolina	4,187	4,355	1.04	4,192	1.00	4,088	0.98	2,281	0.54	517	0.12
North Dakota	325	303	0.93	300	0.92	297	0.91	278	0.86	19	0.06
Northern Mariana Isl	16	*	*	*	*	*	*	*	*	0	0.00
Ohio	4,830	4,444	0.92	4,325	0.90	4,175	0.86	2,130	0.44	265	0.05
Oklahoma	1,543	1,343	0.87	1,290	0.84	1,212	0.79	831	0.54	196	0.13
Oregon	1,702	1,622	0.95	1,575	0.93	1,520	0.89	1,062	0.62	121	0.07
Pennsylvania	5,235	4,801	0.92	4,646	0.89	4,601	0.88	3,708	0.71	*	*
Puerto Rico	1,239	751	0.61	699	0.56	593	0.48	218	0.18	13	0.01
Rhode Island	437	409	0.94	407	0.93	407	0.93	304	0.70	*	*
South Carolina	2,070	2,104	1.02	2,063	1.00	1,999	0.97	1,252	0.60	164	0.08
South Dakota	359	336	0.94	332	0.93	327	0.91	282	0.79	26	0.07
Tennessee	2,769	2,607	0.94	2,551	0.92	2,487	0.90	1,865	0.67	469	0.17
Texas	10,747	10,507	0.98	10,301	0.96	10,001	0.93	6,902	0.64	1,753	0.16
Utah	1,095	1,178	1.08	1,152	1.05	1,119	1.02	931	0.85	243	0.22
Vermont	269	267	0.99	251	0.93	226	0.84	183	0.68	18	0.07
Virgin Islands	43	28	0.64	25	0.59	25	0.59	*	*	0	0.00
Virginia	3,326	3,164	0.95	3,076	0.92	3,040	0.91	2,469	0.74	1,017	0.31
Washington	3,021	3,008	1.00	2,915	0.97	2,819	0.93	2,199	0.73	240	0.08
West Virginia	721	614	0.85	573	0.79	529	0.73	388	0.54	40	0.06
Wisconsin	2,446	2,286	0.93	2,185	0.89	2,063	0.84	887	0.36	99	0.04
Wyoming	238	229	0.96	220	0.92	209	0.88	79	0.33	11	0.05
Total	128,833	122,506	0.95	119,366	0.93	115,632	0.90	81,004	0.63	16,853	0.13

= Rounds to Zero; * = Data withheld for confidentiality reasons.

Note: Numbers may not sum to totals due to rounding.

Sources: FCC Form 477 (Connections); 2019-2023 ACS 5-year estimates; Census 2010.

Figure 44
Connections by Type of End User by State as of June 30, 2024
(Connections in thousands)

<i>State</i>	<i>Connections</i>		<i>Percentages</i>		<i>Total</i>
	<i>Residential</i>	<i>Business</i>	<i>Residential</i>	<i>Business</i>	
Alabama	6,724	1,173	85.1	14.9	7,898
Alaska	943	163	85.3	14.7	1,106
American Samoa	*	*	*	*	*
Arizona	9,988	1,533	86.7	13.3	11,521
Arkansas	4,018	576	87.5	12.5	4,594
California	55,093	10,833	83.6	16.4	65,926
Colorado	7,946	1,681	82.5	17.5	9,626
Connecticut	5,108	990	83.8	16.2	6,098
Delaware	1,454	266	84.6	15.4	1,719
District of Columbia	1,278	705	64.5	35.5	1,982
Florida	32,644	5,820	84.9	15.1	38,464
Georgia	15,101	2,728	84.7	15.3	17,829
Guam	150	66	69.4	30.6	216
Hawaii	1,970	419	82.4	17.6	2,389
Idaho	2,487	383	86.6	13.4	2,870
Illinois	17,221	3,415	83.5	16.5	20,636
Indiana	8,814	1,477	85.7	14.3	10,290
Iowa	4,161	684	85.9	14.1	4,846
Kansas	3,886	640	85.9	14.1	4,526
Kentucky	5,849	1,082	84.4	15.6	6,931
Louisiana	6,493	977	86.9	13.1	7,470
Maine	1,760	443	79.9	20.1	2,202
Maryland	8,688	1,515	85.1	14.9	10,203
Massachusetts	9,619	2,006	82.7	17.3	11,625
Michigan	13,178	2,563	83.7	16.3	15,741
Minnesota	7,545	1,410	84.3	15.7	8,955
Mississippi	4,021	513	88.7	11.3	4,534
Missouri	8,084	1,509	84.3	15.7	9,593
Montana	1,417	285	83.2	16.8	1,702
Nebraska	2,532	609	80.6	19.4	3,140
Nevada	4,532	664	87.2	12.8	5,196
New Hampshire	1,800	460	79.7	20.3	2,259
New Jersey	13,363	2,539	84.0	16.0	15,902
New Mexico	2,837	452	86.2	13.8	3,289
New York	28,328	5,456	83.9	16.1	33,784
North Carolina	14,310	2,985	82.7	17.3	17,295
North Dakota	1,052	188	84.9	15.1	1,240
Northern Mariana Isl	*	*	*	*	*
Ohio	15,493	3,216	82.8	17.2	18,709
Oklahoma	5,300	869	85.9	14.1	6,169
Oregon	5,554	1,149	82.9	17.1	6,703
Pennsylvania	17,645	3,247	84.5	15.5	20,892
Puerto Rico	4,124	403	91.1	8.9	4,527
Rhode Island	1,513	299	83.5	16.5	1,812
South Carolina	7,002	1,241	84.9	15.1	8,244
South Dakota	1,178	171	87.3	12.7	1,349
Tennessee	9,513	1,691	84.9	15.1	11,204
Texas	42,773	7,165	85.7	14.3	49,938
Utah	4,184	917	82.0	18.0	5,101
Vermont	780	230	77.2	22.8	1,010
Virgin Islands	123	10	92.3	7.7	133
Virginia	11,825	2,223	84.2	15.8	14,048
Washington	10,475	2,119	83.2	16.8	12,594
West Virginia	2,226	309	87.8	12.2	2,535
Wisconsin	7,409	1,588	82.3	17.7	8,997
Wyoming	783	154	83.5	16.5	937
Total	462,374	86,238	84.3	15.7	548,612

* = Data withheld for confidentiality reasons. # = Rounds to Zero.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 45
Connections by Technology by State as of June 30, 2024
(in thousands)

<i>State</i>	<i>Copper Wire¹</i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Other Fixed²</i>	<i>Mobile Wireless</i>	<i>Total</i>
Alabama	223	974	548	195	5,959	7,898
Alaska	58	*	21	*	817	1,106
American Samoa	0	*	*	*	*	*
Arizona	336	1,759	366	385	8,676	11,521
Arkansas	178	453	389	117	3,456	4,594
California	1,339	9,460	2,258	1,204	51,665	65,926
Colorado	*	1,670	367	*	7,084	9,626
Connecticut	*	1,048	321	*	4,627	6,098
Delaware	*	*	*	24	1,273	1,719
District of Columbia	*	*	*	21	1,666	1,982
Florida	629	5,991	2,335	599	28,909	38,464
Georgia	456	2,220	1,204	299	13,650	17,829
Guam	*	*	3	4	*	216
Hawaii	19	*	*	19	1,825	2,389
Idaho	130	300	188	159	2,094	2,870
Illinois	562	3,067	594	490	15,924	20,636
Indiana	275	1,368	726	268	7,653	10,290
Iowa	156	404	552	171	3,563	4,846
Kansas	96	485	434	140	3,371	4,526
Kentucky	192	883	576	131	5,148	6,931
Louisiana	195	1,007	420	169	5,679	7,470
Maine	64	484	105	44	1,505	2,202
Maryland	*	1,318	*	129	7,825	10,203
Massachusetts	*	2,114	612	*	8,761	11,625
Michigan	402	2,815	424	382	11,718	15,741
Minnesota	280	1,368	462	234	6,612	8,955
Mississippi	189	355	430	93	3,466	4,534
Missouri	318	1,065	751	288	7,171	9,593
Montana	61	*	75	*	1,216	1,702
Nebraska	76	360	261	87	2,356	3,140

Figure 45 - Continued
Connections by Technology by State as of June 30, 2024
(in thousands)

<i>State</i>	<i>Copper Wire¹</i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Other Fixed²</i>	<i>Mobile Wireless</i>	<i>Total</i>
Nevada	90	829	187	139	3,951	5,196
New Hampshire	*	*	106	25	1,595	2,259
New Jersey	39	2,062	1,318	159	12,325	15,902
New Mexico	144	462	82	113	2,488	3,289
New York	86	4,779	2,390	323	26,205	33,784
North Carolina	349	2,857	1,153	320	12,617	17,295
North Dakota	10	168	150	18	895	1,240
Northern Mariana Isl	*	*	*	*	*	*
Ohio	426	3,070	882	422	13,910	18,709
Oklahoma	182	601	465	215	4,706	6,169
Oregon	122	1,143	315	176	4,947	6,703
Pennsylvania	217	3,334	1,264	341	15,736	20,892
Puerto Rico	*	*	219	92	3,718	4,527
Rhode Island	*	*	*	18	1,374	1,812
South Carolina	180	1,276	652	164	5,972	8,244
South Dakota	20	194	133	24	978	1,349
Tennessee	202	1,394	1,033	206	8,369	11,204
Texas	828	5,660	3,672	1,181	38,597	49,938
Utah	82	661	375	142	3,841	5,101
Vermont	49	182	71	19	688	1,010
Virgin Islands	0	*	*	10	*	133
Virginia	114	1,824	1,205	259	10,647	14,048
Washington	238	2,247	405	317	9,386	12,594
West Virginia	*	417	83	*	1,873	2,535
Wisconsin	328	*	479	*	6,524	8,997
Wyoming	29	130	32	65	682	937
Total	10,586	78,184	32,526	11,258	416,059	548,612

* = Data withheld for confidentiality reasons. # = Rounds to Zero.

¹ Other is summarized with Copper Wire for confidentiality reasons.

² Fixed Wireless and Satellite are summarized as Other Fixed for confidentiality reasons.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

Figure 46
Percentage of Fixed Connections by Downstream Speed by State as of June 30, 2024

<i>State</i>	<i>Over 200 kbps Upstream and</i>				
	<i>% over 200 kbps Downstream</i>	<i>% at least 10 Mbps Downstream</i>	<i>% at least 25 Mbps Downstream</i>	<i>% at least 100 Mbps Downstream</i>	<i>% at least 940 Mbps Downstream</i>
Alabama	99.8	96.7	92.1	77.2	19.8
Alaska	99.9	96.6	85.8	*	*
American Samoa	*	*	*	*	*
Arizona	99.7	96.8	92.8	79.2	20.2
Arkansas	99.7	95.6	88.7	72.8	19.5
California	99.8	97.8	94.9	81.9	21.5
Colorado	99.8	97.6	93.5	79.9	29.9
Connecticut	99.9	98.9	97.4	90.0	29.0
Delaware	100.0	99.0	98.8	89.8	51.3
District of Columbia	100.0	98.7	98.2	87.3	43.6
Florida	99.8	98.7	96.7	85.3	22.9
Georgia	99.8	97.5	94.2	79.7	28.7
Guam	100.0	91.8	84.4	18.1	0.1
Hawaii	99.9	98.0	96.1	90.3	*
Idaho	99.0	94.7	85.6	67.2	17.5
Illinois	99.8	97.1	93.1	75.4	22.3
Indiana	99.6	96.9	92.4	76.7	22.0
Iowa	99.8	96.0	89.4	69.1	25.3
Kansas	99.8	97.5	92.5	77.5	28.7
Kentucky	99.9	96.3	92.6	78.7	15.8
Louisiana	99.6	96.5	91.8	77.3	20.1
Maine	99.6	95.0	89.6	78.6	13.9
Maryland	99.8	98.8	98.1	88.1	53.6
Massachusetts	99.7	98.8	98.5	91.3	41.4
Michigan	99.9	97.3	93.8	79.3	17.0
Minnesota	99.7	97.5	92.9	76.0	23.5
Mississippi	99.7	94.7	86.6	70.8	32.8
Missouri	99.7	96.8	90.7	74.6	22.4
Montana	99.6	96.2	87.4	72.2	6.6
Nebraska	99.9	97.2	93.1	79.4	15.9

Figure 46 - Continued
Percentage of Fixed Connections by Downstream Speed by State as of June 30, 2024

<i>State</i>	<i>Over 200 kbps Upstream and</i>				
	<i>% over 200 kbps Downstream</i>	<i>% at least 10 Mbps Downstream</i>	<i>% at least 25 Mbps Downstream</i>	<i>% at least 100 Mbps Downstream</i>	<i>% at least 940 Mbps Downstream</i>
Nevada	99.8	97.9	95.2	84.1	20.7
New Hampshire	99.4	97.0	94.9	86.3	28.9
New Jersey	99.8	99.1	98.6	92.7	50.4
New Mexico	99.4	95.3	87.5	65.8	18.5
New York	99.8	99.1	97.9	92.7	32.7
North Carolina	99.7	97.3	94.0	84.3	18.1
North Dakota	99.8	99.2	97.8	91.6	50.4
Northern Mariana Isl	*	*	*	*	*
Ohio	99.8	97.5	93.9	80.9	13.7
Oklahoma	99.6	95.6	89.5	74.8	24.4
Oregon	99.8	97.8	94.0	80.2	23.1
Pennsylvania	99.5	97.1	95.8	84.2	37.7
Puerto Rico	100.0	92.8	80.6	40.0	1.9
Rhode Island	99.7	99.2	99.1	95.2	55.0
South Carolina	99.9	98.2	94.9	83.0	14.8
South Dakota	99.8	99.0	97.4	86.9	50.5
Tennessee	99.8	98.0	95.3	82.5	27.4
Texas	99.7	98.0	94.9	81.4	26.0
Utah	99.8	98.1	95.1	81.1	39.7
Vermont	99.2	93.2	86.7	73.4	24.9
Virgin Islands	100.0	92.1	88.6	45.6	*
Virginia	99.5	97.5	95.8	86.8	44.9
Washington	99.7	97.6	93.9	81.4	29.3
West Virginia	99.5	93.3	86.6	73.3	22.2
Wisconsin	99.7	96.7	90.7	77.3	8.3
Wyoming	99.7	96.7	91.7	69.4	9.9
Total	99.7	97.6	94.3	81.7	26.0

* = Data withheld for confidentiality reasons.

Source: FCC Form 477.

Figure 47
Providers of Connections by Technology by State as of June 30, 2024
(Connections over 200 kbps in at least one direction)

<i>State</i>	<i>Copper Wire¹</i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Satellite</i>	<i>Fixed Wireless</i>	<i>Mobile Wireless</i>	<i>Unduplicated Total</i>
Alabama	21	15	49	*	16	7	75
Alaska	13	*	19	*	14	10	32
American Samoa	0	*	*	*	*	*	*
Arizona	21	11	47	*	49	7	88
Arkansas	18	13	55	*	32	5	84
California	28	26	79	*	113	6	179
Colorado	24	11	83	*	66	10	125
Connecticut	*	5	14	*	*	5	21
Delaware	*	4	13	*	5	5	22
District of Columbia	5	*	15	*	7	5	24
Florida	18	15	61	*	32	5	91
Georgia	23	24	85	*	23	6	106
Guam	*	*	5	*	4	*	6
Hawaii	5	*	8	*	5	4	16
Idaho	19	14	41	*	39	8	67
Illinois	36	14	91	*	73	6	143
Indiana	29	9	81	*	58	5	115
Iowa	37	27	186	*	77	7	220
Kansas	20	22	67	*	49	9	100
Kentucky	13	24	62	*	27	7	95
Louisiana	13	13	35	*	25	6	64
Maine	10	4	18	*	11	6	33
Maryland	8	13	38	*	17	6	55
Massachusetts	6	6	28	*	12	5	41
Michigan	29	17	78	*	43	7	112
Minnesota	33	16	91	*	48	5	119
Mississippi	16	10	44	*	8	6	62
Missouri	28	14	90	*	69	7	137
Montana	17	4	33	*	31	7	55
Nebraska	18	15	53	*	41	7	84

Figure 47 - Continued
Providers of Connections by Technology by State as of June 30, 2024
(Connections over 200 kbps in at least one direction)

<i>State</i>	<i>Copper Wire¹</i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Satellite</i>	<i>Fixed Wireless</i>	<i>Mobile Wireless</i>	<i>Unduplicated Total</i>
Nevada	15	7	29	*	30	6	59
New Hampshire	7	*	16	*	7	6	26
New Jersey	12	7	28	*	5	5	38
New Mexico	18	7	33	*	37	7	64
New York	30	11	58	*	23	5	86
North Carolina	18	20	57	*	25	7	81
North Dakota	9	6	32	*	9	7	43
Northern Mariana Isl	*	*	*	0	*	*	*
Ohio	29	25	76	*	53	5	123
Oklahoma	36	7	70	*	48	9	107
Oregon	27	12	53	*	42	7	86
Pennsylvania	21	22	65	*	32	7	100
Puerto Rico	4	*	22	*	42	4	53
Rhode Island	*	5	7	*	4	5	17
South Carolina	16	11	40	*	11	6	52
South Dakota	12	7	43	*	22	9	66
Tennessee	17	13	77	*	24	6	98
Texas	58	23	141	4	142	6	234
Utah	15	8	32	*	38	9	58
Vermont	9	4	21	*	11	6	34
Virgin Islands	0	*	4	*	*	*	7
Virginia	21	12	59	*	28	7	89
Washington	20	20	65	*	53	7	99
West Virginia	6	11	26	*	23	7	59
Wisconsin	31	13	77	*	39	7	107
Wyoming	11	5	21	*	22	9	41
Total	503	293	1,570	4	1,157	52	2,211

* = 1 to 3 providers.

¹ Other is summarized with Copper Wire for confidentiality reasons.

Note: Numbers may not sum to totals due to rounding.

Source: FCC Form 477.

SECTION 5
SUMMARY STATISTICS: COUNTIES AND CENSUS TRACTS

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Figure 49 Distribution of Counties by Ratio of Residential Fixed Connections
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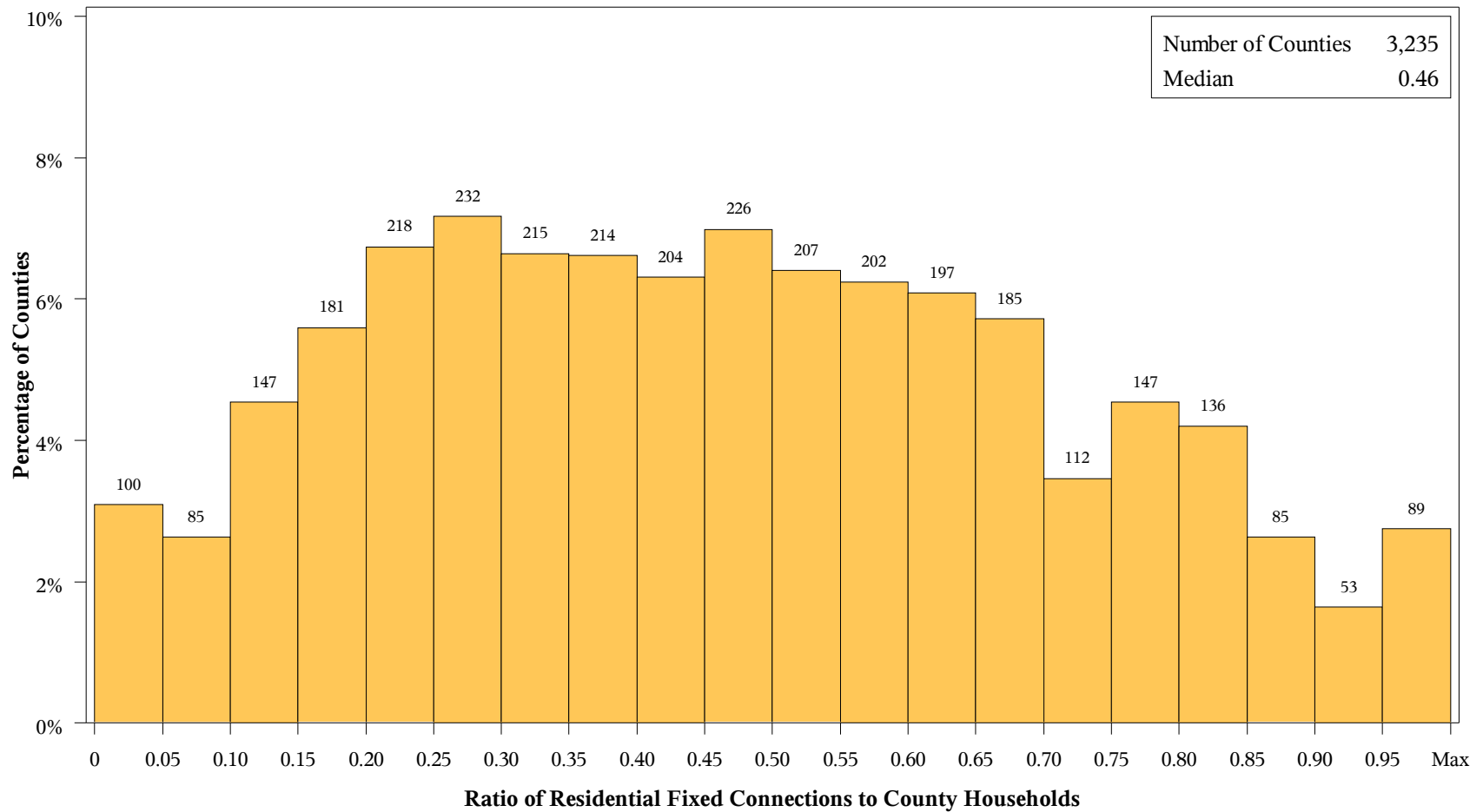
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Figure 51 Distribution of Census Tracts by Ratio of Residential Fixed Connections
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Figure 48
Distribution of Counties by Ratio of Residential Fixed Connections to County Households as of June 30, 2024
 (Connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Ratios over 1 were set to 1. See Technical Notes at the end of the report.
 Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 49
Distribution of Counties by Ratio of Residential Fixed Connections to Households by Technology as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

<i>Technology</i>	<i>Ratio of Residential Fixed Connections to County Households</i>										
	<i>Zero</i>	<i>> 0.00 and ≤ 0.05</i>	<i>> 0.05 and ≤ 0.10</i>	<i>> 0.10 and ≤ 0.20</i>	<i>> 0.20 and ≤ 0.30</i>	<i>> 0.30 and ≤ 0.40</i>	<i>> 0.40 and ≤ 0.50</i>	<i>> 0.50 and ≤ 0.60</i>	<i>> 0.60 and ≤ 0.80</i>	<i>> 0.80 and ≤ 1.00</i>	<i>> 1.00</i>
Any Technology	0.6	2.5	2.6	10.1	13.9	13.3	13.3	12.6	19.8	9.5	1.7
Satellite	49.5	50.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Terrestrial	0.6	2.5	2.6	10.1	13.9	13.3	13.2	12.6	19.8	9.5	1.7
Fixed Wireless	6.2	90.7	2.1	0.7	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Licensed	7.5	91.0	1.0	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Unlicensed	59.3	39.4	0.9	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wireline	0.9	2.5	2.9	11.7	13.8	13.1	13.1	12.4	19.5	8.4	1.5
Copper Wire ¹	55.0	41.0	2.9	0.9	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Coaxial Cable	14.0	7.4	11.3	23.3	15.0	10.5	7.1	5.7	4.8	0.5	0.4
Optical Carrier	3.9	21.0	13.5	19.6	13.3	10.3	6.5	4.0	4.9	2.4	0.6

¹ Other is summarized with Copper Wire for confidentiality reasons.

Note: Each cell indicates the share of 3,235 counties where the ratio of residential fixed connections to households falls within the given range. Numbers may not sum to totals due to rounding.

Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 50
Distribution of Counties by Ratio of Residential Fixed Connections to Households by State as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

State	Counties	Ratio of Residential Fixed Connections to County Households										
		Zero	> 0.00 and ≤ 0.05	> 0.05 and ≤ 0.10	> 0.10 and ≤ 0.20	> 0.20 and ≤ 0.30	> 0.30 and ≤ 0.40	> 0.40 and ≤ 0.50	> 0.50 and ≤ 0.60	> 0.60 and ≤ 0.80	> 0.80 and ≤ 1.00	> 1.00
Alabama	67	0	3	2	16	6	7	10	12	9	2	0
Alaska	30	7	1	4	2	4	2	1	6	3	0	0
American Samoa	5	5	0	0	0	0	0	0	0	0	0	0
Arizona	15	0	1	1	0	3	2	1	6	1	0	0
Arkansas	75	0	1	0	5	8	10	19	11	17	4	0
California	58	0	2	0	5	5	4	7	9	20	5	1
Colorado	64	0	6	1	10	13	5	6	2	7	8	6
Connecticut	9	0	0	0	0	0	0	0	1	5	3	0
Delaware	3	0	0	0	0	0	0	0	0	0	2	1
District of Columbia	1	0	0	0	0	0	0	0	0	1	0	0
Florida	67	0	0	2	2	7	7	12	4	19	11	3
Georgia	159	0	4	2	9	18	17	25	24	38	21	1
Guam	1	0	0	1	0	0	0	0	0	0	0	0
Hawaii	5	0	0	0	0	0	1	1	2	1	0	0
Idaho	44	0	4	3	7	6	9	3	5	3	3	1
Illinois	102	0	1	0	7	14	18	18	20	22	2	0
Indiana	92	0	0	0	2	4	15	22	16	27	6	0
Iowa	99	0	0	0	4	4	16	23	25	24	2	1
Kansas	105	0	2	1	11	17	14	24	9	17	10	0
Kentucky	120	0	0	2	9	17	22	25	15	23	6	1
Louisiana	64	0	2	4	15	14	6	8	7	6	0	2
Maine	16	0	0	0	3	10	1	1	0	1	0	0
Maryland	24	0	0	0	0	0	0	1	2	10	10	1
Massachusetts	14	0	0	0	0	1	0	1	0	4	5	3
Michigan	83	0	0	5	21	16	9	7	10	13	2	0
Minnesota	87	0	0	1	4	7	15	16	12	26	5	1
Mississippi	82	0	6	4	4	10	6	8	10	29	4	1
Missouri	115	0	6	5	7	22	20	14	16	23	1	1
Montana	56	0	7	6	12	8	2	2	5	10	2	2
Nebraska	93	1	3	8	10	5	16	22	18	8	2	0

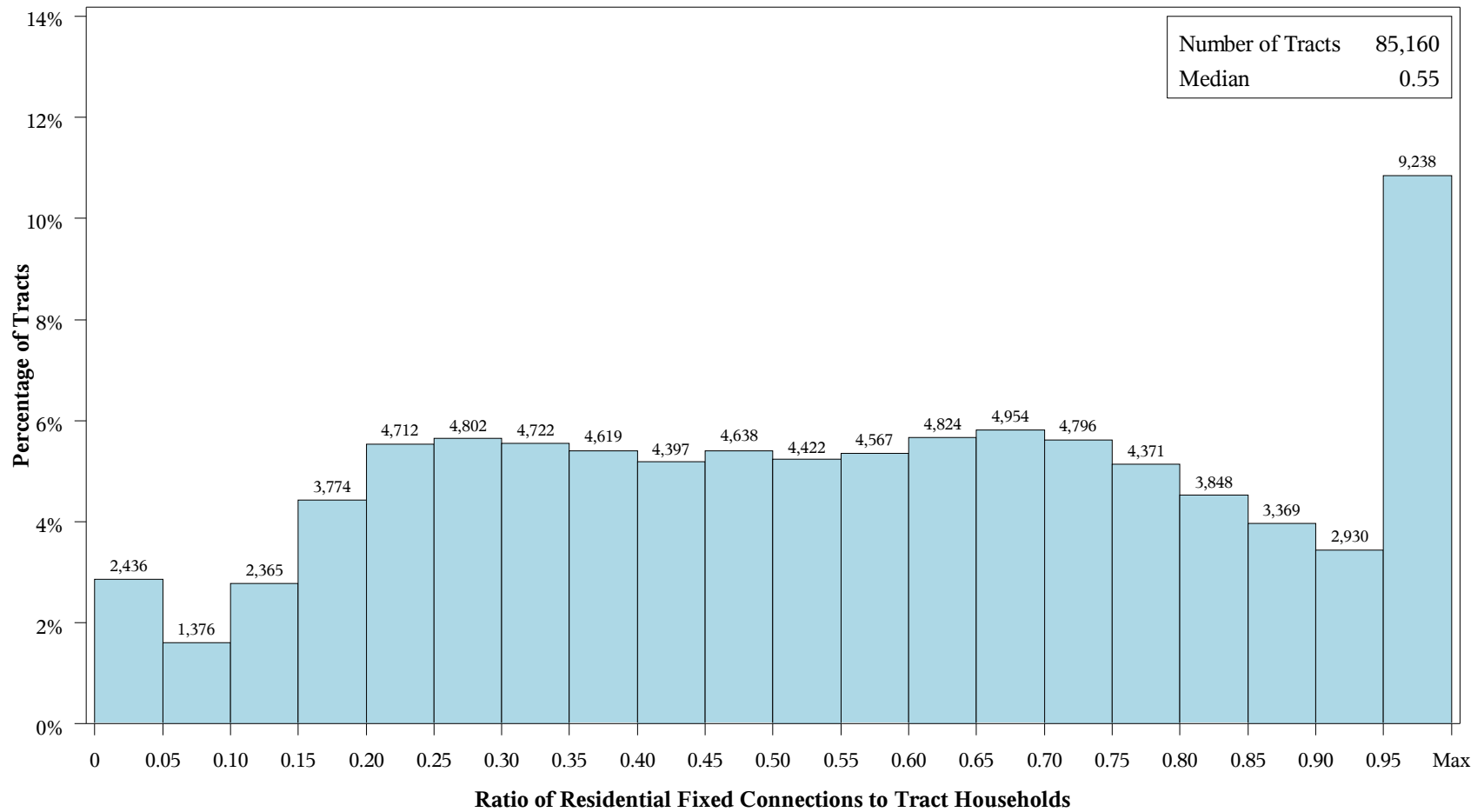
Figure 50 - Continued
Distribution of Counties by Ratio of Residential Fixed Connections to Households by State as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

State	Counties	Zero	Ratio of Residential Fixed Connections to County Households									
			> 0.00 and ≤ 0.05	> 0.05 and ≤ 0.10	> 0.10 and ≤ 0.20	> 0.20 and ≤ 0.30	> 0.30 and ≤ 0.40	> 0.40 and ≤ 0.50	> 0.50 and ≤ 0.60	> 0.60 and ≤ 0.80	> 0.80 and ≤ 1.00	> 1.00
Nevada	17	1	4	1	1	1	3	0	2	4	0	0
New Hampshire	10	0	0	0	1	0	1	0	1	2	4	1
New Jersey	21	0	0	0	0	0	0	0	1	5	13	2
New Mexico	33	0	3	0	2	6	4	4	6	7	1	0
New York	62	0	0	0	2	24	12	9	5	4	5	1
North Carolina	100	0	1	1	8	22	19	16	12	16	4	1
North Dakota	53	0	0	0	0	0	0	0	0	8	36	9
Northern Mariana Isl	4	3	1	0	0	0	0	0	0	0	0	0
Ohio	88	0	0	3	20	22	18	11	8	6	0	0
Oklahoma	77	0	0	2	7	12	11	10	16	14	5	0
Oregon	36	0	0	1	6	9	8	1	1	7	3	0
Pennsylvania	67	0	0	0	3	3	9	6	13	25	7	1
Puerto Rico	78	1	10	8	42	14	3	0	0	0	0	0
Rhode Island	5	0	0	0	0	0	0	0	0	4	1	0
South Carolina	46	0	0	0	5	6	7	5	7	12	2	2
South Dakota	66	0	0	0	0	1	3	2	2	26	27	5
Tennessee	95	0	0	0	4	6	12	9	16	31	16	1
Texas	254	0	10	7	23	51	41	37	40	29	15	1
Utah	29	0	0	0	1	2	3	1	3	4	12	3
Vermont	14	0	0	0	0	3	0	3	1	3	4	0
Virgin Islands	3	0	0	0	1	1	1	0	0	0	0	0
Virginia	133	0	1	3	5	10	10	11	20	42	30	1
Washington	39	0	2	2	3	7	4	4	2	10	4	1
West Virginia	55	0	1	3	10	6	8	11	2	12	2	0
Wisconsin	72	0	0	2	15	17	20	11	3	3	1	0
Wyoming	23	0	0	0	4	8	8	2	1	0	0	0
Total	3,235	18	82	85	328	450	429	430	409	641	308	55

Note: Numbers may not sum to totals due to rounding.

Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 51
Distribution of Census Tracts by Ratio of Residential Fixed Connections to Households as of June 30, 2024
 (Connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Ratios over 1 were set to 1. See Technical Notes at the end of the report.
 Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 52
Distribution of Census Tracts by Ratio of Residential Fixed Connections to Households by Technology as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

<i>Technology</i>	<i>Ratio of Residential Fixed Connections to Tract Households</i>										
	<i>Zero</i>	<i>> 0.00 and ≤ 0.05</i>	<i>> 0.05 and ≤ 0.10</i>	<i>> 0.10 and ≤ 0.20</i>	<i>> 0.20 and ≤ 0.30</i>	<i>> 0.30 and ≤ 0.40</i>	<i>> 0.40 and ≤ 0.50</i>	<i>> 0.50 and ≤ 0.60</i>	<i>> 0.60 and ≤ 0.80</i>	<i>> 0.80 and ≤ 1.00</i>	<i>> 1.00</i>
Any Technology	1.2	1.7	1.6	7.2	11.2	11.0	10.6	10.6	22.2	14.4	8.4
Satellite	95.3	4.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Terrestrial	1.2	1.7	1.6	7.2	11.2	11.0	10.6	10.6	22.2	14.4	8.4
Fixed Wireless	6.1	88.1	4.5	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0
Licensed	6.8	88.7	3.8	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Unlicensed	90.2	8.9	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wireline	1.9	1.5	1.9	8.3	11.4	10.7	10.6	10.7	21.8	13.4	7.8
Copper Wire ¹	85.1	11.4	1.9	1.1	0.2	0.1	0.1	0.0	0.0	0.0	0.0
Coaxial Cable	5.7	3.3	3.9	13.7	18.9	15.8	12.0	9.2	12.1	4.0	1.4
Optical Carrier	33.1	16.4	6.8	10.7	8.7	6.7	5.0	3.8	4.4	1.6	2.7

¹ Other is summarized with Copper Wire for confidentiality reasons.

Note: Each cell indicates the share of 85,160 Census Tracts where the ratio of residential fixed connections to households falls within the given range. Numbers may not sum to totals due to rounding.

Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 53
Distribution of Census Tracts by Ratio of Residential Fixed Connections to Households by State as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

State	Tracts	Zero	Ratio of Residential Fixed Connections to Tract Households									
			> 0.00 and ≤ 0.05	> 0.05 and ≤ 0.10	> 0.10 and ≤ 0.20	> 0.20 and ≤ 0.30	> 0.30 and ≤ 0.40	> 0.40 and ≤ 0.50	> 0.50 and ≤ 0.60	> 0.60 and ≤ 0.80	> 0.80 and ≤ 1.00	> 1.00
Alabama	1,435	7	57	56	172	234	251	186	136	156	65	115
Alaska	177	23	15	11	6	4	19	21	27	42	4	5
American Samoa	18	18	0	0	0	0	0	0	0	0	0	0
Arizona	1,765	49	97	33	76	93	164	224	290	519	155	65
Arkansas	823	1	9	22	74	127	134	102	90	159	58	47
California	9,107	69	107	64	335	1,253	1,345	1,022	1,191	2,307	753	661
Colorado	1,447	17	46	29	57	64	37	48	78	451	468	152
Connecticut	879	6	0	1	0	16	19	57	58	256	350	116
Delaware	259	3	0	0	0	2	2	6	7	53	110	76
District of Columbia	206	2	0	0	0	0	3	18	22	53	82	26
Florida	5,114	44	41	36	129	299	582	810	743	1,106	557	767
Georgia	2,791	13	33	26	98	218	398	620	462	480	193	250
Guam	56	9	16	19	7	3	0	0	0	0	0	2
Hawaii	436	12	1	2	16	40	78	94	82	59	21	31
Idaho	456	1	29	14	34	34	22	61	77	96	20	68
Illinois	3,263	9	34	33	91	208	379	481	483	1,029	366	150
Indiana	1,693	9	11	11	93	160	220	247	227	414	172	129
Iowa	896	5	2	8	48	47	88	131	142	296	92	37
Kansas	829	13	11	28	76	108	113	101	109	130	70	70
Kentucky	1,306	10	20	40	162	259	155	142	135	232	86	65
Louisiana	1,376	19	96	107	302	219	141	118	70	107	65	132
Maine	400	0	7	17	106	129	73	17	12	18	16	5
Maryland	1,463	8	2	1	6	11	31	66	103	415	588	232
Massachusetts	1,613	21	2	1	44	103	29	34	59	365	709	246
Michigan	2,971	77	38	59	256	317	370	321	327	732	301	173
Minnesota	1,502	4	18	15	87	97	113	115	188	527	281	57
Mississippi	875	4	52	19	55	95	121	95	105	155	103	71
Missouri	1,654	6	64	53	166	314	221	189	151	288	98	104
Montana	319	5	37	24	59	78	42	15	16	28	8	7
Nebraska	553	3	8	14	25	28	63	79	117	175	30	11

Figure 53 - Continued
Distribution of Census Tracts by Ratio of Residential Fixed Connections to Tract Households by State as of June 30, 2024
(Connections at least 100 Mbps downstream and 20 Mbps upstream)

State	Tracts	Zero	Ratio of Residential Fixed Connections to Tract Households									
			> 0.00 and ≤ 0.05	> 0.05 and ≤ 0.10	> 0.10 and ≤ 0.20	> 0.20 and ≤ 0.30	> 0.30 and ≤ 0.40	> 0.40 and ≤ 0.50	> 0.50 and ≤ 0.60	> 0.60 and ≤ 0.80	> 0.80 and ≤ 1.00	> 1.00
Nevada	775	5	15	5	11	27	39	98	148	280	96	51
New Hampshire	349	2	1	4	12	18	12	11	12	92	145	40
New Jersey	2,175	9	3	10	8	6	11	35	91	578	1,074	350
New Mexico	612	16	42	26	38	40	43	75	89	186	38	19
New York	5,393	148	14	17	412	541	453	499	522	1,519	946	322
North Carolina	2,660	22	21	25	252	593	499	316	250	363	130	189
North Dakota	228	1	1	0	0	0	2	2	8	64	109	41
Northern Mariana Isl	23	19	4	0	0	0	0	0	0	0	0	0
Ohio	3,162	12	19	72	486	789	512	392	263	386	112	119
Oklahoma	1,205	13	32	38	145	192	199	125	120	178	75	88
Oregon	994	3	16	20	80	112	82	57	48	261	279	36
Pennsylvania	3,445	48	15	15	114	135	157	244	348	1,137	1,000	232
Puerto Rico	939	71	178	102	272	160	91	29	19	11	3	3
Rhode Island	247	1	1	0	0	0	2	15	33	156	31	8
South Carolina	1,317	12	8	10	149	223	198	148	143	176	89	161
South Dakota	242	1	0	3	3	3	12	7	14	78	91	30
Tennessee	1,701	27	5	16	68	121	252	261	258	369	166	158
Texas	6,883	57	94	125	879	1,260	1,055	865	597	883	384	684
Utah	716	8	5	2	8	15	27	25	31	165	259	171
Vermont	193	1	5	7	17	7	9	11	12	56	45	23
Virgin Islands	29	0	1	1	9	8	7	2	0	1	0	0
Virginia	2,186	25	23	20	44	98	91	134	207	629	639	276
Washington	1,772	7	45	34	70	90	77	68	98	461	647	175
West Virginia	546	4	13	24	52	49	43	43	79	167	59	13
Wisconsin	1,526	4	36	50	404	428	213	129	80	95	33	54
Wyoming	160	1	2	7	26	39	42	24	12	6	1	0
Total	85,160	984	1,452	1,376	6,139	9,514	9,341	9,035	8,989	18,945	12,272	7,113

Note: Numbers may not sum to totals due to rounding.

Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

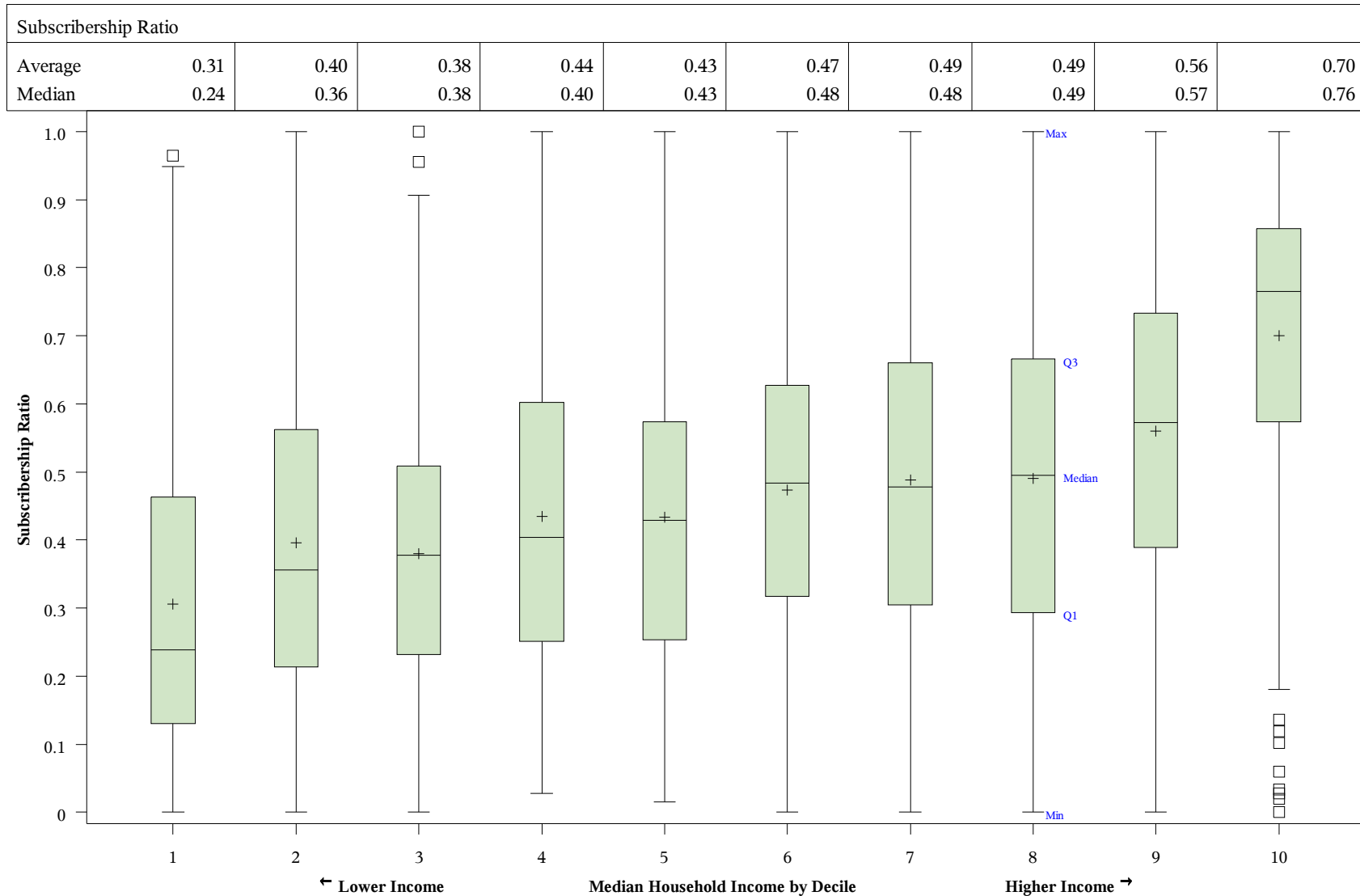
SECTION 6

CORRELATED RESULTS: DEMOGRAPHIC MEASURES

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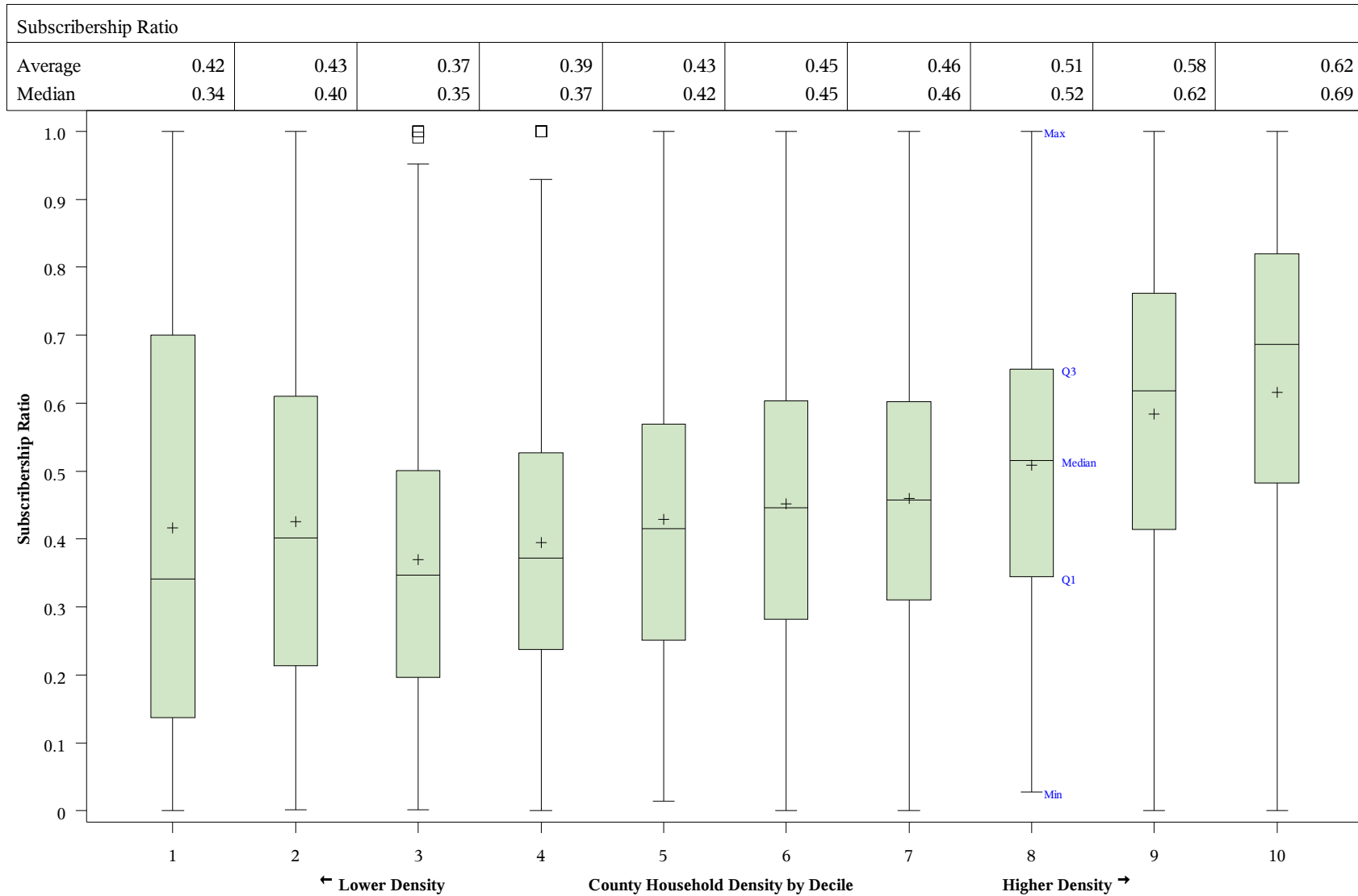
Figure 54
County Subscribership Ratio Distributions by Income Deciles as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Each box plot shows the distribution of residential subscribership to connections at least 100 Mbps downstream and 20 Mbps upstream for counties in the income decile. Some of the features are labeled, but note also that + denotes the position of the average residential subscribership ratio taken across all counties in the decile; ⊥ is the minimum observation above $Q1-1.5(Q3-Q1)$; T is the maximum observation below $Q3+1.5(Q3-Q1)$; and □ is any data point beyond $Q1-1.5(Q3-Q1)$ or $Q3+1.5(Q3-Q1)$. Ratios greater than 1 were set to 1.

Sources: FCC Form 477; 2019-2023 ACS 5-year Estimates; and Census 2010.

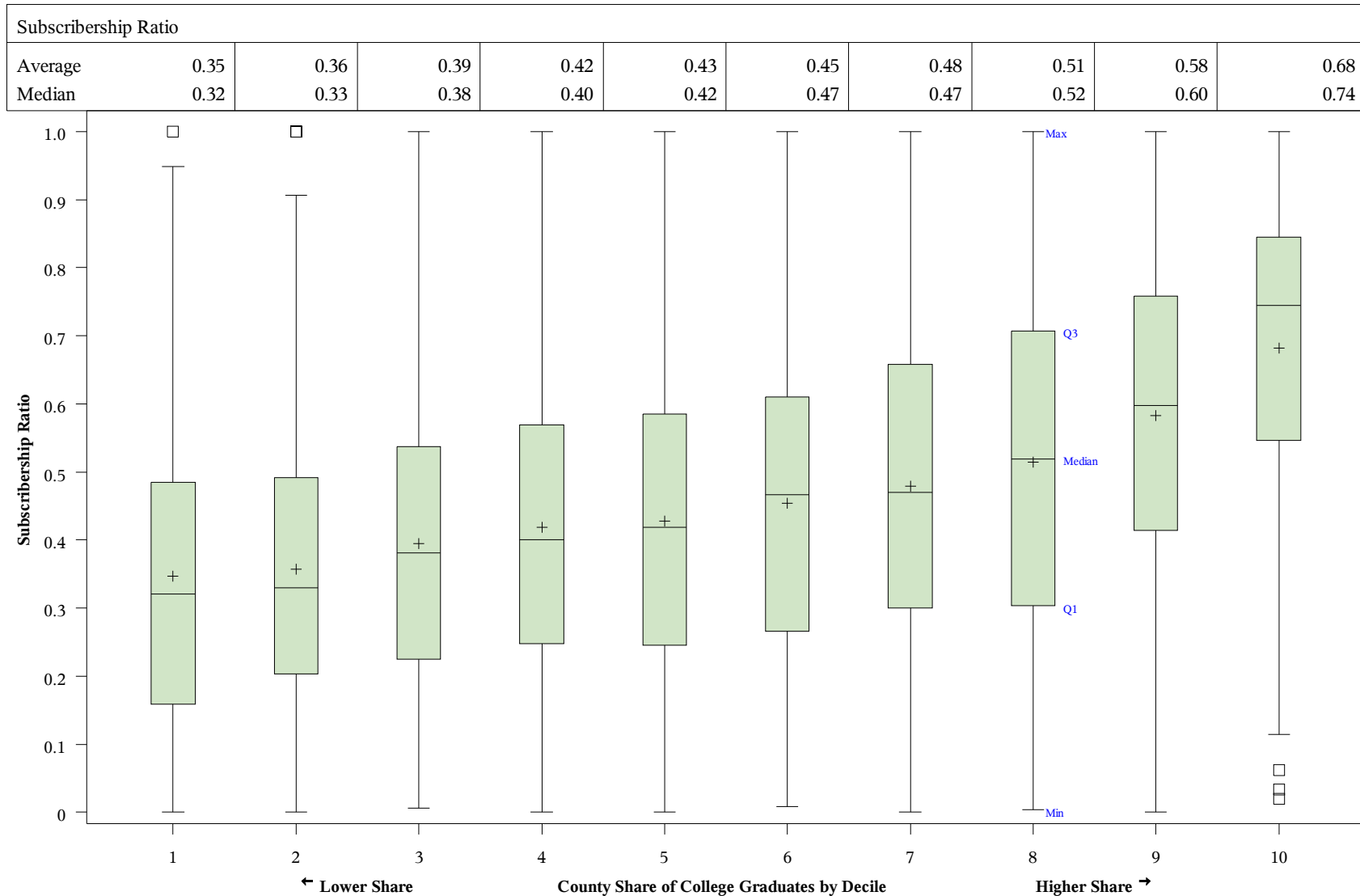
Figure 55
County Subscriberhip Ratio Distributions by Density Deciles as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Each box plot shows the distribution of residential subscribership to connections at least 100 Mbps downstream and 20 Mbps upstream for counties in the density decile. Some of the features are labeled, but note also that + denotes the position of the average residential subscribership ratio taken across all counties in the decile; ⊥ is the minimum observation above $Q1-1.5(Q3-Q1)$; T is the maximum observation below $Q3+1.5(Q3-Q1)$; and □ is any data point beyond $Q1-1.5(Q3-Q1)$ or $Q3+1.5(Q3-Q1)$. Ratios greater than 1 were set to 1.

Sources: FCC Form 477; 2019-2023 ACS 5-year Estimates; and Census 2010.

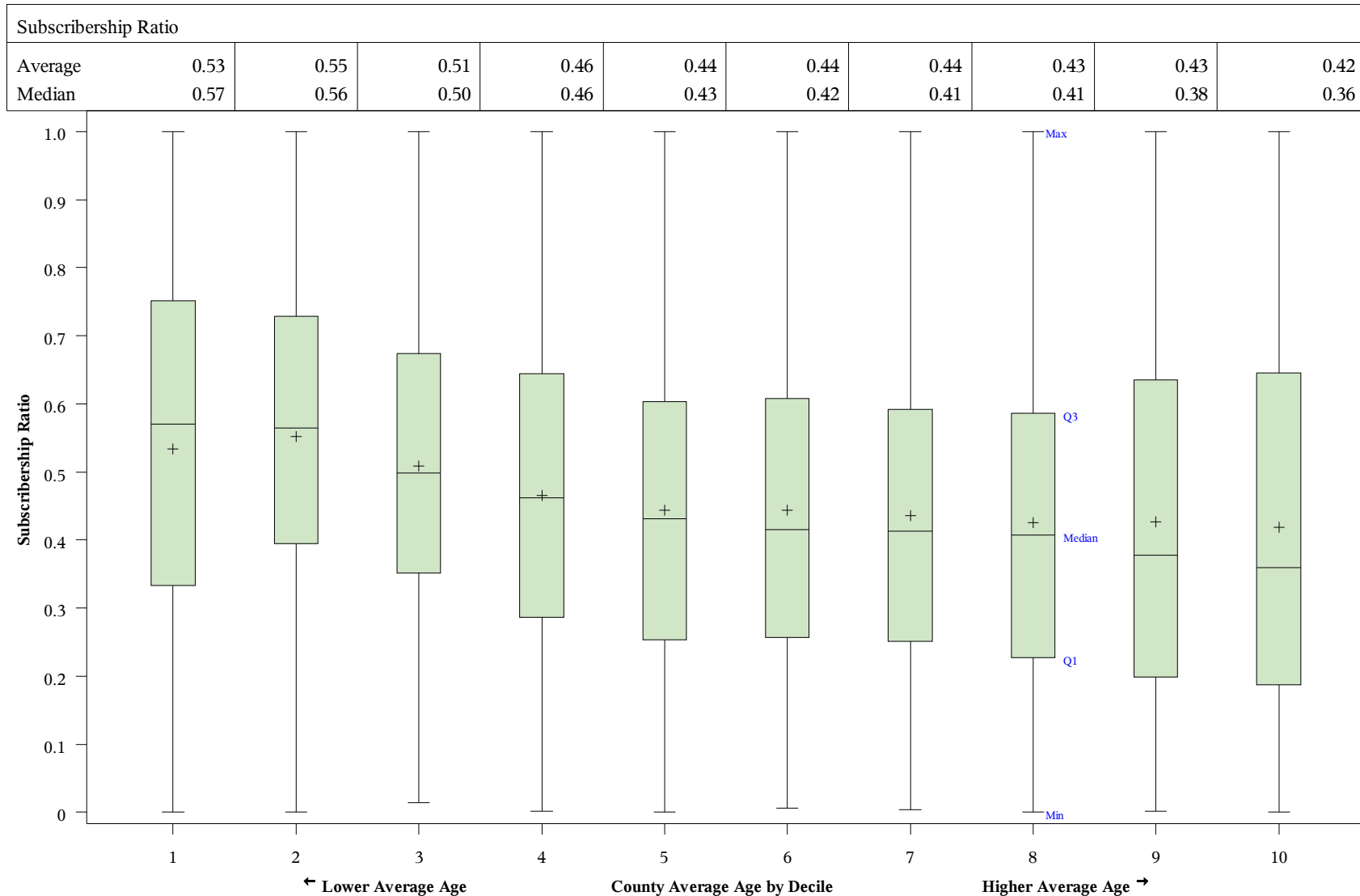
Figure 56
County Subscribership Ratio Distributions by Share of Population with a College Degree (in Deciles) as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Each box plot shows the distribution of residential subscribership to connections at least 100 Mbps downstream and 20 Mbps upstream for counties in the share decile. Some of the features are labeled, but note also that + denotes the position of the average residential subscribership ratio taken across all counties in the decile; ⊥ is the minimum observation above $Q1-1.5(Q3-Q1)$; T is the maximum observation below $Q3+1.5(Q3-Q1)$; and □ is a data point beyond $Q1-1.5(Q3-Q1)$ or $Q3+1.5(Q3-Q1)$. Ratios greater than 1 were set to 1.

Sources: FCC Form 477; 2019-2023 ACS 5-year Estimates; and Census 2010.

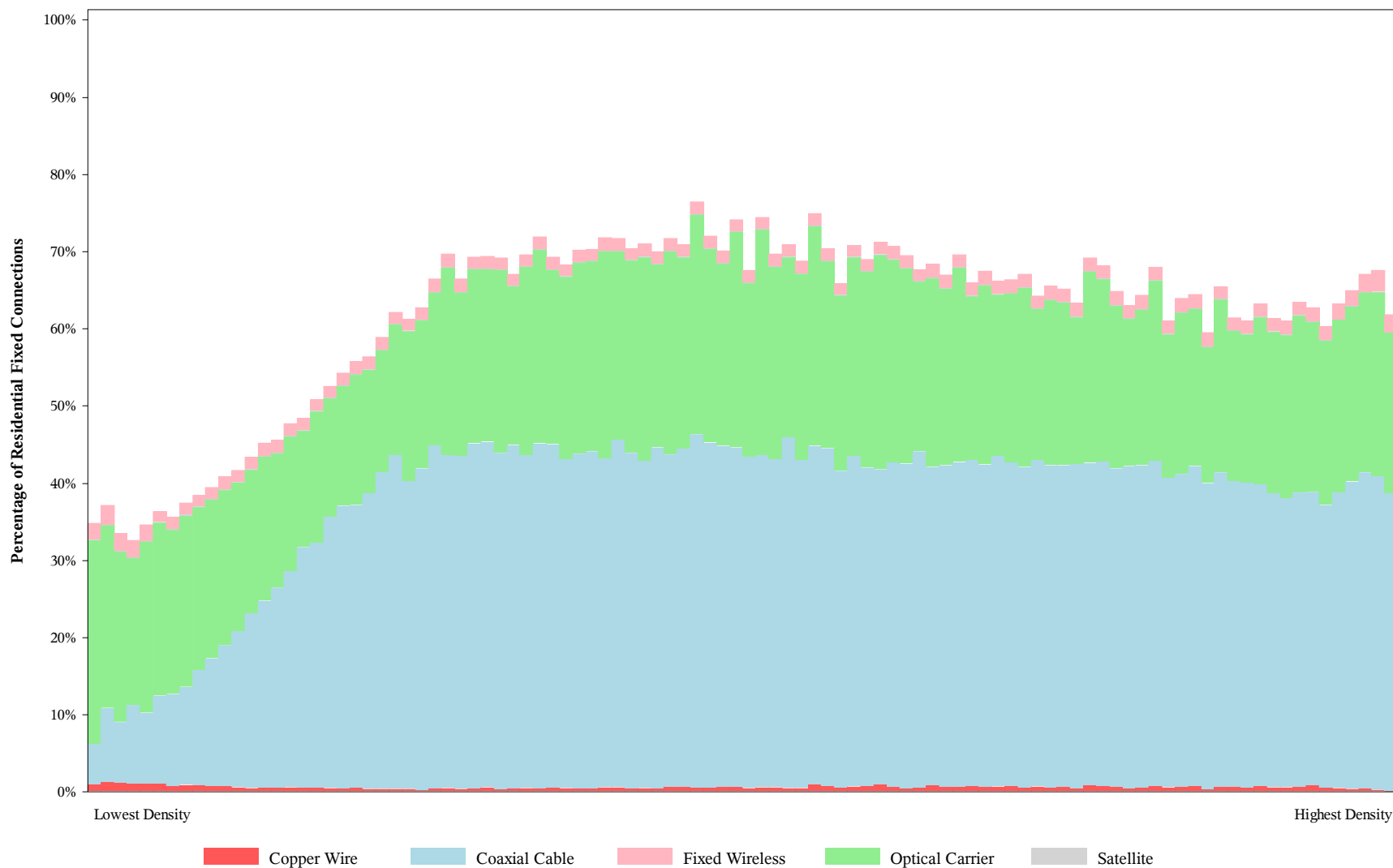
Figure 57
County Subscriberhip Ratio Distributions by Average Age of Population (in Deciles) as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Each box plot shows the distribution of residential subscribership to connections at least 100 Mbps downstream and 20 Mbps upstream for counties in the average age decile. Some of the features are labeled, but note also that + denotes the position of the average residential subscribership ratio taken across all counties in the decile; ⊥ is the minimum observation above $Q1-1.5(Q3-Q1)$; T is the maximum observation below $Q3+1.5(Q3-Q1)$; and □ is a data point beyond $Q1-1.5(Q3-Q1)$ or $Q3+1.5(Q3-Q1)$. Ratios greater than 1 were set to 1.

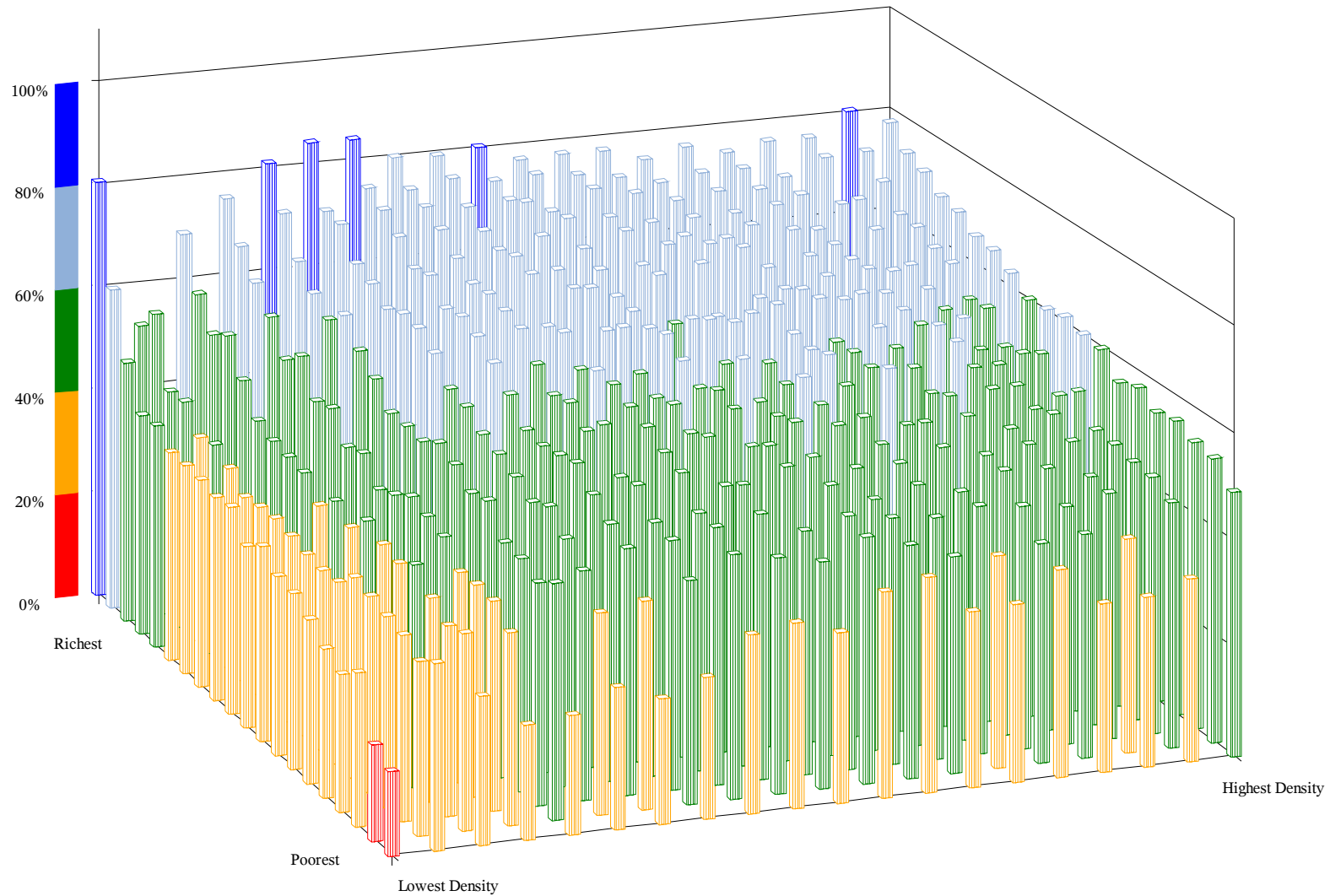
Sources: FCC Form 477; 2019-2023 ACS 5-year Estimates; and Census 2010.

Figure 58
Tract Subscribership Ratios by Technology and Household Density as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



Note: Other is summarized with Copper Wire for confidentiality reasons. This chart shows subscribership ratios by technology and household density. Tracts were grouped into 100 density percentiles based on households per square mile, calculated as the ratio of estimated tract households to tract land area from the Census Bureau. For each percentile, the height of the bar represents the household-weighted average ratio of residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream to households across tracts in the percentile.
 Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

Figure 59
Tract Subscribership Ratios by Income and Household Density as of June 30, 2024
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream by Tract)



This chart shows subscriber ratios by household density and income quantiles. Tracts were grouped into 400 density/income quantiles based on households per square mile, calculated as the ratio of estimated tract households to tract land area, and median household income. For each quantile, the height of the grid represents the household-weighted average ratio of residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream to households across tracts in the decile. Sources: FCC Form 477; 2019-2023 ACS 5-year estimates; and Census 2010.

TECHNICAL NOTES

General

The information presented in this report is based on data from FCC Form 477 and the Broadband Data Collection (BDC). Through these data collections, facilities-based broadband providers submit information to the FCC about where they offer and have subscribers to Internet access services over 200 kilobits per second (kbps) in at least one direction. In June 2013, the Commission adopted several changes to FCC Form 477.¹ Detailed information about those changes and about the FCC Form 477 reporting requirements in general is available at www.fcc.gov/form477.

FCC Form 477 collects information about *Internet access connections in service* to end-user locations that are advertised to deliver information to and/or from the end user – that is, in at least one direction – at transfer rates (speeds) above 200 kilobits per second (kbps). Information is collected about the number of connections by the advertised speeds associated with each service to which end users have subscribed in the relevant geographic area: census tracts for fixed and states for mobile. Providers report connections by the advertised upload and download speeds, and the technology employed by the part of the connection that terminates at the end-user location.

Through the BDC, the FCC collects information about the *availability* of Internet access services. In March 2020, Congress passed the Broadband Data Act which required the Commission to collect broadband availability data at a more granular level than what was historically reported through FCC Form 477.² As a result, starting in June 2022, broadband availability data have been collected through the BDC while subscription data continues to be collected through FCC Form 477. To ensure consistency across the two data collections, several minor changes were made to the FCC Form 477 reporting requirements beginning with filings as of June 30, 2022. Complete reporting requirements for both, the BDC and FCC Form 477, can be found here: www.fcc.gov/BroadbandData/filers. The inaugural BDC filing window for data as of June 30, 2022 was closed on September 1, 2022.

“End users” are residential, business, institutional, or government entities who use services for their own purposes and who do not resell such services to other entities. *Facilities-based providers* report information about connections they provide directly to their own end-user customers and also connections that they provide to Internet Service Providers for resale to end users. For the purposes of these collections, the facilities-based provider of a connection is the entity that owns the portion of the physical facility that terminates at the end-user location, obtains an unbundled network element (UNE), special access line, or other leased facility that terminates at the end-user location and provisions/equips it as a connection that transfers information at rates over 200 kbps in at least one direction, or provisions/equips a wireless channel that transfers information at rates over 200 kbps in at least one direction to the end-user location over licensed spectrum or over spectrum that the provider uses on an unlicensed basis.

Beginning with data as of June 30, 2022, the ten mutually exclusive *technology categories* are: copper wire; coaxial cable; optical carrier; geostationary satellite; non-geostationary satellite; unlicensed terrestrial fixed wireless; licensed terrestrial fixed wireless; licensed-by-rule terrestrial fixed wireless; mobile wireless; and other (which is included to capture deployment of additional technologies over

¹ *Modernizing the FCC Form 477 Data Program*, WC Docket No. 11-10, Report and Order, 28 FCC Rcd 9887 (2013). See also *High-Speed Services for Internet Access: Status as of December 31, 2014* (March 2016) at 1-2, available at <https://www.fcc.gov/reports-research/reports/internet-access-services-reports/internet-access-services-reports>.

² Broadband Deployment Accuracy and Technological Availability Act, Pub. L. No. 116-130, 134 Stat. 228 (2020) (codified at 47 U.S.C. §§ 641-646) (Broadband DATA Act or Act).

time). Connections deployed over hybrid fiber-coax (HFC) architecture are reported in the coaxial cable category. Wireless ISPs (WISPs) report in the fixed wireless category if providing service to dispersed, fixed end-user locations and report in the mobile wireless category if providing a commercial service that can be received at any location within a service footprint. Wireless local area networks (such as Wi-Fi hotspots) that only enable local distribution and sharing of a premises connection are not included, although the shared premises connection is included. For confidentiality reasons and for ease of reporting, the report aggregates several of these categories. Geostationary Satellite and Non-Geostationary Satellite are reported as a single category: 'Satellite'; Licensed-by-Rule Terrestrial Fixed Wireless is aggregated with Licensed Fixed Wireless; and Other is reported with Copper Wireline.

Numbers of connections presented in this report are not adjusted for the number of persons at a single end-user location who have access to, or who use, the Internet access services delivered over the connection to that location.

Census tracts

Since the collection of data as of December 31, 2008, facilities-based providers of reportable fixed connections have been reporting connection counts at the census tract level of detail. Facilities-based mobile wireless providers report connection counts by state rather than census tract.

The census tract-level data summarized in this report were collected for tracts in the 2020 decennial census. For the purposes of this report, there are 85,160 census tracts because we exclude census tracts delineated specifically to cover large bodies of water.

Ratios of residential fixed connections to households that exceed 100%

We estimate the share of households with fixed connections in individual census tracts by taking the ratio of the reported number of residential fixed connections to the estimated number of households. We continue to find “outlier” estimates at or above 100% and to find that the number of outliers is substantially reduced when estimates are made for individual counties rather than for individual census tracts.

Possible explanations of ratios at or above 100% include: (1) geocoding misallocations of service locations to census tracts; (2) proper allocation of connections to the county level by some filers, but improper allocation of all connections to a single tract in the county; (3) possible overestimation of residential connections in service plans for which the customer base is primarily residential; and (4) connections at seasonally or occasionally occupied housing units, such as vacation homes, while the household is counted elsewhere. The numbers of households in census tracts that were used to generate the estimated ratios are themselves estimates by the United States Census Bureau, which could have an independent effect.

Maps showing residential subscribership rates by census tract

The two maps based on connections over 200 kbps in at least one direction per 1,000 households (that is, estimated household subscribership rates) exclude all connections identified as business connections and necessarily exclude residential mobile wireless connections (which are reported for the state but not for individual census tracts).

GLOSSARY

Term	Definition
aDSL	Asymmetric Digital Subscriber Line: A digital local loop typically using copper facilities and providing greater bandwidth in one direction than the other.
BSL	Broadband Serviceable Location: A business or residential location in the United States at which mass-market fixed broadband Internet access service is, or can be, installed.
Coaxial cable	A fixed wireline service which offers customers access to the Internet using coaxial cable or hybrid fiber-coaxial.
Copper wire	A fixed wireline service using copper wire (e.g., Asymmetric or Symmetric DSL, ethernet over copper, T-1, etc.)
Fabric	Broadband Serviceable Location Fabric: A dataset of all locations in the United States and its Territories where fixed broadband internet access service is or could be installed
Downstream speed	Speed of transmission from the Internet to the end user.
End users	Residential, business, institutional, or government entities who use services for their own purposes and who do not resell such services to other entities.
Facilities-based provider	Entity that owns the portion of the physical facility that terminates at the end-user location, obtains an unbundled network element (UNE), special access line, or other leased facility that terminates at the end-user location and provisions/equips it as a connection that transfers information at rates over 200 kbps in at least one direction, or provisions/equips a wireless channel that transfers information at rates over 200 kbps in at least one direction to the end-user location over licensed spectrum or over spectrum that the provider uses on an unlicensed basis.
Fixed technologies	All technologies other than terrestrial mobile wireless.
Fixed wireless	A radio communication service between specified fixed points.
Geostationary satellite	Fixed non-terrestrial wireless service using satellites in geostationary orbit.
Internet access service	Service that provides end users access to the Internet.
ISPs	Internet Service Providers: Companies or organizations that provide Internet access service (see above).
Licensed fixed wireless	Fixed terrestrial wireless service using entirely licensed spectrum (including priority access licenses in the 3.5 GHz band) or a hybrid of licensed, unlicensed, and licensed-by-rule spectrum connections to make last-mile connections to fixed locations.
Licensed-by-rule fixed wireless	Fixed terrestrial wireless services using entirely licensed-by-rule spectrum or a hybrid of licensed-by-rule and unlicensed spectrum to make last-mile connections to fixed locations.
Mobile wireless service	A radio communication service between mobile and fixed stations, or between mobile stations.

Mobile wireless provider	Provider of mobile wireless service (see above).
Non-geostationary satellite	Fixed non-terrestrial wireless service using satellites in non-geostationary orbit (e.g., Low Earth Orbit or Medium Earth Orbit)
Optical carrier	Fixed wireline service using fiber to the home or business end user, but does not include “fiber to the curb”.
Other wireline	All copper-wire based technologies other than DSL technologies; Ethernet over copper and T-1 are examples.
Power line	Internet access service delivered over electric power transmission lines.
Satellite communications	A telecommunications service provided via one or more satellite relays and their associated uplinks and downlinks.
sDSL	Symmetric Digital Subscriber Line: DSL technology that provides equal bandwidth for both uploads and downloads.
Speed tiers	Sub-groupings defined by ranges of upstream speeds and downstream speeds.
Units	The number of residential housing units or business establishments located within a BSL.
Unlicensed fixed wireless	Fixed terrestrial wireless service using entirely unlicensed spectrum, including service provided over Wi-Fi as a fixed solution, to make last-mile connections to fixed locations.
Upstream speed	Speed of transmission from the end user to the Internet.
Wi-Fi hotspot	Wireless Fidelity: Generic term referring to any type of IEEE 802.11 wireless network. A hotspot is a small geographic area in which users can gain access to a Wi-Fi network which in turn connects to the Internet.
Wireless service	Telephone, Internet, data, and other services provided to customers through the transmission of signals over networks of radio towers.
Wireless service provider	Provider of wireless service (see above).
WISP	Wireless ISP: A company that provides end users with wireless access to the Internet, most commonly by using radio spectrum designated for unlicensed use.