



# BASTROP COUNTY, TEXAS

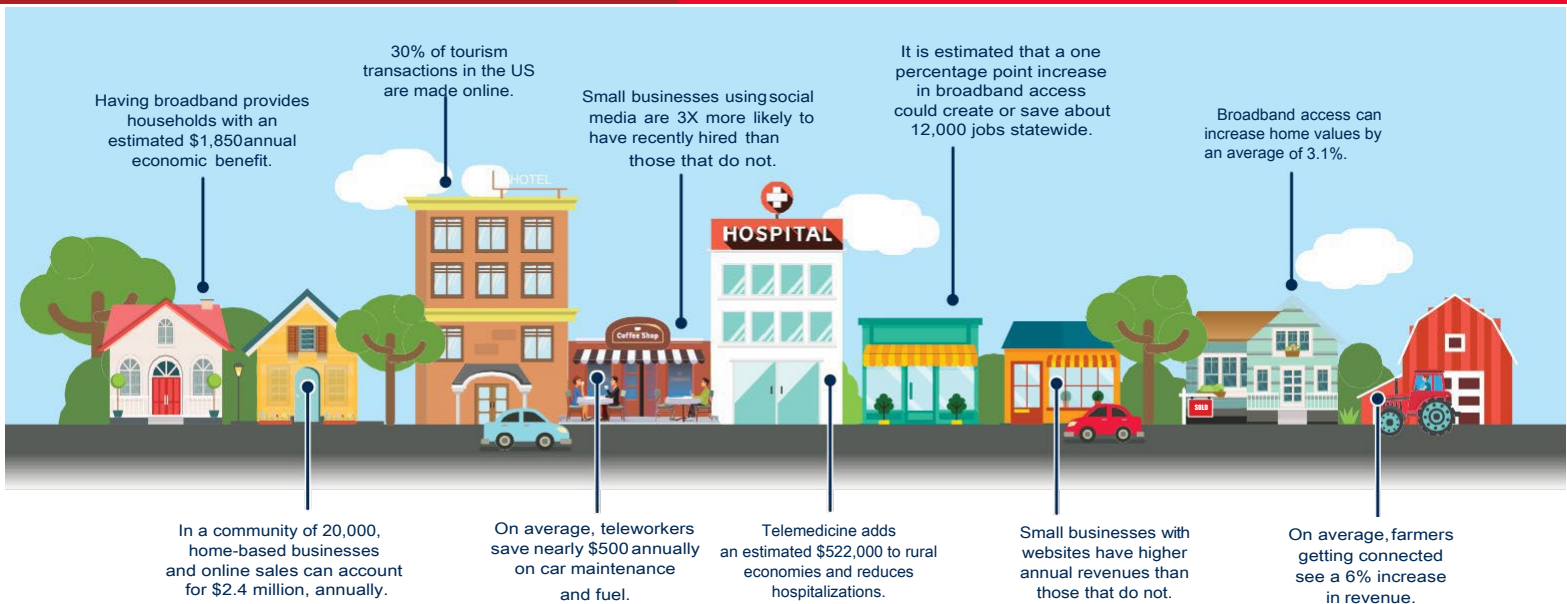
BROADBAND PLAN SUMMARY

January 2021



**CONNECTED  
NATION<sup>SM</sup>**

**Texas**



## OVERVIEW

Today, technology plays a pivotal role in how businesses operate, how institutions provide services, and where consumers choose to live, work, and play. The success of a community has become dependent on how broadly and deeply the community adopts technology resources, which includes access to reliable, high-speed internet networks; the digital literacy of its residents; and the use of online resources for business, government, and leisure.

Between July and November 2020, Bastrop County conducted a comprehensive survey of broadband technology access and adoption across the community that collected responses from 3,624 different households. This assessment was designed to identify issues and opportunities to close the local Digital Divide. To do so, the community needs insights about its available broadband infrastructure; how its residents are adopting and using broadband services; and what steps would have the greatest impact toward improving broadband access, adoption, and use across every sector.

The following provides a summary of that assessment as well as recommendations for improving broadband and technology access, adoption, and use.



More than 90% of Bastrop County internet subscribers would like to have more options available to them.

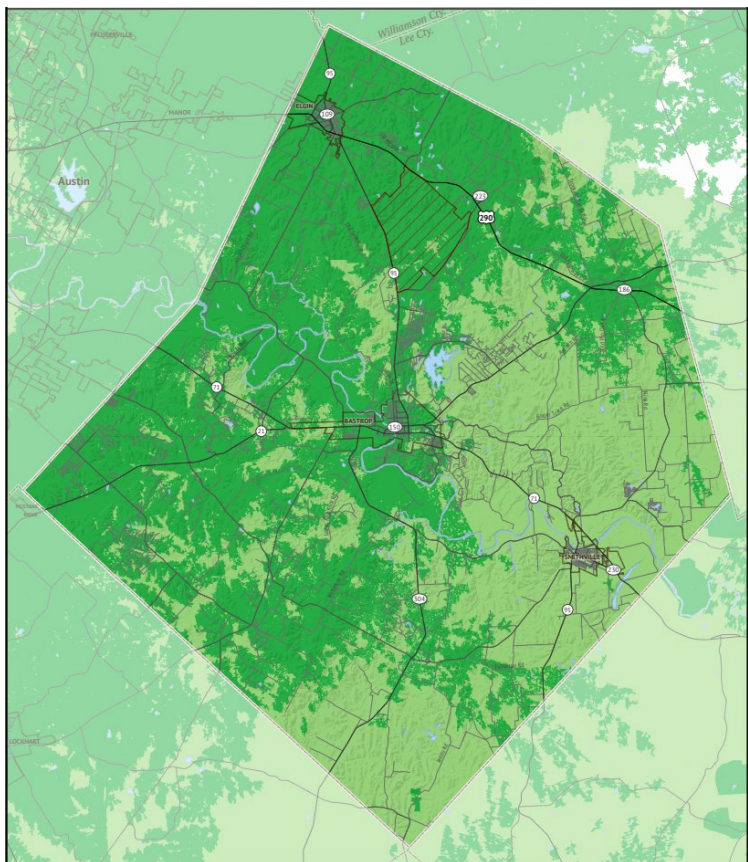
## KEY FINDINGS

- 1** According to data from the FCC and internet service providers (ISPs), nearly every household in Bastrop County (100%) has access to internet service at speeds that the FCC defines as “broadband” (25 Mbps downstream and 3 Mbps upstream). Yet one in nine Bastrop County households (11%) say they do not subscribe to broadband because it is not available where they live, and field validation shows that some of that reported availability is overstated.
- 2** Only slightly more than two-thirds of households in Bastrop County (68.3%) have access to internet service at future-ready speeds (100 Mbps downstream and 10 Mbps upstream). This is significantly lower than the statewide average, as 88.6% of all Texas households have internet access at this speed.
- 3** Nearly one out of four Bastrop County households said they do not subscribe to home internet service. Despite the FCC reporting that nearly 100% of households can access broadband, the top barrier was a lack of available service, followed by the monthly cost of internet service.
- 4** Three out of five Bastrop County households that subscribe to the internet said their current service does not meet their needs. When asked why, the top cause for dissatisfaction was the slow speed of their current service, followed by the unreliability of the available service offerings.
- 5** More than one-third of all responding households (37%) say mobile internet service is the primary (or only) internet connection in their household.

## INFRASTRUCTURE

According to data Connected Nation Texas (CN Texas) published in December 2020, nearly all Bastrop County households currently have access to broadband at 25/3 Mbps, the current definition of broadband (high-speed internet) as set forth by the Federal Communications Commission (FCC). However, based on local feedback and information from residents in Bastrop County, the maps and broadband service data for the county are overstated. This led to CN Texas conducting field validation activities in December 2020 to determine areas needing refinement in the next broadband map update, as well as confirm the presence of telecommunications assets and infrastructure routes in the area.



### Initial Bastrop County 25x3 Mbps Broadband Map



### Bastrop County, Texas

Broadband Service with Speeds of at Least  
25 Mbps Downstream/3 Mbps Upstream

Fixed, Terrestrial Non-Mobile Internet Service

-  Detailed Service Areas
-  FCC Service Availability

The field validation team traversed a large portion of the roads within Bastrop County between December 7-17, 2020. The team was able to identify wireline

broadband overstatement, due to census block reporting, for multiple providers by locating broadband asset locations and applying the technical parameters of the appropriate technology. One of the wireline providers utilizing DOCSIS 1.0 technology is not capable of delivering 25/3 Mbps speeds. The majority of cable providers within the county are utilizing DOCSIS 3.0 technology, which is capable of downstream speeds nearing one gigabit with an upload speed near 35 Mbps.

The field validation team also noted areas where fiber to the home was recently constructed, which is more than capable of providing at least 25x3 Mbps.

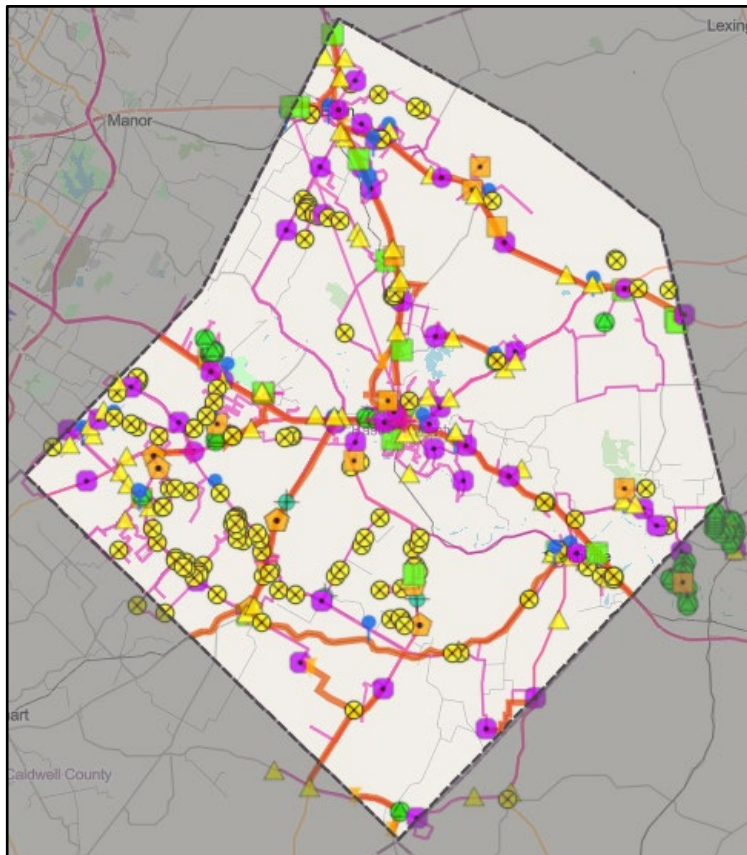
In addition to reviewing and confirming wireline broadband, the presence of fixed wireless service was verified by utilizing an AVCOM spectrum analyzer and the appropriate test antennas, as well as Ubiquity customer premise equipment to perform a sweep across the unlicensed and licensed bands. However, due to the terrain, elevation changes, and foliage types present in specific areas, fixed wireless coverage can be spotty in Bastrop County. A significant portion of the areas reporting 25x3 Mbps speeds in the county are due to the presence of fixed wireless providers, however, they do not provide ubiquitous coverage across all of Bastrop County.

In speaking with local residents, there are instances where one neighbor will allow for the necessary customer equipment structure to receive the fixed wireless signal, whereas the next neighbor does not have the facilities nor the desire to have such an antenna mounting structure on their roof or near their residence. There are cases where the terrain and/or foliage changes makes it impossible for that neighbor to receive the fixed wireless signal and operate at required levels. The team discovered antennas varying in height from rooftop to over 60 feet. Although fixed wireless may be an option for many residents within the County, it was discovered fixed wireless providers do not provide continuous coverage across Bastrop County meeting a minimum speed of 25x3 Mbps.

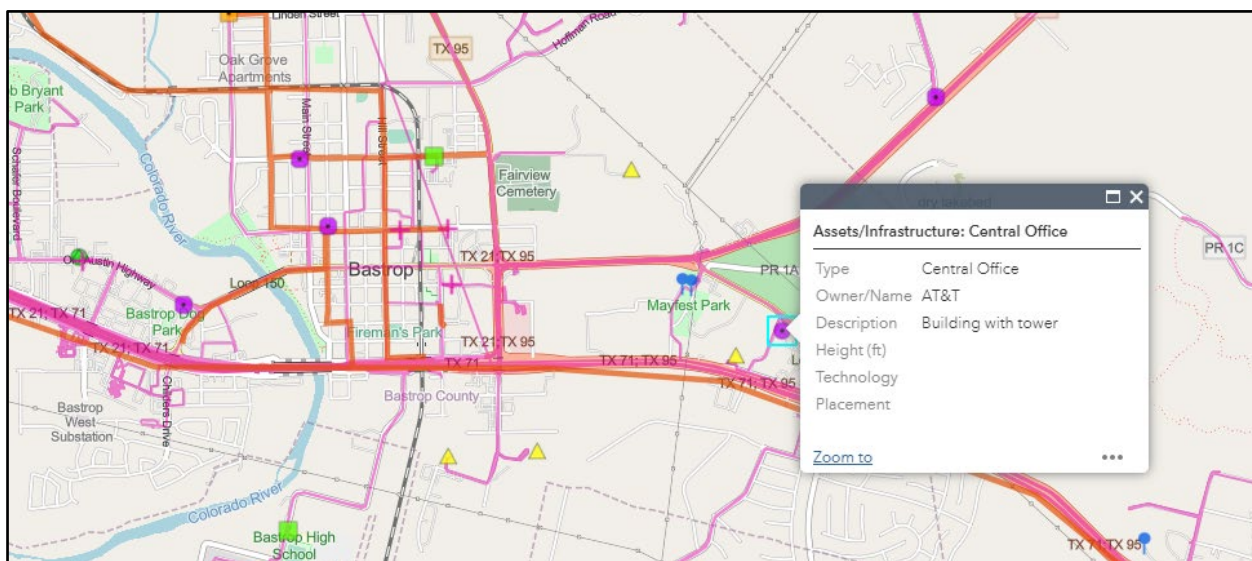
From the insights gained from the field validation, CN Texas will revise the affected provider data and the next set of broadband maps to be produced for the state in July 2021. Below are maps of various aspects of the field validation activities.

The Bastrop County interactive map is available at:  
<https://connectednation.org/texas/bastrop/interactivemap>.

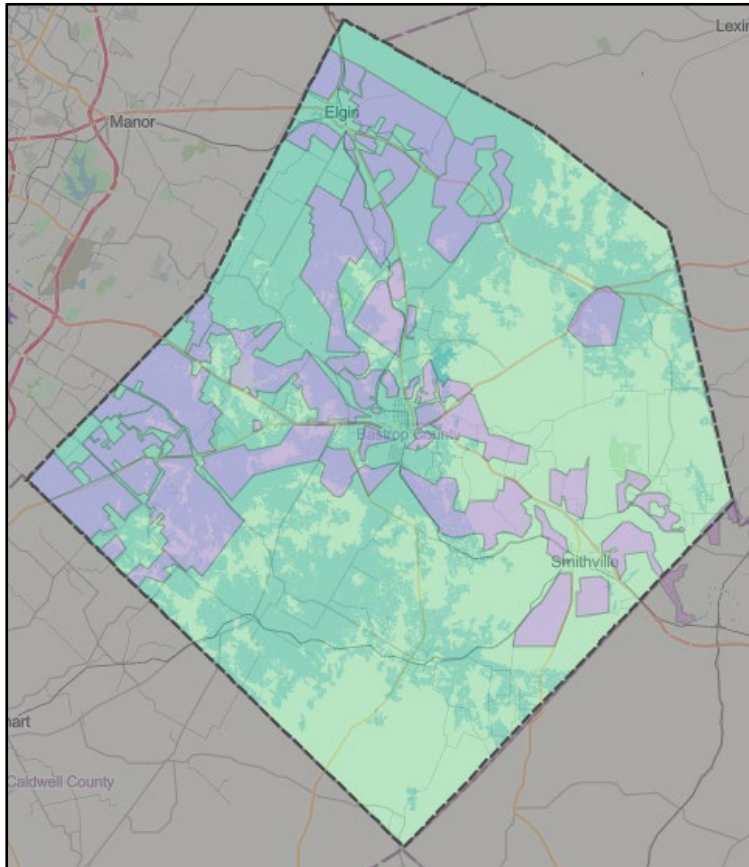
## Field Validation Drive Routes, Assets, and Infrastructure Routes






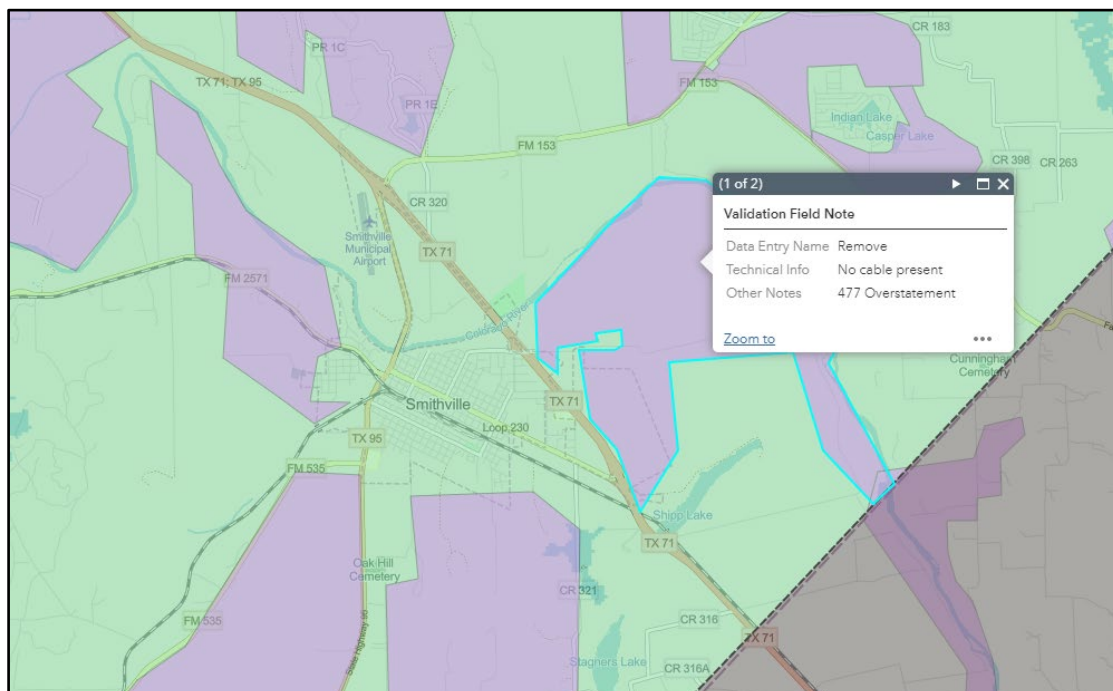
- Central Office
- Data Center
- DSLAM
- ▲ Fiber Marker
- Node
- Pedestal
- ⬢ Remote Terminal
- ⊕ Standpipe
- ▲ Tower
- + Utility Pole
- Vault
- Water Tank
- Wi-Fi AP (open)
- ⊗ Other Type
- Fiber Transport
- Validation – Drive Routes



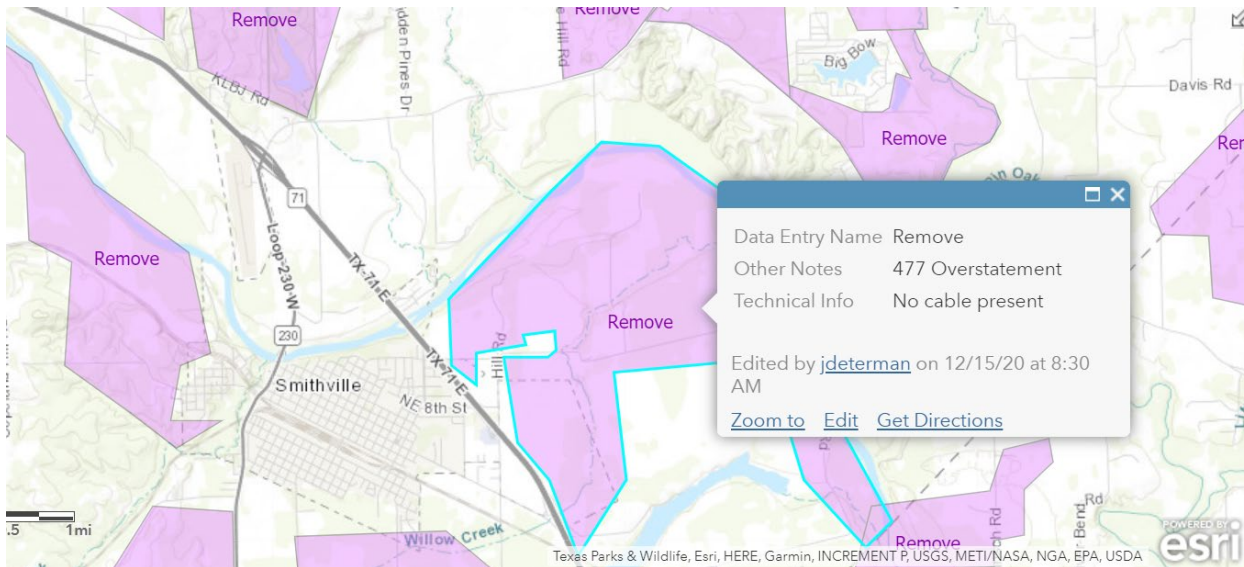
## Field Validation Identification of Broadband Overstatement



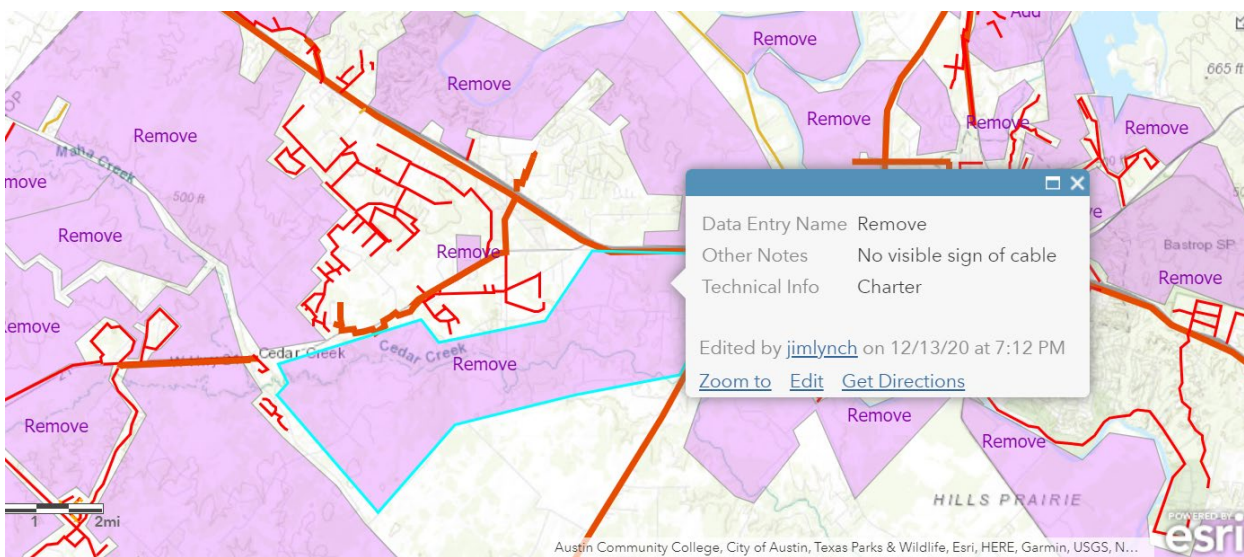
-  Overstated Coverage (validated) from Some Providers
- ACCESS – 25 Mbps Download/ 3 Mbps Upload or Greater**
-  Detailed Service Areas
-  FCC Service Availability



Among other field validation activities conducted in Bastrop County, CN Texas focused on the identification of areas where FCC Form 477 data were likely overstated. In the screenshot below, the field engineers created polygons of such “overstated” areas and flagged them for removal from the broadband map.



The screenshot below illustrates the actual routes of broadband infrastructure (as mapped by CN Texas) during the field validation audit. With routes mapped, and no visible signs of infrastructure within the polygons marked “Remove,” CN Texas can now eliminate the overstated areas and develop a map better depicting actual coverage areas from broadband providers.





# BASTROP COUNTY, TEXAS BROADBAND PLAN SUMMARY



Different portions of the county are served by internet service providers (ISPs) offering a variety of advertised speeds and platforms. As suggested above, though, providers typically do not offer these top speeds to every household, and in some cases the availability of broadband service is overstated. This highlights the need to review and validate the availability of broadband in the areas where prior federal efforts may have overstated coverage.

PROVIDER	TECHNOLOGY	MAXIMUM DOWNLOAD SPEED (Mbps)	MAXIMUM UPLOAD SPEED (Mbps)
Charter Communications Inc	Cable	940	35
CVTC	Fiber, DSL	100	100
Comcast	Cable	987	35
Particle Communications	Fixed Wireless	25	10
GHz Wireless	Fixed Wireless	50	5
GVTC	Cable, DSL	12	1.5
GVEC.net	Fixed Wireless	25	8
Rise Broadband	Fixed Wireless	25	15
theSPECnet, Inc.	Fixed Wireless	15	3
Skynet	Fixed Wireless	15	3
SOS Communications	Fixed Wireless	25	5
AT&T Southwest	DSL, Fiber, Fixed Wireless	1,000	1,000
Spry Wireless Inc.	Fixed Wireless	30	10
Suddenlink Communications	Cable	1,000	50
Zochnet	Fixed Wireless, Cable	50	15
VTXC	Fixed Wireless	25	4
Western Broadband	Fixed Wireless	15	1.5

## DETAILED FINDINGS

This section provides an overview of results from online surveys conducted in Bastrop County between July and November 2020. Altogether, CN Texas received completed surveys from 3,624 different households across the county, along with responses from schools, businesses, libraries, and other sectors. Respondents provided insights into their internet connectivity, or lack thereof. Data from Bastrop County are compared to findings from dozens of other rural communities across Michigan, Ohio, Texas, and Pennsylvania that participated in the Connected program to benchmark and identify areas for improvement.

### ADOPTION

Home Broadband Adoption



All Connected Communities



Bastrop County, Texas

- Fixed Connection (cable, DSL, fiber, and fixed wireless)
- Non-fixed Connection (dial-up, satellite, and mobile only)
- No Connection

Slightly more than one-half of Bastrop County households that responded to the survey (53%) subscribe to fixed broadband service. Fixed service is delivered via a cable, DSL, fiber, or fixed wireless technology. Slightly more than 24% of respondents indicate that their internet service is delivered via dial-up, satellite, or a mobile wireless service. This leaves 23% of households without internet access at home.

### CONNECTION DETAILS

Bastrop County respondents indicate that, on average, their internet connections cost slightly more than \$81 per month. By comparison, respondents in other Connected communities say that their average price is just under \$68 per month for their home internet service.

Average Monthly Cost for Home Internet Service



- All Connected Communities
- Bastrop County, Texas

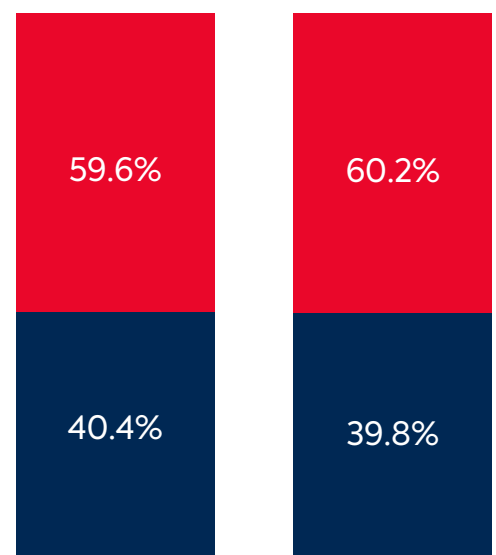
Average Download Speed (Mbps)



- All Connected Communities
- Bastrop County, Texas

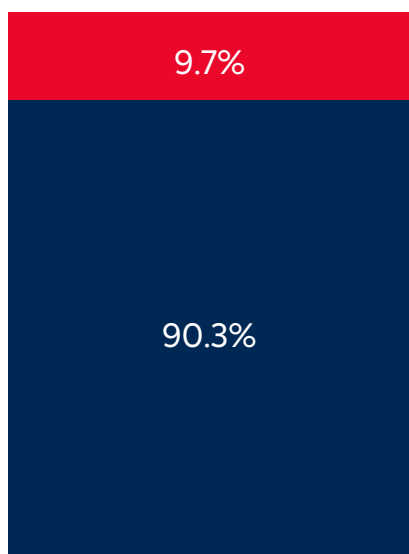
The FCC currently defines broadband as an internet connection with a download speed of at least 25 Mbps and upload speed of at least 3 Mbps. On average, respondents indicate that their advertised download speed is 23.09 Mbps, which is close to that 25 Mbps threshold but is significantly lower than household connections in other communities, despite the higher average prices being paid.

Does Your Internet Connection Meet Your Needs?



- Yes
- No

Are You Interested in Additional Internet Choices at Home?



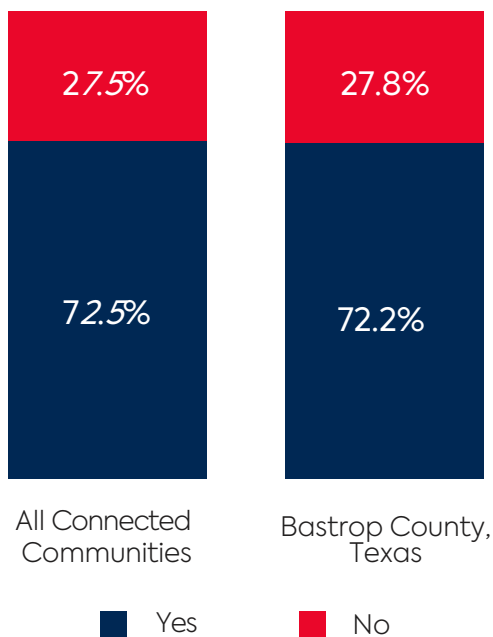
- Yes
- No

Competition provides residents with choices for service, allowing households the ability to switch providers if their current service does not meet their needs.

Three out of five internet-subscribing households (60.2%) indicate that their internet connection does not meet their needs. This is a dissatisfaction rate similar to that found among households in other communities. More than nine out of ten (90.3%) indicated that they are interested in additional internet choices for their home.



Households Subscribing to  
Mobile Internet Service



## MOBILE CONNECTIVITY

Fewer than three out of four Bastrop County households (72.2%) report that they subscribe to mobile internet service which they access via a smartphone or similar mobile device. This is comparable to other Connected communities. More than one-third of responding households (37%) say mobile internet service is the primary (or only) internet connection in their household.

## RECOMMENDATIONS

The following recommendations are presented as first steps to assist Bastrop County in expanding broadband access and adoption throughout the community.

### Develop public-private partnerships to deploy broadband service.

Public-private partnerships take many forms, limited only by the imagination and legal framework in which a political subdivision operates. Some communities issue municipal bonds to fund construction of a network, others create nonprofit organizations in collaboration with private carriers or provide seed investment to jump-start network construction.

- Determine priorities for the partnership.
- Research partnership models.
- Understand key legal considerations for localities looking to build a broadband partnership.

### Make Bastrop County a Digital Ready Community.

Create a framework through which your community can demonstrate that they are a “Digital Ready Community” with streamlined policies, cleared barriers, and a commitment to making broadband infrastructure deployment in the community a priority. This will make it easier to work with providers who want to expand their services.

- Conduct meetings of involved parties to identify any needs or concerns related to broadband expansion; create and promote a Digital Ready Community website.
- Review the local regulations and requirements that present barriers to broadband expansion in the county.
- Pass the necessary language in the governing bodies to amend any necessary regulations or policies.
- Publish the list of requirements along with the necessary electronic documentation

### Develop and maintain a Technology Action Committee.

Organize, establish, and promote an empowered group of passionate and interested individuals focused on broadband and technology access, adoption, and use.

- Maintain a board that can provide leadership and direction, set bylaws, structure, and apply for nonprofit status.
- Hold regularly-scheduled meetings, and recruit businesses and individuals to the TAC.
- Create a centralized technology portal/website that promotes local technology resources for use by residents. Resources would include calendars (promoting local tech events and showing available hours at public computer centers), online training resources, and local computer resources.