2023 Regional

Broadband Summit

FROM LISTENING → ACTION

Houston-Galveston Area Council

Welcome

Master of Ceremonies

- Ronnie Barnes – Department Director, Houston-Galveston Area Council

Welcoming Remarks: Mayor of Humble, Texas

- Mayor Norman Funderburk

Welcoming Remarks: Chief Operating Officer of H-GAC

- Onyinye Akujuo

National Telecommunication and Information Administration

- Luis Acuña – Southwest Regional Director, NTIA

THE BROADBAND EQUITY ACCESS AND DEPLOYMENT (BEAD) PROGRAM

FUNDED BY THE BIPARTISAN INFRASTRUCTURE LAW

ADMINISTERED BY THE DEPARTMENT OF COMMERCE'S NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

APRIL 2023

BEAD program will provide ~$42.45B for infrastructure planning and implementation

Funding pool
$42.45B

A program to get all Americans online by funding partnerships between states or territories, communities, and stakeholders to build infrastructure where we need it to and increase adoption of high-speed Internet.

PROGRAM HIGHLIGHTS

Entities eligible to apply for this program include:

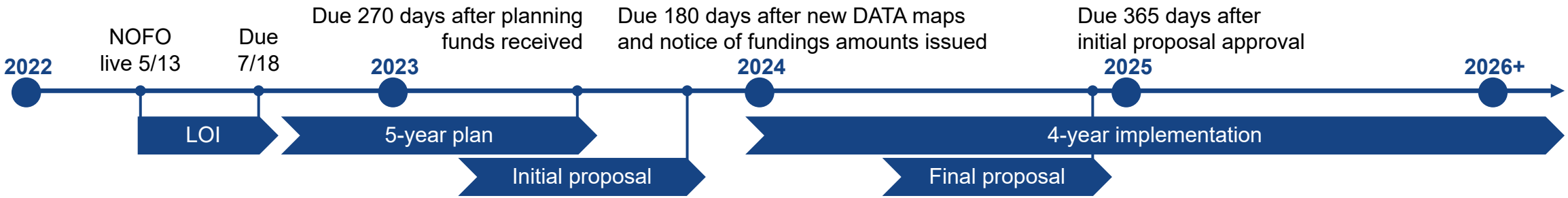
- All 50 States
- The District of Columbia and Puerto Rico
- Other Territories: U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands

Example eligible uses of funds include:

- Planning for deployment of Internet
- Deploying or upgrading Internet
- Installing Internet in multi-tenant buildings
- Implementing adoption and digital equity programs
- Workforce and job training

ESTIMATED TIMELINE

Timeline approximate unless exact date specified



BEAD funding includes three components and is based on new FCC maps

Three components of funding:

Minimum allocation

$100M for each state, D.C., and Puerto Rico

$25M for U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands

+

High-cost allocation

$$\frac{\text{\# unserved locations in high-cost areas in the Eligible Entity}}{\text{\# unserved locations in high-cost areas in the US}} \times \$4.245\text{B}$$

+

Remaining funds allocation

$$\frac{\text{\# unserved locations in the Eligible Entity}}{\text{\# unserved locations in the US}} \times \text{Remaining funds}^{1}$$

New FCC Broadband DATA Maps will be utilized to identify unserved locations

Eligible Entities shall develop a **challenge process** for stakeholders to challenge whether a location or community anchor institution is eligible for grant funds

Eligible Entities must **document the final list** of unserved locations, underserved locations, and eligible community anchor institutions

1. $41.6B – minimum initial allocation – high-cost allocation

BEAD funding will go to projects that expand reliable, high-speed Internet

Example uses of funds

- Deploying or upgrading high-speed Internet infrastructure
- Conducting data collection, broadband mapping, and planning to support program goals
- Installing or providing reduced-cost high-speed Internet in a multi-family residential building
- Supporting broadband adoption, including programs to provide affordable devices
- Investing in training and workforce development or other programs to support digital equity

Eligible Entities will select projects based on selection criteria including

- Amount of BEAD funds required
- Affordability to the consumer
- Subgrantee's record of compliance with federal labor laws
- Speed to project deployment
- Speed of network and other technical capabilities
- Other factors established by states

BEAD will prioritize Complete coverage of unserved locations and underserved locations (where funding permits), then CAIs

First, Eligible Entities must serve all unserved locations (incl. serving multi-tenant buildings)

- **Unserved locations** without reliable Internet and with download speeds <25 Mbps, upload speeds <3 Mbps, and latency < 100ms

Second, Eligible Entities must serve all underserved locations

- **Underserved locations** without reliable Internet and with download speeds <100 Mbps, upload speeds <20 Mbps, and latency <100 ms

Next, NTIA strongly urges Eligible Entities serve Eligible Community Anchor Institutions

- **Eligible Community Anchor Institutions** are entities (e.g., school, library, hospital) that facilitate greater use of high-speed Internet service by vulnerable populations and have download speed <1 Gbps
- **Other eligible uses** include affordability programs, cybersecurity training, workforce development., etc.
- If an Eligible Entity wants to use funds for other eligible uses instead of eligible Community Anchor Institutions, then it must provide a strong rationale

The BEAD Program will include a low-cost broadband service option for all Eligible Subscribers

Low-cost option is available to Eligible Subscribers

- **Eligible Subscriber** means any household that qualifies for the Affordable Connectivity Program (ACP) or a successor program

Please see the Federal Communications Commission (FCC) website for more details on the Affordable Connectivity Program (ACP) (link)

Eligible Entities will define parameters for low-cost plans

Eligible Entities will define the parameters for low-cost plans while considering the following:

- Provider participation in the Affordable Connectivity Program or other household subsidies
- Expected cost to an Eligible Subscriber after subsidies
- Technical performance of the plan (e.g., Internet speed)

Description of an example low-cost plan

- **Cost:** ≤$30 incl. taxes and fees (≤$75 for tribal land residents)
- **Subsidies:** Can apply Affordable Connectivity Benefit subsidies
- **Speed:** ≥100 Mbps for downloads and ≥20 Mbps for uploads
- **Latency:** ≤100 ms
- **Extra fees:** No data caps or surcharges
- **Upgrades:** Can later upgrade to new low-cost offerings at no cost

Eligible Entities must conduct local coordination activities as part of plan development and implementation

Geographic coverage

Coordination must include Tribal, rural, suburban, and urban areas

Each political subdivision and Tribe must be given:

- Opportunity to submit a plan for Eligible Entity consideration
- Opportunity to comment on Eligible Entity proposals

Diverse stakeholders

Coordination must include a diverse group of stakeholders

Eligible Entities must ensure Tribal or Native entities are involved in developing plans (incl. via a formal Tribal consultation process)

Example stakeholders include state agencies, community anchor institutions, etc.

Outreach mechanisms

Coordination must include multiple mechanisms to ensure broad awareness and participation

Example mechanisms include listening sessions, public meetings, websites, social media, etc.

Transparency

Coordination must include clear procedures to ensure transparency

Examples include websites, periodic reports, in-person meetings, etc.

Un-/underserved and under-represented communities

Coordination must target un-/underserved, and underrepresented communities that have historically faced barriers in participating in federal programs

Examples include an advisory board with representatives, surveys to better understand needs, etc.

Initial Proposal | Initial Proposals are due within 180 days of the release of the Notice of Available Amounts

Timing

When the Notice of Available Amounts is issued, the Assistant Secretary will invite Eligible Entities to submit Initial Proposals

Each Eligible Entity will have **180 days** to submit its Initial Proposal

Content

Initial Proposal is the **first draft** of an Eligible Entity's Final Proposal for funding

Draft should explain how the Eligible Entity plans to ensure access to a reliable, affordable, high-speed Internet connection

Draft should describe **challenge process** for stakeholders to challenge whether a location is eligible for funds and process for **selecting subgrantees**

Review

Prior to submission, each political subdivision and Tribal / Native entities must have opportunity to submit a plan for consideration and comment on the proposal

Assistant Secretary will then begin the **iterative review process** in the order Initial Proposals are submitted

Assistant Secretary decides if proposed use of funds:

1. Complies with statute
2. Is in the public interest
3. Effectuates the purposes of the statute

Approval

When the Assistant Secretary approves of the Initial Proposal, the Eligible Entity may receive **20% of its total allocation** for expenditures specifically approved in the initial proposal

DIGITAL EQUITY ACT PROGRAMS

FUNDED BY THE BIPARTISAN INFRASTRUCTURE LAW

ADMINISTERED BY THE DEPARTMENT OF COMMERCE'S NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

APRIL 2023

Digital Equity Act created three programs to promote digital equity and inclusion

Funding pool
$2.75B

Three programs that provide funding to promote digital inclusion and advance equity for all. They aim to ensure that all communities can access and use affordable, reliable high-speed Internet to meet their needs and improve their lives.

PROGRAMS HIGHLIGHTS

The Digital Equity Act created three programs:

State Planning
- $60M formula funding program to develop digital equity plans

State Capacity
- $1.44B formula funding program to implement plans & promote digital inclusion

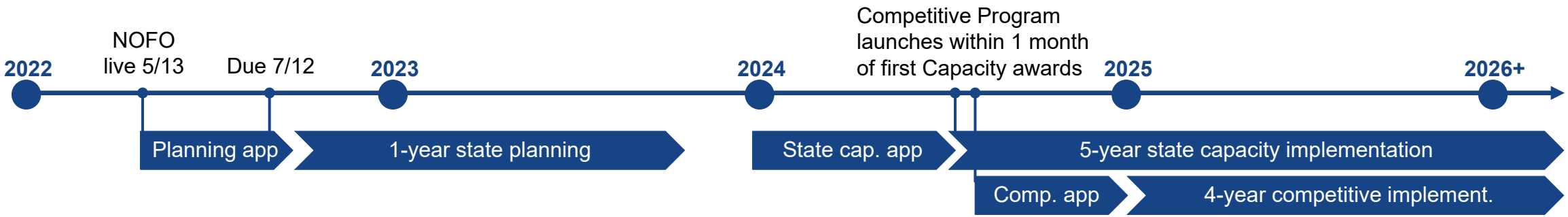
Competitive
- $1.25B to implement digital equity and inclusion activities

Example eligible uses of funds across three programs include:

- Developing digital equity plans; states must develop a plan to be eligible for state capacity grants
- Making awards to other entities to help make digital equity plans
- Improving accessibility and inclusivity of public resources
- Implementing digital equity plans and related activities
- Providing digital literacy and digital skills education
- Facilitating the adoption of high-speed Internet

ESTIMATED TIMELINE

Timeline approximate unless exact date specified



The programs are sequential and participation in planning is essential to receive capacity (i.e., implementation) funds

	State Planning Grant	State Capacity Grant	Competitive Grant
Who	Open to **U.S. states, the District of Columbia, and Puerto Rico**	Open to U.S. states, the District of Columbia, and Puerto Rico, that **completed the State Planning Program**	Open to **certain entities**, such as political subdivisions, Tribal entities, nonprofits, community anchor institutions, local educational agencies, and workforce development orgs
What	Grants will be used to **develop a State Digital Equity Plan**	Grants will be used to **implement State Digital Equity Plans**	Grants will be used to **develop and implement digital inclusion activities**

Other U.S. territories, Indian Tribes, Alaska Native entities, and Native Hawaiian orgs have a separate statutory set-aside and separate program requirements under the State Planning and Capacity Programs, as detailed on the next page

The Digital Equity Act focuses on addressing the needs of "covered populations" as defined by the statute

Covered Populations

Identity groups and communities disproportionally impacted by digital inequity

- Low-income households
- Aging populations
- Incarcerated individuals
- Veterans
- People with disabilities
- People with language barriers
- Racial and ethnic minorities
- Rural inhabitants

Programs' funds can be used for different purposes

Uses of State Planning Grant funds

- **Developing** State Digital Equity **Plans**
- **Making subgrants** to other entities, such as community anchor institutions, municipalities, Indian Tribes, nonprofits, and other organizations, that help develop the Digital Equity Plan

Uses of State Capacity and Competitive Grant funds

- **Updating and implementing** State Digital Equity **Plans** (Capacity)
- Pursuing **digital inclusion activities**
- Facilitating **adoption** of high-speed Internet
- Implementing **training and workforce development programs**
- Making **equipment and software** for high-speed Internet services available
- Constructing or upgrading **public access computer centers**

State Planning and Capacity funds will be allocated proportionally based on the State's population, share of members of covered populations, and relative lack of availability and adoption among residents

NTIA and the U.S. Census Bureau have collaborated to create the Digital Equity Act Population Viewer, which shows covered population totals for each state and other inputs into the funding formula

NTIA's Request for Comment on the Digital Equity Act programs is **currently open.**

The Notice and RFC is available here. Comments can be submitted at regulations.gov under Docket **NTIA-2023-0002**.

The deadline for all comments is: **May 1st, 2023, 5:00 PM EST**

Thank You

https://www.internet4all.gov/
Internet For All: internetforall@ntia.gov

https://broadbandusa.ntia.doc.gov/
BBUSA: broadbandusa@ntia.gov

For More Information:

Luis Acuña, Regional Director, Southwest
Internet for All
lacuna@ntia.gov, (202) 451-0996

Texas Business Development Office

- Andrea Pacheco – Broadband Outreach Coordinator, Texas BDO

TEXAS BROADBAND DEVELOPMENT OFFICE

Gulf Coast Regional Broadband Summit
April 20, 2023

Agenda

1. House Bill 5 - Creation of BDO
2. Texas Broadband Plan
3. Broadband Development Map
4. Broadband Expansion Programs
5. Bringing Online Opportunities to Texas (BOOT) Program
6. IIJA Funding
7. Public Engagement Model
8. Points of Engagement
9. Questions

House Bill 5 (87R)

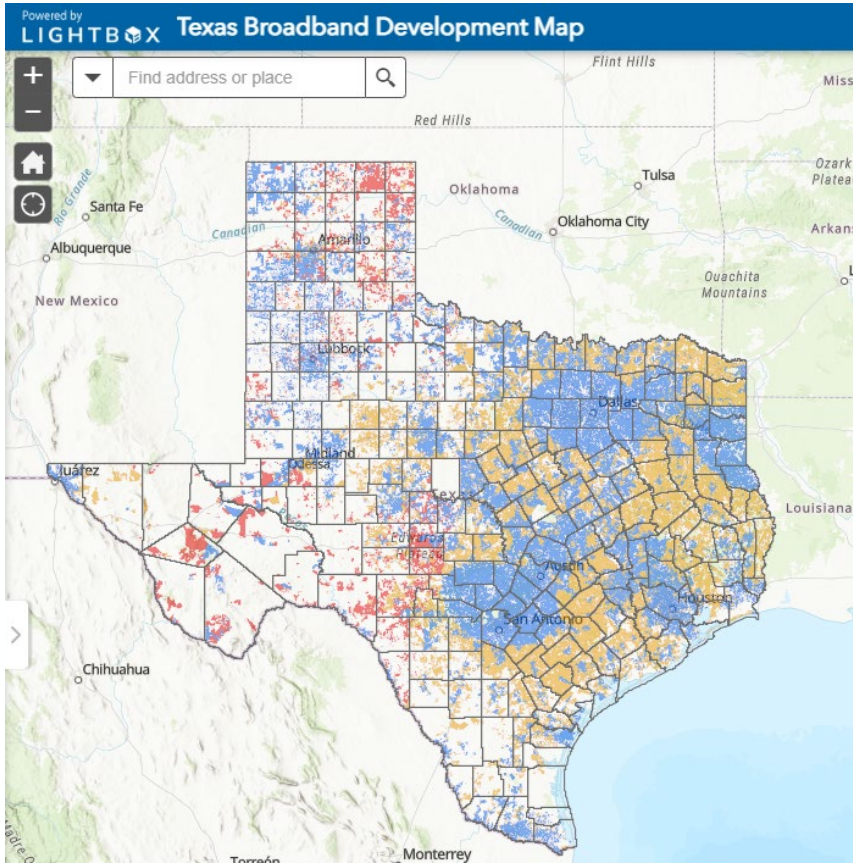
- Authored by Rep. Ashby
- Created the Broadband Development Office (BDO)
- Tasks BDO to:
  - Create, maintain and publish a state broadband plan;
  - Create, maintain and publish a broadband development map;
  - Create and manage broadband development program to expand broadband in the state;
- Created the BDO Board of Advisors
  - Chaired by the Comptroller with seven appointed members
  - Meets every two months

Texas Broadband Plan

- Strategies and goals for expanding access to and further adoption of broadband service
- Published in June 2022
- 12 stop listening tour
- 16,000 respondents to public survey
- Roundtables, one-on-ones and direct conversations
- Iterative updates will be made on an at-need basis

Broadband Development Map

- Address-level fabric overlaid with broadband provider service data
- Depicts designated areas as “eligible” or “ ineligible” for funding
- An eligible area has less than 80 percent of locations are unserved and lacks prior federal commitments for broadband funding
- Updated every six months



Map Challenges

- Deadline to submit was Feb. 27th
- Challenges received were posted on March 30th
- A notice of the challenges to each broadband service provider that has indicated it provides broadband service to the designated area will be emailed.
- Affected political subdivisions and broadband providers have 45 days (May 15) after receiving notice to provide information to the office showing whether the designated area should or should not be reclassified.

Funding

- Coronavirus Capital Projects Fund (American Rescue Plan Act)
- Administered by U.S. Treasury
- Texas' Allocation: $500.5 Million
- Purpose: helping to ensure that all communities have access to the high-quality modern infrastructure, including broadband, needed to access critical services.
- Funds must be expended by Dec. 2026

Funding

- BDO's Grant Plan submitted to Treasury Sept 2022

Program Component	Description	Allocation Request		
		Project Costs	Admin. Costs	Total Costs
1a: Broadband Infrastructure Projects	BDO – Texas Last Mile Connectivity Program	$363,807,243	$22,412,581	$386,219,824
1a: Broadband Infrastructure Projects	BDO – Texas Broadband Pole Replacement Program	$75,000,000	$0	$75,000,000
1c: Multi-Purpose Community Facility Project	Texas State Library and Archives Commission (TSLAC) – Infrastructure and Facility Access Improvement Grant Program (IFAIG)	$7,799,162	$1,611,177	$9,410,339
1a: Broadband Infrastructure Projects	Texas Department of Agriculture (TDA) – Texas Rural Hospital Broadband Program (TRBP)	$22,845,000	$1,000,000	$23,845,000
1c: Multi-Purpose Community Facility Project	Texas Department of Transportation (TxDOT) – El Paso District Safety Rest Area (ELP SRA) Broadband Infrastructure Project	$6,000,000	$0	$6,000,000
	TOTAL:	$475,451,405	$25,023,758	$500,475,163

Bringing Online Opportunities to Texas (BOOT) Program

- Notice of Funding Availability (NOFA) was published on March 6
- Accepting Applications from April 3 to May 5
- NOFA = Solicitation
- BDO's objective is to maintain a level playing field
- Responses to questions were published on the ESBD website, along with a draft agreement for potential awardees

Funding

- Infrastructure Investment and Jobs Act
  - Broadband Equity, Access, and Deployment (BEAD) Program
  - Digital Equity Act
- Administered by the National Telecommunications and Information Administration (NTIA)
- Texas' Allocation: $2 – 4 Billion (est.)
- Purpose: fund state broadband deployment grant programs and ensure communities have the skills and devices to properly take advantage of the internet.

IIJA Funding

- Texas received $8.1 million for initial planning activities
- Connected Nation has been selected as the IIJA planning vendor for Texas
- Key dates:
  - June 30th: BEAD allocation is expected
  - August 28th: BEAD Five Year Action Plan is due
  - Dec. 1st: State Digital Opportunity Plan is due
- Implementation of program funds are not expected to occur until 2024 at the earliest

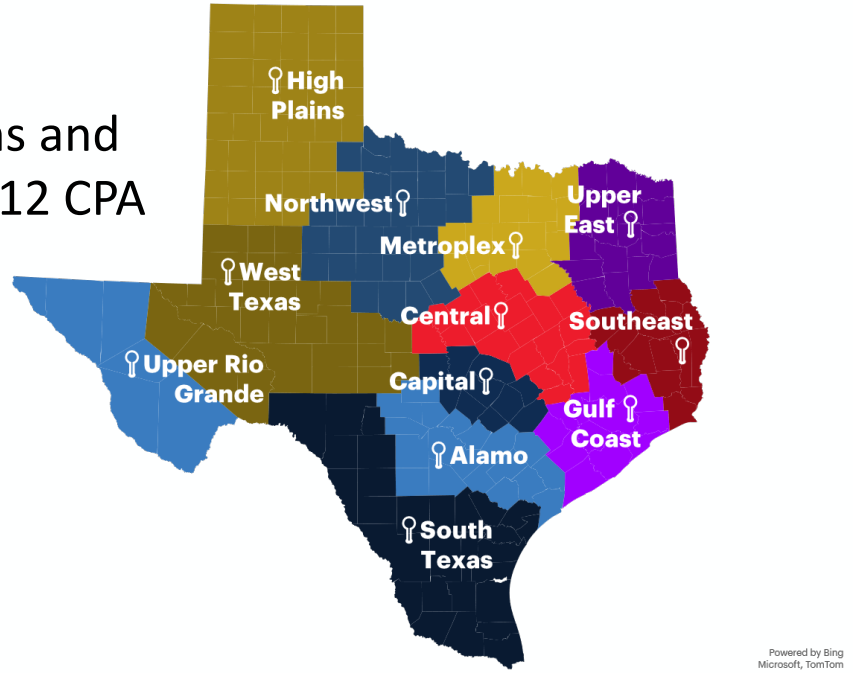
BDO Engagement Model

Regional Working Groups and Task Forces

- BEAD NOFO: “each Eligible Entity must ensure that a diverse set of stakeholders is involved in development of its Five-Year Action Plan, Initial Proposal, and Final Proposal.”
- “Diverse stakeholder groups” include:
  - State and territorial agencies
  - Anchor institutions
  - Nonprofit and community-based organizations
  - Local educational agencies
  - Tribal governments

Regional Working Groups

- Primary conduit between the BDO and local communities, representing Covered Populations and geographically diverse stakeholders across the 12 CPA regions...
  - Provide local insight to the BDO from community data and planning efforts
  - Coordinate events, meetings, listening sessions, and roundtables with local communities
  - Promote BDO events, surveys, and communications within communities
- To get involved, start by letting us know who you are and how you would like to participate on our Contact Form



Points of Engagement

- BroadbandForTexas.com
- Local government roundtable hosted by BDO on the first Thursday of every month at 10a (Meeting Link)
- Industry roundtable for ISPs, engineering firms, consultants, and other private sector stakeholders hosted by BDO on the last Tuesday of every month at 3p (Meeting Link)
- The BDO Board of Advisors meets every other month
- The Governor's Broadband Development Council meets frequently, meeting postings can be found here.
- The BDO has a monthly newsletter and announcements, be sure to sign up for updates.
- BDO engagement model for IIJA planning by signing up to participate.

Questions

- 833-3-TEXBDO
- broadband@cpa.texas.gov

Local Government Panel

- Brian Ligon – City of Mont Belvieu
- John Speirs – Harris County Office of Broadband
- Larry Kuciemba – Bellville EDC
- Robert Pechukas – Waller County
- Robyn Doughtie – Fort Bend County





Lunch Break

Lunch Presentation: Regional Data

- Sungmin Lee – Manager of Data Analysis and Visualization, Houston-Galveston Area Council
- John Speirs – Manager, Harris County Office of Broadband

Broadband Adoption Trends & Impacts in H-GAC 13-County Region

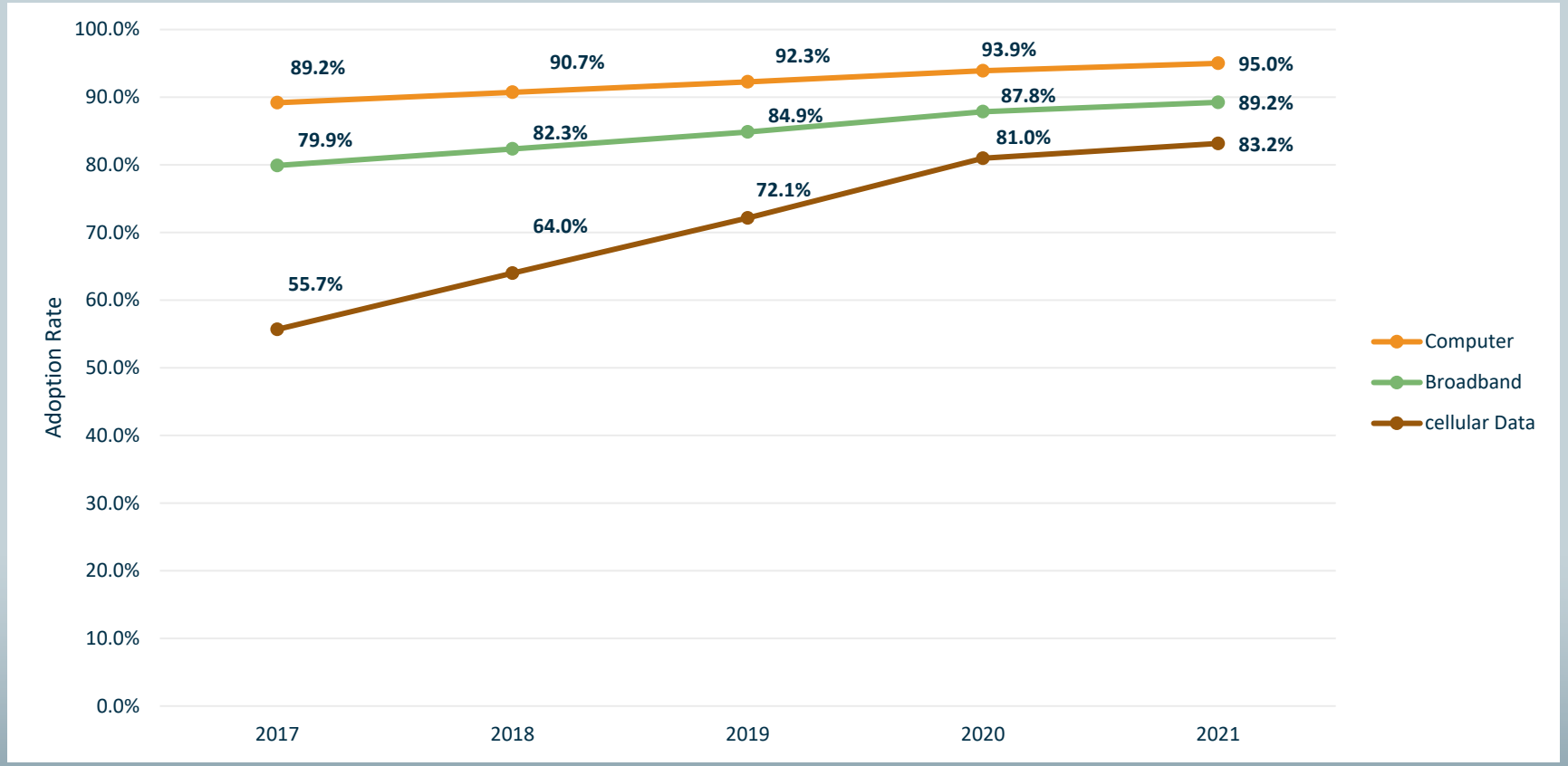
Sungmin Lee

Manager of Data Visualization, Data Analytics and Research Department

Houston-Galveston Area Council

Broadband Summit April 20, 2023

Technology Adoption of Households in 13-County Region from 2017 to 2021



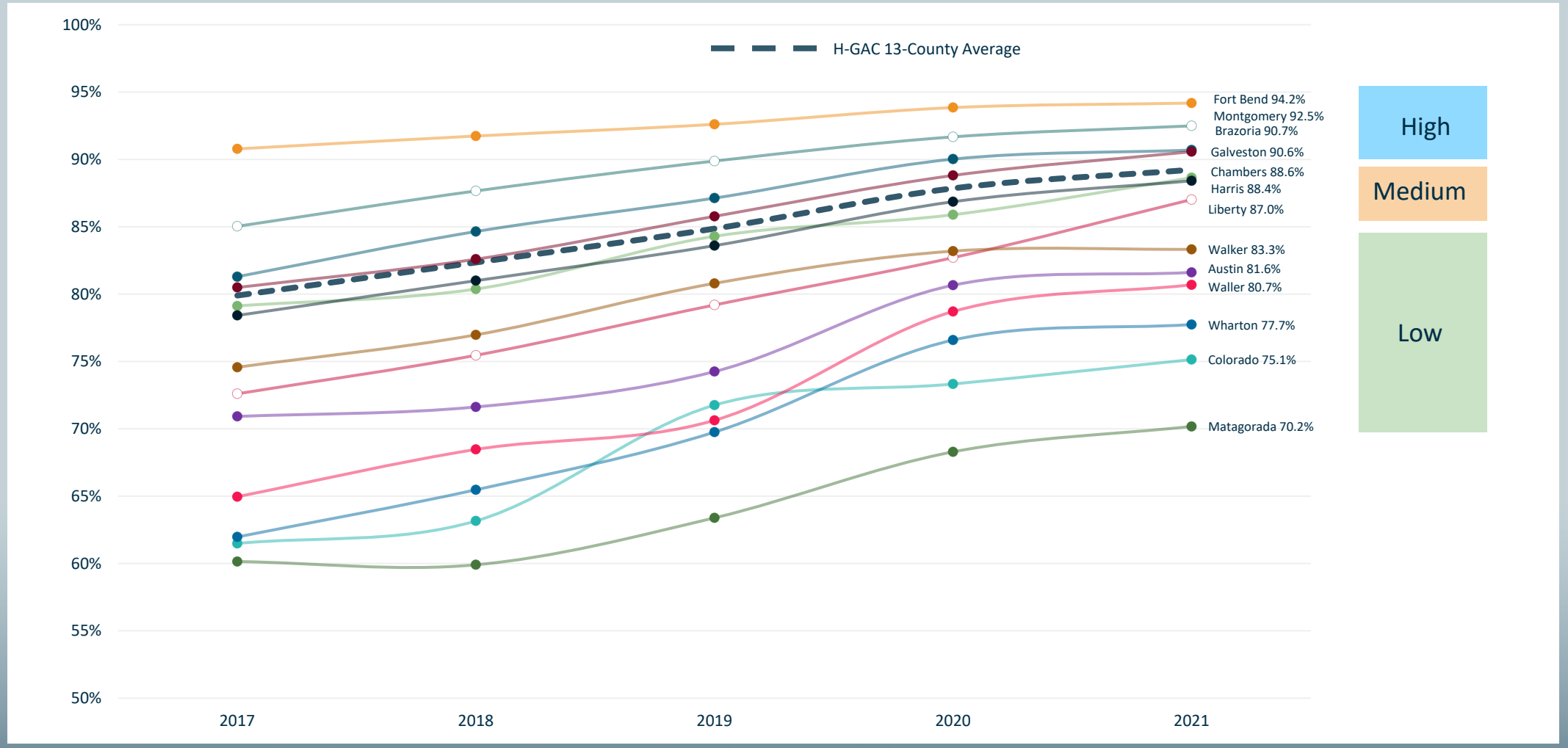
Source: Census American Community Survey (ACS) 5-Year Estimates, 2017-2021

Comparison of Household Broadband Adoption (2021)

	United States	Texas	H-GAC 13-County Region	Dallas-Fort Worth Metro Area	Austin Metro Area	San Antonio Metro Area
Broadband	87.0%	86.9%	**89.2%**	90.3%	91.8%	87.3%
Cellular data plan	78.7%	80.0%	**83.2%**	84.8%	85.8%	79.9%
Broadband such as cable, fiber optic or DSL	72.0%	68.8%	**72.9%**	74.3%	79.3%	71.0%
Satellite Internet service	6.8%	9.0%	**8.9%**	8.9%	6.2%	8.5%

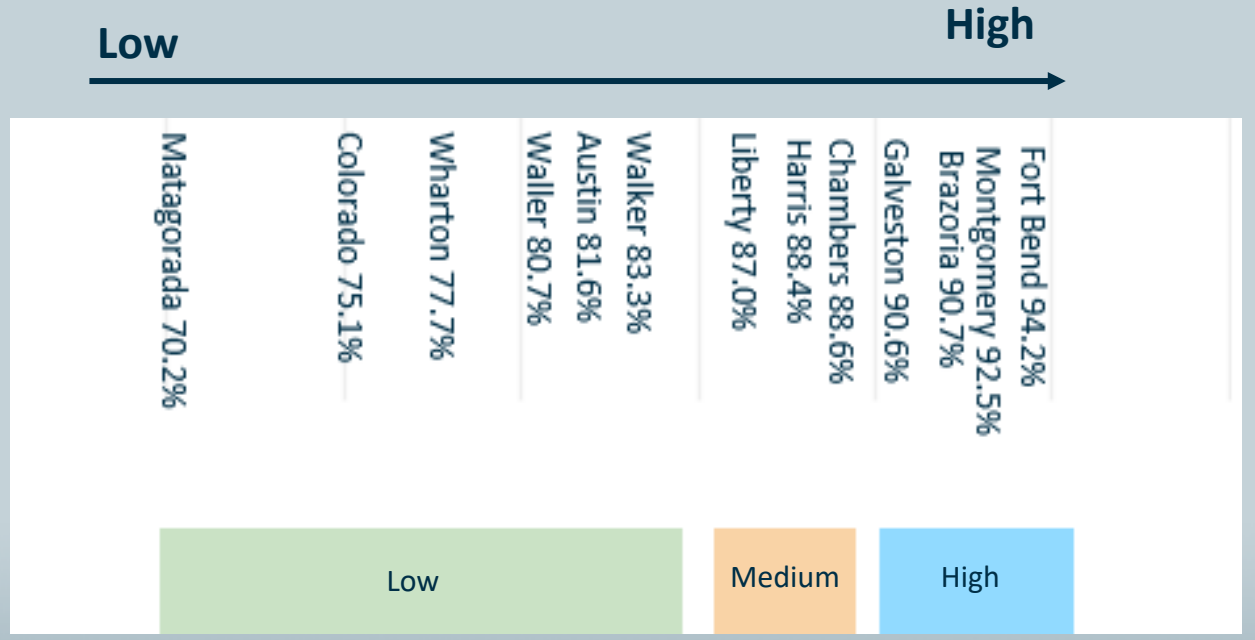
Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

Household Broadband Adoption Change by County from 2017 to 2021

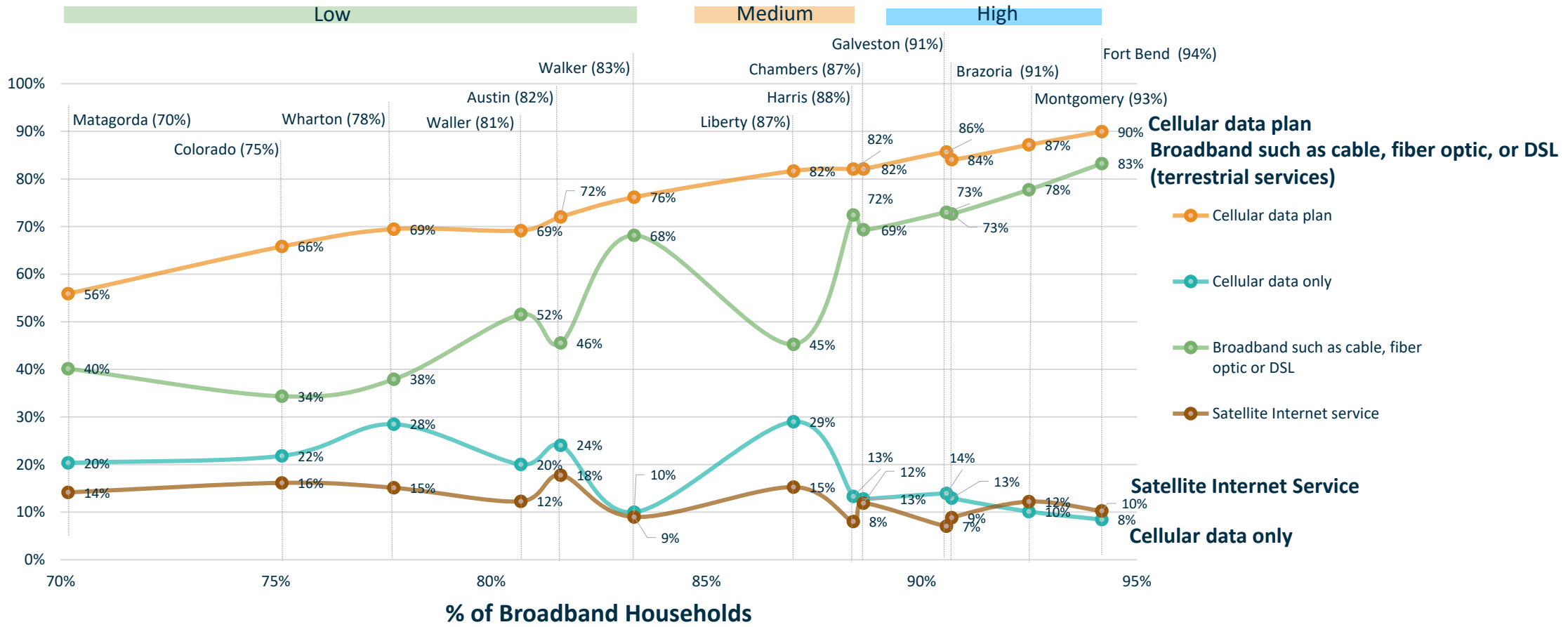


Source: Census American Community Survey (ACS) 5-Year Estimates, 2017-2021

County's Adoption Rates (2021)

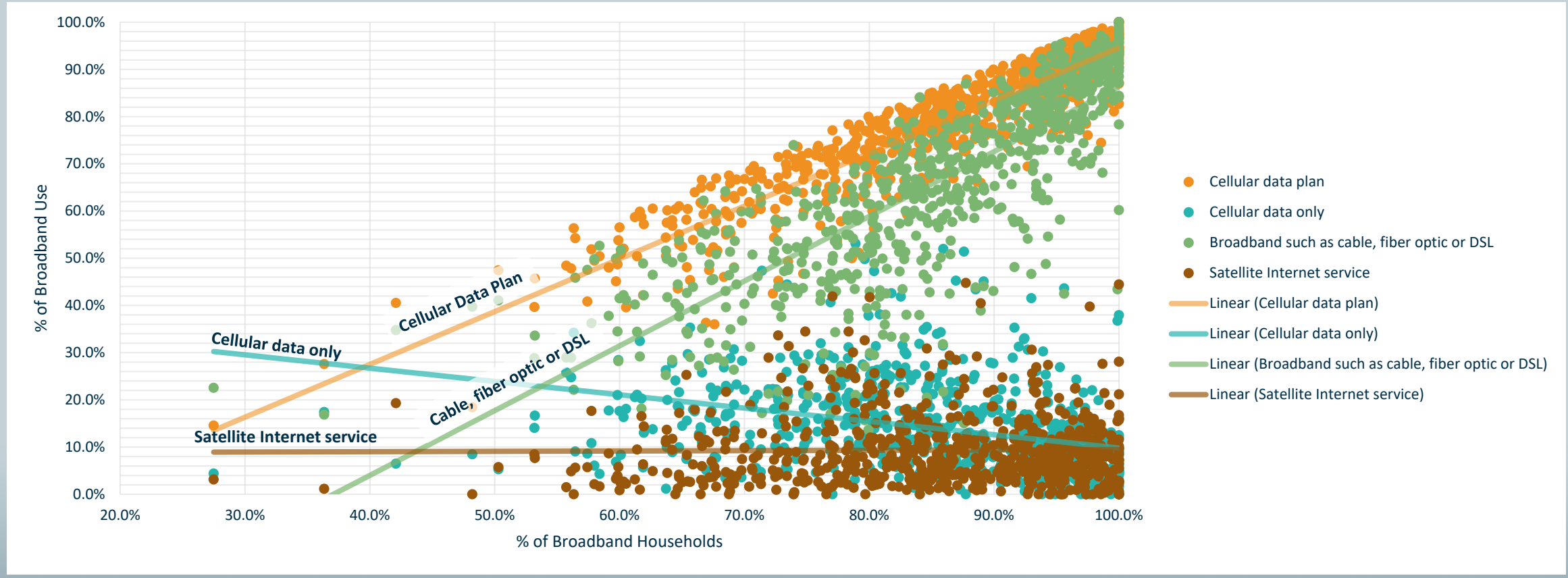


Relationship Between Adoption Rate and Broadband Usage Types (2021): Counties



Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

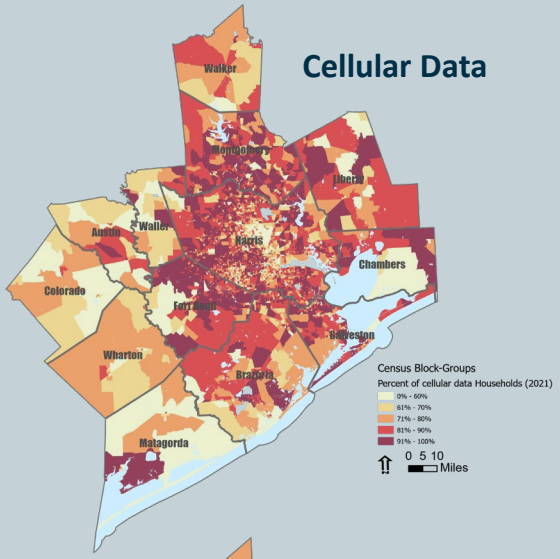
Relationship Between Adoption Rate and Broadband Usage Types (2021): Census Tracts



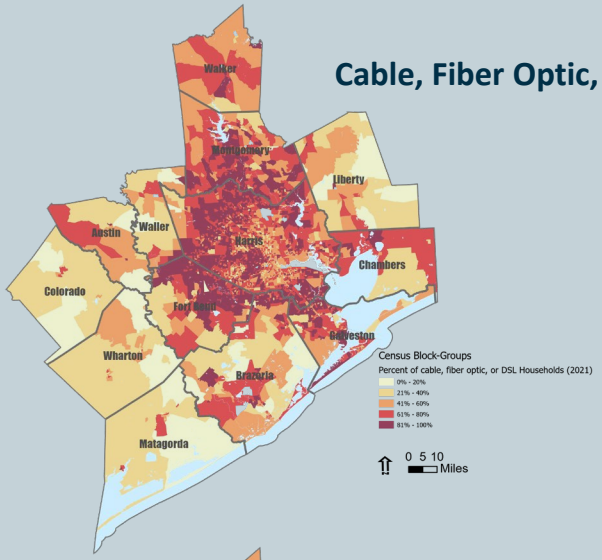
Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

Broadband Usage Map

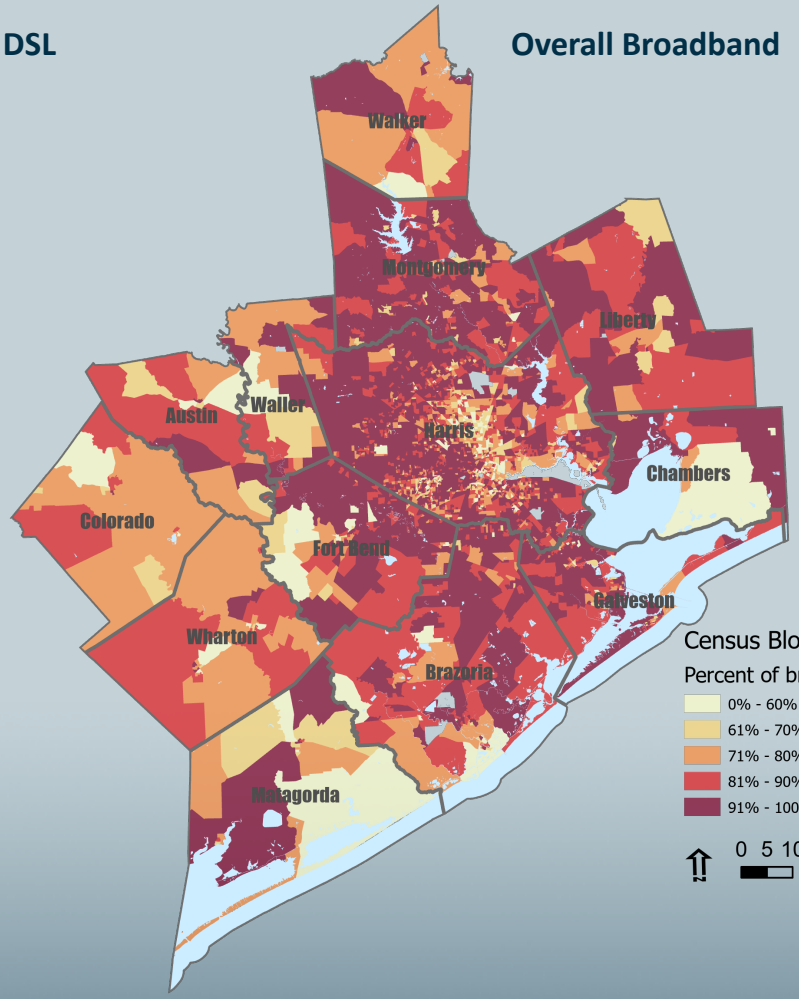
Cellular Data



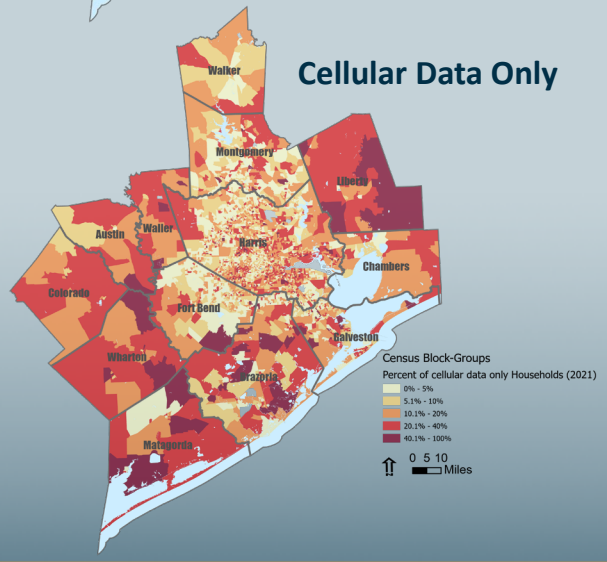
Cable, Fiber Optic, or DSL



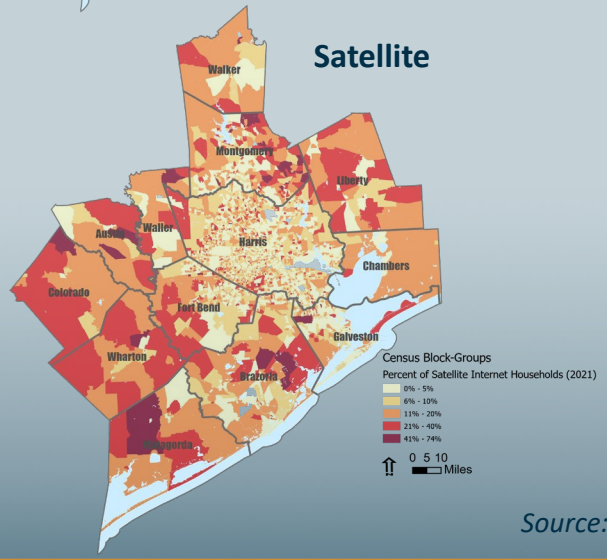
Overall Broadband



Cellular Data Only



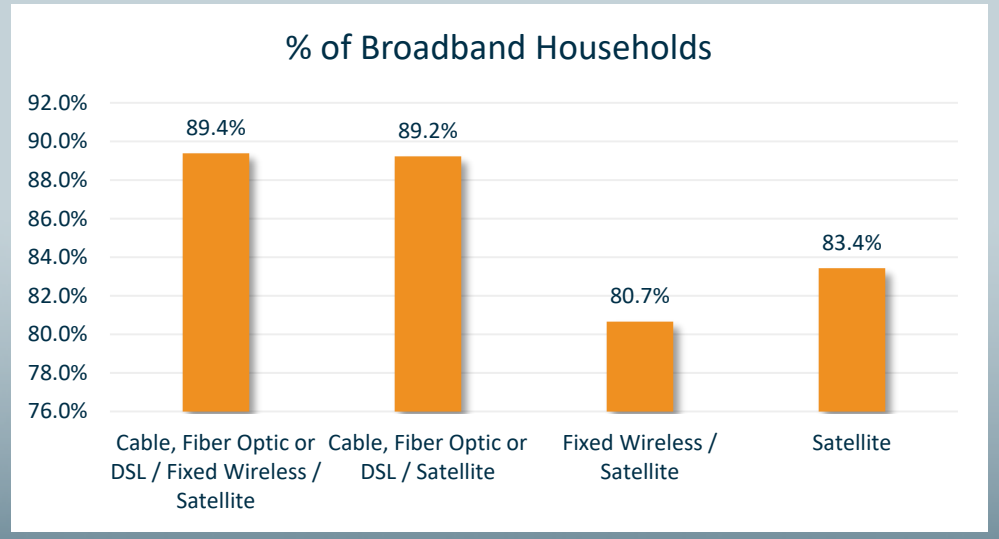
Satellite

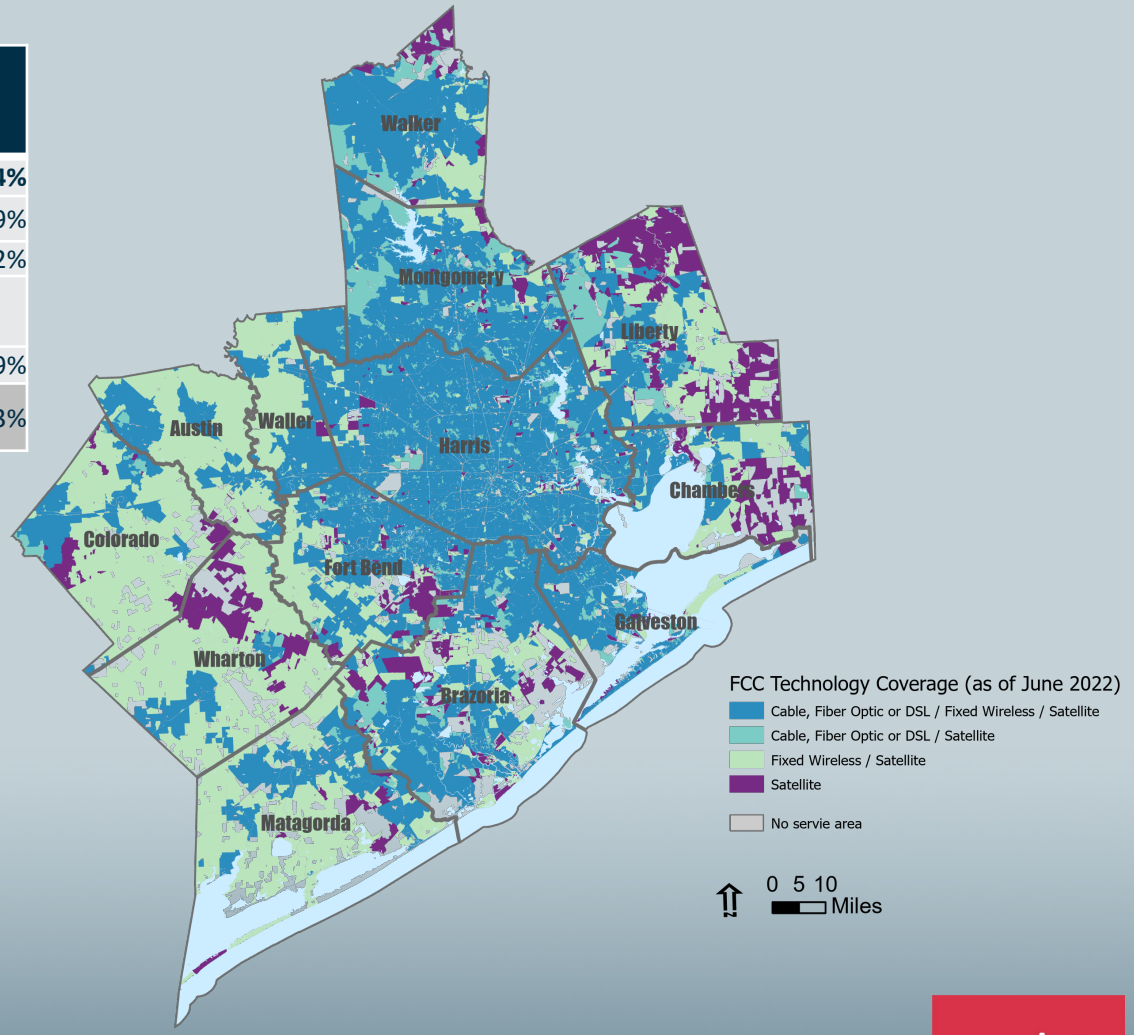


Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

FCC Broadband Technology Coverages

	Cable, Fiber Optic or DSL / Fixed Wireless / Satellite	Cable, Fiber Optic or DSL / Satellite	Fixed Wireless / Satellite	Satellite
Broadband	**89.4%**	**89.2%**	**80.7%**	**83.4%**
Cellular data plan	83.3%	83.7%	72.2%	77.9%
Cellular data plan only	12.7%	12.7%	26.0%	24.2%
Broadband such as cable, fiber optic or DSL	73.5%	72.8%		
Satellite Internet service	8.7%	9.3%	19.2%	23.9%
Percent of Households of 13 counties (2021)	90.9%	7.5%	1.4%	0.3%

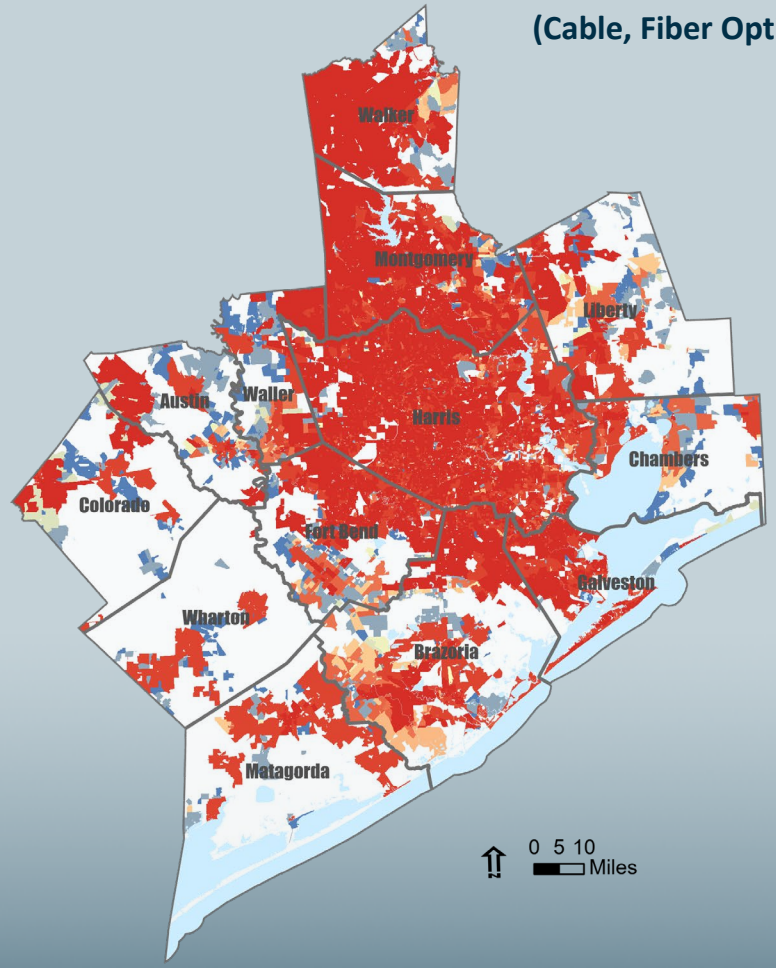




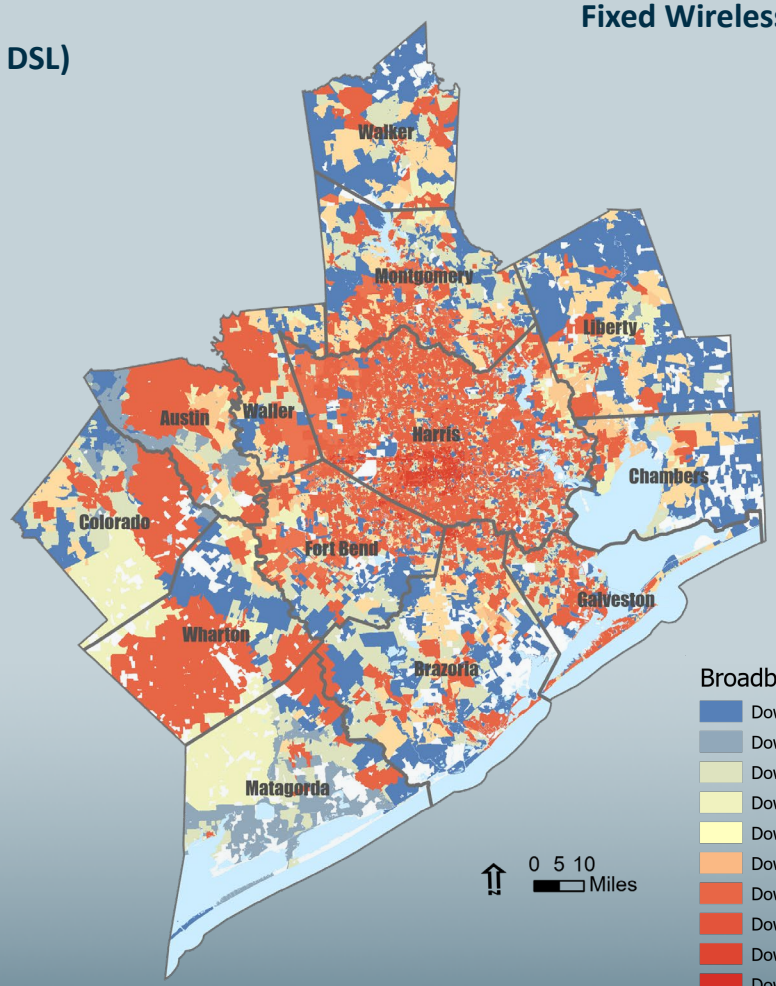
Source: Census American Community Survey (ACS) 5-Year Estimates, 2017-2021
Broadband Data, Federal Communications Commission (FCC), June 2022

Broadband Speed By Technology As Defined by FCC

Terrestrial Services (Cable, Fiber Optic & DSL)



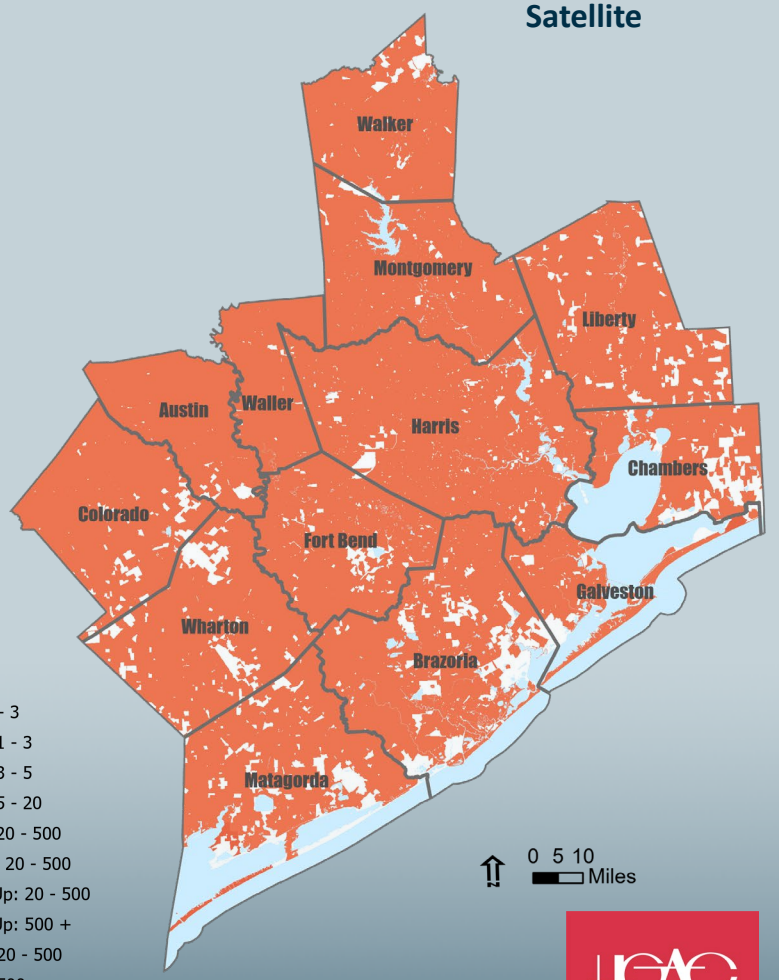
Fixed Wireless



Broadband Speed

- Down: < 10 - Up: 1 - 3
- Down: 10 - 25 - Up: 1 - 3
- Down: 25 - 50 - Up: 3 - 5
- Down: 25 - 50 - Up: 5 - 20
- Down: 25 - 50 - Up: 20 - 500
- Down: 50 - 100 - Up: 20 - 500
- Down: 100 - 1000 - Up: 20 - 500
- Down: 100 - 1000 - Up: 500 +
- Down: 1000 + - Up: 20 - 500
- Down: 1000 + - Up: 500 +

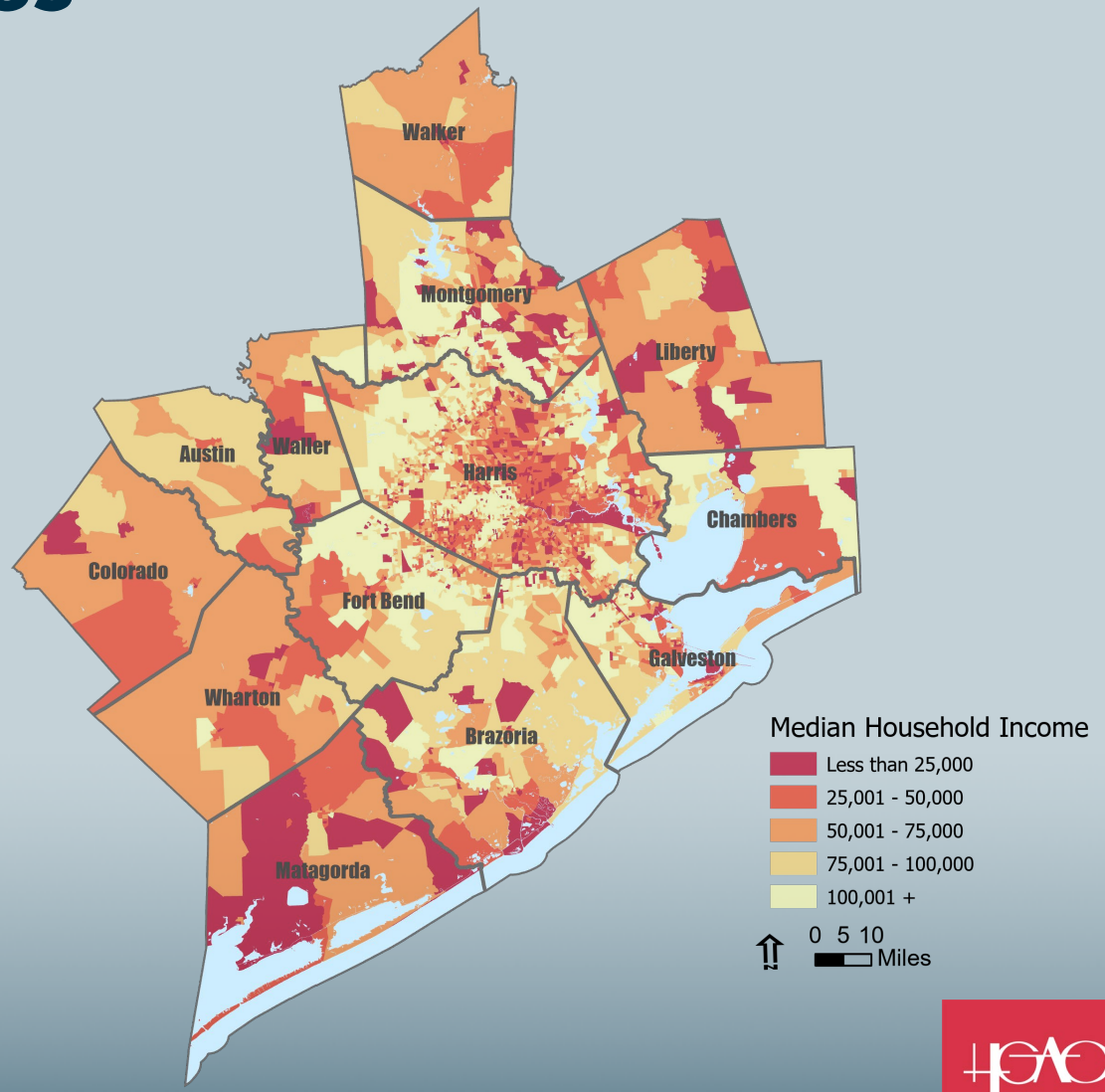
Satellite



Broadband Adoption Rate by Household Incomes

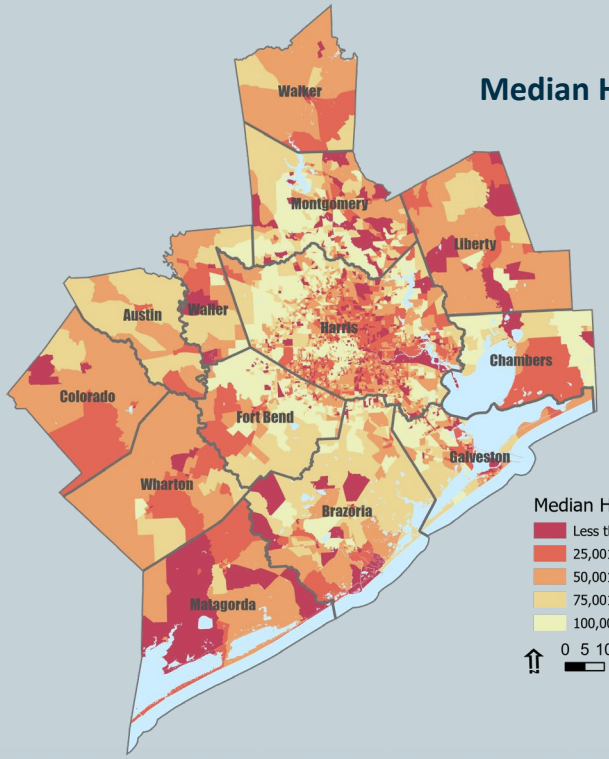
	Households with Broadband		
	Household Income less than 35K	Household Income 35K - 75K	Household Income 75K or more
13-County Region	**75.3%**	**88.9%**	**96.4%**
Austin	67.6%	78.7%	90.8%
Brazoria	72.3%	90.1%	96.7%
Chambers	75.9%	78.6%	96.9%
Colorado	58.8%	78.8%	85.7%
Fort Bend	79.0%	92.4%	98.1%
Galveston	79.7%	90.1%	95.6%
Harris	74.9%	88.6%	96.3%
Liberty	75.0%	90.5%	94.4%
Matagorda	53.0%	76.4%	85.0%
Montgomery	81.4%	91.3%	96.5%
Walker	79.9%	80.0%	91.8%
Waller	61.0%	75.9%	94.4%
Wharton	62.5%	80.3%	90.2%

Source: Census American Community Survey (ACS) 5-Year Estimates, 2021



Household Income and Broadband Adoption

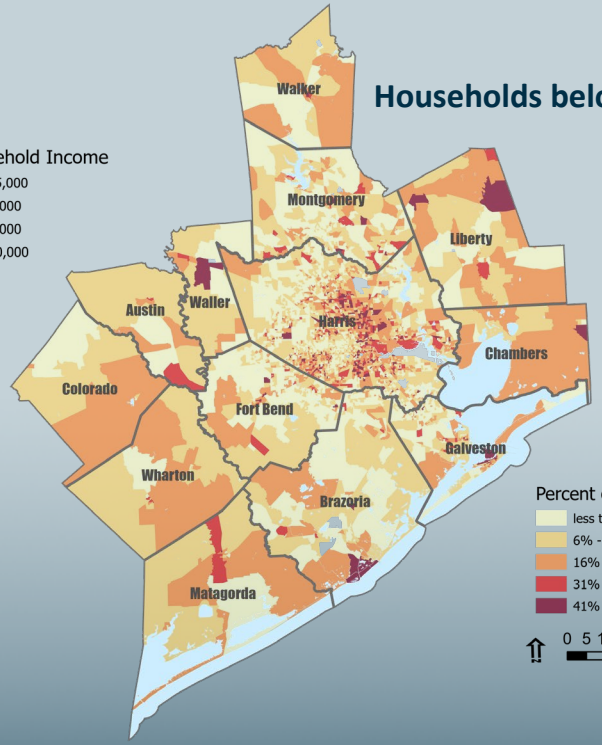
Median Household Incomes



Median Household Income
- Less than 25,000
- 25,001 - 50,000
- 50,001 - 75,000
- 75,001 - 100,000
- 100,001 +

0 5 10 Miles

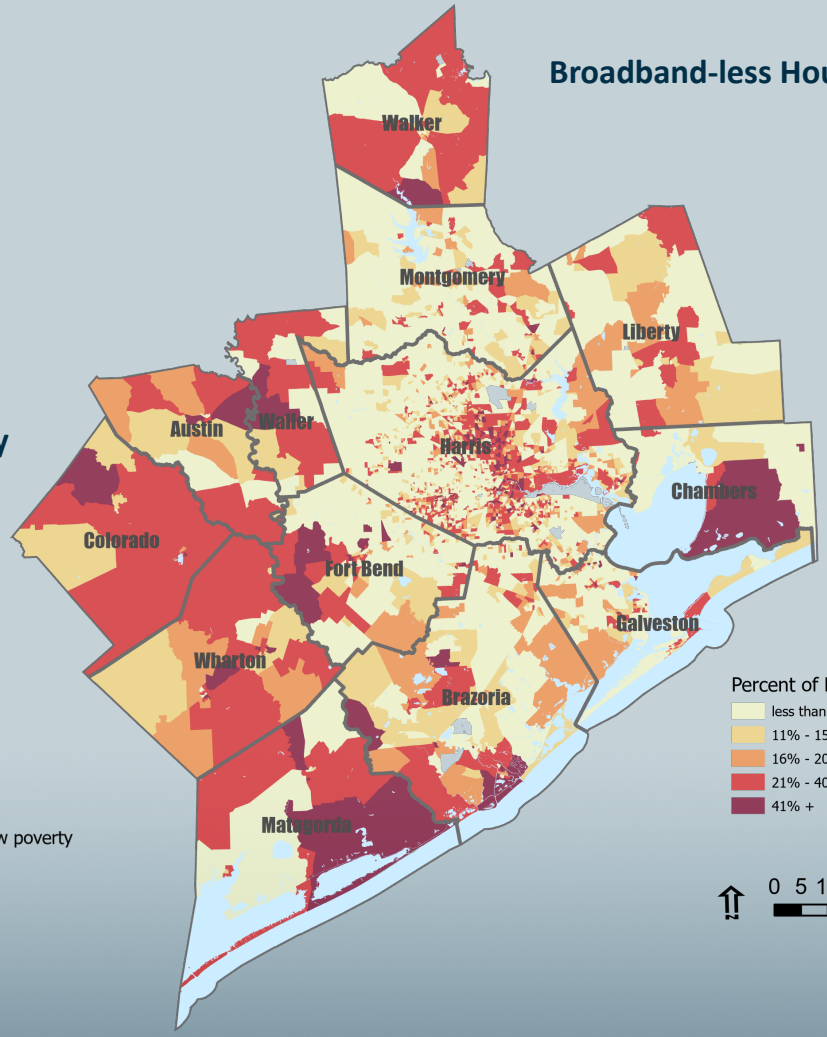
Households below poverty



Percent of Household below poverty
- less than 5%
- 6% - 15%
- 16% - 30%
- 31% - 40%
- 41% +

0 5 10 Miles

Broadband-less Households



Percent of Broadband-less Households (2021)
- less than 10%
- 11% - 15%
- 16% - 20%
- 21% - 40%
- 41% +

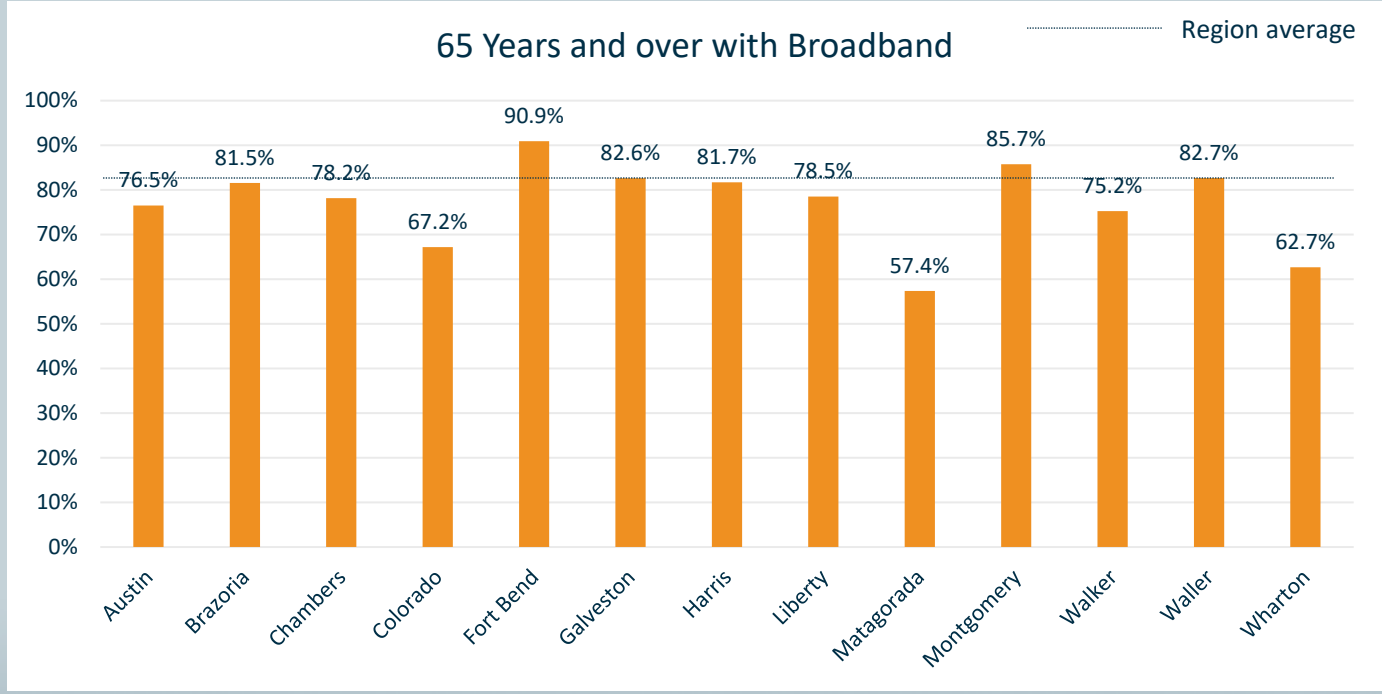
0 5 10 Miles

Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

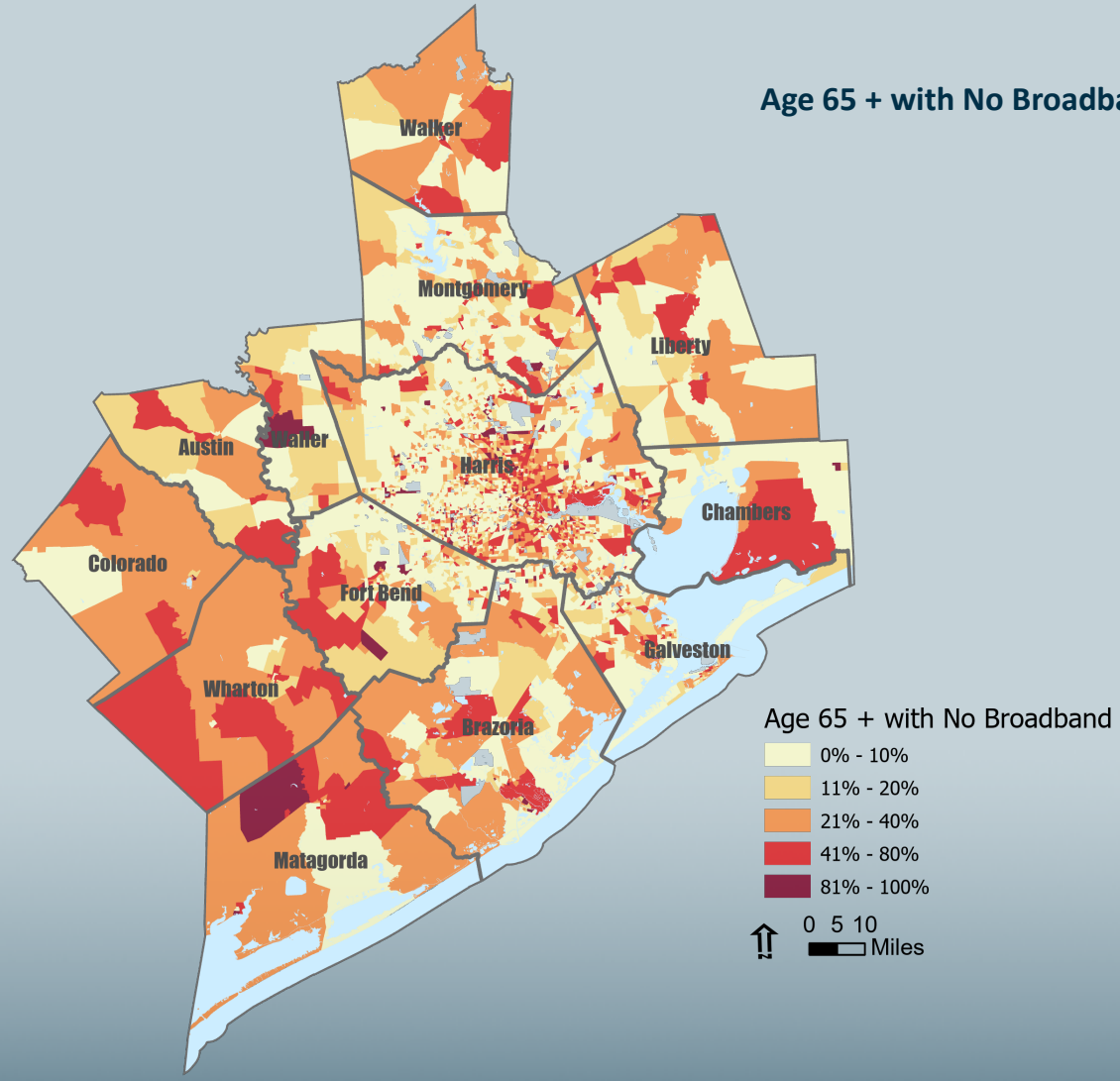
Broadband Adoption by Age

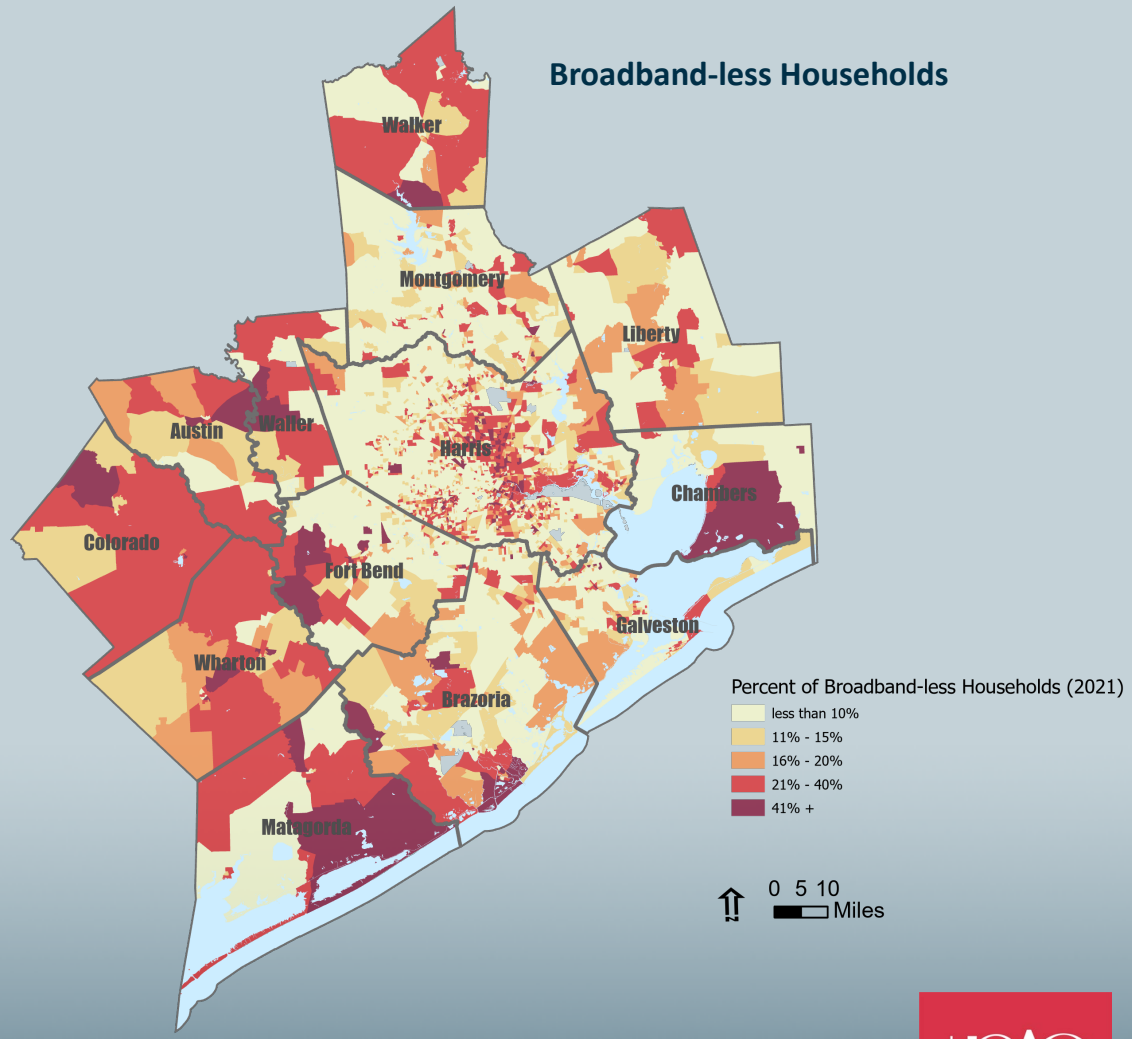
	Under 18 Years	18 to 64 years	65 Years and over
13-County Region	**92.7%**	**91.8%**	**82.6%**
Austin	87.4%	84.4%	76.5%
Brazoria	94.8%	93.8%	81.5%
Chambers	96.9%	94.5%	78.2%
Colorado	91.9%	81.5%	67.2%
Fort Bend	96.0%	95.6%	90.9%
Galveston	95.8%	94.0%	82.6%
Harris	91.6%	90.8%	81.7%
Liberty	94.0%	91.0%	78.5%
Matagorda	79.8%	79.9%	57.4%
Montgomery	95.3%	94.6%	85.7%
Walker	86.9%	88.5%	75.2%
Waller	86.2%	83.7%	82.7%
Wharton	89.3%	85.6%	62.7%
% of Total Population (2021)	26.8%	61.9%	11.3%

Source: Census American Community Survey (ACS) 5-Year Estimates, 2021



65 Year and Over with No Broadband



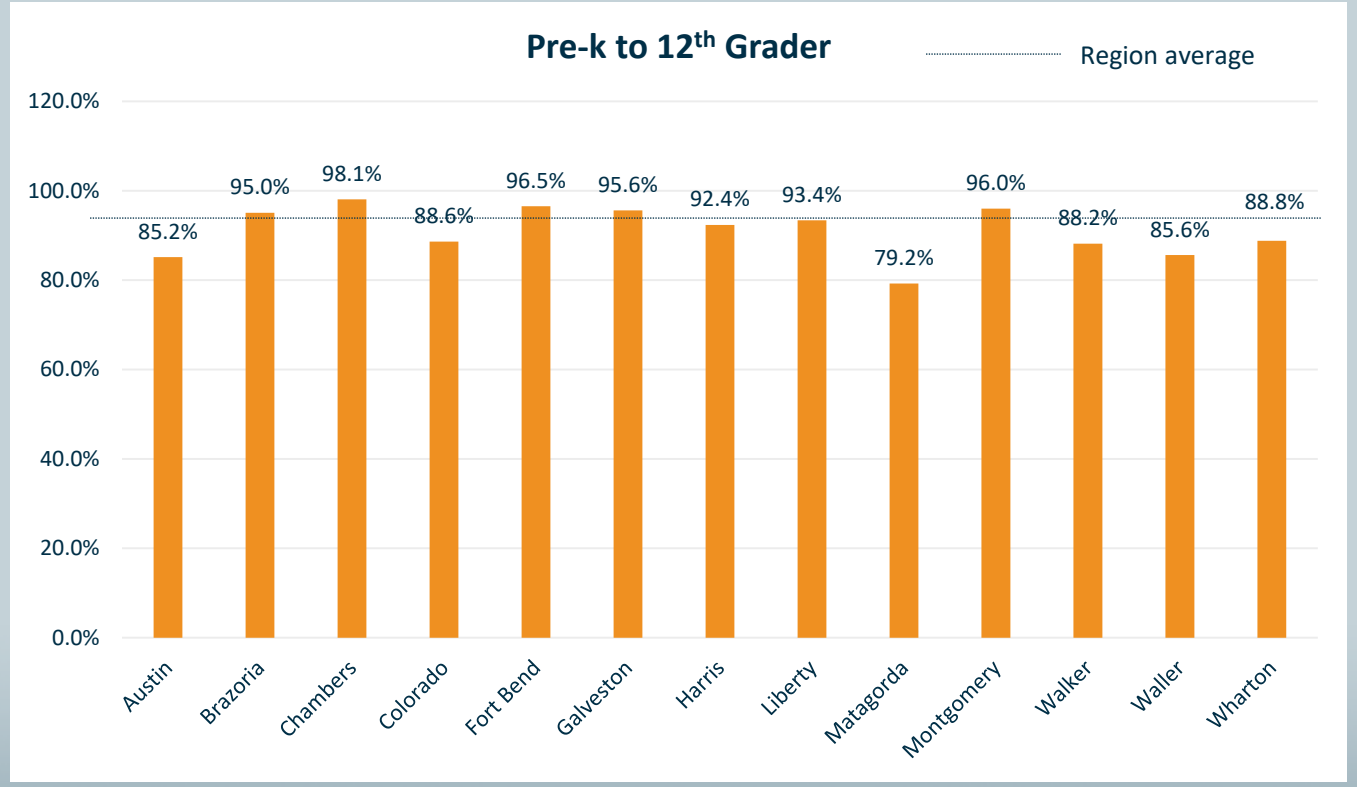


Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

School Age Broadband & Internet Access

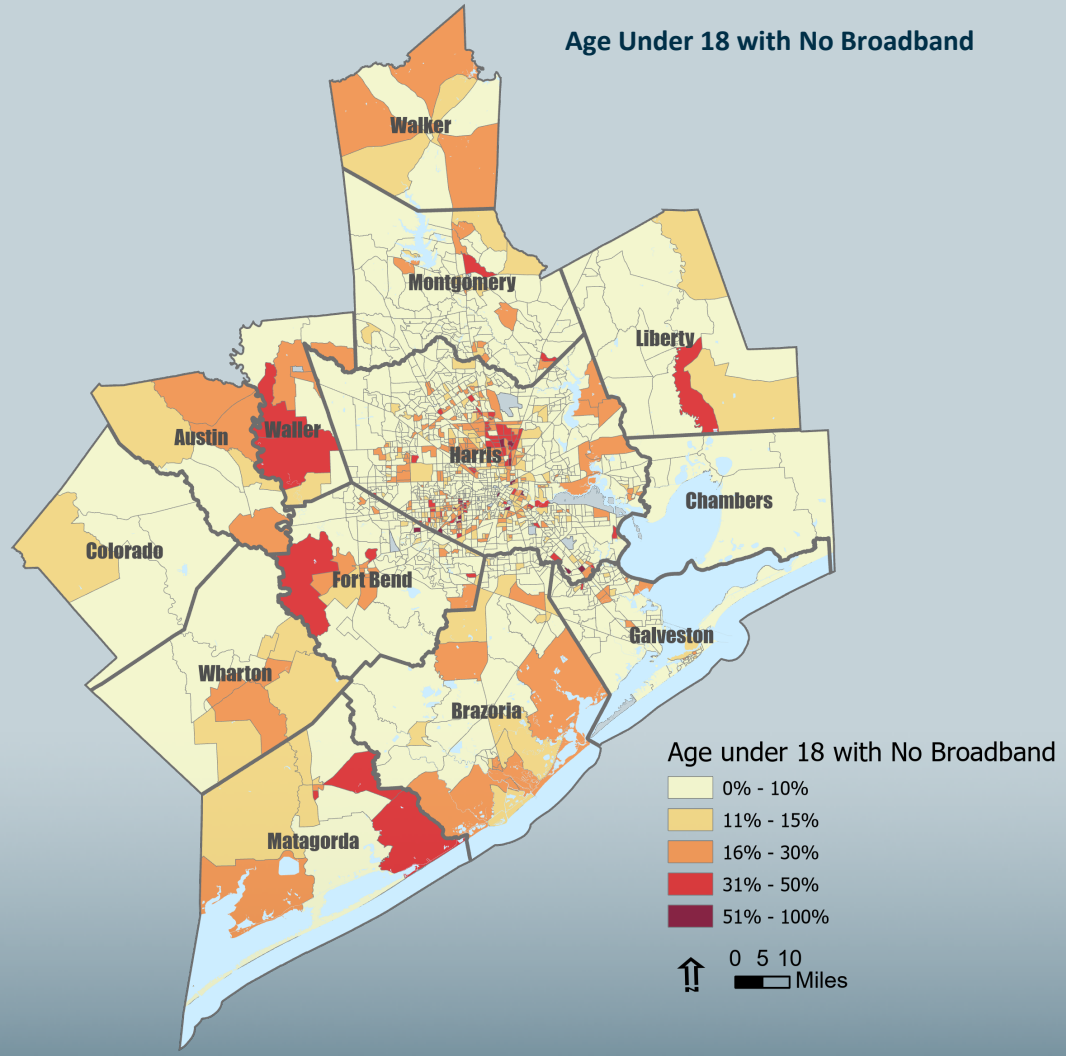
	Broadband Adoption		Computer Ownership & Internet Subscription
	Overall	Under 18 Years	Pre-K to 12th Grader
13-County Region	**89.2%**	**92.7%**	**93.3%**
Austin	81.6%	87.4%	85.2%
Brazoria	90.7%	94.8%	95.0%
Chambers	88.6%	96.9%	98.1%
Colorado	75.1%	91.9%	88.6%
Fort Bend	94.2%	96.0%	96.5%
Galveston	90.6%	95.8%	95.6%
Harris	88.4%	91.6%	92.4%
Liberty	87.0%	94.0%	93.4%
Matagorda	70.2%	79.8%	79.2%
Montgomery	92.5%	95.3%	96.0%
Walker	83.3%	86.9%	88.2%
Waller	80.7%	86.2%	85.6%
Wharton	77.7%	89.3%	88.8%

Source: Census American Community Survey (ACS) 5-Year Estimates, 2021

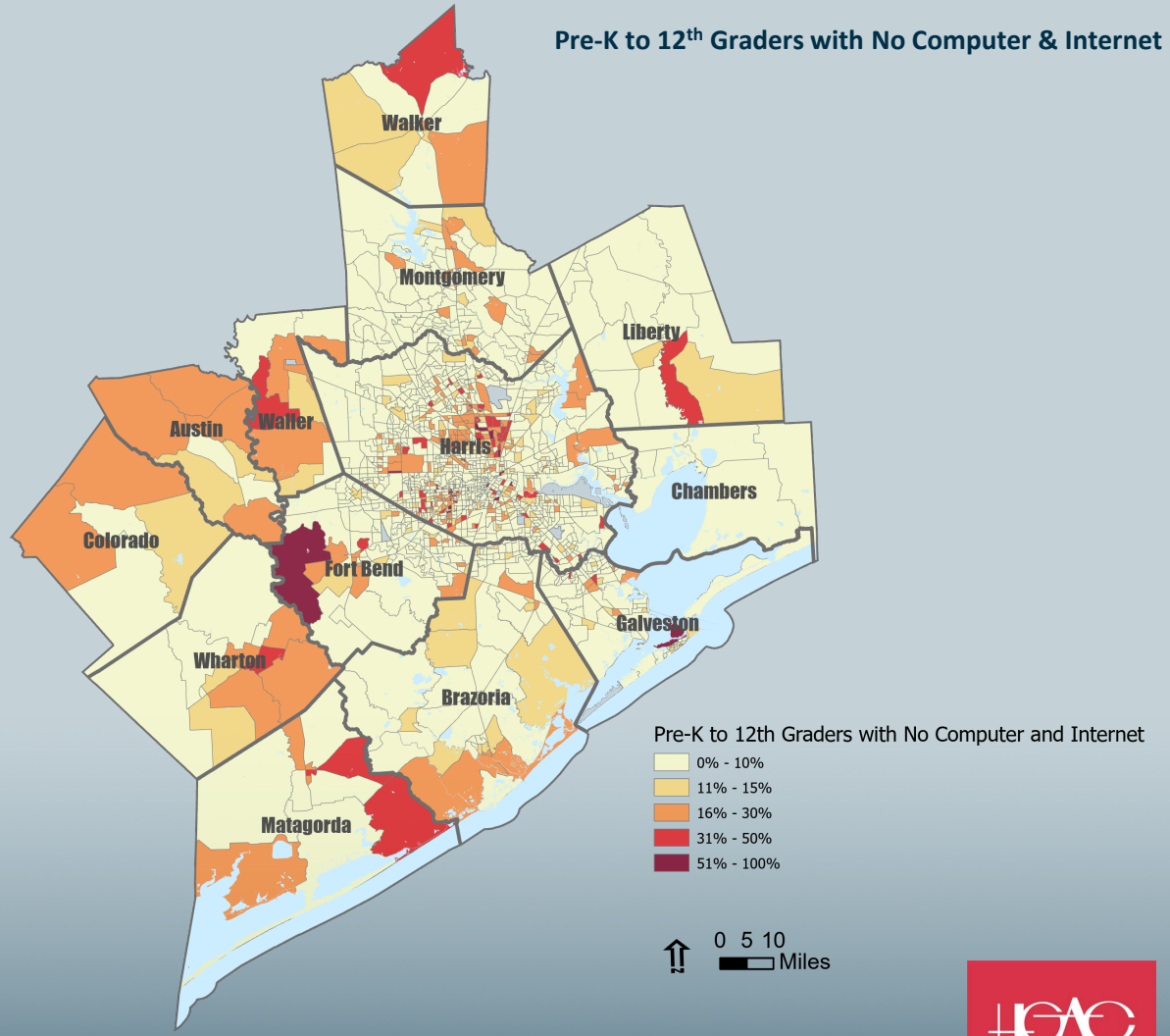


School Age Broadband & Internet Access

Age Under 18 with No Broadband



Pre-K to 12th Graders with No Computer & Internet



Summary

- Increased availability of terrestrial services enhances broadband adoption rates.
- Broadband adoption is lower in areas dependent on cellular data only or with a higher share of satellite services.
- Even with expanding broadband access in the region, low-income households still face considerable entry barriers.
- The 65+ age group has the region's lowest broadband adoption, with a strong correlation to households with no broadband. About 140,000 seniors don’t have broadband connection at home (2021).
- While school-aged broadband adoption exceeds the regional average, the concentration of school-aged population without access to broadband and resources remains an issue. Nearly 100,000 students from Pre-K to Grade 12 do not have a computer and internet subscription at home and 140,000 under the age of 18 do not have a broadband connection (2021).

Contact Information

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Houston-Galveston Area Council
Email: Sungmin.Lee@h-gac.com

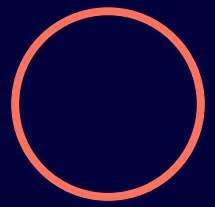
Broadband Enhancement & Digital Equity Initiatives

Mission Complete: Broadband Infrastructure Deployment

Service	Service Description	Output	Demand	What's Next?
Wireless Devices	• Emergency Connectivity Fund • Over 40,000 devices deployed since March 2020	Residents w/ need and students	• 16k unique users w/ access set to expire December 23	> Address short-term needs with a laser-focus on long-term transformation
Enterprise Public Wi-Fi	• 67 County locations managed • 24 HCPL sites w/ US firewall services	15 County depts & agencies Served	• 16,000 unique users in CY23 (Q1) • 65,000 unique users in CY22 • 26,000 unique users in CY21	> Transition service and cost center to Harris County IT Network Enterprise for continuing maintenance & operations responsibility
LTE Network	• 29 Broadband LTE Antennas • Serves 10 school districts	47,076 Households Served	• 98.78% network uptime in FY23	> Process of discovery underway as a component of Broadband Enhancement Project

Enterprise Network	• 500+ County locations on leased wide area network w/ multiple providers
	• Growing data transport demand w/ shift to virtual
		76 County depts & agencies	• Avg. Monthly (as of Q4 2022)
			  • Upload- 878 Gbps
			  • Download- 10,080 Gbps
				> Process of discovery underway as a component of Broadband Enhancement Project

Central Driving Question:



What’s Next?

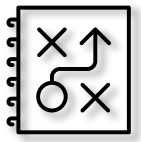
Statutory Priorities of Bipartisan Infrastructure Law: Broadband Programs

Open Access Middle-Mile Networks Are Priority Link to Last-Mile Services

Increase Broadband Availability in Unserved and Underserved Areas

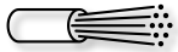
Structural Competition creates Material Reduction in Broadband Prices

Increased Opportunity for Minority Business Enterprises

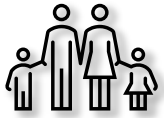


New FCC National Broadband Maps for consumers to challenge data, enable regular updates based on boots-on-the-ground data

Strong position for local governments to measure and address their own broadband needs



Change in statutory definition of Broadband to align with real-world experience. This increases speed threshold to 100/20 Mbps from 25/3 Mbps



Enforcement mechanisms exist to provision affordable broadband service, especially for the benefit of underserved communities. Enables long-term approach for one-time funded Affordable Connectivity Program

Digital Equity Act provides digital skills training and education to low-income and other priority populations. Improves online accessibility of social services for individuals with disabilities

Broadband is a necessary component of other renewable energy, advanced transportation, and electric vehicle infrastructure projects

Enabling Innovation & Digital Transformation

Harris County Engagement & Outreach Network	Countywide Infrastructure Investment Opportunities Project Team	Broadband & Digital Equity Working Group	Texas Cities and Counties Broadband Collaborative

Created the Texas City and County Broadband Collaborative to coordinate shared public-interest position for broadband & digital equity efforts (5 planning regions, 16 of Texas' most populous cities and counties = 70% of the Texas population).

Initiated the Countywide Infrastructure Investment Project Team to provision transformational projects with Precincts, County departments, and members of the community, this includes a recent SMART Infrastructure project to deliver a $2 MIL grant award for the early road flood warning system project with Precinct 2, Office of County Engineer, Sustainability Office, Flood Control, and Community Services Department.

HARRIS COUNTY OUTREACH & ENGAGEMENT NETWORK

Created Harris County Outreach and Engagement Network to elevate staff awareness of the outreach and engagement projects within the Harris County organization. This network focuses on community engagement efforts throughout the County to elevate public assistance services available.

Manage the Broadband & Digital Equity Working Group to support the development and implementation of 5-year action plans required from BEAD, to enhance infrastructure objectives, and improve digital literacy/workforce development objectives.

HARRIS COUNTY TEXAS

Infrastructure

Public Private Partnership with Broadband Providers

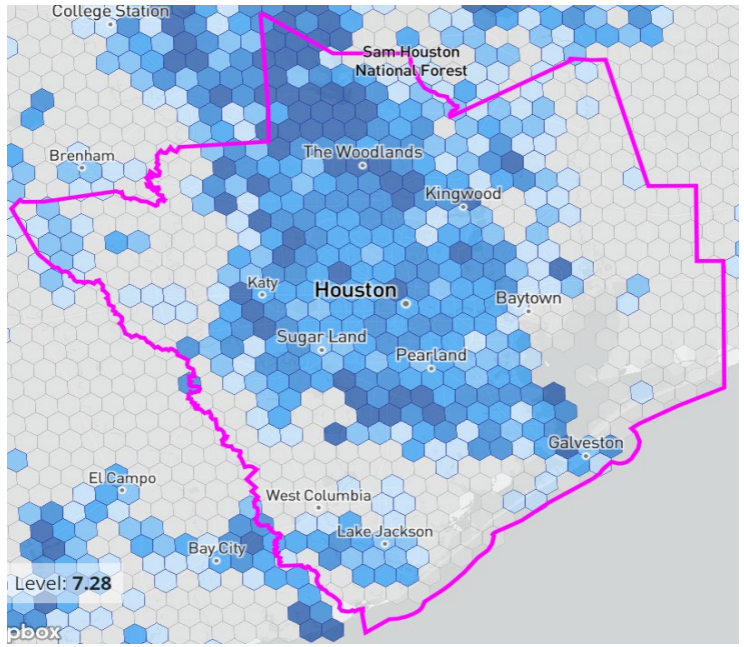
Public Need Exists to Ensure Broadband Availability for All, Not Just Some

NTIA grants prioritize:
Unserved <25/3
Underserved <100/20
Community Anchor Institutions

Harris County is 100% served, with any technology, at the previous broadband speed threshold at 25/3.

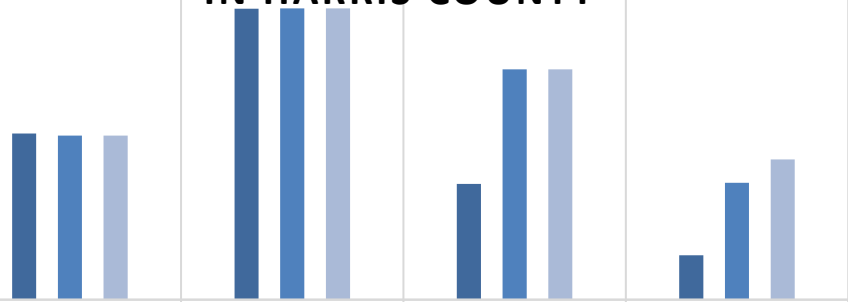
Harris County is 98.5% served, with any technology, at new broadband speed threshold at 100/20.

NTIA grant allocations do not include unlicensed wireless and satellite service, these are classified as unreliable.

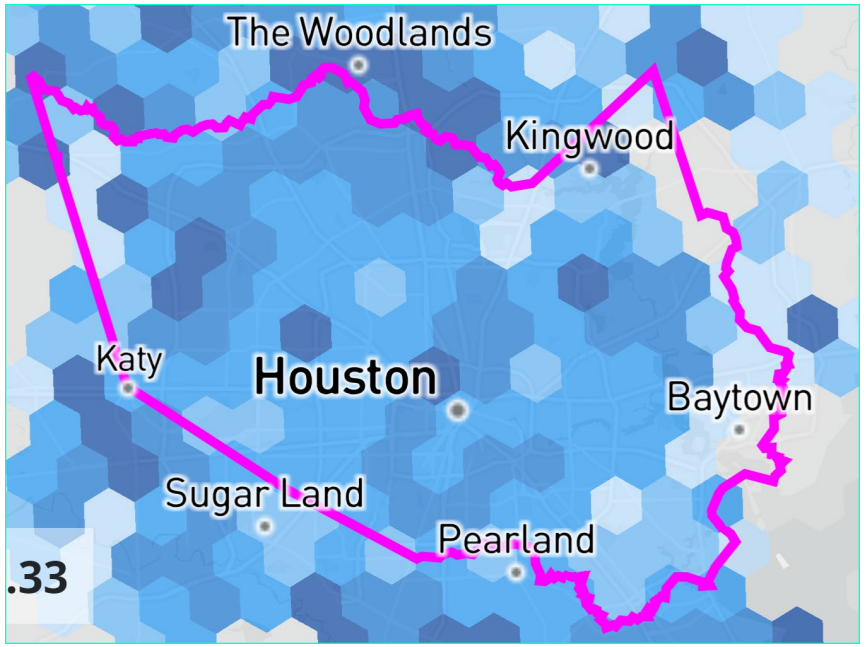


FCC National Broadband Map of Fiber availability in the Houston-Woodlands-Sugarland MSA

% RESIDENTIAL BROADBAND AVAILABILITY IN HARRIS COUNTY

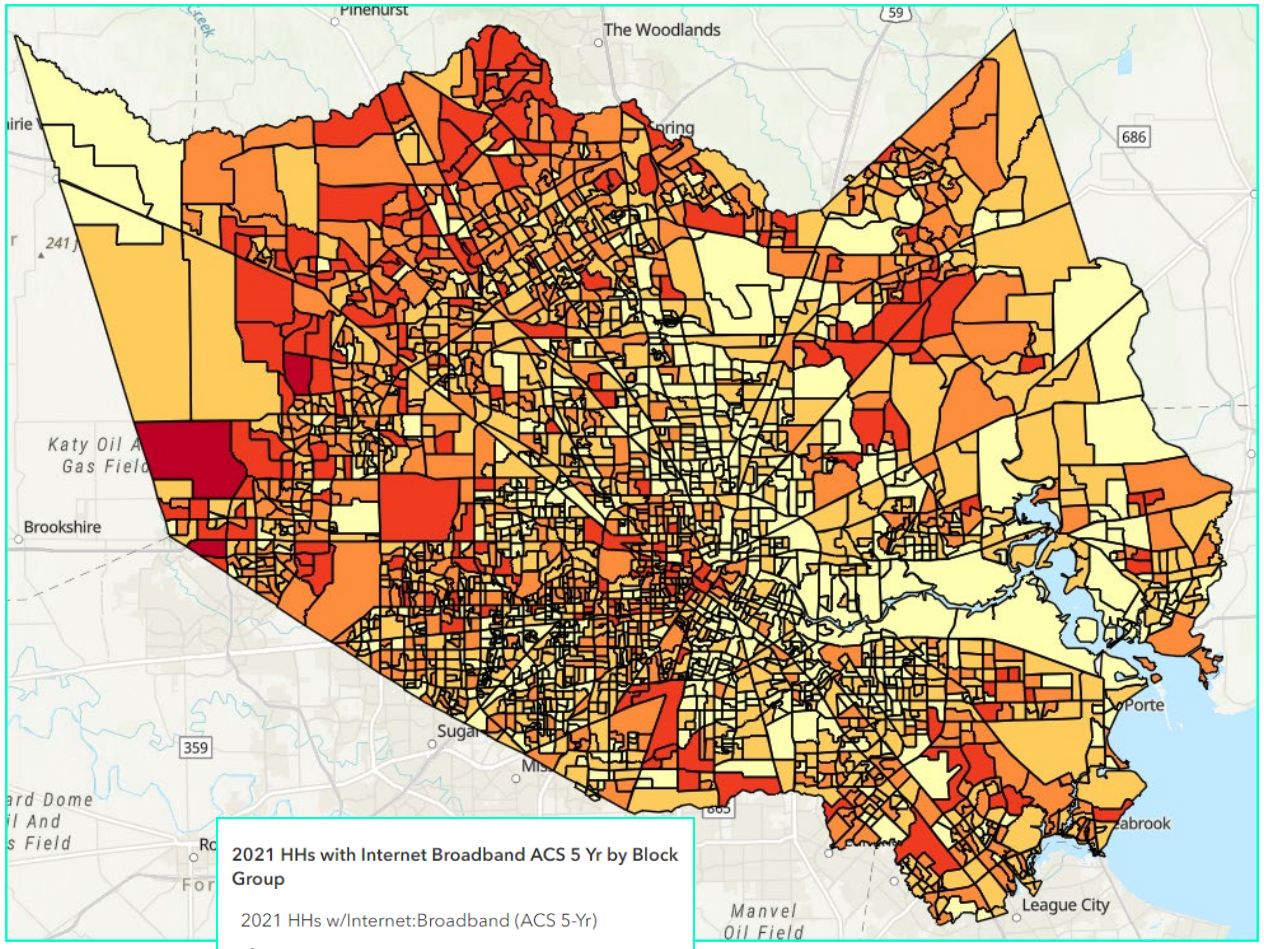


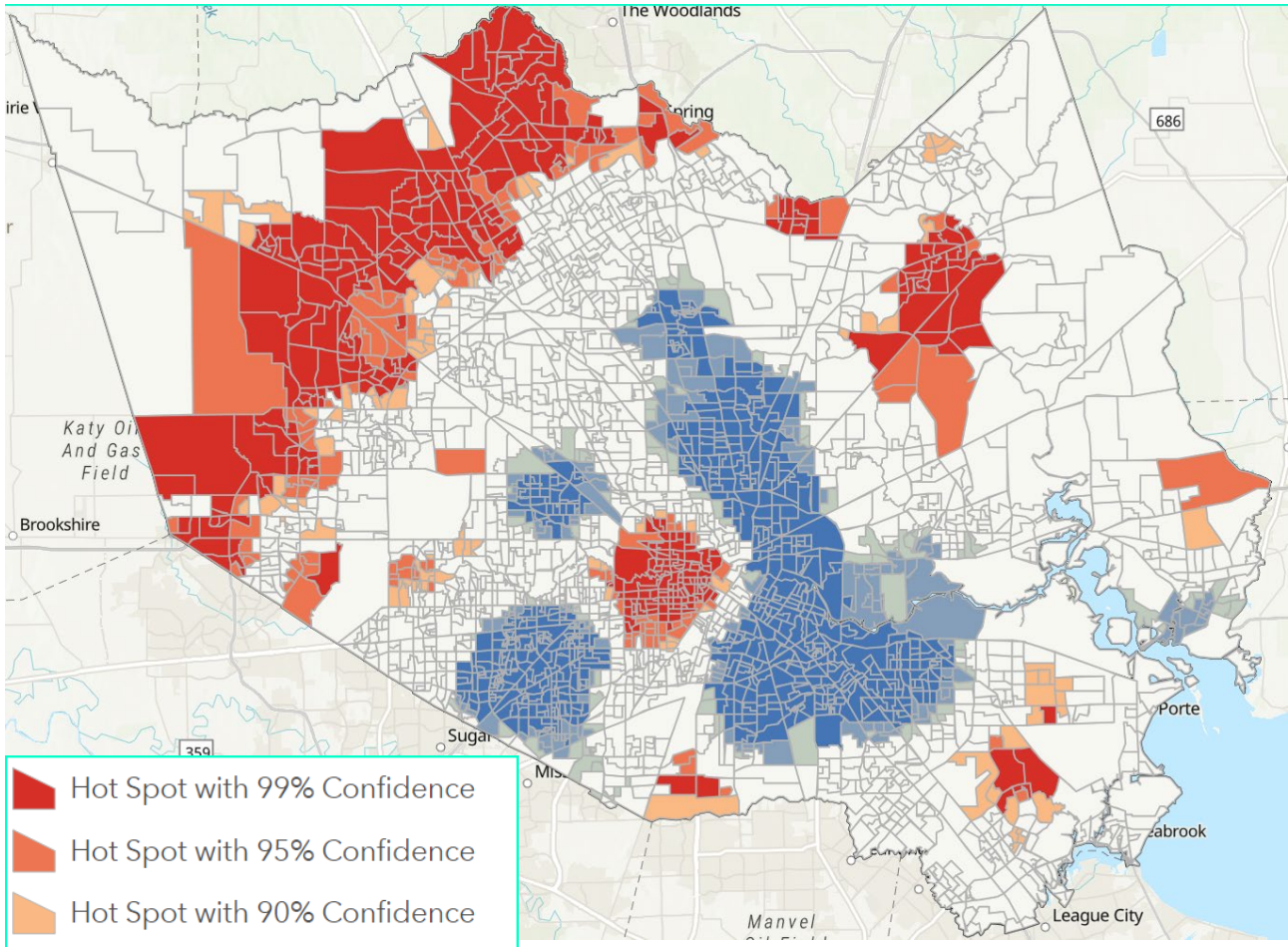
	Fiber	Cable	Licensed Wieless	Copper
100/20	54.8	95.91	38.15	14.62
25/3	54.11	96.02	75.94	38.51
>10/1	54.11	96.02	75.94	46.23



FCC National Broadband Map of Fiber availability in Harris County

Broadband Key Indicators: ACS 2021: Households with Broadband Subscriptions





Infrastructure

Broadband Enhancement Project

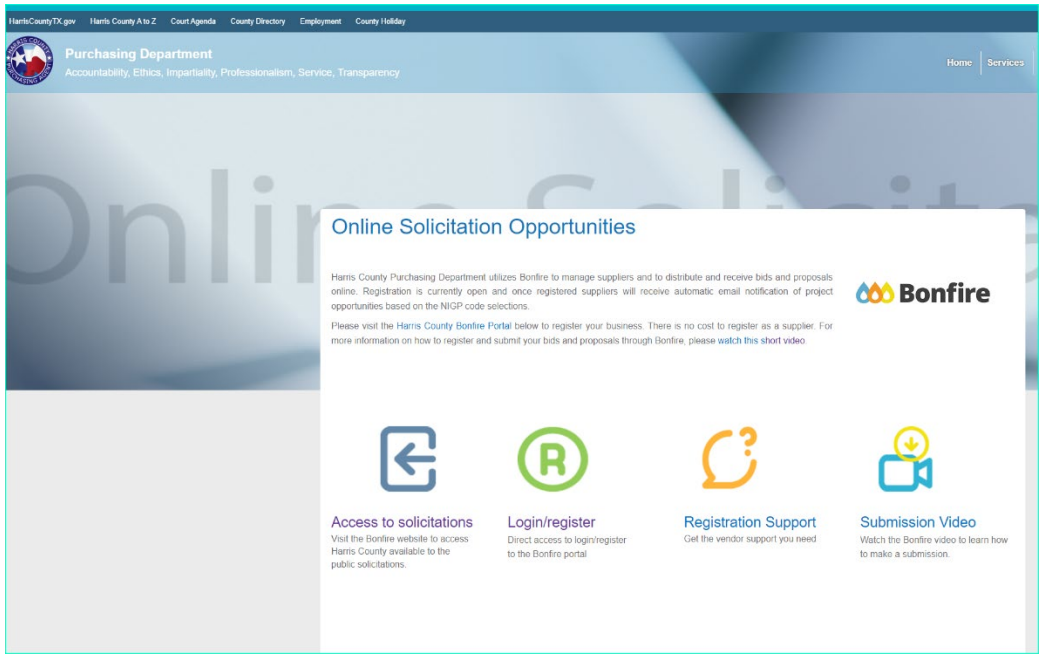
Broadband Enhancement Project

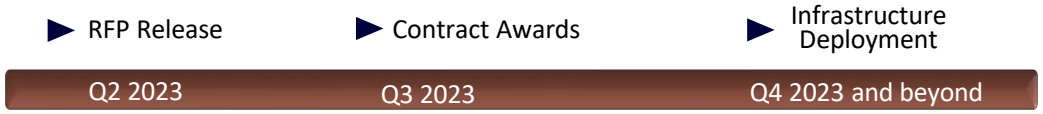
The Office of Broadband is currently preparing for the release of a competitive procurement to deploy broadband infrastructure and broadband services to the county constituents, prioritizing unserved and underserved areas.

purchasing.harriscountytx.gov/

- The Harris County Purchasing Department utilizes Bonfire to manage suppliers and to distribute and receive bids and proposals online. Registration is currently open and once registered suppliers will receive automatic email notification of project opportunities based on the NIGP code selections.

- Please visit the Harris County Bonfire Portal below to register your business. There is no cost to register as a supplier. For more information on how to register and submit your bids and proposals through Bonfire, please watch this short video.

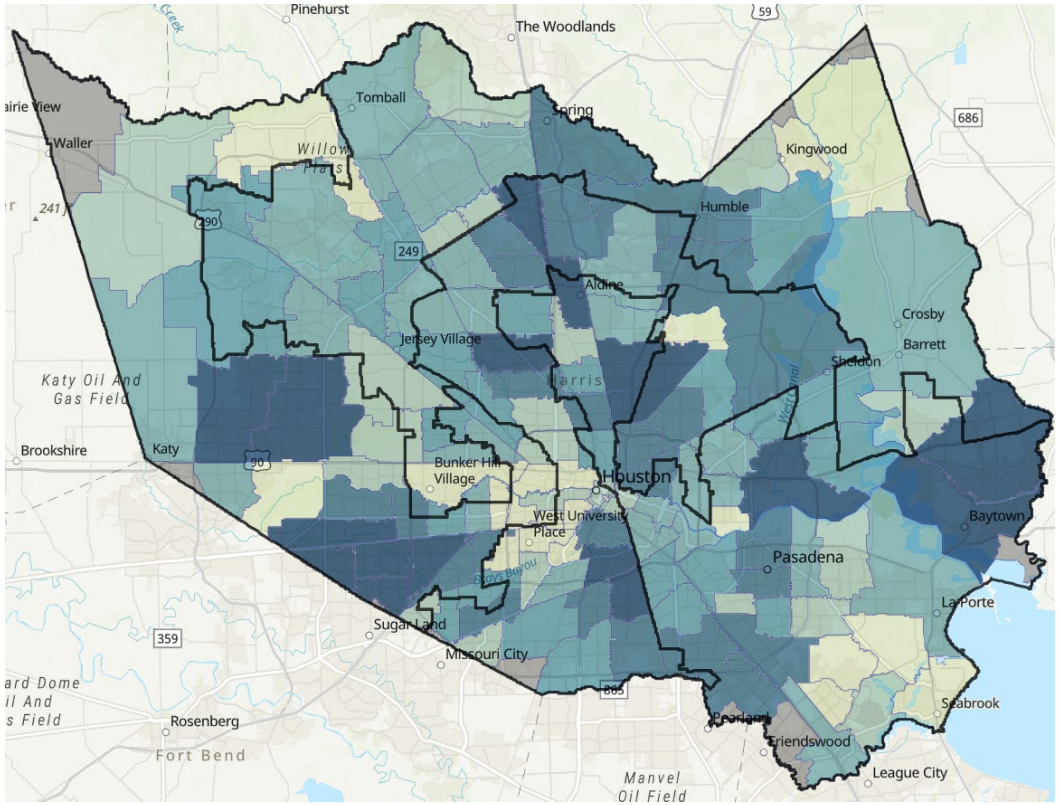




People

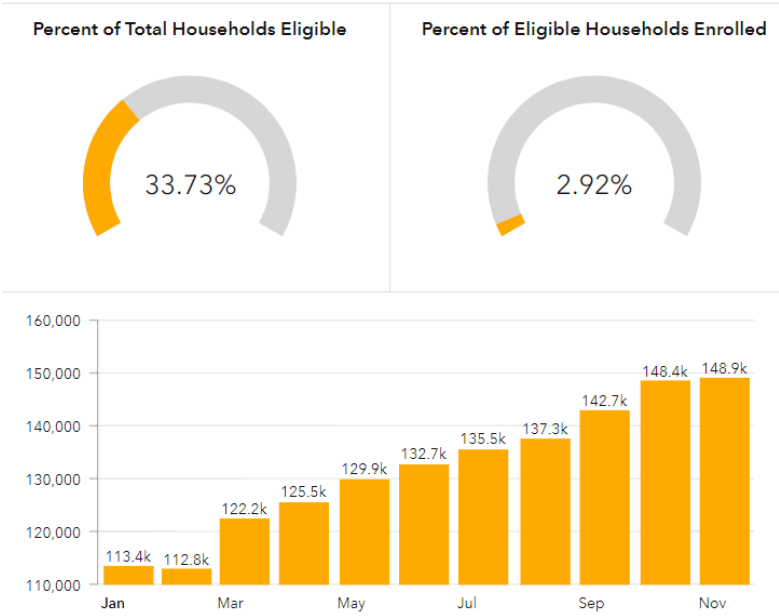
Empower Community to Develop Innovative Solutions

Affordable Connectivity Program



Harris County ACP Enrollment (2022)

148,875 Households Enrolled
out of
560,713 Households Eligible



Current Reach

The $1.6M Affordable Connectivity Grant Program will provide **train-the-trainer services** to community-based organizations for the **Affordable Connectivity Program** with a target to enroll **37,000 households.**

Outreach Approach

Digital Navigators Project will connect residents with ACP resources, and other public assistance through a **Community Resource Task Force**.

Digital Navigators will play a key role as trainers for community-based organizations, ensuring that these organizations are knowledgeable about the services available to residents to sustain the longevity of resources.

This will also enhance coordination among County departments and external partners, thereby elevating the affordable connectivity program through the utilization of new and existing navigator resources.

Digital Literacy

Digital Navigators

Affordable Internet

Access to Devices

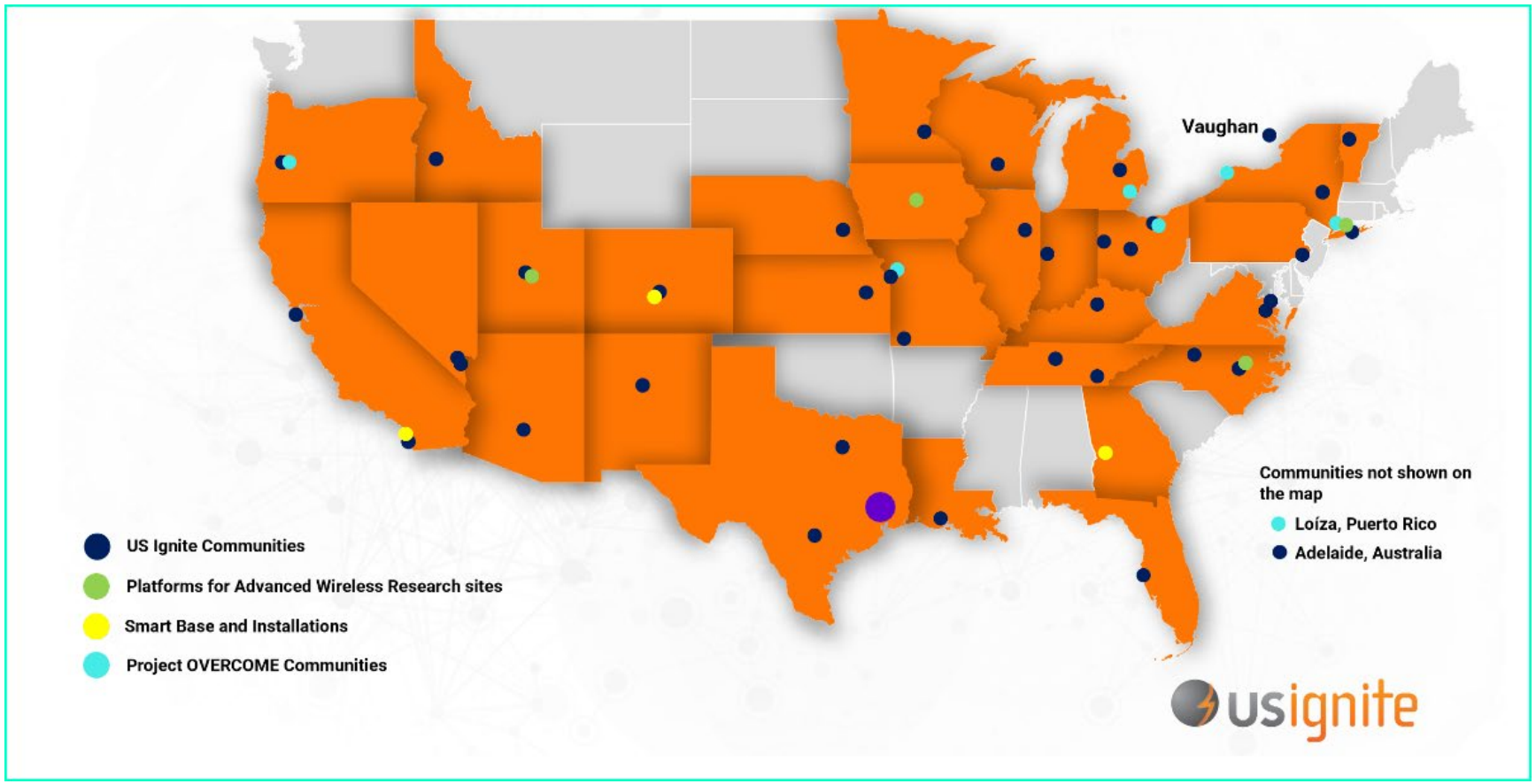
Harris County Joins US Ignite Communities

Developing and deploying next-generation internet technologies

Better serve and help people in our community

Share with other communities in the Gulf Coast region

Scale our innovation ecosystem



Coalition of Stakeholders to Coordinate and Inform Digital Equity Work

Partnerships require a complex level of engagement between government, industry, academia, and community advocates

Local gov often needs support to align innovative public solutions with procurement processes

Outcome-driven and applied regionally to advance broadband and digital equity in the Gulf Coast

Accelerator to envision, launch and build advanced technology solutions

Our Goals

- Collaborate and develop sustaining partnerships
- Be a facilitator
- Bring structure to a fragmented ecosystem of stakeholders
- Align funding to needs
- Enable market signals for the private sector

Regional Approach Adds Value to Participating Cities & Counties

- Buying power benefits rural neighbors in the region
- Open access middle-mile infrastructure is a crucial component to achieve economic vitality
- Cost Effective to Leverage Shared-Procurements

How might we balance the competing interests of cities and counties against the benefits of working together?

Fin

Lunch Presentation: Best Practices

- Ty Beauchamp – Integrated Library System Manager, Houston Public Library

Harris County Public Library System

- Bridging the digital divide and providing digital navigation services before the terms were coined
- Public PCs, digital literacy programming, technology assistants on staff
- Largest ECF distribution by a public library in the US

HARRISCOUNTY
PUBLICLIBRARY
your pathway to knowledge

Three Pillars of Digital Equity

1

Internet Connectivity

2

Devices

3

Digital Literacy

HARRIS COUNTY PUBLIC LIBRARY
your pathway to knowledge

ECF Distribution: Round One

Guardrails came down with barriers

System open for abuse

No one understood the program

ECF Distribution: Round Two

Pair distributions with training sessions

Leverage scheduling platform

Switch vendors

HARRIS COUNTY PUBLIC LIBRARY
your pathway to knowledge

Lessons Learned

No one pillar survives without the others

Narrow and deep beats shallow and wide

Listen to the folks close to the ground

Digital Navigators grant?

HARRIS COUNTY PUBLIC LIBRARY
your pathway to knowledge

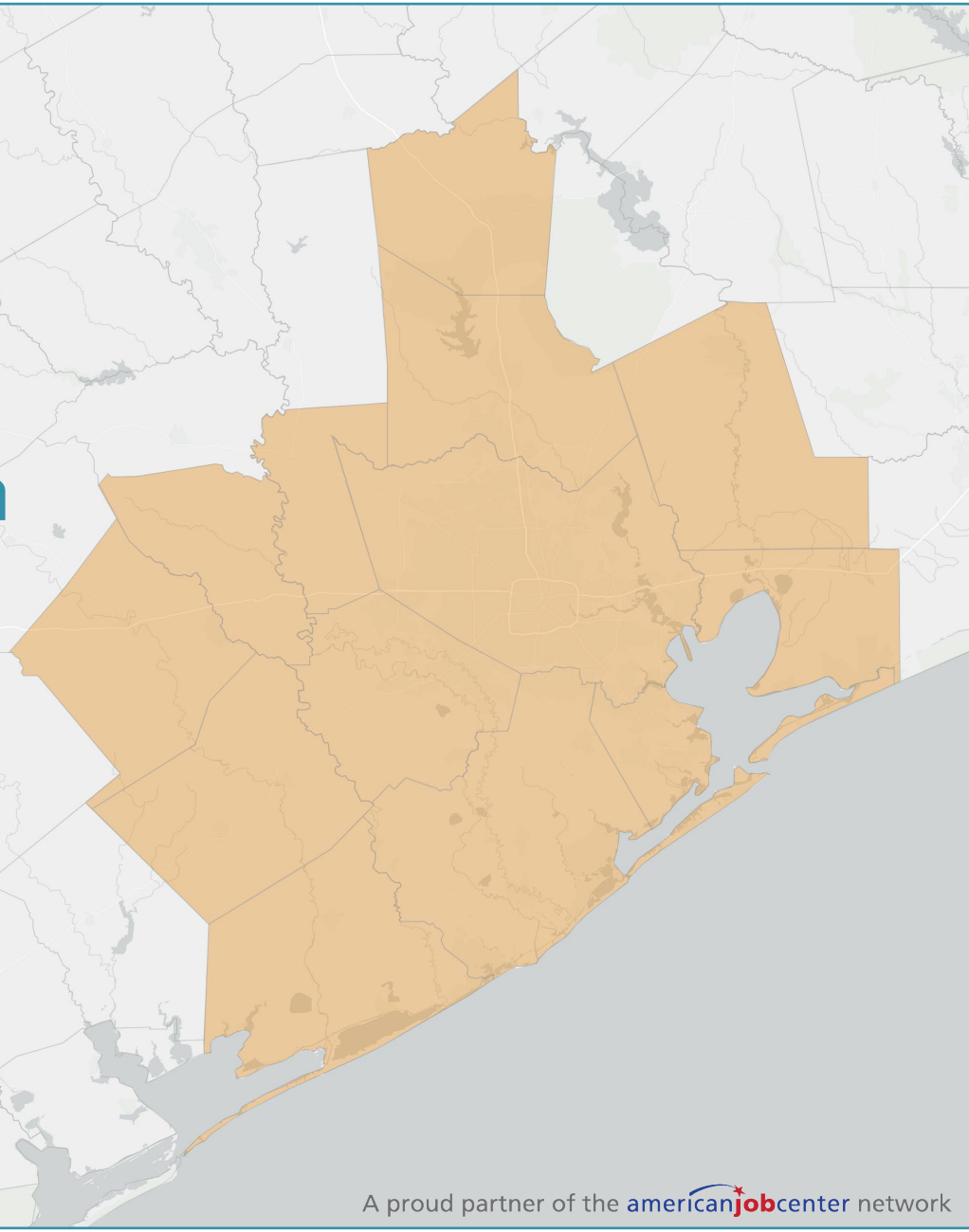
Lunch Presentation: Workforce Solutions

- Parker Harvey – Manager for Regional Economic Analysis, Houston-Galveston Area Council

Workforce Solutions

Labor Market Analysis:

Broadband-related Employment in the 13-County Gulf Coast Region



Topics

Part 1: Broadband-related industries

Part 2: Broadband-related occupations

Part 3: Occupation supply-demand dynamics

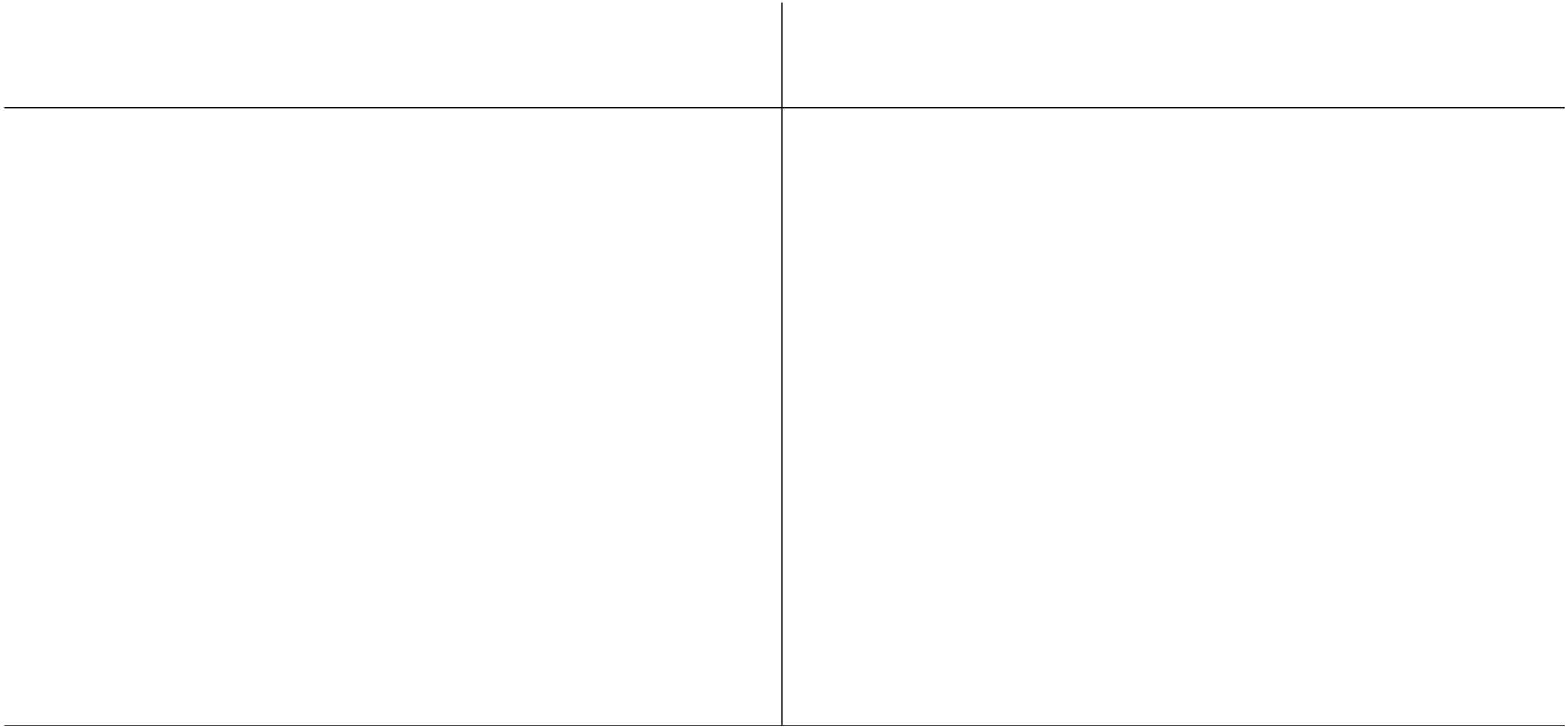
Part 4: Potential job creation and tax revenue from grant funding

Workforce Solutions

Part 1:

Broadband-related Industries

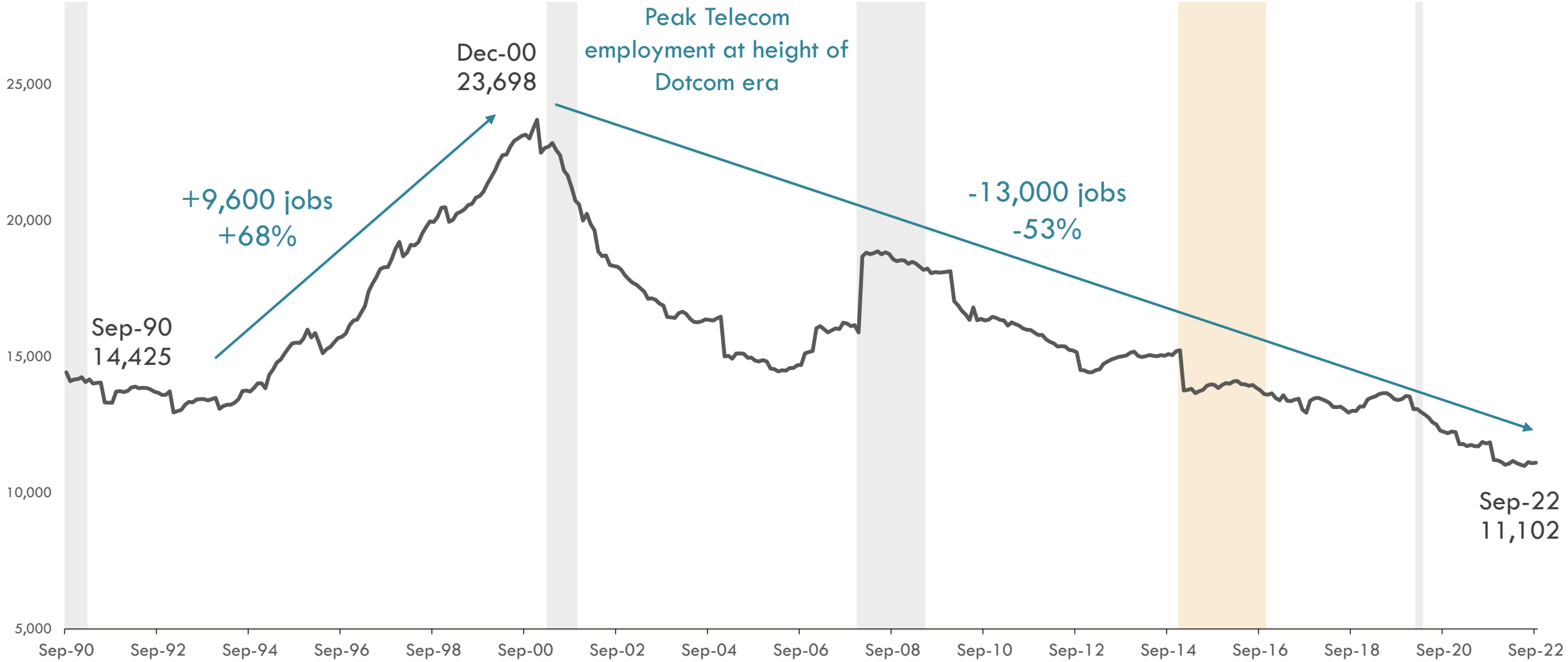
Defining Broadband-related Industries



Source(s): BLS/TWC QCEW; Census

Workforce Solutions

QCEW – Gulf Coast Telecommunication Services* Employment
Sep1990 – Sep 2022

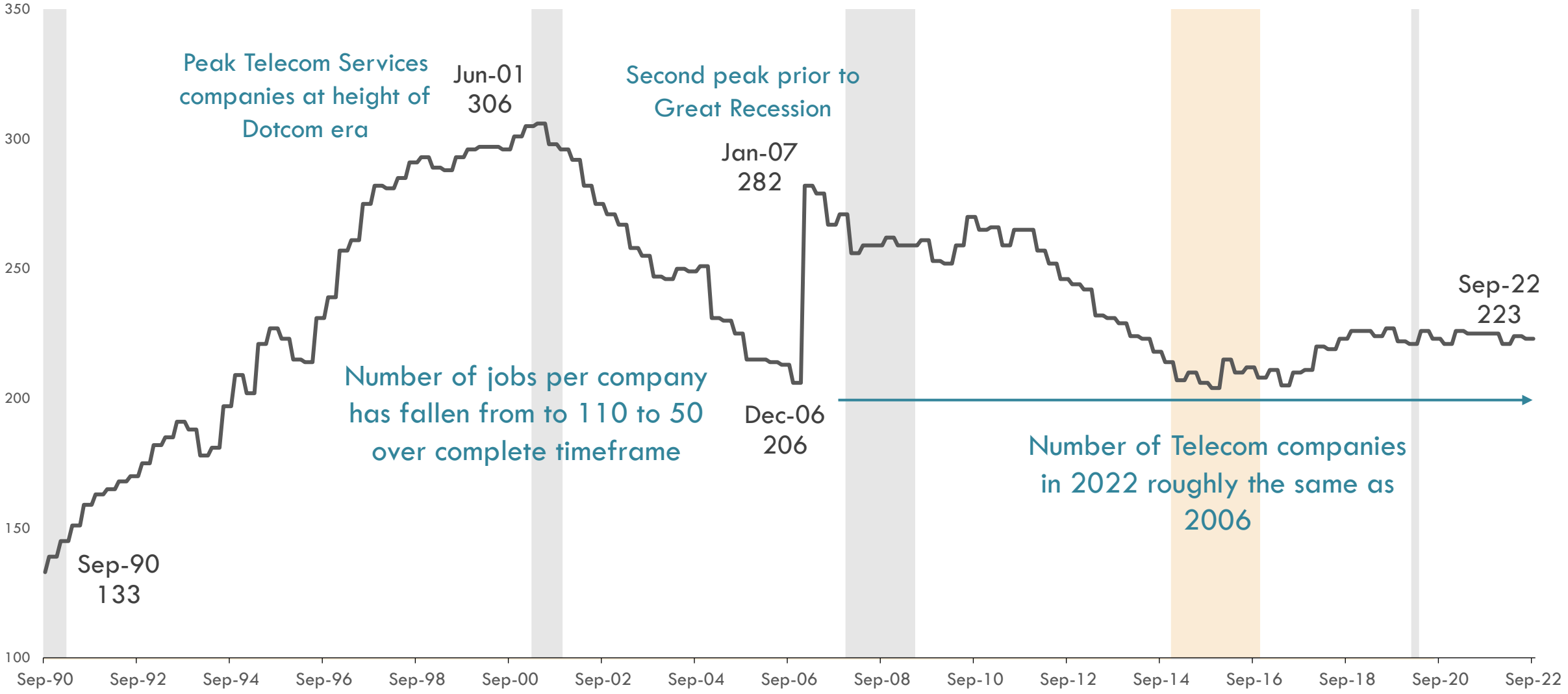


*Telecommunication Services employment is defined as NAICS 517 Telecommunications. Note that multiple telecommunications component 4-digit industries that comprise 517 Telecommunications have received multiple reclassifications since 1990 with some being newly created, discontinued, combined, and/or replaced.

Source: QCEW via TWC LMCI Division

Workforce Solutions

QCEW – Gulf Coast Telecom Services Companies
Sep1990 – Sep 2022

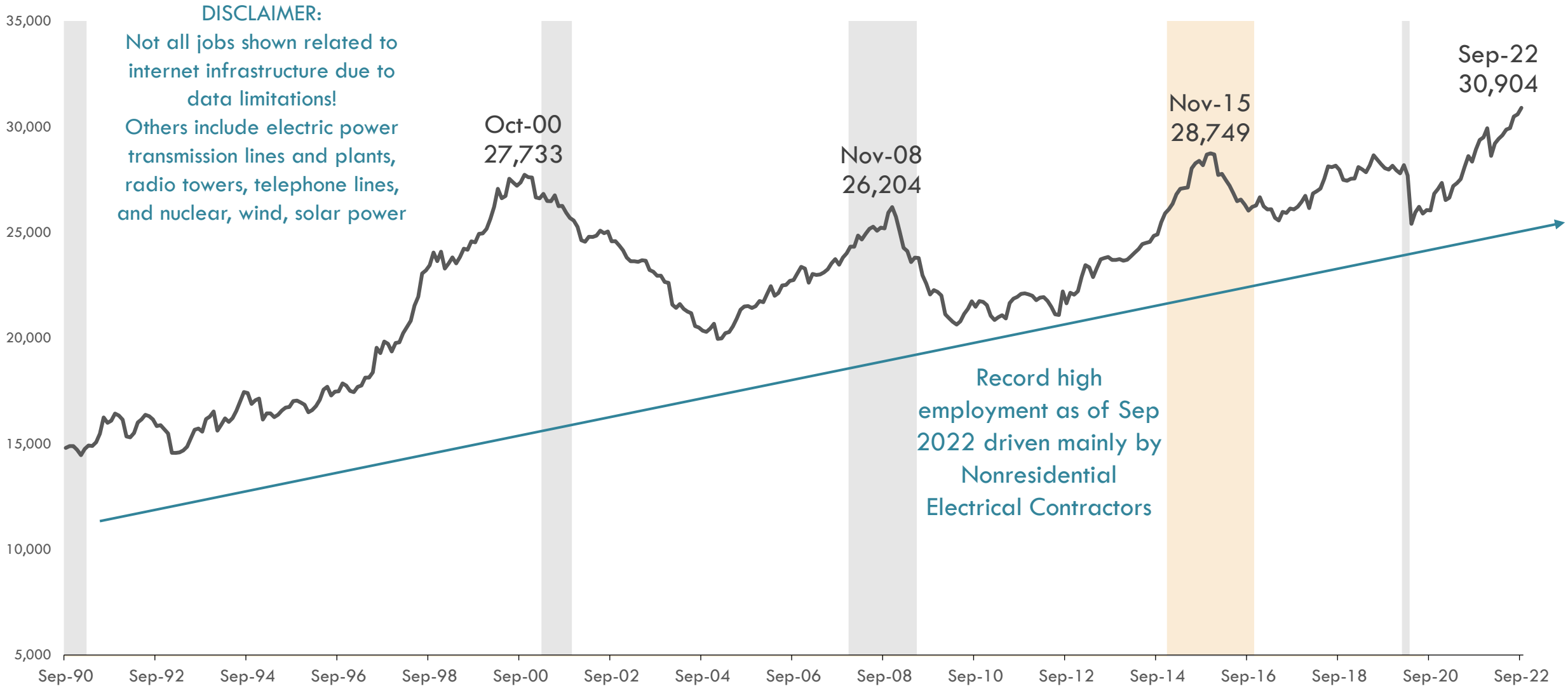


*Telecommunication Services employment is defined as NAICS 517 Telecommunications. Note that multiple telecommunications component 4-digit industries that comprise 517 Telecommunications have received multiple reclassifications since 1990 with some being newly created, discontinued, combined, and/or replaced.

Source: QCEW via TWC LMCI Division

Workforce Solutions

QCEW – Gulf Coast Telecom Construction and Installation Employment*
Sep1990 – Sep 2022

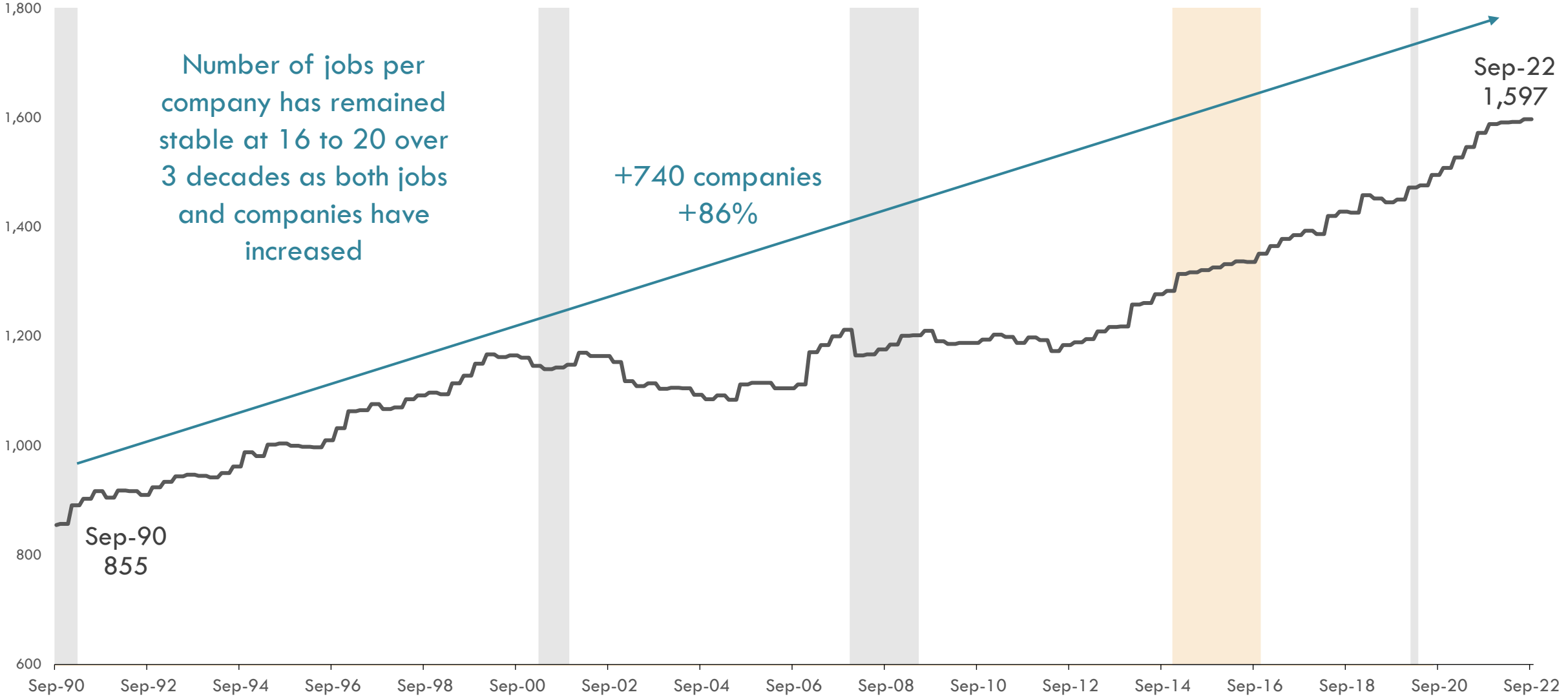


*Telecom-related Construction and Installation employment is defined as 237130 Power and Communication Line and Related Structures Construction, 238211 Residential electrical contractors, and 238212 Nonresidential electrical contractors. Note that not all employment in these 6-digit industries directly supports internet infrastructure due to the general nature of the construction industry

Source: QCEW via TWC LMCI Division

Workforce Solutions

QCEW – Gulf Coast Telecom Construction and Installation Companies*
Sep1990 – Sep 2022



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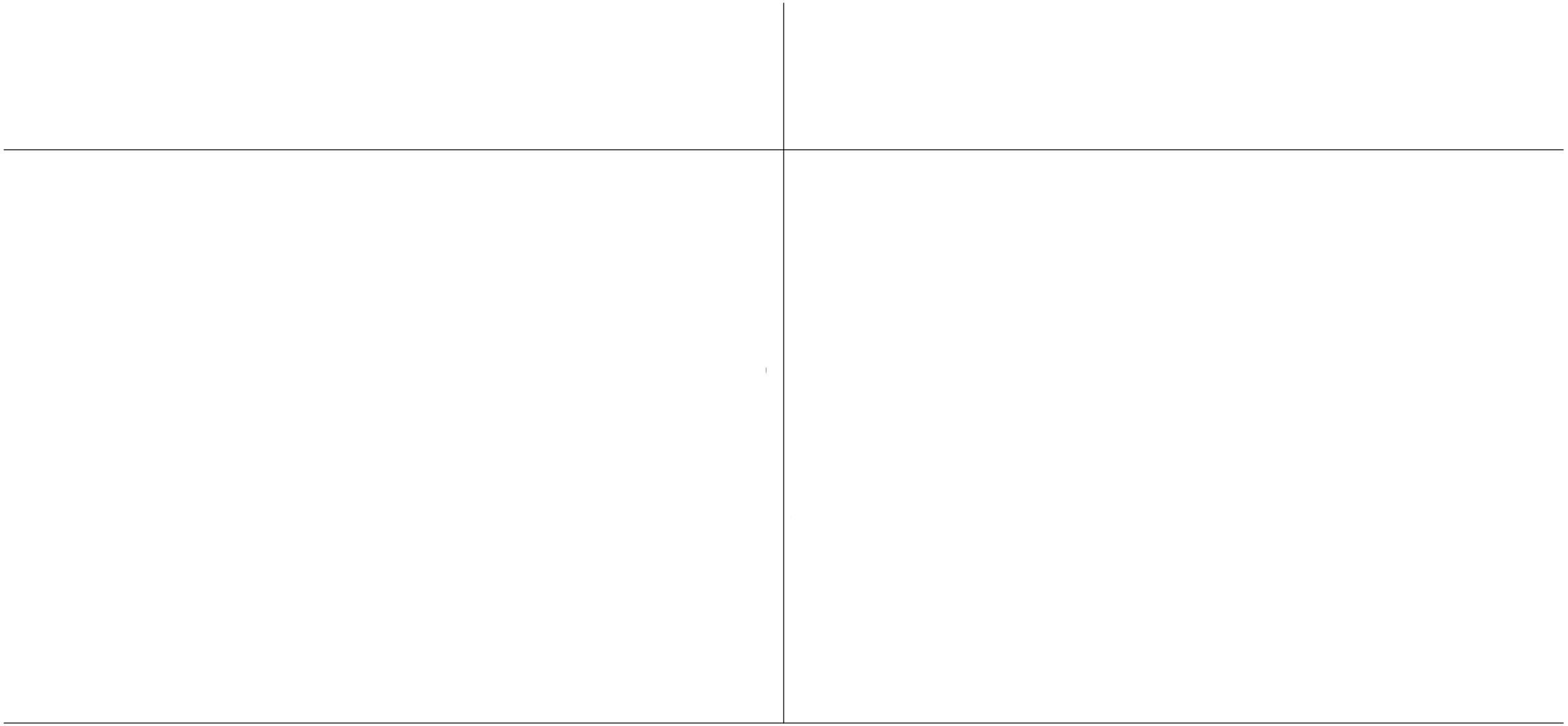
Source: QCEW via TWC LMCI Division

Workforce Solutions

Part 2:

Broadband-related Occupations

Broadband-related Occupations



Source(s): O*NET

Workforce Solutions

Broadband-related Occupations

49-2022
Telecommunications Equipment Installers and Repairers, Except Line Installers

Number of Jobs in Gulf Coast

4,300

Median Annual Salary

$57,000

Typical Education Requirement for Entry

Postsecondary nondegree award

Typical On-the-job Training Required

Moderate (> 1 month but < 1 year)

49-9052
Telecommunications Line Installers and Repairers

Number of Jobs in Gulf Coast

2,300

Median Annual Salary

$60,500

Typical Education Requirement for Entry

High school diploma or equivalent

Typical On-the-job Training Required

Long-term (> 1 year)

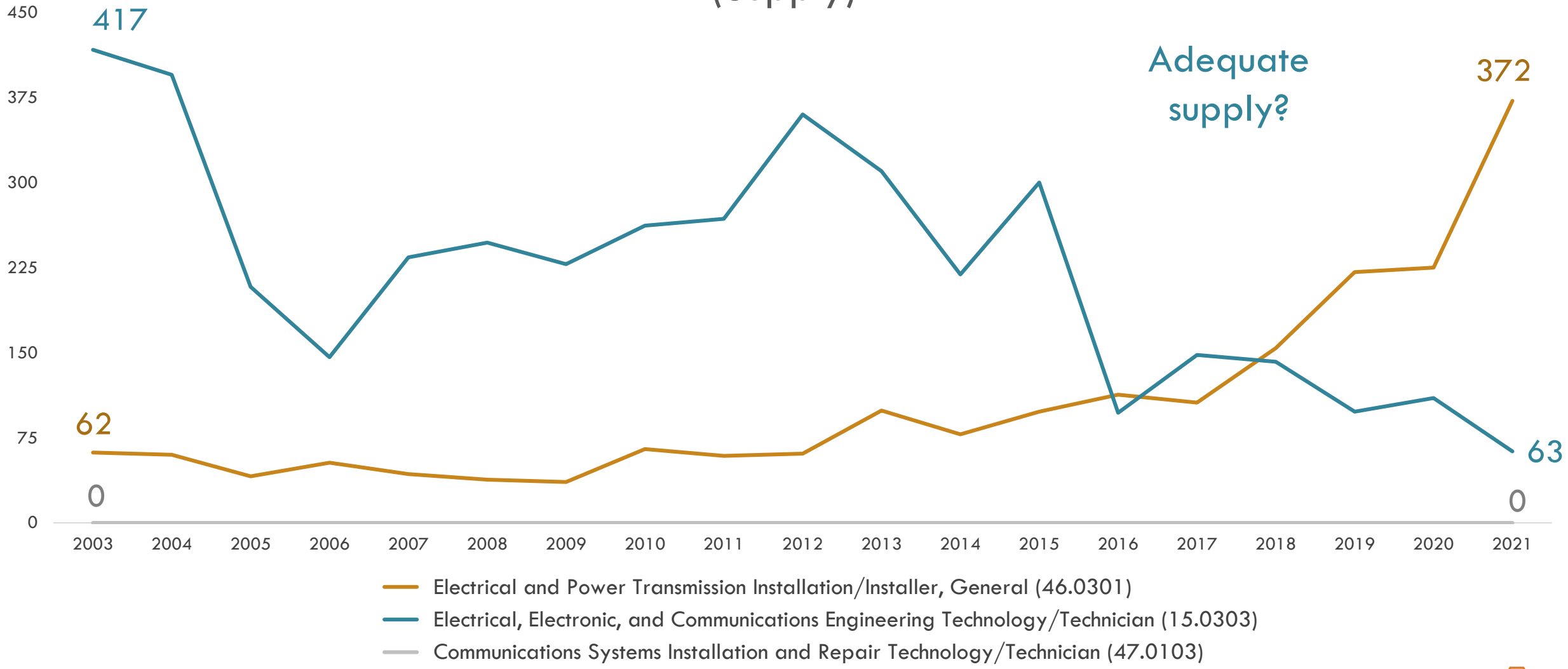
Source(s): Lightcast

Workforce Solutions

Part 3:

Broadband-related Occupations Supply-Demand Dynamics

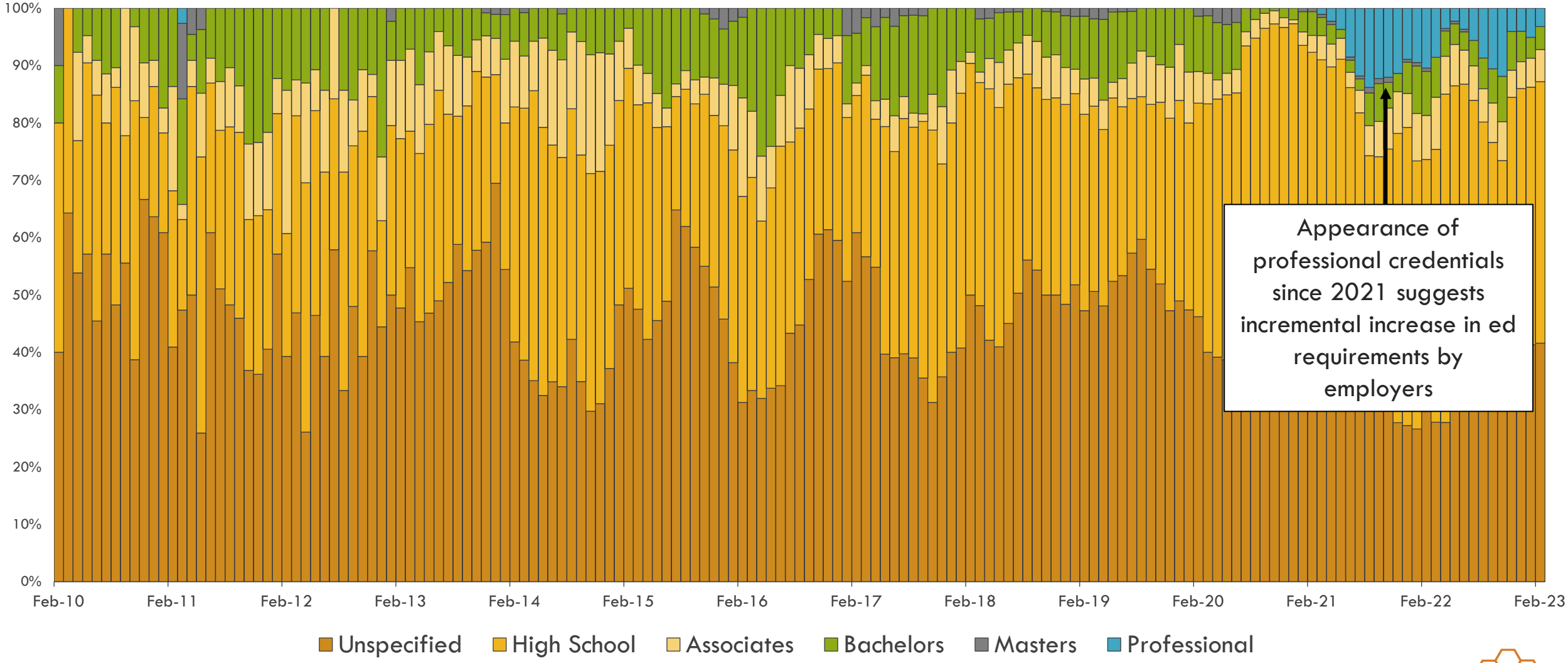
Gulf Coast Region Broadband-related Occupations Instructional Program Completions 2003 – 2021 (Supply)



Source(s): Lightcast, Chmura, NCES in order of appearance in legend

Workforce Solutions

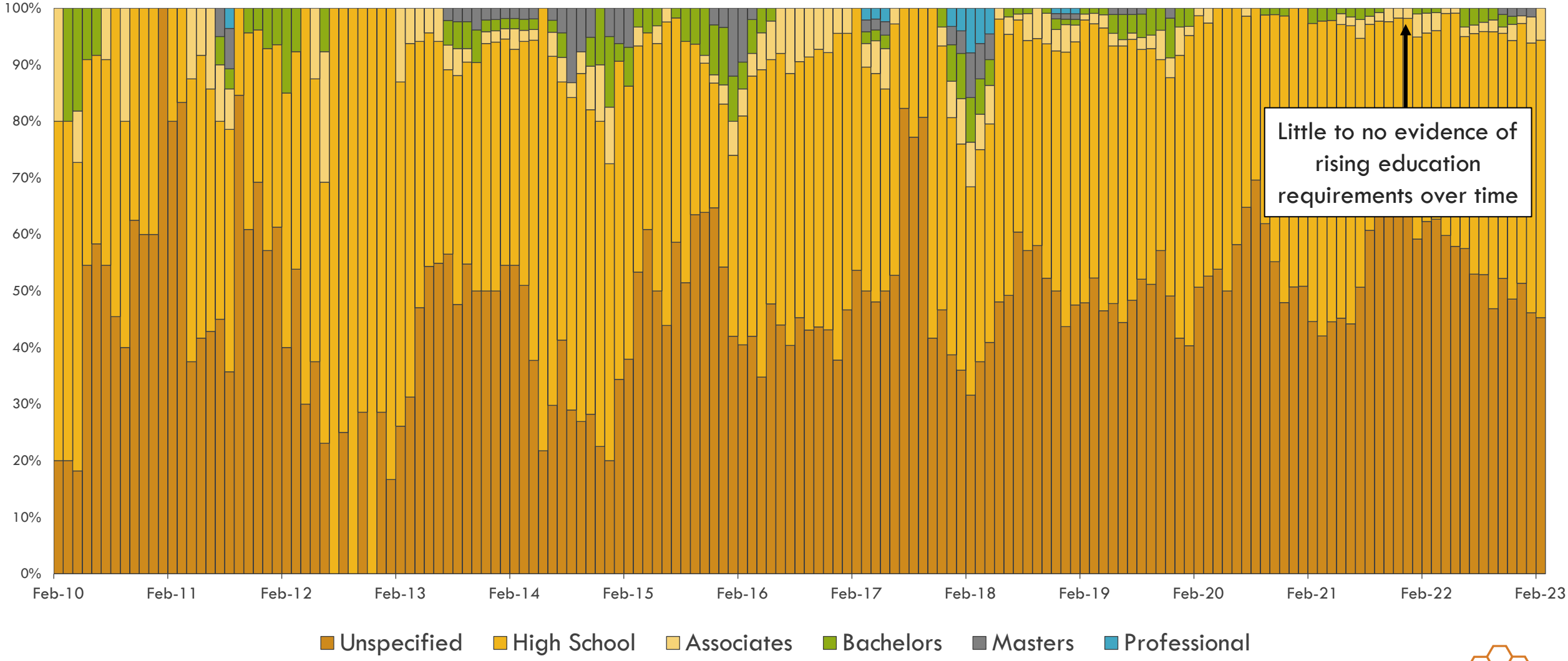
Gulf Coast Region Telecommunications Equipment Installers and Repairers, Except Line Installers - Education Requirements in Job Ads Feb 2010 – Feb 2023 (Demand)



Source(s): Lightcast

Workforce Solutions

Gulf Coast Region Telecommunications Equipment Line Installers and Repairers – Education Requirements in Job Ads Feb 2010 – Feb 2023 (Demand)



Source(s): Lightcast

Workforce Solutions

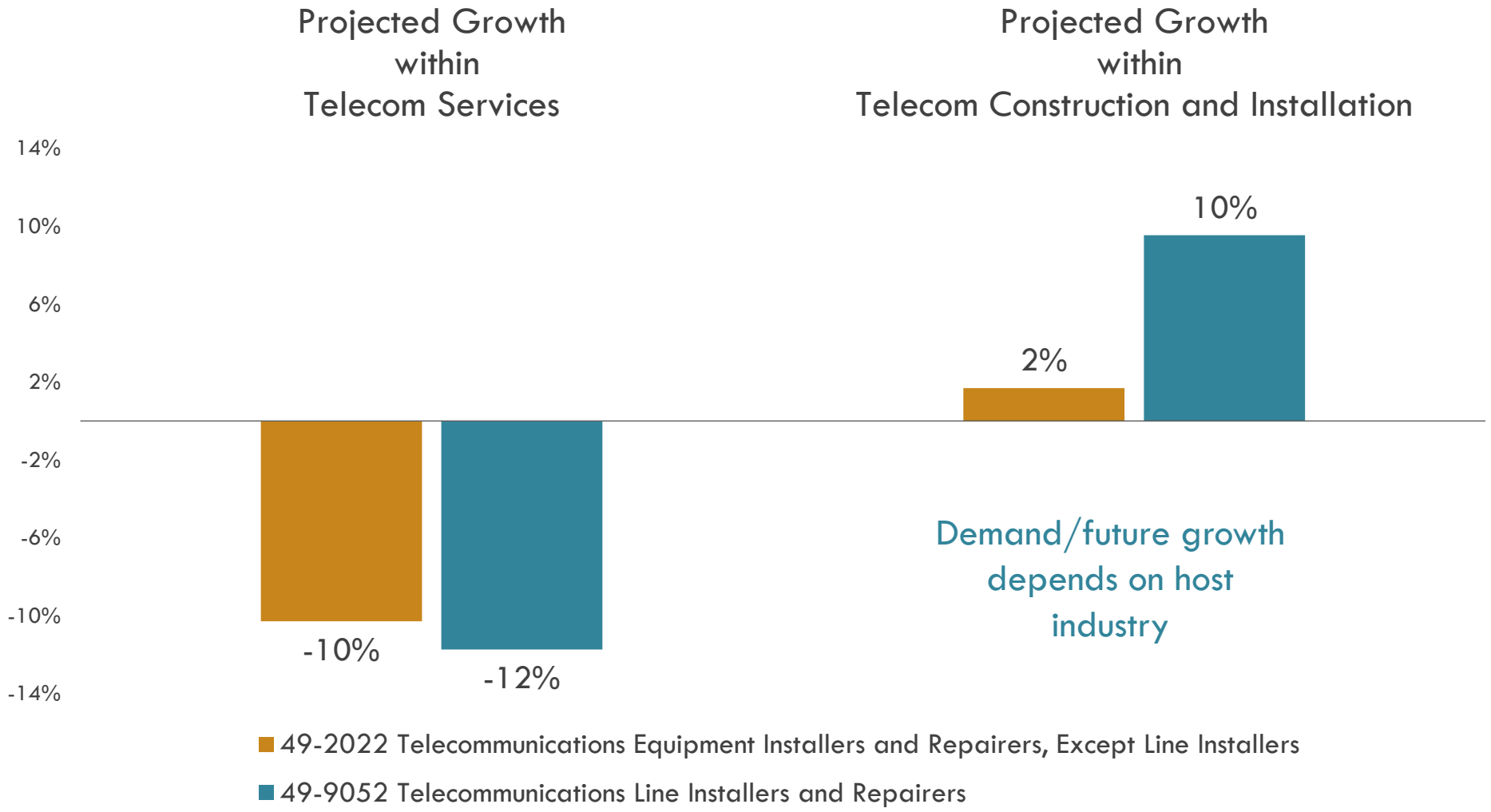
Gulf Coast Region Broadband-related Occupations
Top-20 Certifications and Hard Skills Found in Job Postings 2017-2023

Certifications	Hard Skills
Driver's License	Ability to Lift 51-100 lbs.
OSHA 10	Cabling
Commercial Driver's License (CDL)	Telecommunications
OSHA 30	Ability to Lift 41-50 lbs.
Building Industry Consulting Service International Certification (BICSI)	Routers
Transportation Worker Identification Credential (TWIC)	Hand Tools
Certification in Cardiopulmonary Resuscitation (CPR)	Microsoft Office
Secret Clearance	Computer Networking
Cisco Certified Network Associate (CCNA)	Power Tools
First Aid Certification	Using Ladders
Registered Communications Distribution Designer (RCDD)	Mechanical
Certified Alarm Technician (CAT)	Microsoft Excel
Cisco Certified Networking Technician (CCENT)	Optical Time Domain Reflectometers (OTDR)
Certified Fiber Optic Technician (CFOT)	Extension Ladders
Mobile Product Specialist (MECP)	Closed Circuit Television Systems (CCTV)
Certified Playground Safety Inspector (CPSI)	Microsoft Outlook
Certified Technology Specialist (CTS)	Aerial Lifts
Class A Commercial Driver's License (CDL-A)	Personal Computers (PC)
Broadband Transport Specialist (BTS)	Tape Measures
HAZMAT	Power Meters

Source(s): Chmura

Workforce Solutions

Gulf Coast Region Broadband-related Occupations
Projected Job Growth 2022 – 2032
(Demand)



Source(s): Lightcast

Workforce Solutions

Part 4:

Potential Job Creation and Tax Revenue from BOOT Grant Funding

Potential Job Creation and Tax Revenue from BOOT Grant

Proportional allocation based on industry sales

Assumes Gulf Coast grant funding based on % of Texas economy/population

$120mm x 25% = $30mm

Telecom Services + Telecom Construction & Installation

Power and Communication Line and Related Structures Construction

Electrical Contractors and Other Wiring Installation Contractors

Wired Telecommunications Carriers

Wireless Telecommunications Carriers (except Satellite)

Satellite Telecommunications

Telecommunications Resellers

All Other Telecommunications

Total Sales: $18.5 billion

Direct + Indirect + Induced Jobs and Tax Revenue

= 250 new jobs and $2.1mm in tax revenue over life of investment

Source: Lightcast

Workforce Solutions

Potential Job Creation and Tax Revenue from BOOT + BEAD

Assumes Gulf Coast grant funding based on % of Texas economy/population

$3.03bb x 25% = $780mm

Proportional allocation based on industry sales

Telecom Services + Telecom Construction & Installation

Power and Communication Line and Related Structures Construction

Electrical Contractors and Other Wiring Installation Contractors

Wired Telecommunications Carriers

Wireless Telecommunications Carriers (except Satellite)

Satellite Telecommunications

Telecommunications Resellers

All Other Telecommunications

Total Sales: $18.5 billion

Direct + Indirect + Induced Jobs and Tax Revenue

= 6,483 new jobs and $55mm in tax revenue over life of investment

Source: Lightcast

Workforce Solutions

Thank You!

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Federal Communication Commission

- Kirk Burgee – Associate Bureau Chief, FCC

FCC Broadband Map

April 20, 2023

Broadband Data Task Force
Federal Communications Commission

Kirk Burgee
Kirk.Burgee@fcc.gov

Broadband Data Collection (BDC): New Approach to Mapping Broadband Availability

- The FCC historically collected broadband deployment data using FCC Form 477.
- More reliable and consistent broadband availability data are critical to efforts to target public funds to connect unserved and underserved communities.
- March 2020: Congress passes the Broadband Deployment Accuracy and Technological Availability (DATA) Act, which directed the FCC to collect, verify, and publish more granular broadband data.

The National Broadband Map

The map consists of two layers: the Fabric, which is the foundation for fixed availability reporting, and broadband availability data, collected from ISPs by the FCC. Both sets of data can be challenged by states, territories, and other entities, although through different processes and on different timelines.

Fabric

What

The Fabric is a dataset of all structures in every state and territory where fixed broadband internet access service is or could be installed - Broadband Serviceable Locations (BSLs).

Who

FCC contracted with CostQuest to build and update the Fabric.

Updates

The Fabric is updated twice a year, every year. This update includes a complete refresh from CostQuest using updated data, challenges to the Fabric from states and stakeholders.

The Current Map

Version 1 of the Fabric is the base of the current public map. Version 2 of the Fabric is available to license holders to submit challenges, and was used in the second data collection.

Broadband Availability Data

What

Broadband availability data show what broadband services, if any, are available at locations included in the Fabric, as reported by ISPs.

Who

This data are submitted to the FCC by (ISPs) during bi-annual FCC "Broadband Data Collection" periods.

Updates

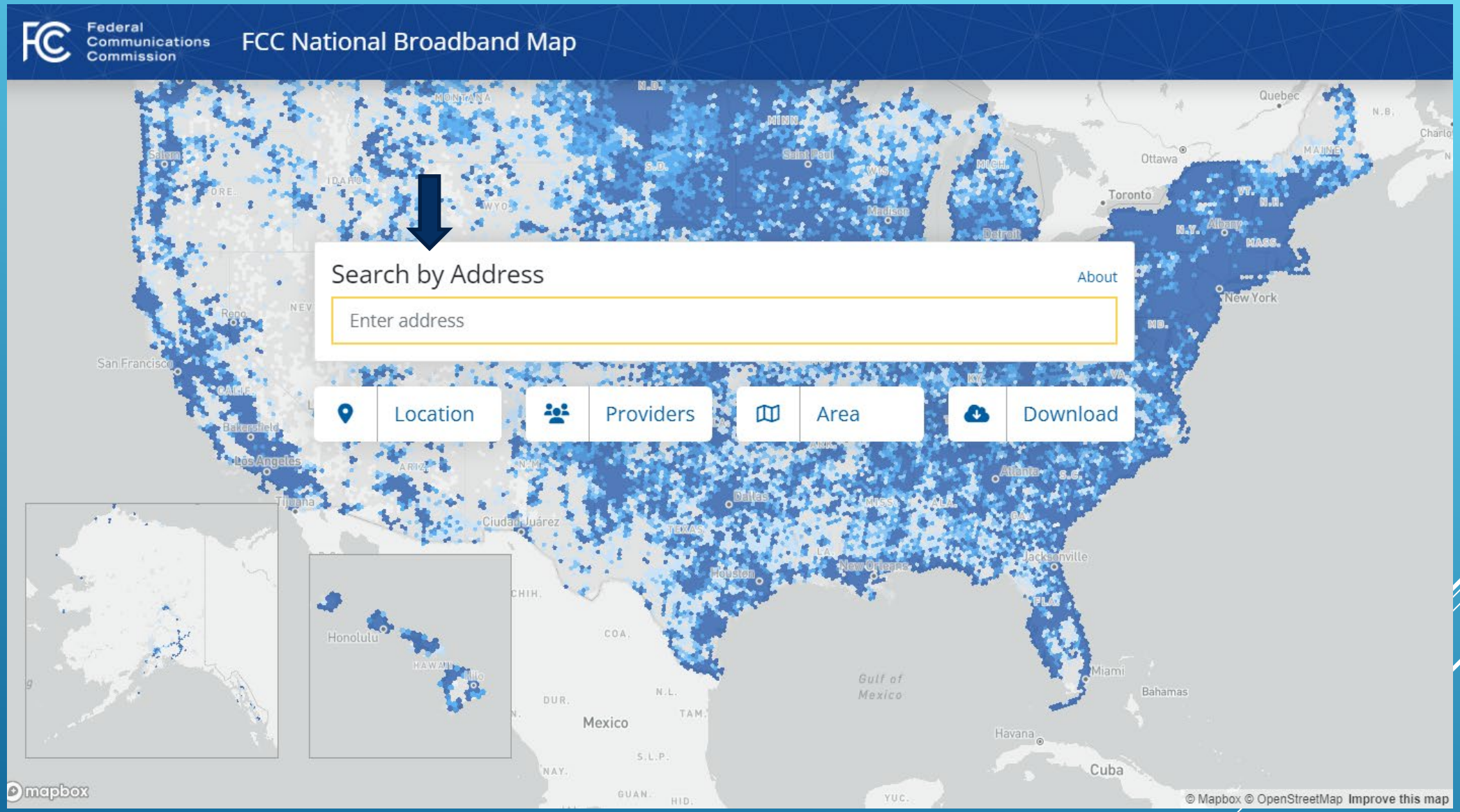
This data can be updated consistently over time as challenges are resolved. Currently the FCC is updating it approximately twice per month.

The Current Map

Current broadband availability data from the FCC's first Broadband Data Collection period in summer of 2022 is publicly displayed on the map and being updated as challenges are adjudicated.

National Broadband Map: What We've Done

- June 23, 2022 - Fabric made available to Governmental entities (state, local and Tribal) and ISPs who executed a licensing agreement.
- June 30, 2022 - inaugural BDC collection begins.
- November 18, 2022 - Public launch of the National Broadband Map and the FCC began accepting availability challenges.
- December 30, 2022 - Fabric Version 2 Released.
  - Bulk challenges submitted before Nov. 10, 2022 were reviewed for possible inclusion.
- March 1, 2023 - Second provider filing window closed.



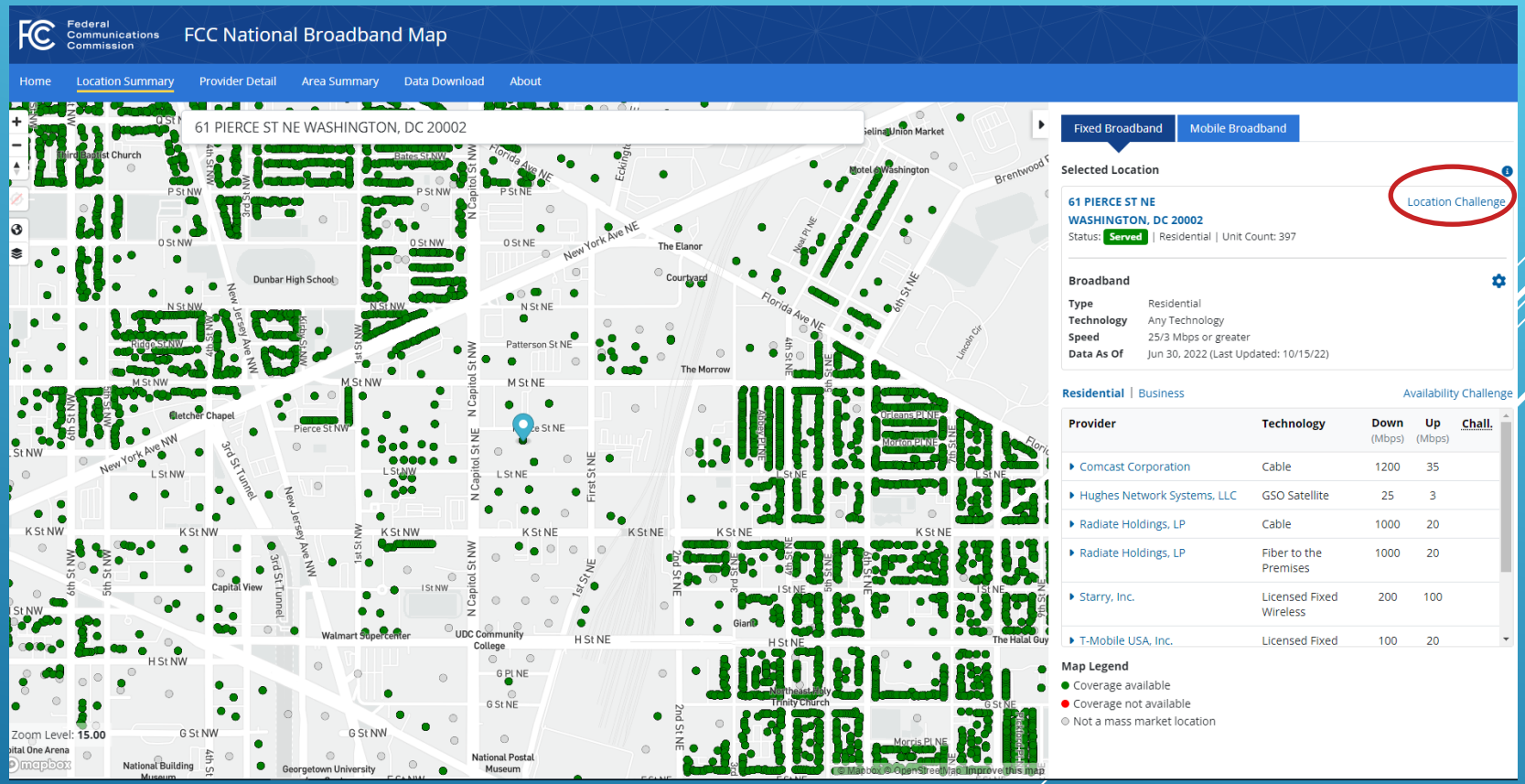
BroadbandMap.gov

National Broadband Map: Location Challenges

Location points are part of a dataset called the Broadband Serviceable Location Fabric.

What can be challenged?

- Wrong address
- Wrong unit count
- Wrong placement on the map
- Misidentified as non-Broadband-Serviceable
- Missing location



National Broadband Map: Fixed Availability Challenges

The BDC will measure broadband *availability*, not network performance, affordability or adoption.

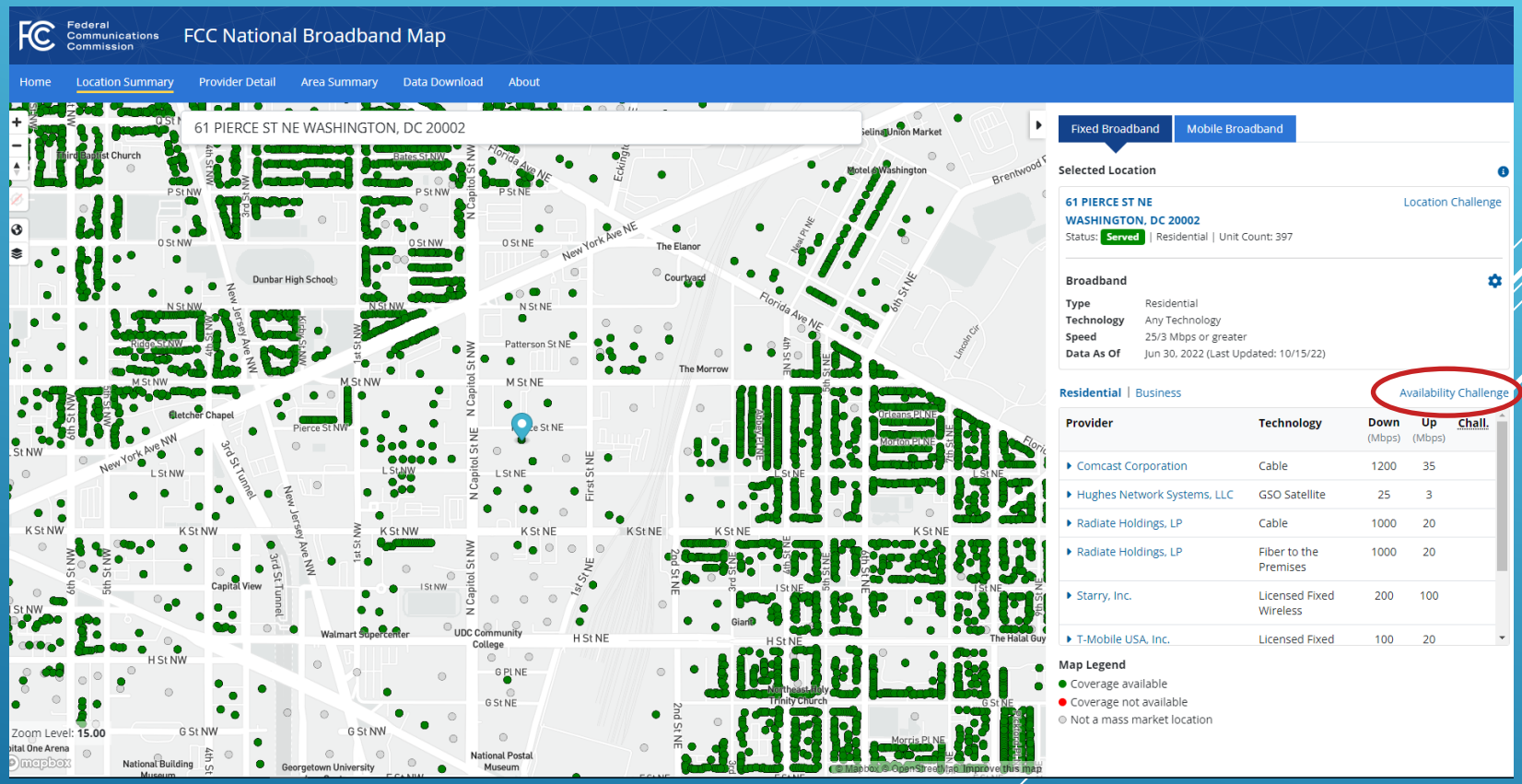
Service is "available" if the provider has, or previously had, a connection in service to the location, or if the provider could initiate service through a routine installation within 10 business days of a request with no extraordinary charges, or delays attributable to the extension of the provider's network.

Service providers will report availability by network technology and report the maximum advertised download and upload speeds associated with each such technology.

National Broadband Map: Availability Challenges

Fixed service is "available" if the provider:

- has, or previously had, a connection in service to the location.
- could initiate service through a routine installation within 10 business days of a request with no extraordinary charges or delays attributable to the extension of the provider's network.



National Broadband Map: Fixed Availability Challenges

Codes identifying the category of or reason for a bulk fixed availability challenge:

1 – Provider Failure to Schedule Install Within 10 Days of Request for Service

2 – Provider Failure to Perform Install Within 10 Days of Request for Service

3 – Provider Demand for Connection Charges That Exceed Its Standard Installation Charge

4 – Provider Denial of Request for Service

5 – Reported Service Type Not Offered

6 – Reported Speed Not Available for Purchase

7 – Subscribed Speed Not Achievable [Individuals only can select this option (on the map), but it won't create a challenge]

8 – Signal Not Available (Satellite / Fixed Wireless only)

9 – Provider Demand for Additional Construction (Satellite / Fixed Wireless only)

National Broadband Map: Mobile Availability Challenges

- Challengers may dispute the availability of mobile broadband service using on-the-ground speed test data.
- Speed test data may be submitted using the FCC's Speed Test app (or another third-party speed test app approved by the FCC's Office of Engineering and Technology).
- Alternatively, bulk availability challengers may submit speed test data collected using their own hardware and software provided it meets the requirements set forth in the FCC's mobile speed test data specification and they disclose .

National Broadband Map: FCC Next Steps

- Continue processing location challenges to Version 2 of the Fabric
- Continue processing availability challenges and update the map on a biweekly basis
- Next version of the Map to be released Spring 2023

BroadbandMap.gov

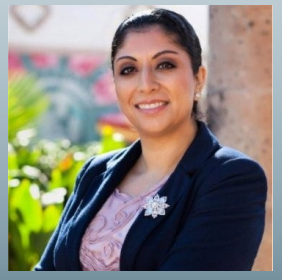
For More Information:
www.fcc.gov/BroadbandData

Internet Service Provider and Engineering Firm Panel

- Dr. Kiesha King – T-Mobile
- Russell Kacer – YK Communications
- Ryan S. Hazel – Verizon Wireless
- Shemon Bartal – AMSYS
- Stephanie Loving - Comcast
- Tanya Makany Rivera – AT&T







SOAR Analysis

- Omar Fortune – Senior Manager, Houston-Galveston Area Council

Thank you!

Please contact H-GAC for any additional information

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