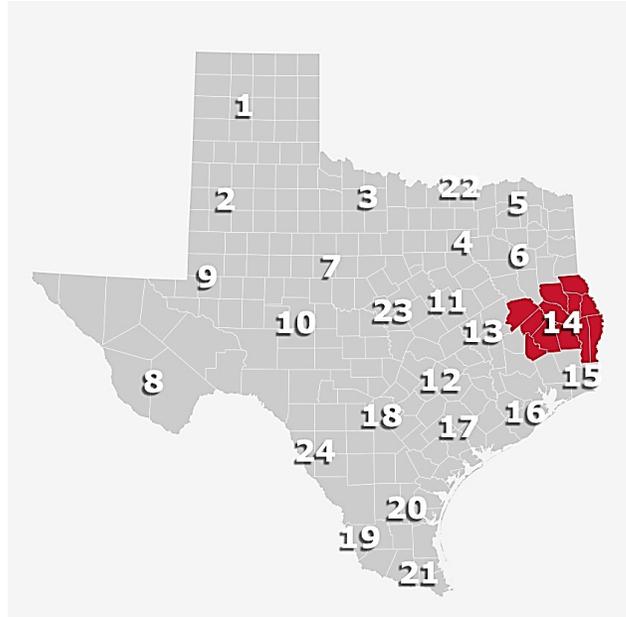


UPDATE:

Updated November 2022



The Case for Broadband in Deep East Texas



Deep East Texas Council of Governments
and Economic Development District

About DETCOG

The Deep East Texas Council of Governments and Economic Development District (DETCOG) is an association of Counties, Cities, Independent School Districts, the Alabama-Coushatta Tribe of Texas, River Authorities, Special Districts and sustaining private industry members. Our region encompasses 11 counties -- Angelina, Houston, Nacogdoches, Newton, Polk, Sabine, San Augustine, San Jacinto, Shelby, Trinity, and Tyler -- an area of 9,414 square miles with a population of 340,000 residents. DETCOG's regional broadband initiative includes neighboring Jasper County, thus covering 10,383 square miles and 373,000 residents.

Organized in 1966, DETCOG is both a Regional Planning Commission under the State of Texas and a federal Economic Development District under the U.S. Department of Commerce's Economic Development Administration (EDA).

DETCOG envisions a Deep East Texas region where all people have the necessary skills and opportunities to achieve their individual dreams; a Deep East Texas where people enjoy good health, safety and security, and a high-quality standard of living. DETCOG assists its members' efforts to increase jobs and strengthen their local economies. Regional cooperation leads to stronger communities and more efficient use of resources. DETCOG provides the opportunity for local jurisdictions to work together to accomplish more than any individual member could accomplish on its own.



DETCOG's Broadband Initiative

As broadband goes, Deep East Texas is one of the most underserved regions in the nation. Our goal is to change that. We believe that **every** home and business – not just the ones that are easy and profitable to serve -- should have access to reliable and affordable broadband.

Broadband is no longer a convenience or luxury. It is a necessity. A modern digital infrastructure with broadband service -- accessible and affordable for all -- is a critical component of a competitive and modern regional ecosystem for its enterprise and residential stakeholders.

We know there are many areas in our region that are difficult to serve, and frankly, impossible to serve under a traditional business model. Yet these rural residents and businesses deserve the same opportunities as their counterparts who live and work in urban and suburban areas.

We believe the only way to provide service for everyone in a region like ours is to leverage the population and resources of the entire region. When *everyone* in the region has access, the entire region will benefit.



Why is Broadband So Important?

Broadband is a basic building block for the future. When any part of our region suffers, all of us suffer.

- Nine of the 12 counties have declined in population since 2010.
- Ten of the 12 counties have unemployment rates substantially higher than the rest of Texas.
- Household income in all 12 counties is substantially lower than the rest of the state and nation.
- Broadband is essential for education. Without broadband, our students do not have the same opportunities as students in the rest of Texas and the US.
- Broadband is essential for rural healthcare. Our counties rank near the bottom of Texas Health Rankings. Access to healthcare is a major obstacle with a severe shortage of physicians. Telehealth services can help bridge this gap – but only if our citizens have reliable broadband available in their homes.

Our First Step: The inCode/Ericsson Study

Aware of the enormous and costly challenge to provide broadband in rural areas like Deep East Texas, the DETCOG Board of Directors authorized a regional study in 2019 to determine the feasibility of such an undertaking and develop a road map for success.

inCode Consulting, a division of Ericsson Inc., was commissioned to conduct a regional broadband market analysis and feasibility study as a first step in the development of a regional broadband network to provide high-speed internet and data services to all 12 counties of the region.

The study documented the shortcomings of existing service in Deep East Texas and projected the positive economic and societal impact of broadband on the future of our region.



Executive Summary of Findings and Recommendations from inCode Study for DETCOG

Minimal existing broadband infrastructure requires extensive network build

- Existing fiber constitutes **less than 15% of the total needed fiber miles** in DETCOG
- Institutions such as schools, universities, and utility coops have fiber assets, but **access is limited due to legislative and regulatory requirements**
- Capital requirements and investment profile is outside of typical enterprise consideration. **A public-private-partnership (PPP) model is necessary to maximize resources available for the project**

High buildout costs require fiber alternatives & partnerships between ISP, utility Co-Ops, and government

- Fiber construction **ranges between \$30,000 – \$100,000 per mile** dependent on location geography
- **Alternative technologies** such as Fixed Wireless Access (FWA), 5G cellular and hybrid-fiber coax will serve to increase speeds with less capital intensity compared to fiber
- **Broadband's economic impact to DETCOG** has the potential for additional ~2.5K jobs and ~\$300M in incremental GDP growth over next 10 years via investments in IT, education, and telehealth alone!

A phased selection of counties is required to keep network buildout realistic and manageable

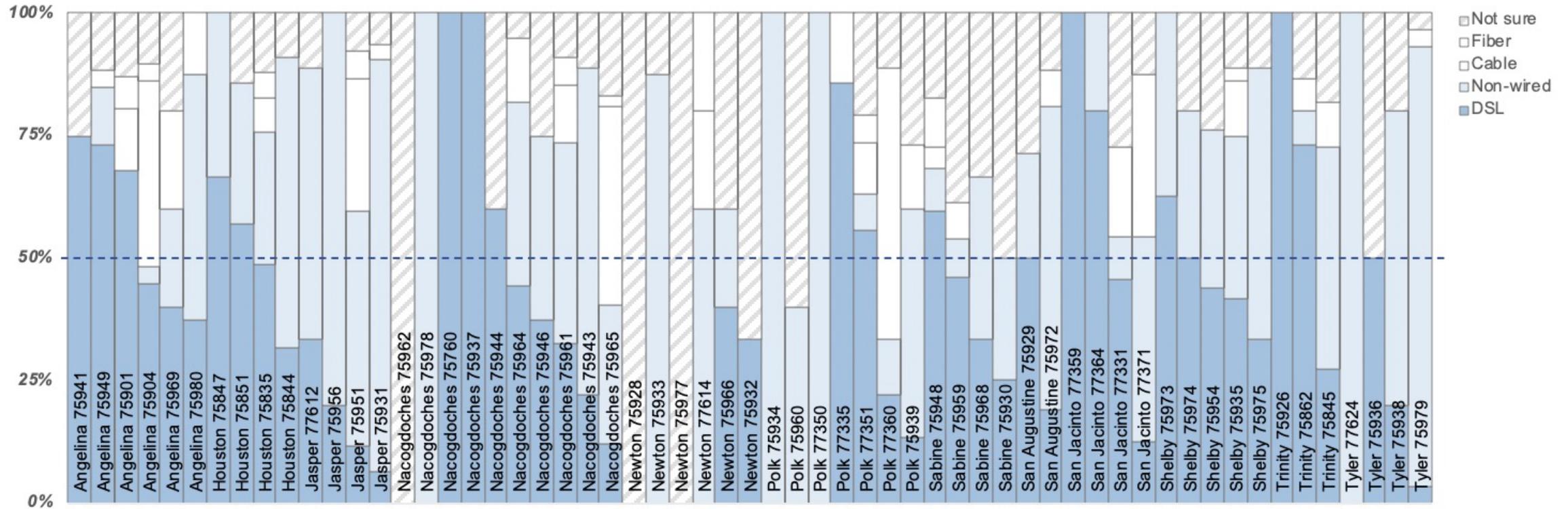
- A simultaneous, full-scale all-fiber network buildout can cost upwards of \$600 M
- **DETCOG can potentially address 60% of households through a mix of fiber and cellular technology with a projected \$143 M capital cost**
- DETCOG should work with on-ground ISPs and utility Co-ops to develop a target list of build areas to keep the initial project achievable, and potentially **reduce per mile build-cost down to \$12,000 – \$25,000 per mile**

The majority of Deep East Texans do not have access to reliable, high speed internet.

DSL is the most common internet service technology in Deep East Texas. Households without access to fixed line internet must supplement with unreliable, slow, and costly alternatives such as satellite internet service.

Home internet services technology breakout in DETCOG

Service areas defined and segmented by zip codes, 'Not listed here' consists of cellular and satellite technologies



Source: DETCOG Internet Speed Test Survey, DETCOG stakeholder interviews, inCode analysis

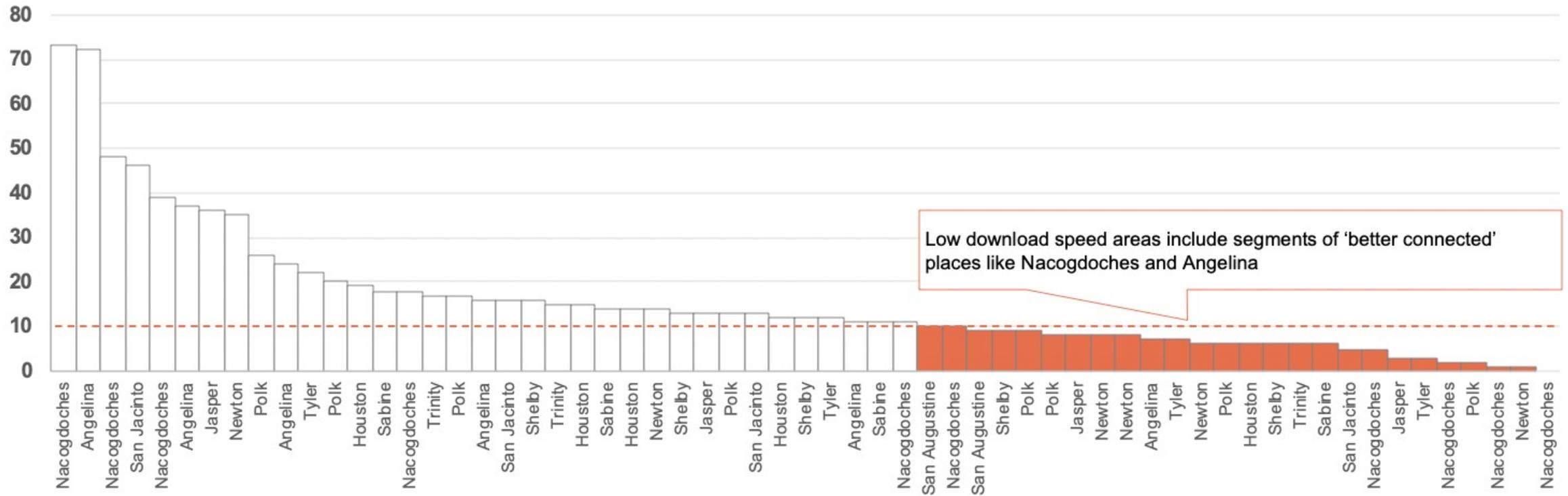
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Almost half of Deep East Texas experiences download speeds of 10 Mbps or less.

The predominance of DSL and Satellite internet service contribute to the low download performance measured

Average home internet download speed in DETCOG

In Mbps, service areas defined and segmented by zip codes



Source: DETCOG Internet Speed Test Survey, DETCOG stakeholder interviews, inCode analysis

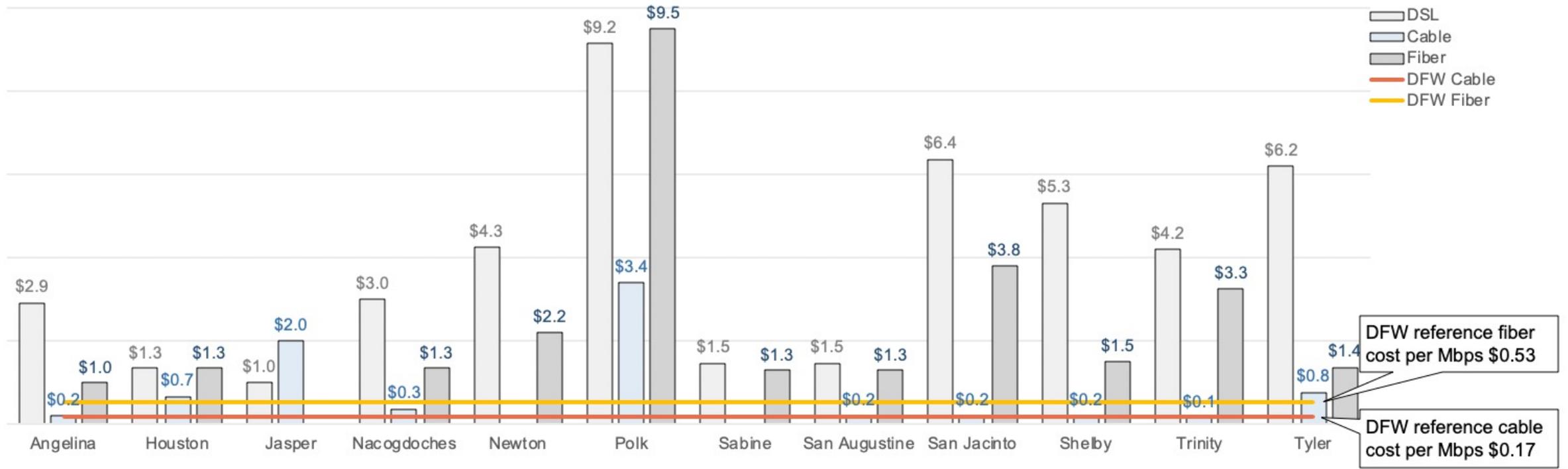
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Compared with the DFW metro area, the cost of fixed line internet service is much higher for residents of Deep East Texas when normalized for access speed.

On average, DETCOG residents pay **390% more for cable service** and **430% more for fiber service** based on cost per Mbps delivered to their home

Average cost per Mbps based on fixed line internet services

Cost per Mbps based on monthly service costs

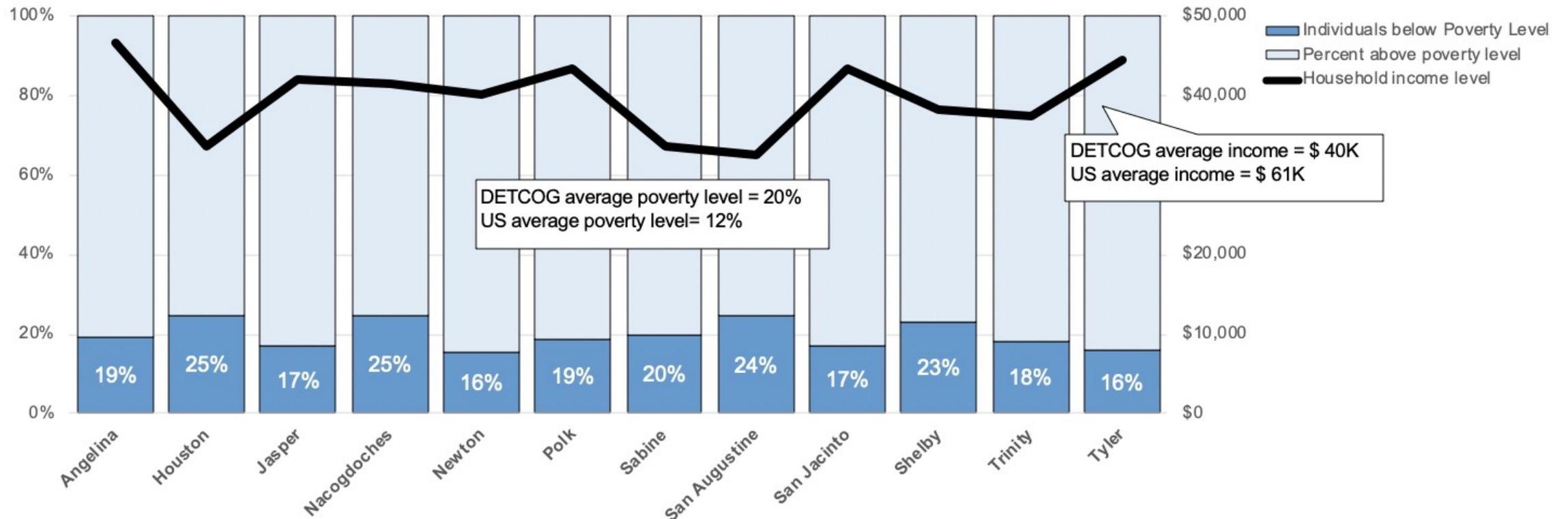


The DETCOG region's demographic profile limits the interest of service providers to invest and deploy broadband services...

Broadband deployment and services will need to account for the income characteristics in the DETCOG regions

Comparison of poverty levels and average income in DETCOG counties

Based on 2010 US Census data



Source: US Census

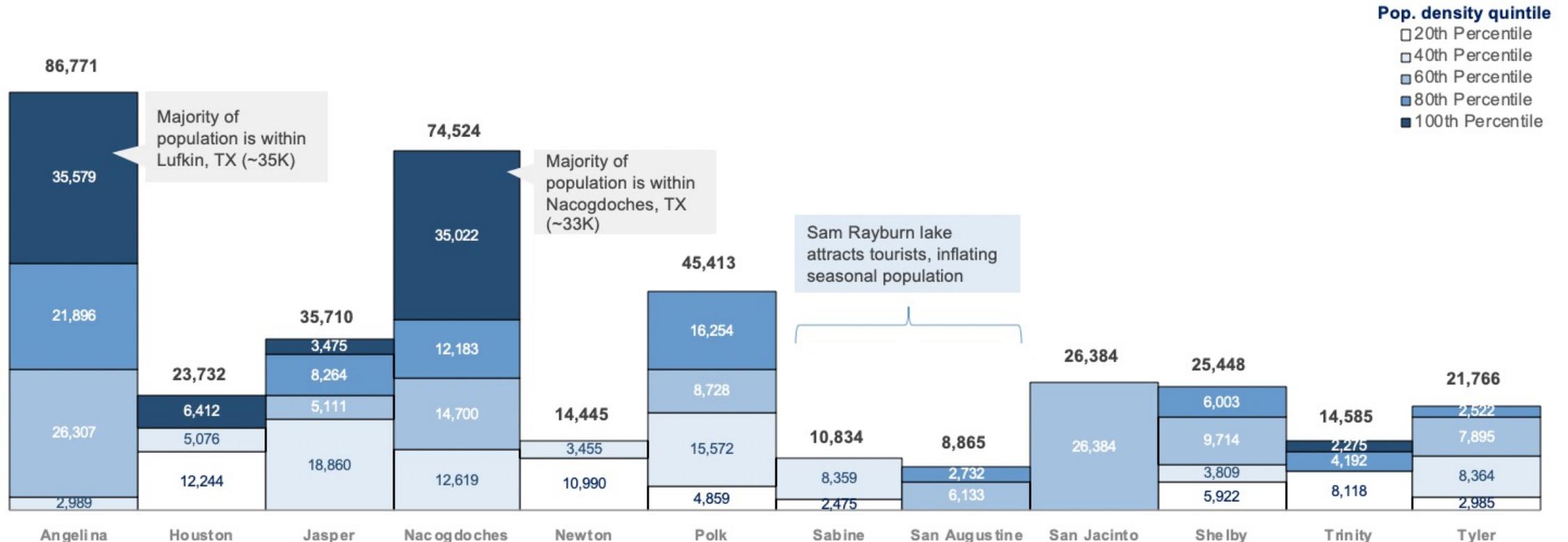
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...but profile and data points recorded by US Census do not capture seasonality trends that could impact broadband investment decisions. This is an issue throughout our region, which is home to the three largest reservoirs in Texas (*Toledo Bend, Sam Rayburn, and Lake Livingston*).

Counties around Sam Rayburn Reservoir (e.g. Sabine) experience up to 3x population increase in summer due to vacationers, bass fishing competitions, and other seasonal leisure events

Population of DETCOG segmented by population density

Population density ranked by quintiles



¹Based on 2010 Census Data

Source: US Census, inCode analysis

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Game-Changer Alert: *The Economic Impact of Broadband*

The inCode study projected the economic impact of broadband over a 10-year period.

Broadband can provide an enormous boost to our economically distressed region. Despite the natural beauty and other positive aspects of life in Deep East Texas, our region historically suffers from high poverty, high unemployment, and low wages. This stymies new investments in our region and affects every aspect of life for our residents, including education and health outcomes. Broadband is the key to changing that!

Economic impact of broadband over a 10-year period in Deep East Texas...

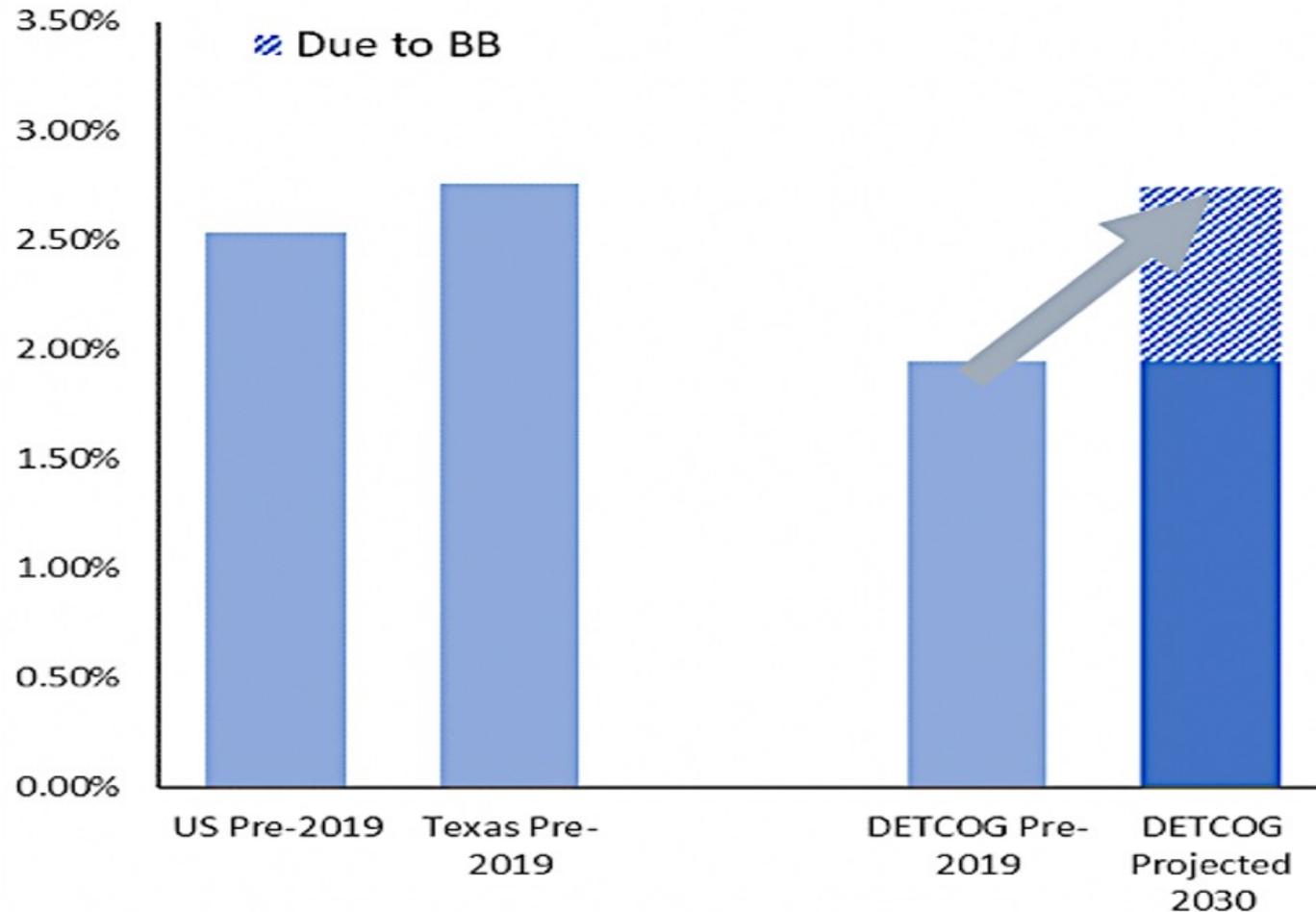
- **10,300 New Jobs**
- **\$1.4 Billion in GDP Growth**

With affordable broadband for all, we can create an Economic Virtuous Cycle that will transform our historically distressed rural region and benefit every resident.



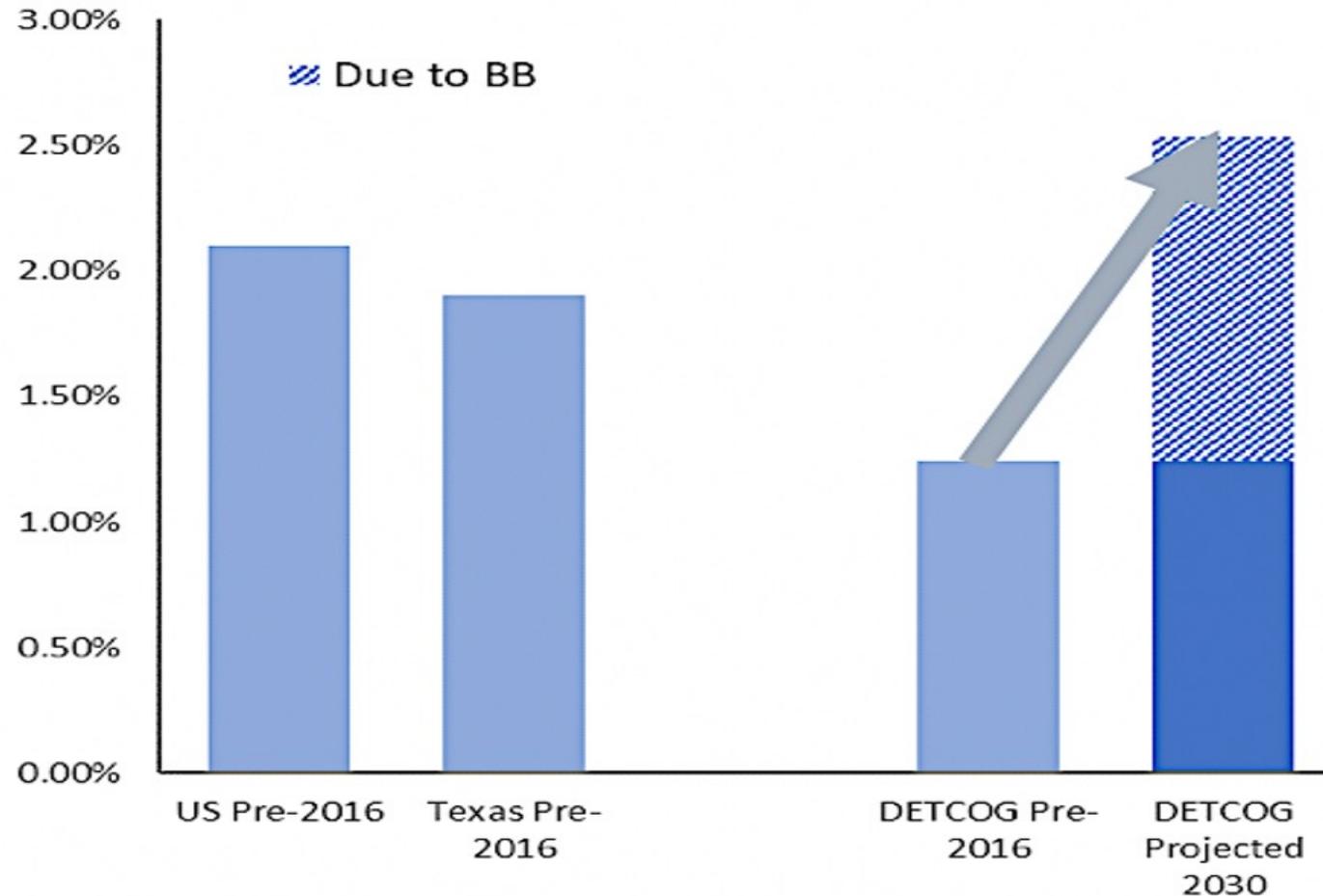
Without broadband, household income for the average Deep East Texan will continue to lag behind the rest of Texas and the US. Broadband is the catalyst for growth.

Median household income growth

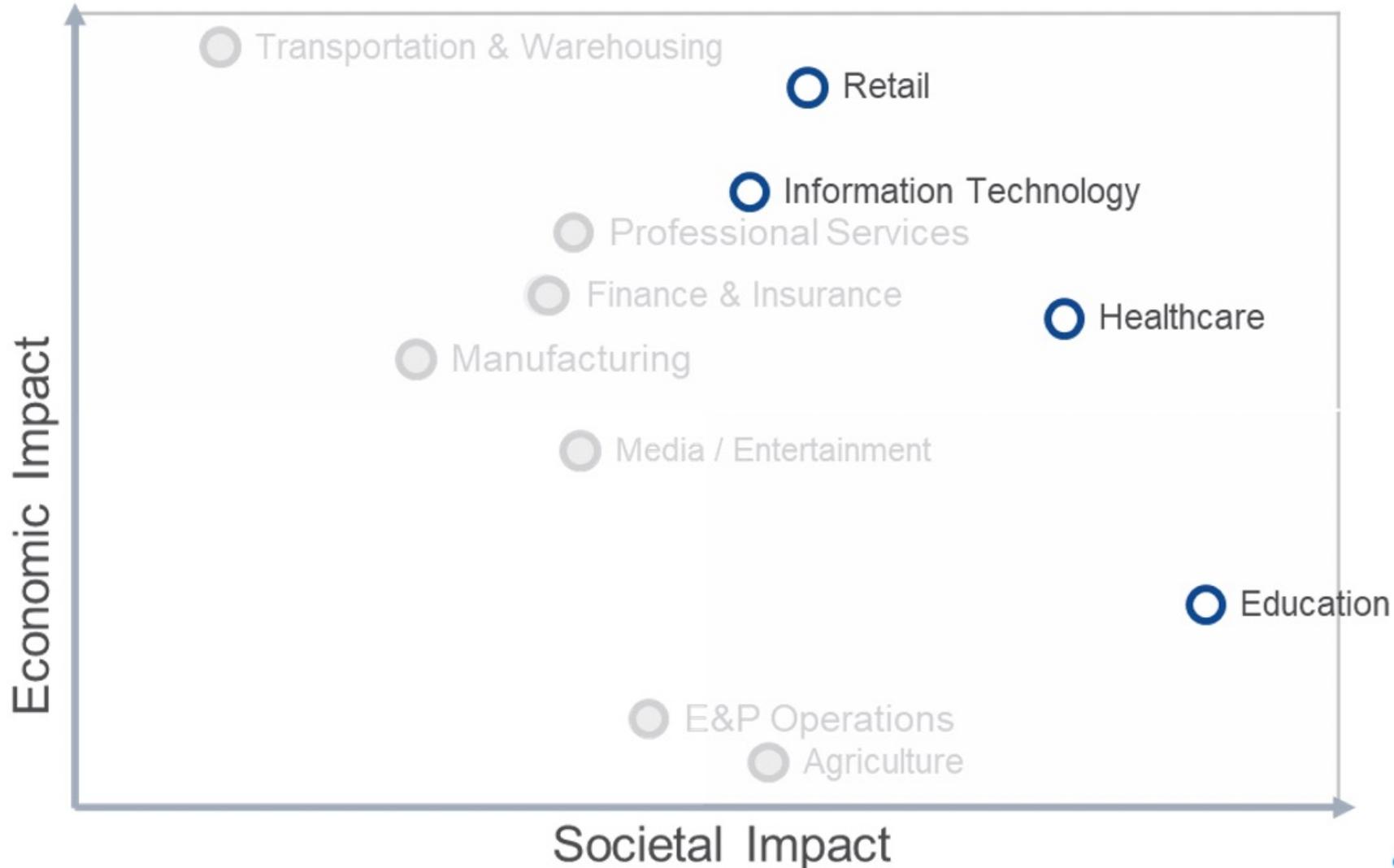


Without broadband, growth in employment will remain stagnant in our region. Affordable broadband for the entire region will lead to significant growth.

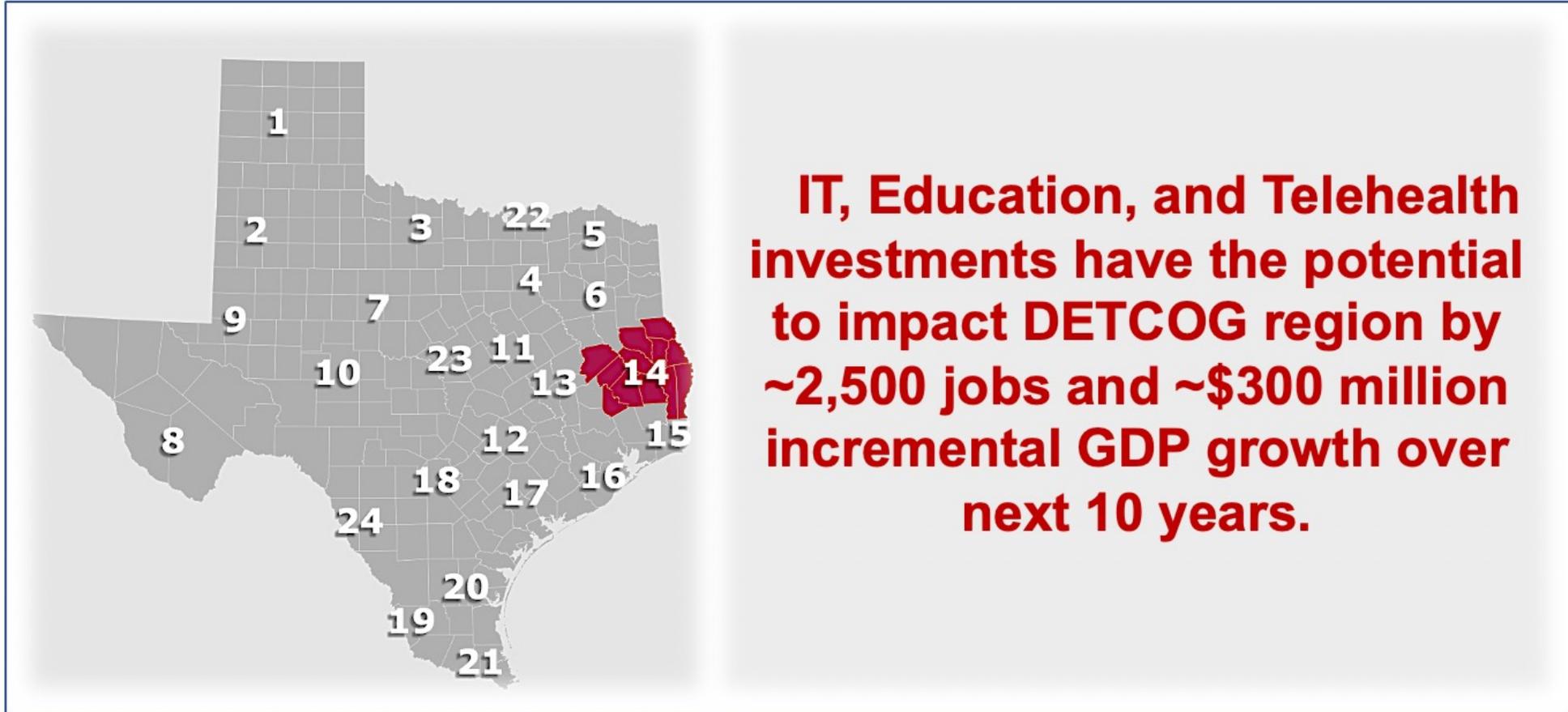
New employment growth



Every public service and every business benefits from broadband. This chart shows the sectors that would benefit most in Deep East Texas from both an economic and societal impact.



COVID-19 has underscored the importance of technology for delivery of education and healthcare services. In addition to the obvious improvements in education and health outcomes, the economic impact would be significant for our region.



Because of our location, natural resources including abundant water, and the availability of affordable land, Deep East Texas is an attractive area for business, including the technology sector.

IT Impact: Why not Deep East Texas?



Data Centers in Texas

- **Broadband infrastructure helps lower costs and allows practicality of data/IT centers**
- **Facilities like NacSpace (a new data center and IT service provider in Nacogdoches) require \$5-10 million investments and employ 100-200 IT professionals**
- **Data centers will provide higher paying jobs and prevent regional graduates from leaving (*NacSpace's #1 source of professionals is the local university, SFA*)**

Companies like Provalus see the potential for tech jobs in Deep East Texas. Provalus has expanded into the Jasper community with great success.

Why not Deep East Texas?

There's a tech talent shortage in the US, with companies outsourcing billions of dollars of work overseas every year. Companies like Provalus, which recently expanded into Jasper TX, are training local talent in under-served communities to bring those funds into our economy and transform our rural communities in the process.

Software and support business to expand operations to Jasper



JASPER — Following months of discussion and negotiation, Provalus, a provider of software and support for the information technology industry, announced on Thursday that it will expand its operations to Jasper.

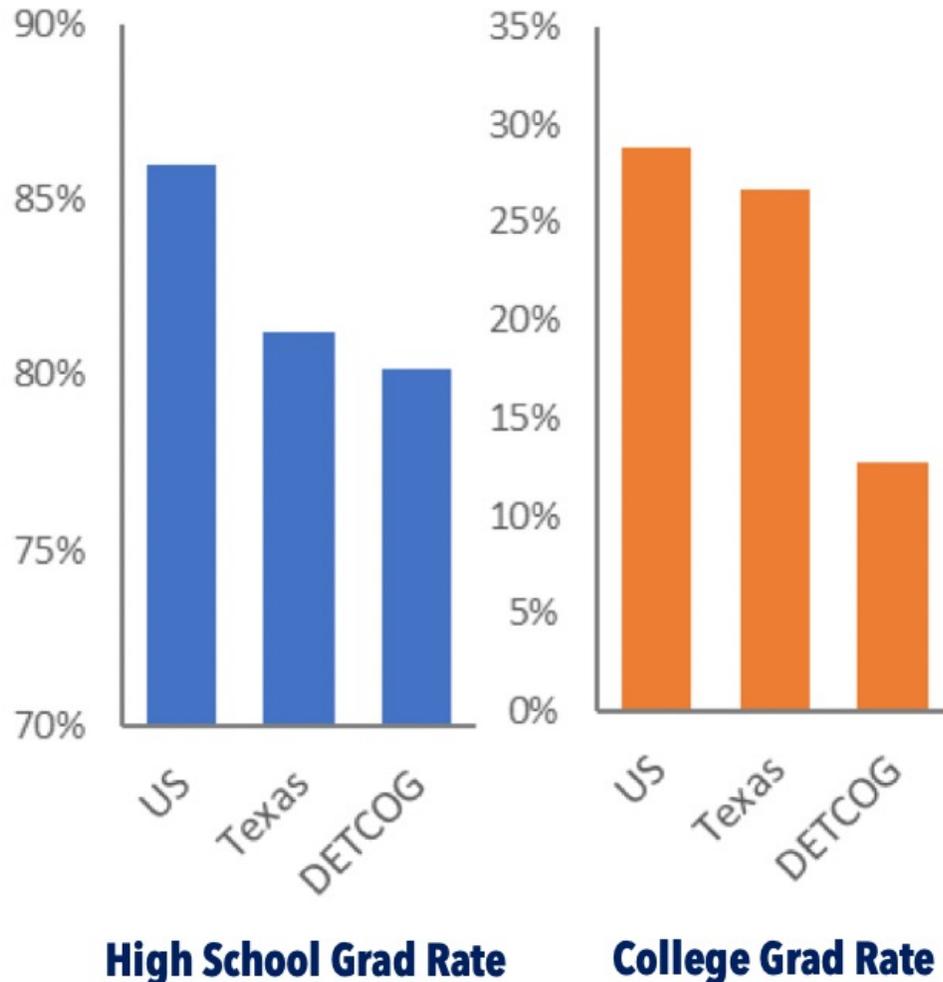
The decision was announced by Provalus' parent

New business in Jasper already expanding



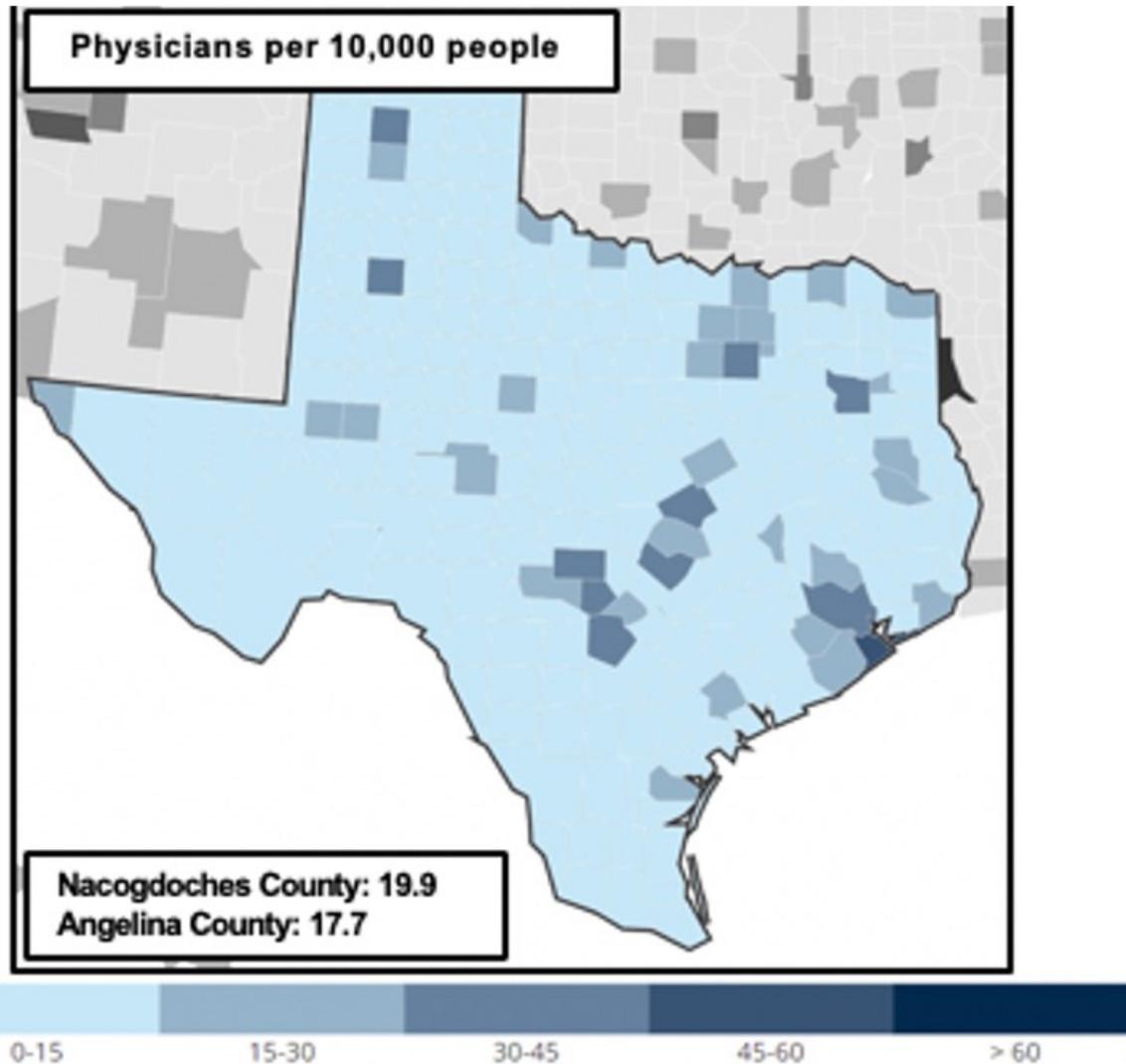
JASPER — Work is continuing on the new parking lot that is being built for Provalus, the Brewton, Alabama firm that recently expanded its operations to Jasper.

Students in Deep East Texas are at a disadvantage. Schools cannot offer online classes because most students, and many teachers, do not have access to reliable internet service at home.



- **Broadband will extend learning into the home**
- **High school students exposed to online learning are 2x as likely to attend college**
- **Distance learning provides a low cost method to attain necessary skills/education required for employment**
- **An effective 1:1 student/teacher ratio can be created which has been proven to be more effective (17:1 currently in DETCOG region)**

The importance of Tele-health services has been magnified by COVID-19. Sadly, this is not an option for most residents of Deep East Texas due to lack of affordable broadband.



- **Telehealth provides rural residents access to physicians & specialists**
- **Telehealth access increases hospital & pharmacy savings**
- **Telehealth reduces consumer costs in travel and lost wage hours**
- **Greatest impact seen in radiology, oncology & mental health services**
- **Investment in tele-equipment will lead to job and value growth**

It's all about the future.

The vision of DETCOG is to facilitate development of a world-class telecommunications infrastructure for our region for the 21st century and beyond. Broadband is a critical service for education, health and safety, economic development, and quality of life. Every home, business, nonprofit organization, government entity, and education institution should have the opportunity to connect affordably, easily and securely. DETCOG intends to empower its citizens, local businesses, governments and schools to be network economy *producers*, not just *consumers* of network information and data services. DETCOG is looking for innovative solutions that will provide a cost-effective and rigorous path forward to present value to potential stakeholders, and to the region as a whole. We hope to become a model for other regions to follow. Because of the rural nature of our region, if it can be done here, it can be duplicated anywhere.



Progress to date...

- ✓ Regional feasibility study and market analysis completed
- ✓ Strong region-wide support from citizens, local officials, business community, and legislators
- ✓ Broadband project manager, engineering & grant management firms in place
- ✓ Phase One of network design completed
- ✓ DETCOG has launched a \$9 million fixed wireless project in northern Newton County funded by a CDBG-Mitigation grant (environmental study in progress)
- ✓ DETCOG has been allocated \$42 million in additional CDBG-Mitigation funds for a regional project that will offer fixed wireless broadband to most households in Jasper, Newton, Polk, San Augustine, San Jacinto, and Tyler counties.
- ✓ DETCOG is assisting Sabine County with management of a \$17 million fiber-to-the-home project being constructed by Kinetic by Windstream (funded by NTIA)
- ✓ DETCOG continues to explore potential sources of funding to implement projects in five counties (Angelina, Houston, Nacogdoches, Shelby, and Trinity).

The DETCOG North Newton County Project

We are moving forward with construction of the rural broadband network in northern Newton County, Texas.

- This CDBG-Mitigation funding was awarded by the Texas General Land Office in a competition for areas impacted by 2016 flood disasters. The grant contract has been signed and as of November, 2022, we are awaiting completion of the environmental review. Our hope is that construction will begin in 2023 and be completed by the end of 2024.
- Traylor and Associates has been procured to administer the grant and manage the project, and Magellan Advisors has been procured as project engineer.
- Utilizing fixed wireless technology, this project will provide reliable, affordable broadband to more than 6,700 persons including 3,540 persons in low-to-moderate income households. Supported by 91 miles of fiber, the wireless network will deliver speeds of 50 to 100 Mbps.



The DETCOG Six-County Regional Project

Funding has been allocated for construction of a rural broadband network in six counties which were included in the Presidential disaster declaration for Hurricane Harvey.

- DETCOG has been allocated \$42 million in CDBG-Mitigation funding which will be used to construct a fixed wireless network across six counties. The project application has recently been submitted and is pending approval by TXGLO.
- Engineering and environmental review will require a number of months to complete, followed by construction of the network.
- This project will provide reliable, affordable broadband to more than 113,00 persons in Jasper, Newton, Polk, San Augustine, San Jacinto, and Tyler counties including more than 63,000 persons in low-to-moderate income households.
- Supported by 227 miles of fiber, the wireless network will deliver speeds of 50 to 100 Mbps.



The Sabine County NTIA Project

In partnership with Kinetic by Windstream, Sabine County has been awarded a grant to fund a fiber-to-the-home project to serve most households in the county.

- Sabine County was awarded a \$12.7 million grant from the National Telecommunications and Information Administration (NTIA).
- Kinetic by Windstream will provide approximately \$4.7 million in matching funds for a total project of more than \$17 million.
- Kinetic will construct and operate the new fiber network which is expected to reach more than 5,000 homes, nearly 160 businesses, and other community facilities in Sabine County.
- DETCOG provided support for the grant application process and has been contracted to assist Sabine County with grant administration and oversight.



Key Points:

- We applaud and support all existing providers that are working to improve broadband options in various parts of our region. We urge them to design their networks to include blanket coverage for every household.
- Overlap/duplication of service areas is not a bad thing. It is necessary in order to ensure coverage for every household in a rural region like ours.
- Urban residents pay less for broadband because they have multiple providers to choose from.
- Rural residents deserve to have a choice, too. Multiple providers will result in better service and lower costs.
- A regional network is necessary to ensure access to affordable and reliable broadband for every household. It will provide the first service for many Deep East Texans, and an affordable alternative for others.

DETCOG remains committed to these core principles:



Deep East Texas Council of Governments
and Economic Development District

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- Access to broadband for every home and business in Deep East Texas
- Equity & affordability
- Reliability & redundancy
- Better than “the minimum”