RAINS COUNTY, TEXAS

Technology Action Plan Summary

July 2021

CONNECTED NATION℠

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 networks; the digital literacy of residents; and the use of online resources locally for business, government, and leisure.

The Connected Nation Texas (CN Texas) Connected Program partnered with the Rains County Broadband Team to conduct a study designed to determine the availability of 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 locally.

Pursuant of this goal, between November 2019 and November 2020, Rains County conducted a comprehensive survey of broadband technology access and adoption across the community that collected responses from 458 households. CN Texas staff also met with community officials to determine community needs and to gather qualitative data for consideration in the study. Overall, the assessment was designed to identify issues and opportunities to close the local Digital Divide.

Rains County – Quick Facts	
Population	12,164
Number of Households	4,330
Median Household Income	$51,579
Poverty Rate	12.9%
Bachelor's Degree or Higher	13.7%
Homeowner	77.7%
Hispanic or Latino Population	9.1%
Households Served with Broadband[1]	99.67%

Source: U.S. Census 2019
https://data.census.gov/cedsci/profile?g=0500000US48379

It will be imperative that Rains County leverages community partnerships, federal funding, and infrastructure improvement projects to increase broadband availability in the community. With Rural Digital Opportunity Fund (RDOF) money and Coronavirus State and Local Fiscal Recovery funds, the future looks bright for Rains County. Understanding how to partner and work with local providers and keeping up with grant expenditures is imperative to long-term success. Many recommendations in this action plan are inexpensive or cost nothing at all but will contribute greatly to community development, including continued advancements in digital literacy, economic development, and workforce solutions. Increasing broadband adoption and use throughout the County will contribute to greater quality of life.

The following provides a summary of the technology assessment performed by CN Texas as well as recommendations for improving broadband and technology access, adoption, and use. Many recommended actions are inexpensive for the County and should be engaged in immediately to help the community accelerate deployment opportunities.

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[1] The current FCC definition of broadband is a minimum of 25 Mbps download and 3 Mbps upload. This data is derived from Connected Nation Texas, July 2021.

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KEY FINDINGS

- Over 50% of residents either use non-fixed internet connections[2] such as dial-up, satellite, and mobile-only services or are not adopting broadband at all.

- The average internet speed reported by households in Rains County **(12.71 Mbps)** is only slightly higher than one-third of the speed reported in other similar communities **(36.65 Mbps)**. Additionally, this reported average does not meet the current FCC definition of broadband (25 Mbps download and 3 Mbps upload).

- For households that reported that they do not subscribe to home internet service, **the top barrier to subscription was the lack of available service.**

- Rains County households reported a **higher average reported monthly cost** of service among households in the community **($90.52)** compared to those in other Connected communities ($69.22).

- **Slow speeds** and **unreliable connections** were the top reasons given for dissatisfaction by households in the community.

- **93.2%** of households said they would like to have improved or additional options for home internet service.

- About **87.5%** of households in Rains County have access to internet service at speeds needed to run many modern applications (100 Mbps downstream and 10 Mbps upstream). Statewide, 92.05% of households have internet access at this speed.

46.5%

of households in Rains County subscribe to a fixed home broadband connection

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[2] Non-fixed internet connections include dial-up, satellite, and mobile-only services. These non-fixed types of internet services, while providing basic access, can often be plagued by connection latency, have costly monthly data plans, or can be impacted by weather, terrain, large expanses of open water, and other environmental factors.

RAINS COUNTY, TEXAS SUMMARY

INFRASTRUCTURE

The first step in understanding the state of broadband infrastructure in Rains County and the rest of Texas is having accurate maps. Accordingly, CN Texas works with providers to develop a variety of broadband maps at a state and county level. Data shown on these maps are derived from a combination of direct provider outreach and data collection, FCC Form 477 broadband deployment filings, and independent research conducted by CN Texas. If a provider was unable or unwilling to supply granular data and a detailed service area could not be developed, the provider's service is represented by Form 477 data, a format that tends to overstate the service territory.

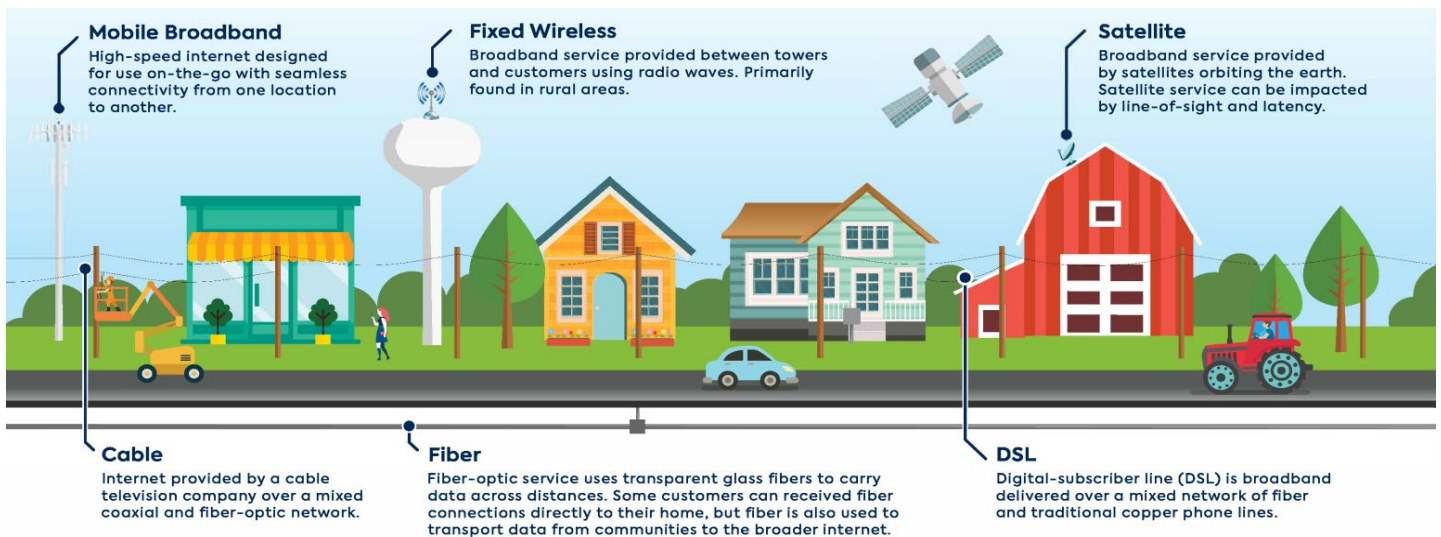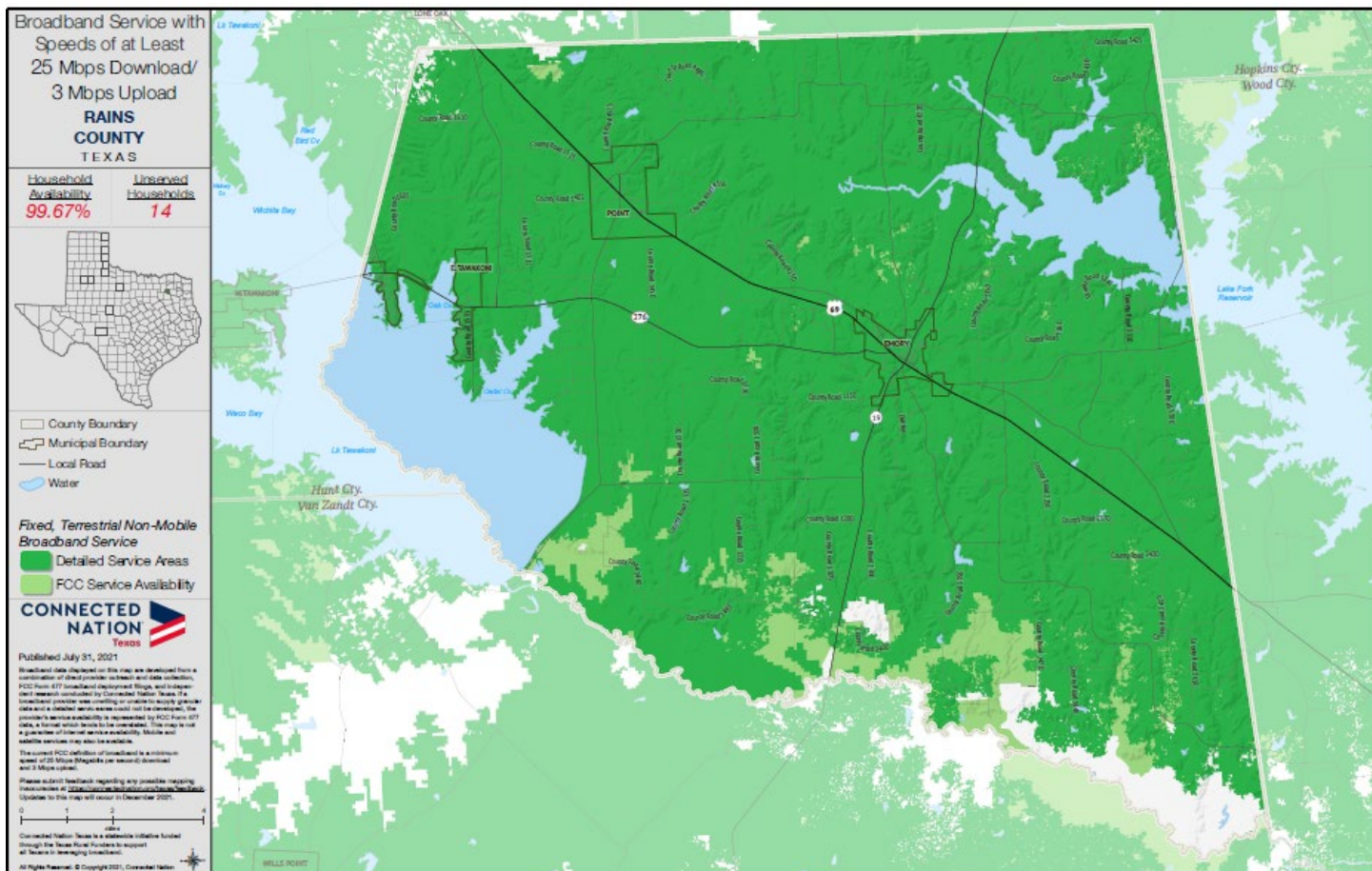| Broadband – Quick Facts	
Unserved Households (25/3 Mbps)	14
Households served (10/1 Mbps)	99.72%
Households served (25/3 Mbps)	99.67%
Households served (50/5 Mbps)	97.5%
Households served (100/10 Mbps)	87.48%

Broadband data collected by CN Texas in 2021
https://connectednation.org/texas/mapping-analysis/.

According to CN Texas broadband data collected in 2021 – with public feedback, field validation, and provider input, nearly all households have access to broadband at least 25/3 Mbps, the current definition of broadband as set forth by the Federal Communications Commission (FCC).

Internet Service Providers in Rains County

PROVIDER	TECHNOLOGY	MAXIMUM DOWNLOAD SPEED (Mbps)	MAXIMUM UPLOAD SPEED (Mbps)
Argon Technologies	Fixed Wireless	15	3
Nextlink Residential	Fixed Wireless	100	20
Nextwave Wireless	Fixed Wireless	25	3
PEOPLES	Fiber	1000	100
	Fixed Wireless	500	50
Personal Touch Communications	DSL	10	1
	Fiber	100	100
Rise Broadband	Fixed Wireless	25	3
Wi-Five Broadband Internet	Fixed Wireless	18	2

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RAINS COUNTY, TEXAS
SUMMARY

Texas

Below is Rains County's (25/3 Mbps) map. To access the full map, go to
https://connectednation.org/texas/county-maps/ and select Rains County from the list. Other portions of the
county are served by internet service providers (ISPs) offering slower advertised speeds.

Broadband Service with Speeds of at Least 25 Mbps Download/ 3 Mbps Upload
RAINS COUNTY TEXAS

Household Availability	Unserved Households
99.67%	14

County Boundary
Municipal Boundary
Local Road
Water

Fixed, Terrestrial Non-Mobile Broadband Service
Detailed Service Areas
FCC Service Availability

Mobile Broadband
High-speed internet designed for use on-the-go with seamless connectivity from one location to another.

Fixed Wireless
Broadband service provided between towers and customers using radio waves. Primarily found in rural areas.

Satellite
Broadband service provided by satellites orbiting the earth. Satellite service can be impacted by line-of-sight and latency.

Cable
Internet provided by a cable television company over a mixed coaxial and fiber-optic network.

Fiber
Fiber-optic service uses transparent glass fibers to carry data across distances. Some customers can received fiber connections directly to their home, but fiber is also used to transport data from communities to the broader internet.

DSL
Digital-subscriber line (DSL) is broadband delivered over a mixed network of fiber and traditional copper phone lines.

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HOUSEHOLDS – DETAILED FINDINGS

The following provides an overview of results from a broadband survey conducted in Rains County between November 2019 and November 2020. Altogether, CN Texas received 458 completed surveys from households across the county, and respondents provided insights into their internet connectivity or lack thereof. Data from Rains County are compared to data from dozens of other rural Connected participating communities across Michigan, Ohio, Texas, and Pennsylvania to benchmark and identify areas for improvement.

Households - Quick Facts	
Fixed Home Broadband Adoption[3]	46.5%
Average Monthly Cost of Internet	$90.52
Average Download Speed	12.71 Mbps
Households Satisfied with Service	30.0%

Source: Rains County Household Survey conducted by CN Texas

ADOPTION

Home Broadband Adoption
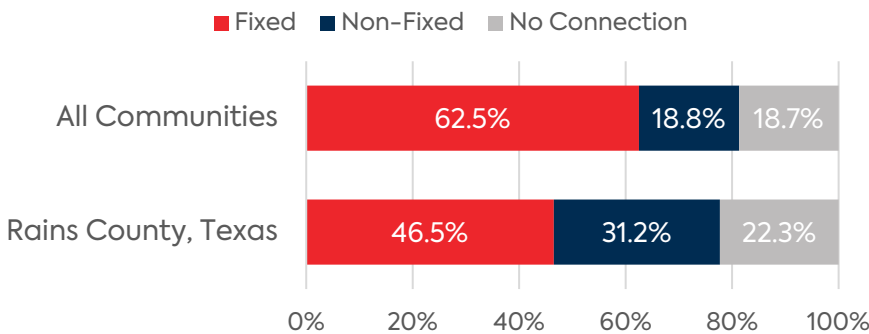
In Rains County, 46.5% of households that took the survey subscribe to fixed broadband service delivered via a cable, DSL, fiber, or fixed wireless technology. Also, 31.2% of respondents indicate they have internet service, but it is delivered via dial-up, satellite, or a mobile wireless service. This leaves over one-fifth (22.3%) of survey respondents without internet access at home.

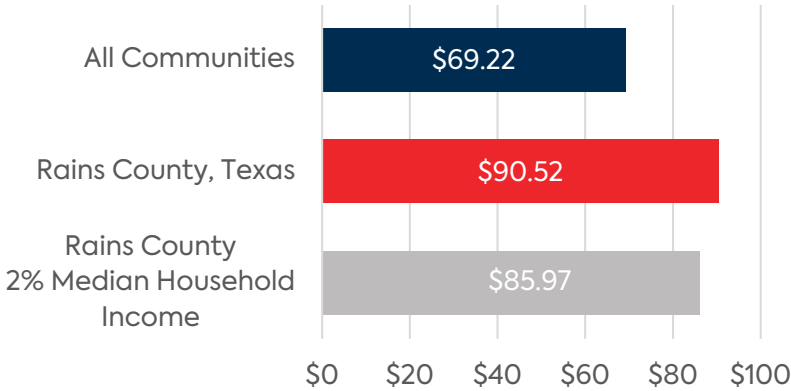**Primary Barrier to Home Broadband Adoption**
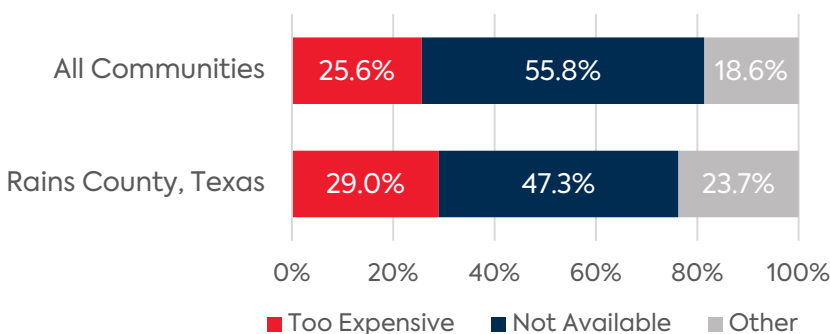
Among those without a home internet connection, 29% indicate that it was too expensive, while nearly one-half (47.3%) said they did not have broadband because it was not available to them. Like in many communities, cost and availability are the two primary barriers to home broadband adoption.

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[3] Fixed home broadband connections are those provided by cable, DSL, fiber, or fixed wireless technology.

CONNECTION DETAILS

Average Monthly Cost for Home Internet Service

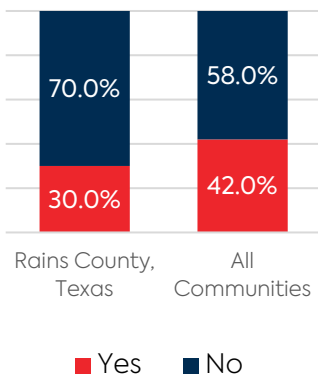|	
All Communities	$69.22
Rains County, Texas	$90.52
Rains County 2% Median Household Income	$85.97

Scale: $0 $20 $40 $60 $80 $100

Respondents indicate that on average, their internet connection costs about $90.52 per month. This is higher than monthly costs in other communities ($69.22). Additionally, as two percent of monthly income is a recognized standard for measuring the affordability of a home internet connection, two percent of the median household income in Rains County is $85.97 per month.

Average Download Speed (Mbps)

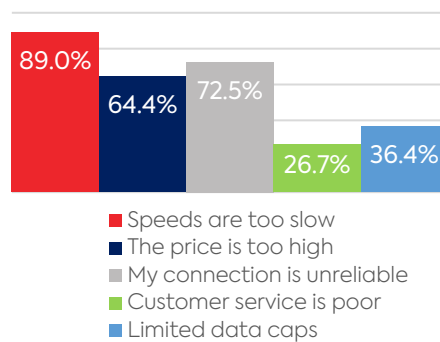|	
All Communities	36.65
Rains County, Texas	12.71

Scale: 0 10 20 30 40
Speed (Mbps)
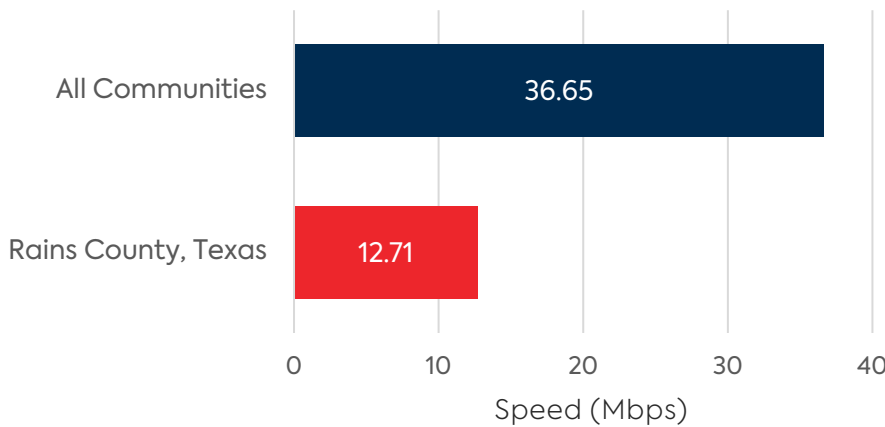
The FCC currently defines broadband as an internet connection with a download speed of at least 25 Mbps and upload speed of at least 3 Mbps. On average, respondents indicate that their connection's download speed is 12.71 Mbps, which is lower than household connections in other communities (36.65 Mbps).
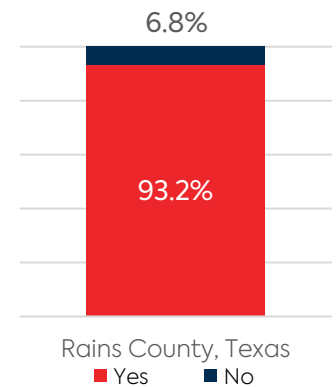
Does Your Internet Connection Meet Your Needs?

	Rains County, Texas	All Communities
No	70.0%	58.0%
Yes	30.0%	42.0%

■ Yes ■ No

Why Does Your Connection Not Meet Your Needs?

Speeds are too slow	89.0%
The price is too high	64.4%
My connection is unreliable	72.5%
Customer service is poor	26.7%
Limited data caps	36.4%

Are You Interested in Additional Internet Choices at Home?

|	Rains County, Texas
No	6.8%
Yes	93.2%

■ 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. About 70% of respondents indicate that their internet connection does meet their needs, unlike all communities where nearly 60% of respondents were satisfied with their internet service. For those who indicated dissatisfaction with their connection, when asked why their connection does not meet their needs, nearly 90% of households indicate that the speed is too slow. About 65% say the price is too high, and nearly three-quarters indicate that the connection is unreliable; (respondents could choose more than one reason). Finally, over 90% of respondents indicate that they are interested in additional internet choices for their home.

MOBILE CONNECTIVITY

Nearly three-quarters of Rains County households (73.7%) report that they subscribe to mobile internet service which they access via a smartphone or similar mobile device. This is consistent with other Connected communities (74.0%).

Additionally, about 15.7% of mobile-connected households report that they rely on their mobile service as their primary source of internet connectivity at home. In addition, 24.8% use mobile service to connect other household devices to the internet.
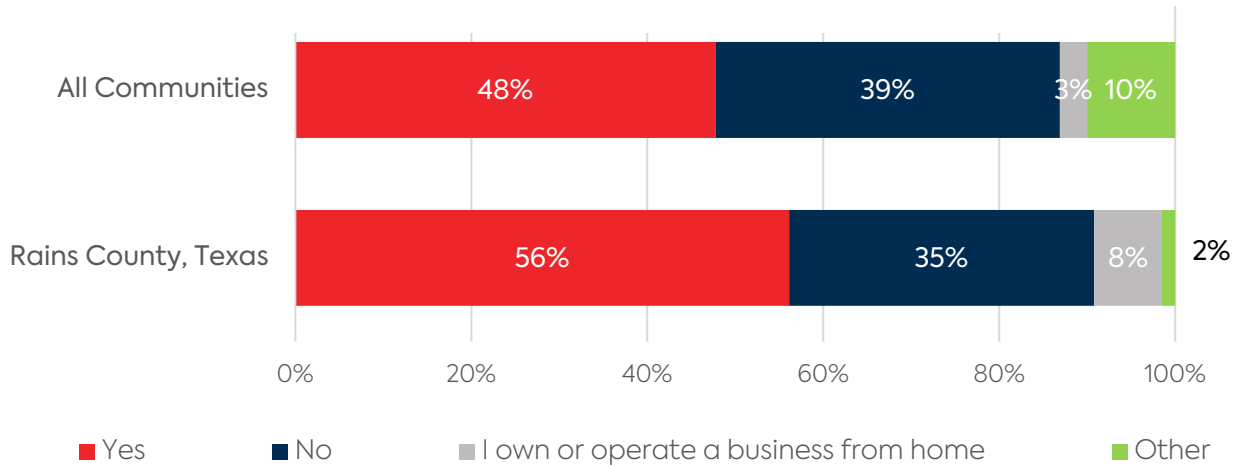
Households Subscribing to Mobile Internet Service

	Rains County, Texas	All Communities
No	26.3%	26.0%
Yes	73.7%	74.0%

■ Yes ■ No
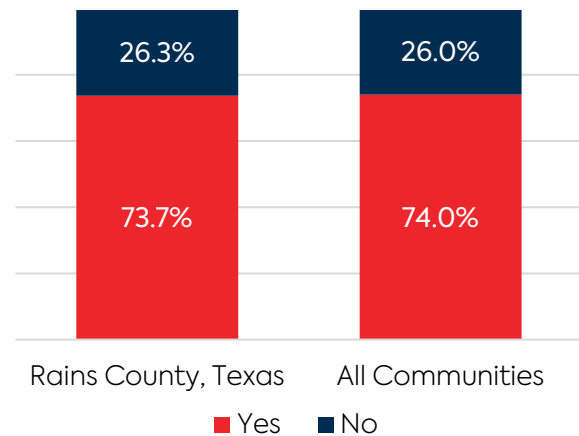
37.3%
of mobile-connected households use their mobile service as a *secondary* home internet source
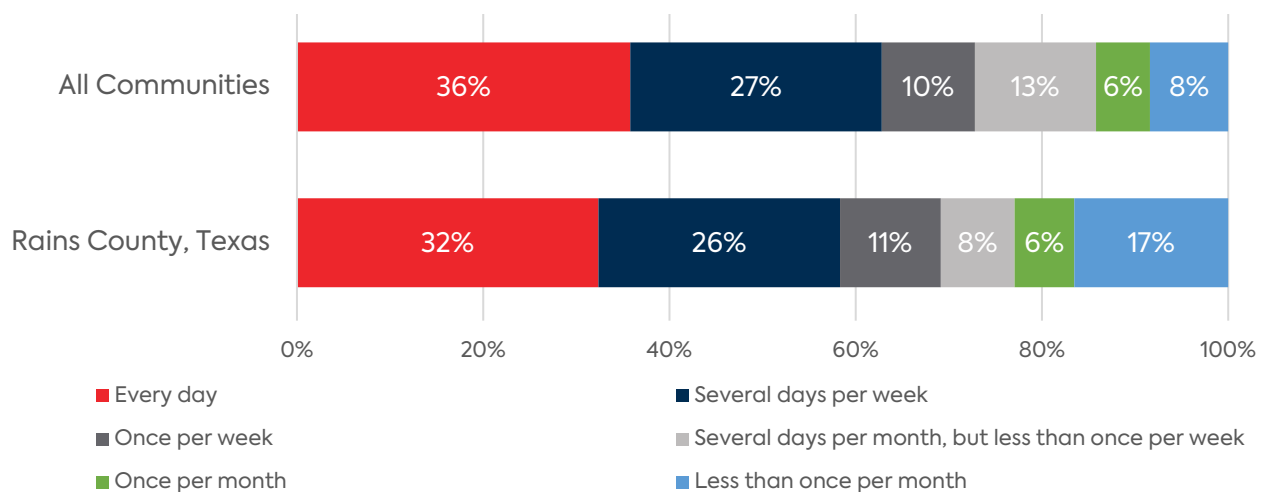
TELEWORK

Teleworking, or telecommuting, refers to working outside of the conventional workplace and communicating with it by way of telecommunications or computer-based technology. The COVID-19 pandemic forced many organizations to allow staff to telework. Teleworking is quickly becoming a critical part of growing a local economy because it represents an opportunity to attract or retain employees even though their employer may not be located within the community. The COVID- 19 lockdowns helped to accelerate adoption of teleworking temporarily – and in some instances for the long term. However, this only works if those employees have access to advanced broadband infrastructure. Nearly 60% of employed residents in Rains County indicate that they telework at least part of the time. This is more than residents in other communities. It is important to note COVID-19 pandemic likely had a dramatic impact in the teleworking data.

Do You Currently Telework For Your Job?

	Yes	No	I own or operate a business from home	Other
All Communities	48%	39%	3%	10%
Rains County, Texas	56%	35%	8%	2%

How Frequently Do You Telework?

	Every day	Several days per week	Once per week	Several days per month, but less than once per week	Once per month	Less than once per month
All Communities	36%	27%	10%	13%	6%	8%
Rains County, Texas	32%	26%	11%	8%	6%	17%

RECOMMENDATIONS

The following recommendations are presented to assist Rains County in expanding broadband access and adoption throughout the community.

Perform a Broadband Build-Out Analysis and Validate Demand for Broadband Service in Underserved Areas

Conduct onsite visual assessments of the defined geographic areas unserved by broadband coverage. The assessment determines the feasibility of deploying various Internet systems in a defined area.

Use the results of the Residential Technology Survey to identify pockets of demand in areas without service. Survey results can also provide information on currently adopted speeds and costs.

A market analysis should also be performed to identify potential broadband providers, understand potential service offerings, and respective rates.

Results of the studies should be analyzed and released to providers to inform a business case for expansion or upgrades. Community broadband team members should include broadband providers in discussions of access expansion.

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 non-profit organizations to develop networks in collaboration with private carriers or provide seed investment to jumpstart construction of networks that the private sector is unable to cost-justify on its own.

Determine priorities for the partnership; competition, enhanced service, equity and service to all, public control over infrastructure, redundancy, etc. Research partnership models; Private investment, public facilitation; Private execution, public funding; or Shared investment and risk.

More information is available here: https://www.ntia.doc.gov/files/ntia/publications/ntia_ppp_010515.pdf

Host Website and Social Media Classes for Local Businesses

Training should be provided to small businesses regarding the use of websites and social media within that small business. Website topics should range from starting a basic website to more advanced topics such as e-commerce. Social media topics should include a variety of social media outlets including Facebook, Twitter, Instagram, YouTube, Pinterest, and LinkedIn.

Work with the local chambers and libraries to expand on existing programs that promote e-commerce and web development and marketing within the small business community including those involved in agriculture. Identify regional and community partners with resources and expertise to assist in producing workshops. Schedule workshops and advertise classes via local media.

Create a Telework Support and Attraction Program

Teleworking allows employees to lower their commuting costs, and accommodates people with disabilities, the elderly, working mothers, and rural residents who may not be in a position to work outside the home. It is unlikely that all employees will be able to telework. A good way to start is to identify types of positions or job types that can be performed remotely and initiate a trial period and track results.

Gather a local team of those that support businesses and employees such as chambers, business associations, citizens, and other relevant interest groups. Determine if there is interest from current or prospective teleworkers in services the community could offer or needs that are not currently met. Reach out to other communities and learn from their experience: https://tinyurl.com/sandg4w.

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Promote Telemedicine in Remote Areas

Promote the delivery of healthcare services from a distance using video-based technologies. Telemedicine can help to address challenges associated with living in sparsely populated areas and having to travel long distances to seek medical care—particularly for patients with chronic illnesses. While telemedicine can be delivered to patient homes, it can also be implemented in partnership with local clinics, libraries, churches, schools, or businesses that have the appropriate equipment and staff to manage it.

Gather a local team to begin exploring the opportunity: healthcare providers and broadband providers; state, county, and local government healthcare departments; healthcare advocates and community organizations; and citizens. Determine the healthcare service currently offered via telemedicine technology and build awareness in the community. Determine digital literacy needs for telemedicine applications and identify or develop training programs for those skills. Explore funding opportunities such as: https://www.usac.org/rural-health-care/.

Explore 1:1 Device Programs in K-12 Schools

Online content and web-enabled course delivery can provide opportunities for learning beyond the traditional face-to-face course format found in many K-12 institutions. These applications can be further bolstered by providing students with their own Internet-enabled devices. Advancements in technology and personal computing provide new opportunities for student engagement and learning. Implementing a 1:1 device program is not a light undertaking, and it requires the input and dedication of administrators, teachers, and students. A 1:1 program is not about the devices; rather, it's about creating an environment where all students have greater access to learning resources.

Create your 1:1 vision and leadership team; research other successful implementations; assess district readiness; identify a project manager and consult with experts; create a strategic plan; develop a financial plan; assess infrastructure needs; consider conducting a pilot; ensure curriculum and pedagogy embrace technology; and install collaborative and ongoing professional development.

Explore resources such as:

Five steps to a successful 1:1 environment

https://www.edutopia.org/blog/one-to-one-environment-andrew-marcinek.

An interactive map of broadband service for the county can be found at:
http://cngis.maps.arcgis.com/apps/webappviewer/index.html?id=d2ba0b24759b4193b1a039a9e0c582fb