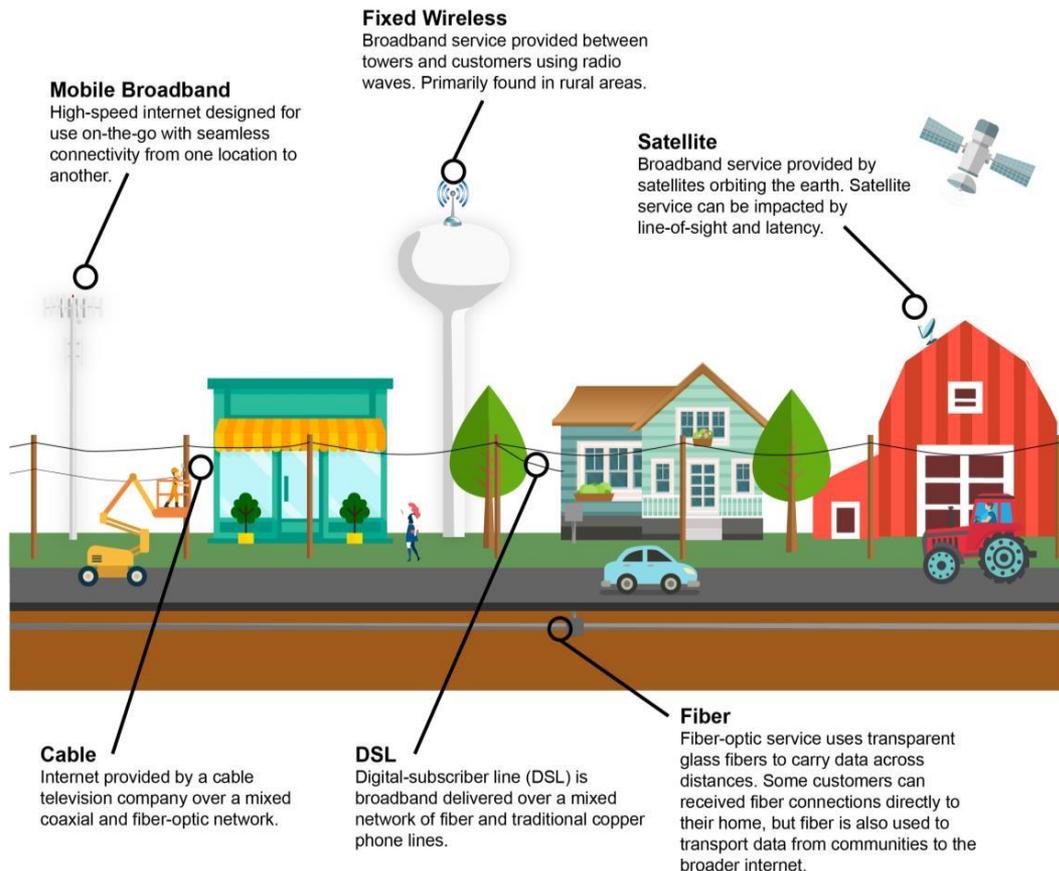# Broadband Defined

Broadband: More commonly referred to as high-speed internet access, technically, broadband is any kind of connection other than dial-up. Connection is always on.

Fixed, terrestrial broadband: Service designed for permanent, stationary use at a home, business, or institution

Mobile broadband: Wireless internet service designed for continuous use on a portable device

FCC definition of broadband is 25/3 Mbps

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

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

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

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

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

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

Broadband Defined

	10 Mbps	25 Mbps	1 Gbps
Estimated time to download 2 GB file:	29 minutes	11 minutes	17 seconds
Devices Supported:	1 or 2	3 to 5	10+
Activities Supported:	Web surfing, e-mail, & moderate HD streaming	Heavy HD streaming, video conferencing, large file transfer	Extreme HD, real-time streaming, frequent & huge file transfers
Primarily used by:	Homes & Some Businesses	Homes & Businesses	Businesses & Some Homes

Broadband Defined

Access

Physical connection to high-speed infrastructure.

Adoption

Recognizing the value in broadband and subscribing either at home, work, and/or via public institutions.

Use

Having the skills necessary to utilize and leverage broadband and related technologies across sectors.

Broadband Access in Texas

- 96.27% of households in Texas have access at 25/3, leaving 333,070 households unserved at the minimum speed considered broadband.

- Of note, 297,032 of these homes are in rural Texas.

- This means at least 944,000 Texans (849,512 who reside in rural Texas) do not have access to broadband at home to attend school, visit a doctor online, or work from home.

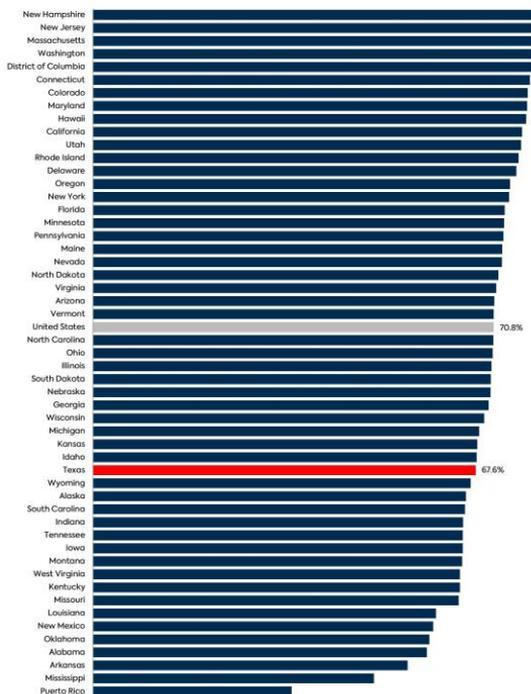- That's like having the entire state of South Dakota not connected to broadband.

Broadband Service with Speeds of at Least 25 Mbps Download/3 Mbps Upload
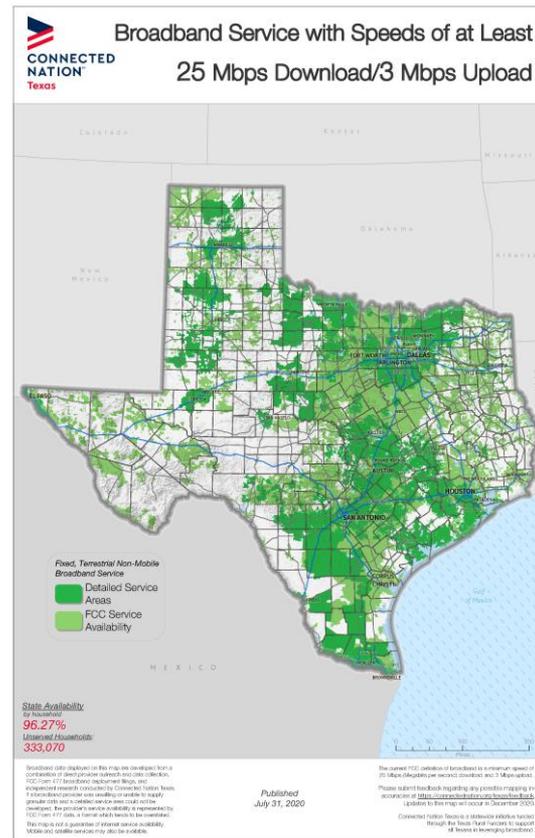
Broadband Adoption in Texas

- **32.4%** of Texas households <u>do not subscribe</u> to fixed, terrestrial broadband service such as DSL, cable, fixed wireless or fiber.
- Texas **35th** is in broadband <u>adoption</u> among other states and territories.

Adoption Rate:
Households with Broadband Subscriptions by State
(Rates include households that may or may not have access to broadband)

New Hampshire
New Jersey
Massachusetts
Washington
District of Columbia
Connecticut
Colorado
Maryland
Hawaii
California
Utah
Rhode Island
Delaware
Oregon
New York
Florida
Minnesota
Pennsylvania
Maine
Nevada
North Dakota
Virginia
Arizona
Vermont
United States — 70.8%
North Carolina
Ohio
Illinois
South Dakota
Nebraska
Georgia
Wisconsin
Michigan
Kansas
Idaho
Texas — 67.6%
Wyoming
Alaska
South Carolina
Indiana
Tennessee
Iowa
Montana
West Virginia
Kentucky
Missouri
Louisiana
New Mexico
Oklahoma
Alabama
Arkansas
Mississippi
Puerto Rico

Broadband Adoption in Texas (Cities)

The National Digital Inclusion Alliance (NDIA) ranked 623 communities <u>with populations of 65,000 or more</u> by:

- percentage of households without "wireline" broadband subscriptions (cable, fiber or DSL)

- percentage of each community's households that lacked broadband Internet subscriptions of any type, including mobile data plans

WORST
Connected Cities 2019
NATIONAL DIGITAL INCLUSION ALLIANCE

Pharr (1st)
Brownsville (2nd)
Tyler (4th)
Harlingen (5th)
Beaumont (18th)
Bryan (33rd)
Longview (68th)
Killeen (71st)
Mission (75th)
Odessa (77th)

BROADBAND POLICY IN OTHER STATES

Promising Practices
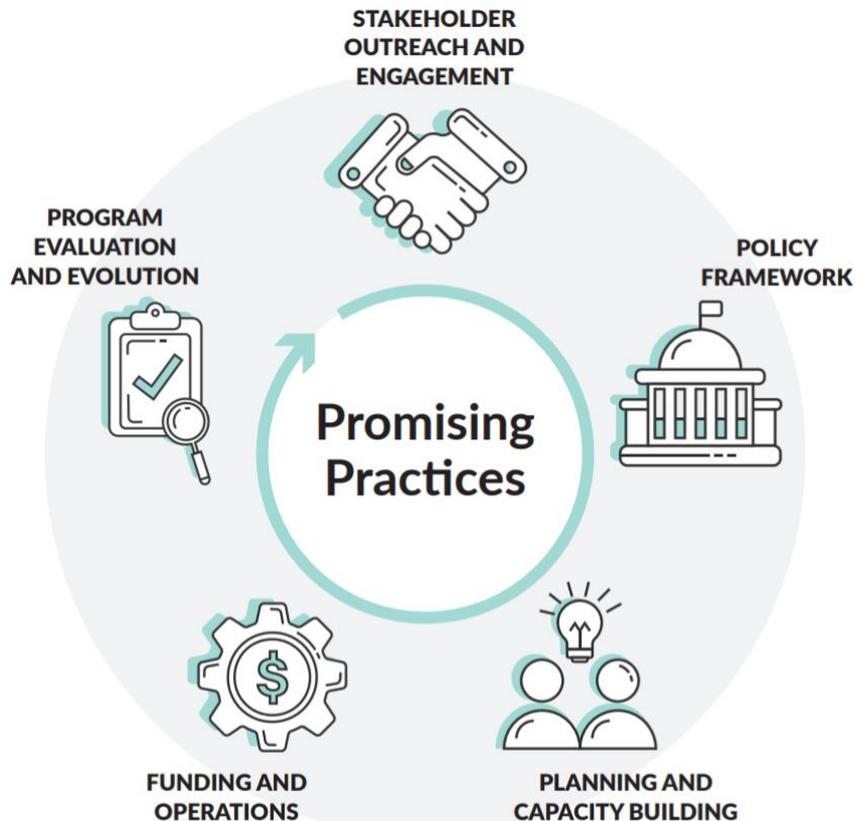
Promising Practices

Stakeholder outreach and engagement. All states with broadband programs are working to engage stakeholders at both the state and local levels. At the state level, this includes broadband task forces and councils, as well as partnerships among state agencies. At the local level, it includes support for broadband committees and education of local stakeholders.

Policy framework. Many states have created a policy framework for broadband deployment by setting well-defined goals and a clear policy direction in legislation and tasking agencies or setting up separate offices to lead statewide broadband programs. They are identifying and addressing barriers to facilitate broadband deployment in unserved and underserved areas. And they are connecting broadband to other policy priorities, including economic development, transportation, health care, and agriculture, to build partnerships and leverage more funding for expansion efforts.

Planning and capacity building. Half of states have plans that define goals and objectives that provide a baseline against which to measure progress. Some also support local and regional planning efforts that help educate community members and build the local capacity necessary for successful broadband infrastructure projects. Local and regional planning efforts can help communities identify their needs and goals, start conversations with providers, evaluate options, and move toward implementing infrastructure projects.

Funding and operations. Some states are providing funding to support broadband deployment in unserved and underserved areas through grant programs that fund a portion of the cost of deployment in these communities. They are also ensuring accountability by requiring that grantees demonstrate they are providing the service they were funded to deliver while also providing the state with the data needed to evaluate the program and progress toward defined goals.

Program evaluation and evolution. States that are supporting planning efforts and funding infrastructure projects are evaluating the performance of these efforts and incorporating lessons learned. States continue to update program goals and activities as their programs mature, addressing broadband adoption and working to help communities make full use of their broadband infrastructure.

State Broadband Offices

Nearly three quarters of states have created a dedicated broadband office within an agency or designated an existing agency—such as departments of economic development or information technology—with authority for expanding broadband. *(Pew, May 2020)*

Common Elements

Leadership. Successful programs have strong leadership from governors, legislators, and agency heads. If the governor's office is focused on broadband, it will bring more attention to the issue. It can also help make broadband a priority within state agencies, ensuring that it is incorporated into state programs.

Dedicated broadband staff. Having staff dedicated to broadband is important to avoid having work on the issue become "other duties as assigned." Staff who are focused on broadband can develop expertise. Assigning them to the issue creates accountability and responsibility and provides stakeholders with a point of contact.

Visibility and responsiveness. Having visible broadband directors and staff who attend meetings and events around the state, not just near the capital, is essential. These can include informational sessions about the state's grant program, broadband committee meetings, and ribbon cuttings or check presentations for grant projects. They are also responsive to questions from grantees and constituents.

Connectors. Successful broadband programs build strong relationships with multiple stakeholder groups and are viewed by them as a trusted partner. They provide a neutral voice when educating policymakers and community leaders and become a reliable resource for information on broadband. As a result, they often play a central role in facilitating coordination and building partnerships to advance broadband projects and policy.
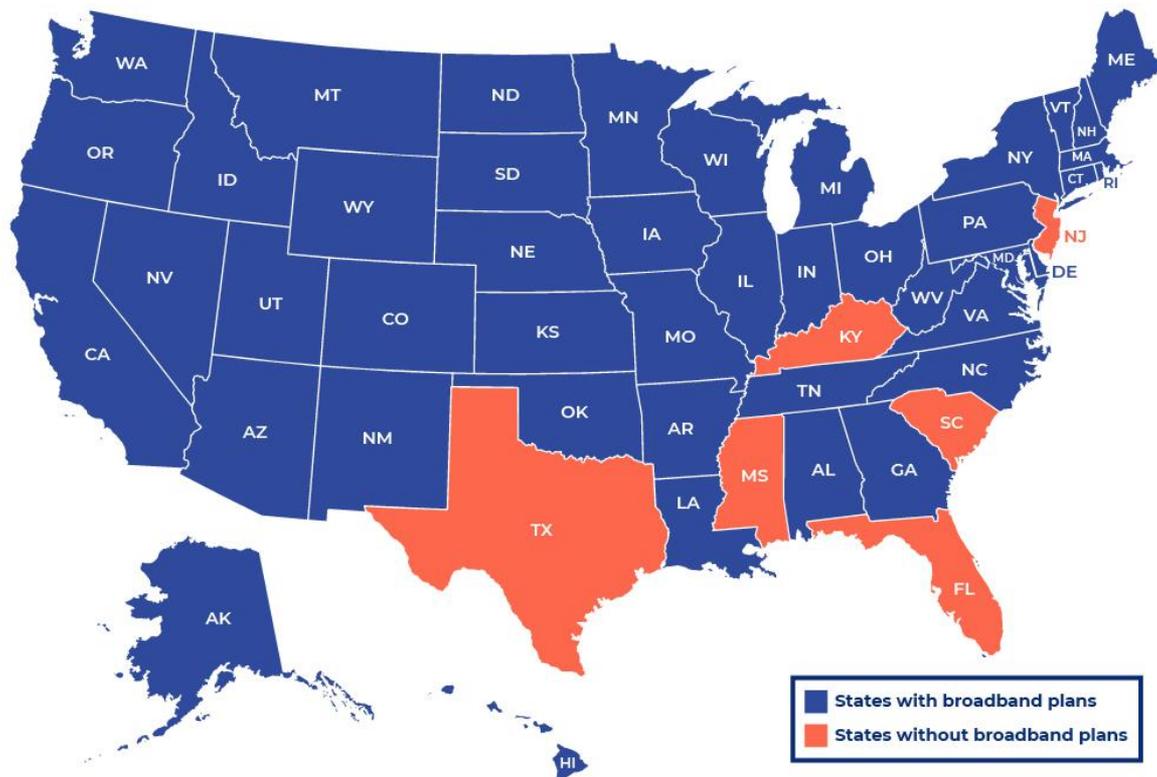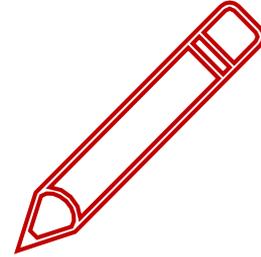
State and Local Broadband Plans

State broadband plans:
- define goals and objectives
- identify steps to achieve them
- help guide state investments
- provide a baseline against which to measure progress
- provide a framework for local planning efforts

Local plans:
- help educate community leaders and residents, putting them in a better position to work with providers to expand and accelerate broadband

Planning processes ensure a systematic approach and depend on stakeholder outreach and engagement to develop robust goals and recommendations that may inform policy and program decisions. Planning processes do more than chart a path; they help educate stakeholders and build the consensus, buy-in, and relationships that are necessary to achieving goals.

Statewide planning can be initiated by federal requirements. For example, having an adopted state broadband plan provides additional points on scoring for the U.S. Department of Agriculture's ReConnect Loan and Grant Program.

State Mapping Programs

Many states have their own broadband mapping programs. Benefits of state mapping programs vs. the current federal mapping done by the FCC include:

Granularity: The FCC Form 477 data gathers access information from providers at a census block level, meaning that if one household in a census block is covered, they consider all the households in the block covered. This may be a reasonable assumption in urban areas where a census block may actually be a city block, but in large rural blocks, that assumption falls short.

Verification: Whereas FCC programs rely on provider information, state programs can support on-the-ground verification of the data provided by ISPs.

Improved research capabilities: Where the FCC has the ability to say "Here's your data, and that's all you get," state programs can take control of analyzing their own data and put it to better use, since they know what the state needs better than the feds would.

Timeliness: The latest (2020) broadband deployment report shows data from 2018. A lot can change over two years. State programs can be nimbler and provide faster results.

TEXAS BROADBAND INITIATIVES

Governor's Broadband Development Council

Created by HB 1960 (86th Legislature)

17 voting members, 15 appointed by the Governor

Duties:

(1) Research the progress of broadband development in unserved areas;
(2) Identify barriers to residential and commercial broadband deployment in unserved areas;
(3) Study technology-neutral solutions to overcome barriers identified under Subdivision (2); and
(4) Analyze how statewide access to broadband would benefit:

> (A) Economic development;
> (B) The delivery of educational opportunities in higher education and public education;
> (C) State and local law enforcement;
> (D) State emergency preparedness; and
> (E) The delivery of health care services, including telemedicine and telehealth.

Annually, not later than November 1, the Council will prepare and deliver an electronic report of its findings and recommendations to the governor, the lieutenant governor, and each member of the legislature.

Operation Connectivity

A statewide initiative launched by Governor Greg Abbott, the Texas Education Agency (TEA), and Dallas Independent School District in May 2020 to deliver internet connectivity and device solutions for school districts, families, and students in Texas.

Operation Connectivity was originally started in Dallas to address the lack of high-speed internet and/or home laptops for many DISD students which caused an interruption to their learning, as education in the classroom transitioned to at-home digital instruction due to COVID-19. This initiative ultimately aims to provide internet connectivity to hundreds of thousands of students statewide.

On July 17, it was announced that the State of Texas will allocate $200 million in Coronavirus Aid, Relief, and Economic Security (CARES) Act funding to TEA for the purchase of eLearning devices and home internet solutions to enable remote learning during the COVID-19 pandemic for Texas students that lack connectivity.

Operation Connectivity has a longer-term goal to connect all students with high-speed internet and devices by the 2021-2022 school year.

Operation Connectivity | Timeline

Operation Connectivity Launch		PHASE 1				PHASE 2			PHASE 3				
Launch of Operation Connectivity	Initial Taskforce Work and Report	Procurement	Shipping and Delivery	LMRP	PPRP	Mapping Tool Development	Mapping of Available Broadband Shared with LEAs	Negotiation with Suppliers to Develop Uniform Rate Packages	Explore New Broadband Tech	DIR	Secure Funding for New Infra-structure	LEAs	Implement-ation of New Infra-structure
May	June - July	July-August	Sept -Early Dec	Sept -Oct	Nov - Dec	Sept	Oct -Nov	Sept-Oct	Sept-Jan	Oct-Dec			
✔	✔	✔	➡	➡	🕐	➡	➡	➡	➡	➡	🕐	🕐	🕐

✔ Completed

➡ In Process

🕐 Not Yet Started

2