



TEXAS WATER  
FOUNDATION

# Training Texans for Water & Broadband

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# Who We Are & What We Do



The leading membership organization for philanthropy dedicated to rural Texas.

**Mission:** mobilize the power of philanthropy to strengthen rural Texas.

Provide **tools** and **information** to funders and communities to better serve rural Texas.

## TEXAS WATER FOUNDATION

Nonpartisan, nonprofit working to lead Texas into a secure water future.

**Mission:** equip decision-makers, support water champions, and invest in the next generation of water leaders

Source of **leadership training, education,** and **policy expertise** to help secure our water future.

# Session Guide

- 1. Why This Matters**
- 2. What We Learned**
- 3. Actions to Improve Broadband & Water Career Pathways**

# 1. Why This Matters

## Our Water & Broadband Workforce Opportunity

# The Invisible Infrastructure Supporting the Texas Economy

Texans need **water to live** and **broadband to work and learn**.



If we care about the future of our communities, we can't skimp on these resources.

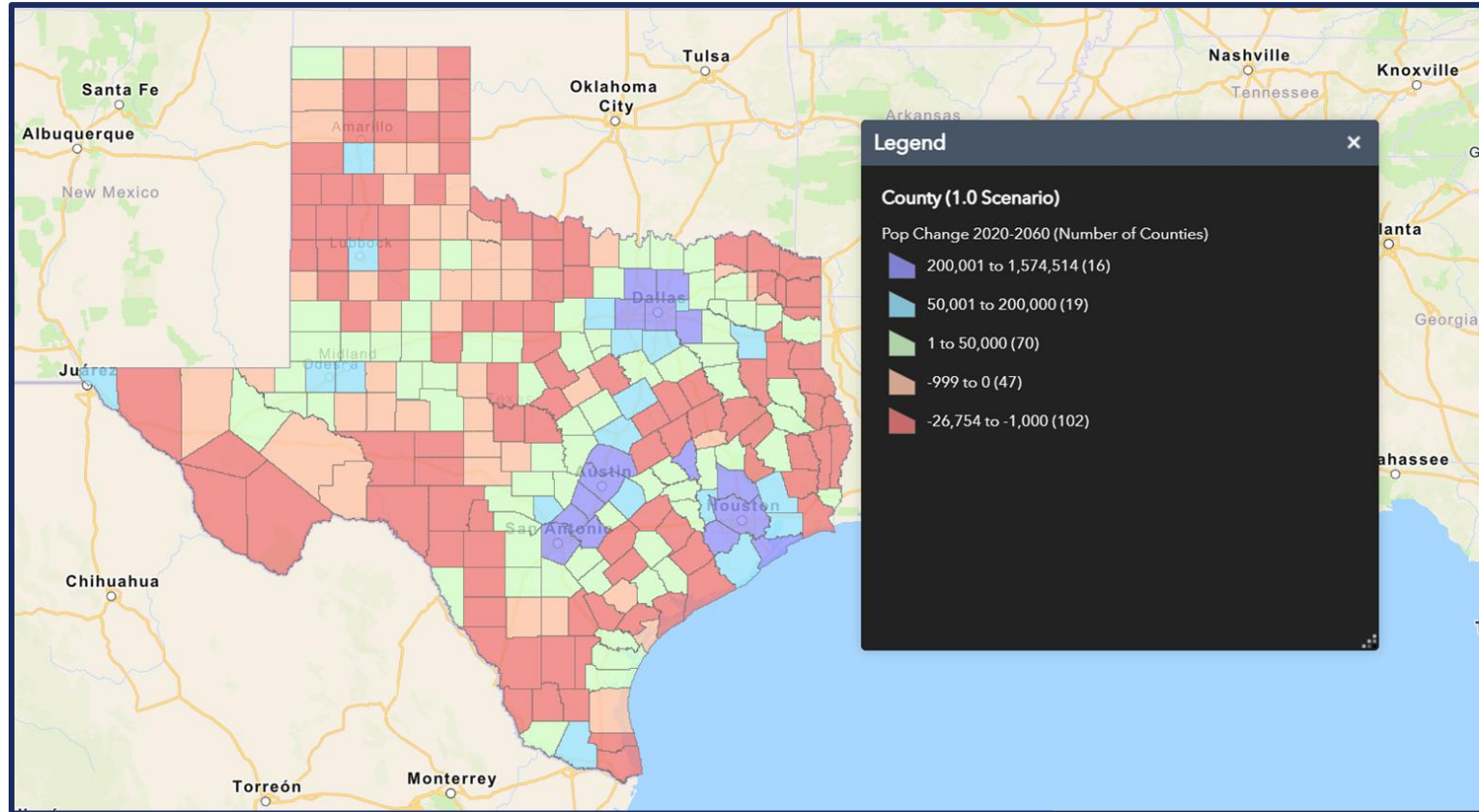


That includes the workers needed to build and make this infrastructure function.



To secure the Texas of tomorrow, we need to take care of the people who take care of us.

## Population Projections for Texas Counties, 2020-2060 (assuming 2010-2020 migration rates)



Source: [Texas Demographic Center](#)

# 2. What We Learned

## Report Overview & Key Takeaways

# Water and Broadband Workforce Study

## Research Scope:

- Use workforce data to understand workforce needs in water and broadband
- Identify tools in Texas available to train the water and broadband workforce

**Goal:** highlight the gaps in the current ecosystem *and* existing programs to fill them

**Methodology:** analyze national workforce dataset from Bureau of Labor Statistics & interviews with Texas broadband and water workforce employers and leaders

**Outcome:** *actionable recommendations* for state agencies, regional stakeholders, and legislators (colleges, employers, school districts, workforce boards, and philanthropy)

**Research Partner:** [Jobs for the Future](#).





# Water and Broadband Workforce Study

## Key Messages:

- Texas needs to build its water and broadband workforce.
- Many of the tools, programs, and partners we need are already in place — we just need to put them to work.

JANUARY 2025



## Creating Infrastructure Pathways in Texas: Water and Broadband

Landscape Analysis and Recommendations

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# Analysis: Why We Need More Infrastructure Workers



**Retirements in Water:** Texas will lose 30-50% of our water workforce to retirement over the next decade. Challenge: Persistently low wages make it hard to attract new talent.



**Reliance on External Broadband Contractors:** Texas doesn't have enough contractors to build all the broadband we need. Many communities have to import workers from different parts of the state (and country).

**Key takeaway:** Texas doesn't currently have the skilled workforce required to expand and maintain our water and broadband infrastructure.

# What are the Necessary Degrees & Skills

Most water and broadband infrastructure jobs require some education after high school.

Job titles *cut across multiple industries* and don't follow traditional job growth patterns.

**Key takeaway:** we need to develop better career pathways that connect education with what employers need.

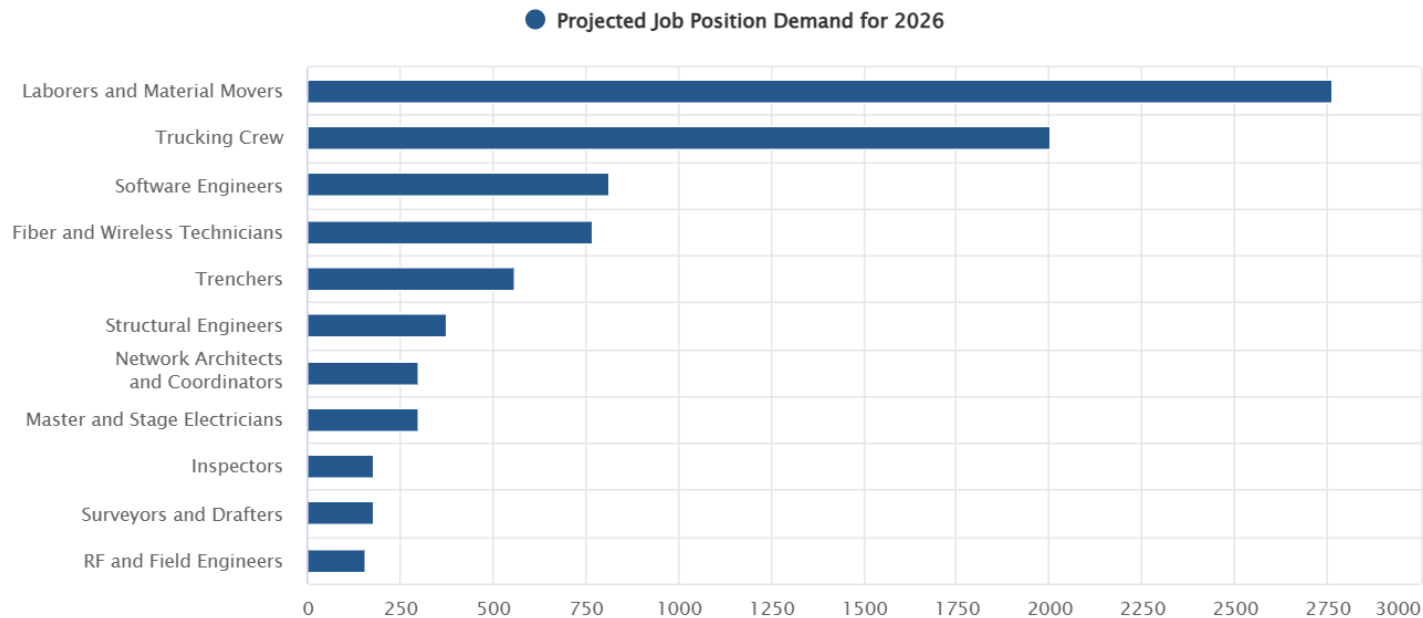
Water

Job Title	Education Required
First-Line Supervisor	High School Diploma
Treatment Plant & System Operators	High School Diploma + State Certification
Environmental Science & Protection Technicians	Associate Degree
Civil Engineers	Bachelor's Degree
Water Resource Scientists	Bachelor's Degree
Telecom Equipment Installers & Repairers	Postsecondary Nondegree Award
Telecom Line Installers & Repairers	High School Diploma
Radio, Cellular, & Tower Equipment Installers & Repairers	Associate Degree
Environmental Science & Protection Technicians	Associate Degree

Broadband

# Snapshot: New Info on Broadband Workforce Needs in Texas

## BROADBAND FIBER JOB POSITION DEMAND IN TEXAS



Sources: Bureau of Labor Statistics, Organization for Economic Cooperation and Development, Congressional Budget Office, CostQuest, Deloitte Analysis [Link](#)

**Are broadband and water jobs  
high-demand and high-wage?**

# Understanding Demand



## Water

Large concentrations of water utility jobs in urban areas, but thousands of small water utilities in rural areas.

- 85% of all water utilities have three or fewer employees
- 80% of all drinking water utilities serve fewer than 500 people



## Broadband

Thousands of additional workers are needed to build federally-funded broadband infrastructure.

- *\$3.3 Billion* – Texas received the largest allocation of federal broadband funds of any state through the BEAD program.
- Rural areas (where these funds are going) have fewer broadband workers. Build-out timelines impact demand.

# Looking at Wages

- Competitive with ***other public entities***, but not compared to private.
- Civil service utility jobs can ***offer stability***, especially in rural areas.
- Most of these jobs are attainable ***without requiring extensive postsecondary education***.
- Certain skills ***are in-demand across professions*** and can offer higher wages. Example: electricians
- Employers can supplement pay with ***wrap-around supports*** and opportunities for additional training

# Our Challenge? Training

Training should be expanded and improved, but the reasons differ by sector:



Water



***Low pass-rate for licensure exams***  
indicates gaps in preparation.



Broadband

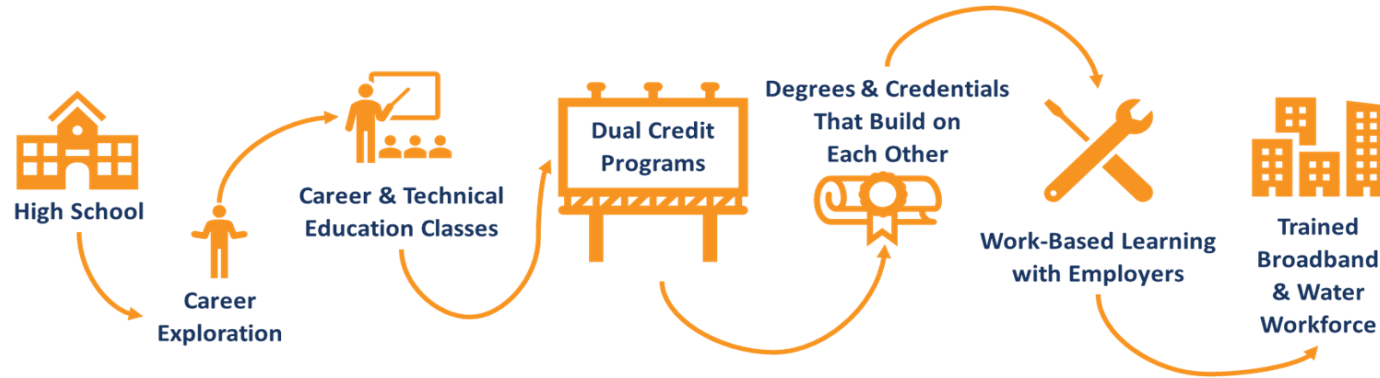


***No standardized training and credentials (yet)***, because it's so new.



# Our Advantage? Texas Supports Pathways

Texas needs education, workforce, and industry partners **to build pathways into water and broadband careers, especially in rural areas.**



We know how to create pathways that lead to jobs, **but we aren't doing it for water and broadband (yet).**

# 3. Ways to Improve Broadband & Water Career Pathways

# Key Assets We Have to Make it Happen

Texas already has multiple tools available to support local partners in creating pathways for students *and* adult learners.

No new legislative action or authority needed!

- ✓ **Data:** understanding of needs & opportunities
- ✓ **Certifications:** industry-based certifications aligned with CTE programs of study
- ✓ **Curricula:** created by industry leaders and experts exists (water) and in-progress (broadband)
- ✓ **Employers:** ready and eager to partner
- ✓ **Funding:** to build and maintain career pathways

# Examples of Action in Texas

Despite the challenges, there are partners across Texas taking steps to build pathways for water and broadband:



**Public-Private Partnerships  
for Infrastructure**

Austin Infrastructure Academy



**Job Stability and Wraparound  
Supports as an Employee Benefit**

Skills for Sustainability (S4S) in El Paso



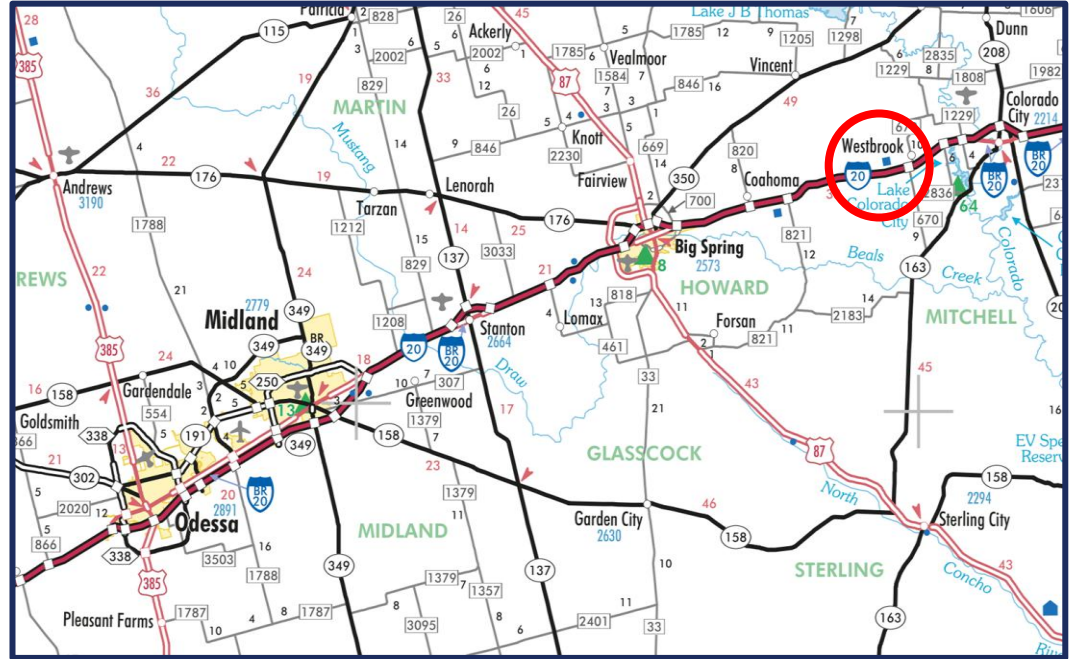
**Work-Based Learning through  
Apprenticeship Programs**

Big Bend Telephone (BBT) in Alpine

# Case Study: SETH

## An idea inspired by Westbrook ISD

- 244 enrolled students
- Operates their municipal water system, like nearly 100 other public school districts in Texas
- Superintendent recognized an opportunity: what if we trained our students to run the water utility?



# Case Study: SETH

**Science, Engineering, Technology and Health (SETH)**  
from Texas American Water Works Association (AWWA)



- 22-hour Basic Water Works Operation course approved by the Texas Commission on Environmental Quality (TCEQ).
- **FREE** to all Texas High School vocational and career programs and fits within multiple pathways: health, STEM, business, and more. Now in 10 school districts and expanding.
- Upon completion, students are qualified to apply for their Class D Provisional Water Operators License and seek employment with their local water system.

# Coming Soon: New Program from WEAT

## **Basic Wastewater Operator Course**

from the Water Environment Association of Texas (WEAT)

- Registered apprenticeship program with U.S. Department of Labor that follows learning objectives approved by the Texas Commission on Environmental Quality (TCEQ).
- Partnerships with Trinity River Authority, Tarrant County College, and North Central Texas Council of Governments to train students.
- Working to get Wastewater Operator licensing added onto TEA's list of approved industry-based certifications eligible for CTE reimbursement.
- Developing video course similar to SETH, ready to launch in Fall 2025.

# Texas Broadband Workforce Training

The Texas Broadband Development Office (BDO) has awarded \$24.6 million to 7 organizations.



**Outcome:** build and expand fiber optic training programs to grow a skilled and robust Texas broadband workforce, starting in 2026.

- CARDboard Project
- City of Pharr
- Etex Communications
- Laredo College
- Learning Alliance Corp.
- Texas A&M University Kingsville
- Wireless Infrastructure Association

Learn more at [comptroller.texas.gov/programs/broadband/funding/workforce/](https://comptroller.texas.gov/programs/broadband/funding/workforce/)



# Rural Pathway Excellence Partnership Program

## ★ Rural Schools Innovation Zone (RSIZ)

Agua Dulce Freer  
Benavides Premont  
Brooks County

## ★ Permian Basin Innovation Zone (PBIZ)

Crane Grandfalls-Royalty  
McCamey

## ★ Falls County Rural Collaborative (FCRC)

Marlin Rosebud-Lott

## ★ Rio Grande Valley – Collaborative Alliance for Rural Education and Employment Resource (RGV-CAREER)

Lasara Monte Alto  
La Villa Santa Rosa  
Lyford San Perlita

## ★ Advancing Mutual Integrated Student Training & Development (AMISTAD)

Jim Hogg County Webb County

## ★ Building Rural Innovation through Dual Graduate Education (BRIDGE)

Progreso Santa Maria

## ★ Leading Innovative Future Technologies (LIFT)

San Isidro Rio Grande City Grulla\*

## ★ Comanche County Rural Collaborative (CCRC)

DeLeon Gustine

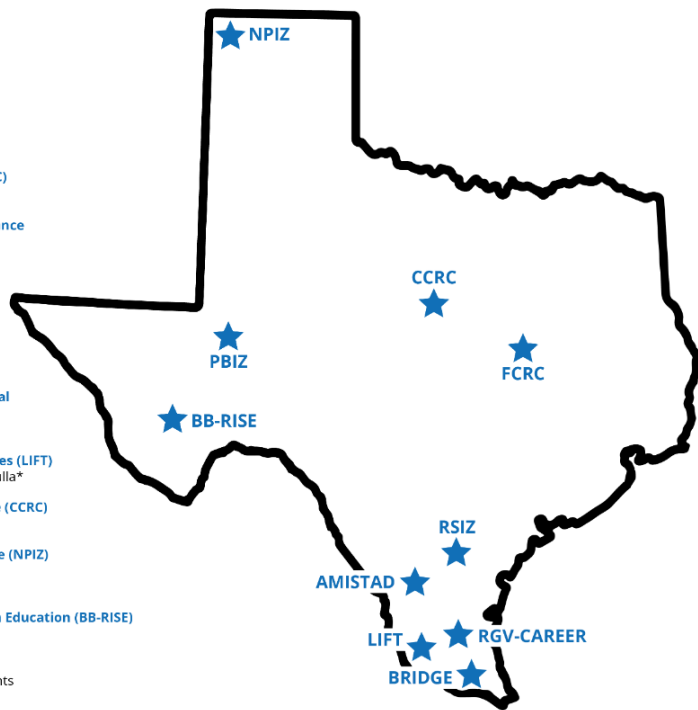
## ★ Northwest Panhandle Innovation Zone (NPIZ)

Channing Dalhart\*  
Texline

## ★ Big Bend Rural Initiative for Success in Education (BB-RISE)

Alpine Marfa  
Marathon

\*denotes district larger than 1600 students



**Overview:** Rural school districts enter into agreements with one another to develop rural college and career pathway partnerships.

**Goal:** increase access to high-quality post-secondary pathways for rural students through multi-district collaboration.



Learn more at <https://tea.texas.gov/texas-schools/district-initiatives/rural-pathway-excellence-partnership-program>

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# Tri-Agency Regional Convener Grant



**Overview:** identify, invest in, and designate a regional convener in each of Texas' [28 workforce development areas](#).

**Goal:** the regional convener will oversee development, implementation, and monitoring of the regional strategy for high-quality career and education pathways into targeted industries across an entire workforce development area.

Learn more at <https://tea.texas.gov/finance-and-grants/grants/grants-administration/grants-awarded/2025-2026-tri-agency-grant-for-regional-conveners>

# Actions You Can Take

1. **Make Broadband and Water Target Occupations:** incorporate *local knowledge* to make sure broadband and water are included for your region.
2. **Get the Word Out:** is there a Rural Pathway Excellence Partnership (R-PEP) or Tri-Agency Regional Convener Grant in your service area? Introduce water and broadband pathways.
3. **Reach out to Texas Training Providers:** for Water (TX AWWA or WEAT) or Broadband

# Questions & Answers

# Contact Us!



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# Appendix

# The Need for Water


Texas is facing increasing **water risk**:

- **Almost 50% of our water supply** will have to come from conservation, efficiency, and reuse ([2022 Texas State Water Plan](#))
- Population growth adds increasing strain to the water system and requires updated and new infrastructure
- Water infrastructure and workforce is **aging and fragile** – especially in rural areas



According to the Texas Water Development Board, our state will need **\$80 billion** to meet our water infrastructure needs through 2070.

# The Work that Goes into Your Water Bill



# WATER SERVICE

Meter # 63309523

Next Read Date Approx. 04/10

Read Date	02/10/2025	03/10/2025	Consumption
Read	245	276	31
	Reading Difference in Hundreds		31
	Total Consumption in Gallons		3100
City of Austin Water - Residential			
	Customer Charge		\$7.75
	Tiered Fixed Charge 2,001 - 6,000 Gallons		\$3.74
→ 2,000 Gallons at \$3.13 per 1,000			\$6.26
→ 1,100 Gallons at \$5.26 per 1,000			\$5.79
	3,100 Gallons at \$0.30 per 1,000 - Water Community Benefit Charge		\$0.93
	3,100 Gallons at \$0.15 per 1,000 - Water Go Purple Community Benefit Charge		\$0.47
	3,100 Gallons at \$0.05 per 1,000 - Reserve Fund Surcharge		\$0.16
TOTAL CURRENT CHARGES		\$25.10	

You are using 6.60 Gallons more water than the average resident in your area.

- 7 charges
- Only 2 include water
- All include cost of infrastructure and people



# The Need for Broadband

Our **digital divide** is holding communities back:

- **Nearly 7 million Texans** don't have access to high-speed internet ([Texas Comptroller](#))
- Over 80% of all Texans who cannot access broadband **are in rural areas** ([Benton Institute](#))
- Reliable, high-speed internet is now a **prerequisite for economic development**














According to the Texas Comptroller of Public Accounts, our state will need **\$10 billion** to meet our broadband infrastructure needs over the next 10 years ([The Texas Tribune](#)).

# The Work that Goes into Your Broadband Bill

The more rural your community, the harder it will be to afford your broadband.

In [\*Finding Funding for Fiber\*](#), Texas Rural Funders asked Totalcom, an internet service provider based in West Central Texas, to breakdown the cost drivers for rural broadband.

Reaching rural customers requires trained workers in construction, installation, engineering, and more - all of which gets priced into your internet bill.

Variables 	Small Town 	Rural Subdivision 	Rural Farms 
Locations per mile 	45	17	2
Local cost factors 	Tree trimming around power lines 	Fiber network construction costs 	Saw blades and drill bits for rocky terrain 
Cost per subscriber 	\$887	\$3,004	\$14,951
Years to break even 	4	8	30+

# Reframing Water and Broadband Jobs



## Water

- The number of water job openings in each region is small, but these jobs are critical for supplying communities with clean, safe water.
- Water is an occupation with an outsized impact on the community's health and economic viability.



## Broadband

- We rely on labor market forecasts to identify which jobs will be in high demand. The recent influx of new broadband was not predicted.
- We'll see a sharp rise in demand for broadband jobs that historical labor market data couldn't have forecasted.