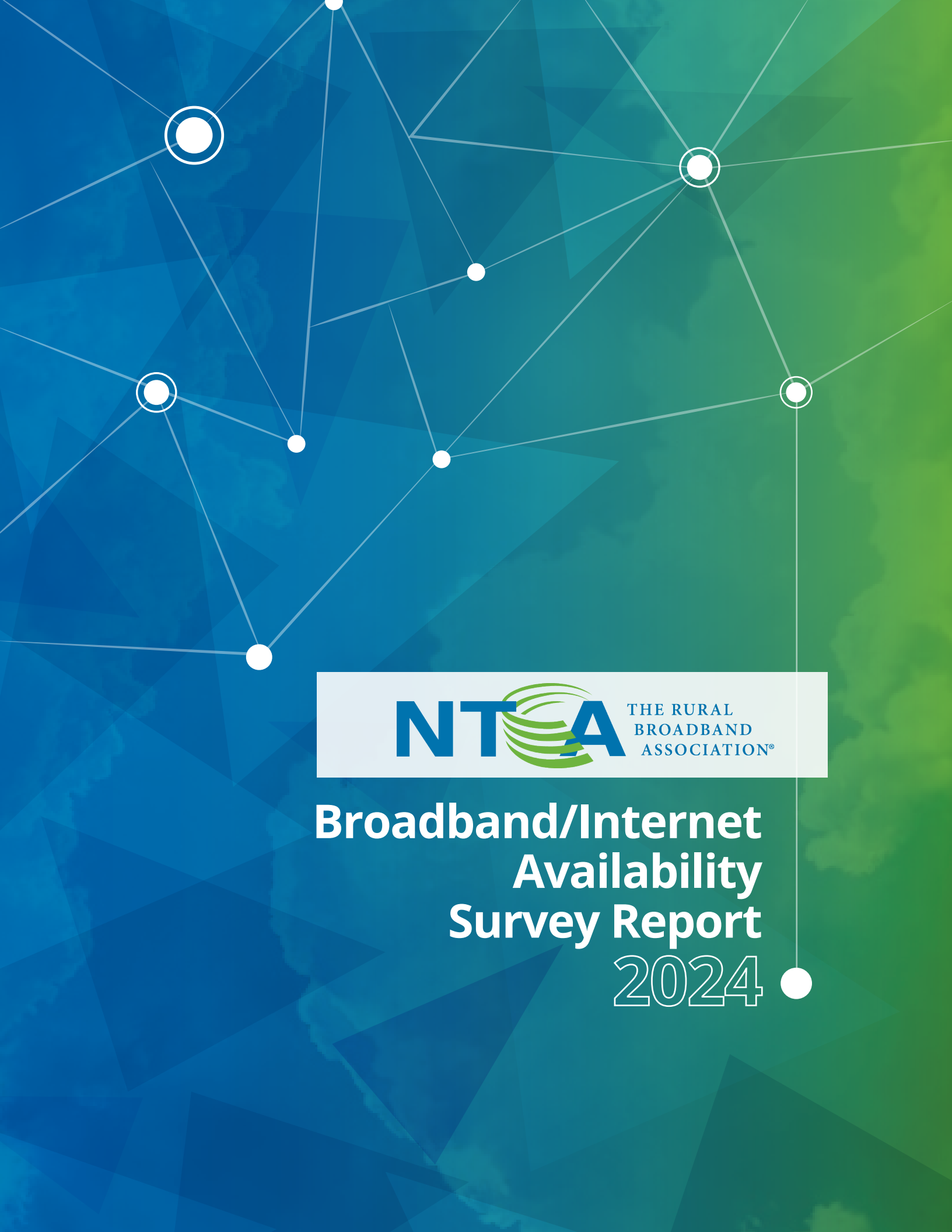

NTCA THE RURAL BROADBAND ASSOCIATION®

Broadband/Internet Availability Survey Report 2024

Broadband/Internet Availability Survey Report

4121 Wilson Boulevard
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Introduction

NTCA THE RURAL BROADBAND ASSOCIATION®

Broadband/Internet Availability Survey Report

2024

Introduction

NTCA–The Rural Broadband Association (NTCA) serves as a key advocate for rural telecommunications providers, representing approximately 850 community-based providers across 44 states. These members deliver critical broadband and voice services to rural communities. To assess the state of broadband deployment and the availability of advanced services among its members, NTCA has been conducting its *Broadband/Internet Availability Survey* for more than 20 years. This long-standing survey offers valuable insights into how rural networks are evolving and highlights the challenges and successes of delivering broadband in less densely populated areas.[1]

This year's survey delves into a broad range of topics critical to understanding the current state of rural broadband networks. It examines the technologies used to deliver broadband in both historical incumbent and competitive service areas as well as broadband availability and subscription rates, anchor institutions,[2] network deployment progress, supply chain challenges, competition, internet backbone and middle-mile connections, and the status of video services offered by NTCA members.

In August 2024, NTCA partnered with Industry Insights, Inc.[3] to conduct its annual Broadband/Internet Availability Survey. Industry Insights distributed the survey via email, providing a link to an online questionnaire sent to each NTCA member company at the holding company level. Out of these, 228 holding company members (41%) responded to the survey, providing a robust data set for analysis. It is important to note that not all respondents answered every survey question, so some areas may have more comprehensive data than others.

On average, respondents report having 5,257 residential and 524 business fixed broadband connections currently in service. The average ILEC service area identified by respondents is approximately 2,621 square miles. Nearly half of respondents (46.5%) report having a service area of less than 500 square miles, while one-quarter (25.8%) have a service area between 500 and 1,999 square miles, and another one-quarter (27.6%) have a service area of 2,000 square miles or larger.

Respondents indicated that they use a variety of the technologies within their ILEC service areas to provide fixed broadband service to their customers.[4] Nearly nine in 10 (85.8%) serviceable locations, on average, are served by Optical Carrier/Fiber to the Premises (BDC Technology Code 50), an increase from the 2023 survey data (83.5%). An average of 12.9% of locations are served via Copper Wire (Code 10), a decrease of 2.3 percentage points from 2023. Coaxial Cable/HFC (Code 40) is used

[1] Copies of this and previous NTCA survey reports from recent years can be downloaded from the NTCA website at https://www.ntca.org/ruraliscool/survey-reports.

[2] Anchor Institutions are defined by the Federal Communications Commission as entities such as “schools, libraries, hospitals and other medical providers, public safety entities, institutions of higher education, and community support organizations that facilitate greater use of broadband by vulnerable populations, including low-income, the unemployed, and the aged.”

[3] Industry Insights, Inc., headquartered in Columbus, Ohio, is a professional research and consulting firm providing management and marketing services to trade and professional associations and their members. Industry Insights conducted the survey, analyzed the findings and prepared the report. All responses have been kept confidential; this report does not reveal information from any individual source.

[4] For purposes of this survey, broadband is defined as throughput equal to or exceeding 200 kilobits per second in at least one direction.

to serve an average of 2.6% of serviceable locations, Licensed Terrestrial Fixed Wireless (Code 71) is used to serve 0.6% and Unlicensed Terrestrial Fixed Wireless (Code 70) is used to serve 0.4%. (Note that the reported percentages of BDC locations served by the various platforms could add to more than 100% if the ILEC reported being capable of serving a single location through multiple technologies.)

Regarding the *availability of downstream service*, on average, respondents reported that the following percentages of their customer base can receive fixed broadband with maximum speeds of:

Greater than/equal to 1 Gig	76.4%
Greater than/equal to 100 Mbps but less than 1 Gig	12.2%
Greater than/equal to 25 Mbps but less than 100 Mbps	5.4%
Greater than/equal to 10 Mbps but less than 25 Mbps	4.0%
Less than 10 Mbps	1.9%

Nearly nine in 10 (88.6%) of 2024 respondents' customers on average could receive a maximum downstream speed greater than or equal to 100 Mbps, noticeably higher than the 84.0% stated in the *2023 Broadband/Internet Availability Report* and the 81.9% in the 2022 report. Of note again this year as compared to past reports, there were large gains for those able to obtain maximum downstream service greater than or equal to 1 Gig (76.4% vs 67.1% in 2023, 60.9% in 2022, 55.4% in 2021 and 45.1% in 2020).

Pertaining to *upstream service availability*, on average, respondents indicated the following percentages of their customer base *can receive* fixed broadband with maximum speeds of:

Greater than/equal to 1 Gig	68.0%
Greater than/equal to 100 Mbps but less than 1 Gig	16.9%
Greater than/equal to 20 Mbps but less than 100 Mbps	5.1%
Greater than/equal to 10 Mbps but less than 20 Mbps	2.1%
Greater than/equal to 3 Mbps but less than 10 Mbps	4.2%
Less than 3 Mbps	3.7%

An average of 90% of respondents' customers can receive maximum upstream speeds of greater than or equal to 20 Mbps, while an average of 84.9% of respondents' customer bases are able to receive maximum upstream speeds of greater than or equal to 100 Mbps.

When evaluating the services customers are purchasing, the average maximum speeds *subscribed to* by respondents' customers are as follows:

Greater than/equal to 1 Gig	12.0%
Greater than/equal to 100 Mbps but less than 1 Gig	55.3%
Greater than/equal to 25 Mbps but less than 100 Mbps	22.6%
Greater than/equal to 10 Mbps but less than 25 Mbps	7.1%
Less than 10 Mbps	3.1%

The percentage of customers subscribing to speeds greater than or equal to 25 Mbps (90%) continues to increase steadily, climbing from 50% in 2019 to 64% in 2020, to 72% in 2021, to 80% in 2022 and to 86% in 2023. Additionally, the percentage of customers subscribing to speeds of 100 Mbps or greater continues to increase significantly when compared to the recent surveys—from 48.9% in 2022 to 58.6% in 2023 to 67.3% this year.

Executive Summary

NTCA THE RURAL BROADBAND ASSOCIATION®

Broadband/Internet Availability Survey Report

2024

Fixed Broadband and Voice in ILEC Service Area

Fixed Broadband and Voice Connections

Fixed Broadband and Voice	Residential		Business	
	2024 Mean	2023 Mean	2024 Mean	2023 Mean
Number of fixed broadband connections	5,257	5,494	524	551
Number of voice connections*	2,701*	2,673**	1,050*	947**

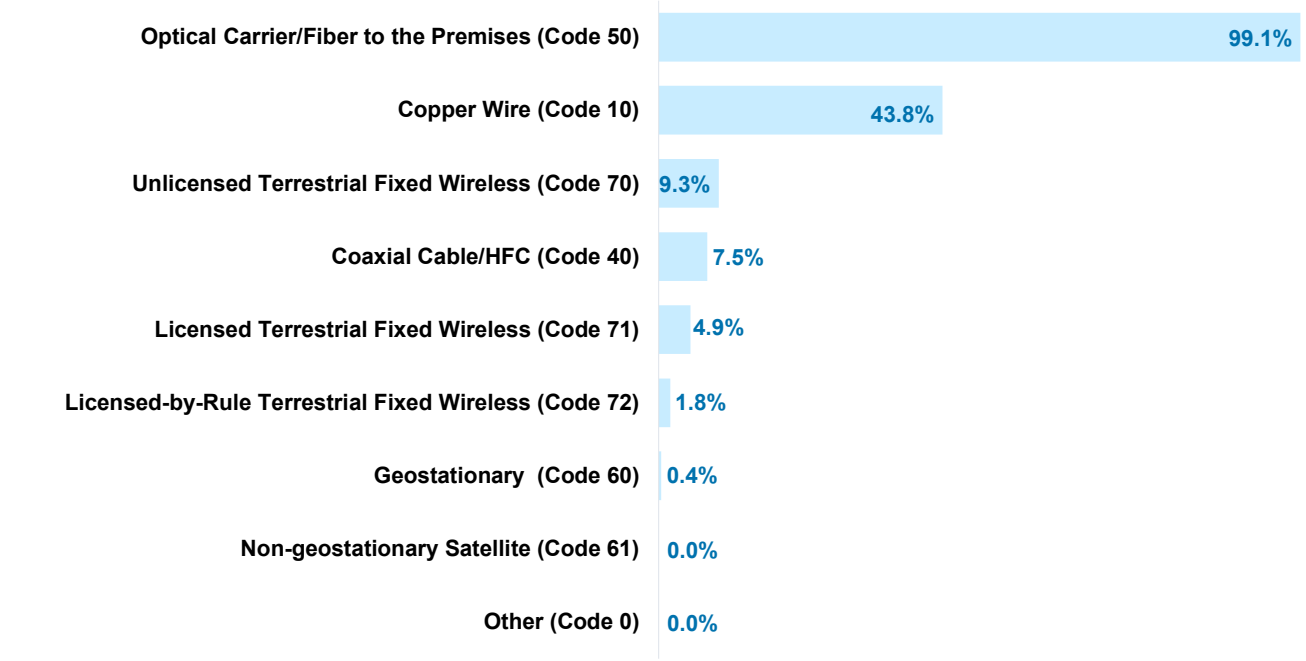
Source: 2024 NTCA–Broadband/Internet Availability Survey

*2024 survey asked for number of voice connections in service, which includes voice grade access lines and VoIP lines

**2023 survey asked for number of voice grade access lines in service

- On average, respondents indicate having 5,257 residential fixed broadband connections in service in 2024, a decrease from 2023 (5,494) but an increase from 2022 (4,287). The average number of business fixed broadband connections in service is 524, down from 2023 (551) and 2022 (648).
- Respondents report having in service an average of 2,701 residential voice connections and 1,050 business voice connections. Voice connections include voice grade access lines and VoIP lines. Previous surveys asked for the number of voice grade access lines and VoIP lines separately.
- The average ILEC service area is approximately 2,621 square miles. While nearly half (46.5%) report having a service area of less than 500 square miles, approximately one-quarter (25.8%) have a service area between 500 and 1,999 square miles, and another one-quarter (27.6%) have a service area of 2,000 square miles or larger.
- When asked what kind of Universal Service Fund (USF) support they receive for their ILEC, most receive support either through Enhanced ACAM (44.9%) or cost-based mechanisms (i.e., CAF-BLS and/or HCLS) (39.1%), while 15.6% receive USF support through ACAM 2, 8.4% receive ACAM 1 support, and 1.8% receive support via the Alaska Plan. (The amounts sum to greater than 100% due to some respondents receiving different kinds of support in different states.)
- Nearly 16% of respondents indicate they serve Tribal Lands. Almost three in five (57.9%) of those indicating that they serve Tribal lands report that these areas make up 1% to 10% of their total ILEC service area. Approximately one in five reports that Tribal lands account for either 11% to 20% or more than 60% of their service area (21.0% each).
- The vast majority of 2024 respondents (83.2%) report using owned or leased IP switching facilities, such as softswitches, for voice telephony services in their ILEC areas. However, more than three-quarters (77.3%) still rely on TDM switching facilities for voice traffic within certain portions of these networks. Additionally, slightly over one-third (35.0%) are now utilizing cloud-based VoIP platforms to deliver voice telephony services in their ILEC areas, up from 29.2% in 2023.

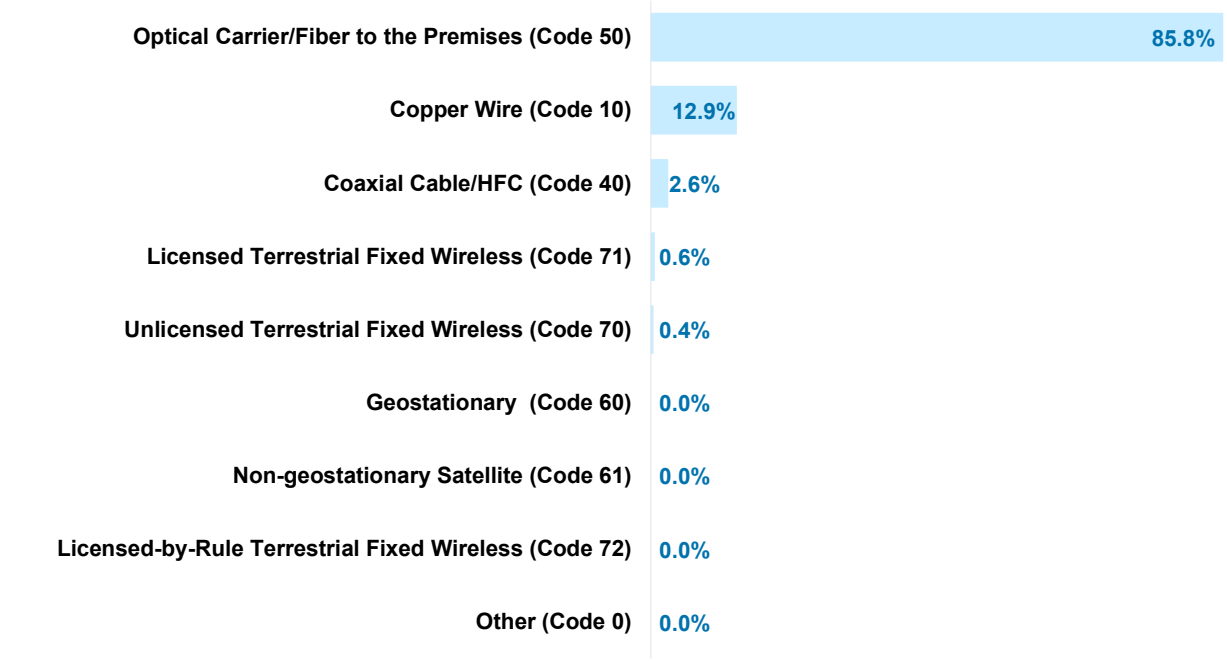
Technologies Used to Deliver Fixed Broadband Service



Source: 2024 NTCA–Broadband/Internet Availability Survey

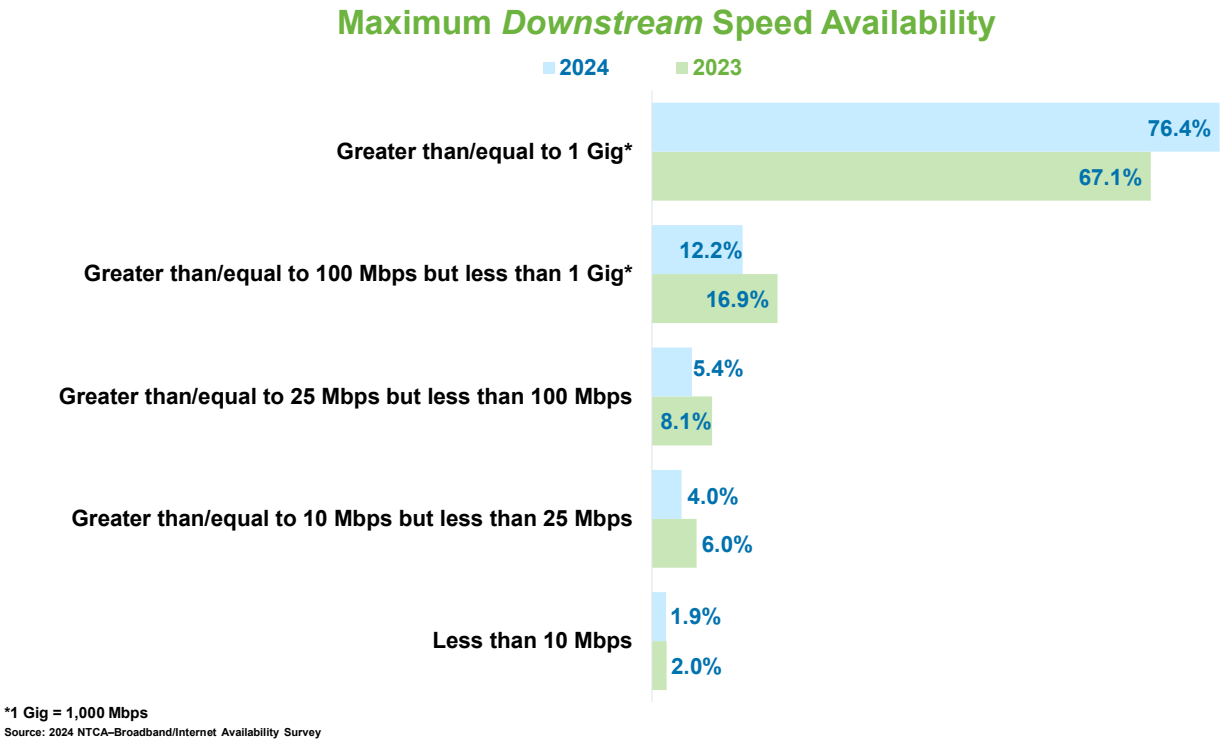
- Nearly all respondents (99.1%) report using Optical Carrier/Fiber to the Premises (BDC Technology Code 50) to provide fixed broadband service to some portion of their service area, a slight increase from what was reported in 2023 (98.0%). Fewer than half (43.8%) of respondents still use Copper Wire (Code 10) for some customers in their service area, dropping slightly from 45.9% reported in 2023.
- Respondents use other technologies more sparingly to provide fixed broadband service. These include Unlicensed Terrestrial Fixed Wireless (Code 70) at 9.3%, Coaxial Cable/HFC (Code 40) at 7.5%, Licensed Terrestrial Fixed Wireless (Code 71) at 4.9%, Licensed-by-Rule Terrestrial Fixed Wireless (Code 72) at 1.8% and Geostationary Satellite (Code 60) at 0.4%. No respondents reported using Non-Geostationary Satellite (Code 61) for fixed broadband service in 2024.
- Percentages add up to more than 100% due to the presence and use of multiple technology platforms in individual respondents' networks.

Average Percentage of BDC Locations Served by Technologies



Source: 2024 NTCA–Broadband/Internet Availability Survey

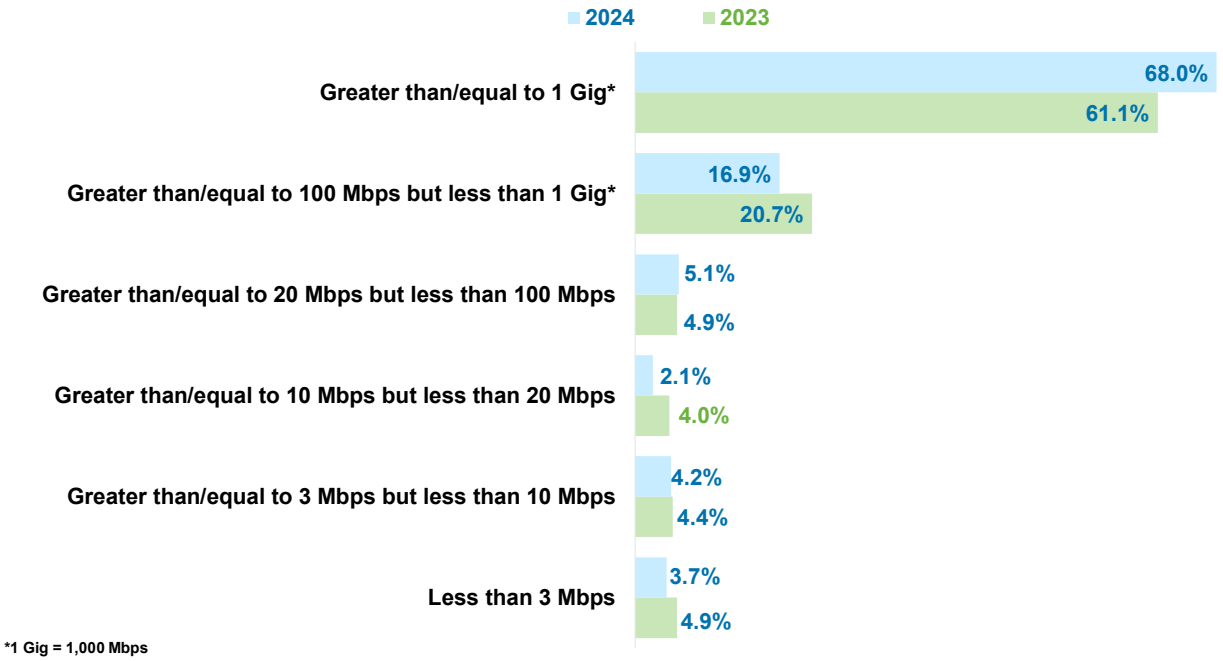
- Respondents report that an average of 85.8% of their serviceable locations are served by Optical Carrier/Fiber to the Premises (Code 50), up from 83.5% in 2023. Meanwhile, the average proportion served by Copper Wire (Code 10) has decreased, from 15.2% in 2023 to 12.9% in 2024.
- An average of 2.6% of serviceable locations are served by Coaxial Cable/HFC (Code 40). Licensed Terrestrial Fixed Wireless (Code 71) accounts for 0.6%, and Unlicensed Terrestrial Fixed Wireless (Code 70) accounts for 0.4%, on average. No service is provided via Geostationary Satellite (Code 60), Non-Geostationary Satellite (Code 61), or Licensed-by-Rule Terrestrial Fixed Wireless (Code 72).
- Note that the reported percentages of BDC serviceable locations could add to more than 100% if multiple technologies are reported on the BDC by the ILEC as being capable of serving a single location.



*1 Gig = 1,000 Mbps
Source: 2024 NTCA–Broadband/Internet Availability Survey

- The survey results show continued growth in the availability of higher-speed services. On average, nearly nine in 10 customers (88.6%) can now access maximum downstream speeds of 100 Mbps or more, up from 84.0% in 2023. The largest increase is again seen in the Gigabit tier, with an average of 76.4% of customers now able to receive maximum downstream speeds of 1 Gig or more—up from 67.1% in 2023, 60.9% in 2022, 55.4% in 2021, and 45.1% in 2020.
- The proportion of customers receiving slower maximum downstream speeds continues to decline. On average, 5.4% of customers can access speeds between 25 Mbps and 100 Mbps, down from 8.1% in 2023. Additionally, 4.0% of customers can access speeds between 10 Mbps and 25 Mbps, while 1.9% are limited to speeds below 10 Mbps—both lower than the 2023 averages of 6.0% and 2.0%, respectively.

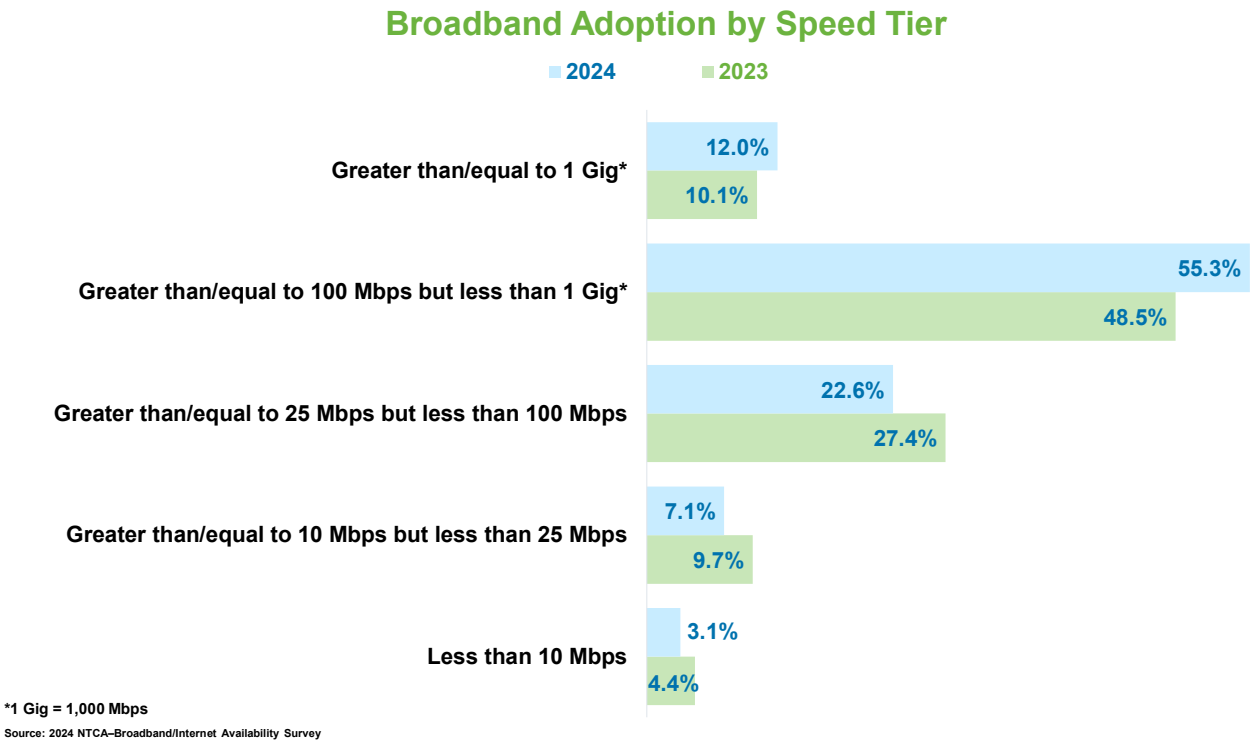
Maximum *Upstream* Speed Availability



*1 Gig = 1,000 Mbps

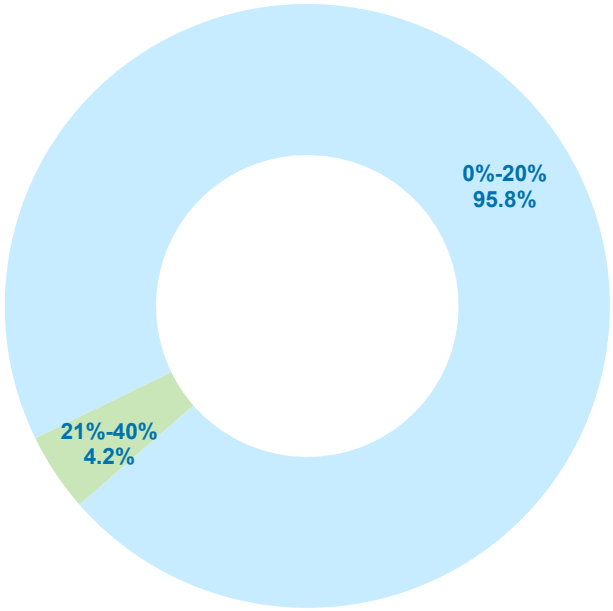
Source: 2024 NTCA–Broadband/Internet Availability Survey

- More than eight in 10 ILEC customers (84.9%) can access maximum upstream speeds of 100 Mbps or higher for fixed broadband service, on average, up from 81.8% in 2023. Additionally, an average of 90.0% of customers can receive upstream speeds of 20 Mbps or greater, an increase from 86.7% in 2023.
- On a narrower scale, nearly seven in 10 customers (68.0%) can receive upstream speeds of 1 Gig or more, while 16.9% can access speeds between 100 Mbps and 1 Gig.



- The survey shows a continued migration of consumers toward higher-speed broadband services as they become increasingly available. On average, 67.3% of customers now subscribe to speeds of 100 Mbps or greater, up from 58.6% in 2023, 48.9% in 2022 and 37.3% in 2021. The most popular tier is between 100 Mbps and less than 1 Gig, with 55.3% of customers subscribing, more than double the next-most popular tier of 25 Mbps to less than 100 Mbps at 22.6%.
- The proportion of customers subscribing to speeds lower than 25 Mbps has continued to decline, now at 10.2%, compared to 14.1% in 2023, 20.1% in 2022 and 27.8% in 2021. Specifically, 7.1% of customers subscribe to speeds between 10 Mbps and less than 25 Mbps, while 3.1% subscribe to speeds below 10 Mbps.
- Standalone broadband services are taken by an average of 45.5% of subscribers, a slight decline from 49.7% in 2023 but an increase from 41.5% in 2022 and 37.0% in 2021. For the purposes of this report, “standalone” broadband refers to broadband purchased without regulated local exchange service from the ILEC. Customers purchasing non-regulated VoIP service are still considered to be subscribing to standalone broadband.

Percentage of Total Customers Who Signed Up for the Affordable Connectivity Program, if Available



Source: 2024 NTCA–Broadband/Internet Availability Survey

- More than eight in 10 respondents (86.0%) indicate they participated in the Affordable Connectivity Program (ACP). Among those who participated, nearly all (95.8%) reported that 0%–20% of their total customers signed up for the discounted service. Similarly, 94.1% reported that 0%–20% of their ACP customers were new customers, and 95.7% reported that 0%–20% of their former ACP customers canceled or reduced their subscriptions when the program ended.

Anchor Institution Connection via Fiber

Anchor Institution	% Connected to Network via Fiber	
	2024 Mean*	2023 Mean
Primary/secondary schools	88.4%	86.0%
Public safety entities (police, fire, etc.)	82.4%	81.1%
Public libraries	85.8%	79.6%
Hospitals/medical clinics	88.0%	77.8%
911 Call Centers	87.3%	49.1%
Community colleges	88.6%	33.2%
State universities and extensions	90.0%	31.2%

Source: 2024 NTCA–Broadband/Internet Availability Survey

*Calculation changed in 2024 to include only participants with the applicable institution type in the area.

- In 2024, nine in 10 state universities and extensions (90.0%) and community colleges (88.6%) are connected to respondents' networks via fiber.
- Similar percentages of primary/secondary schools (88.4%) and hospitals/medical clinics (88.0%) are connected via fiber in 2024, reflecting slight increases from 2023 (86.0% and 77.8%, respectively).
- The proportion of public libraries connected via fiber rose to 85.8% in 2024, up from an average of 79.6% in 2023.
- Connectivity of hospitals/medical clinics via fiber has grown steadily, increasing from 77.8% in 2023 to 88.0% in 2024.
- In 2024, 87.3% of 911 call centers are connected via fiber, a significant rise from 49.1% in 2023.
- Public libraries (85.8%) and public safety entities (police, fire, etc.) (82.4%) also saw fiber connectivity rise in 2024, with libraries increasing from 79.6% in 2023 and public safety growing from 81.1%.

Number of Anchor Institutions in Service Area and Percentage Served With Fixed Broadband

Anchor Institution	Number in Service Area 2024 Mean	Percentage Served 2024 Mean
Primary/secondary schools	9.2	83.4%
Public libraries	3.2	92.2%
Public safety entities (police, fire, etc.)	10.6	93.3%
Hospitals/medical clinics	7.2	93.8%
911 Call Centers	0.7	96.0%
Community colleges	0.2	94.4%
State universities and extensions	0.3	92.3%

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents report that the average percentage of anchor institutions in their ILEC area that they serve with fixed broadband includes 96.0% of 911 call centers, 94.4% of community colleges, 93.8% of hospitals/medical clinics, 93.3% of public safety entities, 92.3% of state universities, 92.2% of public libraries and extensions and 83.4% of primary/secondary schools.

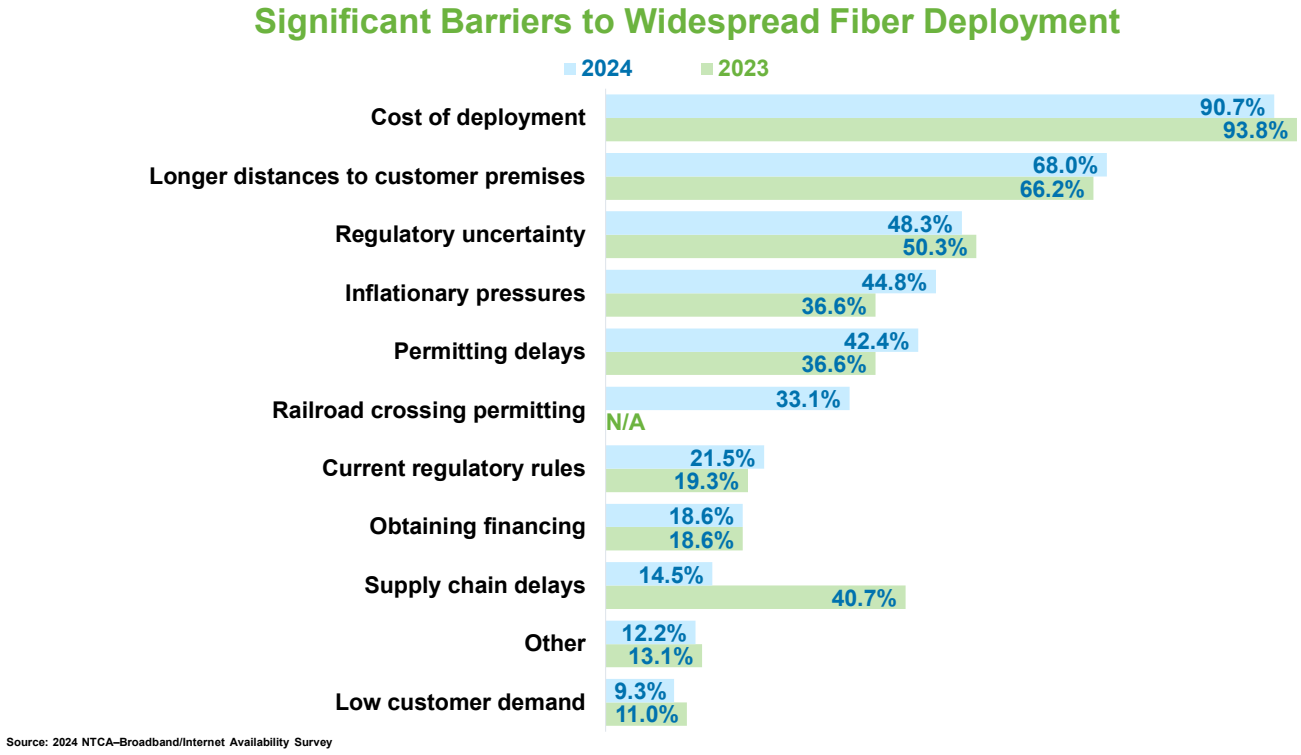
Anchor Institution Broadband Speed

Broadband Speed	2024 Mean	2023 Mean	2022 Mean	2021 Mean	2020 Mean
Maximum Speed of Broadband Available	2,526 Mbps	3,197 Mbps	2,025 Mbps	1,730 Mbps	1,428 Mbps
Average Speed of Broadband Purchased	495 Mbps	453 Mbps	336 Mbps	313 Mbps	235 Mbps

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Even with the decrease to 2,526 Mbps in 2024 from 3,197 Mbps in 2023, the average *maximum* speed of broadband available to anchor institutions has increased significantly since 2020.
- The average speed of broadband purchased in 2024 by anchor institutions is 495 Mbps, continuing its steady climb over the past four years (453 Mbps in 2023, 336 Mbps in 2022, 313 Mbps in 2021, and 235 Mbps in 2020).

Fiber Deployment & Supply Chain Considerations



Source: 2024 NTCA–Broadband/Internet Availability Survey

- The cost of deployment continues to be the most significant barrier to widespread fiber deployment as cited by more than nine in 10 (90.7%) companies, albeit lower than the 93.8% reporting this in 2023.
- Longer distances to customer premises is the second-most significant barrier with slightly more than two-thirds (68.0%) indicating this as a continuing challenge in 2024, a slight increase from 2023 (66.2%).
- Nearly half of all respondents name regulatory uncertainty (48.3%) as a significant barrier, a slight decrease from 2023 (50.3%).
- Inflationary pressures at 44.8% and permitting delays at 42.4% followed closely behind as significant barriers. Both were cited by 36.6% of respondents in 2023.
- Railroad crossing permitting, a new barrier added as a response option on this year's survey, was cited by one-third (33.1%) of respondents as being significant.
- Taking a sharp drop from past surveys (40.7% in 2023 and 62.1% in 2022), supply chain delays were cited by only 14.5% of respondents in 2024.
- Few respondents cited low customer demand as a significant barrier, with just 9.3% saying so. Other less significant barriers include obtaining financing (18.6% in both 2024 and 2023) and current regulatory rules (21.5% in 2024 and 19.3% in 2023).

Inability or Delay in Procuring Supplies Needed for Communications Network Deployment

	2024		2023	
	Yes	No	Yes	No
Experiencing an inability or delay in procuring equipment, fiber, and/or other supplies needed for communications network deployment	13.6%	86.4%	38.4%	61.6%

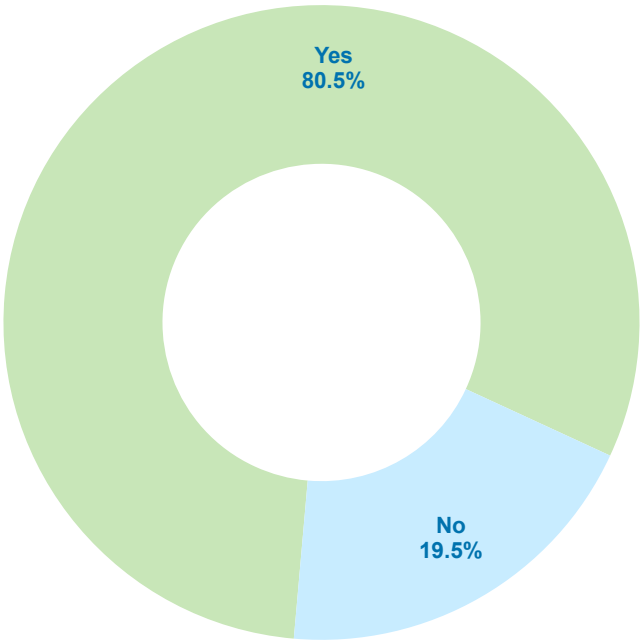
If you are experiencing an inability or delay in procuring supplies, what kind of supplies are affected?	2024	2023
Fiber	51.7%	62.2%
Network electronic components for fixed wireline service	62.1%	70.3%
Network electronic components for fixed wireless service	10.3%	10.8%
Network electronic components for mobile service	0.0%	5.4%
Customer Premises Equipment (including ONTs and routers)	58.6%	67.6%

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Just over one in 10 respondents (13.6%) reported experiencing delays or difficulties in procuring equipment, fiber, or other supplies necessary for communications network deployment—a significant drop from 38.4% in 2023. Slightly more than one-half (51.7%) stated they were unable to acquire or were delayed in procuring fiber specifically.
- Among those facing procurement challenges, 72.4% reported issues with acquiring network electronic components (for fixed wireline and fixed wireless service), and 58.6% reported difficulties procuring Customer Premises Equipment (such as ONTs and routers).
- These delays or procurement challenges have led to impacts such as delayed service installations at customer premises (57.1%), delayed network construction (53.6%), and longer times to replace aging equipment (46.4%).
- When comparing delays in procuring supplies to initial expectations based on supplier quotes or prior experience, more than half (51.7%) reported delays of 3–6 months. Just over one-quarter (27.6%) reported delays of less than 3 months, while only 6.9% cited delays of 7–10 months, 11 months to 1 year, or no delays at all.
- Only 3.6% of respondents experiencing procurement challenges with supplies indicated that these issues had no impact on their operations.

Competitive ISP Broadband Services

Offer Competitive Broadband Service Outside of ILEC Service Area



Source: 2024 NTCA–Broadband/Internet Availability Survey

- More than three-quarters of respondents (80.5%) provide competitive broadband service outside their ILEC service areas, up from 75.3% last year.

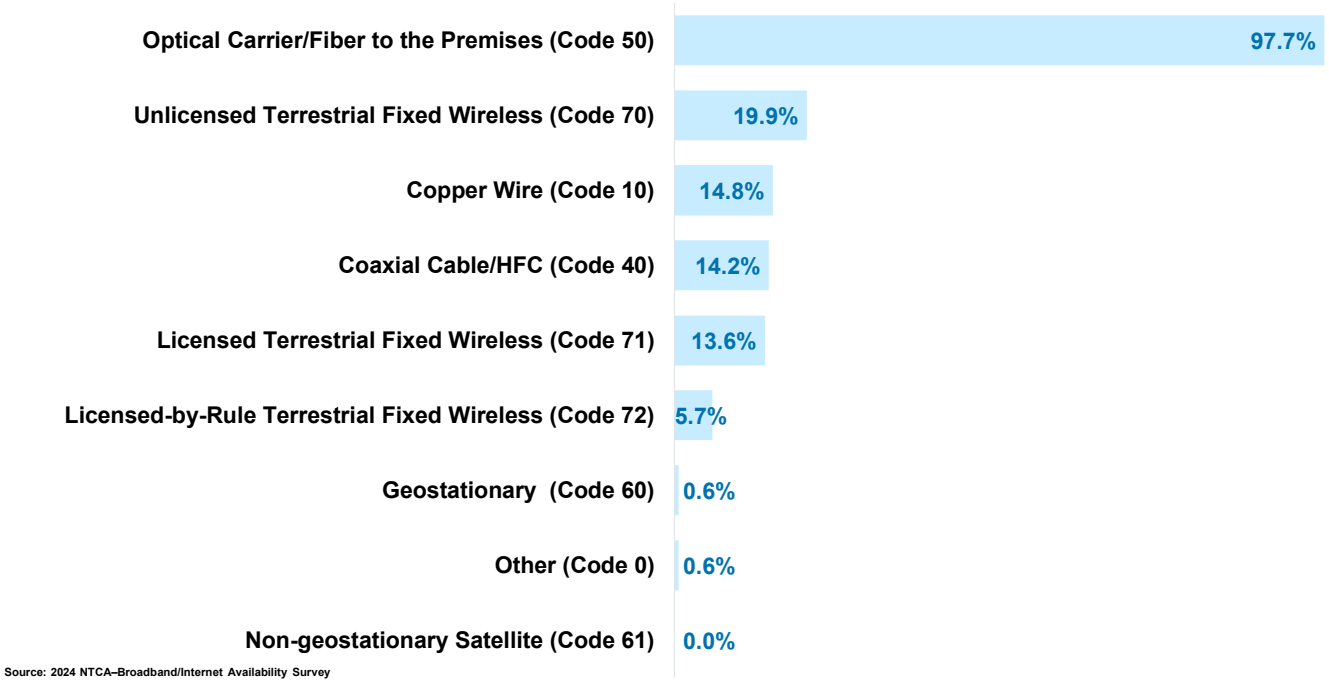
Fixed Broadband Connections in Competitive ISP Operation

Competitive Broadband	2024 Mean	
	Residential	Business
Number of fixed broadband connections	2,808	402

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Responding companies reported that their competitive ISP operations maintain an average of 2,808 residential fixed broadband connections and 402 business fixed broadband connections outside their ILEC service area.

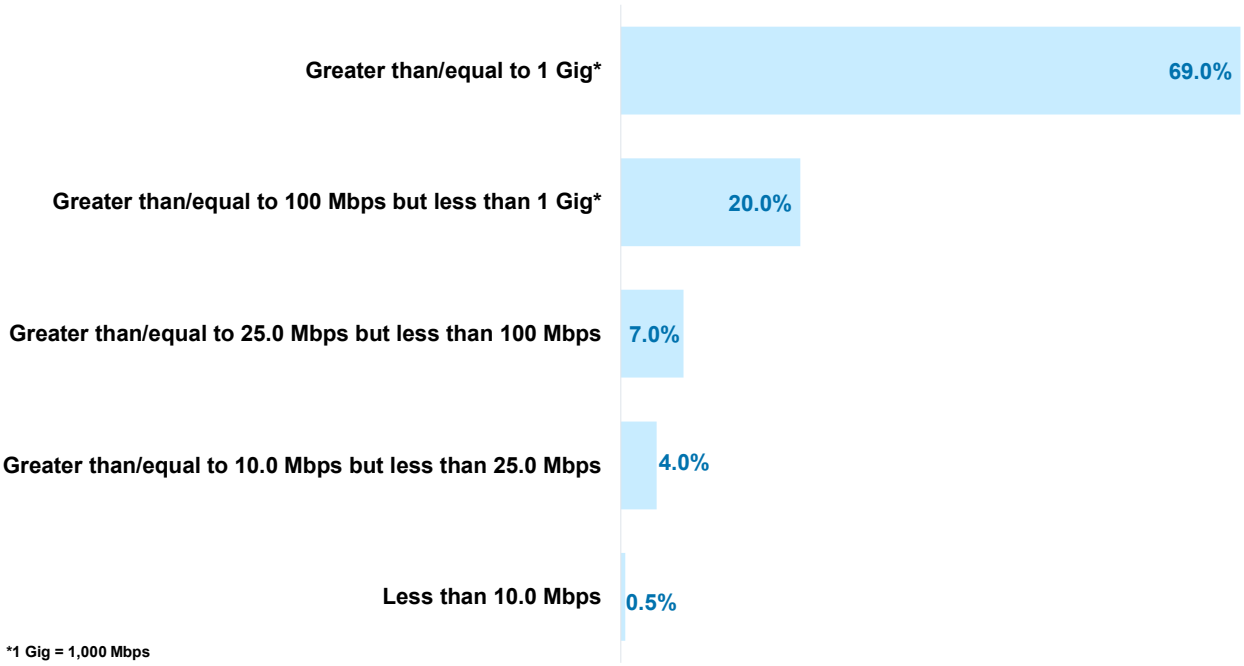
Technologies Competitive ISPs Using to Provide Fixed Broadband Service Outside of ILEC Service Area



Source: 2024 NTCA–Broadband/Internet Availability Survey

- Most respondents (97.7%) offering competitive broadband service outside of their ILEC service area indicate that their competitive ISP is using Optical Carrier/Fiber to the Premises (Code 50), an increase from 93.3% in 2023. Approximately one-fifth (19.9%) report using Unlicensed Terrestrial Fixed Wireless (Code 70), a decrease from 24.8% in 2023 but the same percentage as in 2022.
- Another 14.8% report using Copper Wire (Code 10), down from 18.1% in 2023. Additionally, 14.2% use Coaxial Cable/HFC (Code 40) and 13.6% use Licensed Terrestrial Fixed Wireless (Code 71). Only 5.7% report using Licensed-by-Rule Terrestrial Fixed Wireless (Code 72).
- Geostationary Satellite (Code 60) is used by only 0.6% of respondents, while non-geostationary satellite (Code 61) is not used at all.
- Note: Percentages exceed 100% as members report using multiple technologies to offer competitive service outside their ILEC area.

Maximum *Downstream* Speed Availability to Competitive ISP's Customer Base

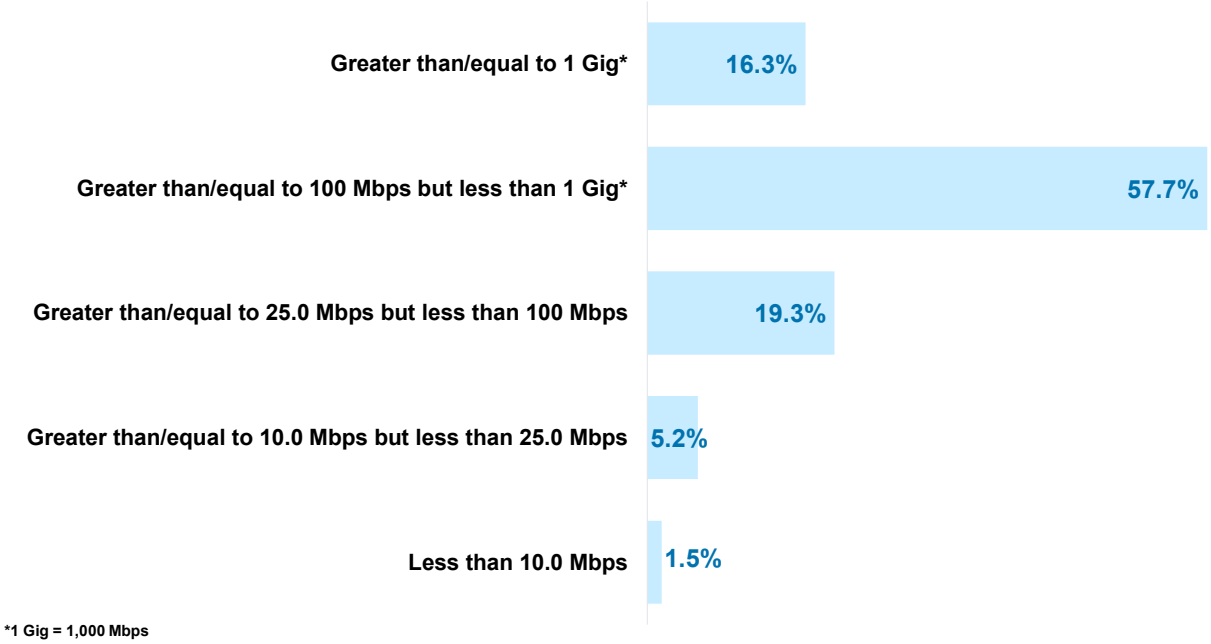


*1 Gig = 1,000 Mbps

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Responding companies offering competitive broadband service outside their ILEC service area report that, on average, 69.0% of their competitive ISP's customer base can receive maximum downstream speeds of 1 Gig or greater. Another 20.0% can receive speeds of 100 Mbps or greater but less than 1 Gig.
- Smaller proportions of customers can receive downstream speeds of 25 Mbps or greater but less than 100 Mbps (7.0%) and 10 Mbps or greater but less than 25 Mbps (4.0%). The remaining 0.5% can receive maximum downstream speeds of less than 10 Mbps.

Downstream Broadband Adoption by Competitive ISP's Customer Base

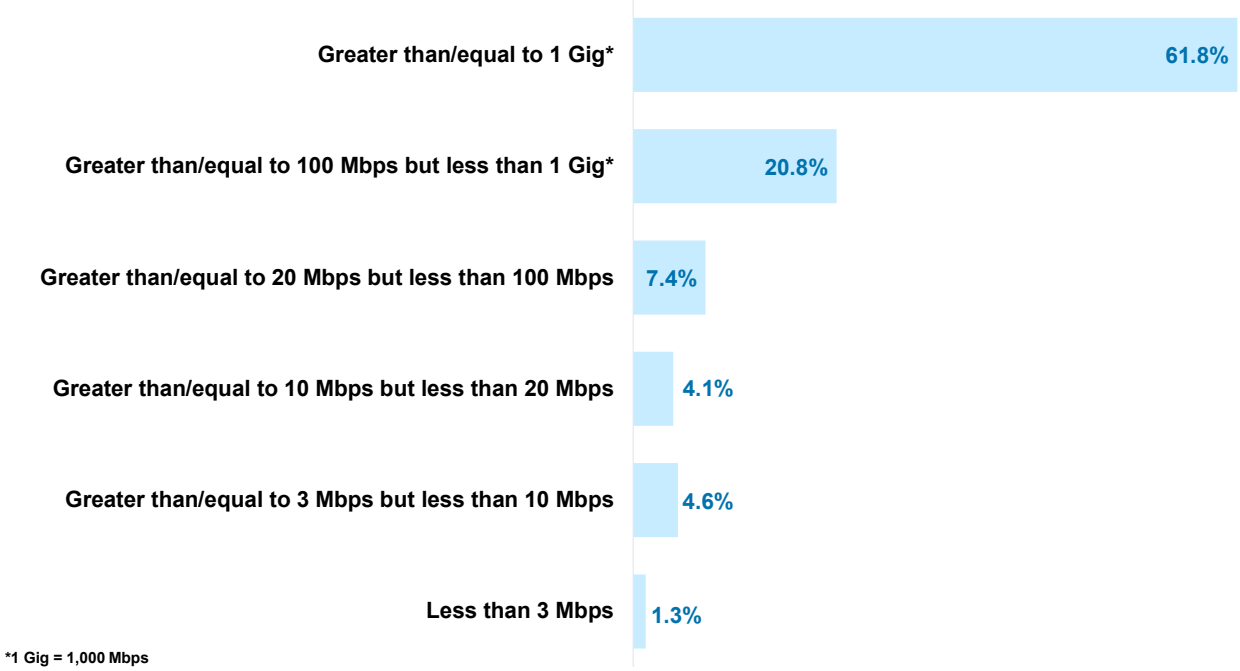


*1 Gig = 1,000 Mbps

Source: 2024 NTCA–Broadband/Internet Availability Survey

- On average, 16.3% of responding companies' competitive ISP customer base subscribes to a maximum downstream speed of 1 Gig or greater, while 57.7% subscribe to speeds of 100 Mbps or greater but less than 1 Gig, and 19.3% subscribe to speeds of 25 Mbps or greater but less than 100 Mbps.
- Smaller percentages subscribe to slower speeds, with 5.2% subscribing to maximum downstream speeds of 10 Mbps or greater but less than 25 Mbps, and 1.5% subscribing to speeds of less than 10 Mbps.

Maximum *Upstream* Speed Availability to Competitive ISP's Customer Base

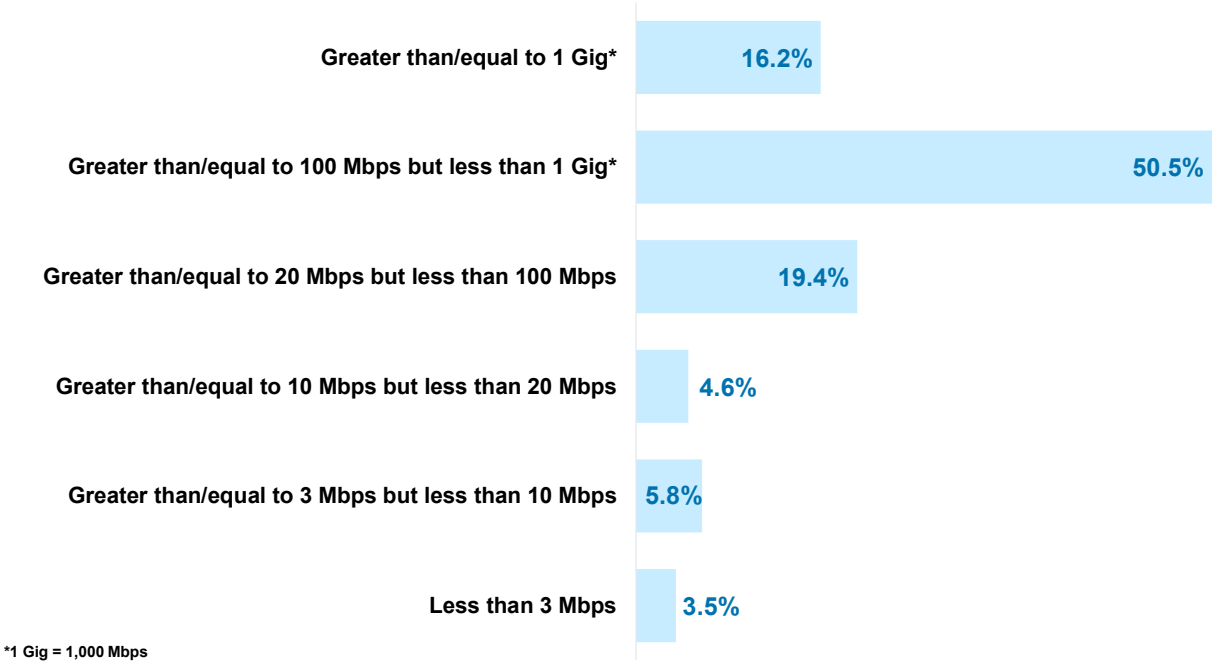


*1 Gig = 1,000 Mbps

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Approximately six in 10 (61.8%, on average) responding companies offering competitive broadband service outside their ILEC service area report that their competitive ISP's customer base can receive a maximum upstream service at a speed that is greater than or equal to 1 Gig, and one in five (20.8%) can receive upstream service at a maximum speed greater than or equal to 100 Mbps but less than 1 Gig.
- Smaller proportions can receive upstream service at a maximum speed that is greater than or equal to 20 Mbps but less than 100 Mbps (7.4%), greater than or equal to 10 Mbps but less than 20 Mbps (4.1%), and greater than or equal to 3 Mbps but less than 10 Mbps (4.6%). The remaining 1.3% can receive upstream service at a maximum speed of less than 3 Mbps.

Maximum *Upstream* Speed Adoption by Competitive ISP's Customer Base



*1 Gig = 1,000 Mbps

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Among responding companies' competitive ISP customer bases, an average of 16.2% subscribe to a maximum upstream speed of greater than or equal to 1 Gig, 50.5% subscribe to maximum upstream speed greater than or equal to 100 Mbps but less than 1 Gig, and 19.4% subscribe to a maximum upstream speed that is greater than or equal to 20 Mbps but less than 100 Mbps.
- Smaller percentages subscribe to each of the slower ranges—4.6%, on average, subscribe to maximum service greater than or equal to 10 Mbps but less than 20 Mbps, 5.8% subscribe to maximum service of greater than or equal to 3 Mbps but less than 10 Mbps, and 3.5% subscribe to maximum service of less than 3 Mbps.

Competition In ILEC Service Area

Competition in ILEC Service Areas

Type of Providers	Fixed Terrestrial Broadband Providers in Service Area	
	2024 Mean	% of ILECs Reporting Competition in Service Area
Cable Companies	1	43.6%
Electric Utilities	0	30.1%
Fixed Wireless ISPs (WISPs) using licensed spectrum	1	46.2%
WISPs using unlicensed spectrum	1	52.4%
Other	1	45.4%

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents were asked to identify the kinds of competitors, if any, that offer competing fixed terrestrial broadband services to some portion of their service areas. Slightly more than half (52.4%) report that WISPs using *unlicensed* spectrum are a competitor in some portion of their service area, while just less than half (45.4%) indicate that other providers offer fixed terrestrial broadband somewhere in the area. More than four in 10 (43.6%) report that cable companies are a competitor in portions of their service area, and 46.2% report fixed wireless ISPs (WISPs) using *licensed* spectrum operate within some portion of their service areas. Three in 10 (30.1%) identify electric utilities as offering broadband in some portion of their service areas.
- Respondents estimate that fixed service competitors offer broadband at speeds of 100 Mbps downstream/20 Mbps upstream or greater at prices comparable to them, on average, to 23.2% of their ILEC service area. This percentage decreases to 11.1% for those competitor(s) offering broadband at speeds of 100 Mbps symmetrical or greater at prices comparable to respondents' prices.

Licensed Spectrum Bands Used or Have Plans to Use

	2024 Mean
Low-band spectrum, less than 1 GHz (e.g., 600 MHz, 700 MHz, 800 MHz Cellular/SMR)	25.0%
Mid-band spectrum, 1-6 GHz (e.g., AWS, PCS, 2.5 EBS, 3.5 CBRS)	88.6%
High-band or mmWave spectrum, above 6 GHz (e.g., 24 GHz, 28 GHz)	9.1%

Percentages based on respondents offering or planning to offer fixed wireless broadband spectrum

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents offering or planning to offer fixed wireless broadband using licensed spectrum use or have plans to use mid-band spectrum, 1-6 GHz (e.g., AWS, PCS, 2,5 EBS, 3.5 CBRS) most often (88.6%). One-quarter (25.0%) use or have plans to use low-band spectrum, less than 1 GHz (e.g., 600 MHz, 700 MHz, 800 MHz Cellular/SMR). Less than one in 10 (9.1%) use or have plans to use high-band or mmWave spectrum, above 6 GHz (e.g., 24 GHz, 28 GHz).

Unlicensed Spectrum Bands Used or Have Plans to Use

	2024 Mean
Low-band spectrum, less than 1 GHz (e.g., 600 MHz TV White Spaces, 900 MHz)	14.3%
Mid-band spectrum, 1-6 GHz (e.g., 2.4 GHz, 3.6 CBRS GAA, 5.8 GHz, 6 GHz)	85.7%
High-band or mmWave spectrum, above 6 GHz (e.g., 24 GHz or higher)	22.4%

Percentages based on respondents offering or planning to offer fixed wireless broadband spectrum

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Regarding unlicensed spectrum, respondents who offer or have plans to offer fixed wireless broadband most often (85.7%) use or plan to use mid-band spectrum, 1-6 GHz (e.g., 2.4 GHz, 3.6 CBRS GAA, 5.8 GHz, 6 GHz). Nearly one-quarter (22.4%) use or plan to use high-band or mmWave spectrum, above 6 GHz (e.g., 24 GHz or higher), and 14.3% use or plan to use low-band spectrum, less than 1 GHz (e.g., 600 MHz TV White Spaces, 900 MHz).

Internet Backbone/Middle Mile

Internet Backbone/Middle Mile

	2024 Mean	2023 Mean	2022 Mean
Number of miles from primary internet backbone connection	92	108	94
Number of middle mile transport providers available	3	3	3

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents report being, on average, 92 miles from their primary internet backbone connection, less than the 108 miles averaged in 2023, but similar to the average reported in 2022 (94 miles). They also can choose to take service from an average of three middle mile transport providers, the same average reported in the past two years.

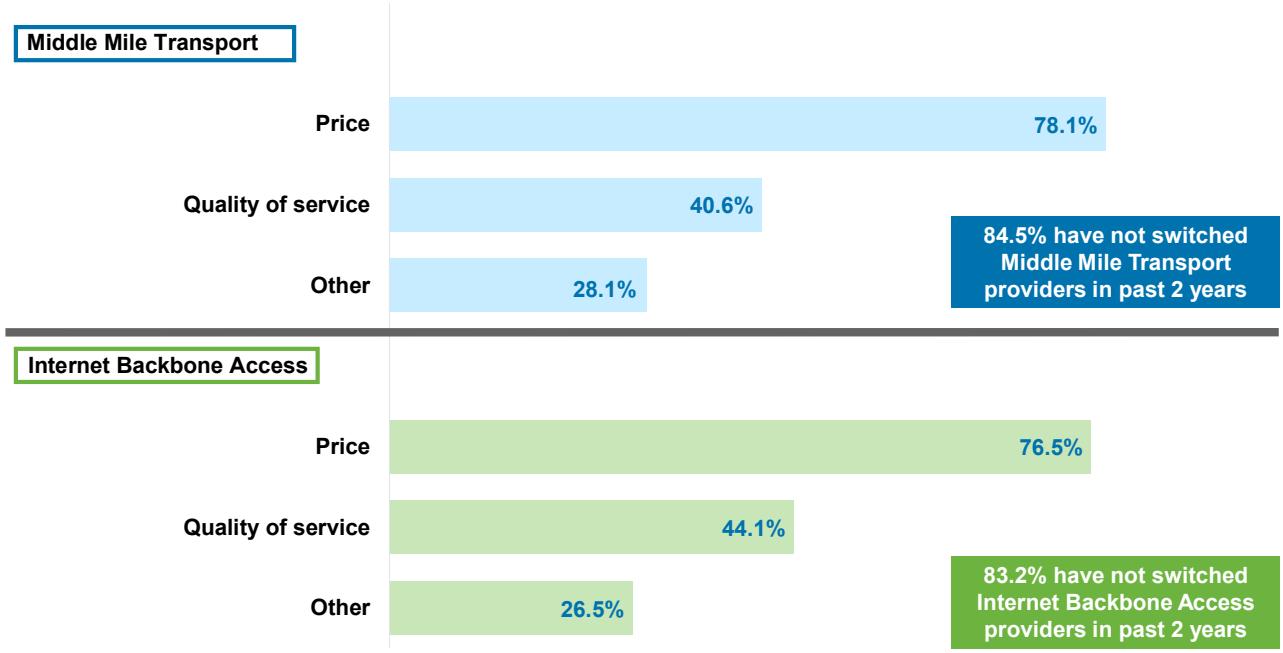
Middle Mile Bandwidth

	2024 Mean	2023 Mean
Middle mile bandwidth (in GB) currently subscribe to	118 GB	63 GB
Number of years expect this capacity to remain sufficient	2.1 Years	2.3 Years

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents currently subscribe to an average of 118 GB of guaranteed middle mile bandwidth (compared to 63 GB in 2023, 54 GB in 2022, 32 GB in 2021, 38 GB in 2020, and 25 GB in 2019) and pay an average of $473 per gigabyte (compared to $798 in 2023, $813 in 2022, $981 in 2021, $1,145 in 2020, and $2,129 in 2019). They expect this capacity to remain sufficient for an average duration of 2.1 years.

Reasons for Switching Providers



Source: 2024 NTCA–Broadband/Internet Availability Survey

- More than eight in 10 (84.5%) responding companies report that they have not switched middle mile transport providers in the past two years, while a similar percentage (83.2%) have not switched internet backbone access providers in the past two years.
- For those who have switched middle mile transport providers in the past two years, 78.1% named price as the reason for switching, down from 80.8% in 2023 and 87.9% in 2022 yet the same as reported in both 2021 and 2020. Price was also the main reason for switching internet backbone access providers, with 76.5% citing this reason, a decrease from the percentage reporting this reason in 2023 (79.3%), 2022 (90.5%) and 2021 (79.3%).
- The percentage of respondents switching middle mile transport providers because of quality of service is 40.6%, down from 53.8% in 2023 and 45.5% in 2022. Similarly, the proportion switching internet backbone providers for quality of service is 44.1%, lower than the 48.3% reported in 2023 but higher than 35.7% in 2022 and 37.9% in 2021.

Video

Video Service(s)

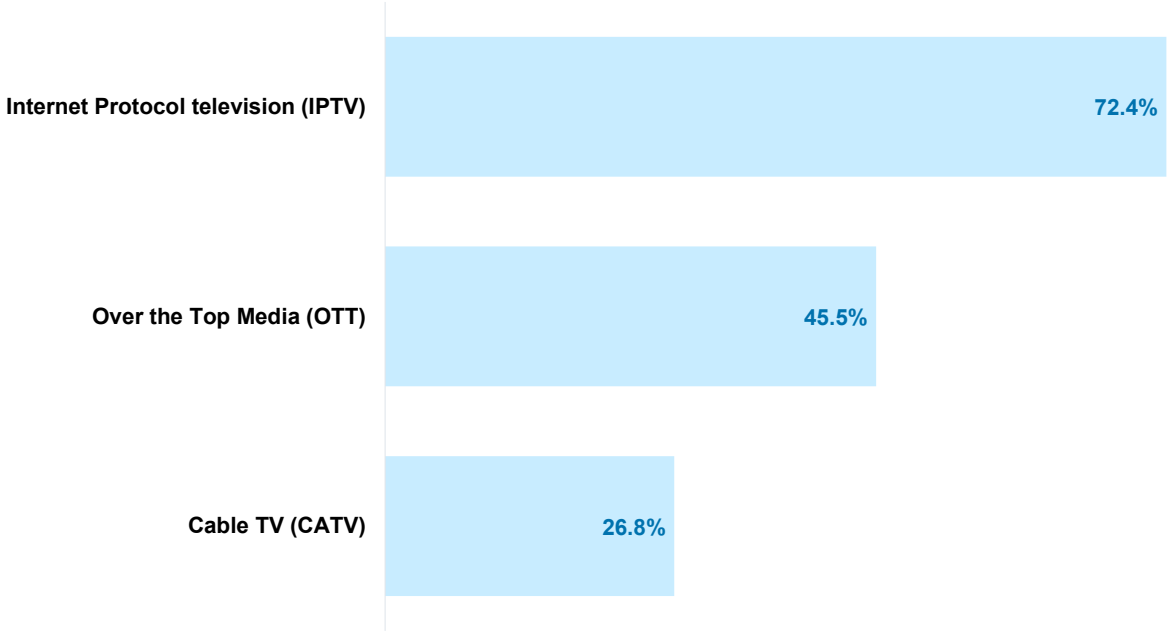
	2024 Mean	2023 Mean
Number of subscribers for Cable TV (CATV)	810	2,650
Number of subscribers for Internet Protocol Television (IPTV)	1,850	1,927
Number of homes passed or otherwise capable of connecting with video service(s)	14,822	13,061

Source: 2024 NTCA–Broadband/Internet Availability Survey

- Responding companies that offer video services report that an average of 810 customers currently subscribe to respondents' Cable TV (CATV) service, compared to an average of 2,650 customers in 2023, while an average of 1,850 customers subscribe to Internet Protocol Television (IPTV) (1,927 in 2023).
- 14,822 homes, on average, are passed or otherwise have the ability to connect with respondents' video service(s), up from an average of 13,061 homes in 2023.
- Using predetermined ranges, respondents report the approximate percentage of households within their service area that cannot receive over-the-air broadcast signals. Specifically, nearly one-quarter (22.2%) indicate that 10% or less of households in their service area cannot receive an over-the-air broadcast signal, 8.2% say it is 11 to 25% of households, 9.2% say it is 26 to 50%, 4.4% say it is 51 to 75%, and 17.4% indicate that more than 75% of service area households cannot receive an over-the-air broadcast signal. Nearly two in five respondents (38.6%) say this percentage is unknown.

Types of Video Services Offered*

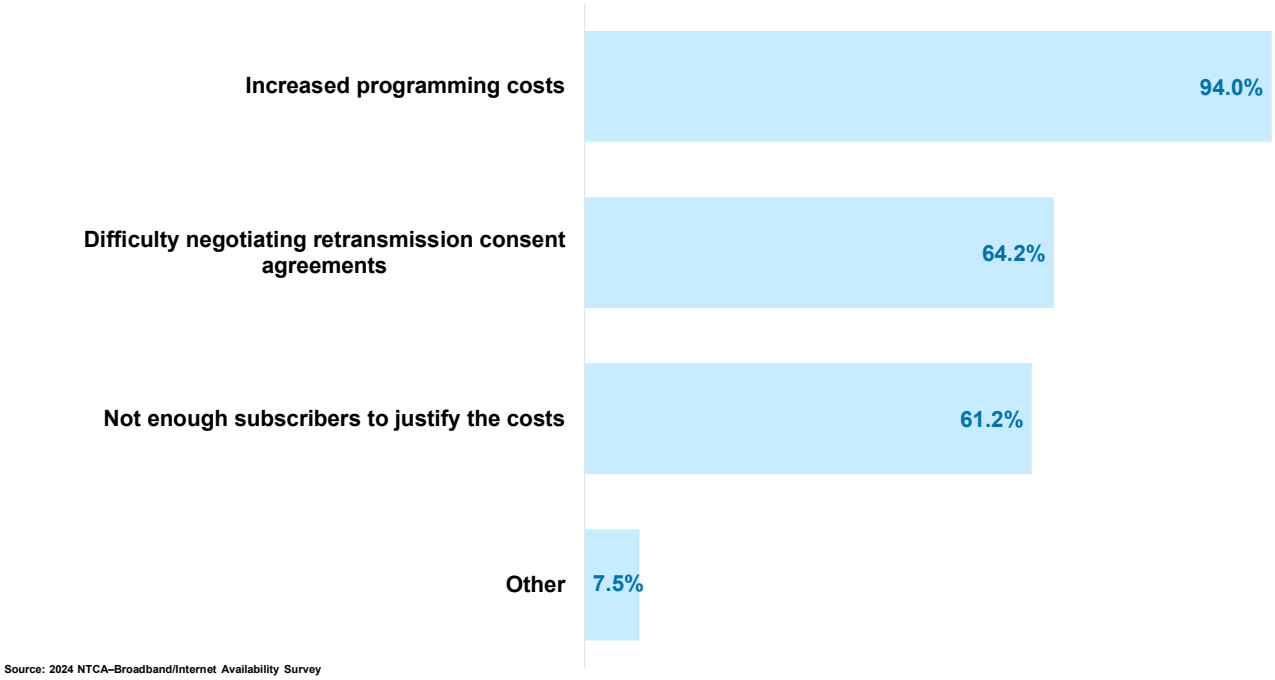
(*Percentages based on respondents currently offering video service)



Source: 2024 NTCA–Broadband/Internet Availability Survey

- Respondents who currently offer video service to their customers most often (72.4%) offer Internet Protocol television (IPTV).
- Over the top media (OTT) is offered by nearly half (45.5%) of responding companies that offer video service, and another 26.8% report offering Cable TV (CATV). Respondents were asked to select all of the types of video services that they offer. Some respondents report offering multiple types of video services, resulting in the combined percentage of all types of video services offered exceeding 100%.
- Of those that currently offer CATV or IPTV service, approximately seven in 10 (69.3%) say they will likely continue to do so for the foreseeable future; more specifically, 28.7% say they are very likely to continue and 40.6% say they are somewhat likely. Nearly one-quarter (22.8%) say they are not very likely to continue offering CATV or IPTV service; 7.9% report that they already have plans to discontinue this service.
- Approximately four in 10 (42.2%) of responding companies do not currently offer video service to their customers.

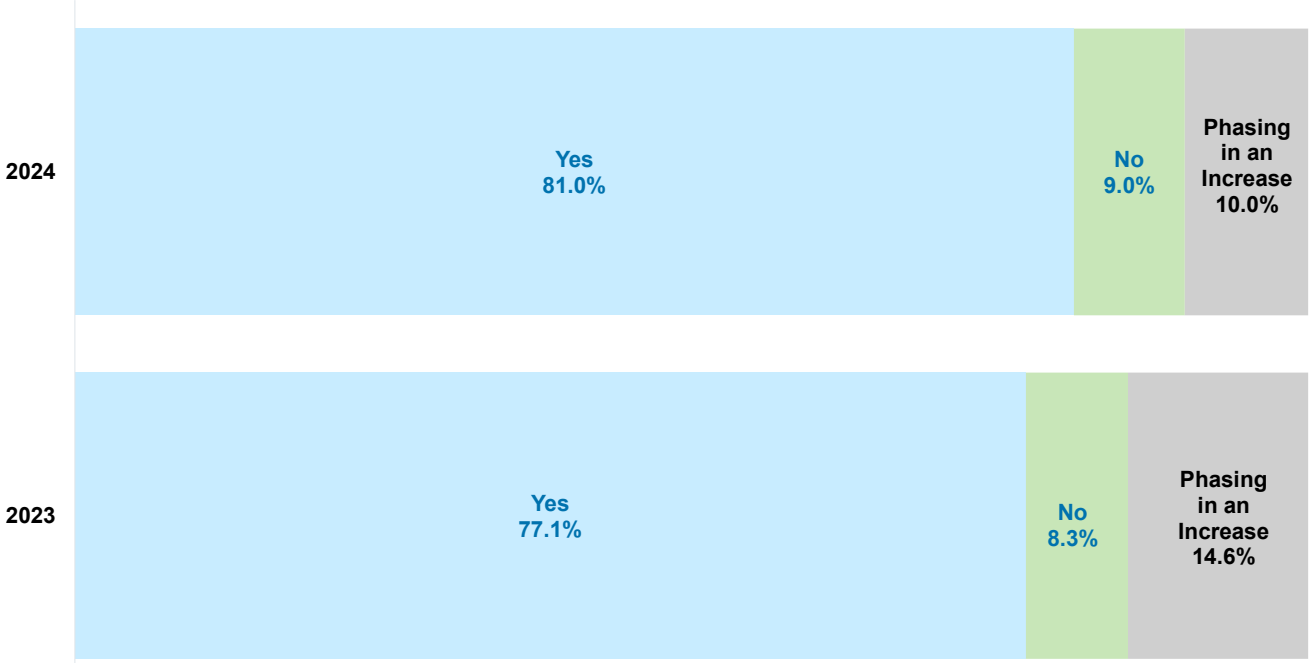
Reasons for Discontinuing CATV or IPTV Services



Source: 2024 NTCA–Broadband/Internet Availability Survey

- Responding companies with plans to discontinue or are considering discontinuing video service cite increased programming costs (94.0%) as the primary reason. Nearly two-thirds (64.2%) also point to difficulties in negotiating retransmission consent agreements, and slightly fewer than that (61.2%) cite insufficient subscriber numbers to justify the costs.

Total Retransmission Fee Increase Passed on to Video Subscribers



Source: 2024 NTCA–Broadband/Internet Availability Survey

- In respondents' most recent retransmission consent agreements, retransmission consent fees increased by an average of $104,020 total dollars. In 2023, average retransmission consent fees increased by $78,022.
- More than three-quarters (81.0%) of responding companies report that they passed the increase in retransmission consent fees on to their subscribers, higher than reported in 2023 (77.1%). One in 10 (10.0%) are phasing in an increase, lower than the 14.6% who planned to phase in the increase in 2023.
- The average percentage of total operating expenditures that went toward retransmission consent fees in 2024 was 37.2%, an increase from 2023 (27.9%) but similar to the 36.2% reported in 2022.

Conclusions

NTCA THE RURAL BROADBAND ASSOCIATION®

Broadband/Internet Availability Survey Report

2024

Conclusions

- **NTCA members continue to maintain and extend their fiber deployments and offer more robust broadband services to meet growing consumer demand for higher speeds.** On average, more than 85% of customers are served by fiber-to-the-premises connections. As a result, nearly nine in 10 customers (88.6%, on average) now have access to downstream broadband speeds of 100 Mbps or higher, compared to 84.0% in 2023, 81.9% in 2022, and 75.6% in 2021.The most significant growth this year is again seen in the Gigabit tier, where an average of 76.4% of customers can now receive downstream speeds of 1 Gig or higher, up from 67.1% in 2023, 60.9% in 2022, and 55.4% in 2021. Adoption of faster speeds also continues to rise. The proportion of customers subscribing to downstream speeds of 100 Mbps or higher has increased to 67.3% this year, compared to 58.6% in 2023, 48.9% in 2022, and 37.3% in 2021.In particular, the percentage of customers subscribing to speeds of 100 Mbps or higher but less than 1 Gig has risen to 55.3% this year, up from 48.5% in 2023 and 36.7% in 2022.
- **Cost of deployment remains the most significant barrier to widespread fiber deployment in rural America,** with 90.7% of respondents citing it as a major challenge in 2024. While this is slightly lower than 93.8% in 2023, it is higher than the 88.1% reported in 2022 and 81.7% in 2021. Other significant barriers include longer distances to customer premises (68.0% in 2024, up from 66.2% in 2023), regulatory uncertainty (48.3%), and inflationary pressures (44.8%). Notably, there has been a sharp decline in respondents citing supply chain delays as a barrier, dropping to 14.5% this year compared to 40.7% in 2023 and 62.1% in 2022. Among those experiencing delays or challenges in procuring supplies needed for network deployment, the most commonly affected items included network electronic components, customer premises equipment (such as ONTs and routers), and fiber. These delays have resulted in extended timelines for network construction and service installation at customer premises as well as replacing older equipment.
- **NTCA members persist in providing higher speeds of broadband service to anchor institutions in their communities.** Respondents report providing fixed broadband service to almost all 911 call centers, community colleges, hospitals/medical clinics, public safety entities (police, fire, etc.), state universities and extensions, and public libraries in their service area, as well as to most primary/secondary schools. The maximum broadband speed available to anchor institutions in respondents' service areas has decreased this year to an average of 2,526 Mbps, down from 3,197 Mbps in 2023. However, this remains higher than the averages of 2,025 Mbps in 2022 and 1,730 Mbps in 2021. Meanwhile, the average speed purchased by anchor institutions continues to rise, reaching 495 Mbps in 2024, up from 453 Mbps in 2023 and 336 Mbps in 2022.
- **Most NTCA members participated in the Affordable Connectivity Program (ACP).** However, adoption remains a challenge. Among the 86.0% of respondents offering the ACP, 95.8% reported that only 0%–20% of their customers signed up for the discounted program. Similarly, 95.7% reported that since the ACP ended, 0%–20% of their customers have canceled or reduced their subscriptions.

- **NTCA members continue to grapple with structural economic challenges in the video services marketplace.** Respondents considering discontinuing or planning to discontinue CATV or IPTV services cite increased programming costs as the primary reason, followed by difficulties in negotiating retransmission consent agreements and insufficient subscriber numbers to justify the costs. The average total amount paid in the most recent retransmission consent agreements also rose again significantly—by $104,020—up from the average of $78,022 increase reported in 2023. Additionally, 81.0% of respondents report that this total retransmission fee increase is passed on to their video subscribers.