



April 3, 2019

Ex Parte Notice

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

RE: *Connect America Fund, WC Docket No. 10-90; Expanding Flexible Use of the 3.7 GHz to 4.2 GHz Band, GN Docket No. 18-122*

Dear Ms. Dortch:

On Monday, April 1, 2019, Shirley Bloomfield, Chief Executive Officer of NTCA-The Rural Broadband Association (“NTCA”), and the undersigned met with Commissioner Geoffrey Starks and his legal advisor, Randy Clarke.

NTCA provided the attached materials to Commissioner Starks to describe the association’s members and their long-running efforts to deploy networks and provide robust and reliable communications services in the most rural parts of America. NTCA discussed the importance of sufficient and predictable universal service funding both in making the business case for such investments and also then sustaining the delivery of voice and broadband services in rural America and on tribal lands. NTCA further emphasized the importance of spectrum policies that strike a balance between the goals of reaching as many consumers as possible and promoting operations and service availability in more rural areas specifically.

Thank you for your attention to this correspondence. Pursuant to Section 1.1206 of the Commission’s rules, a copy of this letter is being filed via ECFS.

Sincerely,

/s/ Michael R. Romano

Michael R. Romano
Senior Vice President –
Industry Affairs & Business Development

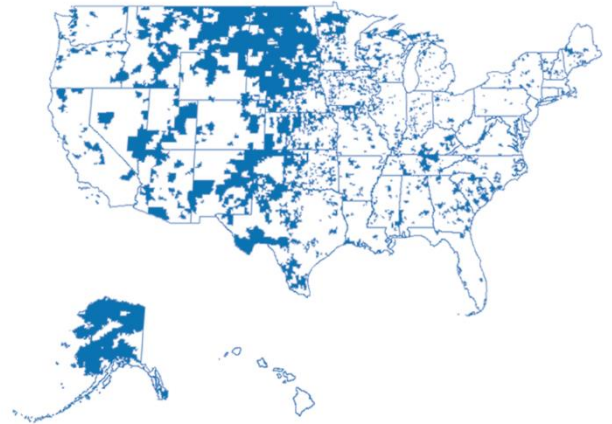
cc: Commissioner Geoffrey Starks
Randy Clarke

Enclosures

Rural Broadband: No One Does It Better Because No One Is More Committed

Every day NTCA members work hard to deliver for the country's rural communities. Their steadfast and longstanding commitment to serving the communities they call home makes them rural America's trusted communications solution providers.

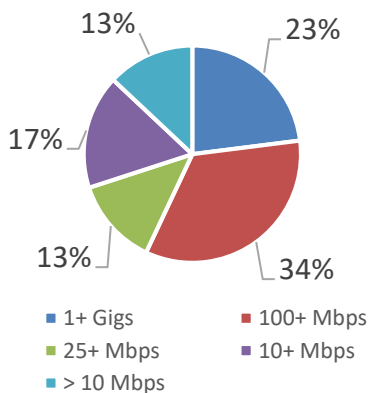
- NTCA advocates on behalf of nearly **850** independent, community-based broadband providers that promote innovation in rural and small-town America.
- Small rural telcos serve rural customers in **46** states, covering more than **35%** of the nation's landmass.
- Population density in most telco service areas is generally in the **5-10** customers per square mile range.



Rural Broadband: Moving America Forward

NTCA members have worked for decades to invest in our nation's future by deploying state-of-the-art, advanced communications infrastructure in the most rural, hard-to-reach areas of the country. These dedicated telecom providers ensure rural Americans have access to affordable, reliable and robust broadband services to connect their homes, businesses and communities to the rest of America and the world.

Internet Speeds



- **70%** of respondents' customers have access to broadband service at speeds in excess of 25 Mbps.*
- **57%** of respondents' customers have access to broadband service at speeds in excess of 100 Mbps.*
- NTCA Providers serve an average of **10** public safety entities (police, fire, etc.) and **8** schools with fixed broadband.*



Since 2013, **69** providers have been recognized as serving **Smart Rural Communities** through their collaboration with local leaders on broadband-enabled solutions, and **176** providers are **Certified Gig-Capable**.



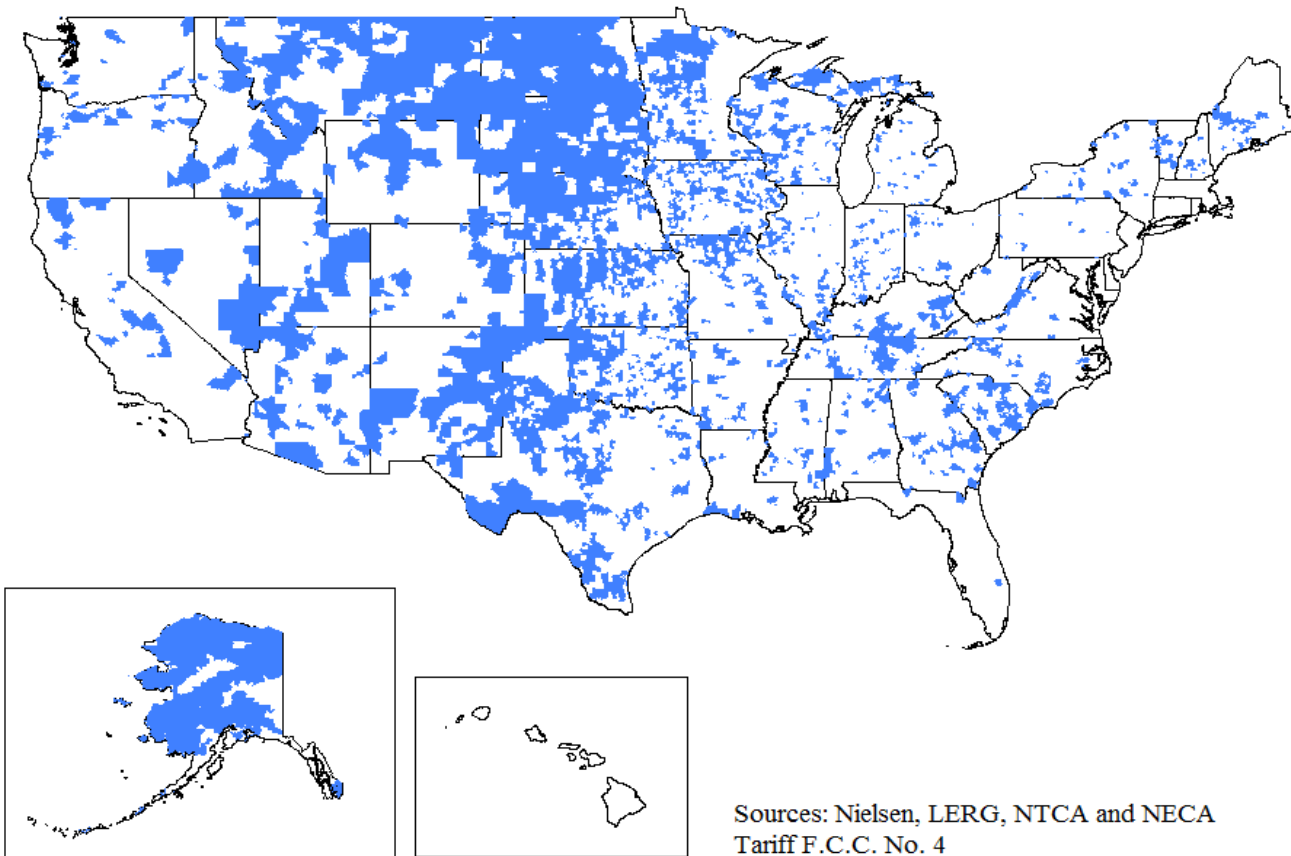
Rural Broadband: Overcoming Challenges to Connect Rural America

While advancements have been made in technology and innovation, many challenges still exist for the small, community-based rural telecom providers. NTCA members are finding solutions to build upon what has worked to date, while incorporating innovative ways to overcome the continuous challenges of operating in rural areas.

- The cost to deploy fiber networks was cited by 93% of survey respondents as the No. 1 barrier to its widespread availability in rural America.*

* Based on results from the ["NTCA 2018 Broadband/Internet Availability Survey Report"](#)

NTCA-The Rural Broadband Association



Broadband/Internet Availability Survey Report



NTCA—THE RURAL BROADBAND ASSOCIATION

4121 Wilson Boulevard
Suite 1000
Arlington, Virginia 22203
703-351-2000

December 2018

Table of Contents

Introduction/Executive Summary 1

Fixed Voice and Broadband..... 4

Mobile Voice and Broadband Data Service 11

Competition/Marketing 14

Fiber Deployment..... 16

Internet Backbone/Middle Mile 18

Voice Over Internet Protocol (VoIP) 21

Video 21

Conclusions 27

INTRODUCTION/EXECUTIVE SUMMARY

Introduction

For nearly two decades, NTCA–The Rural Broadband Association (NTCA) has conducted its Broadband/Internet Availability Survey to gauge the deployment rates of advanced services by its member companies. NTCA is a national association representing nearly 850 rural rate-of-return regulated operating company telecommunications providers in 45 states.

All NTCA members are small carriers that are “rural telephone companies” as defined in the Communications Act of 1934, as amended by the Telecommunications Act of 1996, although all have evolved to become broadband providers as explained further in this report. Respondents have an average of 4,455 residential and 530 business fixed broadband connections in service.

This latest broadband survey is a follow-up to similar surveys conducted in recent years by NTCA and seeks to build upon the results of those surveys.¹ This year’s survey asked about technologies used to provide broadband service, broadband availability and subscription rates, anchor institutions,² mobile wireless and data services, quantity and type of competition, broadband marketing efforts, fiber deployment, internet backbone and middle mile connections, and video service. The survey also provided an opportunity for respondents to provide any specific comments they wished to share.

Executive Summary

In May 2018, NTCA contracted with Association Research, Inc. (ARI)³ to conduct this year’s survey. ARI sent an email with a survey link to each of the companies (as reflected at the holding company level) in NTCA’s email database; 194 members (31.8%) responded. It is important to note that not all respondents answered every question in the survey.

The average service area identified by respondents is approximately 2,244 square miles. Seven in 10 respondents (69.8%) had customer densities in their service areas of 10 residential customers per square mile or less; 25.4% had densities of two residential customers per square mile or less.

Respondents indicated that they use a variety of platforms within their respective service areas to provide broadband service to their customers.⁴ Nearly three in five (58.0%) of respondents’ broadband customers are served via fiber to the home (FTTH), while 27.9% are served via copper loops, 10.4% via fiber to the node (FTTN), 2.6% via cable modem, 0.8% via unlicensed fixed wireless, 0.4% via licensed fixed wireless and 0.1% via satellite.

¹ Copies of this and previous NTCA survey reports 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.” A more in-depth look at types of broadband service that NTCA members offer to anchor institutions within their communities is available at https://www.ntca.org/sites/default/files/documents/2018-08/NTCA%20Rural%20Anchor%20Institution%20Survey%20Report_Final.pdf.

³ Association Research, Inc., an independent survey research organization located in Gaithersburg, Maryland, conducted the survey, analyzed the findings and prepared this 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.

On average, respondents indicated the following percentage of their customer base can receive maximum downstream speeds of:

- 1 Gig or greater: 23.4%
- 100 Mbps but less than 1 Gig: 33.9%
- Greater than/equal to 25 Mbps but less than 100 Mbps: 13.3%
- Greater than/equal to 10 Mbps but less than 25 Mbps: 17.3%
- Greater than/equal to 4 Mbps but less than 10 Mbps: 9.0%
- Greater than/equal to 1.5 Mbps but less than 4 Mbps: 2.3%
- Greater than/equal to 1 Mbps but less than 1.5 Mbps: 0.3%
- Greater than/equal to 768 kilobits per second (kbps) but less than 1 Mbps: 0.5%
- Greater than/equal to 200 kbps but less than 768 kbps: 0.1%

In 2016, 66.5% of the respondents' customers could receive a maximum downstream speed greater than 25 Mbps, which is lower when compared with the 70.6% who can in 2018. (Earlier surveys did not ask about distinct speed tiers above 25 Mbps.)

The average percentage of respondents' customer base that subscribes to maximum downstream speeds is:

- 2.0% subscribe to speeds greater than 1 Gig.
- 13.7% subscribe to greater than/equal to 100 Mbps but less than 1 Gig.
- 24.0% subscribe to greater than/equal to 25 Mbps but less than 100 Mbps.
- 27.2% of respondents' customers subscribe to a maximum downstream speed that is greater than/equal to 10 Mbps but less than 25 Mbps.
- 21.6% subscribe greater than/equal to 4 Mbps but less than 10 Mbps.
- 8.3% subscribe to service greater than/equal to 1.5 Mbps but less than 4 Mbps.
- 2.4% subscribe to speeds greater than/equal to 1 Mbps but less than 1.5 Mbps.

In 2016, 23.7% subscribed to a downstream speed greater than/equal to 25 Mbps compared with 39.7% in 2018.

Many survey respondents indicated that they face some type of competition for broadband in limited portions of their service areas from cable companies, national internet service providers (ISPs), satellite broadband providers, electric utilities and fixed and/or mobile wireless internet service providers (WISPs). Respondents are taking numerous marketing steps to increase broadband take rates, including bundling of services (80.2%), price promotions (74.1%), no separate fee for customer premises equipment installation (69.8%) or hardware including routers (48.1%), and free software (6.8%).

Companies' short-term and long-term strategies involve deploying fiber to the home. The main barrier to widespread deployment of fiber, as reported by 93.2% of respondents (up from 88.9% in 2016), is cost, although more than half (59.4%, up from 53.5% in 2016) also cited regulatory uncertainty as a barrier and 46.6% (down from 51.5% in 2016) cited long loops. Throughout the history of the survey, deployment cost has been respondents' most significant concern.

The average respondent is 117 miles from its primary internet backbone connection. Twenty percent of those that recently changed backbone providers did so for price reasons. Three-quarters (75.5%) of respondents indicated they are generally satisfied (very satisfied/satisfied) with their current backbone access provider.

Nearly half (47.6%) of respondents currently offer voice over internet protocol (VoIP) service, up from one-third (33.1%) in 2016. Approximately half (48.3%) of respondents not currently offering VoIP have plans to do so in the foreseeable future. Three-quarters (74.3%) of respondents offer internet protocol television (IPTV) service to their customers, while 41.9% offer cable TV and 21.3% offer over the top media (OTT). Nearly all respondents identified gaining access to programming at a reasonable price (96.2%) as the largest barrier they face in providing video services, unchanged from the 97.6% reporting the same in 2016. Yet, one-third (32.4%) of respondents rated having a video service as very important or extremely important for customers.

FIXED VOICE AND BROADBAND

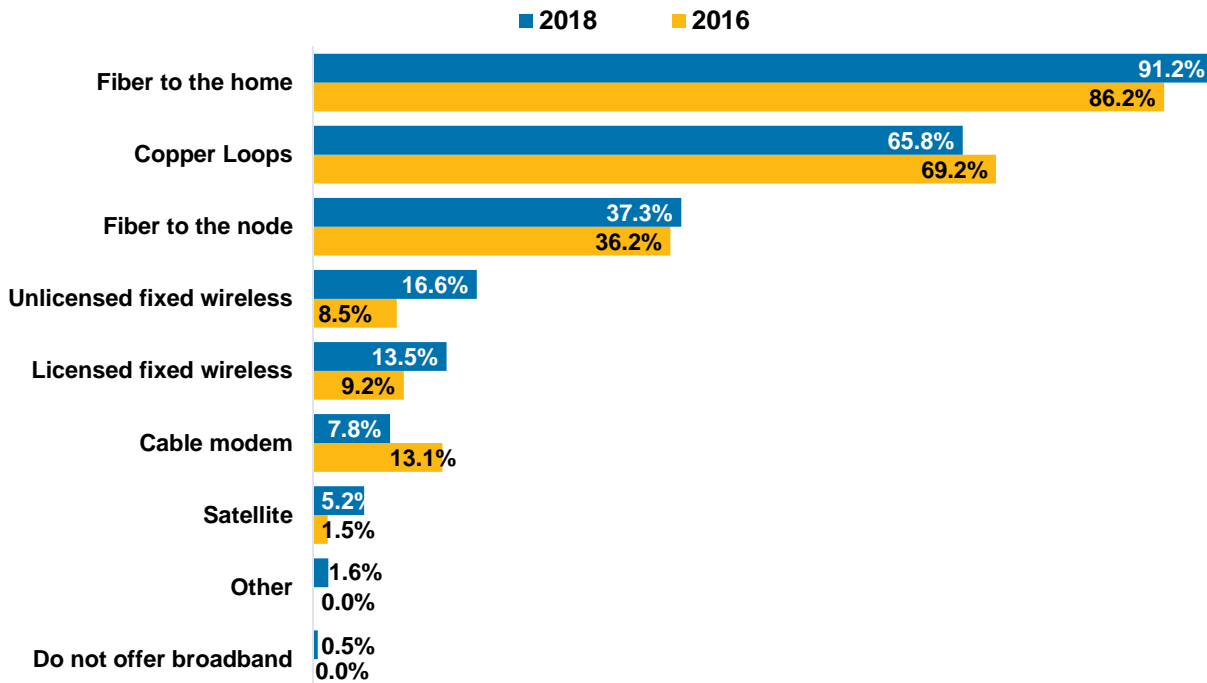
Fixed Voice Access Lines and Broadband Connections

Fixed Voice and Broadband	Residential	Business
	Mean	Mean
Number of voice grade access lines	4,355	1,493
Number of fixed broadband connections	4,455	530

Source: 2018 NTCA–Broadband/Internet Availability Survey

- The average respondent reports having 4,355 residential voice grade access lines in service. The average number of business voice grade access lines in service is 1,493.
- Respondents indicate that the average company has 4,455 residential fixed broadband connections in service. The number of business fixed broadband connections in service averages 530.
- The average service area is approximately 2,244 square miles. Nearly six in 10 (59.8%) survey respondents' service areas were 500 square miles or larger and approximately three in 10 (27.4%) were at least 2,000 square miles. These percentages are virtually unchanged from 2016 levels, 57.4% and 25.4%, respectively.

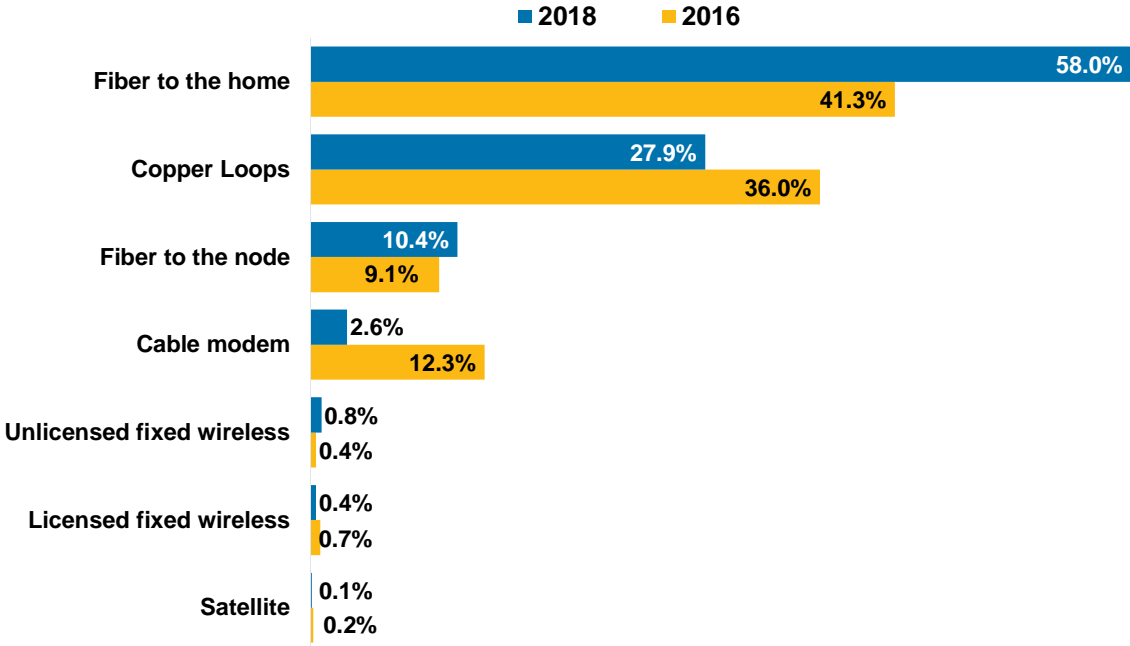
Network Platforms Used to Provide Fixed Broadband Service



Source: 2018 NTCA–Broadband/Internet Availability Survey

- Most respondents (91.2%) report using fiber to the home to provide fixed broadband service in some portion of their service areas, up from 86.2% in 2016. Almost two-thirds (65.8%) use copper loops and more than one-third (37.3%) use fiber to the node, largely unchanged from the proportions reported in 2016. Percentages add up to more than 100% due to the presence and use of multiple technology platforms in individual respondents' networks.
- The platform respondents use least often to provide fixed broadband service is satellite (5.2%). A slightly larger proportion uses cable modems (7.8%).

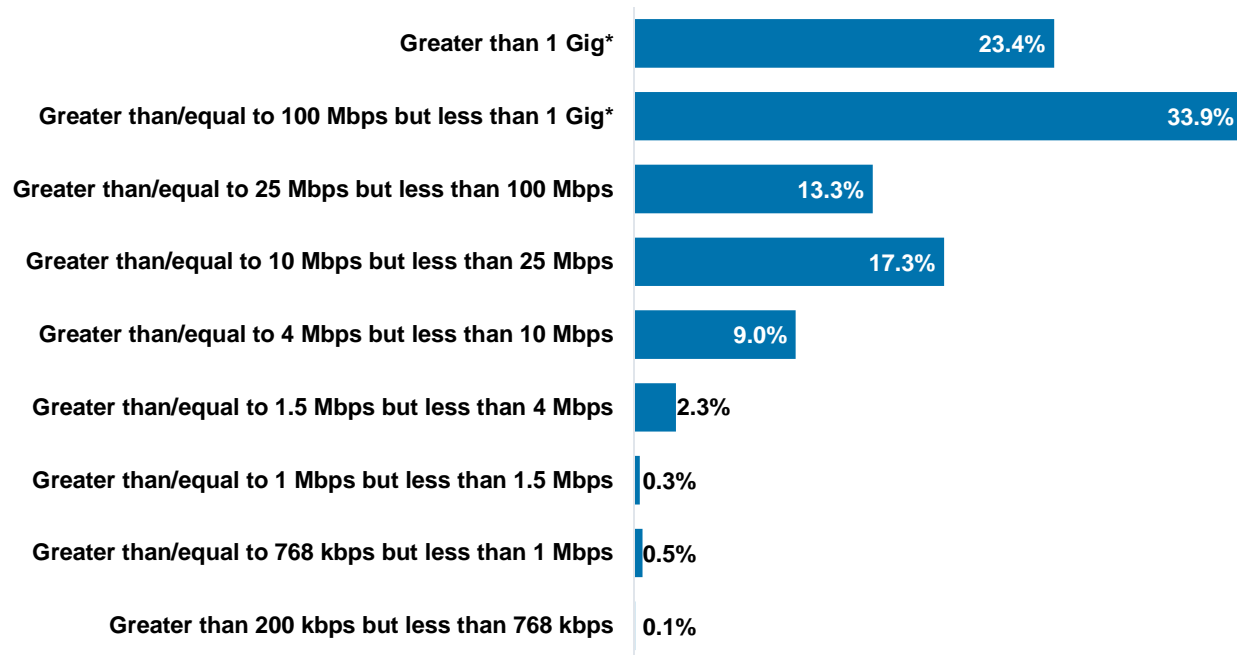
Average Percentage of Residential Broadband Customers Served by Network Platforms



Source: 2018 NTCA–Broadband/Internet Availability Survey

- On average, respondents indicate that 58.0% of their residential broadband customers are served by fiber to the home (up from 41.3% in 2016), while 27.9% are served by copper loops (down from 36.0% in 2016), 10.4% are served by fiber to the node, and 2.6% are served by cable modem (down from 12.3% in 2016).
- Few residential broadband customers are served by satellite (0.1%), while slightly larger proportions are served by licensed (0.4%) or unlicensed (0.8%) fixed wireless. These percentages are similar to those reported by NTCA members in 2016.

Maximum Downstream Speed Availability

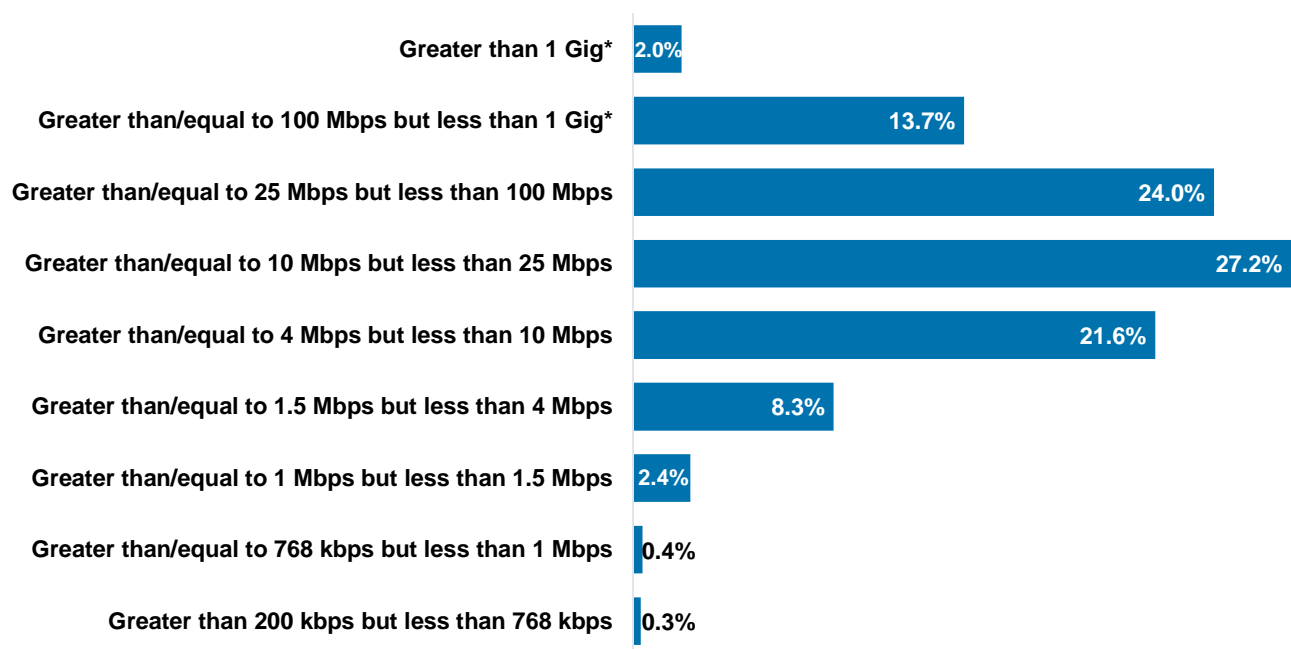


*1 Gig = 1,000 Mbps

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Respondents report that an average of 33.9% of their customer base can receive a maximum downstream speed for fixed broadband of greater than or equal to 100 Mbps, but less than 1 Gig. The next largest percentage is that which can receive greater than 1 Gig (23.4%).
- On average, respondents say that 17.3% of their customer base can receive a maximum of greater than or equal to 10 Mbps but less than 25 Mbps, 13.3% can receive a maximum of greater than or equal to 25 Mbps but less than 100 Mbps, and 9.0% can receive greater than or equal to 4 Mbps but less than 10 Mbps.
- Respondents report that a very small percentage of their customer base can receive greater than or equal to 1.5 Mbps but less than 4 Mbps (2.3%), greater than or equal to 768 kbps but less than 1 Mbps (0.5%), greater than or equal to 1 Mbps but less than 1.5 Mbps (0.3%), or greater than or equal to 200 kbps but less than 768 kbps (0.1%).
- In 2016, two-thirds (66.5%) of the respondents' customers could receive a maximum downstream speed greater than 25 Mbps compared with 70.6% who can receive the same in 2018. It should be noted that the 2016 survey did not ask for specific speed tiers above 25 Mbps as is the case in the current survey.

Broadband Adoption by Speed Tier



*1 Gig = 1,000 Mbps

Source: 2018 NTCA–Broadband/Internet Availability Survey

- According to 2018 survey respondents, 27.2% of their customer base subscribes to a maximum speed for fixed broadband of greater than or equal to 10 Mbps but less than 25 Mbps (compared with 33.1% in 2016), followed by 24.0% subscribing to a maximum speed of greater than 25 Mbps but less than 100 Mbps, and 21.6% subscribing to a maximum speed of greater than or equal to 4 Mbps but less than 10 Mbps.
- It is less common for customers to subscribe to a maximum speed of greater than or equal to 100 Mbps but less than 1 Gig (13.7%). Respondents report that 8.3% subscribe to a maximum speed of greater than or equal to 1.5 Mbps but less than 4 Mbps, and 2.0% subscribe to maximum speed of greater than 1 Gig.
- Respondents report that just 0.4% of their customer base subscribes to a maximum speed of greater than or equal to 768 kbps but less than 1Mbps, and 0.3% subscribe to a speed of greater than or equal to 200 Mbps but less than 768 kbps.
- In 2018, 39.7% of the respondents' customer base subscribed to a maximum speed of greater than or equal to 25 Mbps, compared with just 23.7% in 2016. It should be noted that the 2016 survey did not ask for specific speed tiers above 25 Mbps as is the case in the current survey.

Estimated Cost of Bringing Customers Up to Each Level (Downstream Only)

Level of Service	Estimated Total Costs
	Mean
10 Mbps	\$17,924,100
25 Mbps	\$27,907,729
100 Mbps	\$37,713,558

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Results show that it would cost an average of \$37,713,558 to bring customers who are not currently able to receive 100 Mbps fixed broadband service (downstream only) up to that speed.
- Respondents estimate that the total cost to bring customers up to the 25 Mbps level of service would be, on average, \$27,907,729.

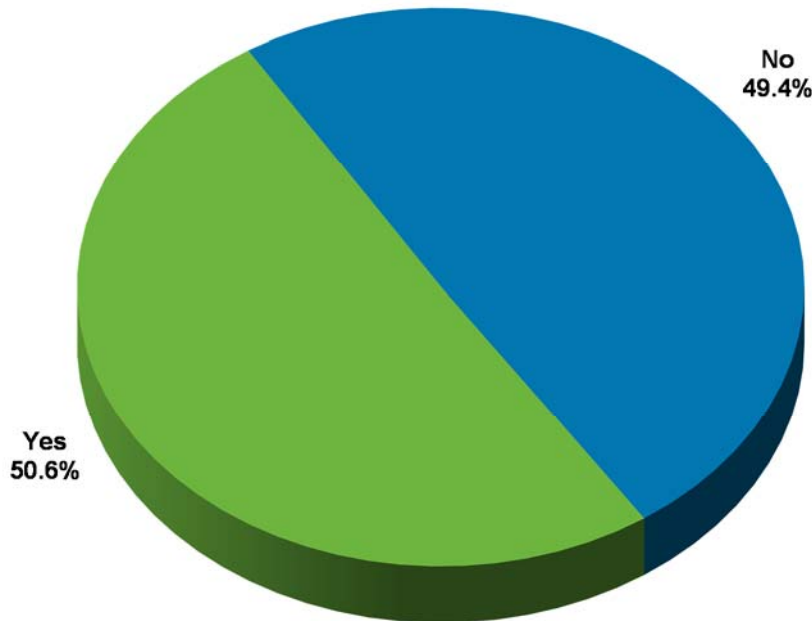
Upstream Speed Availability and Estimated Cost of Bringing Customers Up to Each Level

Upstream Speed	Mean
Percentage of customers that can receive an upstream speed of 1 Mbps or greater for fixed broadband service	95.0%
Estimated total cost of bringing all customers who are not already at 1 Mbps upstream up to that level	\$12,979,873
Percentage of customers that can receive an upstream speed of 3 Mbps or greater for fixed broadband service	78.1%
Estimated total cost of bringing all customers who are not already at 3 Mbps upstream up to that level	\$21,559,297

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Respondents report that 95.0% of their customers, on average, can receive an upstream speed of 1 Mbps or greater for fixed broadband service, with the average total cost of bringing customers in their service area not already at 1 Mbps upstream up to this level being \$12,979,873.
- Respondents estimate that an average of 78.1% of their customers can receive an upstream speed of 3 Mbps or greater for fixed broadband service. The average total cost of bringing customers not at the level of 3 Mbps upstream to this level is estimated to be \$21,559,297.

Offer Standalone Broadband



Source: 2018 NTCA-Broadband/Internet Availability Survey

- Just over half of respondents (50.6%) report that they offer “standalone broadband,” i.e., broadband service only, with no regulated voice component for fixed broadband service, compared with 41.7% in 2016.

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

Anchor Institutions	Number in Service Area	Number Served
	Mean	Mean
Public libraries	4	4
Primary/secondary schools	9	8
Community colleges	2	2
Public safety entities (police, fire, etc.)	12	10
Hospitals/medical clinics	8	8

- Respondents report serving an average of 10 out of 12 public safety entities (police, fire, etc.), and eight out of nine primary/secondary schools in their service areas with fixed broadband.
- Respondents also indicate that their service areas include an average of four public libraries, two community colleges and eight hospitals/medical clinics. The respondents serve all of these institutions with fixed broadband service.
- By comparison, the average respondent to the 2016 survey indicated they served approximately nine public safety entities (police, fire, etc.), eight primary/secondary schools, three public libraries, and three hospitals or medical clinics with fixed broadband.

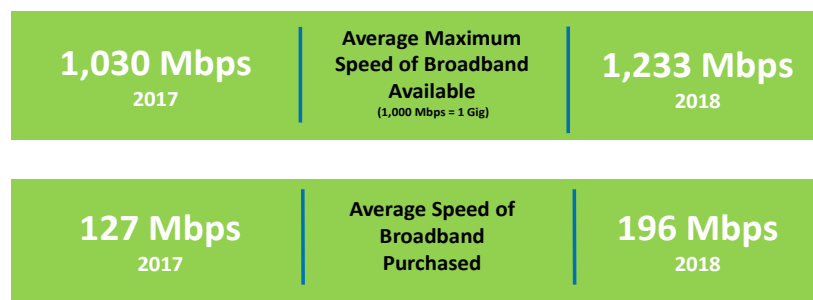
Anchor Institutions Connection and Speed

Anchor Institutions	% Connected to Network via Fiber	% Can Receive Service of 25 Mbps or Greater
	Mean	Mean
Public libraries	73.7%	83.9%
Primary/secondary schools	82.4%	89.9%
Community colleges	38.3%	44.8%
Public safety entities (police, fire, etc.)	69.9%	83.2%
Hospitals/medical clinics	69.8%	78.7%

Source: 2018 NTCA–Broadband/Internet Availability Survey

- The vast majority of primary/secondary schools are connected to respondents' networks via fiber (82.4%) while 89.9% of primary/secondary schools in respondents' service areas can receive service of 25 Mbps or greater.
- Public libraries are connected to the network via fiber with the second-highest frequency, at 73.7%, with 83.9% being able to receive service of 25 Mbps or greater.
- Almost seven in 10 hospitals and medical clinics (69.8%) or public safety entities (69.9%) are connected to respondents' networks via fiber, and about eight in 10 of those institutions (78.7% and 83.2%, respectively) can receive service of 25 Mbps or greater.
- The type of anchor institution least likely to be connected via fiber is community colleges; respondents report that 38.3%, on average, are connected, while 44.8% can receive service of 25 Mbps or greater.

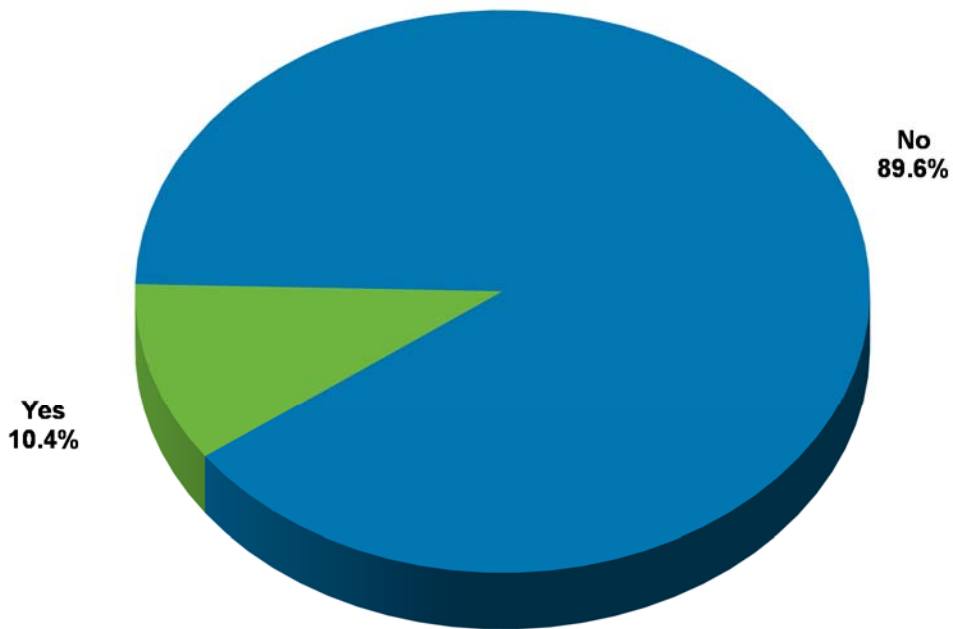
Anchor Institution Average Speed



- Respondents report in 2018 that the maximum broadband speed they make available to anchor institutions in their area is 1,233 Mbps (mean), and that the average broadband speed purchased by these institutions is 196 Mbps.
- In comparison, the maximum available speed offered to anchor institutions in 2017 averaged 1,030 Mbps, and 127 Mbps purchased speed. Those numbers were obtained by calculating the maximum available speed and average purchased speed by three institution types (public libraries, K–12 schools, and hospitals and medical clinics) as collected in NTCA's 2017 Anchor Institutions Survey.

MOBILE VOICE AND BROADBAND DATA SERVICE

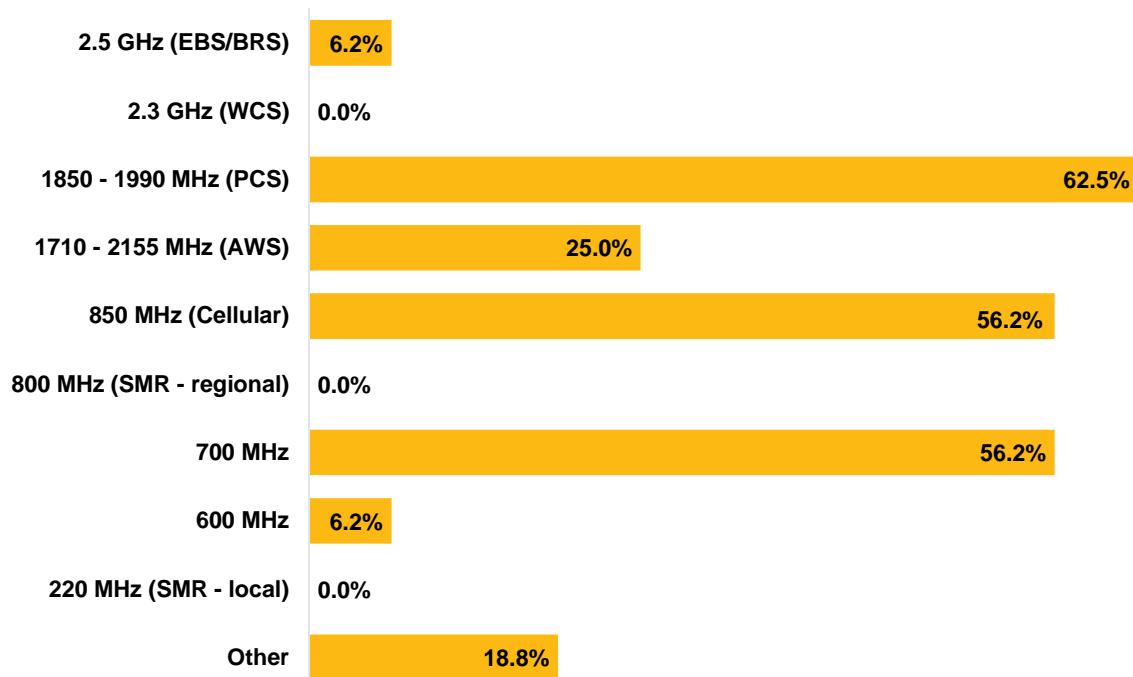
Offer Mobile Wireless Service



Source: 2018 NTCA-Broadband/Internet Availability Survey

- Slightly more than 10% of survey respondents offer mobile wireless service.

Spectrum Used to Offer Mobile Wireless Service

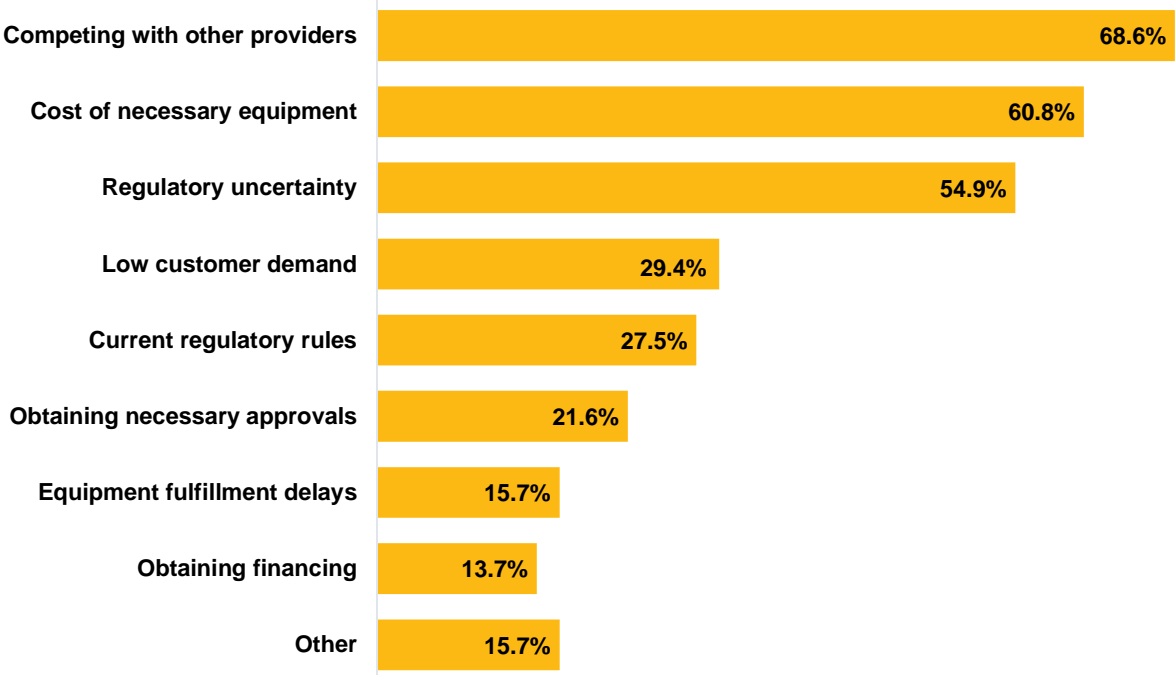


Source: 2018 NTCA-Broadband/Internet Availability Survey

- Of those that do offer mobile wireless service, the spectrum used most often is 1850-1990 MHz (PCS), with 62.5% offering service leveraging this spectrum. However, more than half (56.2%) also offer mobile wireless service using 850 MHz (Cellular) spectrum or the 700 MHz spectrum.

- None of the companies responding to the survey offer mobile wireless service on the 220 MHz (SMR-local), 800 MHz (SMR-regional) or 2.3 GHz (WCS) spectrum. Infrequently, service is offered via the 600 MHz (6.2%) or the 2.5 GHz (EBS/BRS) spectrum (6.2%).

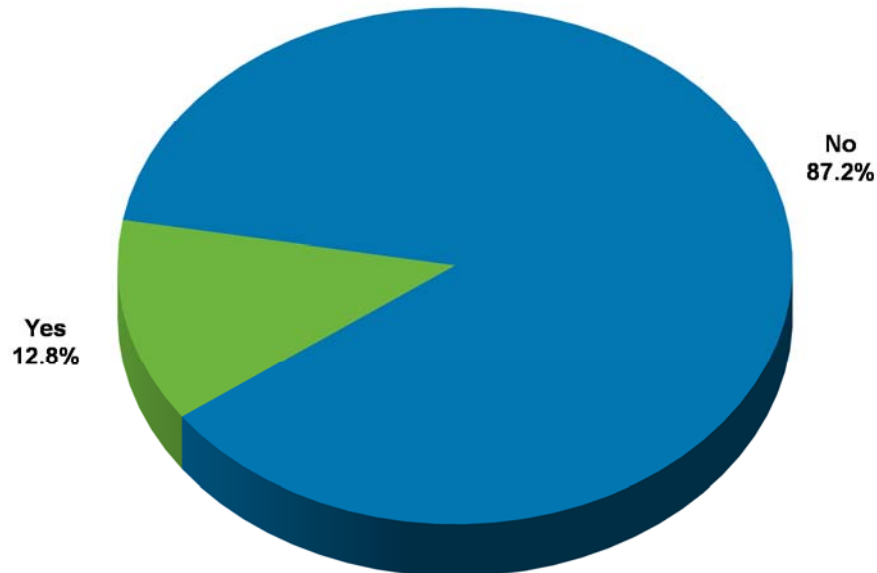
Primary Challenges in Offering a Mobile Broadband Data Service



Source: 2018 NTCA–Broadband/Internet Availability Survey

- The primary challenge that companies cite most often in offering a mobile broadband data service is competing with other providers (68.6%). More than six in 10 (60.8%) also mention the cost of necessary equipment as a primary challenge, and more than half report that they are challenged by regulatory uncertainty (54.9%).
- Less frequently, companies are challenged by obtaining financing (13.7%) or equipment fulfillment delays (15.7%).

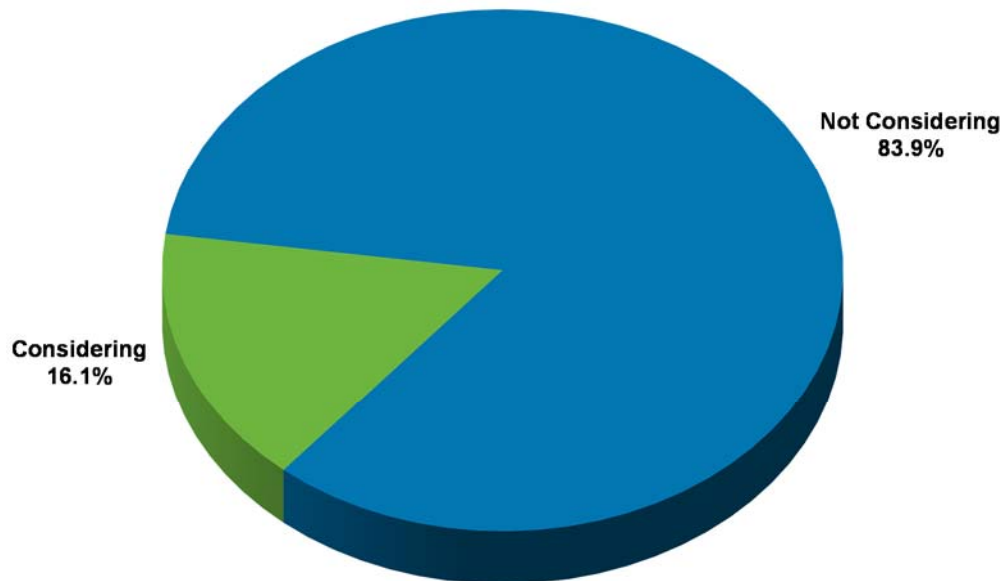
Considering Participating in Future Spectrum Auctions for the Provision of Mobile Broadband Data Service



Source: 2018 NTCA-Broadband/Internet Availability Survey

- Just over one in 10 responding companies (12.8%) are considering participating in future spectrum auctions for the provision of mobile broadband data service.

Plan to Participate in Future Mid-Band Spectrum Auctions



Source: 2018 NTCA-Broadband/Internet Availability Survey

- Less than one-fourth of respondents (16.1%) say they are considering participating in future mid-band spectrum auctions (e.g., Citizens Band Radio Service (CBRS)).

COMPETITION/MARKETING

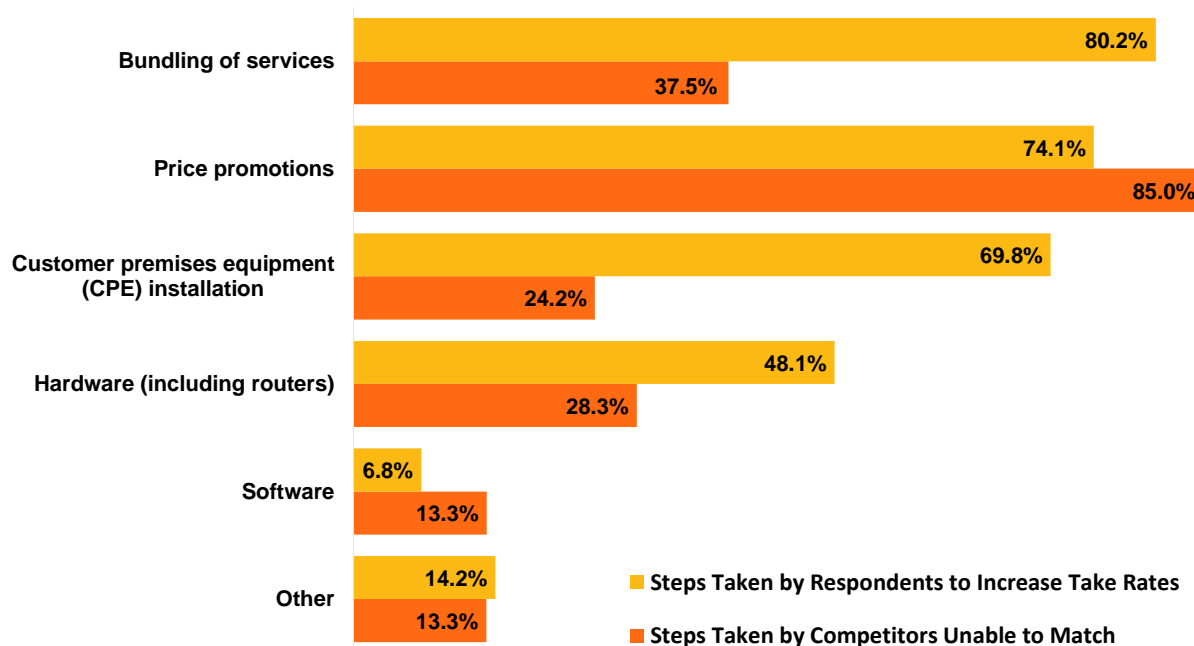
Competing Broadband Services in Respondents' Service Area

Type of Providers	Percentage in Service Area
Cable Companies	60%
National ISPs	24%
Electric Utilities	18%
Fixed Wireless ISPs (WISPs)	56%

Source: 2018 NTCA-Broadband/Internet Availability Survey

- Respondents were asked to identify the kinds of competitors, if any, that served limited portions of their service areas. Cable competition was most prevalent, with sixty percent (60%) of respondents indicating a cable provider operated somewhere within the service areas in question. Nearly as many respondents (56%) indicated that a fixed wireless internet provider operated within a limited portion of their service areas. Fewer respondents identified either national ISPs (24%) or electric utilities (18%) as offering broadband in a limited portion of their service areas.

Marketing Steps Taken



Source: 2018 NTCA-Broadband/Internet Availability Survey

- In 2018, more than three-quarters of companies (80.2%) offered bundling of services to attract more subscribers. Nearly three-quarters used price promotions (74.1%), and nearly seven in 10 did not charge a separate fee for customer premises equipment (CPE) installation (69.8%). Close to half (48.1%) also did not charge extra for hardware (including routers). Only a few companies offered free software (6.8%). In 2016, respondents offered free installation (87.1%), bundling of services (83.9%), and price promotions (79.0%) to increase broadband take rates.

- Most often, respondents report that their competitors have offered price promotions that they are unable to match (85.0%). By contrast, less than half report that their competitors have adopted other incentives such as bundling of services (37.5%), free hardware (including routers) (28.3%), or free customer premises equipment (CPE) installation (24.2%) that the responding companies have not been able to match. Few companies report that their competition has used free software (13.3%) and of those that do, approximately half (6.8%) have been unable to match this incentive.

FIBER DEPLOYMENT

Short-Term and Long-Term Fiber Deployment Strategy

SHORT-TERM STRATEGY

Deploy fiber to the node to X% of customers by year-end 2018

10.1%

% of Customers to the Node:
Average: 64.9%

Deploy fiber to the home to X% of customers by year-end 2018

48.2%

% of Customers to the Home:
Average: 61.0%

All fiber deployments are done

32.1%

No formal strategy

9.5%

LONG-TERM STRATEGY

Deploy fiber to the node to X% of customers by year-end 2020

7.9%

% of Customers to the Node:
Average: 82.3%

Deploy fiber to the home to X% of customers by year-end 2020

51.5%

% of Customers to the Home:
Average: 78.1%

All fiber deployments are done

32.1%

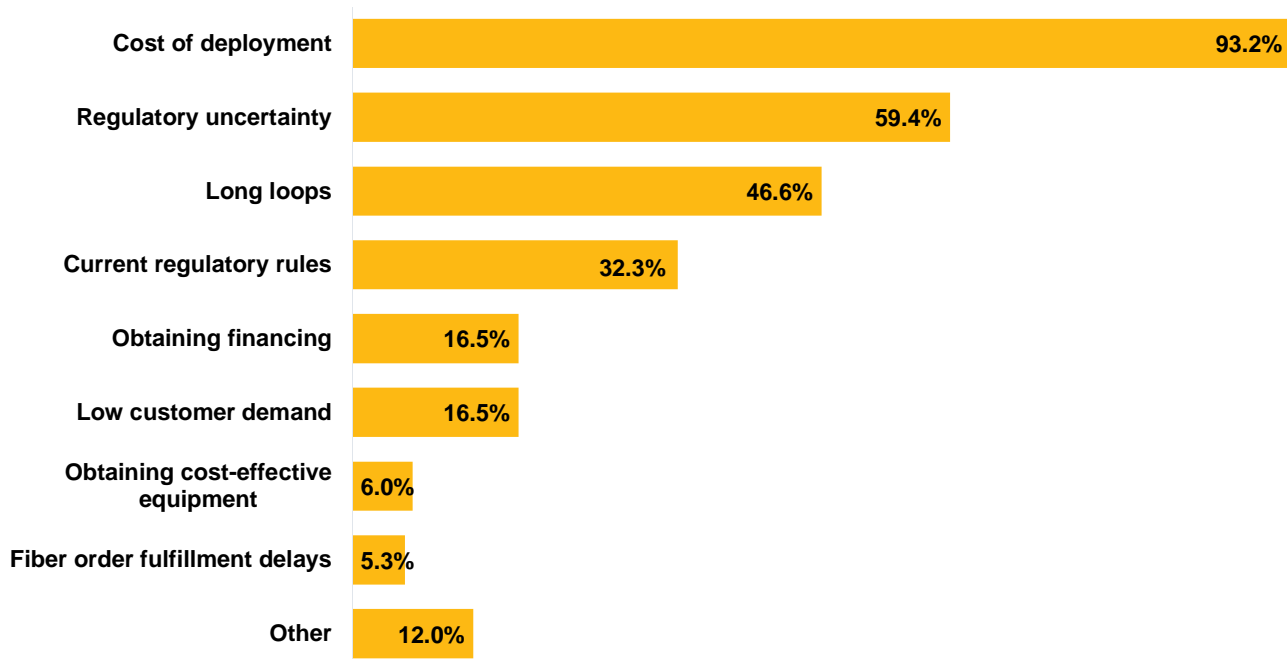
No formal strategy

8.5%

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Nearly half of responding companies (48.2%) report that their short-term fiber deployment strategy is to deploy fiber to the home to an average of 61.0% of customers by year-end 2018. Similarly, the favored long-term strategy is to deploy fiber to the home to an average of 78.1% customers by 2020, which is being pursued by 51.5% of respondents. In 2016, 66.2% of respondents expected to provide fiber to the home to at least half of their customers by 2019.
- Nearly one-third of respondents (32.1%) reported that all fiber deployments are done, compared with 31.3% saying the same in 2016.
- Companies are far less likely to deploy fiber to the node as either a short-term (10.1%) or long-term (7.9%) strategy. In the short term, these companies plan to deploy fiber to the node to an average of 64.9% of customers, and to an average of 78.1% of customers long-term. In 2016, 39.3% of survey respondents expected to provide fiber to the node to more than 75% of their customers in the long term.

Significant Barriers to Widespread Fiber Deployment



Source: 2018 NTCA–Broadband/Internet Availability Survey

- The most common barrier to widespread fiber deployment is the cost, cited by 93.2% of companies (up from 88.9% in 2016). However, more than half also indicate that regulatory uncertainty is a significant barrier (59.4%, up from 53.5% in 2016), while 46.6% are deterred by long loops (down from 51.5% in 2016).
- Fiber order fulfillment delays (5.3%) and obtaining cost-effective equipment (6.0%) are not currently significant deterrents for many respondents. Those barriers were cited by higher proportions of respondents in 2016: 13.1% and 8.1%, respectively.

INTERNET BACKBONE/MIDDLE MILE

Internet Backbone/Middle Mile

	Mean
Number of miles from primary internet backbone connection	117
Number of middle mile transport providers available	3

Source: 2018 NTCA–Broadband/Internet Availability Survey

- On average, respondents report being 117 miles from their primary internet backbone connection and can choose to take service from an average of three middle mile transport providers.

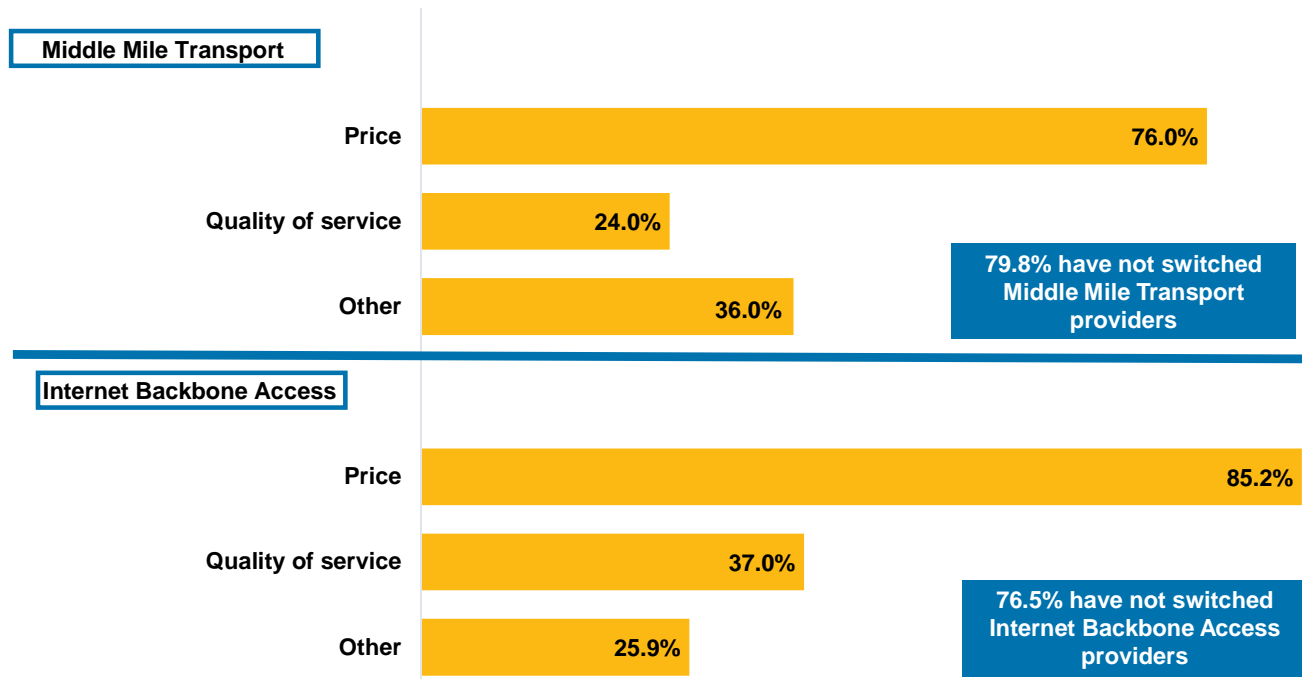
Middle Mile Bandwidth

	Mean
Middle mile bandwidth (in MB) currently subscribe to	12,000 MB
Number of years expect this capacity to remain sufficient	2 Years

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Companies subscribe to an average of 12,000 MB of middle mile bandwidth. The average respondent expects this capacity to remain sufficient for two years.

Reasons for Switching Providers

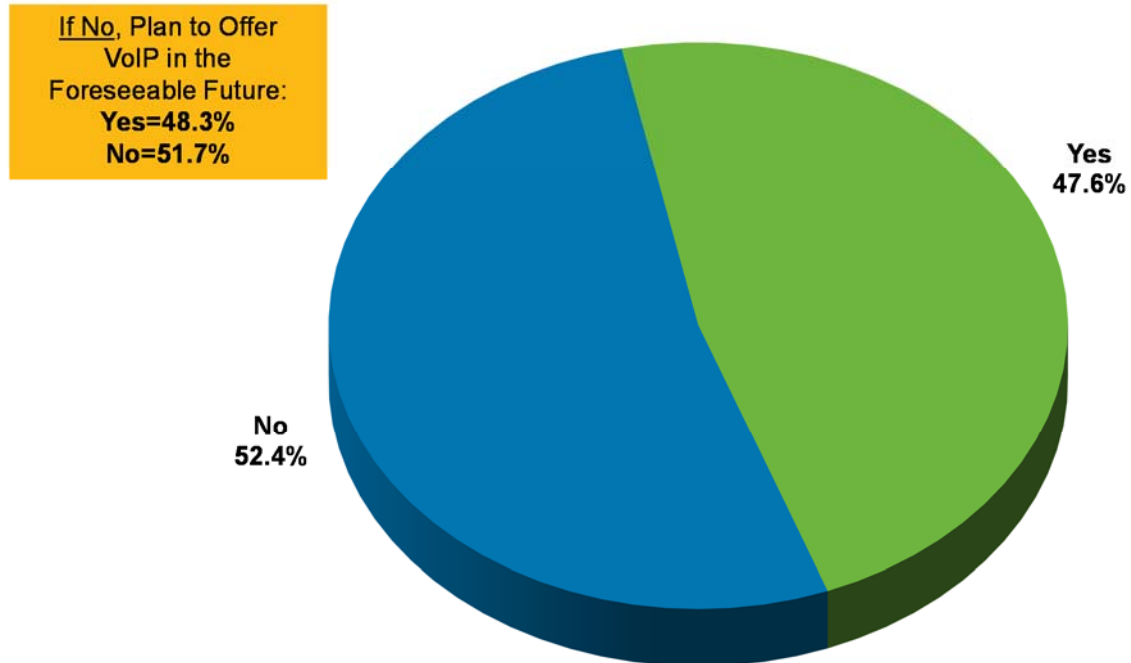


Source: 2018 NTCA–Broadband/Internet Availability Survey

- The vast majority of companies report that they have not switched middle mile transport providers (79.8%) or internet backbone access providers (76.5%) in the past two years.
- For those who have switched, 76.0% (up from 63.0% in 2016) named price as the reason for switching middle mile transport providers, while 85.2% (87.5% in 2016) named price as the reason for switching internet backbone access providers. Quality of service was named by 24.0% (29.6% in 2016) as the reason for switching middle mile transport providers, and by 37.0% (up from 25.0% in 2016) for switching internet backbone access providers.

VOICE OVER INTERNET PROTOCOL (VoIP)

Offer a VoIP Service



- Fewer than half of companies currently offer a VoIP service (47.6%, up from 33.1% in 2016). Among those not currently offering VoIP, 48.3% plan to offer it in the foreseeable future. This is similar to 2016, when 46.9% of respondents said they planned to offer VoIP in the foreseeable future.

VIDEO

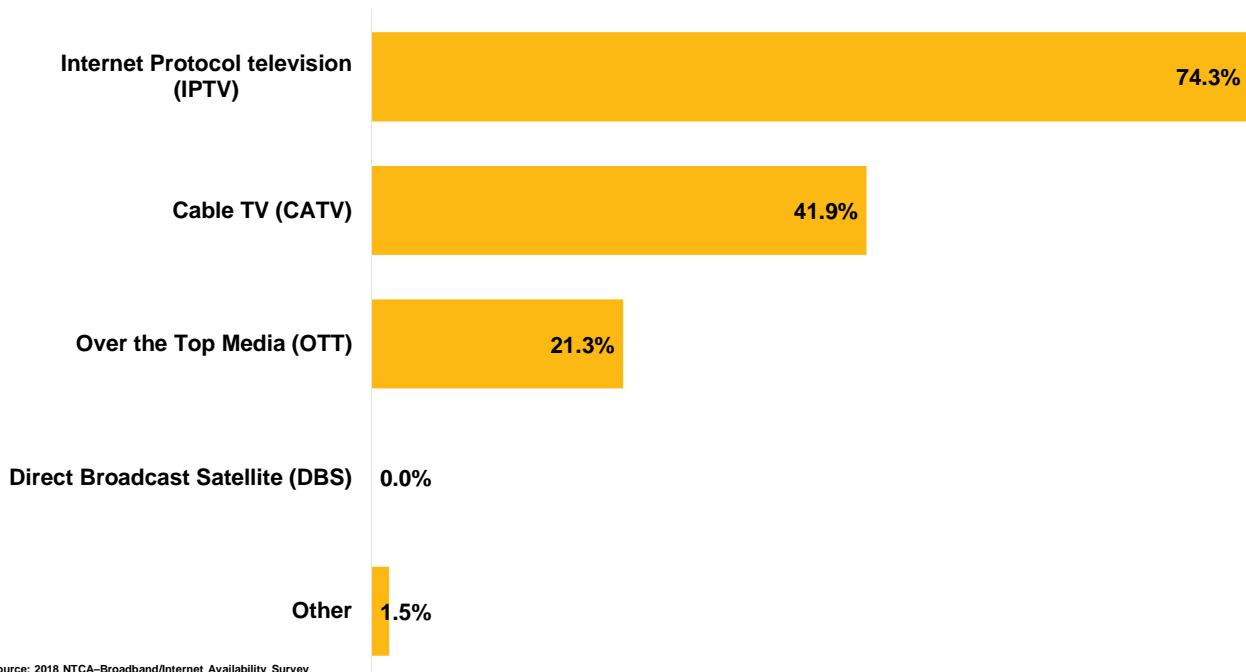
Video Service

	Mean
Number of customers that currently subscribe to video service	2,566
Estimated video take rate	36.0%

Source: 2018 NTCA–Broadband/Internet Availability Survey

- Respondents report that an average of 2,566 customers currently subscribe to their video service and the average video take rate is 36.0%, unchanged from 2016.

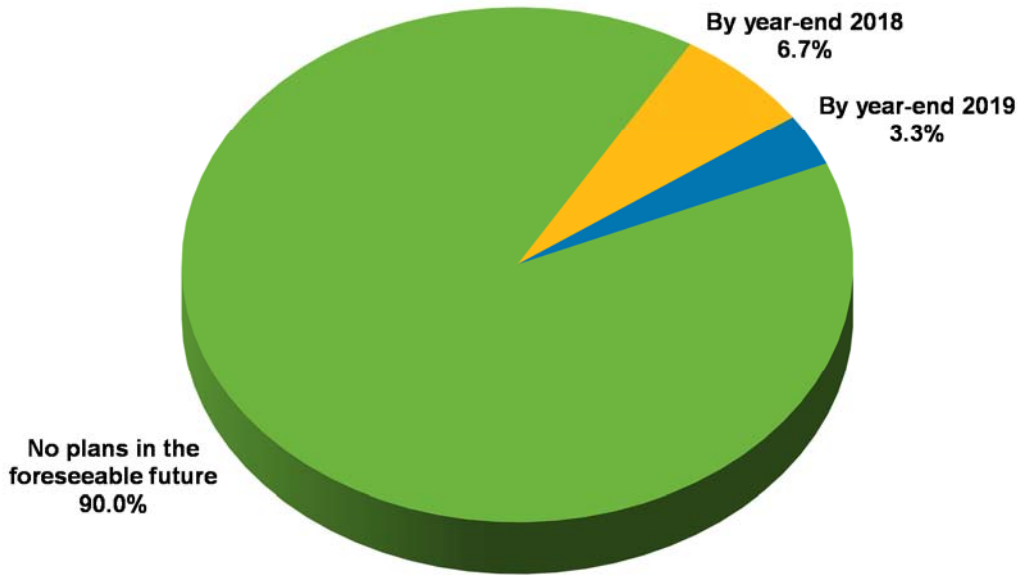
Types of Video Services Offered



Source: 2018 NTCA–Broadband/Internet Availability Survey

- Of the types of video services offered, companies most frequently offer internet protocol television (IPTV), with 74.3% indicating that they offer this service to their customers.
- More than four in 10 (41.9%) offer cable TV (CATV) to their customers, and 21.3% offer over the top media (OTT).
- In 2016, 69.8% of survey respondents offered video services to their customers, with 85.7% offering video via Internet Protocol television and 50.7% via CATV. It should be noted that the question about types of video services was asked differently (Yes/No) in 2016 than in 2018 (Select All That Apply), so comparisons of the results should be made with that in mind.

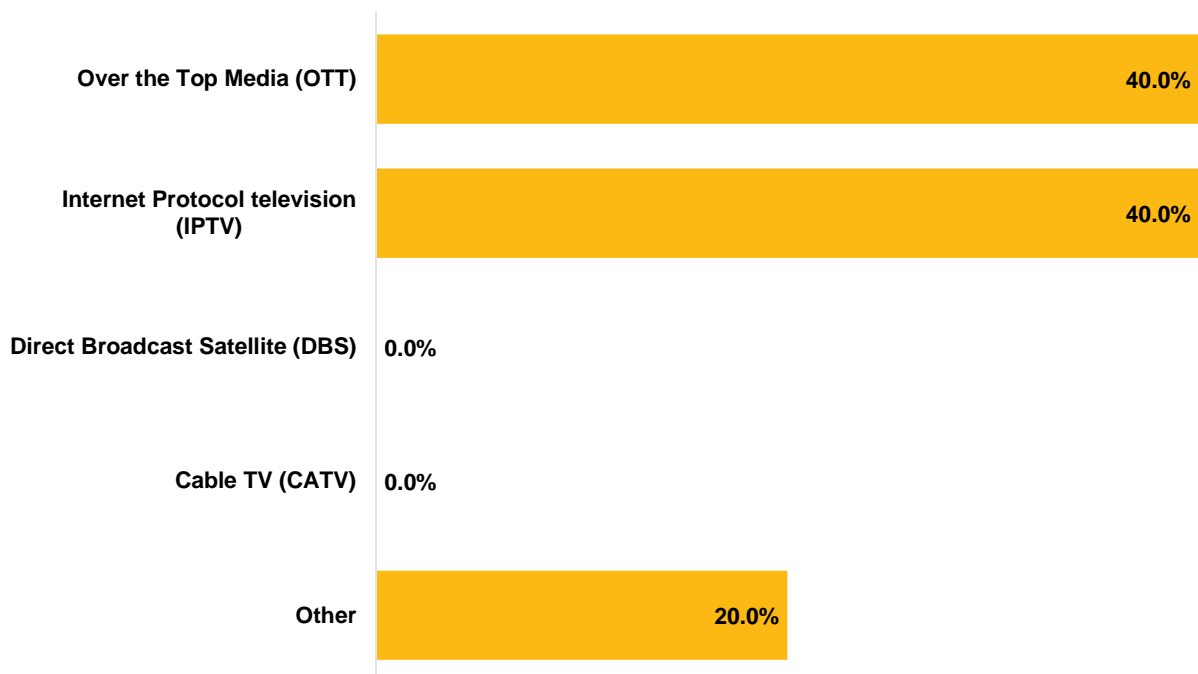
Plans to Offer Video Service if Not Currently Offered



Source: 2018 NTCA–Broadband/Internet Availability Survey

- The vast majority of companies that do not currently offer video service have no plans to do so in the foreseeable future (90.0%), compared with 86.5% in 2016.

Types of Video Services Planned for the Future



Source: 2018 NTCA–Broadband/Internet Availability Survey

- Of those that do not currently offer video services but have plans to do so in the future, Internet Protocol television (IPTV) and Over the Top Media (OTT) are planned at the same rate (40.0%). This is different from 2016, when 77.8% of those not offering video services planned to offer IPTV and 22.2% planned to offer cable TV (CATV).

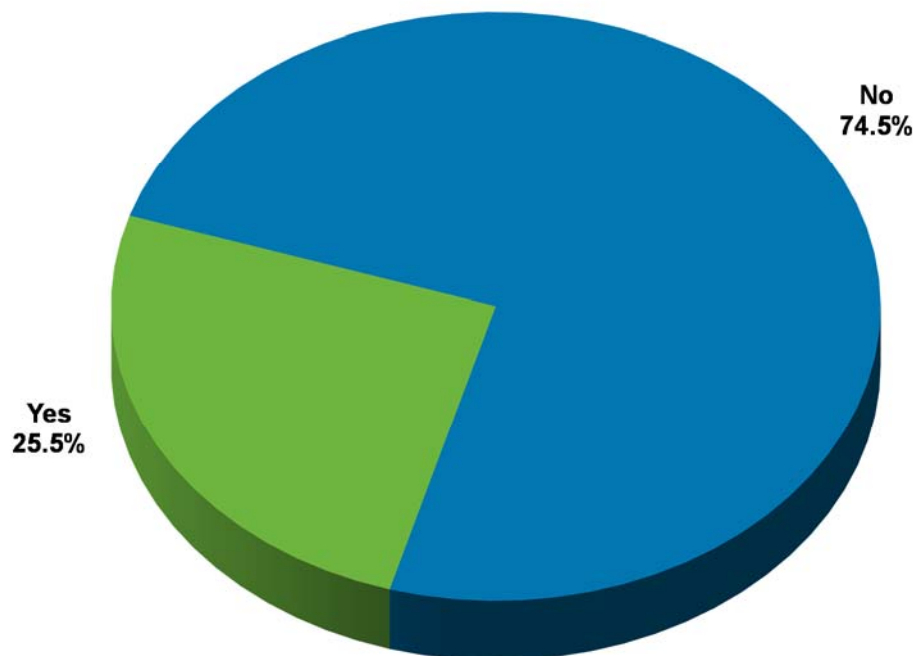
Entertainment Television Packages and Linear Channels Offered

	Mean
Number of "tiers" or entertainment television packages offered	3
Number of linear (i.e., nonvideo on demand) channels offered	194

Source: 2018 NTCA-Broadband/Internet Availability Survey

- Companies offer an average of three "tiers" or entertainment televisions packages and an average of 194 linear (i.e., nonvideo on demand) channels.

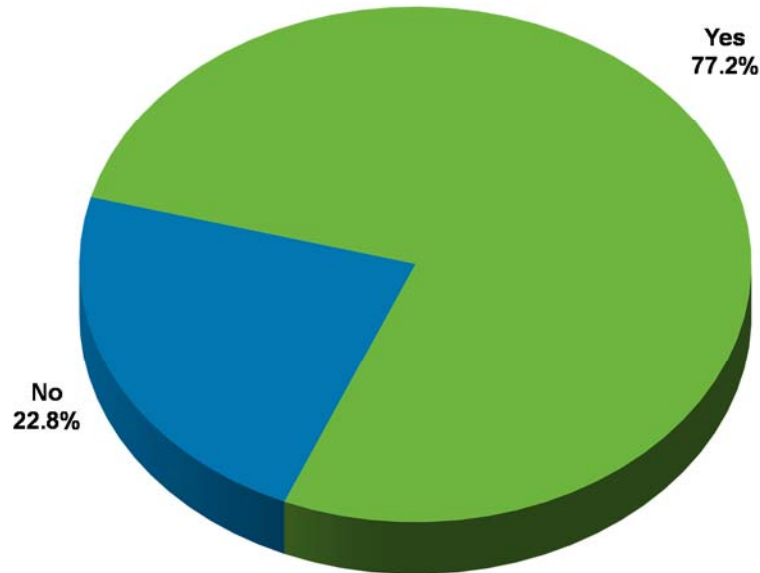
Offer Video on Demand (VOD)



Source: 2018 NTCA-Broadband/Internet Availability Survey

- Most respondents do not offer video on demand (VOD) (74.5%).

Customers Are Able to Watch Programming on Multiple Devices, Both Inside and Outside Homes

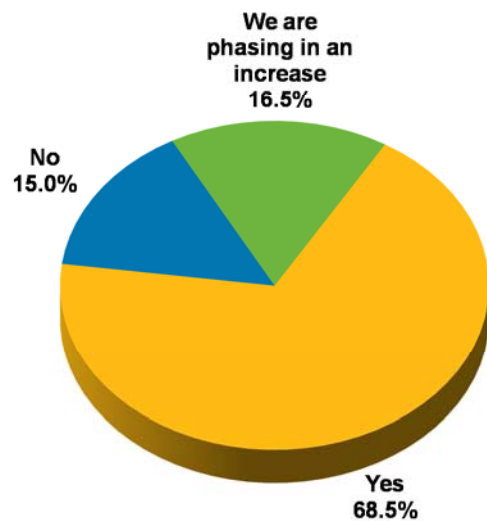


Source: 2018 NTCA-Broadband/Internet Availability Survey

- More than three-quarters of companies (77.2%) indicate that their customers are able to watch programming on multiple devices, both inside and outside their homes (e.g., “TV everywhere”). This is nearly unchanged from 2016 (77.8%).

Retransmission Consent Fees

Total Retransmission Fee Increase Passed on to Video Subscribers

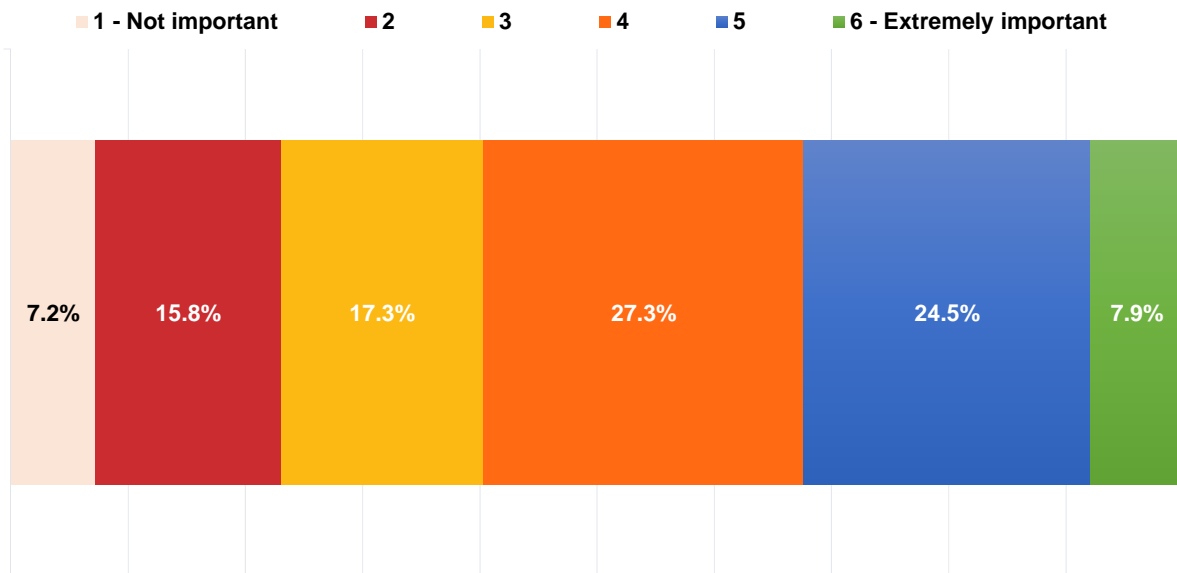


	Mean
Percentage of total operating expenditures go toward retransmission consent fees	33.6%
In total dollars, amount retransmission consent fees increased in the last negotiating cycle	\$43,855

Source: 2018 NTCA-Broadband/Internet Availability Survey

- Most companies (68.5%) pass this fee increase on to their subscribers, while an additional 16.5% are phasing in an increase.

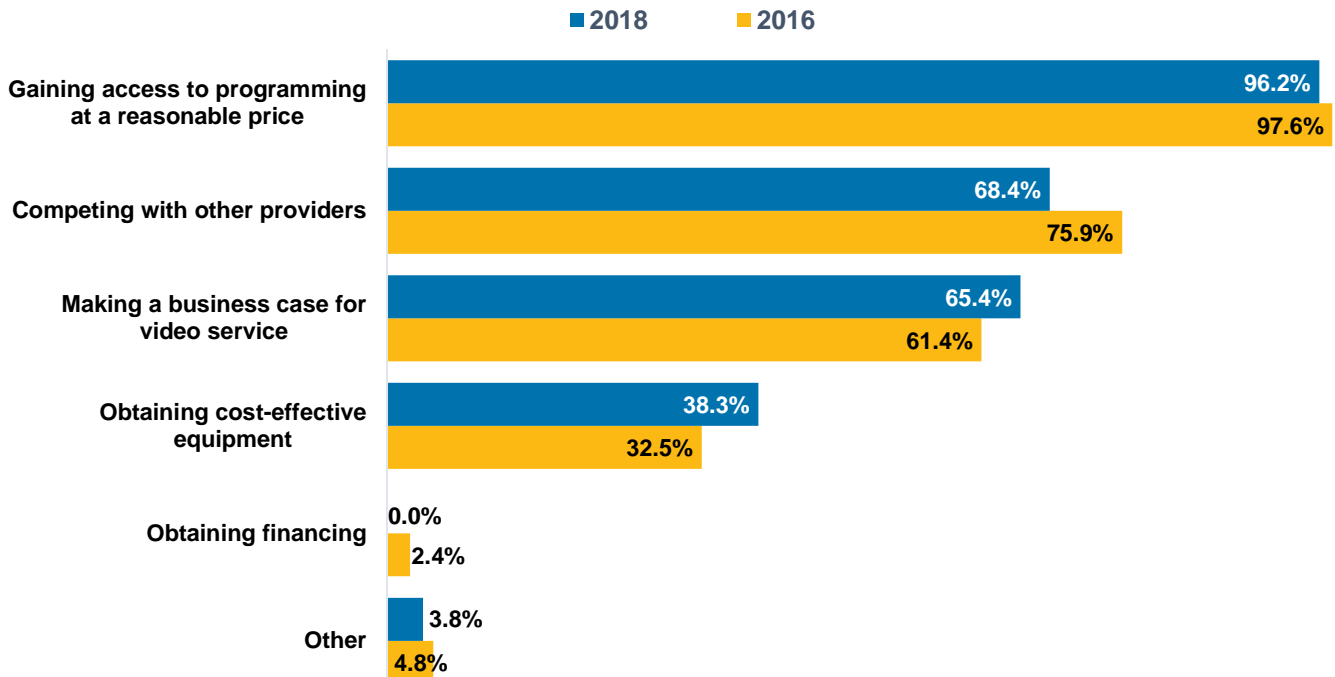
Importance of Offering Video to Customers



Source: 2018 NTCA–Broadband/Internet Availability Survey

- As broadband adoption has increased, 32.4% indicate that, on a scale of 1-6, where 1 is not important and 6 is extremely important, the importance of having a video offering for customers is rated as a “5” or a “6.”

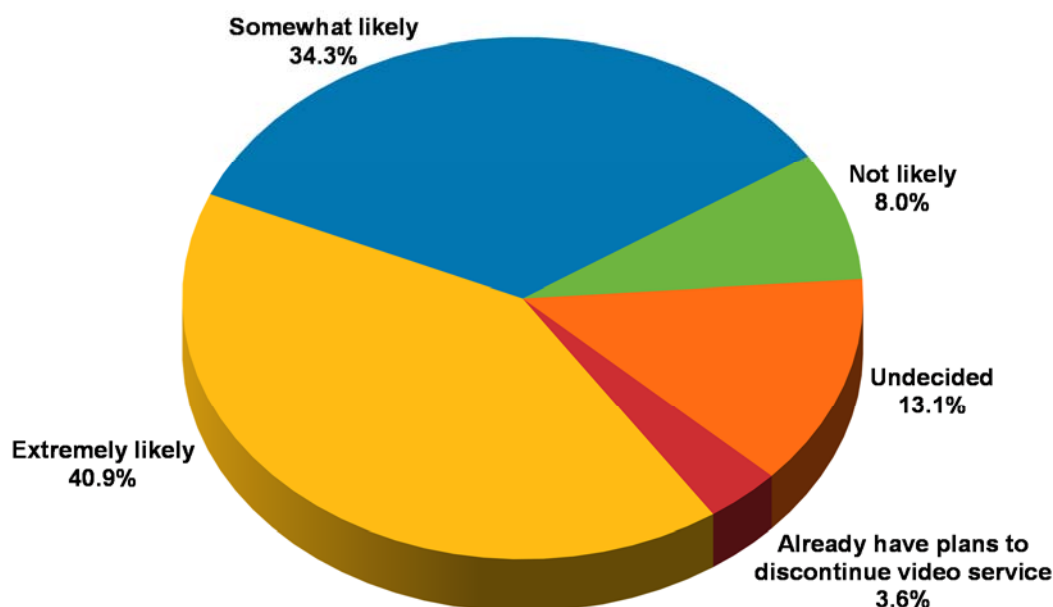
Barriers to Providing Video Service



Source: 2018 NTCA–Broadband/Internet Availability Survey

- Companies’ largest barrier to providing video service is gaining access to programming at a reasonable price (96.2%, similar to 97.6% in 2016). More than six in 10 indicate that competing with other providers (68.4%, down from 75.9% in 2016) and making a business case for video service (65.4%, up from 61.4% in 2016) are also barriers they face.

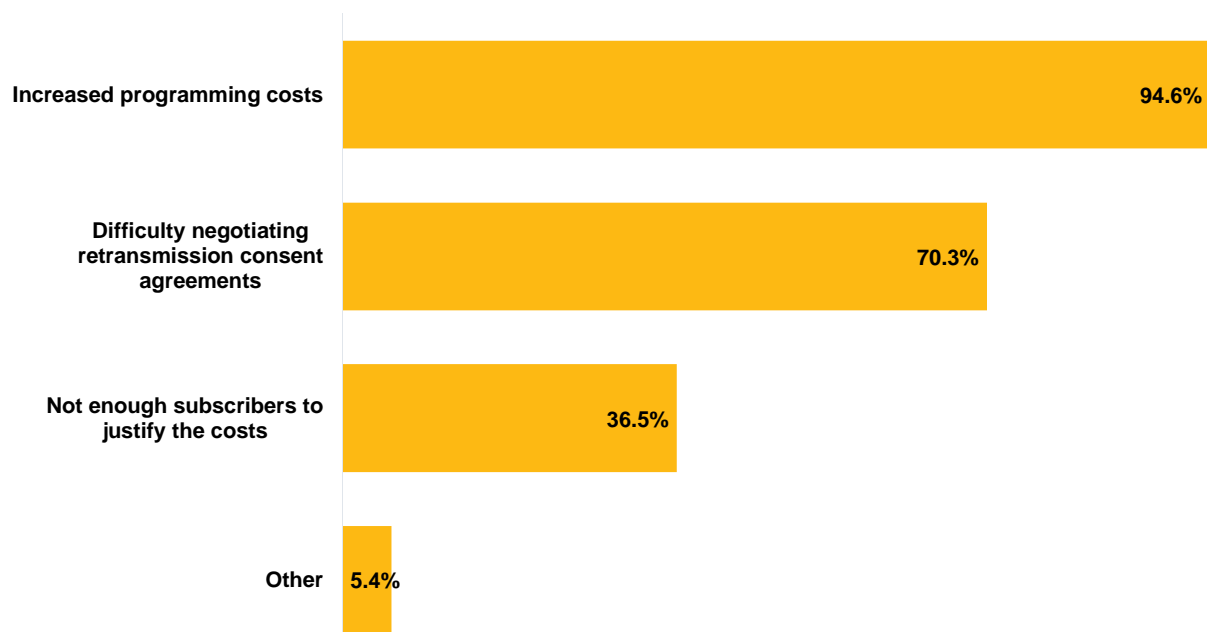
Likelihood of Continuing to Offer Video Services



Source: 2018 NTCA–Broadband/Internet Availability Survey

- More than one-third of companies (40.9%) say it is extremely likely they will continue to offer video services for the foreseeable future, while 34.3% say it is somewhat likely they will continue to do so.

Reasons for Discontinuing Video Service



Source: 2018 NTCA–Broadband/Internet Availability Survey

- The main reason respondents cite for considering discontinuing video service is increased programming costs (94.6%). Seven in 10 (70.3%) attribute this decision to difficulty negotiating retransmission consent agreements, and about one-third (36.5%) note not having enough subscribers to justify the costs.

CONCLUSIONS

- **Technology has brought about vast changes for rural consumers in the past few years.** NTCA members have made great strides in driving both higher speed deployment and adoption of broadband services in rural areas. NTCA members have taken substantial steps to replace aging copper in networks, with fiber to the home deployment up from 41.3% in 2016 to 58% of customers served in the most recent survey. In turn, broadband speeds made available by NTCA members have increased, with more than 70% of respondents' customers having access to 25 Mbps or higher broadband, including more than 57% with access to speeds of 100 Mbps or greater. The recent survey results similarly demonstrate remarkable gains in rural adoption of better broadband services, with nearly 40% of respondents' customers purchasing broadband at 25 Mbps or higher speeds (up from 23.7% in the 2016 survey), including almost 16% of consumers now subscribing to services with speeds of 100 Mbps or greater.
- **For all of the efforts of NTCA members, however, much work remains to be done to advance and sustain broadband in rural America.** Despite the progress described above, a substantial portion (nearly 30%) of the rural population served by survey respondents remains without access to 25 Mbps broadband service. Similarly, although NTCA members have sustained their efforts to replace aging copper in networks with fiber facilities as noted above, nearly 28% of respondents' customers continue to be served via copper-only loops. Regulatory and economic concerns are cited as challenges in reaching those remaining customers, with survey respondents indicating that it would cost on average nearly \$28 million to bring all customers up to 25 Mbps downstream speeds. Finally, even as the recent survey results demonstrate gains in adoption of higher speed services, nearly one-third of respondents' customers still subscribe to broadband with speeds of less than 10 Mbps.
- **NTCA members provide critically important broadband service to the vast majority of anchor institutions in their communities.** Respondents provide fixed broadband service to all of the hospitals, public libraries and community colleges located within their communities. They also provide fixed broadband service to nearly all primary/secondary schools and public safety entities (police, fire department, etc.) in their communities. These are critical lifelines for residents of their community and benefit the overall health and well-being of residents.
- **For mobile data services, competition is the primary challenge, followed closely by equipment costs and regulatory uncertainty.** Member companies face a number of challenges in offering a mobile broadband data service, with the primary one being competition (68.6%). Other significant challenges include equipment costs (60.8%) and regulatory uncertainty (54.9%). Consequently, just 12.8% of respondents are considering participating in future mobile broadband data spectrum auctions.
- **Respondents have had to find more effective marketing strategies than price promotions.** Nearly three-quarters of respondents have used price promotions to attract new subscribers. However, 85.0% indicate that their competition has used this strategy as well and they have been unable to match their competitors' price. Instead, member companies have found offering bundled services and not charging a separate fee for customer premises equipment installation to be their most effective marketing steps.

- **Video is becoming increasingly important, yet companies face significant barriers in offering video service to their customers.** Nearly one-third of respondents indicate that it is important to offer video service. However, nearly all respondents point to programming costs as a barrier they face in providing this service; similarly, those who are considering discontinuing video service mainly attribute this decision to increased programming costs (nearly three-quarters say it is due to difficulty in negotiating retransmission consent agreements).

A Special Report
provided by
Rural Telecom
magazine



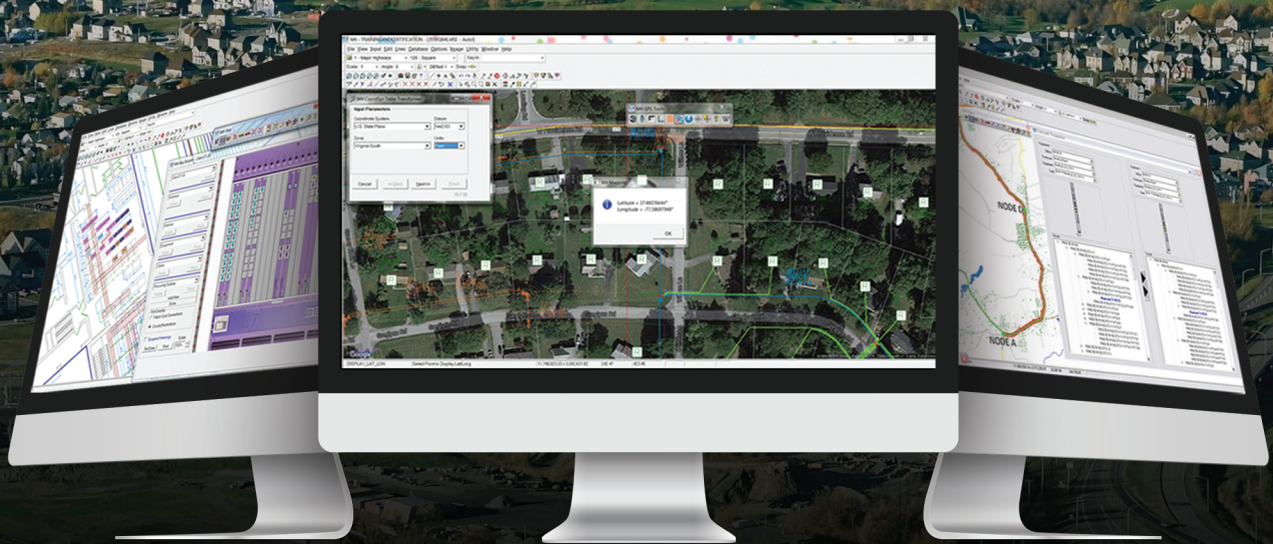
SMART
CERTIFIED
CELEBRATED



NTCA's
Smart Rural
Communities
and Certified
Gig-Capable
Providers

Visualize

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Visually manage your entire network infrastructure with M4!

Integrated OSS | Fiber | Circuits | Assignment | Workforce | Inventory | Locates

SOMETHING TO CELEBRATE

For the last four years, NTCA—The Rural Broadband Association has presented its Smart Rural Community (SRC) Showcase Award to rural telcos that leverage their networks in a variety of innovative ways. As the SRC program has caught on, NTCA members have risen to the challenge of meeting the requirements for recognition; this year's group of winners (profiled in the pages after the SRC map) bring the total number of awardees to 43.

Expanded interest in the SRC program has led to additional ways of acknowledging rural-telco innovation. In the past two years, NTCA has awarded SRC Collaboration Challenge grants to five companies for their efforts in economic development, education, health care and job training.

Building on the success of the SRC program, NTCA launched a certification program highlighting telcos delivering internet-connection speeds that match or exceed those of telco-industry giants. As of July 2016, NTCA had certified 80 telcos as Gig-Capable Providers—industry leaders in the provision of gigabit broadband.

This special report highlights the telcos that have received these honors and sheds light on their impressive work. For the latest on the SRC and Certified Gig-Capable Provider programs, visit www.ntca.org.

Christian Hamaker
Editor, Rural Telecom
chamaker@ntca.org



CONTENTS

- 4 Smart Rural Community Showcase Award Winners
- 6 SRC 2016 Winners Profiles
- 7 SRC Collaborative Challenge Grant Winners
- 8 NTCA Certified Gig-Capable Provide Program
- 10 NTCA Certified Gig-Capable Providers

SMART RURAL COMMUNITY SHOWCASE AWARD WINNERS 2013-2016

Alaska

Copper Valley
Telecom (Valdez)

Florida

ITS Telecom
(Indiantown)

Georgia

ComSouth
Telecommunications
(Hawkinsville)

Pineland Telephone
Cooperative Inc.
(Metter)

Illinois

Madison
Telephone Co.
(Staunton)

Indiana

Endeavor
Communications
(Cloverdale)

NineStar Connect
(Greenfield)

Iowa

Citizens Mutual Telephone
Cooperative (Bloomfield)

Liberty Communications
(West Liberty)

Premier Communications Inc.
(Sioux Center)

South Slope Cooperative
Communications
(North Liberty)

Kansas

Blue Valley
Tele-Communications, Inc.
(Home)

Mutual Telephone Co.
(Little River)

Nex-Tech (Hays)

Rainbow Telecommunications
Association Inc. (Everest)

Tri-County Telephone
Association Inc. (Council Grove)

Twin Valley Telephone Co., Inc.
(Miltonvale)

Kentucky

Peoples Rural Telephone
Cooperative (McKee)

Maine

UniTel (Unity)

Minnesota

Arvig (Perham)

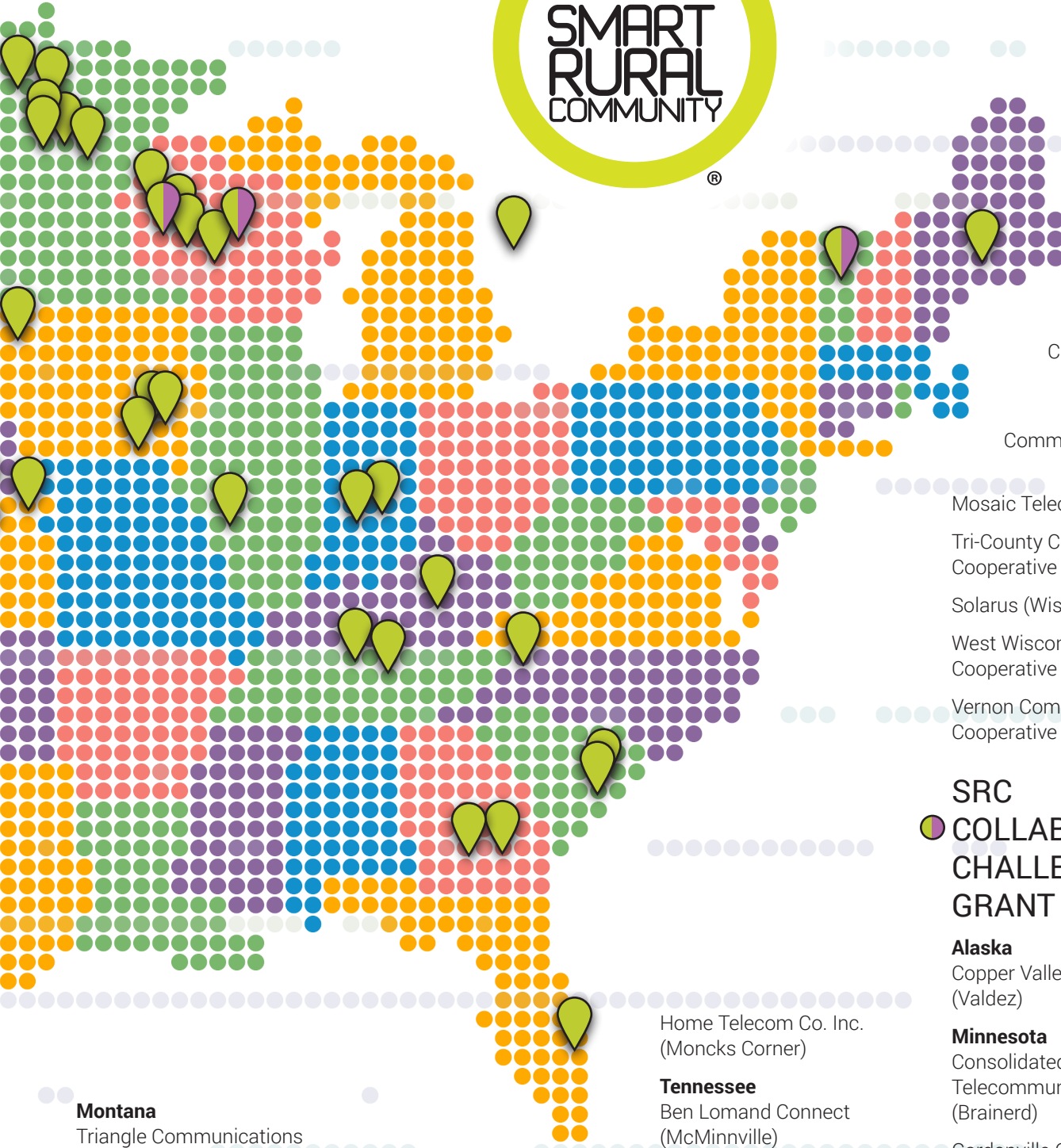
Consolidated
Telecommunications Co.
(Brainerd)

Garden Valley Telephone Co.
(Erskine)

Park Region Telephone Co./
Otter Tail Telcom
(Underwood)

Paul Bunyan Communications
(Bemidji)

West Central Telephone
Association (Sebeka)



Montana
Triangle Communications
(Havre)

North Carolina
SkyLine Membership Corp.
(West Jefferson)

North Dakota
DRN (Ellendale)
Polar Communications
Mutual Aid Corp. (Park River)

Ontario
Huron Telecommunications
Cooperative, Ltd. (Ripley)

South Carolina
FTC Communications Inc.
(Kingstree)

Home Telecom Co. Inc.
(Moncks Corner)

Tennessee
Ben Lomand Connect
(McMinnville)
North Central Telephone
Cooperative Inc. (Lafayette)

Texas
Big Bend Telephone Co. Inc.
(Alpine)

Vermont
Waitsfield and Champlain
Valley Telecom (Waitsfield)

Wisconsin
Citizens Connected
(New Auburn)
Lakeland
Communications Group,
LLC (Milltown)
Mosaic Telecom (Cameron)
Tri-County Communications
Cooperative (Strum)
Solarus (Wisconsin Rapids)
West Wisconsin Telcom
Cooperative Inc. (Downsville)
Vernon Communications
Cooperative Inc. (Westby)

SRC
COLLABORATION
CHALLENGE
GRANT WINNERS

Alaska
Copper Valley Telephone
(Valdez)

Minnesota
Consolidated
Telecommunications Co.
(Brainerd)

Gardonville Cooperative
Telephone Association
(Brandon)

Montana
Triangle Communications Inc.
(Havre)

Vermont
Waitsfield & Champlain Valley
Telecom (Waitsfield)

SRC 2016 SHOWCASE AWARD WINNERS



Arvig

Melrose, Minn.

Serves 9,813 square miles with a population of nearly 4,100; provides fiber optic connectivity within the city limits with access to speeds of 1 GB, and copper DSL service outside of the city limits with speeds ranging from 5 MB to 1 GB.

Public Safety

All police department vehicles are equipped with Wi-Fi and GPS, providing officers immediate access to data and improving overall community safety. Arvig's broadband network also assists local ambulance services with a traffic-signal-prioritization system to manipulate traffic signals for emergency vehicles in transit.

Ben Lomand Connect

McMinnville, Tenn.

Serves more than 3,200 square miles with a population of 115,000 people; provides fiber active Ethernet and copper-based services with symmetrical speeds up to 1 GB.

Smart Grid

Ben Lomand Connect established a virtual local area network (VLAN) for an electric utility that provides power to over 8,000 customers. The VLAN is a two-way system that enables meter reading, power outage data and voltage alerts.

Citizens Connected

New Auburn, Wis.

Serves 191 square miles with a combined population of 1,482; provides FTTH to 90% of homes, with the other 10% utilizing copper, with speeds of 25 MB and higher.

Natural Resources

Citizens Connected's service area is home to many lakes, forests and recreational opportunities. An all-weather camera at Lower Long Lake uses a broadband connection to monitor boats in an effort to keep invasive weeds and wildlife out of the lake. Additionally, nearby campgrounds are Wi-Fi enabled.

ComSouth Telecommunications

Hawkinsville, Ga.

Serves more than 270 square miles with a population of 11,542; provides 1 GB capability to almost every business in their area.

Telehealth

Taylor Regional Healthcare System (TRHS) transmits medical records and images electronically from their facilities to its medical partners. A local telehealth initiative supported by ComSouth allows students and teachers to access medical care utilizing connected health carts in school nurse offices that provide connections to remote physicians.

Garden Valley Telephone Co.

Erskine, Minn.

Serves 24 exchanges covering 3,700 square miles across eight counties and a population of 32,629 people; FTTH with speeds of up to 1 GB is deployed to most customers.

Career Training and Education

In December 2015, Garden Valley partnered with local school districts to create a dedicated broadcast channel for each school. The company provided schools with broadcast equipment and training

for students and staff, providing opportunities to learn about the broadcasting and skills and experience to work in the industry.

Home Telecom Co. Inc.

Moncks Corner, S.C.

Serves 1,100 square miles with a population of 194,750; FTTP is deployed to nearly 50% of the customer base, with the rest served via coax and copper technologies.

Libraries

With the technological help of Home Telecom, the Berkeley County Mobile Library meets the educational needs of the small communities without access to a local library. The efficiency and lower cost of the mobile library allows Berkeley County to provide rural users with laptops and internet access, as well as 2,500 books, audiobooks, movies and music. Home Telecom provides Wi-Fi to most of the library's 30 stops. The communities rely on the internet access provided in order to conduct both personal and professional business.

Liberty Communications

West Liberty, Iowa

Serves a total population of approximately 6,000 across 187 square miles with FTTH and copper, offering speeds of up to 50 Mbps.

Commerce

Liberty's service area is home to more than 200 businesses and hundreds of small farmers. Robust broadband access has proven critical to the success of these businesses by enabling cameras and sensors that can be monitored by broadband-enabled

devices, as well as web-based portals to enable local and global sales.

Mosaic Telecom

Cameron, Wis.

Serves more than 425 square miles with 4,126 residents; provides FTTP with speeds of up to 100 Mbps.

Community Nonprofit

Mosaic aids the Boys and Girls Club of Barron County and Benjamin's House Emergency Center as their technology partner in their fundraising efforts. Both organizations' fundraising revenue comes from silent auctions that can be conducted on a mobile platform. This allows the organizations to conduct their auctions electronically, giving guests the chance to view items before the event, bid efficiently and monitor bidding on their mobile devices.

Pineland Telephone Cooperative Inc.

Metter, Ga.

Serves 1,200 square miles with an estimated population of 40,605; provides FTTH to more than 90% of its customers with download speeds ranging from 10 Mbps to 100 Mbps.

Manufacturing

Pineland is located less than 60 miles from the world's fastest growing shipping port as well as two industrial parks adjacent to the interstate highway. Pineland's broadband capabilities support global commerce and drive the local economy.



SkyLine Membership Corp.
West Jefferson, N.C.

Supports a population of 55,607 over an area of 840 square miles; provides FTTP to 98% of its customers, with plans to reach 100% by the end of 2016, with up to 1 GB.

Entrepreneurship

Working with the Center for Entrepreneurship, the Watauga Economic Development Commission and the local chamber of commerce, Skyline created and supports through its broadband network an entrepreneurial hub to cultivate

economic development as well as a regional summit and youth entrepreneurship camp.

UniTel
Unity, Maine

Serves 280 square miles, with 16 rural communities in three counties; provides services to 5,000 households; commencing expansion of FTTH network with a newly built 90-mile fiber optic cable network and an additional 26 miles of fiber coming soon; provides up to 1 GB.

Fire Department

UniTel provides broadband to

local volunteer fire departments, enabling emergency service providers to connect with each other in order to support information sharing, training and fire safety concerns in the extremely rural areas of the state.

24/7 Telcom Inc. and West Wisconsin Telcom Cooperative Inc.

Downsville, Wis.

Serves 545 square miles across two service areas with a combined population of 26,200; offers FTTH throughout the network with up to a 2.4 GB download speed and

1.2 GB upstream; CLEC utilizes a combination of Gigabit Passive Optical Network and copper.

Commerce and Economic Development

Extended fiber providing synchronous 75 Mbps, with the ability to increase to 1 Gbps, to support a new retail outlet that created 40 new jobs; provides fiber to enable public Wi-Fi, 24/7 security monitoring and communications system in a community-owned store that supports 30 local jobs.

SRC COLLABORATION CHALLENGE GRANT WINNERS

In an effort to encourage collaboration among community leaders in identifying and implementing broadband-enabled solutions, NTCA–The Rural Broadband Solution has, for the past two years, offered its Smart Rural Community (SRC) Collaboration Challenge. Since its inception, the SRC Collaboration Challenge has awarded more than \$23,000 across five different areas (see chart)—a testament to the innovative work happening in rural America.

2016

Consolidated Telecommunications Co., Brainerd, Minn.

Supporting the deployment of seven starter MakerSpace kits in schools servicing a total of 3,600 students to support STEAM (science, technology, engineering, art and math) curricula.

Copper Valley Telephone, Valdez, Alaska

Partnering with local college to offer computer literacy classes to the elderly.

Triangle Communications Inc., Havre, Mont.

Working with tribally owned economic development agency and providing online digital training and education opportunities.

2015

Copper Valley Telephone, Valdez, Alaska

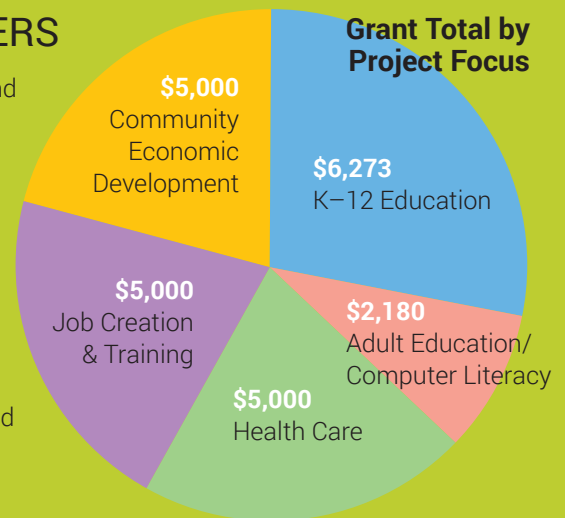
Extending broadband scholarships to financially challenged students and enabling their participation in a wide range of distance-learning curricula and classes.

Gardenville Cooperative Telephone Association, Brandon, Minn.

Partnering with a hospice to deploy small-form wireless routers to enable patient connectivity to the internet for vital signs monitoring and social connectivity.

Waitsfield & Champlain Valley Telecom, Waitsfield, Vt.

Collaborating with local businesses to support a series of downtown Wi-Fi networks in commercial and public gathering areas.



Gig-Capable Providers Prosper Across Rural America

Since July of 2015, more than 80 telco members of NTCA—The Rural Broadband Association have been recognized as Certified Gig-Capable Providers, a designation that highlights how independent telecommunications providers are delivering the Internet of tomorrow—today.

Certified Gig-Capable Providers have demonstrated, through confirmation by an engineering firm or other independent source involved in the company's network planning, deployment or operation, that gigabit technology is currently commercially available within 95% of one or more of their exchanges or census blocks, and that such service can be provided without new trenching or stringing of new aerial facilities.

The program has been a huge success—a sign of vitality not only for independent communications providers but for the communities they serve. Challenged by changing funding mechanisms and population trends, these telcos have given current and future residents yet another reason to love their scenic communities.

The map and list of companies in the following pages show just how extensive the Gig-Capable Provider program had become as of October 2016. To see an up-to-date list of all Certified Gig-Capable Providers, along with NTCA Smart Rural Community Showcase Award winners and Collaboration Challenge Grant awardees, go to www.smartruralcommunity.com. The map—and the impact of rural broadband on rural residents, not to mention the ripple effect such connectivity has on the entire country—is always growing.

Christian Hamaker
Editor, Rural Telecom

A Year of Gig-Capable Providers

- July 2016 marked the one-year anniversary of the program.
- As of July 2016, NTCA has recognized more than 80 community-based telecommunications companies as Certified Gig-Capable Providers. They serve a total of 502 exchanges in rural areas across 24 states.
- With 17 certified companies, Iowa has the largest number of Certified Gig-Capable Providers of any state in the country, followed by North Dakota (9) and Kansas (7).
- North Dakota has the largest number of exchanges (125) served by Certified Gig-Capable Providers.
- On July 30, 2015, NineStar Connect (Greenfield, Ind.) became the first company to be designated as a Certified Gig-Capable Provider by NTCA. The company is also a Smart Rural Community Showcase Award recipient.
- Consolidated Telecommunications Co. (Brainerd, Minn.) is the only company to have earned the NTCA Certified Gig-Capable Provider designation, the Smart Rural Community Showcase Award and the Smart Rural Community Collaboration Challenge Grant.

More information
about the
NTCA Gig-Capable Provider
Certification Program
is available at
www.ntca.org/gigcertified.



A Smart Investment

NRTC congratulates our telco members who have received Showcase Awards, Collaboration Challenge Grants and Gig Certification.

By building, expanding and enhancing broadband networks, you are making a difference in the communities you serve and in the lives of the people who call rural home.

NRTC is proud to be a founding sponsor of the Smart Rural Community initiative, and we're honored to work with NTCA and other allied organizations on this important program.

nrtc

Member driven. Technology focused.

NTCA CERTIFIED GIG-CAPABLE PROVIDERS

▶ For the most up-to-date map, go to www.smartcommunity.com

Alabama

Farmers Telecommunications Cooperative (Rainsville)

Arkansas

NATCO Communications (Flippin)

Pinnacle Communications (Lavaca)

Southwest Arkansas Telephone Cooperative (Texarkana)

Colorado

Philips County Telephone Co. (Holyoke)

Rye Telephone Co. (Colorado City)

Wiggins Telephone Association, dba Blue Lightning (Wiggins)

Georgia

Bulloch County Rural Telephone Cooperative Inc. (Stateboro)

Illinois

MTCO Communications (Metamora)

Wabash Telephone Cooperative Inc. (Louisville)

Indiana

Endeavor Communications (Cloverdale)

NineStar Connect (Greenfield)

Iowa

Citizens Mutual Telephone Cooperative (Bloomfield)

Clear Lake Independent Telephone Co. (Clear Lake)

Colo Telephone Co. (Colo)

Cooperative Telephone Exchange (Stanhope)

Corn Belt Telephone Co. (Wall Lake)

Dumont Telephone Co. (Dumont)

Ellsworth Cooperative Telephone Association (Ellsworth)

Farmers Mutual Cooperative Telephone Co. (Moulton)

Farmers Mutual Telephone Co. (Stanton)

Minburn Communications (Minburn)

OmniTel Communications (Nora Springs)

Panora Communications Cooperative (Panora)

Partner Communications Cooperative (Gilman)

Premier Communications (Sioux Center)

South Slope Cooperative Communications (North Liberty)

Stratford Mutual Telephone Co. (Stratford)

Webster-Calhoun Cooperative Telephone Association (Gowrie)

Western Iowa Networks (Breda)

Winnebago Cooperative Telecom Association (Lake Mills)

Kansas

Golden Belt Telephone Association (Rush Center)

KanOkla Networks (Caldwell)

Nex-Tech (Lenora)

Optic Communications (Columbus)

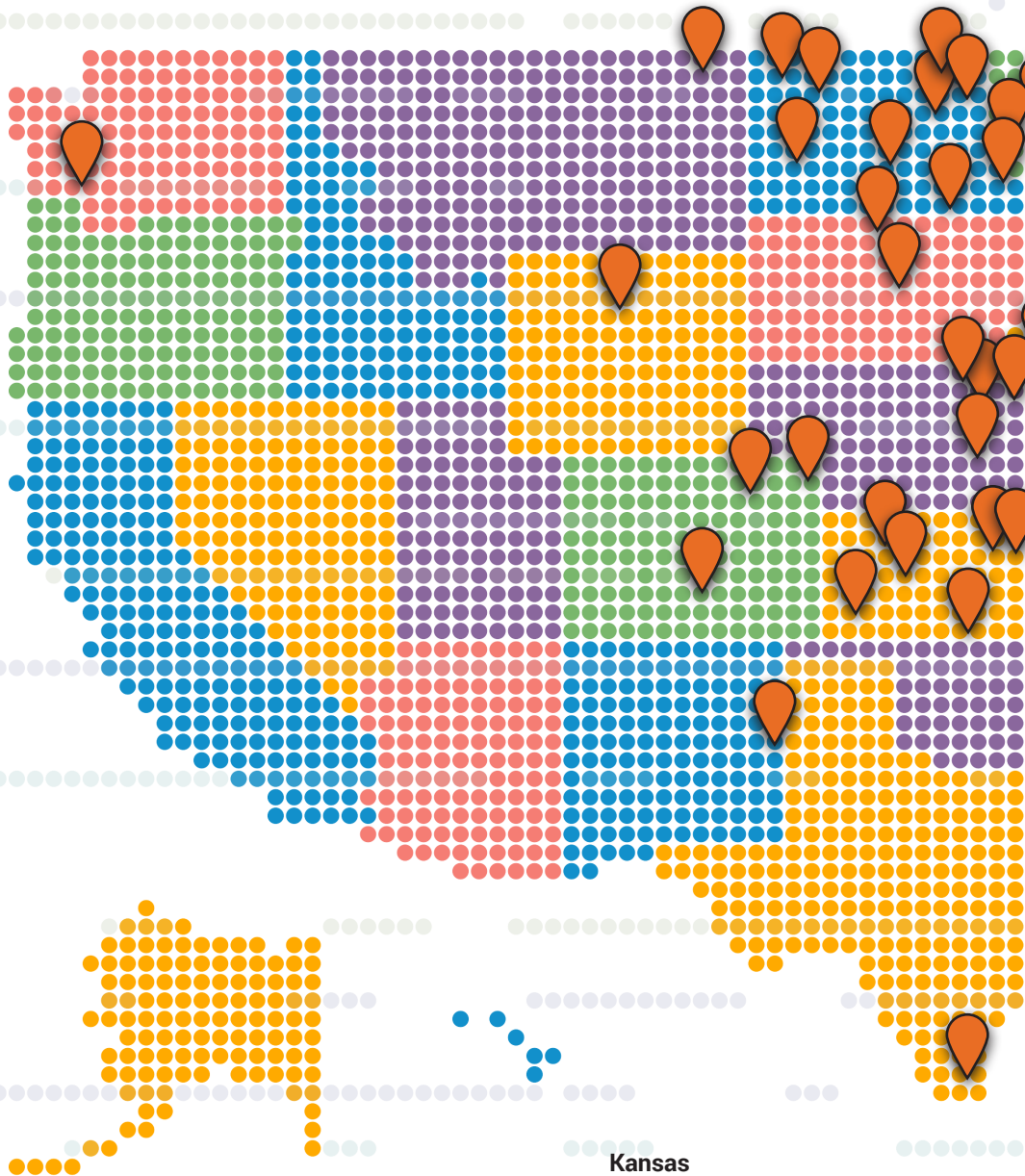
Peoples Telecommunications, LLC (La Cygne)

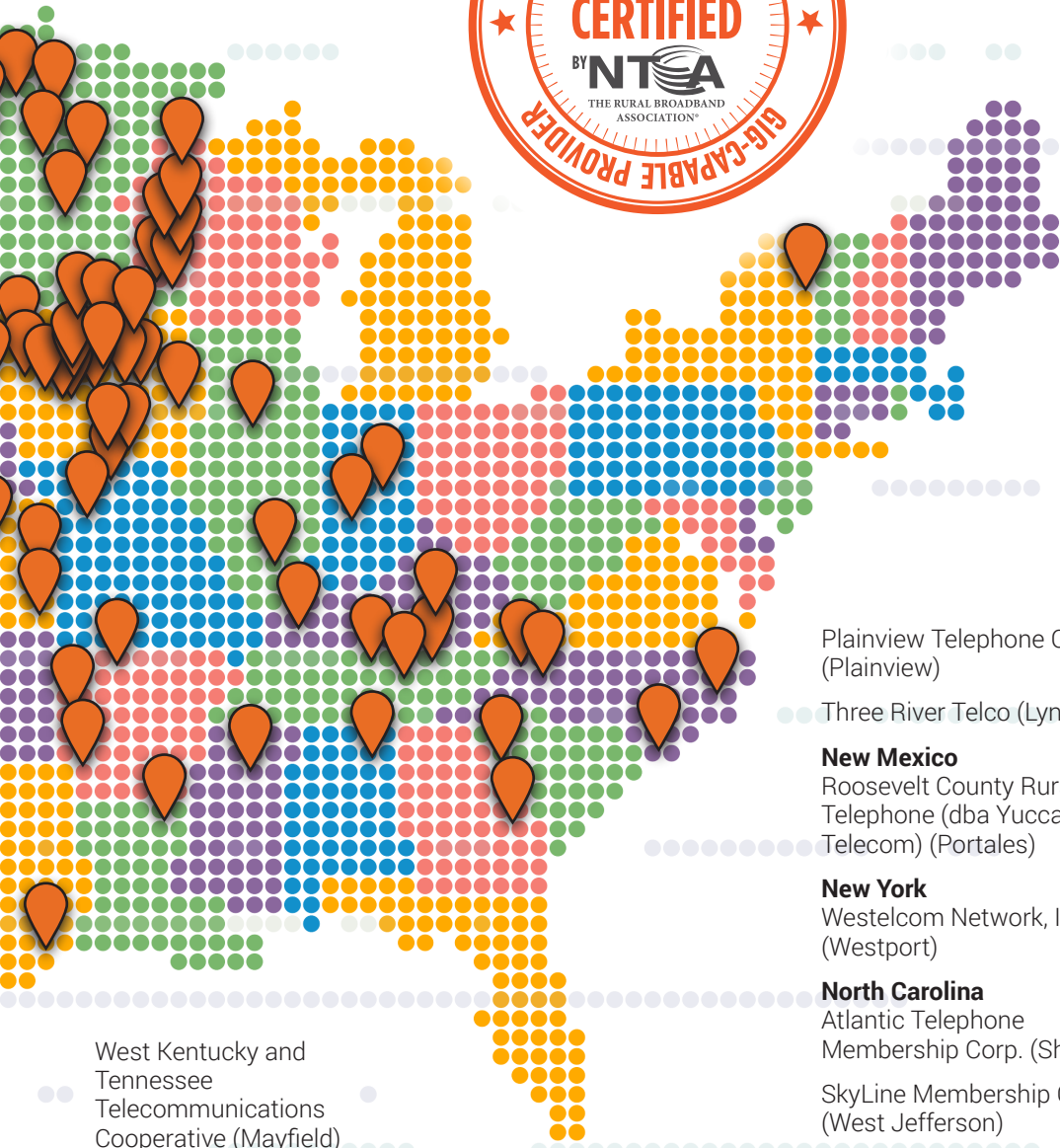
Twin Valley Communications (Miltonvale)

Wamego Telephone Co., Inc. (Wamego)

Kentucky

Peoples Rural Telephone Cooperative (McKee)





West Kentucky and Tennessee Telecommunications Cooperative (Mayfield)

Louisiana
NortheastTel (Collinston)

Minnesota
Albany Mutual Telephone Association (Albany)

Consolidated Telecommunications Co. (Brainerd)

Garden Valley Telephone Co. (Erskine)

Halstad Telephone Co. (Halstad)

Paul Bunyan Communications (Bemidji)

West Central Telephone Association (Sebeka)

Mississippi
Bruce Telephone Co. (Bay Springs)

Missouri
Green Hills Telephone Corp. (Breckenridge)

GRM Networks (Princeton)

Montana
Nemont Communications Inc. (Scobey)

Nebraska
Clarks Telecommunications Co. (Jackson)

Northeast Nebraska Telephone Co. (Jackson)

Plainview Telephone Co. (Plainview)

Three River Telco (Lynch)

New Mexico
Roosevelt County Rural Telephone (dba Yucca Telecom) (Portales)

New York
Westelcom Network, Inc. (Westport)

North Carolina
Atlantic Telephone Membership Corp. (Shalotte)

SkyLine Membership Corp. (West Jefferson)

TriCounty Telecom (Belhaven)

Wilkes Communications, Inc. (Wilkesboro)

North Dakota
BEK Communications Cooperative (Steel)

Consolidated Telcom (Dickinson)

Dickey Rural Networks (Ellendale)

North Dakota Telephone Co. (Devils Lake)

Northwest Communications Cooperative (Ray)

Polar Communications (Park River)

Red River Communications (Abercrombie)

Reservation Telephone Cooperative (Parshall)

United Communications (Langdon)

South Carolina
West Carolina Rural Telephone Cooperative (Abbeville)

South Dakota
Valley Telecommunications Cooperative (Herreid)

Venture Communications Cooperative (Highmore)

Tennessee
Ben Lomand Connect (McMinnville)

Highland Telephone Cooperative, Inc. (Oneida)

North Central Telephone Cooperative, Inc. (Lafayette)

Texas
enTouch Systems (Houston)

Valley Telephone Cooperative, Inc. (Raymondville)

Washington
Toledo Tel (Toledo)

Wisconsin
Citizens Connected (New Auburn)

Cochrane Cooperative Telephone (Cochrane)

Nelson Communications Cooperative (Durand)

Norvado (Cable)

Tri-County Communications Cooperative, Inc. (Strum)

West Wisconsin Telcom Cooperative Inc. (Downsville)

Wyoming
RT Communications, Inc. (Worland)

Smart Rural Communities...

Demonstrating Broadband Value and Commitment

NISC has been involved with the Smart Rural Community program since its beginning, celebrating the more than 40 rural telecoms who've earned this benchmark of excellence. Every SRC telecom represents the best in innovation, local commitment and business skills needed to build broadband value and services to rural America. NISC is proud to be a supporter and we extend our congratulations to 2016's SRC recipients.

- **Arvig Enterprises, Inc.**
Perham, MN
- **Ben Lomand Connect**
McMinnville, TN
- **Citizens Connected**
New Auburn, WI
- **ComSouth**
Hawkinsville, GA
- **Garden Valley Telephone Company**
Erskine, MN
- **Home Telecom**
Moncks Corner, SC
- **Liberty Communications**
West Branch, IA
- **Mosaic Telecom**
Cameron, WI
- **Pineland Telephone Cooperative**
Metter, GA
- **Skyline Membership Corp.**
West Jefferson, NC
- **Unitel, Inc.**
Unity, ME
- **24-7 Telecom & West Wisconsin Telecom Cooperative**
Downsville, WI



**Congratulations to All
SRC Recipients from NISC!**