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.

DETCOG

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**

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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
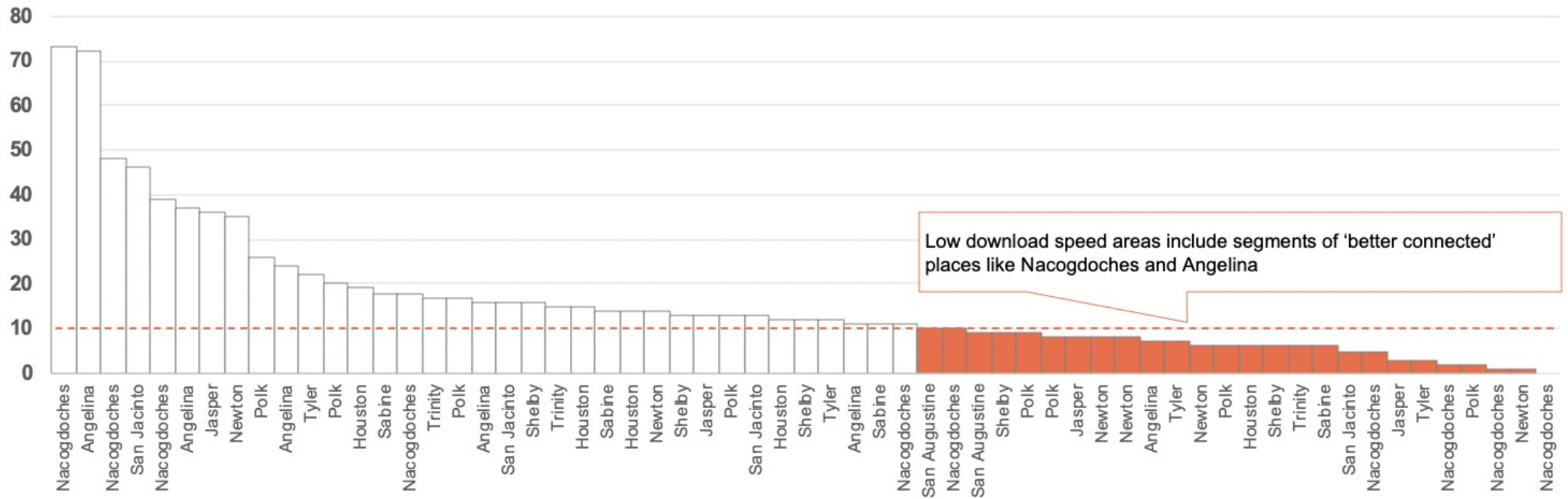
Legend: Not sure, Fiber, Cable, Non-wired, DSL
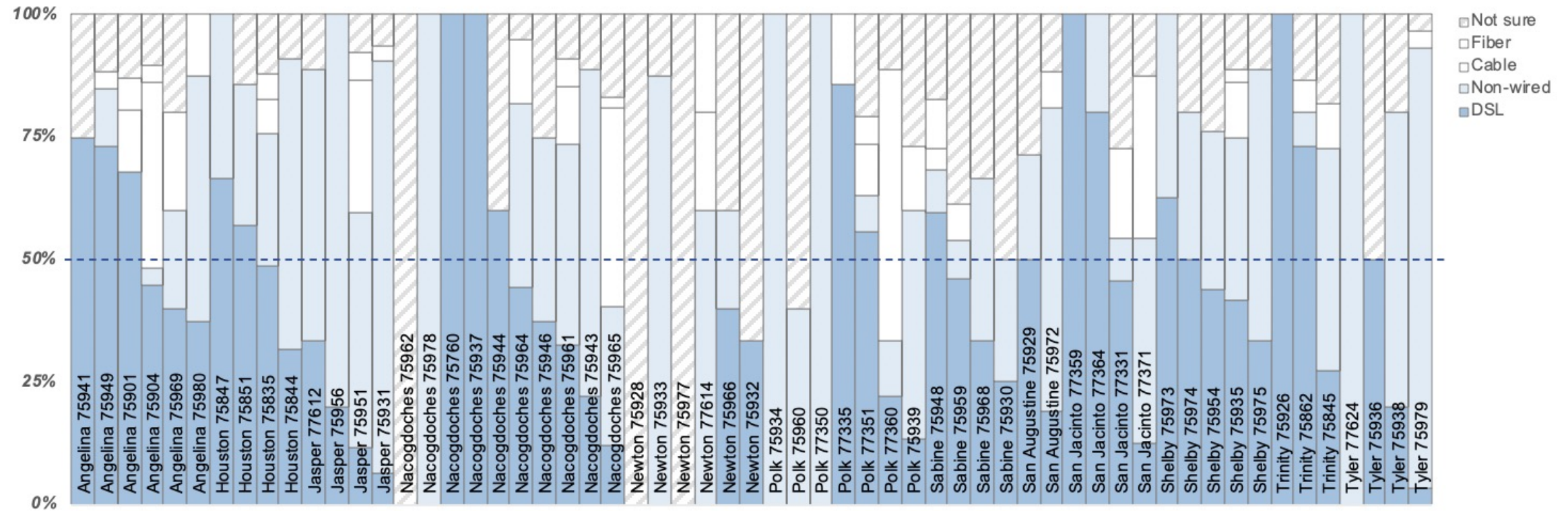
Almost half of Deep East Texas experiences download speeds of 10 Mbps or less.

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

Low download speed areas include segments of 'better connected' places like Nacogdoches and Angelina
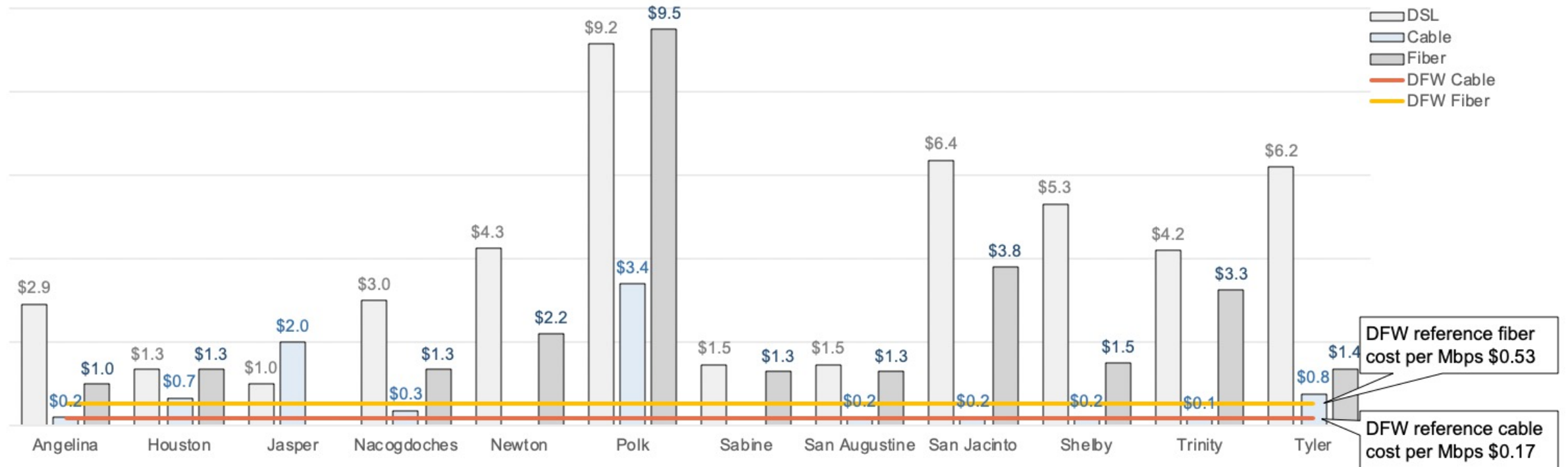
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Compared with the DFW metro area, the cost of fixed line internet service is much higher for residents of Deep East Texas when normalized for access speed.

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

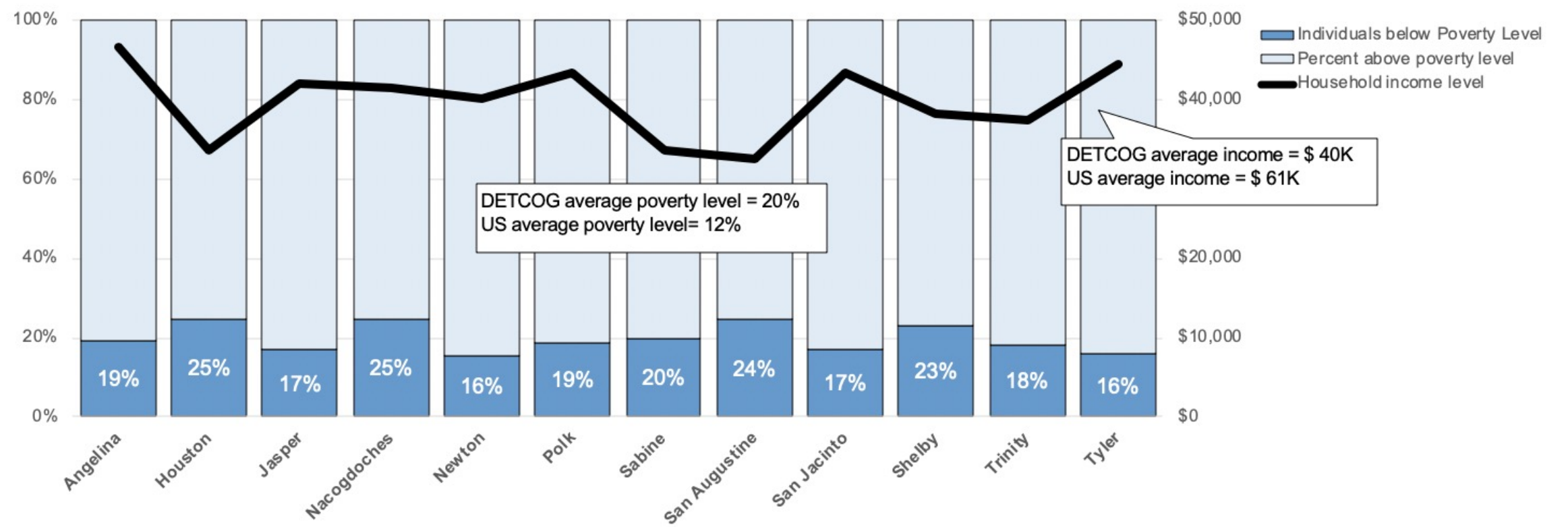**Average cost per Mbps based on fixed line internet services**
Cost per Mbps based on monthly service costs

Legend:
- DSL
- Cable
- Fiber
- DFW Cable
- DFW Fiber

Data labels by county:
- Angelina: $2.9, $0.2, $1.0
- Houston: $1.3, $0.7, $1.3
- Jasper: $1.0, $2.0
- Nacogdoches: $3.0, $0.3, $1.3
- Newton: $4.3, $2.2
- Polk: $9.2, $3.4, $9.5
- Sabine: $1.5, $1.3
- San Augustine: $1.5, $0.2, $1.3
- San Jacinto: $6.4, $0.2, $3.8
- Shelby: $5.3, $0.2, $1.5
- Trinity: $4.2, $0.1, $3.3
- Tyler: $6.2, $0.8, $1.4

DFW reference fiber cost per Mbps $0.53

DFW reference cable cost per Mbps $0.17

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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
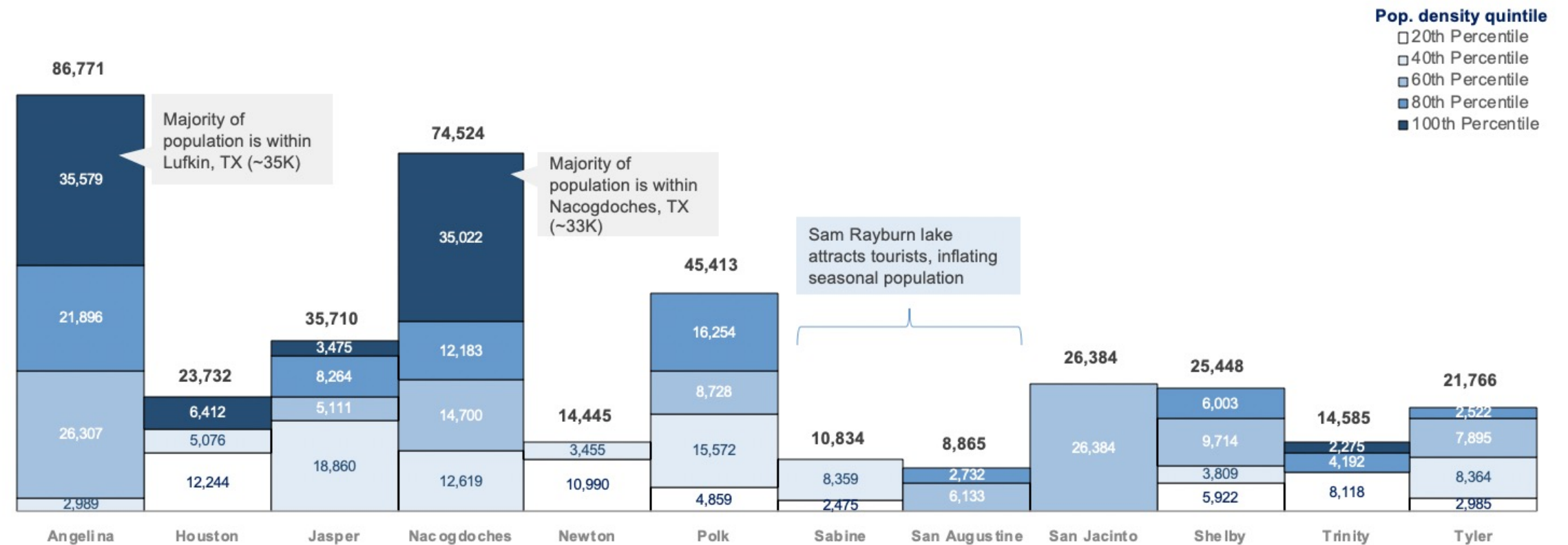
Comparison of poverty levels and average income in DETCOG counties
Based on 2010 US Census data

DETCOG average poverty level = 20%
US average poverty level = 12%

DETCOG average income = $ 40K
US average income = $ 61K

Legend:
- Individuals below Poverty Level
- Percent above poverty level
- Household income level

Counties: Angelina 19%, Houston 25%, Jasper 17%, Nacogdoches 25%, Newton 16%, Polk 19%, Sabine 20%, San Augustine 24%, San Jacinto 17%, Shelby 23%, Trinity 18%, Tyler 16%

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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

Pop. density quintile
- □ 20th Percentile
- □ 40th Percentile
- ▣ 60th Percentile
- ▣ 80th Percentile
- ■ 100th Percentile

Majority of population is within Lufkin, TX (~35K)

Majority of population is within Nacogdoches, TX (~33K)

Sam Rayburn lake attracts tourists, inflating seasonal population

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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.

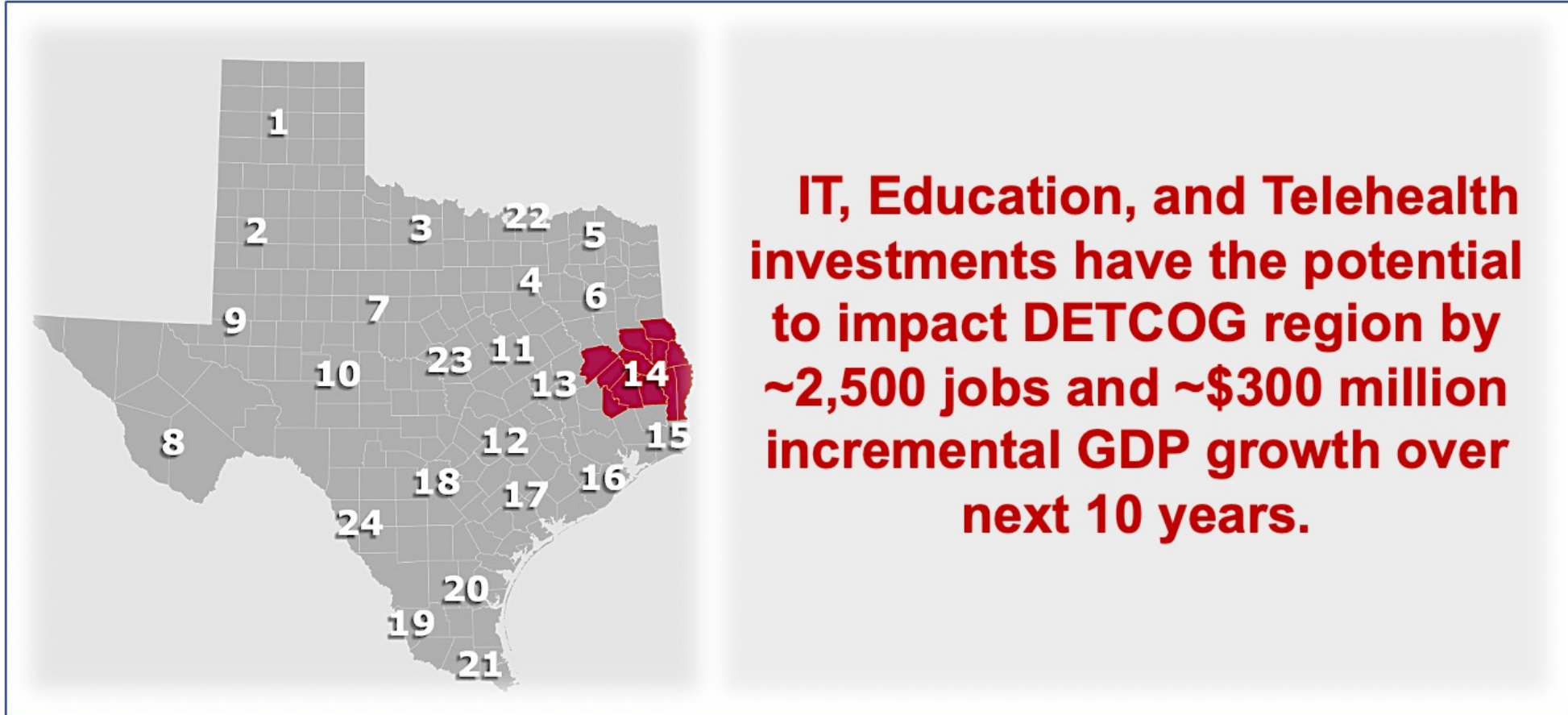Median household income growth

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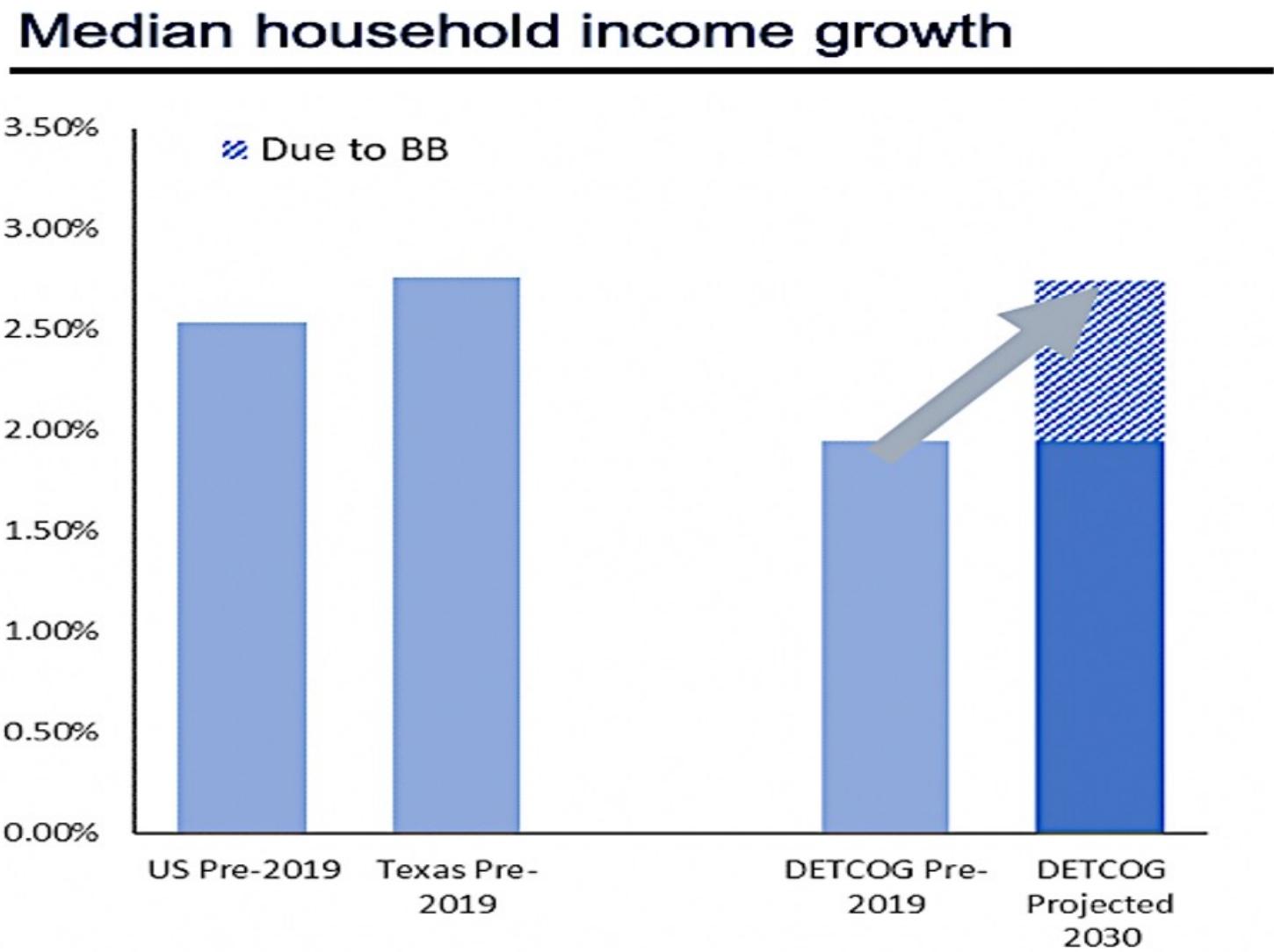
Without broadband, growth in employment will remain stagnant in our region. Affordable broadband for the entire region will lead to significant growth.

New employment growth
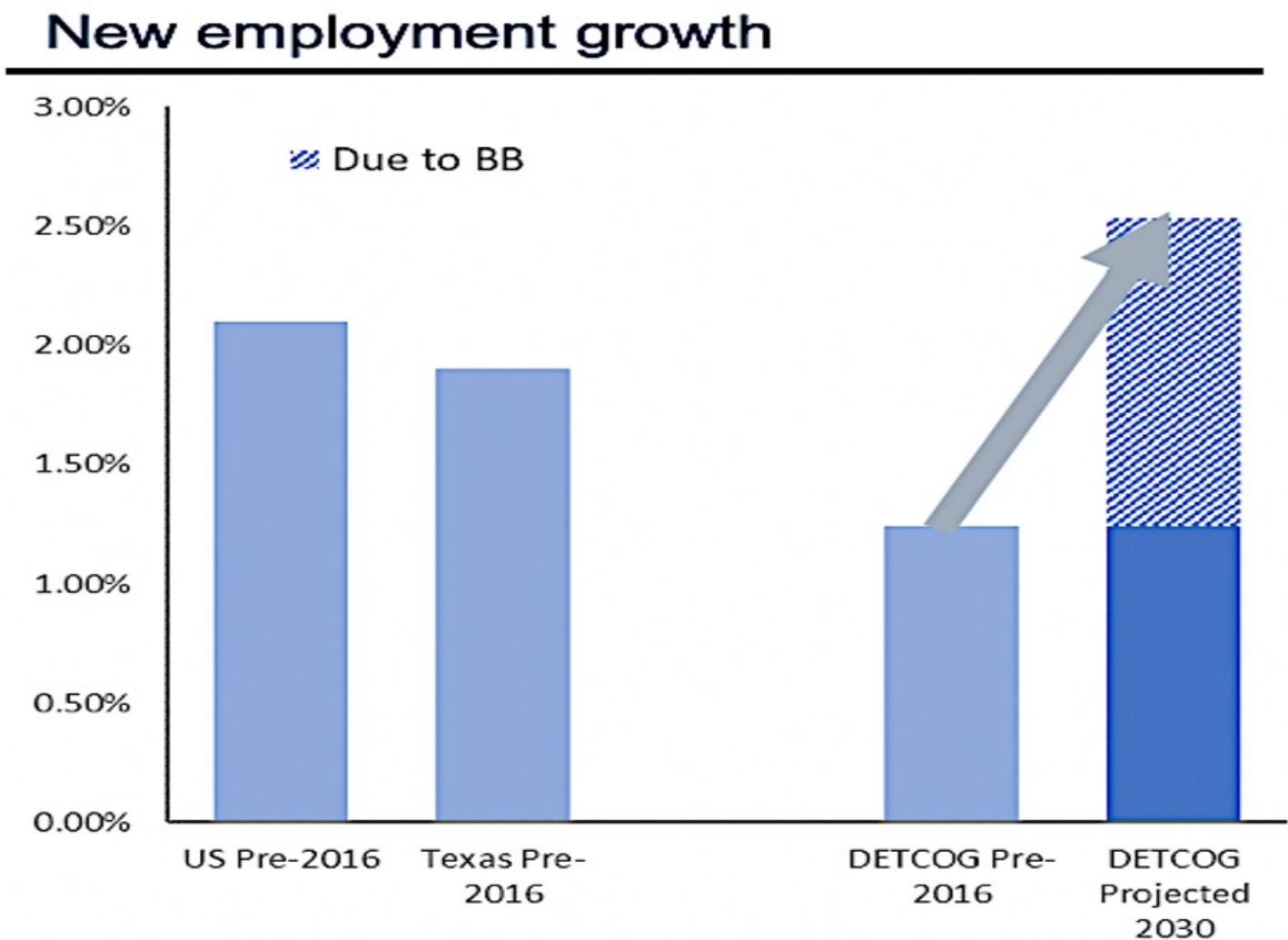
Every public service and every business benefits from broadband. This chart shows the sectors that would benefit most in Deep East Texas from both an economic and societal impact.
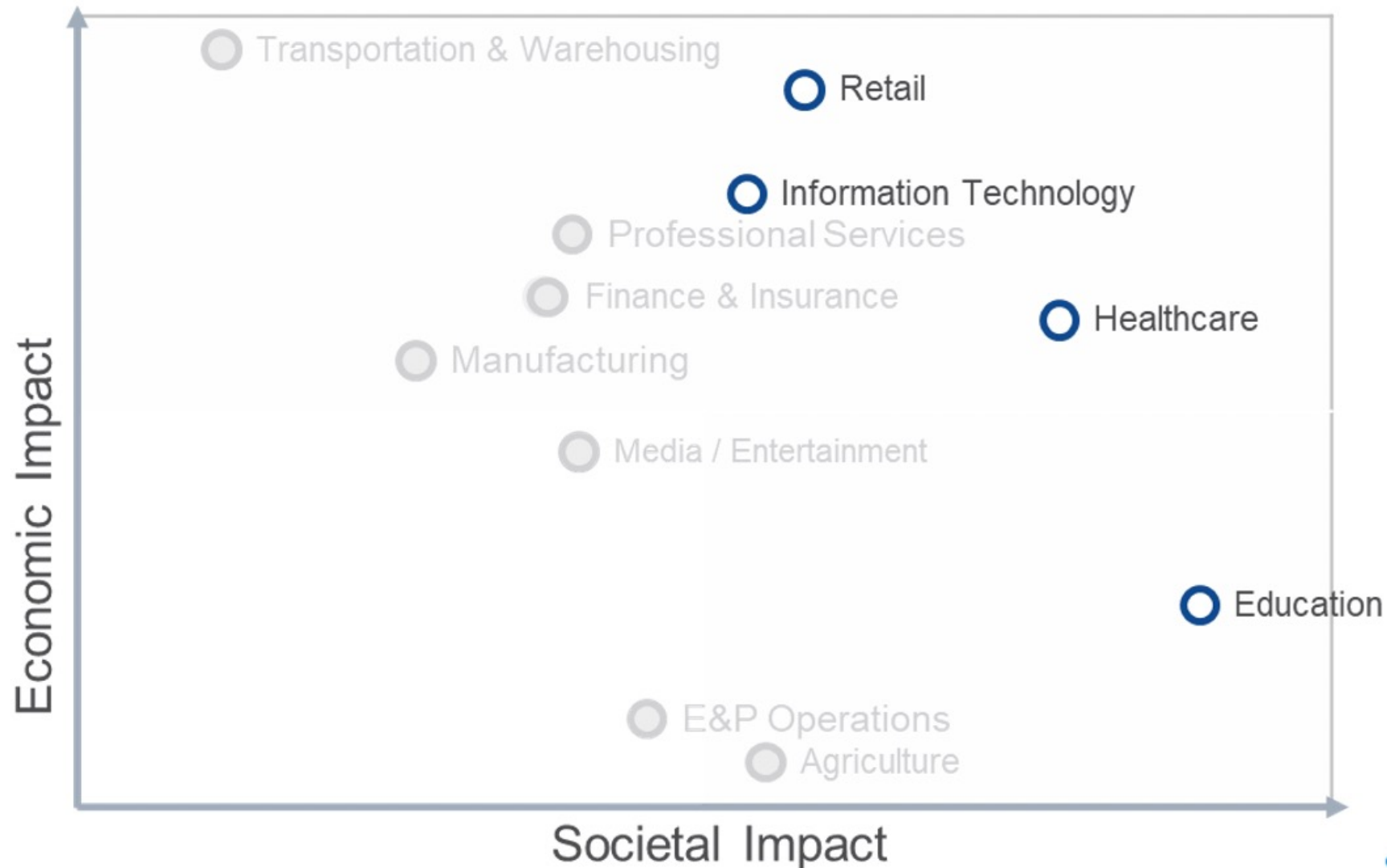
COVID-19 has underscored the importance of technology for delivery of education and healthcare services. In addition to the obvious improvements in education and health outcomes, the economic impact would be significant for our region.

IT, Education, and Telehealth investments have the potential to impact DETCOG region by ~2,500 jobs and ~$300 million incremental GDP growth over next 10 years.

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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?
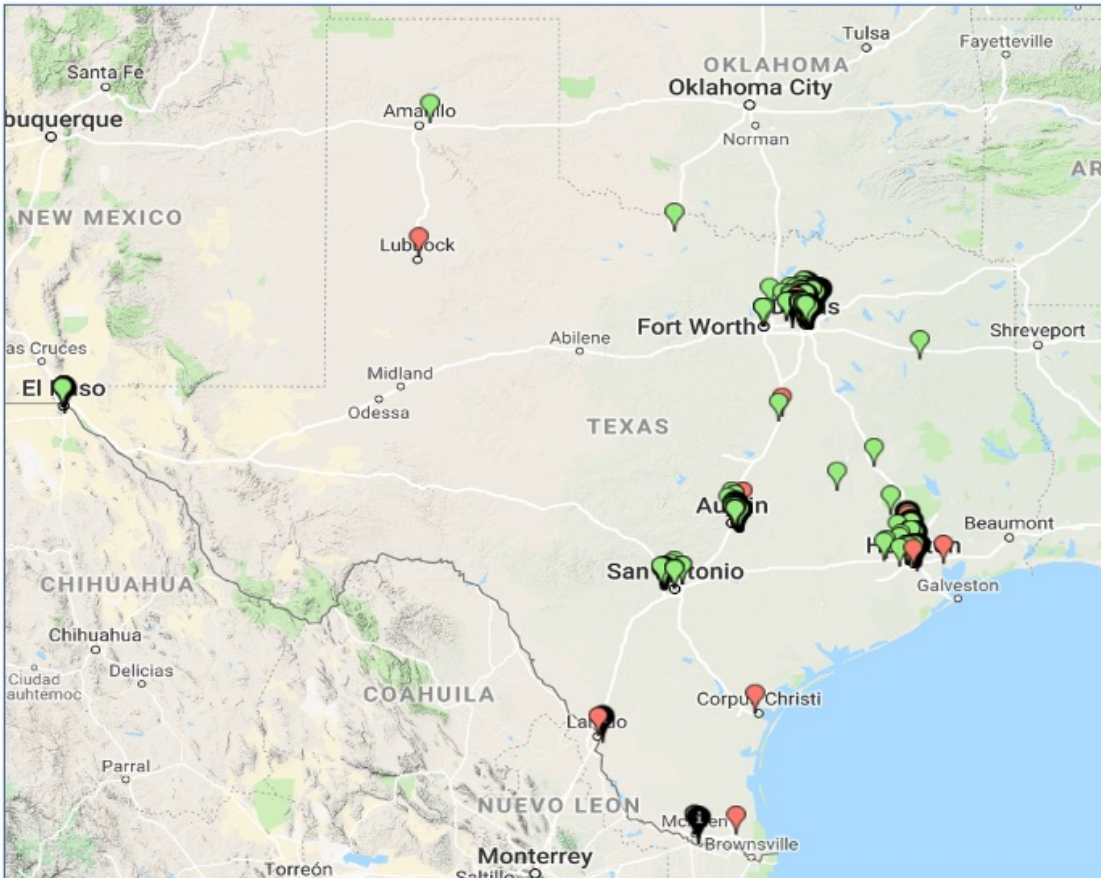
Data Centers in Texas

- **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 ever 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

°6 KFDM

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 wa[...] of
Provalus' paren[...] ia.

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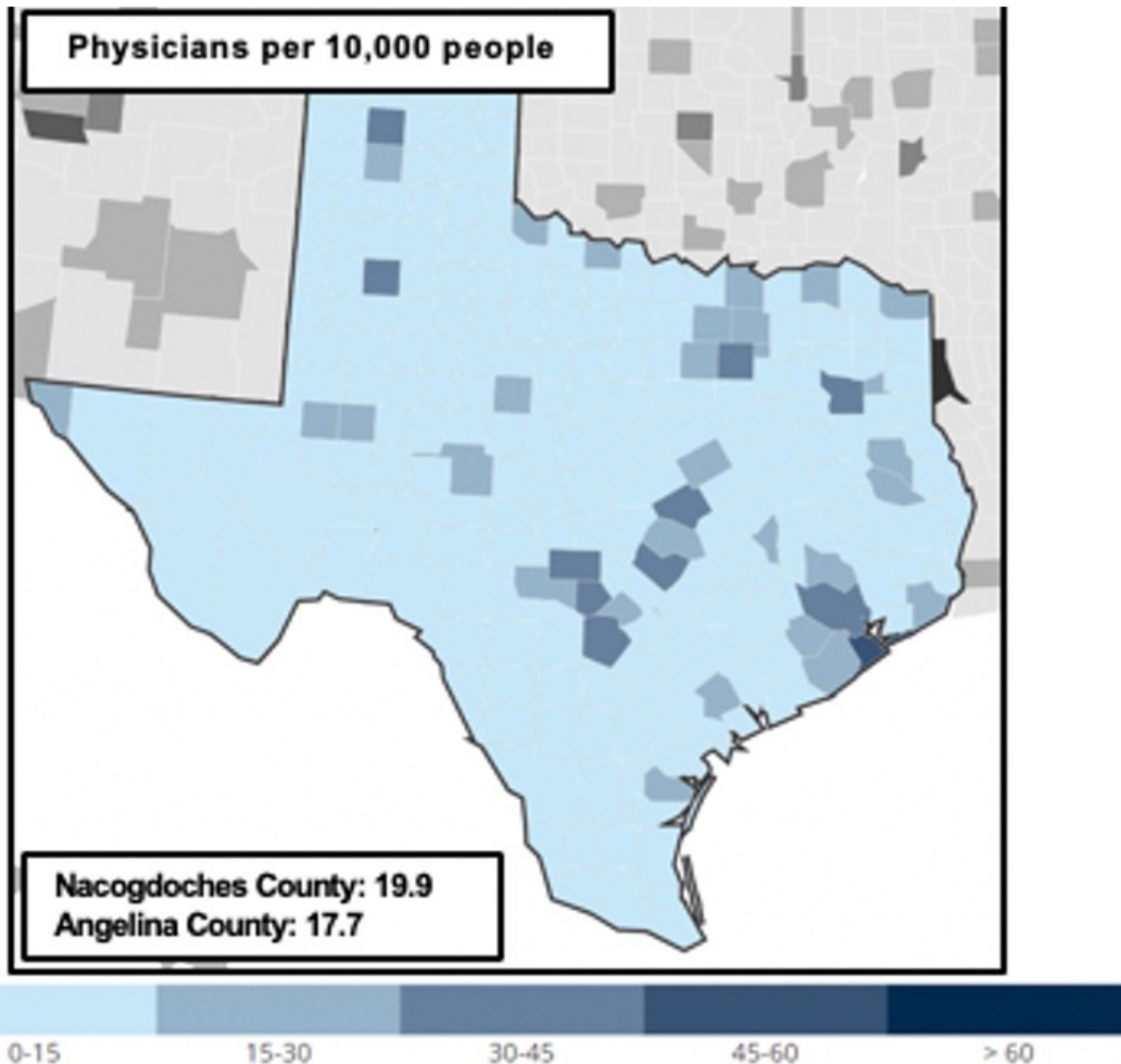
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Students in Deep East Texas are at a disadvantage. Schools cannot offer online classes because most students, and many teachers, do not have access to reliable internet service at home.

High School Grad Rate

College Grad Rate
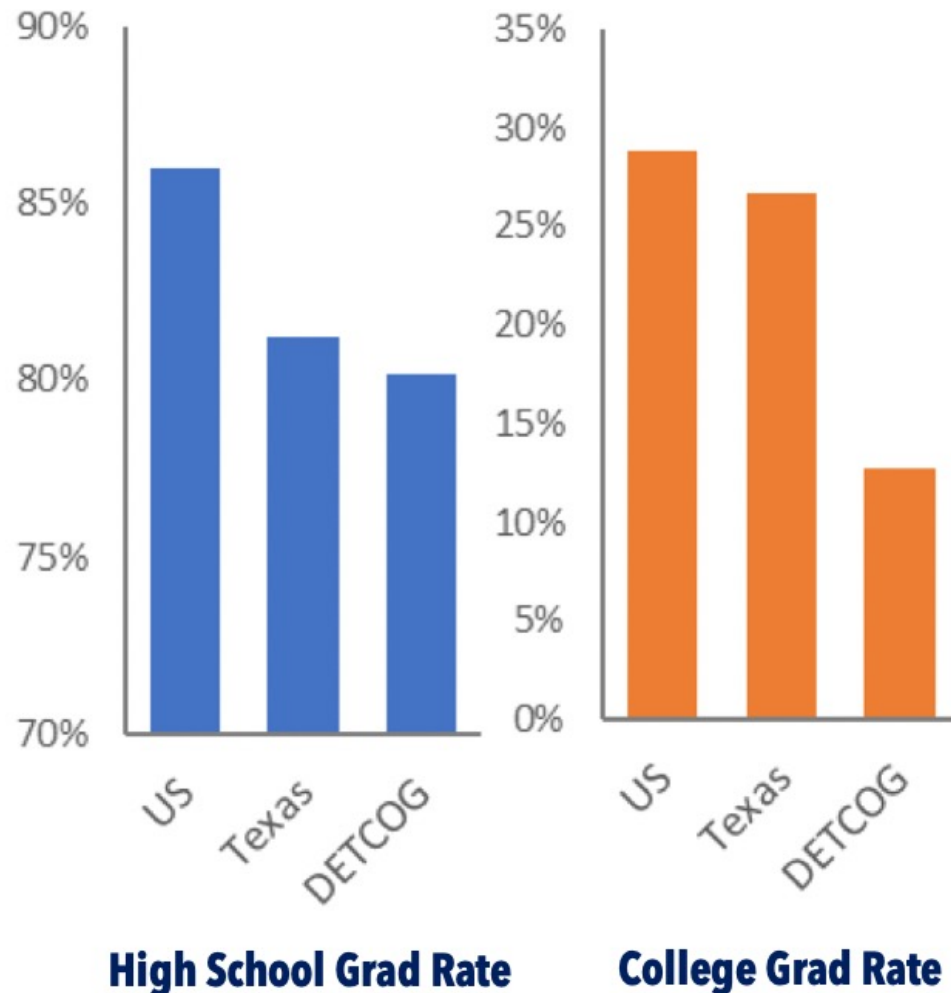
- **Broadband will extend learning into the home**

- **High school students exposed to online learning are 2x as likely to attend college**

- **Distance learning provides a <u>low cost</u> 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.

Physicians per 10,000 people

Nacogdoches County: 19.9
Angelina County: 17.7

0-15 15-30 30-45 45-60 > 60

- 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**

- ✓ **Engineering & grant management firms in place**

- ✓ **Broadband project manager in place**

- ✓ **Phase One of network design completed**

- ✓ **Grant applications submitted to fund construction of Phase One**

DETCOG

Grant Application Results

In October of 2020, DETCOG submitted two applications in the Texas General Land Office's CDBG-Mitigation Grant Competition:

- ✓ **DETCOG was awarded a grant of $9,008,688 to construct a rural broadband network to serve Northern Newton County.**

- -- In spite of a strong showing, our second application – for $100 million to fund a network in all 12 counties of the region -- was not successful. Applications totaling $6 billion competed for only $1.1 billion available funding. Competing against more traditional infrastructure projects, our broadband grant application fell just 2.5 points short in the final scoring.

Where do we go from here?

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

- The grant contract was signed in December of 2021 with work on the project beginning in January of 2022. Engineering and environmental review will require a number of months to complete, followed by construction of the network.
- Traylor and Associates has been procured to administer the grant and manage the project, and Magellan Advisors has been procured as project engineer.
- 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 a 91 miles of fiber, the wireless network will deliver speeds of 50 to 100 Mbps.

We are continuing to seek the funding required to expand the Deep East Texas Regional Broadband Network to all 12 counties.

DETCOG

Key Points:

We are aware that a number of for-profit companies – both large and small – are working to improve broadband options in various parts of our region. We applaud and support their efforts. Unfortunately, no one else is proposing a solution that provides blanket coverage for every household. We believe:

- Overlap/duplication of service areas is not a bad thing.
- Urban residents pay less for broadband because they have multiple providers to choose from.
- Rural residents deserve to have a choice, too.
- Multiple providers means 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"**