

# **Internet Access Services: Status as of December 31, 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 December 31, 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.<sup>1</sup> 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](https://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](https://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](https://fcc.gov/general/fcc-form-477-additional-data).

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<sup>1</sup> 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](https://fcc.gov/encyclopedia/high-speed-services-internet-access-reports) (December 2008 High-Speed Report).

**SECTION 1  
OVERVIEW & HIGHLIGHTS**

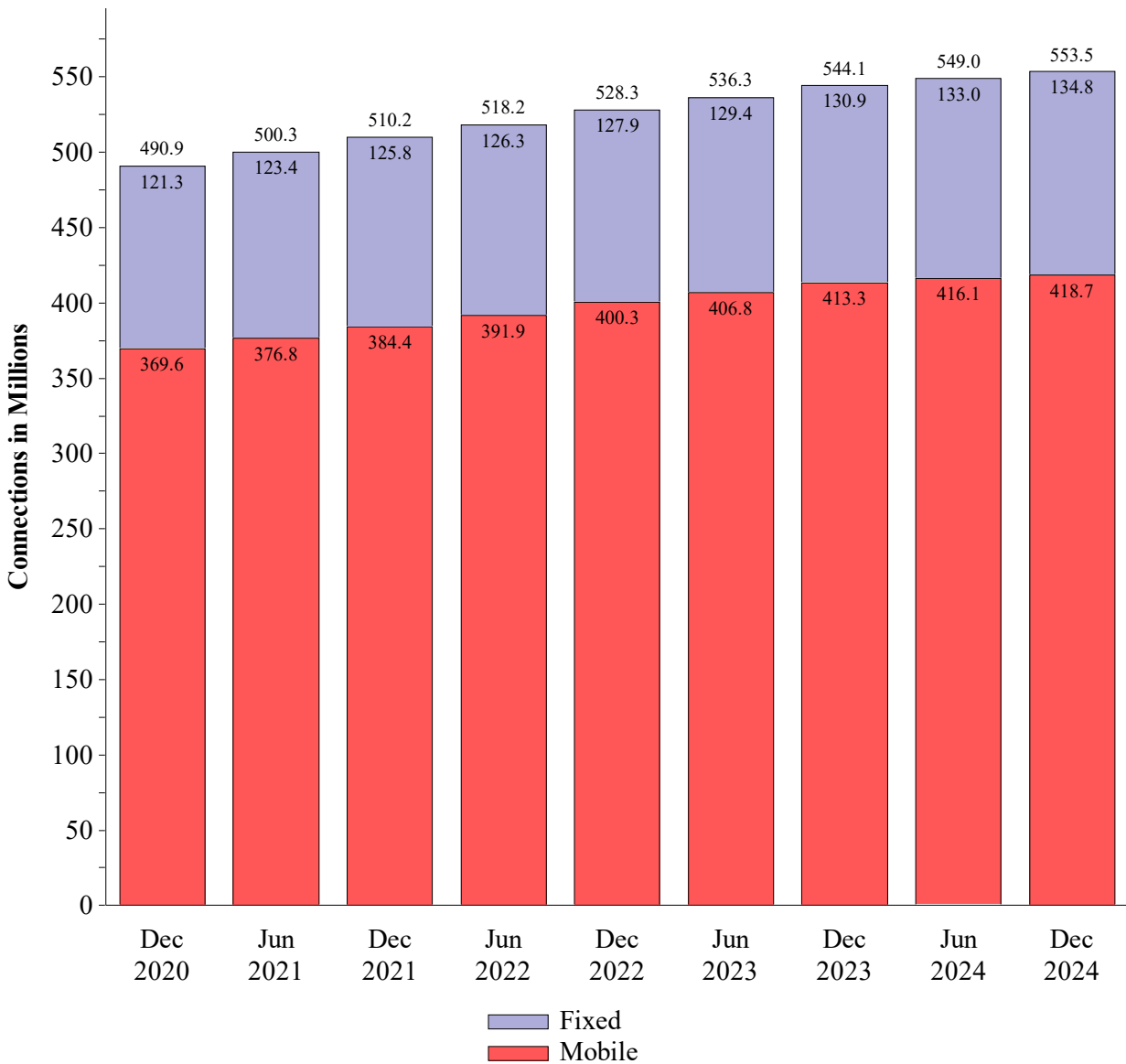
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## Total Connections

As shown in Figure 1, total connections increased by about 1.7% between December 2023 and December 2024 to 554 million. Mobile connections increased 1.3% year-over-year to 419 million in December 2024, while fixed connections grew to 135 million – up about 3.0% from December 2023.

**Figure 1**  
**Fixed and Mobile Connections 2020-2024**

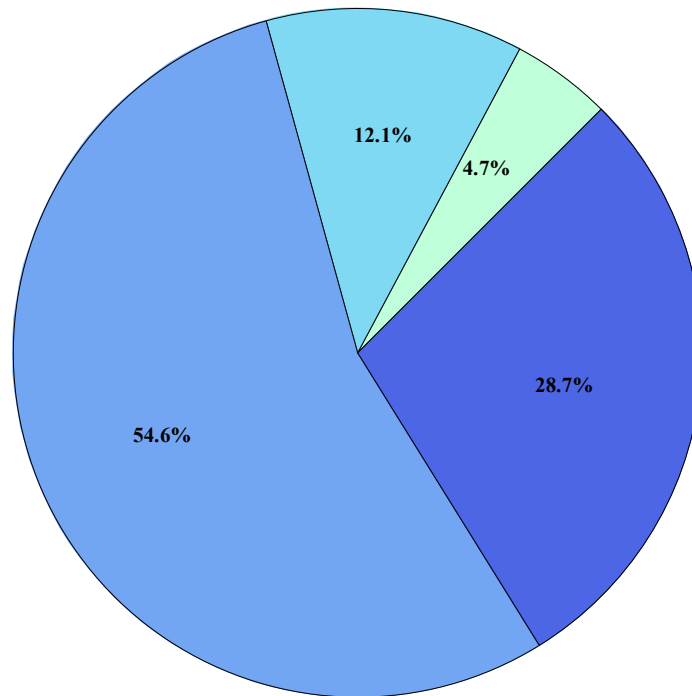


Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.  
Source: FCC Form 477.

## Fixed Connections - Downstream Speeds

Figure 2(a) illustrates how the 135 million fixed connections reported for December 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 December 31, 2024**



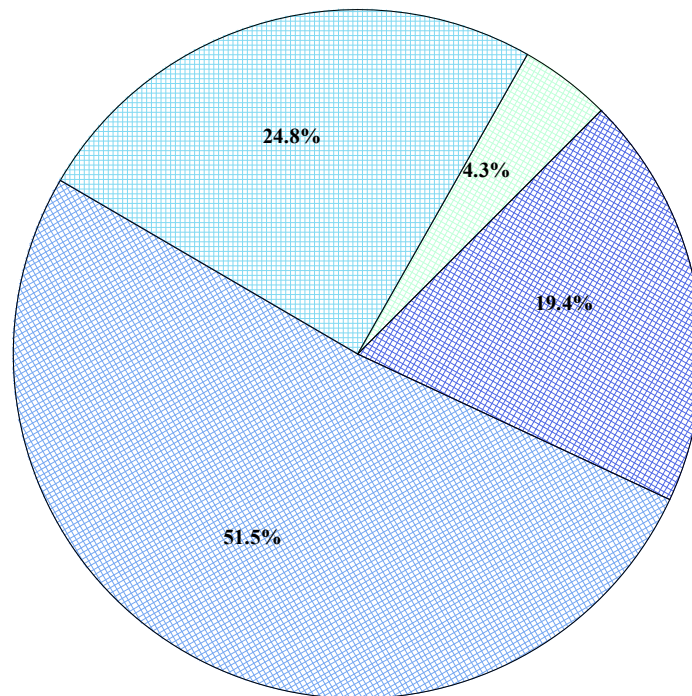
Downstream Speed	Percentage	Number of Connections (Millions)
Less than 25 Mbps	4.7%	6.3
At least 25 Mbps & less than 100 Mbps	12.1%	16.3
At least 100 Mbps & less than 940 Mbps	54.6%	73.5
At least 940 Mbps	28.7%	38.6

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

## Fixed Connections - Upstream Speeds

Figure 2(b) illustrates how the 135 million fixed connections reported for December 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 December 31, 2024**

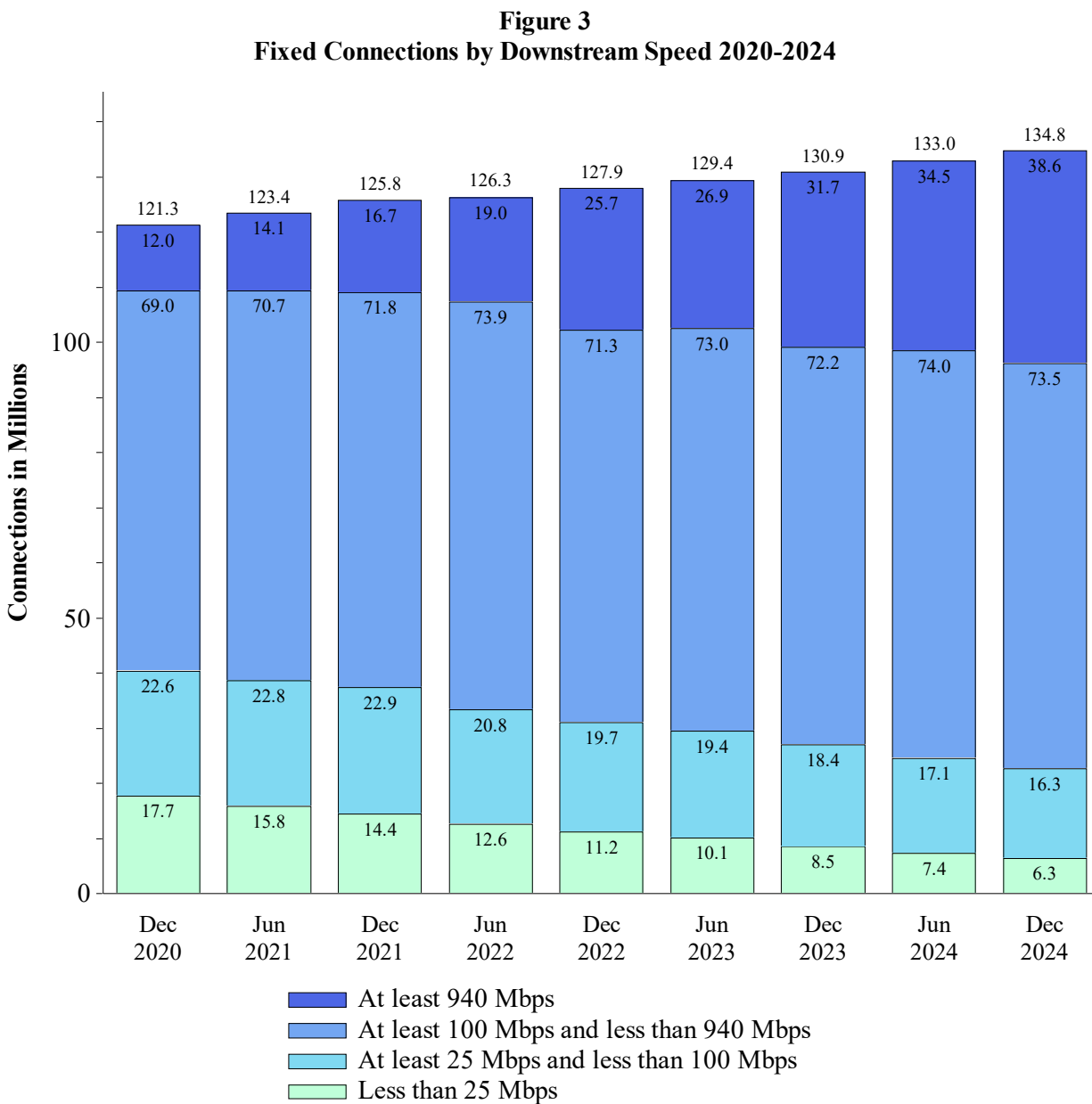


Upstream Speed	Less than 3 Mbps (5.8 million)
	At least 3 Mbps & less than 20 Mbps (33.4 million)
	At least 20 Mbps & less than 500 Mbps (69.4 million)
	At least 500 Mbps (26.2 million)

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 67% (or 81 million connections) in December 2020 to 83% (or 112 million connections) in December 2024. Over the same period, the percentage of fixed connections with downstream speeds of less than 25 Mbps has decreased from 15% (or 18 million connections) in December 2020 to about 5% (or about 6 million connections) in December 2024.

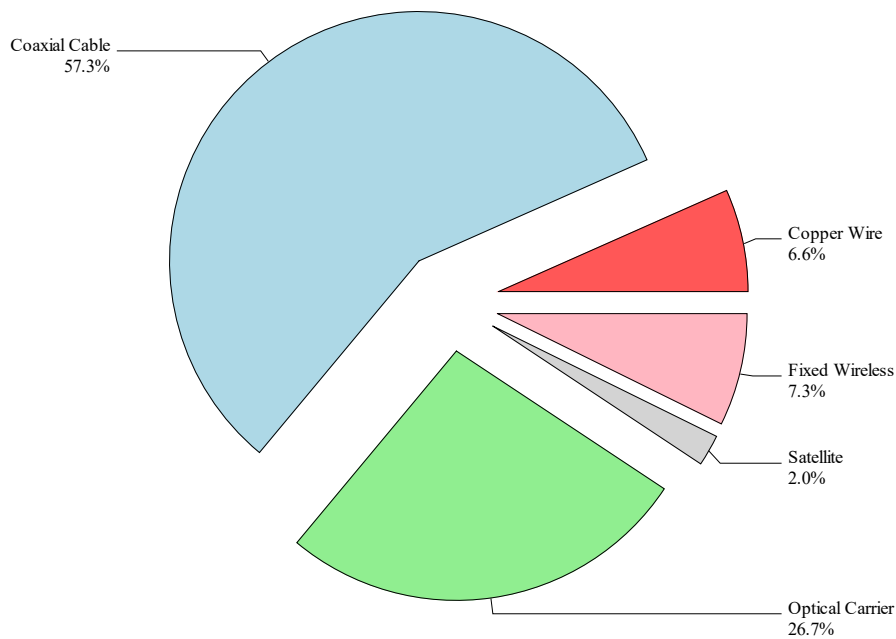
## Fixed Connections by Technology

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 December 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 December 31, 2024**

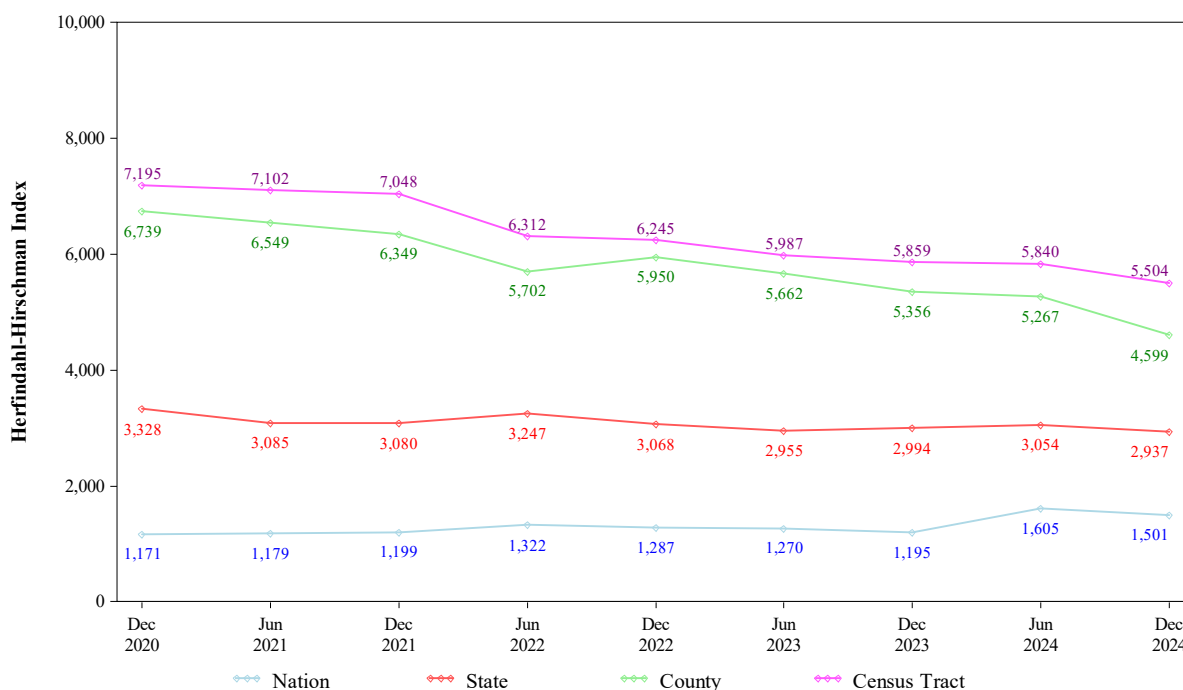


Note: Other is summarized with Copper Wire for confidentiality reasons.  
Source: FCC Form 477.

## 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.<sup>1</sup>

**Figure 5**  
**Median Herfindahl-Hirschman Index by Geography 2020-2024**  
 (residential fixed connections of at least 100 Mbps downstream and 20 Mbps upstream)



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

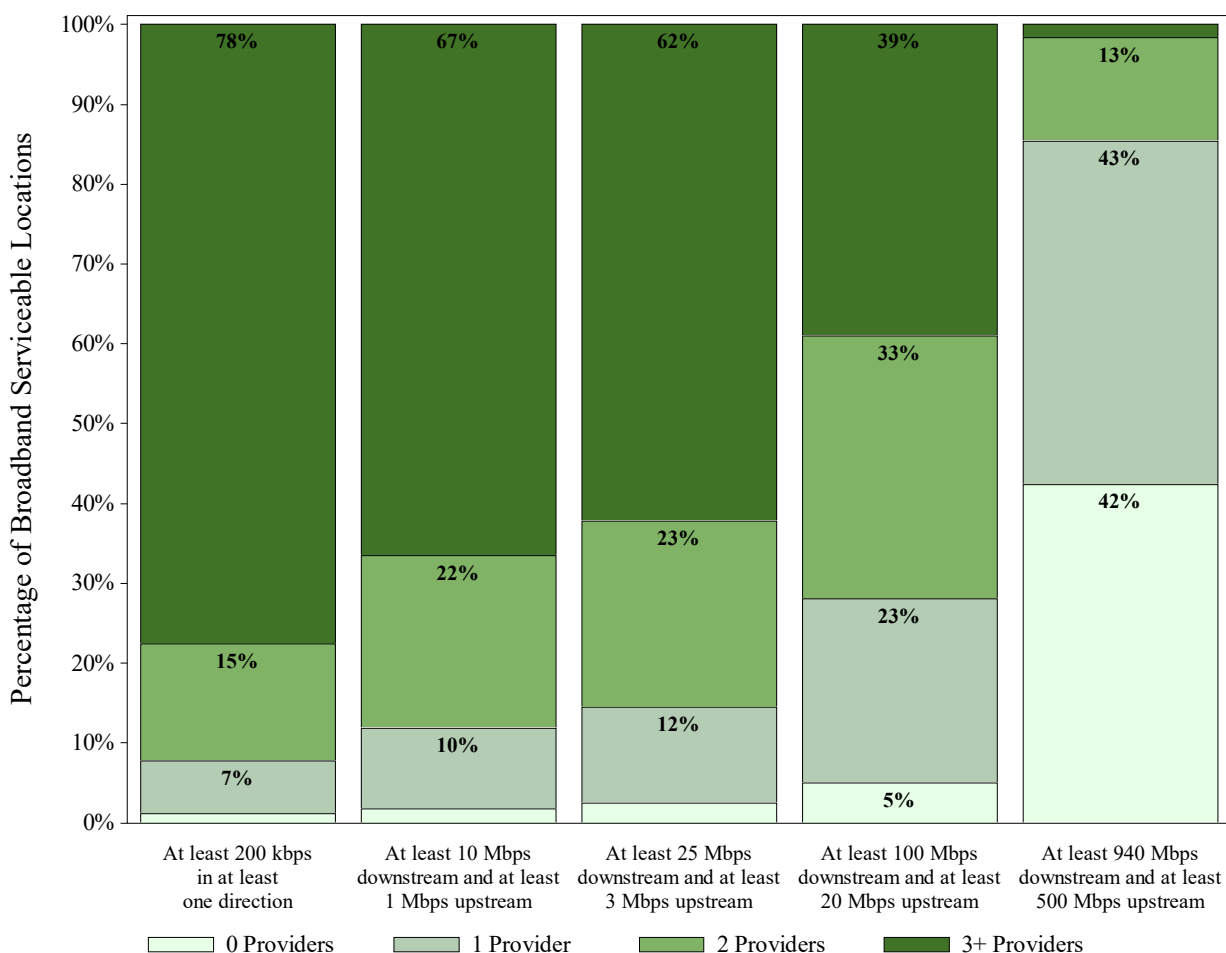
For the period shown above, the median HHI for census tracts has declined by almost 24% while the median across counties has declined by 32%. In December 2024, the median HHI for census tracts is about 20% larger than that of counties and 87% larger than that of states. These differences suggest that 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.

<sup>1</sup> 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 December 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](https://broadbandmap.fcc.gov).

**Figure 6**  
**Percentage of Broadband Serviceable Locations in which Providers Reported Availability of Fixed Broadband as of December 31, 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 December 2024, approximately 95% 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 2% 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 500 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 35 Mbps and the median upstream speed was 2 Mbps. For residential mobile connections, the median downstream speed was 35 Mbps and the median upstream speed was 2 Mbps. See Figures 37 and 38.

### *Residential Connections*

- Residential fixed connections increased by about 2.2% between December 2023 and December 2024, to about 124 million. See Figure 12.
- Residential (non-business) mobile connections on mobile devices with data plans for full Internet access increased by about 0.0%, to 340 million, between December 2023 and December 2024. See Figure 12.
- Approximately 98% of residential fixed connections had a speed of at least 10 Mbps downstream and 1 Mbps upstream in December 2024, while 95% had a speed of at least 25 Mbps downstream and 3 Mbps upstream. About 71% 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 December 2024, there were about 94 residential fixed connections with speeds of at least 10 Mbps downstream and 1 Mbps upstream per 100 households; 91 residential fixed connections with speeds of at least 25 Mbps downstream and 3 Mbps upstream per 100 households; and 68 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 December 31, 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 December 31, 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	115,813	115,802	1.00	115,811	1.00	10	0.00
Satellite	115,813	115,523	1.00	115,582	1.00	59	0.00
Terrestrial	115,813	110,067	0.95	113,433	0.98	3,366	0.03
Fixed Wireless	115,813	58,396	0.50	89,884	0.78	31,488	0.27
Licensed	115,813	51,498	0.44	86,549	0.75	35,051	0.30
Unlicensed	115,813	16,364	0.14	22,683	0.20	6,320	0.05
Wireline	115,813	105,971	0.92	109,912	0.95	3,941	0.03
Copper Wire <sup>1</sup>	115,813	4,034	0.03	18,368	0.16	14,334	0.12
Coaxial Cable	115,813	94,791	0.82	99,797	0.86	5,006	0.04
Optical Carrier	115,813	63,525	0.55	78,029	0.67	14,504	0.13

<sup>1</sup> 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 December 31, 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	57.6
Satellite	100.0	100.0	100.0	99.7	0.0
Terrestrial	98.8	98.2	97.5	95.0	57.6
Fixed Wireless	87.9	76.9	74.8	50.4	3.3
Licensed	85.2	72.3	69.9	44.5	0.4
Unlicensed	23.9	22.6	21.4	14.1	2.9
Wireline	94.7	93.8	92.5	91.5	55.9
Copper Wire <sup>1</sup>	41.0	32.1	20.0	3.5	0.0
Coaxial Cable	82.1	82.1	82.1	81.8	7.7
Optical Carrier	54.9	54.9	54.9	54.9	53.3

<sup>1</sup> Other is summarized with Copper Wire.

Source: FCC Broadband Data Collection.

**Figure 9**  
**Availability of Terrestrial Fixed Broadband by State as of December 31, 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
Alabama	<b>2,180</b>	2,105	0.97	2,063	0.95	2,037	0.93	1,931	0.89	1,160	0.53
Alaska	<b>283</b>	261	0.92	252	0.89	232	0.82	210	0.74	16	0.06
American Samoa	<b>9</b>	9	1.00	9	1.00	9	1.00	2	0.20	0	0.00
Arizona	<b>2,705</b>	2,686	0.99	2,670	0.99	2,651	0.98	2,585	0.96	999	0.37
Arkansas	<b>1,348</b>	1,314	0.98	1,294	0.96	1,283	0.95	1,227	0.91	864	0.64
California	<b>10,226</b>	10,154	0.99	10,144	0.99	10,130	0.99	10,008	0.98	4,696	0.46
Colorado	<b>1,990</b>	1,966	0.99	1,957	0.98	1,947	0.98	1,889	0.95	1,010	0.51
Connecticut	<b>1,090</b>	1,088	1.00	1,088	1.00	1,087	1.00	1,085	1.00	881	0.81
Delaware	<b>402</b>	402	1.00	402	1.00	402	1.00	394	0.98	214	0.53
District of Columbia	<b>123</b>	123	1.00	123	1.00	123	1.00	123	1.00	107	0.87
Florida	<b>7,490</b>	7,447	0.99	7,406	0.99	7,372	0.98	7,255	0.97	4,203	0.56
Georgia	<b>3,827</b>	3,775	0.99	3,742	0.98	3,705	0.97	3,616	0.94	2,253	0.59
Guam	<b>36</b>	36	1.00	36	1.00	36	1.00	36	0.98	11	0.30
Hawaii	<b>321</b>	314	0.98	314	0.98	313	0.98	310	0.97	222	0.69
Idaho	<b>750</b>	738	0.98	734	0.98	725	0.97	682	0.91	319	0.43
Illinois	<b>4,119</b>	4,102	1.00	4,092	0.99	4,077	0.99	3,974	0.96	1,758	0.43
Indiana	<b>2,727</b>	2,705	0.99	2,685	0.98	2,666	0.98	2,592	0.95	1,693	0.62
Iowa	<b>1,368</b>	1,365	1.00	1,363	1.00	1,354	0.99	1,308	0.96	851	0.62
Kansas	<b>1,199</b>	1,193	0.99	1,189	0.99	1,183	0.99	1,139	0.95	846	0.71
Kentucky	<b>1,846</b>	1,810	0.98	1,783	0.97	1,750	0.95	1,662	0.90	1,442	0.78
Louisiana	<b>1,874</b>	1,796	0.96	1,770	0.94	1,762	0.94	1,676	0.89	883	0.47
Maine	<b>630</b>	620	0.98	617	0.98	605	0.96	579	0.92	294	0.47
Maryland	<b>1,850</b>	1,842	1.00	1,838	0.99	1,837	0.99	1,820	0.98	1,191	0.64
Massachusetts	<b>1,955</b>	1,952	1.00	1,951	1.00	1,951	1.00	1,947	1.00	1,041	0.53
Michigan	<b>4,030</b>	3,958	0.98	3,915	0.97	3,879	0.96	3,781	0.94	1,374	0.34
Minnesota	<b>2,101</b>	2,085	0.99	2,077	0.99	2,055	0.98	2,010	0.96	1,470	0.70
Mississippi	<b>1,313</b>	1,247	0.95	1,217	0.93	1,194	0.91	1,132	0.86	852	0.65
Missouri	<b>2,514</b>	2,492	0.99	2,477	0.99	2,461	0.98	2,370	0.94	1,798	0.72
Montana	<b>486</b>	468	0.96	457	0.94	446	0.92	399	0.82	150	0.31
Nebraska	<b>794</b>	789	0.99	786	0.99	780	0.98	755	0.95	549	0.69

**Figure 9 - Continued**  
**Availability of Terrestrial Fixed Broadband by State as of December 31, 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	<b>1,004</b>	1,002	1.00	1,000	1.00	998	0.99	993	0.99	922	0.92
New Hampshire	<b>518</b>	515	0.99	513	0.99	510	0.99	506	0.98	312	0.60
New Jersey	<b>2,576</b>	2,573	1.00	2,572	1.00	2,571	1.00	2,565	1.00	1,869	0.73
New Mexico	<b>855</b>	846	0.99	836	0.98	821	0.96	779	0.91	259	0.30
New York	<b>4,702</b>	4,656	0.99	4,646	0.99	4,635	0.99	4,609	0.98	3,447	0.73
North Carolina	<b>4,337</b>	4,289	0.99	4,258	0.98	4,211	0.97	4,072	0.94	2,264	0.52
North Dakota	<b>333</b>	332	1.00	332	1.00	332	1.00	331	1.00	235	0.71
Northern Mariana Isl	<b>11</b>	11	0.99	11	0.99	11	0.99	2	0.23	2	0.16
Ohio	<b>4,531</b>	4,495	0.99	4,473	0.99	4,449	0.98	4,339	0.96	2,556	0.56
Oklahoma	<b>1,714</b>	1,704	0.99	1,694	0.99	1,677	0.98	1,612	0.94	999	0.58
Oregon	<b>1,515</b>	1,491	0.98	1,480	0.98	1,462	0.96	1,404	0.93	761	0.50
Pennsylvania	<b>4,896</b>	4,831	0.99	4,789	0.98	4,770	0.97	4,681	0.96	2,669	0.55
Puerto Rico	<b>1,178</b>	1,178	1.00	1,175	1.00	1,173	1.00	1,167	0.99	783	0.66
Rhode Island	<b>341</b>	338	0.99	337	0.99	337	0.99	335	0.98	271	0.80
South Carolina	<b>2,178</b>	2,169	1.00	2,161	0.99	2,154	0.99	2,109	0.97	1,283	0.59
South Dakota	<b>395</b>	392	0.99	389	0.99	385	0.98	373	0.94	204	0.52
Tennessee	<b>2,762</b>	2,732	0.99	2,710	0.98	2,691	0.97	2,648	0.96	1,910	0.69
Texas	<b>10,104</b>	10,022	0.99	9,986	0.99	9,959	0.99	9,772	0.97	7,619	0.75
Utah	<b>1,024</b>	1,017	0.99	1,014	0.99	1,006	0.98	989	0.97	695	0.68
Vermont	<b>280</b>	279	1.00	274	0.98	265	0.95	245	0.88	162	0.58
Virgin Islands	<b>34</b>	34	1.00	34	1.00	34	1.00	34	1.00	11	0.33
Virginia	<b>2,914</b>	2,831	0.97	2,788	0.96	2,758	0.95	2,661	0.91	1,799	0.62
Washington	<b>2,566</b>	2,529	0.99	2,500	0.97	2,461	0.96	2,352	0.92	998	0.39
West Virginia	<b>897</b>	819	0.91	804	0.90	763	0.85	716	0.80	294	0.33
Wisconsin	<b>2,300</b>	2,265	0.98	2,245	0.98	2,217	0.96	2,042	0.89	1,093	0.48
Wyoming	<b>263</b>	254	0.97	251	0.96	248	0.95	236	0.90	121	0.46
<b>Total</b>	<b>115,813</b>	114,447	0.99	113,722	0.98	112,951	0.98	110,067	0.95	66,685	0.58

# = 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 December 31, 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
Alabama	2,180	2,172	1.00	2,172	1.00	2,037	0.93	1,859	0.85
Alaska	283	266	0.94	257	0.91	219	0.77	138	0.49
American Samoa	9	9	1.00	9	1.00	9	0.97	9	0.96
Arizona	2,705	2,699	1.00	2,698	1.00	2,633	0.97	2,607	0.96
Arkansas	1,348	1,335	0.99	1,335	0.99	1,259	0.93	1,147	0.85
California	10,226	10,191	1.00	10,191	1.00	10,090	0.99	9,965	0.97
Colorado	1,990	1,964	0.99	1,963	0.99	1,894	0.95	1,856	0.93
Connecticut	1,090	1,087	1.00	1,087	1.00	1,056	0.97	993	0.91
Delaware	402	402	1.00	402	1.00	398	0.99	386	0.96
District of Columbia	123	123	1.00	123	1.00	123	1.00	123	1.00
Florida	7,490	7,488	1.00	7,488	1.00	7,446	0.99	7,265	0.97
Georgia	3,827	3,820	1.00	3,820	1.00	3,660	0.96	3,404	0.89
Guam	36	36	0.99	36	0.99	36	0.98	30	0.82
Hawaii	321	316	0.99	316	0.99	312	0.97	303	0.94
Idaho	750	737	0.98	736	0.98	711	0.95	697	0.93
Illinois	4,119	4,117	1.00	4,117	1.00	4,051	0.98	3,943	0.96
Indiana	2,727	2,723	1.00	2,723	1.00	2,624	0.96	2,506	0.92
Iowa	1,368	1,366	1.00	1,366	1.00	1,329	0.97	1,244	0.91
Kansas	1,199	1,198	1.00	1,198	1.00	1,154	0.96	1,094	0.91
Kentucky	1,846	1,790	0.97	1,790	0.97	1,558	0.84	1,438	0.78
Louisiana	1,874	1,870	1.00	1,870	1.00	1,820	0.97	1,734	0.92
Maine	630	611	0.97	611	0.97	538	0.85	434	0.69
Maryland	1,850	1,844	1.00	1,844	1.00	1,823	0.99	1,770	0.96
Massachusetts	1,955	1,953	1.00	1,953	1.00	1,911	0.98	1,835	0.94
Michigan	4,030	4,007	0.99	4,007	0.99	3,828	0.95	3,645	0.90
Minnesota	2,101	2,097	1.00	2,097	1.00	2,036	0.97	1,927	0.92
Mississippi	1,313	1,306	1.00	1,306	1.00	1,189	0.91	1,031	0.79
Missouri	2,514	2,499	0.99	2,499	0.99	2,384	0.95	2,230	0.89
Montana	486	466	0.96	466	0.96	441	0.91	427	0.88
Nebraska	794	792	1.00	792	1.00	741	0.93	699	0.88

**Figure 10 - Continued**  
**Availability of Mobile Broadband by State as of December 31, 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	<b>1,004</b>	1,003	1.00	1,002	1.00	997	0.99	993	0.99
New Hampshire	<b>518</b>	510	0.99	510	0.99	431	0.83	362	0.70
New Jersey	<b>2,576</b>	2,576	1.00	2,576	1.00	2,562	0.99	2,519	0.98
New Mexico	<b>855</b>	842	0.99	842	0.99	812	0.95	794	0.93
New York	<b>4,702</b>	4,656	0.99	4,656	0.99	4,505	0.96	4,300	0.91
North Carolina	<b>4,337</b>	4,299	0.99	4,299	0.99	4,065	0.94	3,729	0.86
North Dakota	<b>333</b>	332	1.00	332	1.00	316	0.95	296	0.89
Northern Mariana Isl	<b>11</b>	11	0.99	11	0.99	9	0.83	8	0.79
Ohio	<b>4,531</b>	4,516	1.00	4,516	1.00	4,460	0.98	4,356	0.96
Oklahoma	<b>1,714</b>	1,711	1.00	1,711	1.00	1,674	0.98	1,596	0.93
Oregon	<b>1,515</b>	1,503	0.99	1,503	0.99	1,460	0.96	1,413	0.93
Pennsylvania	<b>4,896</b>	4,855	0.99	4,855	0.99	4,697	0.96	4,582	0.94
Puerto Rico	<b>1,178</b>	1,176	1.00	1,175	1.00	1,170	0.99	1,137	0.96
Rhode Island	<b>341</b>	341	1.00	341	1.00	337	0.99	327	0.96
South Carolina	<b>2,178</b>	2,177	1.00	2,177	1.00	2,113	0.97	2,010	0.92
South Dakota	<b>395</b>	393	1.00	393	1.00	376	0.95	355	0.90
Tennessee	<b>2,762</b>	2,716	0.98	2,716	0.98	2,511	0.91	2,332	0.84
Texas	<b>10,104</b>	10,094	1.00	10,094	1.00	9,946	0.98	9,769	0.97
Utah	<b>1,024</b>	1,018	0.99	1,018	0.99	1,007	0.98	1,001	0.98
Vermont	<b>280</b>	264	0.94	264	0.94	170	0.61	133	0.48
Virgin Islands	<b>34</b>	34	1.00	34	1.00	33	0.97	4	0.11
Virginia	<b>2,914</b>	2,871	0.99	2,871	0.99	2,646	0.91	2,457	0.84
Washington	<b>2,566</b>	2,542	0.99	2,542	0.99	2,476	0.96	2,398	0.93
West Virginia	<b>897</b>	799	0.89	799	0.89	716	0.80	651	0.73
Wisconsin	<b>2,300</b>	2,282	0.99	2,282	0.99	2,117	0.92	1,935	0.84
Wyoming	<b>263</b>	258	0.98	258	0.98	236	0.90	226	0.86
<b>Total</b>	<b>115,813</b>	115,060	0.99	115,047	0.99	111,154	0.96	106,417	0.92

# = 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>Dec</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>	
Total	490,890	500,260	510,200	518,206	528,259	536,263	544,121	549,049	553,524	
Mobile	369,640	376,840	384,420	391,868	400,322	406,820	413,257	416,059	418,742	
Fixed	121,250	123,430	125,780	126,338	127,936	129,443	130,864	132,990	134,782	

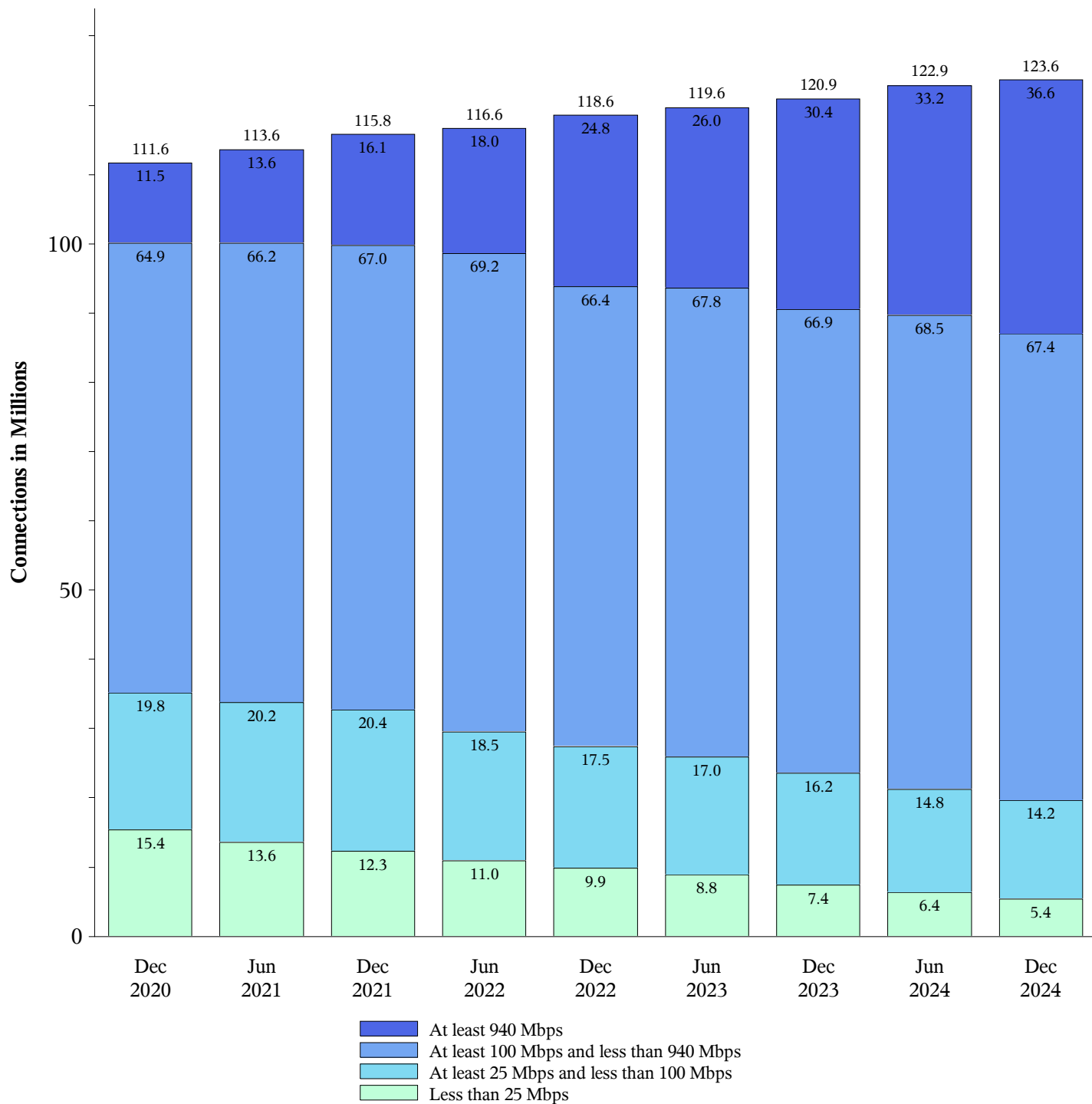
Note: Some previously published data may have been revised. Numbers may not sum to totals due to rounding.  
Source: FCC Form 477.

**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>Dec</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>	
Total	407,650	415,260	436,580	442,469	449,615	455,177	460,446	462,737	463,205	
Mobile	296,030	301,680	320,780	325,823	331,059	335,540	339,544	339,868	339,588	
Fixed	111,620	113,580	115,790	116,645	118,556	119,637	120,902	122,869	123,616	

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 December 31, 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	1,396	441	#	#	#	1,837
At least 1 Mbps & Less than 3 Mbps	1,200	2,367	382	4	#	3,954
At least 3 Mbps & Less than 20 Mbps	96	709	14,264	18,332	13	33,414
At least 20 Mbps & Less than 500 Mbps	59	70	1,637	49,018	18,587	69,371
At least 500 Mbps	0	1	1	6,181	20,022	26,206
<b>Total</b>	<b>2,752</b>	<b>3,589</b>	<b>16,284</b>	<b>73,535</b>	<b>38,623</b>	<b>134,782</b>

<i>Percentages</i>						
Less than 1 Mbps	1.0	0.3	0.0	0.0	0.0	1.4
At least 1 Mbps & Less than 3 Mbps	0.9	1.8	0.3	0.0	0.0	2.9
At least 3 Mbps & Less than 20 Mbps	0.1	0.5	10.6	13.6	0.0	24.8
At least 20 Mbps & Less than 500 Mbps	0.0	0.1	1.2	36.4	13.8	51.5
At least 500 Mbps	0.0	0.0	0.0	4.6	14.9	19.4
<b>Total</b>	<b>2.0</b>	<b>2.7</b>	<b>12.1</b>	<b>54.6</b>	<b>28.7</b>	<b>100.0</b>

# = 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 December 31, 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	1,123	407	#	#	0	1,530
At least 1 Mbps & Less than 3 Mbps	1,043	2,030	346	4	#	3,423
At least 3 Mbps & Less than 20 Mbps	77	619	12,671	16,816	13	30,195
At least 20 Mbps & Less than 500 Mbps	56	50	1,193	44,586	17,584	63,467
At least 500 Mbps	0	1	1	5,948	19,049	25,000
<b>Total</b>	<b>2,299</b>	<b>3,106</b>	<b>14,211</b>	<b>67,354</b>	<b>36,645</b>	<b>123,616</b>

<i>Percentages</i>						
Less than 1 Mbps	0.9	0.3	0.0	0.0	0.0	1.2
At least 1 Mbps & Less than 3 Mbps	0.8	1.6	0.3	0.0	0.0	2.8
At least 3 Mbps & Less than 20 Mbps	0.1	0.5	10.2	13.6	0.0	24.4
At least 20 Mbps & Less than 500 Mbps	0.0	0.0	1.0	36.1	14.2	51.3
At least 500 Mbps	0.0	0.0	0.0	4.8	15.4	20.2
<b>Total</b>	<b>1.9</b>	<b>2.5</b>	<b>11.5</b>	<b>54.5</b>	<b>29.6</b>	<b>100.0</b>

# = 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	490,890	500,260	510,200	518,206	528,259	536,263	544,121	549,049	553,524	
Mobile	369,640	376,840	384,420	391,868	400,322	406,820	413,257	416,059	418,742	
Fixed	121,250	123,430	125,780	126,338	127,936	129,443	130,864	132,990	134,782	
Copper Wire <sup>1</sup>	19,327	18,620	17,412	15,651	14,691	13,238	11,848	10,788	8,953	
Coaxial Cable	77,909	79,330	80,232	80,026	80,114	79,466	78,968	78,184	77,245	
Optical Carrier	19,945	21,120	23,338	24,947	26,252	28,245	30,150	32,761	36,022	
Satellite	1,931	1,910	1,873	2,031	2,039	2,026	2,128	2,308	2,732	
Fixed Wireless	2,140	2,445	2,923	3,682	4,839	6,469	7,771	8,948	9,830	
Licensed	-	-	-	1,954	3,213	4,887	6,253	7,447	8,438	
Unlicensed	-	-	-	1,728	1,626	1,582	1,518	1,502	1,392	

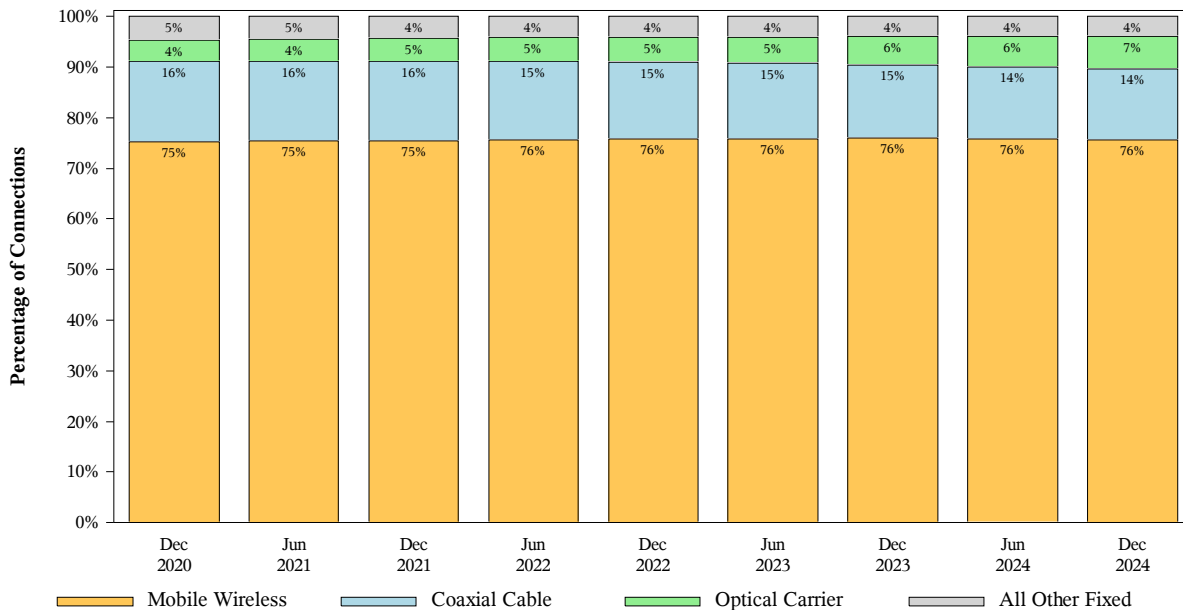
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	407,650	415,260	436,580	442,469	449,615	455,177	460,446	462,737	463,205	
Mobile	296,030	301,680	320,780	325,823	331,059	335,540	339,544	339,868	339,588	
Fixed	111,620	113,580	115,790	116,645	118,556	119,637	120,902	122,869	123,616	
Copper Wire <sup>1</sup>	16,983	16,344	15,269	13,985	13,094	11,861	10,625	9,716	8,002	
Coaxial Cable	72,543	73,844	74,599	74,445	74,537	73,897	73,385	72,685	70,985	
Optical Carrier	18,384	19,414	21,531	22,958	24,474	26,256	28,045	30,473	33,520	
Satellite	1,752	1,728	1,692	1,841	1,949	1,929	2,037	2,174	2,580	
Fixed Wireless	1,959	2,251	2,701	3,415	4,503	5,693	6,809	7,821	8,530	
Licensed	-	-	-	1,841	3,022	4,258	5,434	6,465	7,265	
Unlicensed	-	-	-	1,575	1,481	1,435	1,375	1,356	1,264	

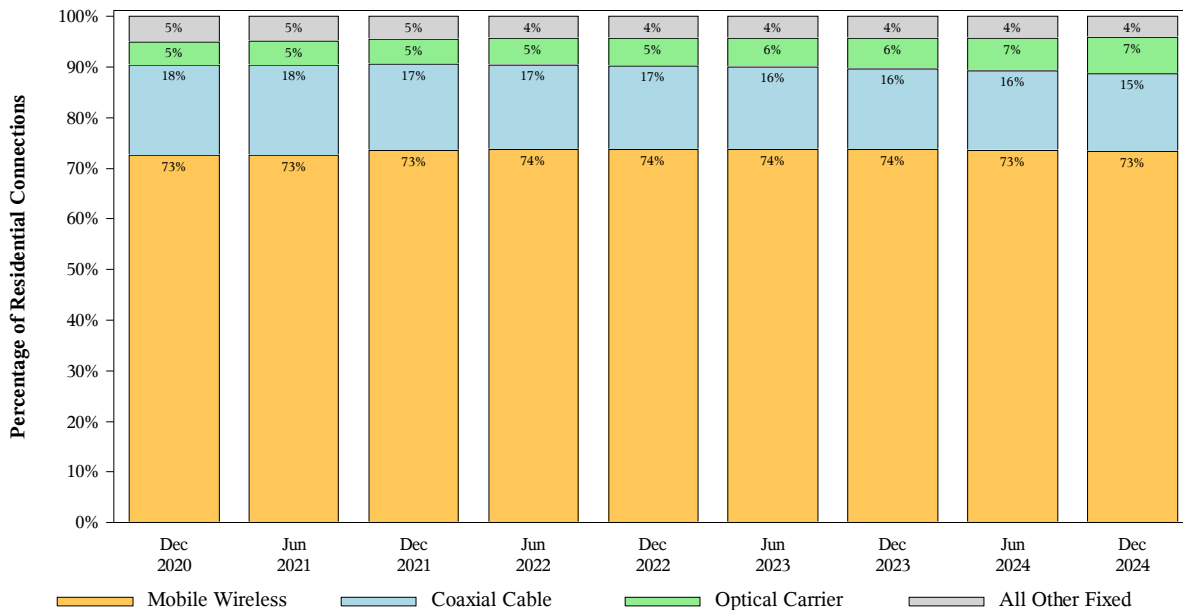
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

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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 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	112,450	115,770	118,770	120,354	122,593	124,599	126,680	129,449	131,589	
Copper Wire <sup>1</sup>	12,086	12,347	11,681	10,690	10,321	9,428	8,569	8,065	6,567	
Coaxial Cable	77,513	79,035	79,956	79,680	79,823	79,287	78,855	78,037	77,072	
Optical Carrier	19,555	20,813	23,058	24,785	26,114	28,118	30,032	32,648	35,905	
Satellite	1,727	1,717	1,700	1,863	1,935	1,929	2,049	2,235	2,661	
Fixed Wireless	1,564	1,860	2,379	3,336	4,400	5,837	7,175	8,463	9,384	
Licensed	-	-	-	1,907	3,052	4,599	5,949	7,206	8,198	
Unlicensed	-	-	-	1,429	1,348	1,238	1,225	1,257	1,187	

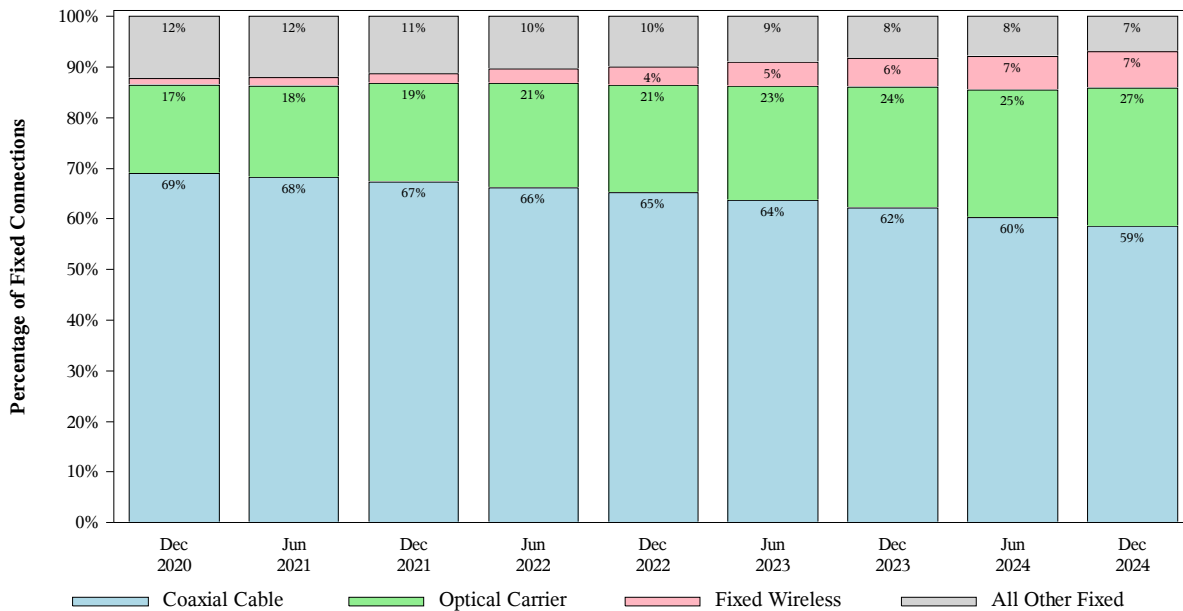
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	104,200	107,210	109,980	111,533	113,916	115,420	117,254	119,783	120,910	
Copper Wire <sup>1</sup>	10,818	11,066	10,441	9,658	9,278	8,536	7,760	7,324	5,983	
Coaxial Cable	72,215	73,611	74,386	74,150	74,299	73,754	73,302	72,572	70,845	
Optical Carrier	18,042	19,145	21,286	22,821	24,361	26,154	27,945	30,381	33,422	
Satellite	1,691	1,676	1,656	1,806	1,884	1,869	1,991	2,133	2,540	
Fixed Wireless	1,434	1,714	2,206	3,097	4,094	5,107	6,257	7,373	8,119	
Licensed	-	-	-	1,799	2,871	3,989	5,151	6,242	7,043	
Unlicensed	-	-	-	1,299	1,223	1,118	1,105	1,130	1,076	

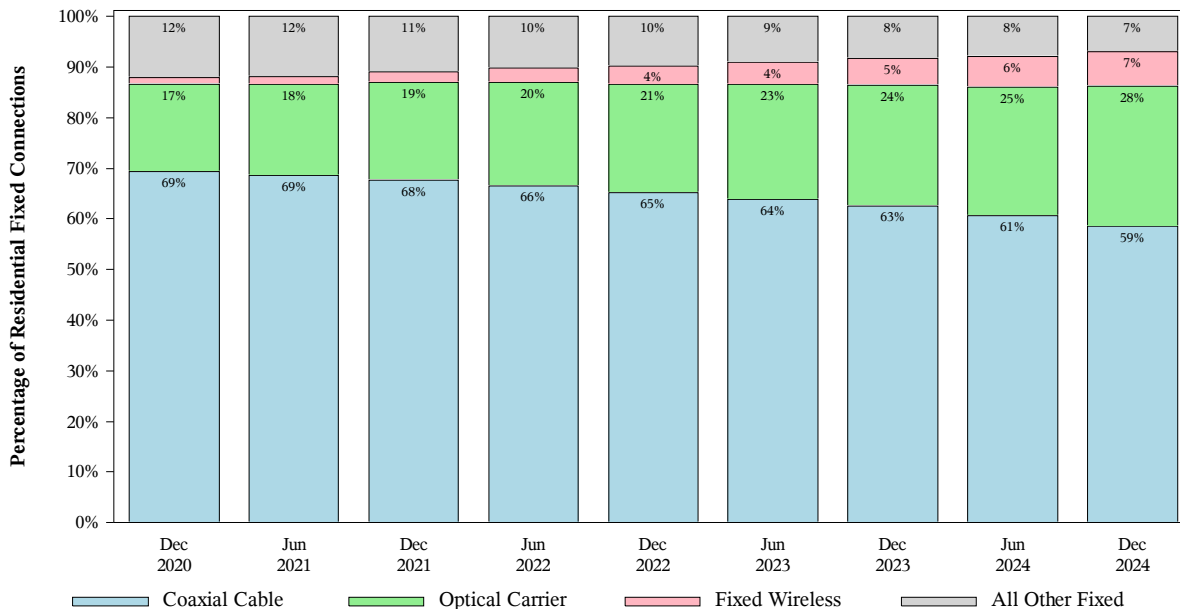
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	101,630	106,790	110,630	113,027	116,128	118,798	121,710	124,996	128,055	
Copper Wire <sup>1</sup>	*	6,688	6,538	6,014	6,094	5,523	5,110	5,023	3,993	
Coaxial Cable	74,169	77,502	78,656	78,602	78,989	78,553	78,488	77,730	76,917	
Optical Carrier	18,840	20,171	22,459	24,249	25,687	27,842	29,794	32,424	35,747	
Satellite	*	1,328	1,353	1,552	1,685	1,734	1,889	2,109	2,568	
Fixed Wireless	805	1,105	1,620	2,610	3,672	5,147	6,428	7,710	8,830	
Licensed	-	-	-	1,797	2,801	4,358	5,622	6,831	7,989	
Unlicensed	-	-	-	813	871	789	806	879	841	

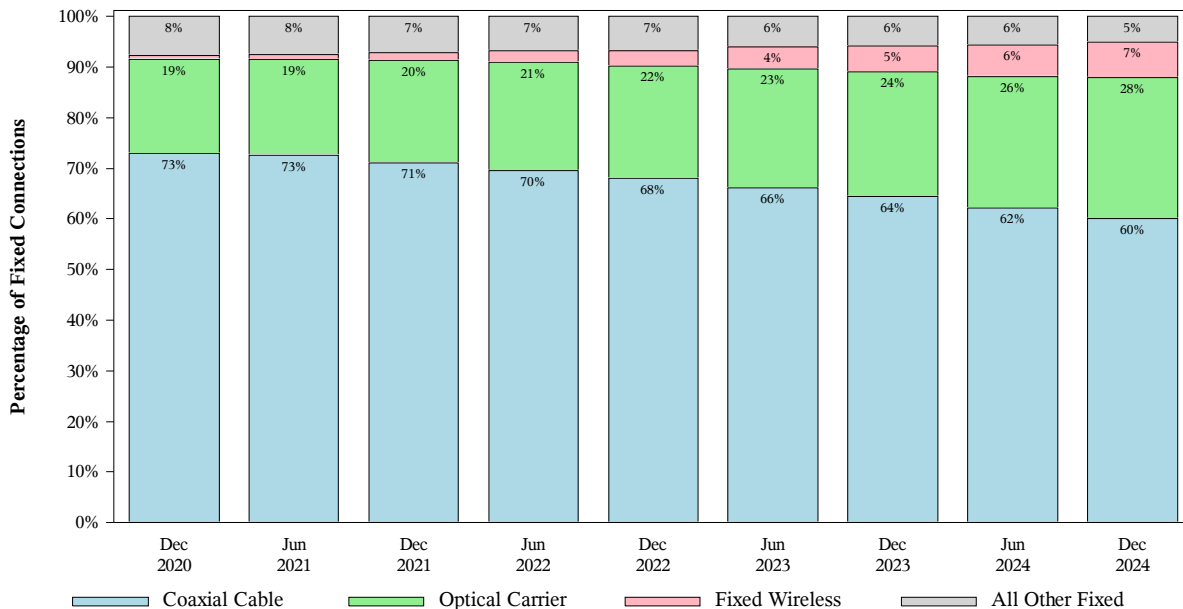
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	94,451	99,254	102,800	105,023	108,184	110,304	113,041	116,056	117,860	
Copper Wire <sup>1</sup>	*	6,068	5,930	5,515	5,547	5,107	4,730	4,651	3,730	
Coaxial Cable	69,098	72,268	73,262	73,217	73,560	73,110	73,006	72,330	70,728	
Optical Carrier	17,445	18,615	20,795	22,371	24,016	25,933	27,760	30,218	33,306	
Satellite	*	1,288	1,311	1,497	1,637	1,677	1,831	2,032	2,466	
Fixed Wireless	727	1,015	1,506	2,421	3,423	4,476	5,714	6,825	7,631	
Licensed	-	-	-	1,698	2,637	3,764	4,991	6,041	6,874	
Unlicensed	-	-	-	724	787	712	723	784	757	

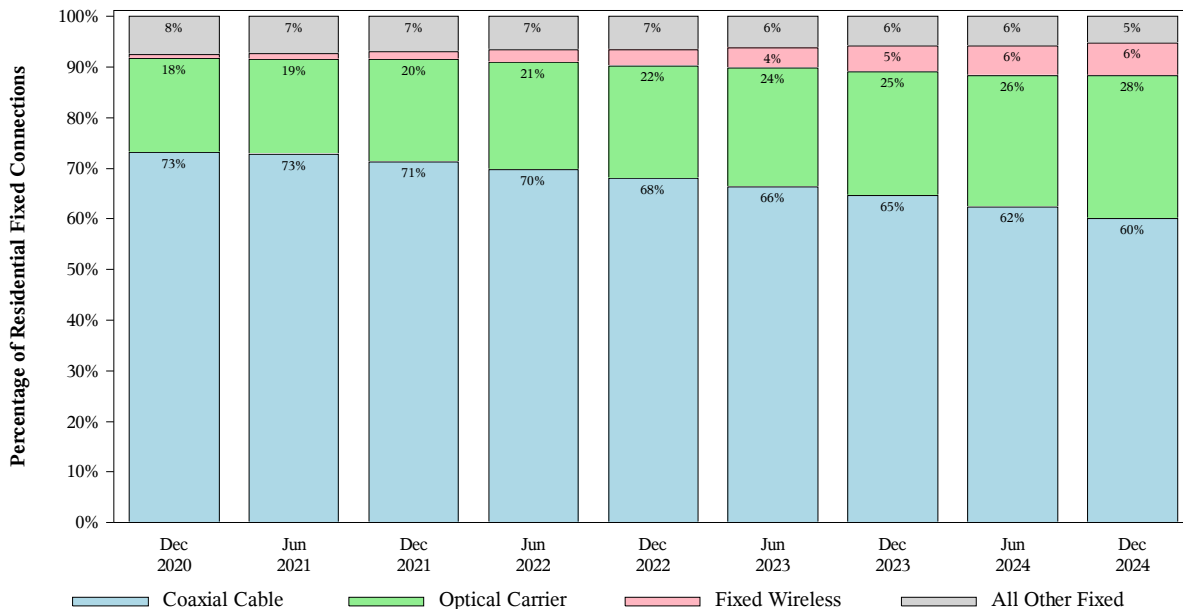
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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.

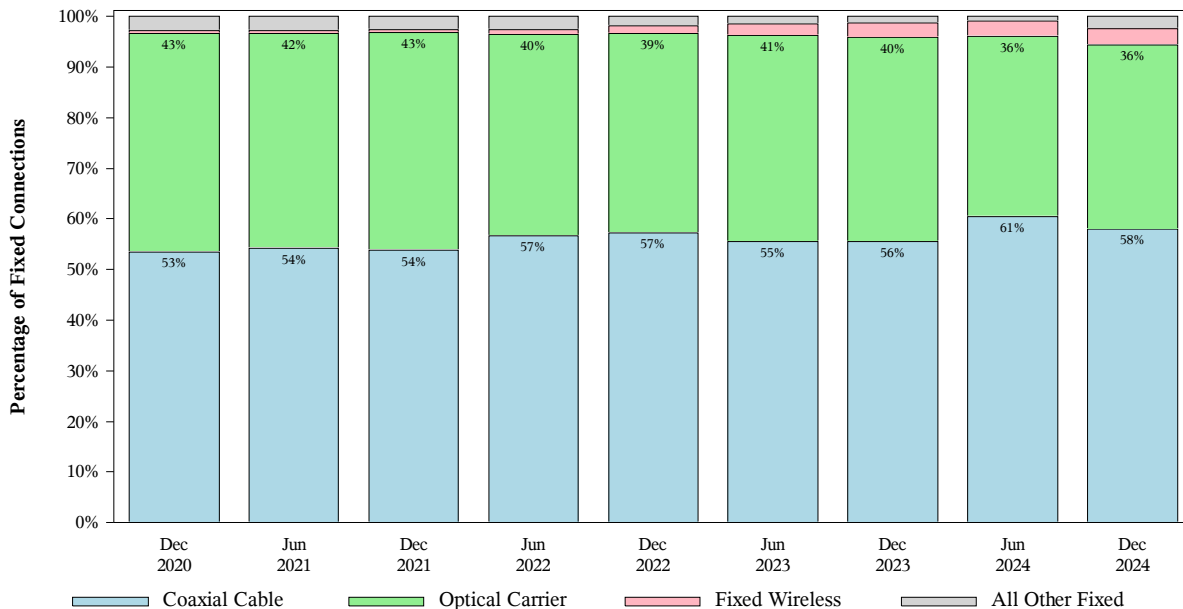
Source: FCC Form 477.

**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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	34,493	38,563	43,352	52,808	58,345	62,035	69,216	86,132	93,809	
Copper Wire <sup>1</sup>	*	*	*	*	*	*	*	*	*	
Coaxial Cable	18,420	20,924	23,298	29,955	33,395	34,407	38,478	52,116	54,321	
Optical Carrier	14,933	16,373	18,705	20,950	22,940	25,324	27,922	30,690	34,108	
Satellite	*	*	*	*	*	*	*	*	*	
Fixed Wireless	143	180	239	501	880	1,395	1,952	2,464	3,081	
Licensed	-	-	-	302	675	1,210	1,729	2,210	2,796	
Unlicensed	-	-	-	199	205	185	223	254	285	

<sup>1</sup> 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	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	31,773	35,456	39,921	49,027	54,498	57,843	64,481	81,129	87,167	
Copper Wire <sup>1</sup>	*	*	*	*	*	*	*	*	*	
Coaxial Cable	16,843	19,128	21,298	27,829	31,091	31,953	35,759	49,401	50,287	
Optical Carrier	14,055	15,329	17,537	19,522	21,689	23,813	26,208	28,790	31,965	
Satellite	*	*	*	*	*	*	*	*	*	
Fixed Wireless	118	158	215	451	801	1,260	1,750	2,187	2,725	
Licensed	-	-	-	277	616	1,096	1,554	1,967	2,471	
Unlicensed	-	-	-	175	186	165	195	219	254	

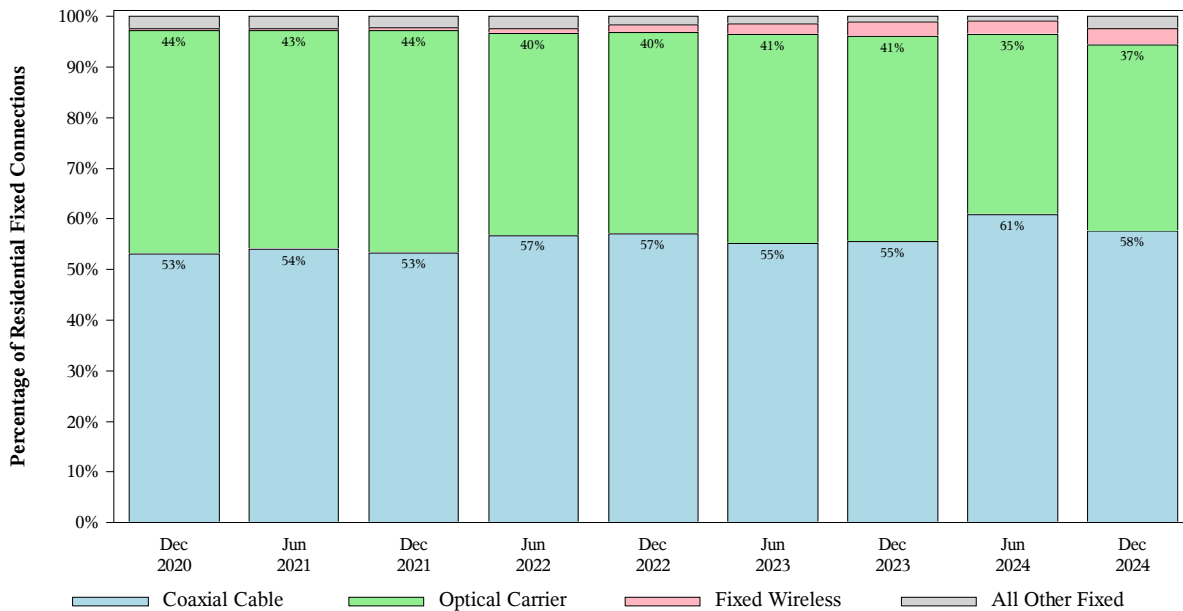
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons. See Technical Notes at the end of the report for a description of FCC Form 477 technology categories and other reporting requirements.

\* = 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.

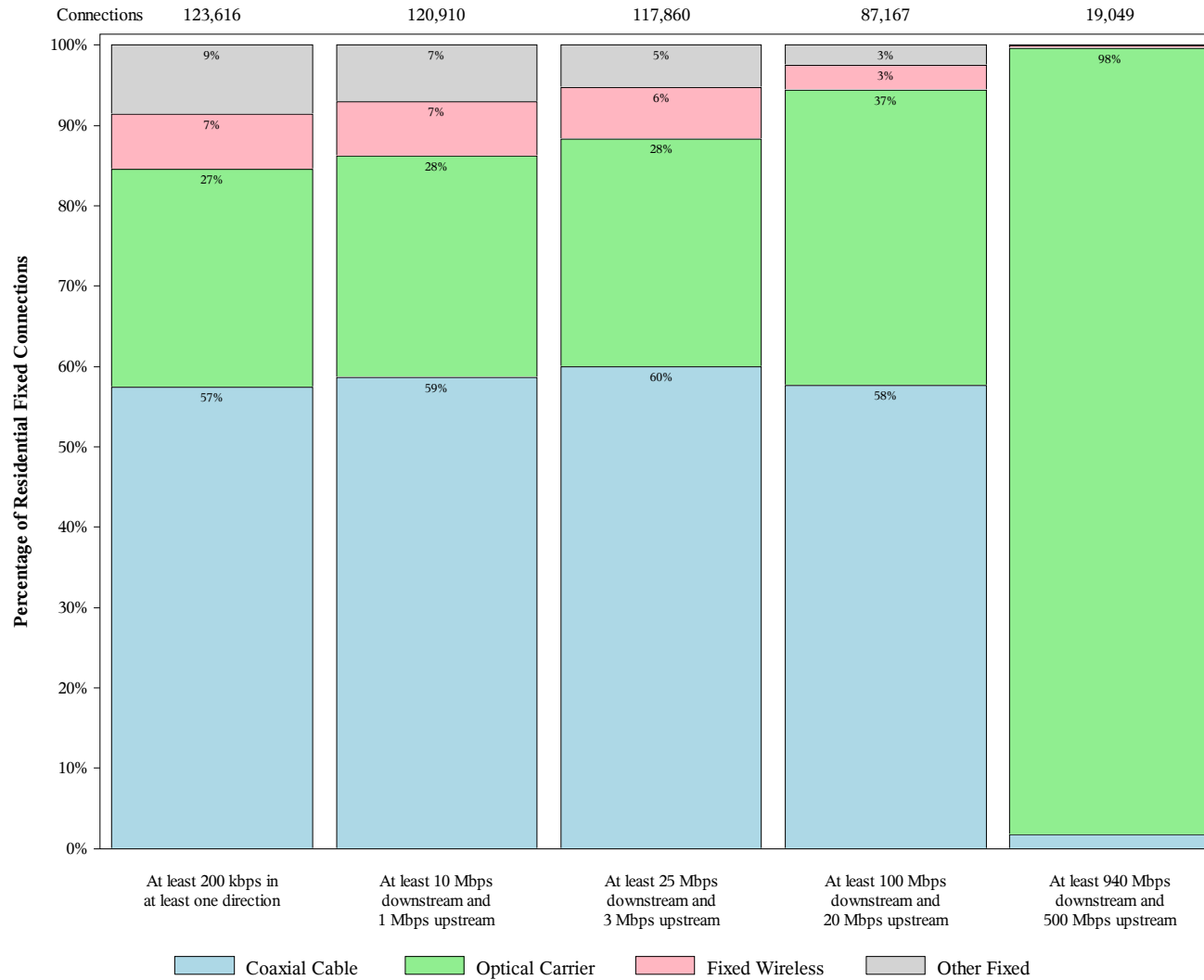
**Figure 31**  
**Residential Fixed Connections at Least 100 Mbps Downstream and 20 Mbps Upstream 2020-2024**  
(Shares of selected technologies)



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 December 31, 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 December 31, 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	2,752	3,589	16,284	73,535	38,623	134,782
Copper Wire <sup>1</sup>	1,949	2,690	3,688	616	11	8,953
Coaxial Cable	173	104	4,946	53,618	18,403	77,245
Optical Carrier	113	151	1,308	14,388	20,061	36,022
Satellite	*	*	*	*	0	2,732
Fixed Wireless	*	*	*	*	147	9,830
<b>Percentages</b>						
Total	2.0	2.7	12.1	54.6	28.7	100.0
Copper Wire <sup>1</sup>	1.4	2.0	2.7	0.5	0.0	6.6
Coaxial Cable	0.1	0.1	3.7	39.8	13.7	57.3
Optical Carrier	0.1	0.1	1.0	10.7	14.9	26.7
Satellite	*	*	*	*	0.0	2.0
Fixed Wireless	*	*	*	*	0.1	7.3

<sup>1</sup> 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 December 31, 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	2,299	3,106	14,211	67,354	36,645	123,616
Copper Wire <sup>1</sup>	1,615	2,367	3,437	574	9	8,002
Coaxial Cable	140	70	4,239	49,112	17,424	70,985
Optical Carrier	95	110	1,031	13,212	19,072	33,520
Satellite	*	*	*	*	0	2,580
Fixed Wireless	*	*	*	*	139	8,530
<i>Percentages</i>						
Total	1.9	2.5	11.5	54.5	29.6	100.0
Copper Wire <sup>1</sup>	1.3	1.9	2.8	0.5	0.0	6.5
Coaxial Cable	0.1	0.1	3.4	39.7	14.1	57.4
Optical Carrier	0.1	0.1	0.8	10.7	15.4	27.1
Satellite	*	*	*	*	0.0	2.1
Fixed Wireless	*	*	*	*	0.1	6.9

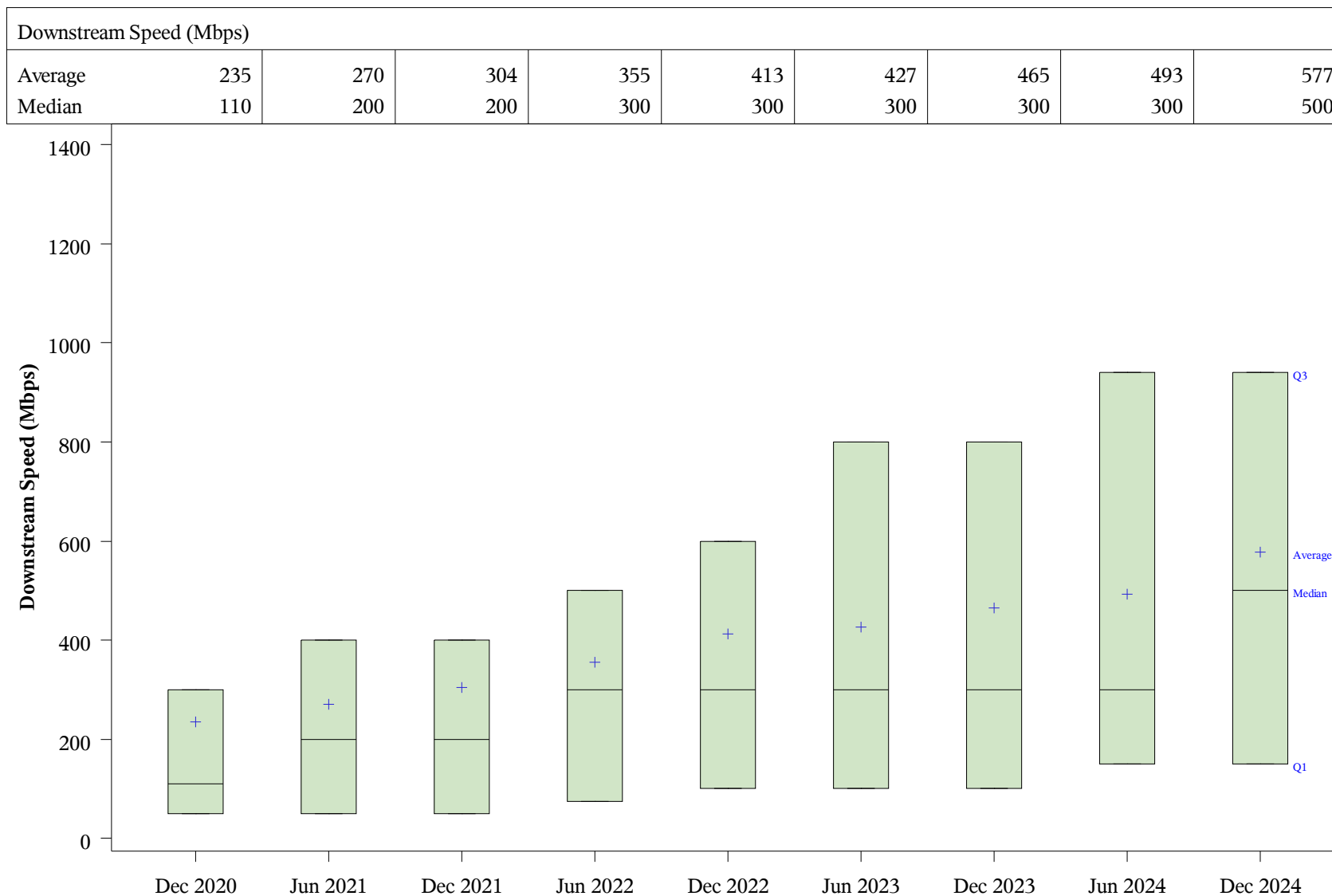
<sup>1</sup> Other is summarized with Copper Wire for confidentiality reasons.

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

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

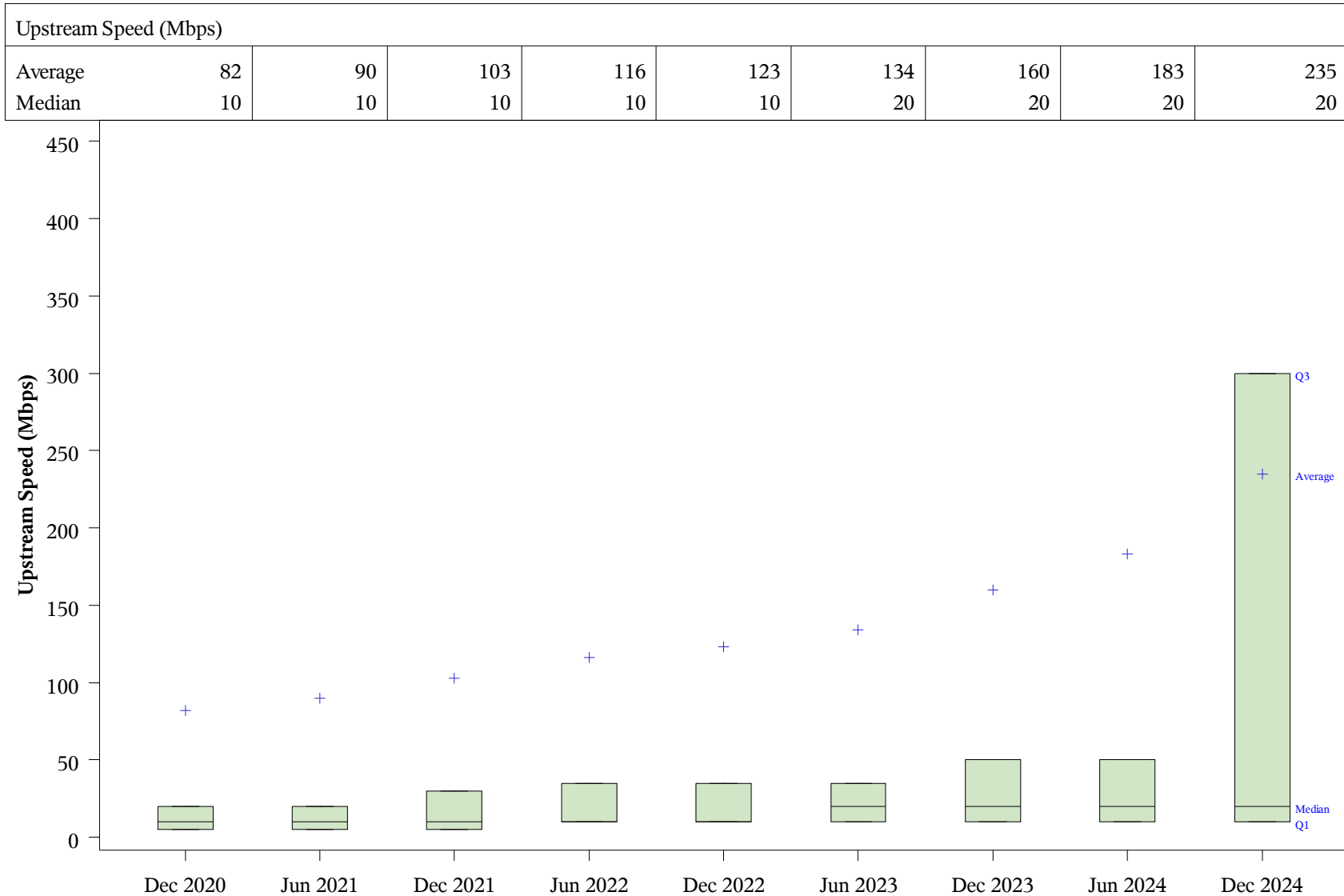
Source: FCC Form 477.

**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**

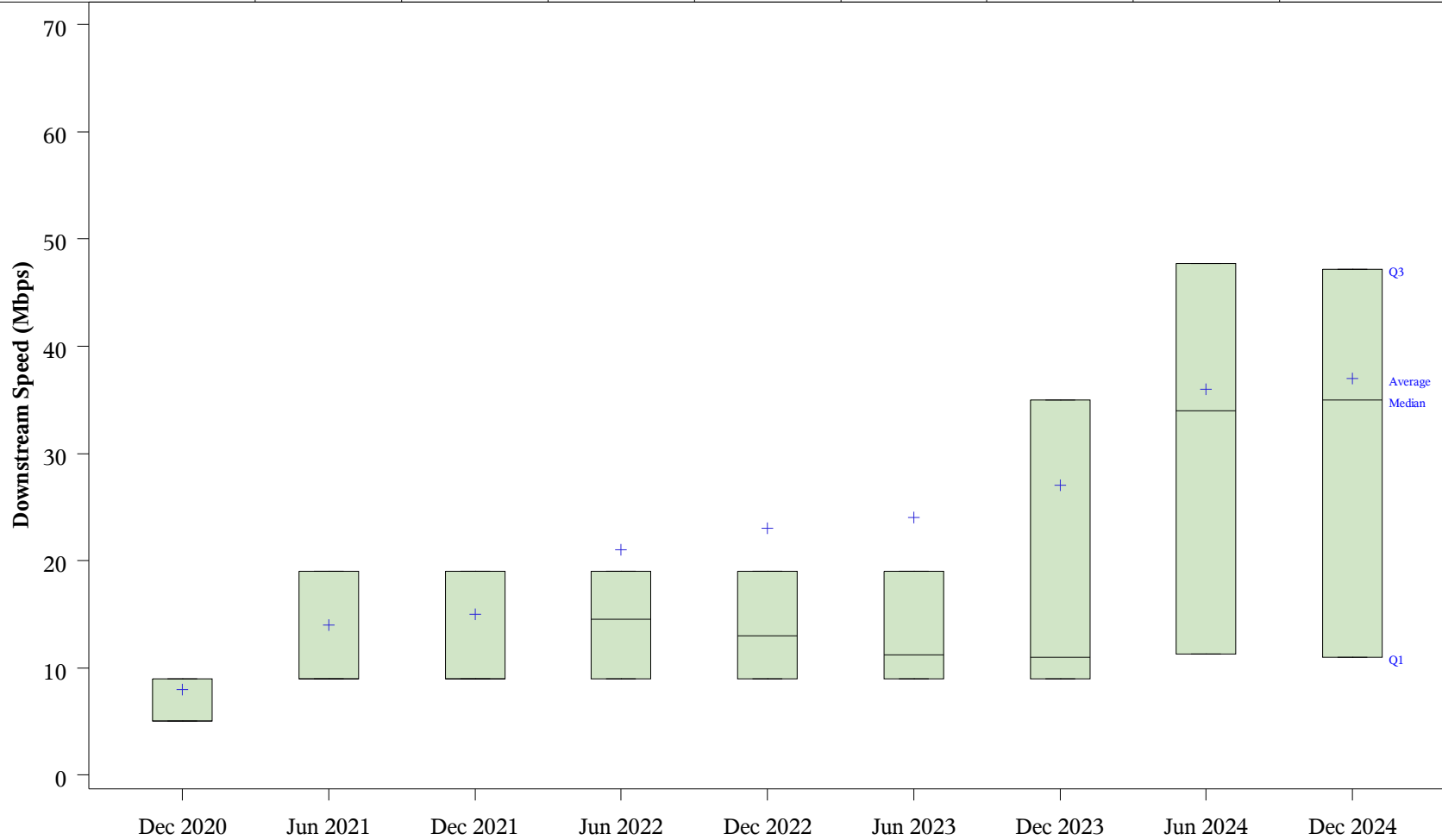


Note: Each box represents the Interquartile Range where the top line indicates the 75th percentile of upstream speeds, the middle line indicates the median upstream speed, the bottom line indicates the 25th percentile of upstream speeds, and the + denotes the position of the average upstream speed. Some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

Source: FCC Form 477.

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

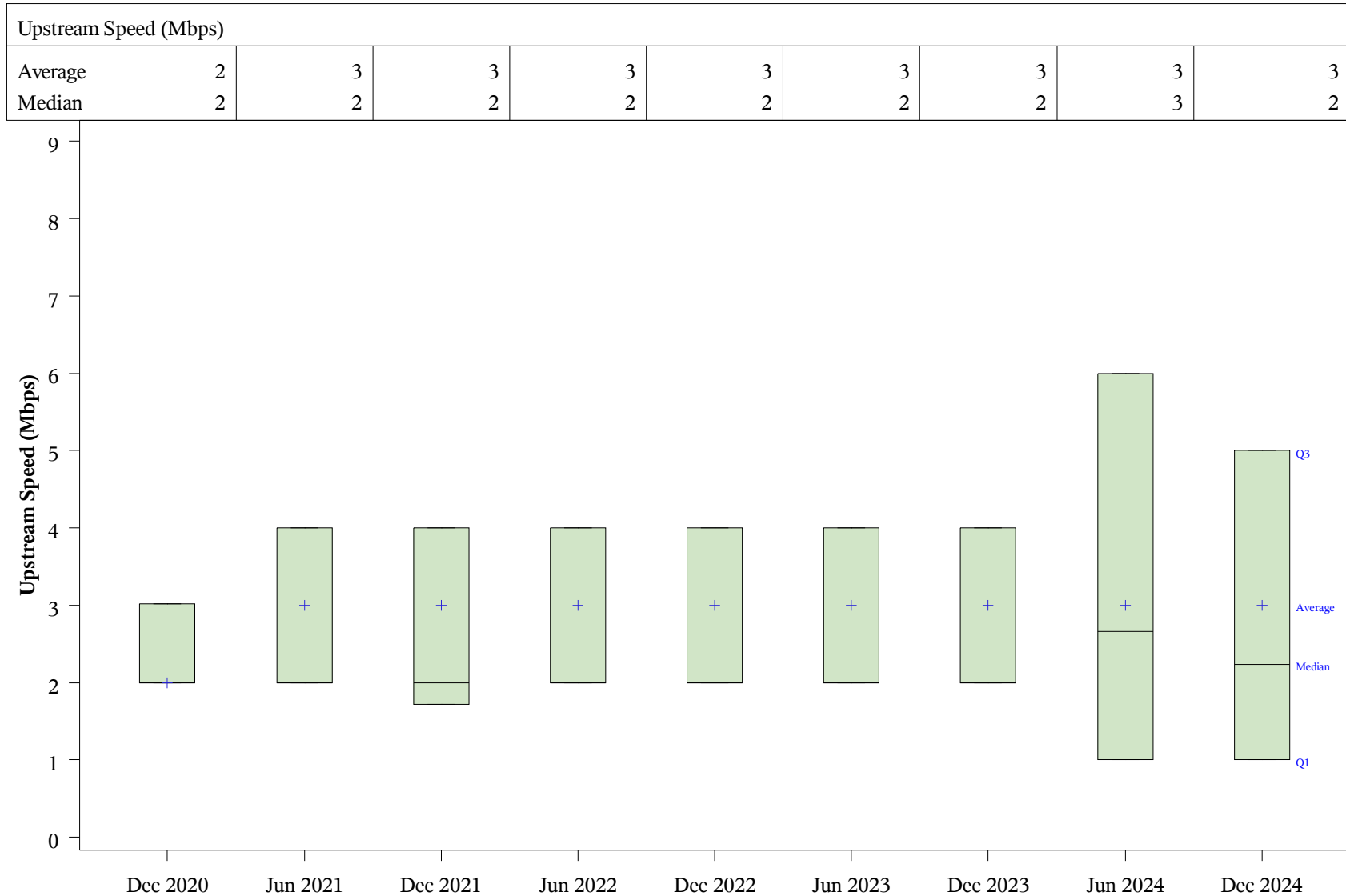
Downstream Speed (Mbps)									
Average	8	14	15	21	23	24	27	36	37
Median	5	9	9	15	13	11	11	34	35



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.

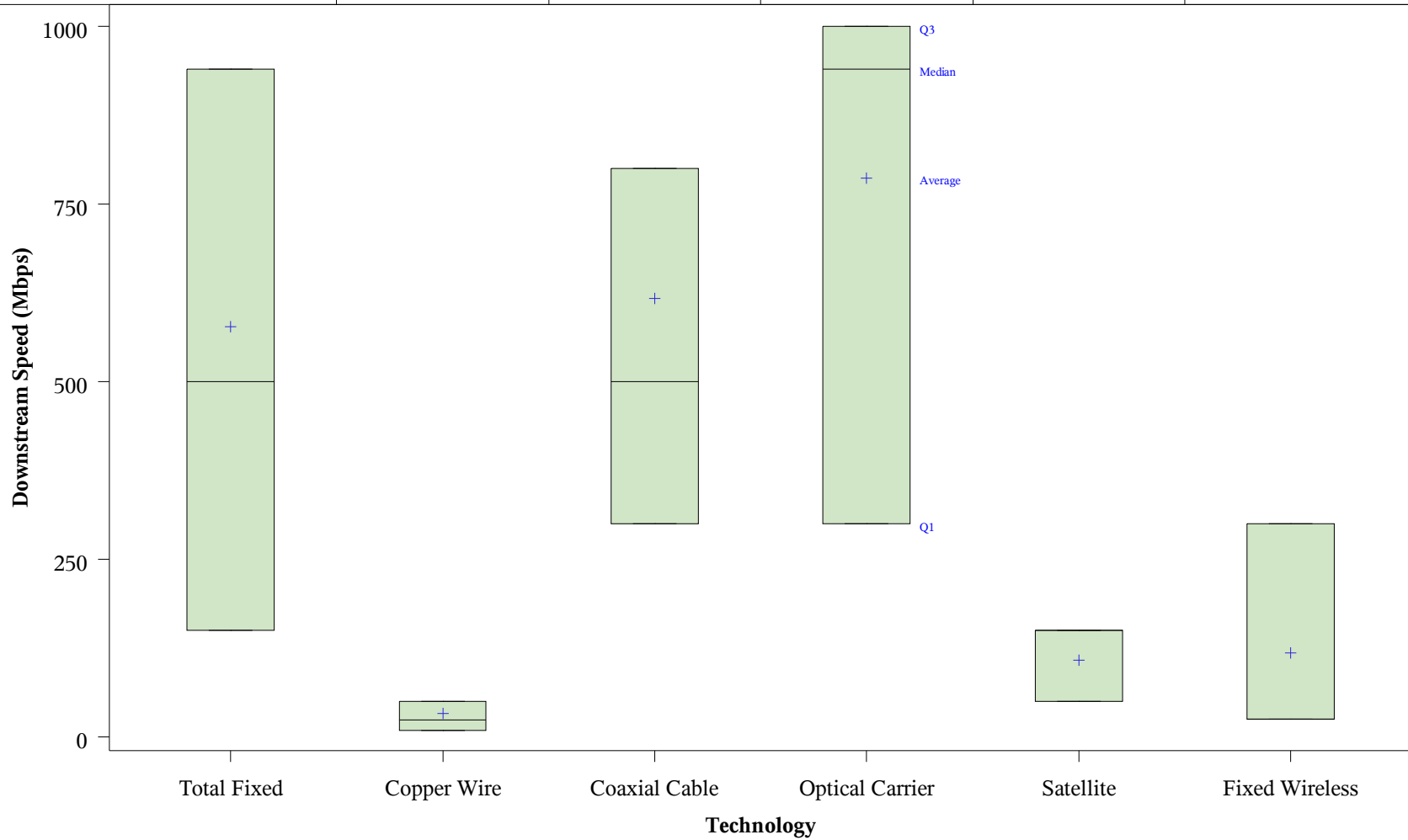
**Figure 38**  
**Distribution of Upstream Speeds of Mobile Connections 2020-2024**



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 December 31, 2024**

Downstream Speed (Mbps)						
Average	577	33	617	787	108	118
Median	500	24	500	940	150	25

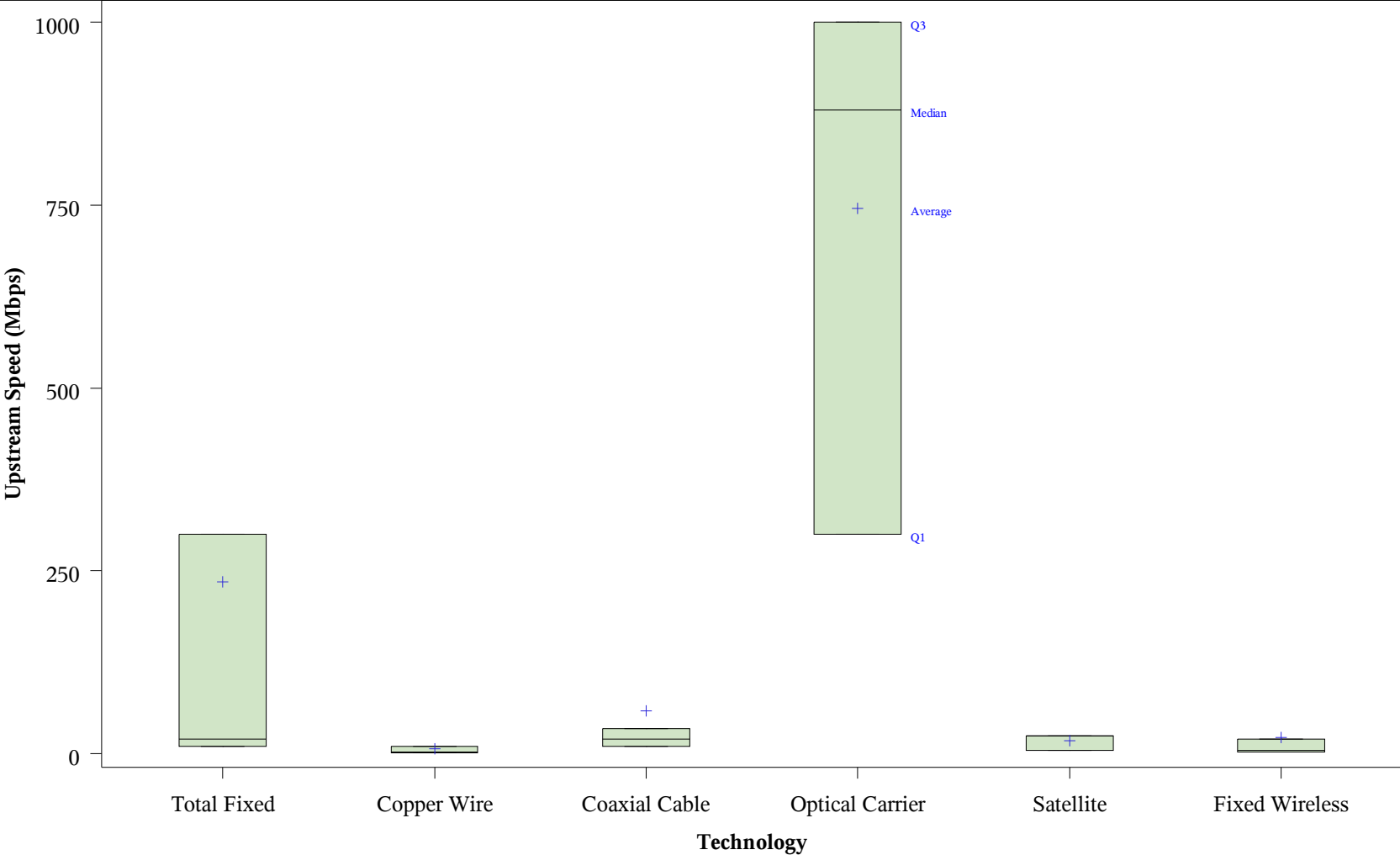


Note: Other is summarized with Copper Wire for confidentiality reasons. Each box plot shows the distribution of downstream speeds for a particular technology. Each box represents the Interquartile Range where the top line indicates the 75th percentile of downstream speeds, the middle line indicates the 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 December 31, 2024**

Upstream Speed (Mbps)						
Average	235	7	59	746	18	22
Median	20	2	20	880	25	5



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**

Technology	2020		2021		2022		2023		2024	
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	
Total	2,382	2,392	2,384	2,252	2,290	2,245	2,223	2,220	2,165	
Mobile	64	63	62	58	58	57	53	52	53	
Fixed	2,371	2,378	2,371	2,243	2,281	2,236	2,216	2,213	2,158	
Copper Wire <sup>1</sup>	773	755	743	593	571	546	525	502	472	
Coaxial Cable	368	362	352	313	308	312	307	295	280	
Optical Carrier	1,442	1,477	1,505	1,474	1,522	1,544	1,563	1,574	1,557	
Satellite	6	6	5	4	4	4	4	4	4	
Fixed Wireless	1,397	1,383	1,359	1,240	1,256	1,199	1,173	1,163	1,136	
Licensed	-	-	-	300	359	380	398	409	398	
Unlicensed	-	-	-	1,136	1,144	1,085	1,065	1,054	1,019	

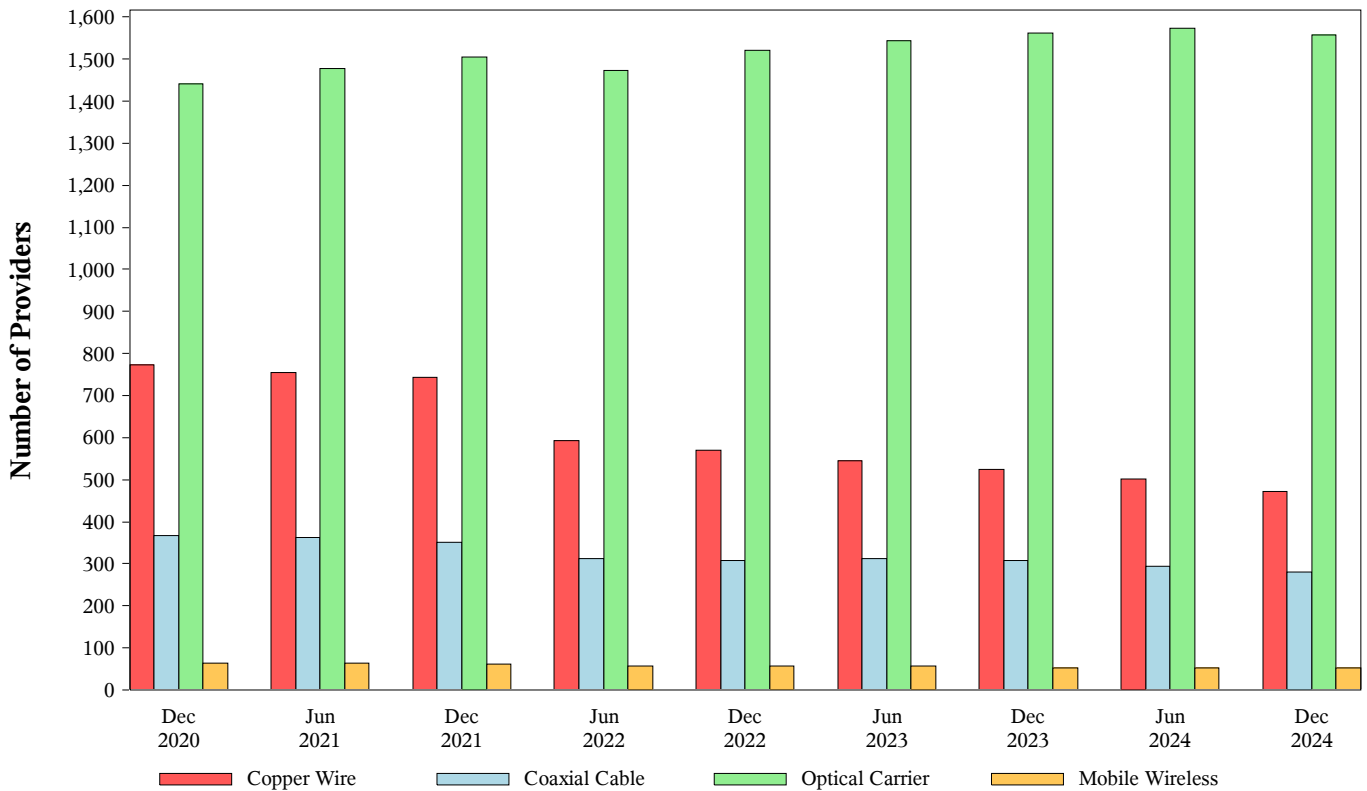
<sup>1</sup> Power Line and Other are summarized with Copper Wire for confidentiality reasons.

\* = 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 December 31, 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	1,739	0.88	1,677	0.85	1,619	0.82	1,058	0.54	259	0.13
Alaska	268	253	0.94	248	0.92	225	0.84	163	0.61	1	0.00
American Samoa	10	*	*	*	*	*	*	*	*	0	0.00
Arizona	2,797	2,713	0.97	2,647	0.95	2,547	0.91	1,769	0.63	177	0.06
Arkansas	1,189	1,068	0.90	1,021	0.86	968	0.81	746	0.63	142	0.12
California	13,435	14,104	1.05	13,898	1.03	13,603	1.01	9,536	0.71	1,191	0.09
Colorado	2,326	2,394	1.03	2,331	1.00	2,252	0.97	1,867	0.80	192	0.08
Connecticut	1,420	1,366	0.96	1,355	0.95	1,334	0.94	1,143	0.80	197	0.14
Delaware	396	394	0.99	390	0.98	389	0.98	352	0.89	*	*
District of Columbia	322	296	0.92	294	0.91	293	0.91	260	0.81	*	*
Florida	8,551	9,000	1.05	8,864	1.04	8,748	1.02	6,575	0.77	1,073	0.13
Georgia	4,008	3,828	0.96	3,749	0.94	3,650	0.91	2,871	0.72	653	0.16
Guam	42	34	0.82	33	0.79	31	0.73	8	0.18	*	*
Hawaii	489	516	1.05	510	1.04	502	1.03	288	0.59	*	*
Idaho	694	726	1.05	690	0.99	631	0.91	479	0.69	43	0.06
Illinois	5,002	4,252	0.85	4,130	0.83	3,977	0.80	3,105	0.62	313	0.06
Indiana	2,682	2,431	0.91	2,359	0.88	2,276	0.85	1,748	0.65	317	0.12
Iowa	1,304	932	0.71	882	0.68	817	0.63	573	0.44	155	0.12
Kansas	1,161	1,051	0.91	1,027	0.88	987	0.85	722	0.62	235	0.20
Kentucky	1,792	1,646	0.92	1,594	0.89	1,540	0.86	1,146	0.64	255	0.14
Louisiana	1,783	1,558	0.87	1,507	0.84	1,451	0.81	911	0.51	185	0.10
Maine	589	556	0.94	535	0.91	509	0.86	219	0.37	16	0.03
Maryland	2,340	2,262	0.97	2,235	0.96	2,225	0.95	1,965	0.84	*	*
Massachusetts	2,762	2,691	0.97	2,654	0.96	2,651	0.96	2,265	0.82	594	0.22
Michigan	4,040	3,717	0.92	3,628	0.90	3,525	0.87	2,435	0.60	169	0.04
Minnesota	2,283	2,097	0.92	2,037	0.89	1,953	0.86	1,453	0.64	144	0.06
Mississippi	1,132	981	0.87	941	0.83	874	0.77	728	0.64	237	0.21
Missouri	2,485	2,194	0.88	2,106	0.85	2,006	0.81	1,510	0.61	439	0.18
Montana	453	438	0.97	417	0.92	385	0.85	193	0.43	16	0.03
Nebraska	787	725	0.92	706	0.90	681	0.87	485	0.62	69	0.09

**Figure 43 - Continued**  
**Residential Fixed Connections and Households by State as of December 31, 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	1,173	0.99	1,145	0.97	1,117	0.94	858	0.72	111	0.09
New Hampshire	551	537	0.97	527	0.96	515	0.93	424	0.77	12	0.02
New Jersey	3,478	3,385	0.97	3,359	0.97	3,350	0.96	3,106	0.89	*	*
New Mexico	825	758	0.92	719	0.87	669	0.81	491	0.59	32	0.04
New York	7,669	7,129	0.93	7,086	0.92	7,047	0.92	5,088	0.66	2,144	0.28
North Carolina	4,187	4,422	1.06	4,281	1.02	4,196	1.00	2,550	0.61	613	0.15
North Dakota	325	309	0.95	306	0.94	304	0.93	288	0.89	23	0.07
Northern Mariana Isl	16	*	*	*	*	*	*	*	*	0	0.00
Ohio	4,830	4,452	0.92	4,346	0.90	4,234	0.88	2,449	0.51	369	0.08
Oklahoma	1,543	1,350	0.87	1,308	0.85	1,240	0.80	909	0.59	212	0.14
Oregon	1,702	1,613	0.95	1,572	0.92	1,527	0.90	1,163	0.68	109	0.06
Pennsylvania	5,235	4,826	0.92	4,727	0.90	4,691	0.90	3,815	0.73	1,119	0.21
Puerto Rico	1,239	753	0.61	711	0.57	620	0.50	227	0.18	17	0.01
Rhode Island	437	415	0.95	412	0.94	412	0.94	319	0.73	*	*
South Carolina	2,070	2,137	1.03	2,101	1.01	2,050	0.99	1,356	0.66	197	0.10
South Dakota	359	332	0.93	329	0.92	324	0.90	291	0.81	28	0.08
Tennessee	2,769	2,650	0.96	2,605	0.94	2,556	0.92	1,972	0.71	528	0.19
Texas	10,747	10,703	1.00	10,531	0.98	10,285	0.96	7,750	0.72	2,115	0.20
Utah	1,095	1,120	1.02	1,099	1.00	1,070	0.98	911	0.83	274	0.25
Vermont	269	262	0.97	248	0.92	228	0.85	198	0.73	19	0.07
Virgin Islands	43	28	0.64	26	0.59	25	0.59	*	*	0	0.00
Virginia	3,326	3,129	0.94	3,050	0.92	3,020	0.91	2,521	0.76	1,082	0.33
Washington	3,021	3,002	0.99	2,921	0.97	2,841	0.94	2,310	0.76	209	0.07
West Virginia	721	631	0.87	594	0.82	558	0.77	449	0.62	54	0.08
Wisconsin	2,446	2,298	0.94	2,208	0.90	2,107	0.86	1,033	0.42	124	0.05
Wyoming	238	226	0.95	218	0.91	209	0.88	103	0.43	13	0.05
<b>Total</b>	<b>128,833</b>	<b>123,616</b>	<b>0.96</b>	<b>120,910</b>	<b>0.94</b>	<b>117,860</b>	<b>0.91</b>	<b>87,167</b>	<b>0.68</b>	<b>19,049</b>	<b>0.15</b>

# = 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 December 31, 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	6,656	1,274	83.9	16.1	7,931
Alaska	952	165	85.2	14.8	1,117
American Samoa	*	*	*	*	*
Arizona	10,035	1,589	86.3	13.7	11,623
Arkansas	4,031	598	87.1	12.9	4,629
California	55,800	11,389	83.0	17.0	67,189
Colorado	7,959	1,743	82.0	18.0	9,703
Connecticut	5,122	1,018	83.4	16.6	6,140
Delaware	1,428	304	82.5	17.5	1,732
District of Columbia	1,269	728	63.5	36.5	1,997
Florida	32,888	6,129	84.3	15.7	39,018
Georgia	15,104	2,868	84.0	16.0	17,972
Guam	181	42	81.1	18.9	223
Hawaii	1,977	436	81.9	18.1	2,413
Idaho	2,515	397	86.4	13.6	2,912
Illinois	17,079	3,668	82.3	17.7	20,748
Indiana	8,772	1,564	84.9	15.1	10,336
Iowa	3,924	978	80.0	20.0	4,902
Kansas	3,890	653	85.6	14.4	4,543
Kentucky	5,842	1,056	84.7	15.3	6,898
Louisiana	6,318	989	86.5	13.5	7,307
Maine	1,722	472	78.5	21.5	2,194
Maryland	8,742	1,566	84.8	15.2	10,308
Massachusetts	9,647	2,074	82.3	17.7	11,722
Michigan	13,110	2,654	83.2	16.8	15,765
Minnesota	7,492	1,530	83.0	17.0	9,022
Mississippi	4,016	526	88.4	11.6	4,542
Missouri	8,059	1,616	83.3	16.7	9,675
Montana	1,424	295	82.8	17.2	1,720
Nebraska	2,556	620	80.5	19.5	3,176
Nevada	4,546	685	86.9	13.1	5,231
New Hampshire	1,794	477	79.0	21.0	2,271
New Jersey	13,491	2,620	83.7	16.3	16,112
New Mexico	2,828	465	85.9	14.1	3,293
New York	28,414	5,689	83.3	16.7	34,103
North Carolina	14,286	3,184	81.8	18.2	17,470
North Dakota	1,067	193	84.7	15.3	1,260
Northern Mariana Isl	*	*	*	*	*
Ohio	15,400	3,366	82.1	17.9	18,765
Oklahoma	5,333	908	85.4	14.6	6,242
Oregon	5,533	1,191	82.3	17.7	6,724
Pennsylvania	17,679	3,336	84.1	15.9	21,015
Puerto Rico	4,023	394	91.1	8.9	4,417
Rhode Island	1,518	300	83.5	16.5	1,818
South Carolina	7,075	1,301	84.5	15.5	8,376
South Dakota	1,184	177	87.0	13.0	1,361
Tennessee	9,556	1,782	84.3	15.7	11,337
Texas	43,179	7,466	85.3	14.7	50,645
Utah	4,145	942	81.5	18.5	5,087
Vermont	774	255	75.2	24.8	1,029
Virgin Islands	114	10	91.8	8.2	124
Virginia	11,819	2,309	83.7	16.3	14,127
Washington	10,447	2,180	82.7	17.3	12,627
West Virginia	2,235	333	87.0	13.0	2,567
Wisconsin	7,381	1,635	81.9	18.1	9,016
Wyoming	784	160	83.1	16.9	943
<b>Total</b>	<b>463,205</b>	<b>90,319</b>	<b>83.7</b>	<b>16.3</b>	<b>553,524</b>

\* = 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 December 31, 2024**  
(in thousands)

<i>State</i>	<i>Copper Wire<sup>1</sup></i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Other Fixed<sup>2</sup></i>	<i>Mobile Wireless</i>	<i>Total</i>
Alabama	191	940	595	223	5,981	7,931
Alaska	54	*	23	*	827	1,117
American Samoa	0	*	*	*	*	*
Arizona	312	1,721	432	442	8,716	11,623
Arkansas	154	441	433	131	3,470	4,629
California	1,127	10,311	2,515	1,353	51,882	67,189
Colorado	*	1,653	408	*	7,134	9,703
Connecticut	*	0	378	*	4,661	6,140
Delaware	*	*	*	28	1,282	1,732
District of Columbia	*	*	*	23	1,674	1,997
Florida	519	5,913	2,644	697	29,245	39,018
Georgia	393	2,179	1,308	347	13,744	17,972
Guam	*	*	3	5	*	223
Hawaii	18	*	*	22	1,843	2,413
Idaho	114	298	204	170	2,127	2,912
Illinois	465	3,026	737	534	15,985	20,748
Indiana	225	1,342	796	293	7,679	10,336
Iowa	140	366	598	183	3,614	4,902
Kansas	82	456	467	142	3,396	4,543
Kentucky	166	863	616	147	5,106	6,898
Louisiana	159	866	466	199	5,616	7,307
Maine	54	453	120	47	1,519	2,194
Maryland	*	1,307	*	142	7,879	10,308
Massachusetts	*	2,094	661	*	8,819	11,722
Michigan	322	2,754	514	417	11,756	15,765
Minnesota	243	1,343	521	243	6,672	9,022
Mississippi	158	348	471	102	3,463	4,542
Missouri	276	1,022	827	319	7,231	9,675
Montana	55	*	83	*	1,232	1,720
Nebraska	66	345	291	97	2,376	3,176

**Figure 45 - Continued**  
**Connections by Technology by State as of December 31, 2024**  
(in thousands)

<i>State</i>	<i>Copper Wire<sup>1</sup></i>	<i>Coaxial Cable</i>	<i>Optical Carrier</i>	<i>Other Fixed<sup>2</sup></i>	<i>Mobile Wireless</i>	<i>Total</i>
Nevada	80	809	208	162	3,973	5,231
New Hampshire	*	*	113	28	1,614	2,271
New Jersey	13	2,017	1,455	182	12,444	16,112
New Mexico	133	462	98	128	2,472	3,293
New York	72	4,634	2,710	358	26,330	34,103
North Carolina	307	2,803	1,279	377	12,704	17,470
North Dakota	7	164	159	22	908	1,260
Northern Mariana Isl	*	*	*	*	*	*
Ohio	360	2,989	1,002	471	13,943	18,765
Oklahoma	153	572	509	236	4,771	6,242
Oregon	106	1,126	319	196	4,977	6,724
Pennsylvania	134	3,298	1,365	388	15,829	21,015
Puerto Rico	*	*	244	104	3,609	4,417
Rhode Island	*	*	*	20	1,373	1,818
South Carolina	154	1,239	719	193	6,071	8,376
South Dakota	19	189	136	27	990	1,361
Tennessee	168	1,360	1,118	228	8,462	11,337
Texas	681	5,513	4,087	1,273	39,091	50,645
Utah	71	561	416	151	3,888	5,087
Vermont	41	180	76	21	711	1,029
Virgin Islands	0	*	*	11	93	124
Virginia	102	1,691	1,290	286	10,758	14,127
Washington	208	2,227	411	355	9,426	12,627
West Virginia	*	419	101	*	1,887	2,567
Wisconsin	289	*	543	*	6,523	9,016
Wyoming	26	123	36	68	691	943
<b>Total</b>	<b>8,953</b>	<b>77,245</b>	<b>36,022</b>	<b>12,562</b>	<b>418,742</b>	<b>553,524</b>

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

<sup>1</sup> Other is summarized with Copper Wire for confidentiality reasons.

<sup>2</sup> 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 December 31, 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	97.2	93.5	78.8	22.4
Alaska	99.9	97.1	88.4	73.5	25.0
American Samoa	*	*	*	*	*
Arizona	99.7	97.9	94.2	81.7	21.8
Arkansas	99.7	96.2	90.4	76.0	22.4
California	99.9	98.2	95.9	83.7	24.5
Colorado	99.8	97.8	94.2	81.1	30.0
Connecticut	99.9	99.0	97.8	90.3	32.7
Delaware	99.9	98.9	98.8	89.8	52.3
District of Columbia	100.0	98.9	98.5	87.9	46.6
Florida	99.8	98.8	97.2	86.2	26.1
Georgia	99.7	97.8	95.3	81.2	31.0
Guam	100.0	94.7	87.8	25.4	0.2
Hawaii	99.9	98.1	96.4	*	*
Idaho	99.2	95.9	87.9	70.9	19.9
Illinois	99.8	97.0	93.6	75.8	24.8
Indiana	99.7	97.3	93.7	78.5	24.6
Iowa	99.7	96.5	90.8	71.5	25.1
Kansas	99.9	98.0	93.6	80.7	31.3
Kentucky	99.8	96.9	94.0	81.3	18.7
Louisiana	99.7	97.1	93.0	79.7	23.0
Maine	99.7	95.4	91.9	82.1	18.6
Maryland	99.9	98.5	97.9	87.7	54.4
Massachusetts	99.9	98.6	98.4	91.2	42.9
Michigan	99.9	97.5	94.7	80.0	19.4
Minnesota	99.7	97.8	94.1	78.0	25.1
Mississippi	99.8	95.9	89.1	74.6	33.7
Missouri	99.7	97.1	91.8	76.6	24.6
Montana	99.4	96.5	88.7	75.3	9.0
Nebraska	99.9	97.6	94.0	81.5	18.9

**Figure 46 - Continued**  
**Percentage of Fixed Connections by Downstream Speed by State as of December 31, 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	99.6	97.9	95.5	85.4	22.4
New Hampshire	99.7	97.0	95.4	86.1	31.4
New Jersey	99.8	99.4	99.0	93.0	54.6
New Mexico	99.6	96.1	89.1	68.7	19.7
New York	99.9	99.3	98.7	93.7	37.7
North Carolina	99.7	97.7	94.9	86.1	22.5
North Dakota	99.8	99.4	98.3	92.8	50.3
Northern Mariana Isl	*	*	*	*	*
Ohio	99.8	97.7	95.0	83.0	16.9
Oklahoma	99.6	96.5	91.2	77.5	25.8
Oregon	99.8	98.2	94.9	81.6	26.8
Pennsylvania	99.8	98.3	97.2	85.6	39.5
Puerto Rico	99.9	94.0	83.4	41.0	2.4
Rhode Island	99.7	99.1	99.0	94.9	57.2
South Carolina	99.8	98.4	95.8	84.3	17.8
South Dakota	99.8	99.2	97.8	88.6	50.8
Tennessee	99.9	98.4	96.3	84.0	29.9
Texas	99.8	98.3	95.8	83.0	29.3
Utah	99.8	98.3	95.6	82.7	42.3
Vermont	99.5	93.7	88.6	77.4	27.1
Virgin Islands	100.0	92.7	89.2	47.8	*
Virginia	99.6	97.7	96.3	87.3	47.1
Washington	99.7	98.0	94.8	82.2	29.2
West Virginia	99.4	94.3	88.9	76.6	25.4
Wisconsin	99.7	97.2	92.1	79.0	11.1
Wyoming	99.8	97.1	92.8	72.9	12.6
Total	99.8	98.0	95.3	83.2	28.7

\* = Data withheld for confidentiality reasons.

Source: FCC Form 477.

**Figure 47**  
**Providers of Connections by Technology by State as of December 31, 2024**  
(Connections over 200 kbps in at least one direction)

<i>State</i>	<i>Copper Wire<sup>1</sup></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	13	51	*	15	7	73
Alaska	13	*	17	*	14	12	31
American Samoa	0	*	*	*	*	*	*
Arizona	22	11	46	*	50	6	90
Arkansas	18	13	54	*	31	5	82
California	27	26	79	*	115	6	178
Colorado	24	10	83	*	63	9	119
Connecticut	4	5	13	*	*	5	20
Delaware	*	4	10	*	6	5	19
District of Columbia	5	*	15	*	8	5	24
Florida	16	15	61	*	32	5	89
Georgia	22	19	79	*	21	6	98
Guam	*	*	5	*	4	*	6
Hawaii	5	*	8	*	5	5	16
Idaho	19	14	45	*	38	8	67
Illinois	33	13	94	*	65	6	137
Indiana	27	9	78	*	56	5	111
Iowa	34	27	184	*	74	7	215
Kansas	20	22	64	*	49	9	95
Kentucky	13	24	62	*	25	6	93
Louisiana	14	13	36	*	26	6	64
Maine	9	4	18	*	9	6	32
Maryland	7	14	38	*	20	6	57
Massachusetts	7	6	28	*	11	5	40
Michigan	27	17	78	*	44	7	111
Minnesota	32	16	88	*	48	5	117
Mississippi	16	10	42	*	9	6	60
Missouri	26	13	87	*	70	7	132
Montana	17	4	35	*	31	6	57
Nebraska	18	15	54	*	36	7	81

**Figure 47 - Continued**  
**Providers of Connections by Technology by State as of December 31, 2024**  
 (Connections over 200 kbps in at least one direction)

<i>State</i>	<i>Copper Wire<sup>1</sup></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	32	*	30	6	61
New Hampshire	7	*	17	*	7	6	28
New Jersey	8	7	25	*	7	5	34
New Mexico	17	7	36	*	37	6	66
New York	29	12	57	*	23	5	82
North Carolina	18	19	55	*	22	7	77
North Dakota	7	6	33	*	9	7	43
Northern Mariana Isl	*	*	*	0	*	*	*
Ohio	25	23	74	*	55	5	116
Oklahoma	37	7	69	*	45	9	101
Oregon	25	12	54	*	41	7	84
Pennsylvania	19	23	64	*	34	7	100
Puerto Rico	4	*	23	*	42	4	52
Rhode Island	*	5	6	*	5	5	17
South Carolina	16	11	38	*	11	6	50
South Dakota	11	7	42	*	21	9	62
Tennessee	16	12	73	*	21	6	93
Texas	55	21	146	4	143	6	235
Utah	14	8	32	*	37	8	57
Vermont	9	5	20	*	11	6	32
Virgin Islands	0	*	4	*	*	4	7
Virginia	19	12	55	*	26	7	83
Washington	18	19	68	*	52	7	101
West Virginia	6	11	26	*	22	7	58
Wisconsin	28	13	72	*	40	7	99
Wyoming	10	5	23	*	22	9	43
<b>Total</b>	<b>472</b>	<b>280</b>	<b>1,557</b>	<b>4</b>	<b>1,136</b>	<b>53</b>	<b>2,165</b>

\* = 1 to 3 providers.

<sup>1</sup> Other is summarized with Copper Wire for confidentiality reasons.

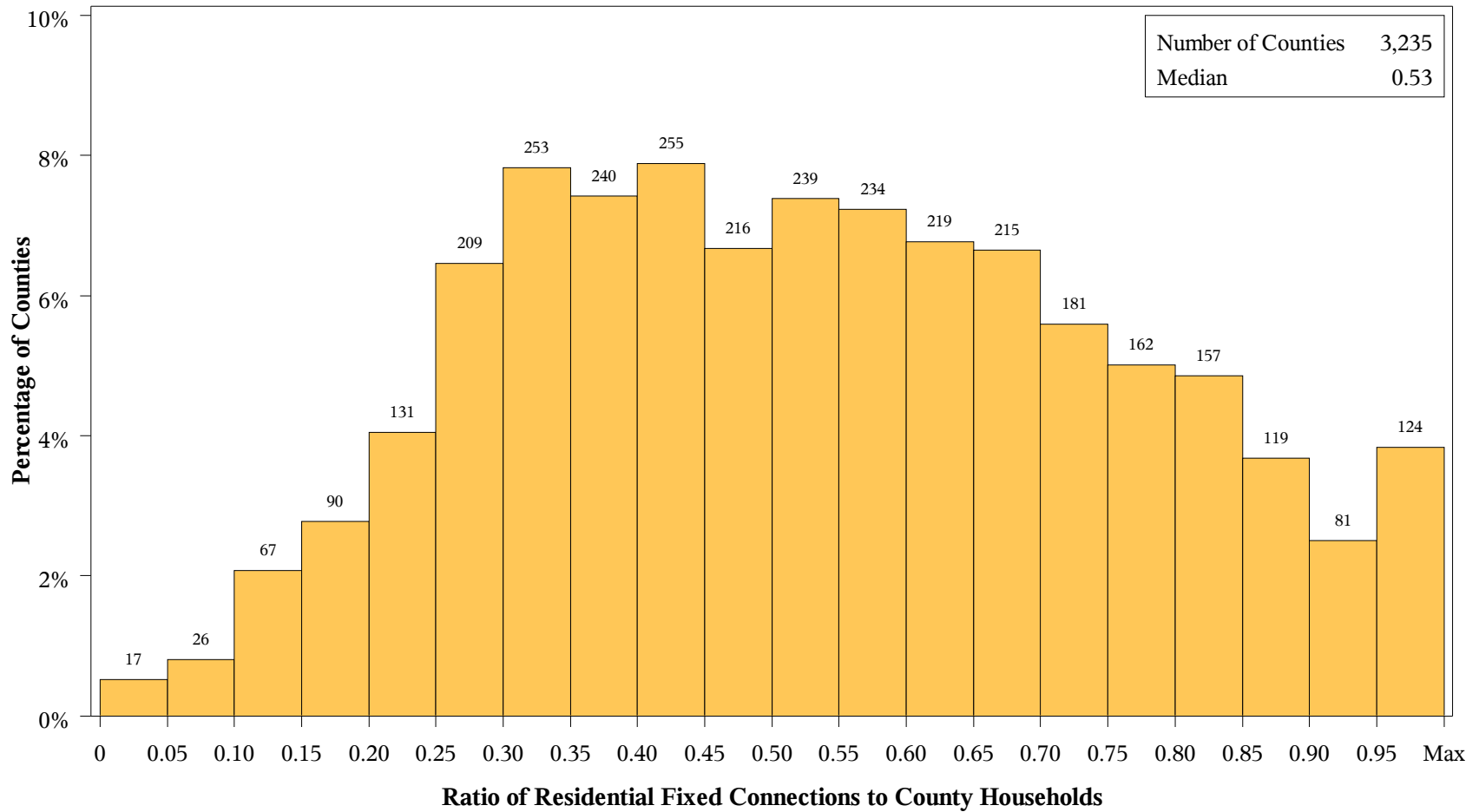
Source: FCC Form 477.

**SECTION 5**  
**SUMMARY STATISTICS: COUNTIES AND CENSUS TRACTS**

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**Figure 48**  
**Distribution of Counties by Ratio of Residential Fixed Connections to County Households as of December 31, 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 December 31, 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>&gt; 0.00 and ≤ 0.05</i>	<i>&gt; 0.05 and ≤ 0.10</i>	<i>&gt; 0.10 and ≤ 0.20</i>	<i>&gt; 0.20 and ≤ 0.30</i>	<i>&gt; 0.30 and ≤ 0.40</i>	<i>&gt; 0.40 and ≤ 0.50</i>	<i>&gt; 0.50 and ≤ 0.60</i>	<i>&gt; 0.60 and ≤ 0.80</i>	<i>&gt; 0.80 and ≤ 1.00</i>	<i>&gt; 1.00</i>
Any Technology	0.2	0.4	0.8	4.9	10.5	15.2	14.6	14.6	24.0	12.5	2.3
Satellite	0.2	72.4	15.9	8.1	2.1	0.4	0.3	0.2	0.2	0.0	0.1
Terrestrial	0.5	2.0	2.6	8.1	12.0	14.3	13.2	13.3	21.0	11.4	1.7
Fixed Wireless	4.6	89.2	4.5	1.2	0.4	0.1	0.0	0.0	0.0	0.0	0.0
Licensed	5.6	91.1	2.5	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Unlicensed	56.9	41.7	0.9	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wireline	0.9	2.4	3.0	9.0	13.3	13.5	13.2	12.7	20.9	9.7	1.5
Copper Wire <sup>1</sup>	55.3	40.6	3.0	0.8	0.2	0.0	0.0	0.1	0.0	0.0	0.0
Coaxial Cable	13.7	13.5	8.7	19.9	15.7	10.0	7.4	5.7	4.5	0.5	0.3
Optical Carrier	3.1	16.1	12.7	20.2	14.8	11.0	7.7	5.2	5.4	3.1	0.7

<sup>1</sup> 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 December 31, 2024**  
**(Connections at least 100 Mbps downstream and 20 Mbps upstream)**

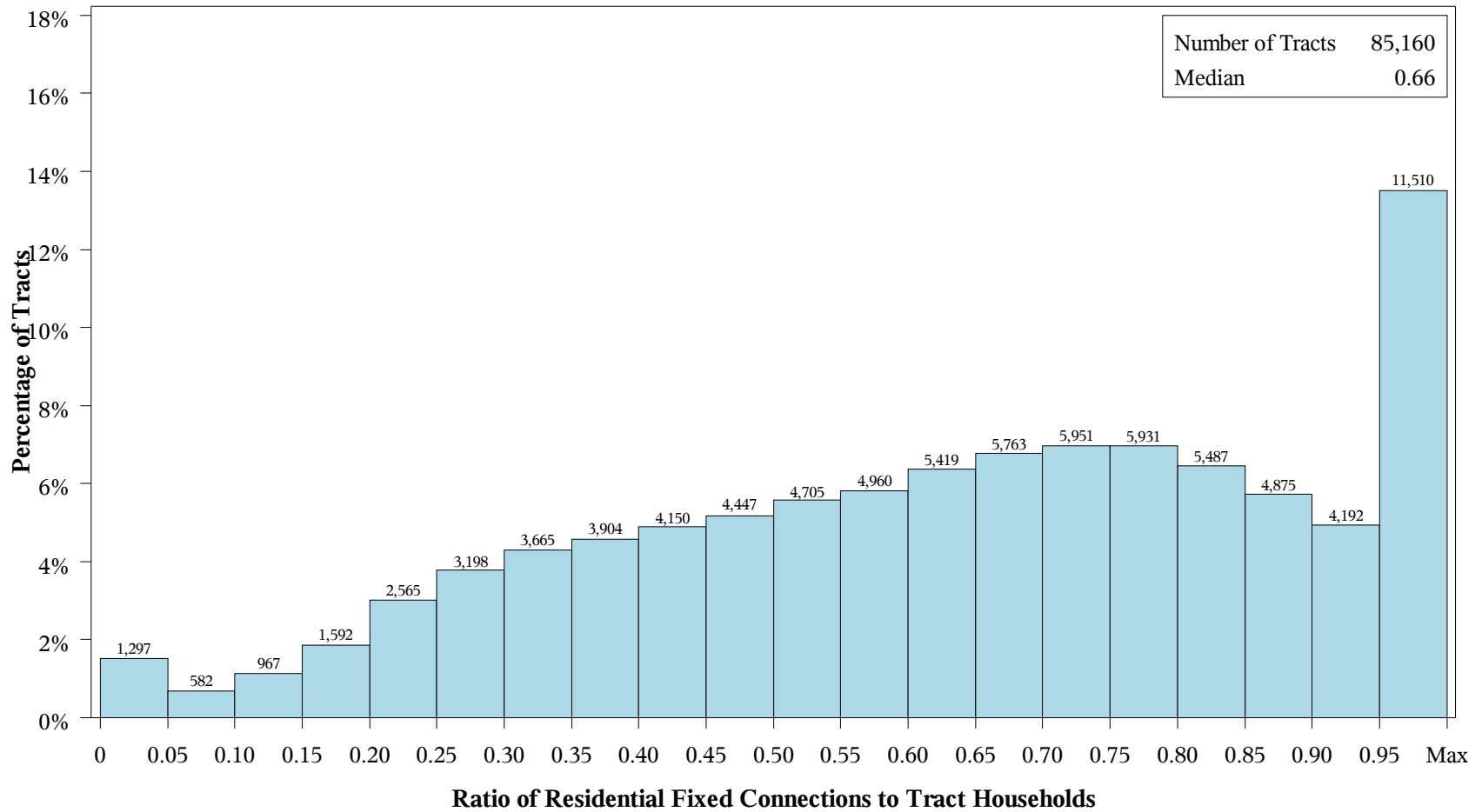
State	Counties	Ratio of Residential Fixed Connections to County Households										
		Zero	> 0.00 and ≤ 0.05	> 0.05 and ≤ 0.10	> 0.10 and ≤ 0.20	> 0.20 and ≤ 0.30	> 0.30 and ≤ 0.40	> 0.40 and ≤ 0.50	> 0.50 and ≤ 0.60	> 0.60 and ≤ 0.80	> 0.80 and ≤ 1.00	> 1.00
Alabama	67	0	0	4	12	9	8	6	17	10	1	0
Alaska	30	0	0	0	1	1	3	0	1	17	4	3
American Samoa	5	2	3	0	0	0	0	0	0	0	0	0
Arizona	15	0	0	0	2	0	2	0	2	9	0	0
Arkansas	75	0	0	0	1	6	6	19	11	24	7	1
California	58	0	0	0	1	2	6	5	4	16	18	6
Colorado	64	0	0	0	6	9	9	7	7	9	12	5
Connecticut	9	0	0	0	0	0	0	0	1	2	6	0
Delaware	3	0	0	0	0	0	0	0	0	0	3	0
District of Columbia	1	0	0	0	0	0	0	0	0	0	1	0
Florida	67	0	0	0	3	3	4	11	13	13	16	4
Georgia	159	0	0	2	7	16	27	22	20	42	21	2
Guam	1	0	0	0	1	0	0	0	0	0	0	0
Hawaii	5	0	0	0	0	0	0	0	3	2	0	0
Idaho	44	0	0	1	1	4	11	10	4	8	4	1
Illinois	102	0	0	3	6	14	17	23	16	21	1	1
Indiana	92	0	0	0	0	3	13	11	24	35	6	0
Iowa	99	0	0	0	7	21	19	31	11	9	1	0
Kansas	105	0	0	0	7	10	16	20	16	25	11	0
Kentucky	120	0	0	1	3	7	15	20	23	40	10	1
Louisiana	64	0	0	0	2	15	18	8	11	10	0	0
Maine	16	0	0	0	0	6	6	3	0	1	0	0
Maryland	24	0	0	0	0	0	0	1	3	10	9	1
Massachusetts	14	0	0	0	0	0	1	0	1	4	5	3
Michigan	83	0	0	0	2	23	17	11	11	18	1	0
Minnesota	87	0	0	1	8	3	12	18	16	22	6	1
Mississippi	82	0	0	1	5	13	8	6	10	30	8	1
Missouri	115	0	0	1	6	14	23	22	12	32	3	2
Montana	56	0	0	2	8	9	12	2	3	8	9	3
Nebraska	93	0	0	1	10	8	10	15	28	19	1	1

**Figure 50 - Continued**  
**Distribution of Counties by Ratio of Residential Fixed Connections to Households by State as of December 31, 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
Nevada	17	0	0	0	2	1	2	1	3	8	0	0
New Hampshire	10	0	0	0	0	1	1	0	1	2	4	1
New Jersey	21	0	0	0	0	0	0	0	1	1	17	2
New Mexico	33	0	0	0	1	2	6	4	9	8	3	0
New York	62	0	0	0	0	7	21	11	7	9	5	2
North Carolina	100	0	0	0	1	13	19	20	14	24	6	3
North Dakota	53	0	0	0	0	0	0	0	0	4	39	10
Northern Mariana Isl	4	3	1	0	0	0	0	0	0	0	0	0
Ohio	88	0	0	0	3	24	22	19	12	6	2	0
Oklahoma	77	0	0	0	0	8	16	11	16	19	7	0
Oregon	36	0	0	0	0	3	9	10	1	9	4	0
Pennsylvania	67	0	0	0	0	3	9	4	11	31	8	1
Puerto Rico	78	0	8	9	37	20	2	2	0	0	0	0
Rhode Island	5	0	0	0	0	0	0	0	0	3	2	0
South Carolina	46	0	0	0	3	4	7	6	8	11	5	2
South Dakota	66	0	0	0	0	1	1	2	5	18	36	3
Tennessee	95	0	0	0	0	5	5	13	11	40	20	1
Texas	254	0	0	0	6	22	44	41	50	56	29	6
Utah	29	0	0	0	0	3	1	0	1	6	12	6
Vermont	14	0	0	0	0	0	2	0	3	5	3	1
Virgin Islands	3	0	0	0	0	1	1	0	1	0	0	0
Virginia	133	0	0	0	1	7	9	16	20	50	29	1
Washington	39	0	0	0	0	1	10	5	6	9	7	1
West Virginia	55	0	0	0	0	2	11	12	13	15	2	0
Wisconsin	72	0	0	0	4	14	23	16	9	5	1	0
Wyoming	23	0	0	0	0	2	9	7	3	2	0	0
Total	3,235	5	12	26	157	340	493	471	473	777	405	76

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 December 31, 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 December 31, 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>&gt; 0.00 and ≤ 0.05</i>	<i>&gt; 0.05 and ≤ 0.10</i>	<i>&gt; 0.10 and ≤ 0.20</i>	<i>&gt; 0.20 and ≤ 0.30</i>	<i>&gt; 0.30 and ≤ 0.40</i>	<i>&gt; 0.40 and ≤ 0.50</i>	<i>&gt; 0.50 and ≤ 0.60</i>	<i>&gt; 0.60 and ≤ 0.80</i>	<i>&gt; 0.80 and ≤ 1.00</i>	<i>&gt; 1.00</i>
Any Technology	0.9	0.6	0.7	3.0	6.8	8.9	10.1	11.3	27.1	21.0	9.6
Satellite	20.7	70.9	4.3	2.8	0.8	0.3	0.1	0.1	0.1	0.0	0.0
Terrestrial	1.1	1.5	1.3	3.9	6.7	8.5	9.7	11.1	26.5	20.5	9.2
Fixed Wireless	4.1	87.1	6.6	1.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0
Licensed	4.5	88.3	5.8	1.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Unlicensed	89.0	9.9	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Wireline	1.8	1.6	1.3	4.4	7.2	8.8	10.1	11.4	26.5	18.9	8.1
Copper Wire <sup>1</sup>	67.7	30.9	1.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coaxial Cable	6.0	5.0	3.0	10.6	18.2	17.4	12.8	9.4	11.4	4.3	1.9
Optical Carrier	14.3	14.7	9.2	15.7	13.4	10.6	7.8	5.6	6.0	1.9	0.9

<sup>1</sup> 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 December 31, 2024**  
**(Connections at least 100 Mbps downstream and 20 Mbps upstream)**

State	Tracts	Ratio of Residential Fixed Connections to Tract 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	1,435	6	15	47	114	178	168	198	176	346	138	49
Alaska	177	2	0	1	2	10	13	25	28	68	18	10
American Samoa	18	2	14	1	1	0	0	0	0	0	0	0
Arizona	1,765	30	21	24	56	100	131	210	251	562	255	125
Arkansas	823	1	2	5	23	57	80	107	113	276	127	32
California	9,107	62	14	18	108	397	929	1,210	1,246	2,197	1,426	1,500
Colorado	1,447	17	0	3	20	67	68	55	77	440	507	193
Connecticut	879	6	0	0	1	2	25	44	74	236	359	132
Delaware	259	3	2	7	2	1	3	7	7	53	103	71
District of Columbia	206	2	0	0	0	0	4	20	17	55	74	34
Florida	5,114	40	6	10	44	137	276	452	587	1,507	1,148	907
Georgia	2,791	10	20	22	82	112	187	234	301	748	722	353
Guam	56	3	0	12	21	9	4	1	2	1	0	3
Hawaii	436	12	8	1	5	23	58	95	102	69	24	39
Idaho	456	0	1	2	16	22	45	53	86	119	35	77
Illinois	3,263	6	31	47	119	167	287	356	452	1,146	591	61
Indiana	1,693	10	2	8	33	69	128	209	260	602	312	60
Iowa	896	5	23	32	94	133	160	156	110	110	55	18
Kansas	829	13	3	6	44	45	72	103	126	243	141	33
Kentucky	1,306	9	6	7	54	73	118	151	182	410	241	55
Louisiana	1,376	11	6	30	140	178	202	190	179	300	117	23
Maine	400	0	0	2	32	145	112	40	20	25	18	6
Maryland	1,463	7	2	2	3	10	34	61	105	373	585	281
Massachusetts	1,613	20	1	3	10	95	63	39	60	348	699	275
Michigan	2,971	78	1	8	111	339	369	301	283	792	609	80
Minnesota	1,502	4	25	29	80	98	122	126	141	462	333	82
Mississippi	875	3	7	15	38	73	86	66	109	225	186	67
Missouri	1,654	5	13	25	100	131	134	169	191	533	296	57
Montana	319	2	2	8	24	74	75	43	21	40	18	12
Nebraska	553	2	1	2	18	23	43	68	103	231	47	15

**Figure 53 - Continued**  
**Distribution of Census Tracts by Ratio of Residential Fixed Connections to Tract Households by State as of December 31, 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	4	0	2	9	10	35	51	103	339	152	70
New Hampshire	349	2	1	0	11	15	10	17	17	104	129	43
New Jersey	2,175	9	2	8	7	3	11	32	63	481	1,110	449
New Mexico	612	10	6	16	31	49	50	79	81	207	49	34
New York	5,393	144	7	10	110	498	440	479	553	1,558	1,121	473
North Carolina	2,660	18	4	6	62	278	377	401	339	641	332	202
North Dakota	228	1	1	0	0	0	0	2	9	53	110	52
Northern Mariana Isl	23	19	4	0	0	0	0	0	0	0	0	0
Ohio	3,162	11	1	7	159	517	542	494	458	643	287	43
Oklahoma	1,205	11	2	4	47	78	144	173	203	354	137	52
Oregon	994	2	0	0	14	73	107	85	86	285	291	51
Pennsylvania	3,445	47	0	11	56	134	145	238	388	1,116	1,020	290
Puerto Rico	939	24	208	104	257	169	103	34	22	11	5	2
Rhode Island	247	1	0	0	0	0	0	7	31	143	55	10
South Carolina	1,317	12	4	2	56	139	148	164	177	311	166	138
South Dakota	242	0	1	2	0	4	6	12	11	74	104	28
Tennessee	1,701	25	1	2	19	68	128	174	187	534	387	176
Texas	6,883	52	13	16	158	450	581	661	818	1,890	1,423	821
Utah	716	7	3	1	6	13	18	23	35	221	249	140
Vermont	193	1	2	0	5	11	13	9	17	64	44	27
Virgin Islands	29	0	1	0	4	11	3	7	2	1	0	0
Virginia	2,186	25	4	2	19	56	106	156	214	651	711	242
Washington	1,772	4	1	2	14	79	103	107	115	478	682	187
West Virginia	546	1	0	1	10	30	67	62	83	202	78	12
Wisconsin	1,526	2	1	9	109	286	383	305	218	171	28	14
Wyoming	160	1	0	0	1	24	53	36	26	15	3	1
Total	85,160	804	493	582	2,559	5,763	7,569	8,597	9,665	23,064	17,857	8,207

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

**SECTION 6**  
**CORRELATED RESULTS: DEMOGRAPHIC MEASURES**

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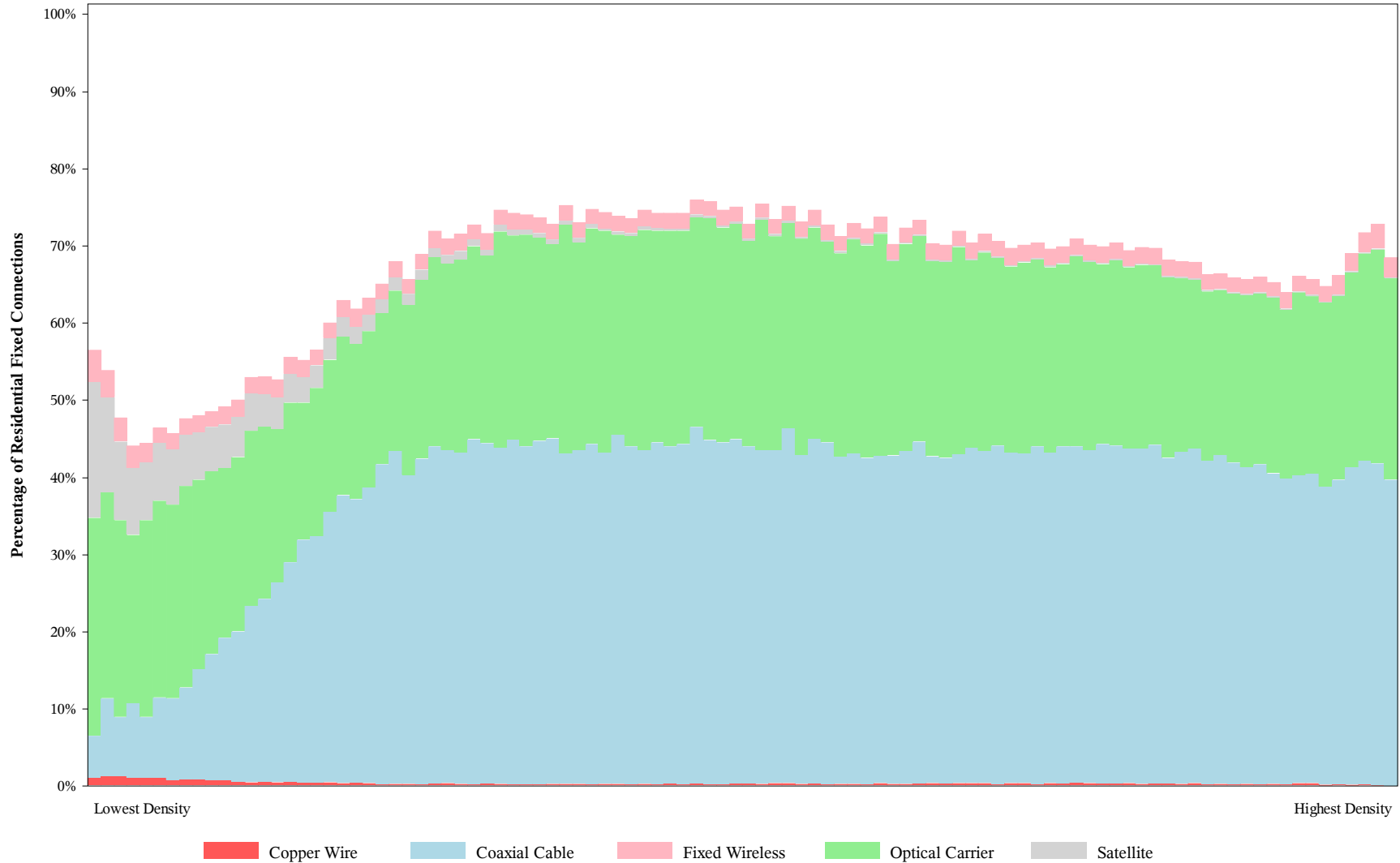






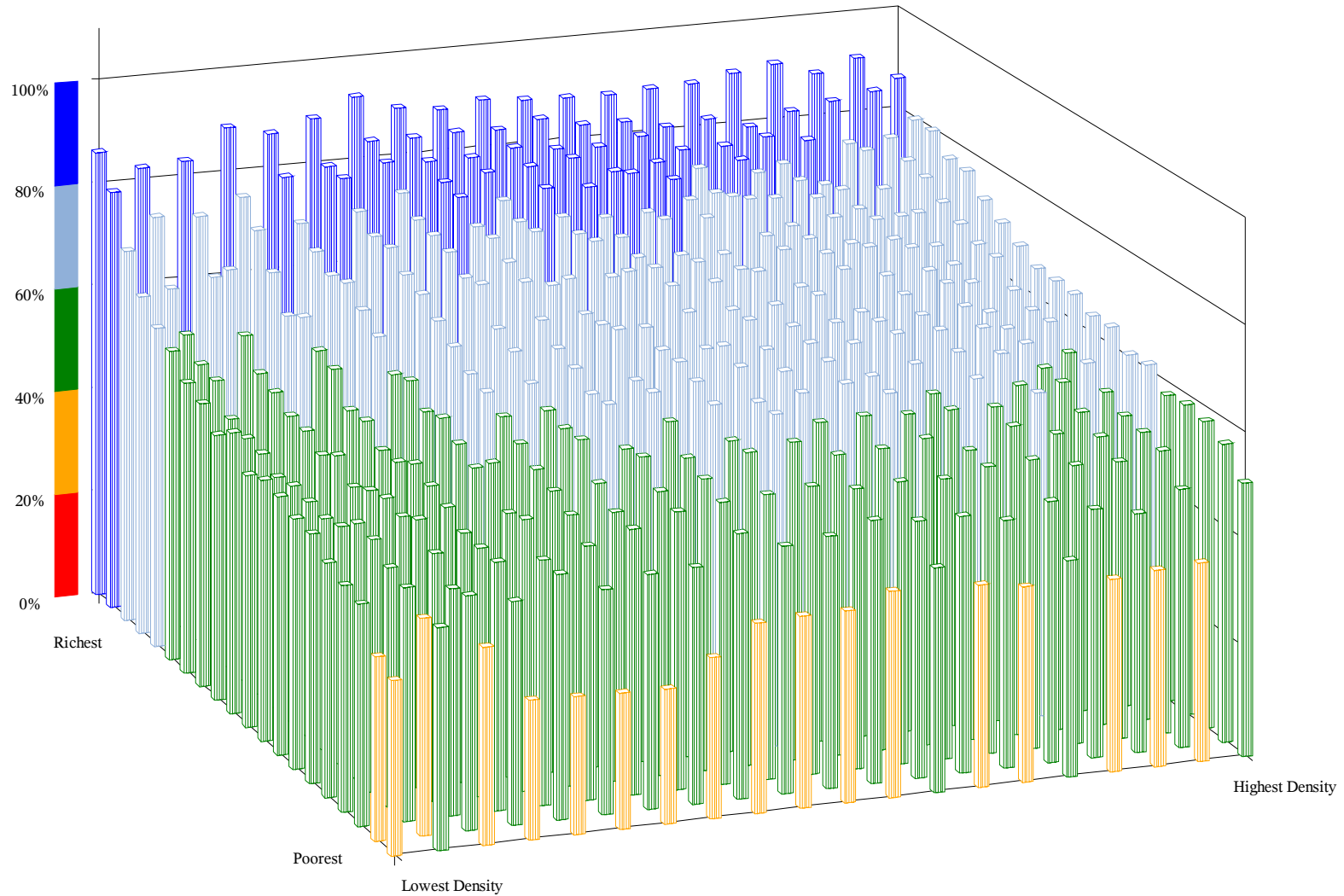


**Figure 58**  
**Tract Subscribership Ratios by Technology and Household Density as of December 31, 2024**  
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream)



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 Subscriberhip Ratios by Income and Household Density as of December 31, 2024**  
 (Residential fixed connections at least 100 Mbps downstream and 20 Mbps upstream by Tract)



This chart shows subscriberhip 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.<sup>1</sup> Detailed information about those changes and about the FCC Form 477 reporting requirements in general is available at [www.fcc.gov/form477](http://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.<sup>2</sup> 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](http://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

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<sup>1</sup> *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>.

<sup>2</sup> 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

<b>Term</b>	<b>Definition</b>
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.