



**CONNECTED**<sup>SM</sup>  
Community Engagement Program

# GILLESPIE COUNTY

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## TECHNOLOGY ACTION PLAN

PREPARED BY **CONNECTED TEXAS**  
AND THE  
**GILLESPIE COUNTY ECONOMIC DEVELOPMENT COMMISSION**



**JANUARY 23, 2013**



ACCESS



ADOPTION



USE



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## EXECUTIVE SUMMARY

### Key Findings

Connected Texas, in conjunction with the Gillespie County Economic Development Commission, has released a Gillespie County Community Technology Action Plan following a community assessment of overall broadband and technology readiness, using criteria that analyzes broadband access, adoption, and use.

### Community Technology Scorecard

Community Champion: Tim Lehmborg Community Advisor: LaTanya Tatum			
FOCUS AREA	ASSESSMENT CRITERIA	COMMUNITY SCORE	MAXIMUM POSSIBLE SCORE
ACCESS	Broadband Availability	2	10
	Broadband Speeds	1	5
	Broadband Competition	3	5
	Middle Mile Access	10	10
	Mobile Broadband Availability	6	10
	<b>TOTAL ACCESS SCORE</b>	<b>22</b>	<b>40</b>
ADOPTION	Digital Literacy	6	10
	Public Computer Centers	10	10
	Broadband Awareness	10	10
	Vulnerable Population Focus	10	10
	<b>TOTAL ADOPTION SCORE</b>	<b>36</b>	<b>40</b>
USE	Economic Opportunity	10	10
	Education	10	10
	Government	10	10
	Healthcare	10	10
	<b>TOTAL USE SCORE</b>	<b>40</b>	<b>40</b>
<b>COMMUNITY ASSESSMENT SCORE</b>		<b>98</b>	<b>120</b>

## Analysis of Scorecard

- Gillespie County achieved a score of 98 points out of 120 for overall broadband and technology readiness which indicates that the community is exhibiting high success in technology access, adoption, and use.
- The county scored 22 out of a possible 40 points in broadband access primarily because of some gaps in broadband availability. Access is available in the cities, but large parts of the county are sparsely populated where broadband providers find it difficult to achieve a reasonable return on investment.
- Gillespie County exceeded 32 points in the Use category. A score of 32 is required in each of the focus areas to obtain community certification.
- While the results indicate that the community has made tremendous strides and investments in technology, this technology plan will provide some insight and recommendations that will help the community continue to achieve success and ultimately, the opportunity to achieve status as a certified community.

## Introduction

Today, technology plays a pivotal role in how businesses operate, the type of service consumers expect, how institutions provide services, and where consumers choose to live, work, and play. For children to succeed, access to online resources has become crucial. More importantly, the success of a community has become dependent on how broadly and deeply the community adopts technology resources – this includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure.

In order to determine if businesses and residents are maximizing the benefits from using high-speed Internet technologies, there is a need to determine the current state of technology before identifying gaps. Thus, the need to know the state of technology in a community – and subsequently in a state – is great. In response to this need, Connected Nation<sup>1</sup> developed the Connected community program to help guide a community through an assessment of its overall broadband and technology status, using criteria that Connected Nation has developed as a “community certification” model. The program helps train community team leaders and supports the formation of community planning teams made up of various sector representatives with the goal of creating an actionable plan for expanding the access to broadband infrastructure, adoption, and use of Internet technologies and becoming a certified

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<sup>1</sup> Connected Nation, parent company for Connected Texas, is a national non-profit 501(c)(3) organization that expands access to and use of broadband Internet and the related technologies that are enabled when individuals and communities have the opportunity and desire to connect. Connected Nation works in multiple states to engage community stakeholders, state leaders, and technology providers to develop and implement technology expansion programs with core competencies centered around the mission to improve digital inclusion for people and places previously underserved or overlooked.

technology community. Funded by the National Telecommunications and Information Administration (NTIA), this effort is part of the State Broadband Initiative.

The Gillespie County Economic Development Commission is leading the way into a new economy for Gillespie County by actively participating in Connected Texas' Connected community program. Using tools provided by Connected Texas, the Gillespie County Economic Development Commission collaborated with multiple sources to assess the overall broadband and technology status in Gillespie County.

## Methodology

In order to determine the state of technology in Gillespie County, the economic development commission initiated a 4-step community engagement program that consisted of:

1. Identification and empowerment of a community team leader (local champion) and creation of a community team composed of a diverse group of local residents from various sectors of the economy including education, government, healthcare, the private sector, and libraries.
2. Assessment of community technology resources.
3. Development of a community technology plan and implementation of recommended actions that will lead to community certification as a Connected community (*ongoing*).
4. Once a community is certified, the community will have an avenue to discuss its success and pursue opportunities as a recognized, technologically advanced community.

## Itemized Key Findings

Gillespie County Broadband Committee identified the following key findings (in addition to findings illustrated in the community scorecard) through its technology assessment:

### ACCESS

- 19 last-mile broadband providers currently provide service in Gillespie County:
  - 78.89% of households have access to 3 Mbps.
  - More than 57% of Gillespie County homes have access to 10 Mbps service.
  - Almost 82% of Gillespie County households have access to more than 1 provider.
- Middle mile fiber infrastructure is available from 3 providers in Gillespie County.
- 94.69% of Gillespie County households have access to mobile broadband.

**ADOPTION**

- 4 Public Computer Centers (PCC) with a total of 16 computers are open to the public.
- 2 Digital Literacy Programs exist in the community with approximately 100 graduates over the last year.
- 4 Broadband Awareness Campaigns are reaching approximately 100% of Gillespie County.
- 5 organizations are working with vulnerable populations.

**USE**

- At least 8 uses of broadband were identified in the area of economic opportunity including 3 advanced uses and 5 basic uses.
- At least 8 uses of broadband were identified in the area of education including 6 advanced uses and 2 basic uses.
- At least 7 uses of broadband were identified in the area of government including 5 advanced uses and 2 basic uses.
- At least 10 uses of broadband were identified in the area of healthcare including 1 advanced use and 9 basic uses.

Through the broadband mapping and inventory undertaken by both Connected Texas and the Gillespie County Economic Development Commission, several Community Anchor Institutions (CAI) were identified. They are broken down by type below:

	CAI Type	Number of CAIs
1	School K-12	14
2	Library	2
3	Medical/Healthcare	1
4	Public Safety	7
5	University, College, Other Post-Secondary	1
6	Other Community Support – Government	2
7	Other Community Support – Nongovernment	0

In addition to the items identified above, the Gillespie County Economic Development Commission identified the following technology resources in the community:

**Technology Providers**

- 19 broadband providers were identified in Gillespie County
- 1 network developer
- 1 web developer

### **Technology Facilities**

- 4 public computing centers
- 16 wireless hotspots

### **Community Websites**

- 7 Business-related websites (excluding private businesses)
- 7 Education-related websites
- 7 Government-related websites
- 10 Healthcare-related websites
- 53 Tourism-related websites

## **Priority Projects**

This exercise has culminated in the outlining of projects to allow the community to continue its recognized excellence in technology and broadband planning across the community. Below are seven priority projects, each describing a project plan with suggested steps. This is followed by a complete list of all recommended actions.

### *Work with a Local Developer to Build a Network*

#### **Project Description**

Gillespie County Economic Development is collaborating with 4ip Technology and Connected Texas on a project to expand broadband availability within Gillespie County. 4ip Technology is a local company headed by Patrick King, a young and dynamic entrepreneur, who has built an IT support/services company and B2B wireless broadband services. With the support of Tim Lehmberg, Executive Director at Gillespie Economic Development, Mr. King is engineering a fixed wireless network. The process involves identifying and evaluating many potential tower sites and designing a self-contained transceiver platform that can be deployed rapidly with high reliability. The goal is to install a beta unit in the first quarter of 2013 and additional units by the second quarter.

#### **Goals**

1. Expand broadband availability to unserved areas using fixed wireless technology.

#### **Action Items**

1. Conduct market analysis and demand assessment with expanded stakeholder involvement.
2. Build mobile tower unit(s) for testing.
3. Identify strategic locations for deployment and secure access rights.
4. Install and configure fixed wireless equipment
5. Conduct throughput and reliability tests and modify as needed.
6. Support, monitoring and maintenance of fixed wireless system.

### **Implementation Team**

Patrick King and Tim Lehmborg

## *Develop a Network of Vineyards*

### **Project Description**

Gillespie County is well-known for its tourism industry. Two of the major attractions to this county are its many vineyards and wineries. It is recommended that a network of operating wineries and vineyards be created to serve as a one-stop shop for information, news, events, etc.

### **Goals**

1. Increase the online presence of local vintners, especially those smaller yards that may not have technological resources to sustain their own website.
2. Encouraging local vintners to develop an online network (visitor's guide) that can assist in increasing tourism to Gillespie County, while helping to facilitate positive relationships within the local business community.

### **Action Items**

1. Create the Gillespie County Vintner Association (members could pay annual dues to be a part of the Association, which would be used to maintain the network [website]).
2. Create a website of all local vintners that are willing to participate in the vintner association, similar to these websites: <http://www.winecountry.com/> and <http://www.napavintners.com/>.
3. Work with local web developers to develop and maintain this website.

### **Implementation Team**

To be determined.

## *Develop a Network of Bed & Breakfasts*

### **Project Description**

Gillespie County is well known for its tourism industry. One of the major attractions to this county is its highly diverse lodging accommodations. It is recommended that a network of operating bed and breakfast inns be created to serve as a one-stop-shop for information, news, events, etc.

### **Goals**

1. Increase the online presence of local bread and breakfast inns, especially smaller facilities that may not have technological resources to sustain their own website.
2. By encouraging local bread and breakfast innkeepers to develop an online network (visitor's guide), this can assist in increasing tourism to Gillespie County, and also help to facilitate positive relationships within the local business community.

### **Action Items**

1. Create and recruit local owners for the Gillespie County Association of Bed and Breakfast Inns (members could pay annual dues to be a part of the Association, which would be used to maintain the network [website]).
2. Create a comprehensive network (website) of local inns that can be used for visitors to secure lodging and read and post reviews.
3. Work with local web developers to develop and maintain this website.

### **Implementation Team**

To be determined.

## ***Apply to USDA for Funding Support to Build out Broadband in Community***

### **Project Description**

The USDA, through its Rural Development mission area, administers and manages housing, business, and community infrastructure and facility programs through a national network of state and local offices. Rural Development has an active portfolio of more than \$165 billion in loans and loan guarantees. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers, and improve the quality of life in rural areas.

#### Farm Bill Loan Program - USDA

This program is designed to provide loans for funding, on a technology neutral basis, for the costs of construction, improvement, and acquisition of facilities and equipment to provide broadband service to eligible rural communities.

#### Community Connect Program – USDA

Provides community access to broadband services in unserved areas through a one-time grant to such organizations as tribes, cooperatives, private companies, and universities, and uses the infrastructure built by the grant to create opportunities for continued improvement.

#### Distance Learning and Telemedicine Loans and Grants Program – USDA

Provides loans and grants to rural community facilities (e.g. schools, libraries, hospitals, and tribal organizations) for advanced telecommunications systems that can provide healthcare and educational benefits to rural areas.

#### Universal Service Rural Health Care Program – Universal Service Administration Company

The Rural Health Care program supports healthcare providers serving rural communities by funding telecommunications services necessary for the provision of healthcare. The program is intended to ensure that rural healthcare providers pay no more for telecommunications in the provision of healthcare services than their urban counterparts.

### *Create a Technology Mentorship Program*

#### **Project Description**

Initiate a program designed to recruit local high school or college students who excel in school and exhibit advanced leadership and technology skills to assist in technology training, technical support, and outreach efforts in their communities. Recognizing students as a powerful resource for local outreach efforts, the program will challenge students to extend their technology experiences beyond the classroom. The program essentially taps into a technology knowledge base that exists through these exceptional students. Students will be required to develop programs such as training seniors to use computers, initiating a computer refurbishing program, offering basic computer training for local communities, building websites, etc.

#### **Goals**

Utilize student technology knowledge to implement community programs.

### *Procure a Multipurpose Mobile Technology Center*

#### **Project Description**

Partner with the public library or school system to acquire a bus (or equip a bookmobile) with laptop computers and wireless Internet service to deliver technology access and programs to unserved residents in remote areas in the community. Equipped with an instructor, the mobile technology center should provide digital literacy classes, job search assistance, e-learning programs, information during community events, and emergency assistance. Beyond training and education, the mobile technology center should be utilized to target and reach unserved or underserved members of the community and to provide them a medium for participating in the community's technology-planning process.



Examples of existing mobile technology centers include:

- [St. Louis Community College Mobile Tech Center](#)
- [El Paso Public Library Tech-Mobile](#)
- [State Library of Ohio Mobile Technology Training Center](#)
- [Pike County Public Library District Mobile Technology Center](#)

### **Goals**

1. Provide unserved and underserved residents with computer and Internet access.

### **Action Items**

1. Equip the vehicle with the following items:
  - a. 10-20 laptops equipped with appropriate software.
  - b. A wireless modem that interfaces with a wireless relay station on the vehicle. Signals can be sent from any remote site in the community to a partnering organization (e.g. public library) for deployment to the Web, television, or other medium.
  - c. Large screen TV.
  - d. Smart board for instruction.
  - e. Wheelchair accessible workstations.
  - f. Networked printer.
  - g. Full-time instructor(s).
2. Develop a schedule of mobile technology center visits.

## ***Establish a "Community Technology Academy"***

### **Project Description**

Develop partnership between libraries, community centers, churches (places with computer labs for public use) and schools, community colleges and universities (places with subject matter experts) to develop a "Community Technology Academy." Providers, local businesses, and community volunteers may be included to provide financial and/or in-kind support for the program. Academy curriculum should include basic training in areas such as "Introduction to Computers," "Internet Basics," social networking, using communication technologies, and the use of applications such as Microsoft Office, OpenOffice, or Google Docs.

### **Goals**

1. Create a partnership to underscore a community's commitment to developing a tech-savvy workforce.

### **Action Items**

1. Identify all organizations performing technology education and training services.
2. Identify all the organizations that have computer labs.
3. Compile a list of classes to be offered and developing content or leveraging content that is currently available at minimum or no cost from organizations such as Microsoft.
4. Determine what classes are currently being offered in the community.
5. Develop a collaborative and cooperative approach for operating the "Community Technology Academy."

## **Complete List of Recommended Actions**

Below is a complete list of 18 recommended actions. Numbered actions indicate those recommended by Connected Texas, whereas non-numbered actions indicate those developed by the Gillespie County Economic Development Commission. Detailed descriptions of each solution proposed by Connected Texas can be found in the *Recommended Actions* section later in this report.

### **ACCESS**

#### **Broadband Availability**

Work with a Local Developer to Build a Network

1. Apply to USDA for Funding Support to Build out Broadband in Community (Priority Project)

**Broadband Speeds** – No recommended actions.

#### **Broadband Competition**

2. Develop Public-Private Partnerships to Deploy Broadband Service
3. Study and Possibly Reassess Major Telecom Purchase Contracts

**Middle Mile Access** – No recommended actions.

#### **Mobile Broadband Availability**

4. Identify, Map, and Validate Broadband Demand
5. Perform a Broadband Build-out Analysis in Unserved Areas
6. Complete a Vertical Assets Inventory
7. Perform Analysis of Local Policies and Ordinances
8. Develop & Issue an RFP for Build-out



**ADOPTION**

**Digital Literacy**

- 9. Facilitate a Technology Summit
- 10. Distribute Digital Literacy Content
- 11. Develop or Identify a Broadband Training and Awareness Program for Small & Medium Businesses
- 12. Establish a "Community Technology Academy" (Priority Project)
- 13. Create a Technology Mentorship Program (Priority Project)
- 14. Procure a Multipurpose Mobile Technology Center (Priority Project)

**Public Computer Centers** – No recommended actions.

**Broadband Awareness** – No recommended actions.

**Vulnerable Population Focus** – No recommended actions.

**USE**

**Economic Opportunity**

- Develop a Network of Vineyards
- Develop a Network of Bed & Breakfasts

**Education**

- 15. Improve Education through Digital Learning

**Government** – No recommended actions.

**Healthcare** – No recommended actions.



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## INTRODUCTION

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### Purpose

The purpose of the report is to summarize the assessment of Gillespie County's current capacity for encouraging the Access, Adoption, and Use of technology as well as the best next steps for addressing any deficiencies or opportunities for improving Gillespie County's technology landscape. (Community assessment results and recommended actions are provided later in this report.)

### Background

Today, high-speed Internet access plays an integral role in how we conduct our business and how we live our lives on a day-to-day basis. As noted in the National Broadband Plan, a high-speed network is "a foundation for economic growth, job creation, global competitiveness and a better way of life."<sup>2</sup> Despite the growing dependence on technology, as of 2012 nearly 34% of Americans did not have a high-speed connection at home.<sup>3</sup> Further, 14 million Americans are lacking access to broadband infrastructure that can support today's and tomorrow's applications.<sup>4</sup> Connected Nation's studies also show that 17 million families with children do not have broadband at home – and 7.6 million of these children live in low-income households. In 2010 Connected Nation surveyed 9,650 businesses in 11 states and Puerto Rico. Based on this data, Connected Nation estimates that at least 2.1 million businesses - 28% - in the United States do not utilize broadband technology today.<sup>5</sup>

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2 *Connecting America: The National Broadband Plan*, Federal Communications Commission, April 2010, <http://www.broadband.gov/download-plan/>

3 Pew Internet and American Life Project <http://pewinternet.org/Trend-Data-%28Adults%29/Home-Broadband-Adoption.aspx> (suggests that 66% have access to Broadband).

4 Federal Communications Commission, *Connecting America: The National Broadband Plan*, March 17, 2010, p. 20.

5 Connected Nation, *Broadband and Business: Leveraging Technology to Stimulate Economic Growth*, <http://www.connectednation.org/survey-results/business>, 2010.

In this age of technology a number of factors have forced businesses to change time-honored models of operation, including global competition and a demand for faster and more personalized services from consumers. Research shows that businesses that use high-speed Internet generate more revenue<sup>6</sup> and experience the most direct benefit of high-speed Internet with increased sales, profit, and growth. Gaining benefits from the implementation of high-speed Internet is not just for large corporations. For smaller businesses and entrepreneurs in small communities, technology creates an even playing field with companies much larger than themselves. Where small businesses were once limited to whatever local customers they could attract through local advertising, e-commerce allows small or even home-based businesses to operate and sell their goods on a national and sometimes international scale.

Schools, colleges, universities, and community and technical colleges continue to find new ways and tools to educate the students of the digital age. With the evolution of social networking and mobile applications, educational institutions are using these tools to communicate effectively with students.

The healthcare sector also relies on technology. On a daily basis, doctors must keep up with the latest research; patient records have to be easily accessible and accurate; and images, test results, and prescriptions have to be delivered promptly, without errors, to practitioners, pharmacies, and insurance providers. Network-based technologies like videoconferencing and digital stethoscopes allow specialists to consult with rural patients, reducing travel time and hazards. This ability to reach rural patients through technology has allowed many people to seek treatment that otherwise may not have done so.

Families are relying more and more on technology for services, education, information, communication, news, and improving their quality of life. Digital literacy training has become the most basic means by which communities and institutions work to teach community members basic skills that allow them to navigate the Internet, perform basic functions, and become a skilled workforce for potential investors.

Local governments have also seen the importance of an online presence. Local governments provide communities with many services, offer a great deal of local information, and encourage public involvement and awareness. The demand for faster and better services has increased the need for high-speed networks.

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<sup>6</sup> Connected Nation, *Broadband & Business Leveraging Technology to Stimulate Economic Growth*, [http://www.connectednation.org/sites/default/files/broadband\\_and\\_business\\_-\\_connected\\_nation.pdf](http://www.connectednation.org/sites/default/files/broadband_and_business_-_connected_nation.pdf).



In order to address challenges associated with the lack of high-speed access, adoption, and use, Connected Texas is working to help communities identify their technology needs and opportunities. Bolstered by benchmarking data that has been gathered through Connected Texas' mapping and market research, the Connected community program is drilling down to the regional and local levels to facilitate community technology planning. Through this program, regions and communities are aiming to accelerate the access, adoption, and use of technology toward creating a better business environment, more effective community and economic development, improved healthcare, enhanced education, and more efficient government. Essentially Connected Texas is helping communities create a forum and structure to take informed actions that help to:

- Improve a community's technology and broadband landscape.
- Identify a community's technology assets.
- Increase economic opportunity, education, healthcare, and e-government in a community.
- Connect a community to technology opportunities and partnerships.
- Leverage a community's existing technology innovations.
- Help a community make strides towards achieving goals outlined in the statewide strategic plan.

## DETAILED FINDINGS

### Gillespie County Assessment Findings

Today, residents in Gillespie County (or sections of the community) are served by 19 providers. Currently broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream. According to Connected Texas' latest broadband mapping update, the following providers have a service footprint in the Gillespie County Community:

Broadband Providers	Technology Type	Website Reference
AT&T Mobility LLC	Mobile Wireless	<a href="http://www.wireless.att.com">http://www.wireless.att.com</a>
Bee Creek Communications, Inc.	Fixed Wireless	<a href="http://beecreek.net">http://beecreek.net</a>
Cricket Communications, Inc.	Mobile Wireless	<a href="http://www.mycricket.com/broadband">http://www.mycricket.com/broadband</a>
DISH Network Corporation	Satellite	<a href="http://www.dishnetwork.com">http://www.dishnetwork.com</a>
Hill Country Telephone Cooperative, Inc.	Fixed Wireless, DSL	<a href="http://www.hctc.coop/en/home.html">http://www.hctc.coop/en/home.html</a>
Hughes Network Systems, LLC	Satellite	<a href="http://www.hughesnet.com">http://www.hughesnet.com</a>
Sprint	Mobile Wireless	<a href="http://sprint.com">http://sprint.com</a>
StarBand Communications	Satellite	<a href="http://starband.com">http://starband.com</a>
Suddenlink Communications, LLC	Cable	<a href="http://www.suddenlink.com">http://www.suddenlink.com</a>
Texas Wireless Internet	Fixed Wireless	<a href="http://www.txwinet.com/service_rates.php">http://www.txwinet.com/service_rates.php</a>
TexasData	Wireless	<a href="http://www.texasdata.net">http://www.texasdata.net</a>
Texxa Internet Services	Fixed Wireless	<a href="http://www.texxa.net">http://www.texxa.net</a>
Time Warner Cable	Cable	<a href="http://www.timewarnercable.com">http://www.timewarnercable.com</a>
T-Mobile	Mobile Wireless	<a href="http://www.t-mobile.com">http://www.t-mobile.com</a>
Verizon	DSL	<a href="http://www.verizon.com">http://www.verizon.com</a>
Verizon Wireless	Mobile Wireless	<a href="http://www.verizonwireless.com">http://www.verizonwireless.com</a>
ViaSat	Satellite	<a href="http://www.viasat.com">http://www.viasat.com</a>
West Central Net	Fixed Wireless	<a href="http://www.wcsonline.net">http://www.wcsonline.net</a>
Windstream Communications Kerrville, L.P.	DSL	<a href="http://www.windstream.com/residential/broadband">http://www.windstream.com/residential/broadband</a>

Below is a list of community websites (sorted by category) designed to share and promote local resources.

Organization Name	Website	Website Category
Charlie's Grill & BBQ	<a href="http://www.charliesgrillnbbq.com">http://www.charliesgrillnbbq.com</a>	Business
Gatti's Pizza	<a href="http://www.gattispizza.com">http://www.gattispizza.com</a>	Business
IHS Studios, Inc.	<a href="http://www.ihsstudios.com">http://www.ihsstudios.com</a>	Business
InSight Gallery	<a href="http://www.insightgallery.com">http://www.insightgallery.com</a>	Business
Michael Roche Photography	<a href="http://www.michaelroche.net">http://www.michaelroche.net</a>	Business
Pizza Hut	<a href="http://www.pizzahut.com">http://www.pizzahut.com</a>	Business
SystemsGo	<a href="http://www.systemsgo.org">http://www.systemsgo.org</a>	Business
Ambleside School of Fredericksburg	<a href="http://www.amblesidefredericksburg.com">http://www.amblesidefredericksburg.com</a>	Education
Bethany Pre-School	<a href="http://www.bethanyfredericksburg.com">http://www.bethanyfredericksburg.com</a>	Education
Fredericksburg Independent School District	<a href="http://www.fisd.org">http://www.fisd.org</a>	Education
Harper Independent School District	<a href="http://www.harperisd.org">http://www.harperisd.org</a>	Education
Heritage School	<a href="http://www.heritage-school.net">http://www.heritage-school.net</a>	Education
St. Mary's Catholic School	<a href="http://school.stmarysfbg.com">http://school.stmarysfbg.com</a>	Education
Texas Tech – Fredericksburg	<a href="http://www.depts.ttu.edu/hillcountry">http://www.depts.ttu.edu/hillcountry</a>	Education
City of Fredericksburg	<a href="http://www.fbgtx.org">http://www.fbgtx.org</a>	Government
Fredericksburg Chamber of Commerce	<a href="http://www.fredericksburg-texas.com">http://www.fredericksburg-texas.com</a>	Government
Fredericksburg Volunteer Fire Department	<a href="http://www.fvfd1883.org">http://www.fvfd1883.org</a>	Government
Gillespie Central Appraisal District	<a href="http://www.gillespiecad.org">http://www.gillespiecad.org</a>	Government
Gillespie County	<a href="http://www.gillespiecounty.org">http://www.gillespiecounty.org</a>	Government
Harper Volunteer Fire Department	<a href="http://www.harper-vfd-ems.com">http://www.harper-vfd-ems.com</a>	Government
Stonewall, Texas	<a href="http://www.stonewalltexas.com">http://www.stonewalltexas.com</a>	Government
Dr. Michael L. Walker	<a href="http://www.mwalkermd.com">http://www.mwalkermd.com</a>	Healthcare
Fredericksburg Clinic	<a href="http://fredericksburgclinic.com">http://fredericksburgclinic.com</a>	Healthcare
Heritage Place of Fredericksburg	<a href="http://heritageplaceoffredericksburg.com">http://heritageplaceoffredericksburg.com</a>	Healthcare
Hill Country Health & Wellness Center	<a href="http://www.hillcountryclinic.org">http://www.hillcountryclinic.org</a>	Healthcare
Hill Country Memorial	<a href="http://hillcountrymemorial.org/Main/Home.aspx">http://hillcountrymemorial.org/Main/Home.aspx</a>	Healthcare



Knopp Healthcare Services	<a href="http://www.knopphealthcareservices.com">http://www.knopphealthcareservices.com</a>	Healthcare
MorningStar Memory Care of Fredericksburg, LLC	<a href="http://www.morningstarmemorycare.com">http://www.morningstarmemorycare.com</a>	Healthcare
The Good Samaritan Center	<a href="http://www.goodsamfbg.org/home">http://www.goodsamfbg.org/home</a>	Healthcare
The Paige House	<a href="http://www.thepaigehouse.com">http://www.thepaigehouse.com</a>	Healthcare
TriStar Care Center Nursing & Rehabilitation	<a href="http://www.tristarcarecenter.com">http://www.tristarcarecenter.com</a>	Healthcare
4.0 Cellars	<a href="http://www.fourpointwine.com">http://www.fourpointwine.com</a>	Tourism
A Quiet Hill Ranch	<a href="http://www.quiethillranch.com">http://www.quiethillranch.com</a>	Tourism
Above and Beyond Day Spa	<a href="http://www.fredericksburg-massage.com">http://www.fredericksburg-massage.com</a>	Tourism
Agave Gallery Fine Art	<a href="http://www.agavegallery.com">http://www.agavegallery.com</a>	Tourism
Artisans at Rocky Hill	<a href="http://www.artisansatrockyhill.com">http://www.artisansatrockyhill.com</a>	Tourism
Becker Vineyards and Lavender Farm	<a href="http://www.beckervineyards.com">http://www.beckervineyards.com</a>	Tourism
Bell Mountain Vineyards	<a href="http://www.bellmountainwine.com">http://www.bellmountainwine.com</a>	Tourism
Boot Ranch	<a href="http://www.bootranch.com">http://www.bootranch.com</a>	Tourism
Buck Valley Ranch	<a href="http://www.buckvalley.com">http://www.buckvalley.com</a>	Tourism
Charles Beckendorf Gallery	<a href="http://www.beckendorf.com">http://www.beckendorf.com</a>	Tourism
Chisholm Trail Winery	<a href="http://www.chisholmtrailwinery.com">http://www.chisholmtrailwinery.com</a>	Tourism
D'Vine Wine of Fredericksburg	<a href="http://www.fredericksburg.dvinewineusa.com">http://www.fredericksburg.dvinewineusa.com</a>	Tourism
European Day Spa of Fredericksburg	<a href="http://www.eurospafredericksburg.com">http://www.eurospafredericksburg.com</a>	Tourism
Eyfels and Eyfels	<a href="http://www.eyfelsandeyfels.com">http://www.eyfelsandeyfels.com</a>	Tourism
Fiesta Winery Fredericksburg	<a href="http://www.fiestawinery.com">http://www.fiestawinery.com</a>	Tourism
Fischer & Wieser's das Peach Haus	<a href="http://www.jelly.com">http://www.jelly.com</a>	Tourism
Fredericksburg Art Guild	<a href="http://www.fredericksburgartguild.org">http://www.fredericksburgartguild.org</a>	Tourism
Fredericksburg Concierge and Tour Service	<a href="http://www.fredericksburg-concierge.com">http://www.fredericksburg-concierge.com</a>	Tourism
Fredericksburg Food & Wine Fest	<a href="http://www.fbgfoodandwinefest.com">http://www.fbgfoodandwinefest.com</a>	Tourism
Fredericksburg Herb Farm	<a href="http://www.fredericksburgherbfarm.com">http://www.fredericksburgherbfarm.com</a>	Tourism
Fredericksburg Limo & Wine Tour	<a href="http://www.FredericksburgTexasLimos.com">http://www.FredericksburgTexasLimos.com</a>	Tourism
Fredericksburg Tennis Association	<a href="http://www.playtennisfredericksburgtx.com">http://www.playtennisfredericksburgtx.com</a>	Tourism
Fredericksburg Theater Company	<a href="http://fredericksburgtheater.org">http://fredericksburgtheater.org</a>	Tourism
Friends of Enchanted Rock	<a href="http://www.friendsofenchantedrock.com">http://www.friendsofenchantedrock.com</a>	Tourism
Friends of Fredericksburg	<a href="http://www.fredericksburgnaturecenter.org">http://www.fredericksburgnaturecenter.org</a>	Tourism



Nature Center		
Grape Creek Vineyards	<a href="http://www.grapecreek.com">http://www.grapecreek.com</a>	Tourism
Hill Country Bicycle Works, Inc.	<a href="http://www.hillcountrybicycle.com">http://www.hillcountrybicycle.com</a>	Tourism
Hill Country Express Tours	<a href="http://www.hillcountryexpresstours.com">http://www.hillcountryexpresstours.com</a>	Tourism
Hilmy Cellars	<a href="http://www.hilmywine.com">http://www.hilmywine.com</a>	Tourism
Larry Jackson Antiques & Estate Services	<a href="http://www.larryjacksonantiques.com">http://www.larryjacksonantiques.com</a>	Tourism
Luckenbach, Texas	<a href="http://www.luckenbachtexas.com">http://www.luckenbachtexas.com</a>	Tourism
Messina Hof Hill Country	<a href="http://www.messinahof.com/mhhillcountry/index.htm">http://www.messinahof.com/mhhillcountry/index.htm</a>	Tourism
National Museum of the Pacific War	<a href="http://www.pacificwarmuseum.org">http://www.pacificwarmuseum.org</a>	Tourism
New Spin 360 LLC	<a href="http://www.insidefredericksburgtx.com">http://www.insidefredericksburgtx.com</a>	Tourism
P.C.A.A./Oktoberfest	<a href="http://www.oktoberfestinfbg.com">http://www.oktoberfestinfbg.com</a>	Tourism
Pedernales Cellars	<a href="http://www.pedernalescellars.com">http://www.pedernalescellars.com</a>	Tourism
Pioneer Museum	<a href="http://www.pioneermuseum.net">http://www.pioneermuseum.net</a>	Tourism
Race Barn	<a href="http://www.theracebarn.com">http://www.theracebarn.com</a>	Tourism
Rancho Ponte Vineyard	<a href="http://www.ranchoponte.com">http://www.ranchoponte.com</a>	Tourism
River Rustic Gallery	<a href="http://www.riverrustic.com">http://www.riverrustic.com</a>	Tourism
RM Enterprises	<a href="http://www.moseleyhuntingcamps.com">http://www.moseleyhuntingcamps.com</a>	Tourism
Rockbox Theater	<a href="http://www.rockboxtheater.com">http://www.rockboxtheater.com</a>	Tourism
RS Hanna Gallery	<a href="http://www.rshannagallery.com">http://www.rshannagallery.com</a>	Tourism
Serenity Day Spa	<a href="http://www.SerenitySpaAtTheInn.com">http://www.SerenitySpaAtTheInn.com</a>	Tourism
Texas Hills Vineyard	<a href="http://www.texashillsvineyard.com">http://www.texashillsvineyard.com</a>	Tourism
Texas Wine Tours	<a href="http://www.texas-wine-tours.com">http://www.texas-wine-tours.com</a>	Tourism
Torre di Pietra Vineyards & Winery	<a href="http://www.texashillcountrywine.com">http://www.texashillcountrywine.com</a>	Tourism
Vaudeville	<a href="http://www.vaudeville-living.com">http://www.vaudeville-living.com</a>	Tourism
Whistle Pik Galleries	<a href="http://www.whistlepik.com">http://www.whistlepik.com</a>	Tourism
White Oak Studio	<a href="http://www.whiteoakstudio.com">http://www.whiteoakstudio.com</a>	Tourism
Wildflower Ridge Alpacas	<a href="http://www.wr-alpaca-ranch.com">http://www.wr-alpaca-ranch.com</a>	Tourism
Wildseed Farms, Inc.	<a href="http://www.wildseedfarms.com">http://www.wildseedfarms.com</a>	Tourism
Zulu Helicopters	<a href="http://www.zuluhelicopters.com">http://www.zuluhelicopters.com</a>	Tourism

Below is a list of local technology companies that are providing technical services or distributing/selling technical resources.

Company Name	Website	Provider Type
4ip Technology & Media	<a href="http://www.4iptech.com">www.4iptech.com</a>	Network Developer
Cloud Tippers, LLC	<a href="http://www.cloudtippers.com">www.cloudtippers.com</a>	Website Developer

Below is a list of organizations that are making technological resources available to the community. These include organizations that provide videoconferencing, public computing, and wireless hotspots.

Organization Name	Resource Type
Pioneer Memorial Library	Public Computer Center
Harper Library	Public Computer Center
Golden Hub	Public Computer Center
Texas Workforce Commission	Public Computer Center
AT&T Retail Store	Wireless Hotspot
Clear River Pecan Co.	Wireless Hotspot
Comfort Inn Suites	Wireless Hotspot
Cottages at Limestone on Main	Wireless Hotspot
Der Stall Bed & Breakfast	Wireless Hotspot
Econo Lodge	Wireless Hotspot
Fredericksburg RV Park	Wireless Hotspot
Gastehaus Schmidt Reservation Service	Wireless Hotspot
Hampton Inn & Suites	Wireless Hotspot
McDonald's	Wireless Hotspot
Oakwood RV Resort	Wireless Hotspot
Quality Inn	Wireless Hotspot
Stagecoach Theatre	Wireless Hotspot
Sweet Marley's	Wireless Hotspot
Town Creek Bed & Breakfast	Wireless Hotspot



## Connected Summary

<b>Community Technology Scorecard</b> Community Champion: Tim Lehmborg Community Advisor: LaTanya Tatum			
FOCUS AREA	ASSESSMENT CRITERIA	COMMUNITY SCORE	MAXIMUM POSSIBLE SCORE
ACCESS	Broadband Availability	2	10
	Broadband Speeds	1	5
	Broadband Competition	3	5
	Middle Mile Access	10	10
	Mobile Broadband Availability	6	10
	<b>TOTAL ACCESS SCORE</b>	<b>22</b>	<b>40</b>
ADOPTION	Digital Literacy	8	10
	Public Computer Centers	10	10
	Broadband Awareness	10	10
	Vulnerable Population Focus	10	10
	<b>TOTAL ADOPTION SCORE</b>	<b>38</b>	<b>40</b>
USE	Economic Opportunity	10	10
	Education	10	10
	Government	10	10
	Healthcare	10	10
	<b>TOTAL USE SCORE</b>	<b>40</b>	<b>40</b>
<b>COMMUNITY ASSESSMENT SCORE</b>		<b>98</b>	<b>120</b>



## ACCESS Score Breakdown

**Broadband Availability** (2 out of 10 Points Possible) – is measured by analyzing provider availability of 3 Mbps broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the October 2012 data collected by Connected Texas, 78.89% of Gillespie County residents had access to broadband speeds of 3 Mbps or greater.**

**Broadband Speeds** (1 out of 5 Points Possible) – is measured by analyzing the speed tiers available within a community. Connected Nation will analyze broadband data submitted through its broadband mapping program. Specifically, Connected Nation will break down the coverage by the highest speed tier with at least 75% of households covered. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the October 2012 data collected by Connected Texas, 78.89% of Gillespie County residents had access to broadband speeds of 3 Mbps.**

**Broadband Competition** (3 out of 5 Points Possible) – is measured by analyzing the number of broadband providers available in a particular community and the percentage of that community’s residents with more than one broadband provider available. Connected Nation performed this analysis by reviewing the data collected through the broadband mapping program. In communities that may have broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the October 2012 data collected by Connected Texas, 81.79% of Gillespie County residents had access to more than one broadband provider.**

**Middle Mile Access** (10 out of 10 Points Possible) – is measured based on a community’s availability to fiber. Three aspects of availability exist: proximity to middle mile points of presence (POPs), number of POPs available, and available bandwidth. Data was collected by the community in coordination with Connected Nation.

- **Gillespie County is served by 2 or more middle mile fiber providers.**

**Mobile Broadband Availability** (6 out of 10 Points Possible) – is measured by analyzing provider availability of mobile broadband service gathered by Connected Nation’s broadband mapping program. In communities that may have mobile broadband data missing, community teams were able to improve the quality of data to ensure all providers are included.

- **According to the October 2012 data collected by Connected Texas, 94.69% of Gillespie County residents had access to mobile broadband service.**



### ADOPTION Score Breakdown

**Digital Literacy** (6 out of 10 Points Possible) – is measured by first identifying all digital literacy programs in the community. Once the programs are determined, a calculation of program graduates will be made on a per capita basis. A digital literacy program includes any digital literacy course offered for free or at very low cost through a library, seniors center, community college, K-12 school, or other group serving the local community. A graduate is a person who has completed the curriculum offered by any organization within the community. The duration of individual courses may vary. A listing of identified digital literacy offerings is below.

Organization Name	Program Description	Number of Grads
FISD Community Education	Various Computer Classes	75
Golden Hub Community Center	Basic Computer Skills Training	25

**Public Computer Centers** (10 out of 10 Points Possible) – is measured based on the number of hours computers are available each week per 1,000 low-income residents. Available computer hours is calculated by taking the overall number of computers multiplied by the number of hours open to a community during the course of the week. A listing of public computer centers available in Gillespie County is below.

Organization Name	Number of Open Hours per Week	Number of Computers	Available Computer Hours per Week
Pioneer Memorial Library	47	4	188
Harper Library	43	7	301
Golden Hub	40	4	160
Texas Workforce Commission	8	1	8

**Broadband Awareness** (10 out of 10 Points Possible) – is measured based on the percentage of the population reached. All community broadband awareness programs are first identified, and then each program’s community reach is compiled and combined with other campaigns. A listing of broadband awareness programs in Gillespie County is below.

Organization Name	Campaign Description	Community Reach
FISD Community Education	Mailing of course offerings twice/year	80% (est.)
Fredericksburg Chamber of Commerce	Provides access to websites for local business	100%
Gillespie County	Online services available to community (bill pay, etc.)	100%
City of Fredericksburg	Online services available to community (bill pay, etc.)	100%

**Vulnerable Population Focus** (10 out of 10 Points Possible) – A community tallies each program or ability within the community to encourage technology adoption among vulnerable groups. Methods of focusing on vulnerable groups may vary, but explicitly encourage technology use among vulnerable groups. Example opportunities include offering online GED classes, English as a Second Language (ESL) classes, video-based applications for the deaf, homework assistance for students, and job-finding assistance. Communities receive points for each group on which they focus. Groups may vary by community, but include low-income, minority, senior, children, etc. A listing of programs focusing on vulnerable populations in Gillespie County is listed below.



Organization Name	Program Description	Vulnerable Group
FISD Community Education	GED Classes	Low income, minority
FISD Community Education	ESL Classes	Low income, minority, senior
FISD Community Education	American Sign Language Classes	Disabled
Harper Library	Adult Literacy (GED & ESL Classes)	Low income, minority, senior
Boys and Girls Club	Power Hour (homework help & tutoring)	Children
Boys and Girls Club	Career Launch (skills/interest assessment)	Children
Boys and Girls Club	Money Matters (financial literacy)	Children
Golden Hub Community Center	Computer Skills Training	Senior Citizens
Texas Workforce Commission	Provides a computer for applicants to use to apply for a job	Low income, minority, senior



### USE Score Breakdown

**Economic Opportunity (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within economic opportunity include: economic development, business development, tourism, and agriculture. Identified uses of broadband in the area of economic opportunity are listed below and identified as basic or advanced.

Application Provider	Description	Basic / Advanced
Fredericksburg Convention and Visitor Bureau	Website to promote visitation to Fredericksburg and Gillespie County	Advanced
Fredericksburg Chamber of Commerce	Website to promote business and economic development	Advanced
Gillespie County AgriLife Extension	Provides news and contact info for agricultural extension services	Basic
Gillespie County Farm Bureau	Agriculture and rural issues	Basic
Stonewall Chamber of Commerce	Website to promote business and economic development	Basic
Harper Chamber of Commerce	Website to promote business and economic development	Basic
Free Wireless Hotspots	City of Fredericksburg has approximately eleven free wireless hotspots	Basic

**Education (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within education include K-12, higher education, and libraries. Identified uses of broadband in the area of education are listed below and identified as basic or advanced.

Application Provider	Description	Basic/Advanced
Fredericksburg ISD	Parent portal; Online progress reports	Advanced
Harper ISD	Parent portal	Advanced
Texas Tech University	Online learning	Advanced
Austin Community College	Online learning	Advanced
Heritage School	Online application for admission	Advanced
Fredericksburg Christian Schools	Interactive website; Online admission	Advanced
Ambleside School of Fredericksburg	Website for public to learn more information	Basic
St. Mary's Catholic School	Interactive website where patrons can schedule a tour and pay tuition online	Basic

**Government (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Categories within government include general government, public safety, energy, and the environment. Identified uses of broadband in the area of government are listed below and identified as basic or advanced.

Application Provider	Description	Basic/Advanced
Atmos Energy	Provides customer online interaction: bill pay, account access	Advanced
City of Fredericksburg	50% of essential government services online	Advanced
Gillespie County	50% of essential government services online	Advanced
Gillespie Central Appraisal District	50% of essential government services online	Advanced
Central Texas Electric Co-op	Provides customer online interaction: bill pay, account access	Advanced
Harper Volunteer Fire Dept.	Website	Basic
Fredericksburg Volunteer Fire Dept.	Website	Basic

**Healthcare (10 out of 10 Points Possible)** – A community receives one point per basic use of broadband and two points per advanced use of broadband. Entities within healthcare can include, but are not limited to, hospitals, medical and dental clinics, health departments, nursing homes, assisted living facilities, and pharmacies. Identified uses of broadband in the area of healthcare are listed below and identified as basic or advanced.

Application Name	Description	Basic/ Advanced
Hill Country Memorial Hospital	Website for 88 bed community hospital	Advanced
Knopp Health Care Services	Website for four nursing/rehab facilities	Basic
Morningstar Memory Care	Website for Alzheimer’s care facility	Basic
The Paige House	Website for retirement home	Basic
Heritage Place	Website for assisted living facility	Basic
TriStar Care Center	Group of family practice & internal medicine physicians	Basic
Fredericksburg Clinic	Group of family practice & internal medicine physicians	Basic
Hill Country Medical Clinic	Website for internal medicine physicians	Basic
Hill Country Urgent Care	Website: <a href="http://hcurgentcare.com">http://hcurgentcare.com</a>	Basic
Fredericksburg Dentistry	Website for dental clinic: <a href="http://www.fredericksburgdentistry.com/contact-us.html">www.fredericksburgdentistry.com/contact-us.html</a>	Basic

## STATEWIDE PERSPECTIVE OF BROADBAND

### Statewide Infrastructure

As part of the Texas State Broadband Initiative (SBI) and in partnership and at the direction of the Texas Department of Agriculture (TDA), Connected Texas produced an inaugural map of broadband availability in the spring of 2010. The key goal of the map was to highlight communities and households that remain unserved or underserved by broadband service; this information was essential to estimating the broadband availability gap in the state and understanding the scope and scale of challenges in providing universal broadband service to all citizens across the state. Since the initial map’s release, Connected Texas has collected and released new data every six months, with updates in October and April annually.

The most current statewide- and county-specific broadband inventory maps released in the fall of 2012 depict a geographic representation of provider-based broadband data represented by cable, DSL, fiber-to-the-home, fixed wireless, and mobile wireless services. These maps also incorporate data such as political boundaries and major transportation networks in the state. Statewide broadband maps can be found at: <http://www.connectedtx.org/mapping/state>. And county-specific maps and data can be found at: [http://www.connectedtx.org/community\\_profile/find\\_your\\_county/texas/gillespie](http://www.connectedtx.org/community_profile/find_your_county/texas/gillespie).

Table 1 -Estimate of Broadband Service Availability in the State of Texas - By Speed Tier Among Fixed Platforms			
SBI Download/Upload Speed Tiers	Unserved Households	Served Households	Percent of Served Households by Speed Tier
<b>At Least 768 Kbps/200 Kbps</b>	149,280	8,773,653	98.33%
<b>At Least 1.5 Mbps/200 Kbps</b>	438,867	8,484,066	95.08%
<b>At Least 3 Mbps/768 Kbps</b>	687,838	8,235,095	92.29%
<b>At Least 6 Mbps/1.5 Mbps</b>	1,519,149	7,403,784	82.97%
<b>At Least 10 Mbps/1.5 Mbps</b>	1,807,469	7,115,464	79.74%
<b>At Least 25 Mbps/1.5 Mbps</b>	4,140,402	4,782,531	53.60%
<b>At Least 50 Mbps/1.5 Mbps</b>	4,200,526	4,722,407	52.92%
<b>At Least 100 Mbps/1.5 Mbps</b>	5,928,174	2,994,759	33.56%
<b>At Least 1 Gbps/1.5 Mbps</b>	8,922,933	0	0%

Source: *Connected Texas, November 2012*

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile and satellite service) across the state of Texas; it presents the number and percentage of unserved and served households by speed tiers. The total number of households in Texas, based on the 2010 Census, is 8,922,933, for a total population of approximately 25 million people. Table 1 indicates that 98.33% of households are able to connect to basic broadband service at speeds of at least 768 Kbps download/200 Kbps upload. This implies that the number of households originally estimated by Connected Texas to be unserved has dropped from 257,571 households in the fall of 2010 to 149,280 households in the fall of 2012. Further, approximately 687,838 households across Texas have broadband available of at least 3 Mbps download/768 Kbps upload speeds. The percentage of Texas households having fixed broadband access available of at least 6 Mbps download and 1.5 Mbps upload speeds is estimated at 82.97%.

Taking into account both fixed and mobile broadband service platforms, an estimated 99.90% of Texas households have broadband available from at least one provider at speeds of 768 Kbps download/200 Kbps upload or higher. This leaves 9,123 households in the state completely unserved by any form of terrestrial broadband (including mobile, but excluding satellite services).

As differences in broadband availability estimates between the fall of 2010 and the fall of 2012 show, additional participating broadband providers can have a large impact upon Texas broadband mapping inventory updates. Further, the measured broadband inventory provides an estimate of the true extent of broadband coverage across the state. There is a degree of measurement error inherent in this exercise that should be taken into consideration when analyzing the data. This measurement error will decrease as local, state, and federal stakeholders identify areas where the displayed coverage is underestimated or overestimated. Connected Texas welcomes such feedback to be analyzed in collaboration with broadband providers to correct errors identified in the maps.

In addition, the broadband availability data collected, processed, and aggregated by Connected Texas has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Texas' broadband availability estimates reported by the NTIA and the FCC in the National Map. The National Broadband Map can be found here: <http://www.broadbandmap.gov> and the specific page for analyzing Texas' data can be found here: <http://www.broadbandmap.gov/summarize/state/texas>.

Connected Texas also maintains an interactive version of their broadband inventory maps, My ConnectView™, available at <http://www.connectedtx.org/interactive-map>.

Connected Texas' business technology assessment was released during the spring of 2011 and can be found here: <http://www.connectedtx.org/survey-results/business>.

## Business and Residential Technology Assessments

To complement the broadband inventory and mapping data, Connected Texas periodically conducts statewide residential and business technology assessments to understand broadband demand trends across the state. The purpose of this research is to better understand the drivers and barriers to technology and broadband adoption and estimate the broadband adoption gap across the state of Texas. Key questions the data address are: who, where, and how are households in Texas using broadband technology? How is this technology impacting Texas households and residents? And, who is not adopting broadband service and why? What are the barriers that prevent citizens from embracing this empowering technology?

Through Connected Texas' research, many insights are able to be collected. The most recent residential technology surveyed 3,597 residents across the state and revealed the following key findings:

- Across the state, 62% of adults subscribe to home broadband service and 48% of adults access the Internet through a mobile device. Less than one in five (17%) of Texans do not use the Internet at home or at a location other than home.
- Adoption of home broadband service in rural Texas is only 48% of households in those areas and 37% of adults in rural Texas use a mobile device to access the Internet.
- Approximately 2 million home broadband subscribers in Texas cite the fact that broadband became available as their main reason for subscribing.
- Among Texans with full- or part-time employment, 21% use their home Internet connection to work from home rather than commute to a work place, known as teleworking.
- 1.4 million, or 20%, of Texas adults say a lack of digital skills and knowledge of how to use a computer and broadband is the main reason they don't have broadband at home.

For more information on the statewide information described, visit the Connected Texas website at <http://www.connectedtx.org>.

Additionally, an assessment on technology of 811 businesses in the state released in the report titled *Technology Adoption Among Texas Businesses* in the fall of 2012 revealed the following key findings:

- Businesses with high-speed Internet connections report having median annual revenues \$200,000 more than businesses without broadband.
- One-half of all Texas businesses (approximately 261,000 businesses) have a website. Median annual revenues among broadband-connected businesses with websites are \$300,000 higher than those without.
- Approximately 95% of Texas businesses using broadband today report that they are satisfied with their broadband service, with 64% answering that they are "Very Satisfied" with their broadband.
- Rural Texas businesses report needing more bandwidth at greater percentages than their urban or suburban counterparts.

- Approximately 27% of all businesses – and 28% of small businesses with fewer than five employees – do not use broadband for their daily business needs.
- Roughly one-quarter of state businesses allow employees to telework, allowing workers more flexibility and job opportunities, and helping businesses operate more efficiently.

Read more about the results of this business technology assessment at the Connected Texas website: [http://www.connectedtx.org/sites/default/files/learn-sidebar-docs/tx\\_biz\\_2012.pdf](http://www.connectedtx.org/sites/default/files/learn-sidebar-docs/tx_biz_2012.pdf)

## **Analyzing Texas' Broadband Infrastructure and Business and Technology Assessments**

Texas broadband availability and adoption estimates were analyzed and presented as part of an initial working report titled *The Broadband Landscape in the State of Texas: Assessment at a State, Regional & Local Level, and Recommendations for Broadband Expansion* which was released in March 2011. This report analyzes this complementary demand- and supply-side research and explores external factors, such as the impact of the federal Universal Service Fund (USF) and the policy implications of the Federal Communication Commission's (FCC) National Broadband Plan (NBP). Following the spirit of the NBP and based on the broadband availability and adoption data collected by Connected Texas, the report proposes a series of policy recommendations aimed to spur discussion and feedback among key stakeholders across Texas. This report is available at <http://www.connectedtx.org/planning>.

Other reports that have been compiled by Connected Texas include:

*Broadband & Business: Leveraging Technology to Stimulate Economic Growth, July 2011*  
[http://www.connectednation.org/sites/default/files/tx\\_bizwhitepaper\\_final.pdf](http://www.connectednation.org/sites/default/files/tx_bizwhitepaper_final.pdf)

*Texas Goes Mobile: Mobile Broadband Adoption and Satisfaction Across Texas, March 2012*  
[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_mobile\\_usage.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_mobile_usage.pdf)

*The Texas Digital Divide: An Assessment of Rural and Non-Rural Texans, June 2012*  
[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_rural\\_non\\_rural\\_final.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_rural_non_rural_final.pdf)

*Making the Connection through Digital Literacy, August 2012*  
[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_digital\\_literacy\\_final.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_digital_literacy_final.pdf)

*Providing Learning Anywhere: K-12 Education in Texas, November 2012*  
[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_elearning.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_elearning.pdf)

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## RECOMMENDED ACTIONS

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This project has culminated in the outlining of projects to close the gaps to becoming a certified technology Connected community. Connected Texas recommends the following actions:

### ACCESS: Recommended Actions

#### **Broadband Availability**

##### **1. Apply to USDA for Funding Support to Build out Broadband in Community**

The USDA, through its Rural Development mission area, administers and manages housing, business, and community infrastructure and facility programs through a national network of state and local offices. Rural Development has an active portfolio of more than \$165 billion in loans and loan guarantees. These programs are designed to improve the economic stability of rural communities, businesses, residents, farmers and ranchers and improve the quality of life in rural areas.

#### **Farm Bill Loan Program – USDA**

This program is designed to provide loans for funding, on a technology neutral basis, for the costs of construction, improvement, and acquisition of facilities and equipment to provide broadband service to eligible rural communities.

#### *Additional Information:*

- Direct loans are in the form of a cost-of-money loan, a 4-percent loan, or a combination of the two.

#### *Eligibility:*

- Must be a rural area. Rural area means any area, as confirmed by the latest decennial census by the U.S. Census Bureau, which is not located within: (a) A city, town, or incorporated area that has a population of more than 20,000 people; or (b) An urbanized area contiguous and adjacent to a city or town with a population of more than 50,000 people. An urbanized area means a densely populated territory as defined in the latest decennial census.



- To be eligible for a broadband loan, an applicant may be either a nonprofit or for-profit organization, and must take one of the following forms: (1) Corporation; (2) Limited liability company (LLC); (3) Cooperative or mutual organization; (4) Federally recognized Indian tribe or tribal organization; or (5) State or local government, including any agency, subdivision, or one of their units.
- A service area may be eligible for a broadband loan if all of the following are true: (1) The service area is completely contained within a rural area; (2) At least 25 percent of the households in the service area are underserved households; (3) No part of the service area has three or more incumbent service providers; (4) No part of the funded service area overlaps with the service area of current RUS borrowers and grantees; (5) No part of the funded service area is included in a pending application before RUS seeking funding to provide broadband service.

### **Community Connect Program – USDA**

Provides community access to broadband services in unserved areas through a one-time grant to such organizations as tribes, cooperatives, private companies, and universities, and uses the infrastructure built by the grant to create opportunities for continued improvement.

#### *Additional Information:*

- The funding will support construction, acquisition, or lease of facilities, including spectrum, to deploy broadband transmission services to all critical community facilities and to offer such services to all residential and business customers located within the proposed service area.
- The funding can be put towards the improvement, expansion, construction, acquisition, or leasing of a community center that furnishes free access to broadband Internet service, providing that the community center is open and accessible to area residents before, during, and after normal working hours and on Saturday or Sunday.
- All equipment purchases with grant and/or matching funds must be new or non-depreciated.

#### *Eligibility:*

- Must be single community with a population of less than 20,000 that does not have Broadband Transmission Service.
- Applicants must be organized as an incorporated organization, an Indian tribe or tribal organization, a state or local unit of government, or other legal entity, including cooperatives or private corporations or limited liability companies organized on a for-profit or not-for-profit basis.

- The project must deploy Basic Broadband Transmission Service, free of all charges for at least 2 years, to all Critical Community Facilities located within the proposed Service Area. Additionally, it should offer Basic Broadband Transmission Service to residential and business customers within the proposed Service Area.

*Contact Information:*

Point of Contact: Thera Swersky or Steven Levine

Telephone: (202) 690-4673.

E-mail: [community.connect@wdc.usda.gov](mailto:community.connect@wdc.usda.gov)

Website: [http://www.rurdev.usda.gov/utp\\_commconnect.html](http://www.rurdev.usda.gov/utp_commconnect.html)

**Distance Learning and Telemedicine Loans and Grants Program – USDA**

Provides loans and grants to rural community facilities (e.g. schools, libraries, hospitals, and tribal organizations) for advanced telecommunications systems that can provide healthcare and educational benefits to rural areas.

*Additional Information:*

- The Distance Learning and Telemedicine Loans and Grant Program (DLT Program) provides three kinds of financial assistance: a full grant, grant-loan combination, and a full loan.

*Eligibility:*

To be eligible for a grant, your organization must:

- Currently deliver or propose to deliver distance learning or telemedicine services for the term of the grant. To receive a grant, the purposes must meet the grant definition of distance learning and telemedicine. The DLT program is focused on sustainability. Planning studies, research projects, and short-term demonstration projects of less than two years will not be considered.
- Be legally organized as an incorporated organization or partnership; an Indian tribe or tribal organization; a state or local unit of government; a consortium; or other legal entity, including a private corporation organized on a for-profit or not-for-profit basis with the legal capacity to contract with the United States Government.
- Operate a rural community facility or deliver distance learning or telemedicine services to entities that operate a rural community facility or to residents of rural areas at rates calculated to ensure that the benefit of the financial assistance passes through to such entities or to residents of rural areas.

*Contact Information:*

Point of Contact: Sam Morgan

Telephone: (202) 720-0665

E-mail: [dltinfo@wdc.usda.gov](mailto:dltinfo@wdc.usda.gov)

Website: [http://www.rurdev.usda.gov/UTP\\_DLT.html](http://www.rurdev.usda.gov/UTP_DLT.html)

### **Universal Service Rural Health Care Program – Universal Service Administration Company**

The Rural Health Care program supports healthcare providers serving rural communities by funding telecommunications services necessary for the provision of healthcare. The program is intended to ensure that rural healthcare providers pay no more for telecommunications in the provision of healthcare services than their urban counterparts.

#### *Additional Information:*

- Public and non-profit healthcare providers in rural areas can receive discounts on installation and monthly charges for telecommunications and Internet access service used for the provision of healthcare by using one of two methods: a mileage-based calculation, or a calculation of the “urban rate” to receive support equal to the difference between what they pay and what they would pay if they were receiving the service in any city in their state with a population of 50,000 or more.
- The rural healthcare provider must submit a form requesting services to the Universal Service Administrative Company (USAC). Once the form is approved, it is posted on USAC’s website seeking bids from telecommunications companies interested in providing the requested services. After the rural healthcare provider selects a provider from qualified bidders and USAC has approved the funding request, the services may begin. Support from the USF is then used to help pay for eligible services provided to the rural healthcare provider.

#### *Eligibility:*

Eligible organizations include:

- post-secondary educational institutions offering healthcare instruction, including teaching hospitals and medical schools;
- community health centers or health centers providing healthcare to migrants;
- local health departments or agencies;
- community mental health centers;
- not-for-profit hospitals;
- dedicated emergency departments in rural for-profit hospitals;
- rural healthcare clinics;
- part-time eligible entities located in facilities that are ineligible; and
- groups of healthcare providers consisting of one or more entities described above.

*Contact Information:*

Telephone: (800) 229-5476

E-mail: [rhc-admin@usac.org](mailto:rhc-admin@usac.org)

Website: <http://www.universalservice.org/rhc/default.aspx>

**Broadband Speeds**

No recommended actions.

**Broadband Competition**

**2. Develop Public-Private Partnerships to Deploy Broadband Service**

Public-private partnerships take many forms, limited only by the imagination and legal framework in which the municipality operates. Some communities issue municipal bonds to fund construction of a network, which they lease to private carriers, with the lease payments covering the debt service. Others create non-profit organizations to develop networks in collaboration with private carriers or provide seed investment to jumpstart construction of networks that the private sector is unable to cost-justify on its own.

A public-private partnership should not be simply seen as a method of financing. The strength of these partnerships is that each party brings something important to the table the other doesn't have or can't easily acquire. The community can offer infrastructure (publicly-owned building rooftops, light poles, towers, and other vertical assets for mounting infrastructure) for the deployment of the system, as well as committed anchor tenants. Private-sector partners bring network-building and operations experience.

*Benefits:*

- The public sector transfers much of the risk for private investment. For example, the public sector has many funding tools available, including incentivizing continued investment through tax credits, encouraging greater availability of private capital through government guaranteed loans, or government being a direct source of capital through loans or grants.
- The partnership can aggregate demand and reduce barriers to deployment. By working together, public and private parties can educate and build awareness needed for the public to better integrate the use of broadband into their lives, thereby improving the business case for broadband deployment.



### 3. Study and Possibly Reassess Major Telecom Purchase Contracts

Demand for broadband capacity across community institutions represents a key segment of the overall demand for broadband in many communities. The purchasing power of this collective should be leveraged to help promote greater competition in the broadband market and drive increased investment in backhaul and last mile broadband capacity.

*Benefits:*

- By aggregating demand within a local community, these institutions will be able to demonstrate to interested broadband providers existing pent-up demand and help justify private investments to bring greater capacity backhaul service to that community.
- The increased backhaul capacity can in turn benefit the whole community.

**Middle Mile Access**

**No recommended actions.**

**Mobile Broadband Availability**

### 4. Identify, Map, and Validate Broadband Demand

Develop a team to conduct research surveys and market analyses to validate a business case. A market analysis includes research on the existing and potential service offerings and the respective rates to determine the levels of interest in the services and rate plans offered by the client. The team should provide accurate, timely, and thorough solutions, accompanied by personalized service to meet the needs of communities or broadband providers.

*Benefits:*

- Enables the ability to better understand the key drivers of the broadband market.
- Validates the business case for network build out and capacity investment.

## 5. Perform a Broadband Build-out Analysis in Unserved Areas

Conduct an onsite visual assessment of the defined geographic area seeking broadband coverage. The assessment determines the feasibility of deploying various Internet systems in a defined area. You should gather site specific information required for (i) determining use of existing infrastructure, (ii) designing wired and wireless Internet system using these assets, and (iii) expanding the broadband coverage in the defined area.

Wireless may be the best likely solution. To assist with that, you should conduct a visual assessment of the vertical assets (broadcast towers and water tanks) to determine the feasibility of deploying a fixed wireless broadband Internet system in the unserved community and to gather site-specific information required for that purpose.

### *Benefits:*

- Determines project feasibility and provides information to develop a business case for build-out.
- First step in providing unserved community residents with adequate broadband access.

## 6. Complete a Vertical Assets Inventory

Wireless communications equipment can be placed in a wide variety of locations, but ideally, wireless providers look for locations or structures in stable condition, with reasonably easy access to electricity and wired telecommunications, and with a significant height relative to the surrounding area. “Vertical assets” are defined as structures on which wireless broadband equipment can be mounted and positioned to broadcast a signal over as much terrain as possible. These assets include structures such as cell towers, water tanks, grain silos, and multi-story buildings.

The lack of easily accessible and readily usable information regarding the number and location of vertical assets prevents the expansion of affordable, reliable wireless broadband service. Wireless broadband providers must determine if it is worth the effort and expense to collect and analyze this data when making investment decisions. Public sector organizations are faced with the same challenges. A centralized and comprehensive vertical assets inventory can help wireless broadband providers expedite decisions regarding the deployment of affordable, reliable broadband service in rural areas.

*Benefits:*

- The vertical assets inventory provides data for private and public investment decisions, lowering the initial cost of efforts needed to identify potential mounting locations for infrastructure.
- The inventory can encourage the expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.

## **7. Perform Analysis of Local Policies and Ordinances**

High capital investment costs, including permit processing, pole attachment costs, and lack of effective planning and coordination with public authorities negatively impact the case for deployment. For example, the FCC's National Broadband Plan concludes that, "the rates, terms, and conditions for access to rights of way [including pole attachments] significantly impact broadband deployment." The costs associated with obtaining permits and leasing pole attachments and rights-of-way are one of the most expensive cost functions in a service provider's plans to expand or upgrade service, especially in rural markets where the ration of poles to households goes off the charts. Furthermore, the process is time consuming. "Make ready" work, which involves moving wires and other equipment attached to a pole to ensure proper spacing between equipment and compliance with electric and safety codes can take months to complete.

Community and provider collaboration to problem solve around local pole attachment and other right of way issues is one of the most effective opportunities to encourage faster, new deployment of infrastructure.

*Benefits:*

- Lowers cost barriers to improve the business case for broadband deployment.
- Encourages good public policy and provider relations.

## **8. Develop & Issue an RFP for Build-out**

An RFP (request for proposals) is a widely used technique for establishing a selection of qualified responses for which to choose when contracting for services. The RFP should provide a guidance and due diligence framework for interested broadband providers and vendors. Furthermore, the RFP should request that interested parties provide plans for cost-effective community broadband networks, including equipment lists, locations, and itemized engineering cost estimates. In addition, the completed design should also include what technology will be needed at customer premises, the performance that can be expected, and recurring costs associated with operating and maintaining the system once it is in place.

*Benefits:*

- After completing an RFP, your community will have a good handle on the potential project risks, as well as benefits, associated with build out.

- An RFP lets providers know that the situation will be competitive. The competitive bidding scenario is often the best method available for obtaining the best pricing and, if done correctly, the best value.

## **ADOPTION: RECOMMENDED ACTIONS**

### **Digital Literacy**

#### **9. Facilitate a Technology Summit**

Develop and host a technology summit of residents and businesses to increase awareness of broadband value, service options, and the potential impact on quality of life. The technology summit should facilitate community partnerships between leaders in local government and the private sector, including non-profits and private businesses in the education, healthcare, and agriculture sectors with the goal of ensuring that residents have at least one place in the community to use powerful new broadband technologies, and that this asset will be sustained over time. Further, the technology summit should highlight success stories as evidence of the impact of technology.

#### *Benefits:*

- Highlights successes, opportunities, and challenges regarding community technology planning.
- Develops ongoing dialogue around improving broadband access, adoption, and use.
- Unifies community stakeholders under one vision.

#### **10. Distribute Digital Literacy Content**

Leverage the abundant digital literacy content available online to distribute to local trainers. Currently, numerous non-profit organizations and for-profit corporations provide curriculum that can be adapted for classroom or self-paced study. Some organizations also provide additional resources for instructor use, including classroom setup information, teaching tips for each course, additional practice, test item files, and answers to frequently asked questions. Digital literacy content can be deployed via local websites (a community portal), print material, podcasts, blogs, and videos.

Additionally, your community could create a partnership between libraries, school systems, computer suppliers, and broadband providers to provide free training and discounted computers and broadband service to low-income community members who are not participating in the digital age. An example of such a program is Connected Nation's Every Community Online program. This is an innovative program that is providing free digital literacy

training, access to low-cost computers, and discounted broadband access to communities across the country.

*Benefits:*

- Increasing the community's digital literacy facilitates widespread online access to education and other public and government services, provides equal access to opportunities such as jobs and workforce training, enables people to find information about their health, and offers the opportunity to increase levels of social interaction and civic involvement.

### **11. Develop or Identify a Broadband Training and Awareness Program for Small & Medium Businesses**

Methods of implementing a small and medium business broadband awareness program include, but are not limited to, facilitating awareness sessions, holding press conferences led by community leaders, inviting speakers to community business conferences or summits, and public service announcements. It is also important to educate local businesses on Internet tools that are available at minimum or no cost to them.

A training program or entry-level "Broadband 101" course could be utilized to give small and medium businesses an introduction on how to capitalize on broadband connectivity, as well as more advanced applications for IT staff. In addition, training should include resources for non-IT staff, such as how to use commerce tools for sales, streamline finances with online records or leverage knowledge management across an organization. Additional training might include:

- "How to" training for key activities such as online collaboration, search optimization, cybersecurity, equipment use, and Web 2.0 tools.
- Technical and professional support for hardware, software, and business operations.
- Licenses for business applications such as document creation, antivirus and security software, and online audio- and videoconferencing.
- Website development and registration.
- Basic communications equipment, such as low-cost personal computers and wireless routers.

*Benefits:*

- Provides entrepreneurial support.
- Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
- Promotes business growth and workforce development.
- Broadband empowers small businesses to achieve operational scale more quickly by lowering start-up costs through faster business registration and improved access to customers, suppliers, and new markets. According to [Connected Nation's 2012 Jobs and](#)

[Broadband Report](#), businesses that are using the Internet bring in approximately \$300,000 more in median annual revenues than their unconnected counterparts.

## 12. Establish a "Community Technology Academy"

Develop partnership between libraries, community centers, churches (places with computer labs for public use) and schools, community colleges and universities (places with subject matter experts) to develop a "Community Technology Academy." Providers, local businesses and community volunteers may be included to provide financial and/or in-kind support for the program. Academy curriculum should include basic training in areas such as "Introduction to Computers," "Internet Basics," social networking, using communication technologies, and the use of applications such as Microsoft Office, OpenOffice, or Google Docs.

### *Benefits:*

- Creates a more digitally literate and competent populace
- Develops community's human capital

## 13. Create a Technology Mentorship Program

Initiate a program designed to recruit local high school or college students who excel in school and exhibit advanced leadership and technology skills to assist in technology training, technical support, and outreach efforts in their communities. Recognizing students as a powerful resource for local outreach efforts, the program will challenge students to extend their technology experiences beyond the classroom. The program essentially taps into a technology knowledge base that exists through these exceptional students. Students will be required to develop programs such as training seniors to use computers, initiating a computer refurbishing program, offering basic computer training for local communities, building websites, etc.

### *Benefits:*

- The program helps students develop self-confidence and technical competencies as they work with their families, leaders, peers, neighbors, seniors, and other members of their communities. In addition to empowering these students with real-world experience, it helps enhance their skills as they mature into productive and highly competent citizens.
- It helps to build character by awarding students opportunities to give back to their communities and embrace responsibilities associated with community service.
- The program will engage students who are creative, knowledgeable, and interested in technology as a great resource for planning, implementation, support, and using technology at a local level. With guidance and support, they will help to provide a missing, and important, link between the members of the community who have experience with broadband technology and those who are currently not using it.
- The program will expose students to potential career paths and provide a basis to determine if they want to further their educations in a technology field. It could also

potentially provide a beginning client base from the relationships he or she has built within the community as a student.

#### **14. Procure a Multipurpose Mobile Technology Center**

Partner with the public library or school system to acquire a bus (or equip a bookmobile) with laptop computers and wireless Internet service to deliver technology access and programs to unserved residents in remote areas in the community. Equipped with an instructor, the mobile technology center should provide digital literacy classes, job search assistance, e-learning programs, information during community events, and emergency assistance. Beyond training and education, the mobile technology center should be utilized to target and reach unserved or underserved members of the community and to provide them a medium for participating in the community's technology-planning process.

Examples of existing mobile technology centers include:

- [St. Louis Community College Mobile Tech Center](#)
- [El Paso Public Library Tech-Mobile](#)
- [State Library of Ohio Mobile Technology Training Center](#)
- [Pike County Public Library District Mobile Technology Center](#)

*Benefits:*

- Improves digital literacy skills of community.
- Provides outreach and awareness.
- Provides opportunity for residents to participate in community's technology-planning process.

#### **Public Computer Access**

**No recommended actions.**

#### **Broadband Awareness**

**No recommended actions.**

#### **Vulnerable Population Focus**

**No recommended actions.**

## USE: RECOMMENDED ACTIONS

### Economic Opportunity

No recommended actions.

### Education

#### 15. Improve Education through Digital Learning

Several digital learning platforms are available for K-12 implementation. For example, [CFY](#) is a national education nonprofit that helps students in low-income communities, together with their teachers and families, harness the power of digital learning to improve educational outcomes. The organization is unique in that it operates both “in the cloud” (through [PowerMyLearning.com](#), a free K-12 online learning platform) and “on the ground” (through its Digital Learning Program, a whole school initiative that works hands-on with all three of the constituents that impact student achievement: teachers, parents, and students).

[PowerMyLearning.com](#) is a free online educational tool that helps students, teachers and parents locate and access over 1,000 high-quality online digital learning activities — videos, simulations, and other educational software — to propel student achievement in subjects including math, English, science, and social studies. The platform has a kid-friendly design. There is a playpoint/badge feature to help motivate students. In addition, students can rate digital learning activities and share them with friends via e-mail, Facebook, and Twitter. CFY also provides onsite training to teach teachers how to integrate PowerMyLearning into their classrooms.

#### *Benefits:*

- Increase learning time by extending learning beyond the classroom walls.
- Individualize learning and increase student engagement in school.
- Encourage self-directed learning.
- Enable parents to more effectively support their children at home.

### Government

No recommended actions.

### Healthcare

No recommended actions.

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## APPENDIX 1: PARTNER AND SPONSORS

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**Connected Texas**, in partnership with the Texas Department of Agriculture, supports Texas' reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by Texas residents. In 2009, Connected Texas partnered with the Texas Department of Agriculture (TDA) to engage in a comprehensive broadband planning and technology initiative as part of the national effort to map and expand broadband. The program began by gathering provider data to form a statewide broadband map, and has progressed to the planning and development stage. At this point the program is expanding to include community engagement in local technology planning, identification of opportunities with existing programs, and implementation of technology projects designed to address digital literacy, improve education, give residents access to global Internet resources, and stimulate economic development.  
<http://www.connectedtx.org>

The Texas Legislature established the **Texas Department of Agriculture** in 1907. The agency's key objectives are to promote production agriculture, consumer protection, economic development, and healthy living. The agriculture commissioner oversees the agency and is elected every four years. The current commissioner, Todd Staples, was first elected in 2006 and re-elected to a second term in 2010.

TDA is a diversified state agency that provides value-added services through its regulatory and marketing initiatives. TDA is headquartered in Austin and has five regional service offices, six satellite offices, six laboratories, and six livestock export facilities.

TDA's mission is to partner with all Texans to make Texas the nation's leader in agriculture, fortify our economy, empower rural communities, promote healthy lifestyles, and cultivate winning strategies for rural, suburban, and urban Texas through exceptional service and the common threads of agriculture in our daily lives.  
<http://texasagriculture.gov/>

**Connected Nation** (Connected Texas' parent organization) is a leading technology organization committed to bringing affordable high-speed Internet and broadband-enabled resources to all Americans. Connected Nation effectively raises the awareness of the value of broadband and related technologies by developing coalitions of influencers and enablers for improving technology access, adoption, and use. Connected Nation works with consumers, community leaders, states, technology providers, and foundations, including the Bill & Melinda Gates Foundation, to develop and implement technology expansion programs with core competencies centered on a mission to improve digital inclusion for people and places previously underserved or overlooked.

<http://www.connectednation.org>

**National Telecommunications and Information Administration (NTIA)** is an agency of the United States Department of Commerce that is serving as the lead agency in running the State Broadband Initiative (SBI). Launched in 2009, NTIA's State Broadband Initiative (SBI) implements the joint purposes of the Recovery Act and the Broadband Data Improvement Act, which envisioned a comprehensive program, led by state entities or non-profit organizations working at their direction, to facilitate the integration of broadband and information technology into state and local economies. Economic development, energy efficiency, and advances in education and healthcare rely not only on broadband infrastructure, but also on the knowledge and tools to leverage that infrastructure.

NTIA has awarded a total of \$293 million for the SBI program to 56 grantees, one each from the 50 states, 5 territories, and the District of Columbia, or their designees. Grantees such as Connected Texas are using this funding to support the efficient and creative use of broadband technology to better compete in the digital economy. These state-created efforts vary depending on local needs but include programs to assist small businesses and community institutions in using technology more effectively, developing research to investigate barriers to broadband adoption, searching out and creating innovative applications that increase access to government services and information, and developing state and local task forces to expand broadband access and adoption.

Since accurate data is critical for broadband planning, another purpose of the SBI program is to assist states in gathering data twice a year on the availability, speed, and location of broadband services, as well as the broadband services used by community institutions such as schools, libraries, and hospitals. This data is used by NTIA to update the National Broadband Map, the first public, searchable nationwide map of broadband availability launched February 17, 2011.

## APPENDIX 2: WHAT IS CONNECTED?

The goal of Connected Texas' Connected program is to certify that each community that participates in the program has, in some relevant manner, addressed their community's need for improved Access, Adoption, and Use of technology by assessing community technological resources, identifying gaps, and working to fill those gaps:

- **ACCESS** – Is Broadband infrastructure available to all residents?
- **ADOPTION** – Do residents use the technologies?
- **USE** – Are residents using technology to improve their quality of life?

### Connected Certification Process



The Connected certification process consists of a 4-step process to community certification:

**Step 1: Create a community technology team.** Facilitate kickoff meetings and program orientation with regional leaders and community champions. Provide them with tools and resources to form a community team. This team will be represented by local leaders from key community sectors, including:

- Broadband Provider Community
- Government: General, Public Safety, Energy and Environment
- Economic Opportunity: Economic Development, Business Development, Tourism
- Agriculture
- Education: K-12, Higher Education
- Libraries
- Healthcare

**Step 2: Perform a technology assessment.** With support provided by a planning specialist, Connected Texas will provide communities with tools (electronic or print depending on the community needs) to benchmark local community technology. Bolstered by benchmarking data that had been gathered through Connected Texas’ mapping and market research, the Gillespie County Broadband Committee will work with community members to determine their overall broadband and technology grade on a 13-point “community certification AAU” model:

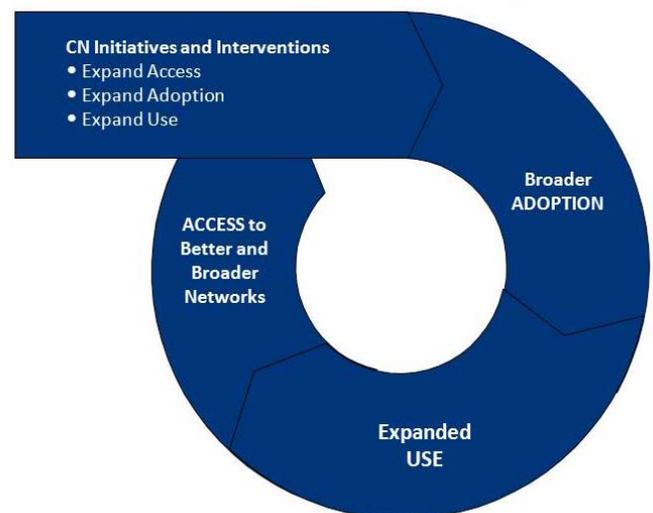
1. Broadband Availability
2. Broadband Speeds
3. Broadband Competition
4. Middle Mile Access
5. Mobile Broadband Availability
6. Digital Literacy
7. Public Computer Centers
8. Broadband Awareness
9. Vulnerable Population Focus
10. Economic Opportunity
11. Education
12. Government
13. Healthcare

**Step 3: Action Planning & Implementation.**

Following Community Assessments, the data is analyzed, gaps will be determined, and recommended actions to help to fill gaps will be identified. After successful execution of projects the community will be certified as a Connected Community.

**Step 4: Project Success and Expanded Local Empowerment.** Once a community is certified, the community will have an avenue to discuss its success and pursue opportunities as a recognized, technologically advanced community.

**Broadband Catalysts for Change**



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## APPENDIX 3: LINKS TO MAPS AND REPORTS

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Creating accurate broadband maps is one of the first steps to promoting access, adoption, and use of broadband across the state. The Connected Texas mapping initiative is working closely with multiple broadband providers from across the state to develop a variety of broadband inventory maps. Currently, broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream.

These maps, which contain data in draft version, highlight where broadband is and is not available in the state, a key component in promoting access, adoption, and use of broadband.

**Map Title: *Broadband Service Inventory for the State of Texas, Advertised Speeds of at Least 768 Kbps Downstream and 200 Kbps Upstream***

This map depicts a geographic representation of provider-based broadband data represented by cable, DSL, fiber-to-the-home, fixed wireless, and mobile wireless services. This map also incorporates data such as political boundaries and major transportation networks in the state.

[http://www.connectedtx.org/connectednationftp/texas/Connected\\_Texas\\_Mapping/Statewide\\_Maps/TX\\_Statewide\\_Broadband.pdf](http://www.connectedtx.org/connectednationftp/texas/Connected_Texas_Mapping/Statewide_Maps/TX_Statewide_Broadband.pdf)

**Map Title: *Broadband Service Inventory for the State of Texas, Advertised Speeds of at Least 3 Mbps Downstream and 768 Kbps Upstream***

This map depicts a geographic representation of provider-based broadband data represented by cable, DSL, fiber-to-the-home, fixed wireless, and mobile wireless services with advertised speeds of at least 3 Mbps downstream and 768 Kbps upstream. The advertised speed threshold is the closest match to the threshold presented in the National Broadband Plan.

[http://www.connectedtx.org/connectednationftp/texas/Connected\\_Texas\\_Mapping/Statewide\\_Maps/TX\\_Statewide\\_Broadband3M.pdf](http://www.connectedtx.org/connectednationftp/texas/Connected_Texas_Mapping/Statewide_Maps/TX_Statewide_Broadband3M.pdf)

**Map Title: *Density of Households Unserved by a Broadband Provider, by Census Block***

This presentation of data uses the smallest geographic region that the U.S. Census acknowledges, the Census Block, and the broadband data to create a representation of how many households per square mile do not have service available in any give Census Block.

[http://www.connectedtx.org/connectednationftp/texas/Connected\\_Texas\\_Mapping/Statewide\\_Maps/TX\\_Statewide\\_Density.pdf](http://www.connectedtx.org/connectednationftp/texas/Connected_Texas_Mapping/Statewide_Maps/TX_Statewide_Density.pdf)

**Map Title: *Maximum Residential Broadband Download Speed***

This map depicts providers' maximum advertised download speed by speed tier across the state. The inclusion of maximum advertised speed data is a refinement made possible to the state by its participation in the SBI program.

[http://www.connectedtx.org/connectednationftp/texas/Connected\\_Texas\\_Mapping/Statewide\\_Maps/TX\\_Statewide\\_MaxDownloadSpeed.pdf](http://www.connectedtx.org/connectednationftp/texas/Connected_Texas_Mapping/Statewide_Maps/TX_Statewide_MaxDownloadSpeed.pdf)

**County Maps**

The following maps are available at

[http://www.connectedtx.org/community\\_profile/find\\_your\\_county/texas/anderson](http://www.connectedtx.org/community_profile/find_your_county/texas/anderson) for all Texas counties. Select the county name from the drop-down list.

- *Broadband Service Inventory*
- *Broadband Service Inventory - with Township Boundaries*
- *Broadband Service Inventory (Advertised Speeds of at Least 3 Mbps Downstream and 768 Kbps Upstream)*
- *Broadband Service Inventory (Advertised Speeds of at Least 3 Mbps Downstream and 768 Kbps Upstream) - with Township Boundaries*
- *Density of Households Unserved by a Broadband Provider*
- *Maximum Advertised Download Speed*
- *Density of Providers*
- *Multiple/Single Platform*

For additional maps and other related information, visit:

<http://www.connectedtx.org/broadband-landscape>.

**Interactive Map**

Connected Texas provides My ConnectView<sup>TM</sup>, an interactive mapping application developed and maintained by Connected Nation, intended to allow users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers Texas' citizens to take an active role in seeking service, upgrading service, or simply becoming increasingly aware of what broadband capabilities and possibilities exist in their area, city, county, or state.

<http://www.connectedtx.org/interactive-map>

**Studies and Reports prepared by Connected Texas**

*The Broadband Landscape in the State of Texas: Assessment at a State, Regional & Local Level, and Recommendations for Broadband Expansion, March 2011*

[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/ctx\\_planning\\_report\\_final\\_web.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/ctx_planning_report_final_web.pdf)

*Broadband & Business: Leveraging Technology to Stimulate Economic Growth, July 2011*

[http://www.connectednation.org/sites/default/files/tx\\_bizwhitepaper\\_final.pdf](http://www.connectednation.org/sites/default/files/tx_bizwhitepaper_final.pdf)

*Texas Goes Mobile: Mobile Broadband Adoption and Satisfaction Across Texas, March 2012*

[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_mobile\\_usage.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_mobile_usage.pdf)

*The Texas Digital Divide: An Assessment of Rural and Non-Rural Texans, June 2012*

[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_rural\\_non\\_rural\\_final.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_rural_non_rural_final.pdf)

*Making the Connection through Digital Literacy, August 2012*

[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_digital\\_literacy\\_final.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_digital_literacy_final.pdf)

*Providing Learning Anywhere: K-12 Education in Texas, November 2012*

[http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx\\_elearning.pdf](http://www.connectedtx.org/sites/default/files/connected-nation/Texas/files/tx_elearning.pdf)

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## APPENDIX 4: GLOSSARY OF TERMS

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### #

**3G Wireless - Third Generation** - Refers to the third generation of wireless cellular technology. It has been succeeded by 4G wireless. Typical speeds reach about 3 Mbps.

**4G Wireless - Fourth Generation** - Refers to the fourth generation of wireless cellular technology. It is the successor to 2G and 3G. Typical implementations include LTE, WiMax, and others. Maximum speeds may reach 100 Mbps, with typical speeds over 10 Mbps.

### A

**ARRA** - American Recovery and Reinvestment Act.

**ADSL - Asymmetric Digital Subscriber Line** - DSL service with a larger portion of the capacity devoted to downstream communications, less to upstream. Typically thought of as a residential service.

**ATM - Asynchronous Transfer Mode** - A data service offering by ASI that can be used for interconnection of customers' LAN. ATM provides service from 1 Mbps to 145 Mbps utilizing Cell Relay Packets.

### B

**Bandwidth** - The amount of data transmitted in a given amount of time; usually measured in bits per second, kilobits per second, and megabits per second.

**BIP - Broadband Infrastructure Program** - Part of the American Recovery and Reinvestment Act (ARRA), BIP is the program created by the U.S. Department of Agriculture focused on expanding last mile broadband access.

**Bit** - A single unit of data, either a one or a zero. In the world of broadband, bits are used to refer to the amount of transmitted data. A kilobit (Kb) is approximately 1,000 bits. A megabit (Mb) is approximately 1,000,000 bits.

**BPL - Broadband Over Powerline** - An evolving theoretical technology that provides broadband service over existing electrical power lines.

**BPON - Broadband Passive Optical Network** - A point-to-multipoint fiber-lean architecture network system which uses passive splitters to deliver signals to multiple users. Instead of running a separate strand of fiber from the CO to every customer, BPON uses a single strand of fiber to serve up to 32 subscribers.

**Broadband** - A descriptive term for evolving digital technologies that provide consumers with integrated access to voice, high-speed data service, video-demand services, and interactive delivery services (e.g. DSL, cable Internet).

**BTOP - Broadband Technology Opportunities Program** - Part of the American Recovery and Reinvestment Act (ARRA), BTOP is the program created by the U.S. Department of Commerce focused on expanding broadband access, expanding access to public computer centers, and improving broadband adoption.

## C

**Cable Modem** - A modem that allows a user to connect a computer to the local cable system to transmit data rather than video. It allows broadband services at speeds of five Mbps or higher.

**CAP - Competitive Access Provider** - (or "Bypass Carrier") A company that provides network links between the customer and the Inter-Exchange Carrier or even directly to the Internet Service Provider. CAPs operate private networks independent of Local Exchange Carriers.

**Cellular** - A mobile communications system that uses a combination of radio transmission and conventional telephone switching to permit telephone communications to and from mobile users within a specified area.

**CLEC - Competitive Local Exchange Carrier** - Wireline service provider that is authorized under state and federal rules to compete with ILECs to provide local telephone and Internet service. CLECs provide telephone services in one of three ways or a combination thereof: a) by building or rebuilding telecommunications facilities of their own, b) by leasing capacity from another local telephone company (typically an ILEC) and reselling it, or c) by leasing discreet parts of the ILEC network referred to as UNEs.

**CMTS - Cable Modem Termination System** - A component (usually located at the local office or head end of a cable system) that exchanges digital signals with cable modems on a cable network, allowing for broadband use of the cable system.

**CO - Central Office** - A circuit switch where the phone and DSL lines in a geographical area come together, usually housed in a small building.

**Coaxial Cable** - A type of cable that can carry large amounts of bandwidth over long distances. Cable TV and cable modem broadband service both utilize this technology.

**Community Anchor Institutions (CAI)** - Institutions that are based in a community and larger user of broadband. Examples include schools, libraries, healthcare facilities, and government institutions.

**CWDM - Coarse Wavelength Division Multiplexing** - Multiplexing (more commonly referred to as WDM) with less than 8 active wavelengths per fiber.

## D

**Dial-Up** - A technology that provides customers with access to the Internet over an existing telephone line. Dial-up is much slower than broadband.

**DLEC - Data Local Exchange Carrier** - DLECs deliver high-speed access to the Internet, not voice. DLECs include Covad, Northpoint, and Rhythms.

**Downstream** - Data flowing from the Internet to a computer (surfing the net, getting e-mail, downloading a file).

**DSL - Digital Subscriber Line** - The use of a copper telephone line to deliver “always on” broadband Internet service.

**DSLAM - Digital Subscriber Line Access Multiplier** - A piece of technology installed at a telephone company’s CO that connects the carrier to the subscriber loop (and ultimately the customer’s PC).

**DWDM - Dense Wavelength Division Multiplexing** - A SONET term which is the means of increasing the capacity of Sonet fiber-optic transmission systems.

## E

**E-rate** - A federal program that provides subsidy for voice and data lines to qualified schools, hospitals, Community-Based Organization (CBOs), and other qualified institutions. The subsidy is based on a percentage designated by the FCC.

**Ethernet** - A local area network (LAN) standard developed for the exchange data with a single network. It allows for speeds from 10 Mbps to 10 Gbps.

**EON - Ethernet Optical Network** - The use of Ethernet LAN packets running over a fiber network.

**EvDO - Evolution Data Only** - A new wireless technology that provides data connections that are 10 times faster than a regular modem.

## F

**FCC - Federal Communications Commission** - A federal regulatory agency that is responsible for, among other things, regulating VoIP.

**Fixed Wireless Broadband** - The operation of wireless devices or systems for broadband use at fixed locations such as homes or offices.

**Franchise Agreement** - An agreement between a cable provider and a government entity that grants the provider the right to serve cable and broadband services to a particular area - typically a city, county, or state.

**FTTH - Fiber To The Home** - Another name for fiber to the premises, where fiber optic cable is pulled directly to an individual’s residence or building allowing for extremely high broadband speeds.

**FTTN - Fiber To The Neighborhood** - A hybrid network architecture involving optical fiber from the carrier network, terminating in a neighborhood cabinet that converts the signal from optical to electrical.

**FTTP - Fiber To The Premise (Or FTTB – Fiber To The Building)** - A fiber optic system that connects directly from the carrier network to the user premises.

## G

**Gbps - Gigabits per second** - 1,000,000,000 bits per second or 1,000 Mbps. A measure of how fast data can be transmitted.

**GPON - Gigabyte-Capable Passive Optical Network** - Uses a different, faster approach (up to 2.5 Gbps in current products) than BPON.

**GPS - Global Positioning System** - A system using satellite technology that allows an equipped user to know exactly where he is anywhere on earth.

**GSM - Global System for Mobile Communications** - This is the current radio/telephone standard in Europe and many other countries except Japan and the United States.

## H

**HFC - Hybrid Fiber Coaxial Network** - An outside plant distribution cabling concept employing both fiber optic and coaxial cable.

**Hotspot** - See *Wireless Hotspot*.

## I

**IEEE** - Institute of Electrical and Electronics Engineers (pronounced “Eye-triple-E.”).

**ILEC - Incumbent Local Exchange Carrier** - The traditional wireline telephone service providers within defined geographic areas. They typically provide broadband Internet service via DSL technology in their area. Prior to 1996, ILECs operated as monopolies having the exclusive right and responsibility for providing local and local toll telephone service within LATAs.

**IP-VPN - Internet Protocol - Virtual Private Network** - A software-defined network offering the appearance, functionality, and usefulness of a dedicated private network.

**ISDN - Integrated Services Digital Network** - An alternative method to simultaneously carry voice, data, and other traffic, using the switched telephone network.

**ISP - Internet Service Provider** - A company providing Internet access to consumers and businesses, acting as a bridge between customer (end-user) and infrastructure owners for dial-up, cable modem, and DSL services.

## J

## K

**Kbps - Kilobits per second** - 1,000 bits per second. A measure of how fast data can be transmitted.

## L

**LAN - Local Area Network** - A geographically localized network consisting of both hardware and software. The network can link workstations within a building or multiple computers with a single wireless Internet connection.

**LATA - Local Access and Transport Areas** - A geographic area within a divested Regional Bell Operating Company is permitted to offer exchange telecommunications and exchange access service. Calls between LATAs are often thought of as long-distance service. Calls within a LATA (IntraLATA) typically include local and local toll telephone services.

**Local Loop** - A generic term for the connection between the customer’s premises (home, office, etc.) and the provider’s serving central office. Historically, this has been a wire connection; however, wireless options are increasingly available for local loop capacity.

**Low Income** - Low income is defined by using the poverty level as defined by the U.S. Census Bureau. A community's low-income percentage can be found at [www.census.gov](http://www.census.gov).

## M

**MAN - Metropolitan Area Network** - A high-speed data intra-city network that links multiple locations with a campus, city, or LATA. A MAN typically extends as far as 50 kilometers (or 31 miles).

**Mbps - Megabits per second** - 1,000,000 bits per second. A measure of how fast data can be transmitted.

**Metro Ethernet** - An Ethernet technology-based network in a metropolitan area that is used for connectivity to the Internet.

**Multiplexing** - Sending multiple signals (or streams) of information on a carrier (wireless frequency, twisted pair copper lines, fiber optic cables, coaxial, etc.) at the same time. Multiplexing, in technical terms, means transmitting in the form of a single, complex signal and then recovering the separate (individual) signals at the receiving end.

## N

**NTIA** - National Telecommunications and Information Administration, which is housed within the United State Department of Commerce.

**NIST** - National Institute of Standards and Technology.

## O

**Overbuilders** - Building excess capacity. In this context, it involves investment in additional infrastructure projects to provide competition.

**OVS - Open Video Systems** - A new option for those looking to offer cable television service outside the current framework of traditional regulation. It would allow more flexibility in providing service by reducing the build-out requirements of new carriers.

## P

**PON - Passive Optical Network** - A Passive Optical Network consists of an optical line terminator located at the Central Office and a set of associated optical network terminals located at the customer's premises. Between them lies the optical distribution network comprised of fibers and passive splitters or couplers.

## Q

## R

**Right-of-Way** - A legal right of passage over land owned by another. Carriers and service providers must obtain right-of-way to dig trenches or plant poles for cable and telephone systems and to place wireless antennae.

**RPR - Resilient Packet Ring** - Uses Ethernet switching and a dual counter-rotating ring topology to provide SONET-like network resiliency and optimized bandwidth usage, while delivering multi-point Ethernet/IP services.

**RUS - Rural Utility Service** - A division of the United States Department of Agriculture that promotes universal service in unserved and underserved areas of the country through grants, loans, and financing.

## S

**Satellite** - Satellite brings broadband Internet connections to areas that would not otherwise have access, even the most rural of areas. Historically, higher costs and lower reliability have prevented the widespread implementation of satellite service, but providers have begun to overcome these obstacles, and satellite broadband deployment is increasing. A satellite works by receiving radio signals sent from the Earth (at an uplink location also called an Earth Station) and resending the radio signals back down to the Earth (the downlink). In a simple system, a signal is reflected, or "bounced," off the satellite. A communications satellite also typically converts the radio transmissions from one frequency to another so that the signal getting sent down is not confused with the signal being sent up. The area that can be served by a satellite is determined by the "footprint" of the antennas on the satellite. The "footprint" of a satellite is the area of the Earth that is covered by a satellite's signal. Some satellites are able to shape their footprints so that only certain areas are served. One way to do this is by the use of small beams called "spot beams." Spot beams allow satellites to target service to a specific area, or to provide different service to different areas.

**SBI - State Broadband Initiatives**, formerly known as the State Broadband Data & Development (SBDD) Program.

**SONET - Synchronous Optical Network** - A family of fiber-optic transmission rates.

**Streaming** - A Netscape innovation that downloads low-bit text data first, then the higher bit graphics. This allows users to read the text of an Internet document first rather than waiting for the entire file to load.

**Subscribership** - Subscribership is the number of customers that have subscribed for a particular telecommunications service.

**Switched Network** - A domestic telecommunications network usually accessed by telephones, key telephone systems, private branch exchange trunks, and data arrangements.

## T

**T-1 - Trunk Level 1** - A digital transmission link with a total signaling speed of 1.544 Mbps. It is a standard for digital transmission in North America.

**T-3 - Trunk Level 3** - 28 T1 lines or 44.736 Mbps.

## U

**UNE - Unbundled Network Elements** - Leased portions of a carrier's (typically an ILEC's) network used by another carrier to provide service to customers.

**Universal Service** - The idea of providing every home in the United States with basic telephone service.

**Upstream** - Data flowing from your computer to the Internet (sending e-mail, uploading a file).

## V

**VDSL (or VHDSL) - Very High Data Rate Digital Subscriber Line** - A developing technology that employs an asymmetric form of ADSL, with projected speeds of up to 155 Mbps.

**Video On Demand** - A service that allows users to remotely choose a movie from a digital library and be able to pause, fast-forward, or even rewind their selection.

**VLAN - Virtual Local Area Network** - A network of computers that behave as if they were connected to the same wire even though they may be physically located on different segments of a LAN.

**VoIP - Voice over Internet Protocol** - A new technology that employs a data network (such as a broadband connection) to transmit voice conversations.

**VPN - Virtual Private Network** - A network that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable one to create networks using the Internet as the medium for transporting data. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted.

**Vulnerable Groups** - Vulnerable groups will vary by community, but typically include low-income, minority, senior, children, etc.

## W

**WAN - Wide Area Network** - A communications system that utilizes cable systems, telephone lines, wireless, and other means to connect multiple locations together for the exchange of data, voice, and video.

**Wi-Fi - Wireless Fidelity** - A term for certain types of wireless local networks (WLANs) that uses specifications in the IEEE 802.11 family.

**WiMax** - A wireless technology that provides high-throughput broadband connections over long distances. WiMax can be used for a number of applications, including last mile broadband connections, hotspots, and cellular backhaul and high-speed enterprise connectivity for businesses.

**Wireless Hotspot** - A public location where Wi-Fi Internet access is available for free or for a small fee. These could include airports, restaurants, hotels, coffee shops, parks, and more.

**Wireless Internet** - 1) Internet applications and access using mobile devices such as cell phones and palm devices. 2) Broadband Internet service provided via wireless connection, such as satellite or tower transmitters.

**Wireline** - Service based on infrastructure on or near the ground, such as copper telephone wires or coaxial cable underground, or on telephone poles.