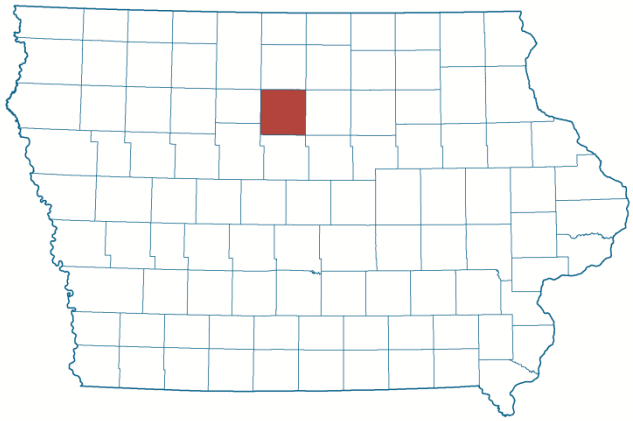
Wright County

Technology Action Plan



Prepared by

Wright County and Connect Iowa

July 2015

ACCESS ADOPTION USE

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INTRODUCTION

The purpose of this report is to summarize the community's assessment of local broadband access, adoption, and use, as well as the best next steps for addressing any deficiencies or opportunities for improving the local technology ecosystem.

Background

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. The success of a community has also become dependent on how broadly and deeply the community adopts technology resources, which includes access to reliable high-speed networks, digital literacy of residents, and the use of online resources locally for business, government, and leisure. As noted in the National Broadband Plan (NBP), broadband Internet is "a foundation for economic growth, job creation, global competitiveness and a better way of life."[1]

Despite the growing dependence on technology, the United States Census reports that 27% of Americans do not have a high-speed connection at home.[2] Connected Nation's studies also indicate that 19.1 million children do not have broadband at home, and 6.1 million of those children live in low-income households.[3]

In 2014, Connected Nation also surveyed 4,206 businesses in 7 states. Based on these data, Connected Nation estimates that at least 1.5 million businesses (20%) in the United States do not use broadband technology today.[4]

Deploying broadband infrastructure, services, and application, as well as supporting the universal adoption and meaningful use of broadband, are challenging – but required – building blocks of a twenty-first century community. To assist communities, Connected Nation developed the Connected Community Engagement Program to help your community identify

[1] *Connecting America: The National Broadband Plan,* Federal Communications Commission, April 2010, http://www.broadband.gov/download-plan/.
[2] United States Census Bureau's American Community Survey Report, "Computer and Internet Use in the United States: 2013." http://www.census.gov/content/dam/Census/library/publications/2014/acs/acs-28.pdf.
[3] National estimates calculated using Connected Nation's 2014 Residential Technology Assessments.
[4] Estimates based on Connected Nation's *2014 Business Technology Assessment* (http://www.connectednation.org/survey-results/business) and 2013 County Business Pattern data from the United States Census Bureau (http://www.census.gov/econ/cbp/).

local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for pursuing solutions.[5]

To fulfill Congress's mandate, the National Broadband Plan, makes recommendations to the FCC, the Executive Branch, Congress, and state and local governments that positively influence the broadband ecosystem – networks, devices, content, and applications - in four ways:

1. Provides entrepreneurial support.
2. Eliminates knowledge gap about how best to utilize broadband tools, increasing productivity.
3. Promotes business growth and workforce development.
4. 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.

Methodology

By actively participating in the Connected Community Engagement Program, Wright County is boosting the community's capabilities in education, healthcare, and public safety, and stimulating economic growth and spurring job creation. Wright County has collaborated with multiple community organizations and residents to:

1. Empower a community team leader (local champion) and create 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. Identify the community's technology assets, including local infrastructure, providers, facilities, websites, and innovative uses employed by institutions.
3. Complete the Connected Assessment, a measurement of the community's access, adoption, and use of broadband based on the recommendations of the National Broadband Plan.
4. Match gaps in the local broadband ecosystem to solutions and best practices being utilized by communities across the nation.
5. Pursue Connected certification, a nationally recognized platform for spotlighting communities that excel in the access, adoption, and use of broadband.

[5] Connected Nation, parent company of Connect Iowa, is a national non-profit 501(c)(3) organization that 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.

What Is Connected Certification?

Connected certification recognizes that a community has measurably demonstrated proficiency for effective access, adoption, and use of broadband and broadband supported technologies. This national platform recognizes communities that are excelling in their pursuit of accelerated access, adoption, and use of broadband. While an exciting accomplishment for any community, it is critical to stress that Connected certification is not the end of the Connected program. In fact, Connected certification, while recognizing work completed to date, marks the launch of the Technology Action Plan and the beginning of a community's journey to continually improve its broadband landscape. Maintaining community collaboration and progress during plan implementation is a difficult task, but one that will result in an improved standing in the digital economy. Additionally, Connected certified communities, and all communities engaged in the Connected program, are part of a nationwide network of stakeholders all working toward the same goal: improved broadband access, adoption, and use. While every community is different, many share common issues and Connected works to identify the best practices for solving these issues and share them with this network. Together, we can work to bring affordable, reliable, and high-capacity infrastructure to underserved areas; promote adoption via skills training and education; and facilitate the advanced use of technology among all sectors to create more sustainable, resilient, and prosperous communities.

CONNECTED ASSESSMENT

The Connected assessment framework is broken into 3 areas: ***ACCESS***, ***ADOPTION,*** and ***USE***. Each area has a maximum of 40 points. To achieve Connected certification, the community must have at least 32 points in each section and 100 points out of 120 points overall.

The ***ACCESS*** focus area checks to see whether the broadband and technology foundation exists for a community. The criteria within the ***ACCESS*** focus area endeavor to identify gaps that could affect a local community broadband ecosystem including last and middle mile issues, cost issues, and competition issues. As noted in the National Broadband Plan, broadband ***ACCESS*** "is a foundation for economic growth, job creation, global competitiveness and a better way of life."

Broadband ***ADOPTION*** is important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The ***ADOPTION*** component of the Connected Assessment seeks to ensure the ability of all individuals to access and use broadband.

Broadband ***USE*** is the most important component of ***ACCESS***, ***ADOPTION,*** and ***USE*** because it is where the value of broadband can finally be realized. However, without ***ACCESS*** to broadband and ***ADOPTION*** of broadband, meaningful ***USE*** of broadband wouldn't be possible. As defined by the National Broadband Plan, meaningful ***USE*** of broadband includes those areas of economic opportunity, education, government, and healthcare where values to individuals, organizations, and communities can be realized.

Analysis of Connected Assessment

The Community Technology Scorecard provides a summary of the community's Connected Assessment. The Connected Assessment's criteria are reflective of the recommendations made by the Federal Communications Commission's National Broadband Plan. These scores reflect the community's progress toward meeting these universal fixed broadband service national benchmarks, ubiquitous mobile service, and growing access to higher speed next-generation services. Lower scores do not necessarily signify a complete lack of access to broadband service but instead reflect that the broadband infrastructure in the community has not met these national goals and benchmarks.

Community Technology Scorecard Brief

The Community Technology Scorecard provides a summary of the community's Connected Assessment.

- The community scored 36 out of a possible 40 points in broadband access primarily, because in Wright County, there are ten fixed broadband providers providing at least 3 Mbps of service to 99.32% of the community and there is a high concentration of fixed broadband providers competing in the community. Three fiber middle mile service providers are also doing business in Wright County. There are four mobile broadband providers that provide access to 100% of Wright County.
- The community scored 36 out of a possible 40 points in broadband adoption. This score indicates an opportunity for Wright County to increase efforts to overcome the local barriers to home broadband subscription.
- The community scored 36 out of a possible 40 points in broadband use. This score indicates that the economic, education, government and healthcare industries in Wright County are using broadband in an impactful and meaningful way.
- Wright County achieved a score of 108 points out of 120 for overall broadband and technology readiness, which indicates a strong commitment toward broadband access, adoption and use from the community and broadband providers. There is room for impactful improvement in Wright County that will help to expand broadband in the community through insightful community planning and continued broadband expansion in the areas of access, adoption and use.
- Wright County exceeded the 32 points in each focus area that are required for certification and has qualified for full certification.

Community Technology Scorecard

Community Technology Scorecard Community Champion: Bryce Davis Community Advisor: Dave Daack				
FOCUS AREA	**ASSESSMENT CRITERIA**	**DESCRIPTION**	**SCORE**	**MAXIMUM POSSIBLE SCORE**
ACCESS	Broadband Availability	99.32% of homes have access to 3 Mbps	10	10
	Broadband Speeds	99.32% of households with access to at least 3 Mbps	1	5
	Broadband Competition	95.36% of households with access to more than 1 broadband provider	5	5
	Middle Mile Access	Availability of middle mile fiber infrastructure from more than 1 provider	10	10
	Mobile Broadband Availability	100% of households have access to mobile broadband	10	10
	ACCESS SCORE		36	**40**
ADOPTION	Digital Literacy	Program grads are greater than 4 per 1,000 residents over the past year	6	10
	Public Computer Centers	500 computer hours per 1,000 low-income residents per week	10	10
	Broadband Awareness	Campaigns reach 100% of the community	10	10
	Vulnerable Population Focus	5 group(s)	10	10
	ADOPTION SCORE		36	**40**
USE	Economic Opportunity	5 advanced, 5 basic uses	10	10
	Education	3 advanced, 5 basic uses	10	10
	Government	3 advanced, 1 basic use	7	10
	Healthcare	0 advanced, 9 basic uses	9	10
	USE SCORE		36	**40**
	COMMUNITY ASSESSMENT SCORE		108	**120**

Itemized Key Findings

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

ACCESS

- 10 last mile broadband providers currently provide service in Wright County:
  - 99.32% of households have access to 3 Mbps
  - 99.32% of households have access to at least 3 Mbps
  - 95.36% of households have access to more than 1 broadband provider
- Availability of middle mile fiber infrastructure from only 1 provider
- 100% of households with access to mobile wireless

ADOPTION

- 5 Digital Literacy Programs exists in the community resulting in 84 Program grads over the past year
- 6 Public Computer Centers (PCC) with a total of 35 computers available to the public
- 9 Broadband Awareness Campaigns are reaching 100% of Wright County
- 5 organizations are working with vulnerable populations

USE

- At least 10 uses of broadband were identified in the area of economic opportunity including 5 advanced uses and 5 basic uses
- At least 8 uses of broadband were identified in the area of education including 3 advanced uses and 5 basic uses
- At least 4 use(s)of broadband were identified in the area of government including 3 advanced uses and 1 basic use
- At least 9 uses of broadband were identified in the area of healthcare including 0 advanced uses and 9 basic uses

In addition to the items identified above, Wright County identified the following technology resources in the community:

Technology Providers

- 18 broadband providers were identified in Wright County
- 1 hardware provider was identified in Wright County
- 2 software providers were identified in Wright County

Technology Facilities

- 5 public computer centers

Community Websites

- 6 Business-related websites (excluding private businesses)
- 3 Education-related websites
- 5 Government-related websites
- 3 Healthcare-related websites
- 4 Library-related websites
- 1 Tourism-related website
- 6 Agriculture-related websites
- 3 Community-based-related websites

Wright County Priority Projects

The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. There are 3 projects that the community has identified as priority projects.

- **Distribute Digital Literacy Content**
- **Facilitate Internet Safety Classes**
- **Establish a Community Technology Academy**

DETAILED FINDINGS

Current Community Technology Developments in Wright County

Wright County's goal is to increase the use and commitment to e-commerce and improve sales among our small businesses through the use of a technology-use program through Iowa Central Community College and Wright County Economic Development. The county is going through a process to centralize available work/job opportunities within Wright County.

In addition, Wright County is in the middle of planning a Cyber-Security Summit to inform businesses that are online how to protect themselves.

Lastly, the county is working to improve its tourism website to market Wright County, externally, and to inform event planners, attractions, and businesses how to promote themselves on the Travel Iowa website.

Wright County Assessment Findings

Today, residents in Wright County (or sections of the community) are served by 18 providers. At the time of broadband assessment, broadband was defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream. According to Connect Iowa's latest broadband mapping update, the following providers have a service footprint in Wright County.

Broadband Providers	Website	Technology Type
AT&T Mobile	http://www.wireless.att.com	Mobile
Verizon Wireless	http://www.verizonwireless.com	Mobile
CenturyLink	http://www.centurylink.com	DSL
Communications 1 Network, Inc.	http://www.comm1net.net	Fiber
Frontier Communications of Iowa, LLC	http://frontier.com	DSL
Goldfield Access Network LC	http://www.goldfieldaccess.net	DSL/Fiber
Hughes Network	http://www.hughes.com	Satellite
JAB Broadband	http://www.jabbroadband.com	Fixed Wireless
Mediacom	http://www.mediacomcc.com	Cable
Skycasters	http://www.skycasters.com	Satellite
StarBand Communications	http://starband.com	Satellite
Sprint	http://www.sprint.com	Mobile
US Cellular	http://www.uscellular.com	Mobile
ViaSat	http://www.wildblue.com	Satellite

Webster-Calhoun Cooperative Telephone Association	http://www.wccta.net	Fiber
Windstream	http://www.windstream.com	DSL
Woolstock Mutual Telephone	http://www.wtccommunications.com	Fixed Wireless
Woolstock Mutual Telephone Association	http://www.wmtel.net	DSL

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

Organization Name	Website	Resource Type
Clarion Public Library	www.clarion.lib.ia.us	Library
Dows Public Library	http://www.dows.lib.ia.us/	Library
Eagle Grove Memorial Library	www.youseemore.com.nilc/eaglegrove	Library
Talbot Belmond Public Library	http://www1.youseemore.com/nilc/belmond	Library
Rowan Public Library	www.rowaniowa.info	Library

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

Organization Name	Website	Category
Advanced Drainage Systems	http://www.ads-pipe.com/en/	Agriculture
Ag Processing	http://www.agp.com/	Agriculture
Gold-Eagle Co-op	http://www.goldeaglecoop.com/	Agriculture
Hagie Manufacturing	www.hagie.com	Agriculture
Max Yield Cooperative	http://www.maxyieldcooperative.com/	Agriculture
Centrum Valley Farms	www.centrumvalleyfarms.com	Agriculture
Eaton Corporation	www.eaton.com	Business
Goldfield Telecom	www.goldtelecom.com	Business
Monsanto	www.monsanto.com	Business
Sportsgraphics, Inc.	https://www.sportsgraphicsinc.com/	Business
Team Effort, Inc.	http://www.teameffort.com/	Business
Stronghold Manufacturing	http://strongholdmfg.com/	Business
Belmond Area Chamber of Commerce	http://www.belmondiowa.com/	Community-Based
Clarion Chamber & Development	http://www.clarioniowa.com/	Community-Based
Eagle Grove Area Chamber of Commerce	http://www.eaglegrove.com/	Community-Based
Belmond-Klemme Community	http://www.bkcsd.org/	Education

School District		
Clarion-Goldfield-Dows Community School District	http://www.clargold.org/	Education
Eagle Grove Community School District	http://www.eagle-grove.k12.ia.us/	Education
City of Eagle Grove	http://eaglegroveiowa.org/	Government
City of Clarion	http://www.clarioniowa.com/	Government
City of Belmond	http://www.belmondiowa.com/	Government
City of Rowan	www.rowaniowa.info	Government
Wright County	www.wrightcounty.org	Government
Iowa Specialty Hospital -Belmond	www.iowaspecialtyhospital.com	Healthcare
Iowa Specialty Hospital - Clarion	www.iowaspecialtyhospital.com	Healthcare
UnityPoint Clinic	http://www.unitypoint.org/fortdodge/clinic.aspx?id=166&Family+Medicine+Eagle+Grove	Healthcare
Wright County Tourism	www.explorewrightcounty.com	Tourism

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

Company Name	Website	Provider Category
A & D Tech Solutions	http://ad-techsolutions.com	Software Service
BelTech Solutions		Sales/Service
Covenant Computer Solutions		Computer Consultants
Viper Bytes		Computer Repair
Steve's PC Clinic		Computer Repair

Connected Assessment Analysis

Access Score Explanation

Broadband Availability (10 out of 10 Possible Points). Broadband Availability 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 2014 data collected by Connect Iowa, 99.32% of Wright County residents had access to broadband speeds of 3 Mbps or greater.**

Broadband Speeds (1 out of 5 Possible Points). Broadband Speeds are measured by analyzing the speed tiers available within a community. Data are collected by Connected Nation's broadband mapping program. The Connected Assessment analyzes broadband coverage by the highest speed tier with at least 75% of households covered. If broadband data is missing, the community team was able to improve the quality of data to ensure all providers are included.

- **According to the October 2014 data collected by Connect Iowa, 99.32% of Wright County residents had access to broadband speeds of 3 Mbps.**

Broadband Competition (5 out of 5 Possible Points). Broadband Competition is measured by analyzing the number of broadband providers available in the 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 its 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 2014 data collected by Connect Iowa, 95.36% of Wright County residents had access to more than one broadband provider.**

Middle Mile Access (10 out of 10 Possible Points). Middle Mile Access is measured based on a community's availability to fiber. Three aspects of availability exist: proximity to fiber middle mile points of presence (POPs), number of POPs available, and available bandwidth. The community, in collaboration with Connected Nation, collected and analyzed middle mile access data.

- **Wright County is served by 1 or more middle mile fiber providers.**

Mobile Broadband Availability (10 out of 10 Possible Points). Mobile Broadband Availability 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 2014 data collected by Connect Iowa, 100% of Wright County residents had access to mobile broadband service.**

Adoption Score Explanation

Digital Literacy (6 out of 10 Possible Points). Digital Literacy is measured by first identifying all digital literacy programs in the community. Once the programs are identified, 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
AAUW	Cyber-bullying program	15
Wright County Economic Development & Eagle Grove Community Development	Google Workshop in Eagle Grove	19
AAUW	Teach Facebook, Kindle, ShutterFly, etc.	15
Rowan Public Library	Training for Internet/technology use	25
NIACC/WCED/Webster City	Cyber-Security Summit in Mason City	10

Public Computer Centers (10 out of 10 Possible Points). Public Computer Centers is measured based on the number of hours computers are available each week per 1,000 low-income residents. Available computer hours are 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 Wright County is on the following page.

Organization Name	Number of Open Hours Per Week	Number of Computers	Available Computer Hours Per Week
Dows Public Library	22.5	4	90
Talbot Belmond Public Library	41	5	205
Eagle Grove Memorial Library	49	8	392
Rowan Public Library	26	3	78
Iowa Workforce Development Clarion Library, Belmond Public Library	42.5	7	297.5
Clarion Library	43	8	344

Broadband Awareness (10 out of 10 Possible Points). Broadband Awareness 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 Wright County is below.

Organization Name	Campaign Description	Community Reach
Banks and Utilities (Alliant, MidAmerican, Prairie Energy Cooperative)	Paperless billing/online transactions and statements	100%
K-12 Schools	Student and parent accounts for grades, class information, and other information as well as a digital newsletter	40%
Wright County Tourism	Attractions, events, entertainment, etc. provided on website www.explorewrightcounty.com	20%
Economic Development Groups	Campaign use of websites with business directories and development	20%
Businesses	Facebook and websites	20%
ICCC/NIACC	Online grades, online courses, technology-customized training programs	20%
Wright County	Website provides department and meeting information, online payment, etc.	40%
News/Media (Belmond Independent, Eagle Grove Eagle, Wright County Monitor)	Online news and information	20%
City Websites (Belmond, Clarion, Dows, Eagle Grove)	Encourage use of website for council meeting information, city information, etc.	20%

Vulnerable Population Focus (10 out of 10 Possible Points). 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. Programs that focus on vulnerable populations in Wright County are listed below.

Organization Name	Program Description	Vulnerable Group
Libraries	Computer usage and training	Minority, low-income, students
NIACC and ICCC	Online GED program	Low-income, learning challenged,
Belmond-Klemme Community School District	Online courses	Children
Clarion Public Library	Changing operating systems to Spanish and providing digital literacy programs	Minority
Clarion-Goldfield-Dows Community School District	Online Courses	Students
Iowa Workforce Development	Completing Online Unemployment Insurance Applications and applying for jobs assistance	Minority, low-income, students
Clarion Public Library	Computer software for educational purposes	Children
Clarion Public Library	NEIBORS-free audio and e-books	Children and Public
Clarion Public Library	Zinio free online magazines	Children and Public
Clarion Public Library	Freegal-free music downloads	Children

Use Score Explanation

Economic Opportunity (10 out of 10 Possible Points). A community receives one point per basic use of broadband and two points per advanced, or interactive, 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
Wright County	Online loan program, Wright County RLF	Advanced
Mid-American, Alliant and Mediacom	Paperless statements and online bill pay	Advanced
Wright County Economic Development	Wright County Economic Development markets available buildings linked to all communities in Wright County (commercial/industrial)	Basic
ISU Extension	Ag resources and databases are available for viewing through the ISU Extension Webpage	Basic
Wright County Economic Development	Mid Iowa Growth Partnership completed labor shed survey information on labor availability	Basic
All banks in Wright County	Paperless statements, online banking etc. available at all banks	Advanced
North Central Career Academy	Customized technology training programs	Advanced
Wright County Tourism	Tourism portal for attractions, events, businesses, etc.	Basic
www.WhenToGrow.Org	Initiative to spur entrepreneurialism, innovation, and community development	Advanced
Wright County Economic Development	Online database for information about local business financing, assistance, and support	Basic

Education (10 out of 10 Possible Points) 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
Clarion-Goldfield-Dows Community School District and Belmond-Klemme Community School District	Available throughout building	Basic
Clarion-Goldfield-Dows Community School District and Belmond-Klemme Community School District, and Eagle Grove Community School District	Online classes available	Advanced
Clarion-Goldfield-Dows Community School District and Belmond-Klemme Community School District, and Eagle Grove Community School District	Upload test results to test provider	Basic
Clarion-Goldfield-Dows Community School District and Belmond-Klemme Community School District	Secondary education courses available online	Advanced
Clarion Public Library, Eagle Grove Public Library, Rowan Public Library, and Talbot Belmond Public Library	Online catalog	Advanced
Clarion Public Library, Eagle Grove Public Library, Rowan Public Library, and Talbot Belmond Public Library	Broadband available to users	Basic
Clarion-Goldfield-Dows Community School District and Belmond-Klemme Community School District, and Eagle Grove Community School District	Technology training provided to teachers	Basic
Clarion Public Library, Eagle Grove Public Library, and Talbot Belmond Public Library	2 computers for children to improve learning	Basic

Government (7 out of 10 Possible Points). 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
City Websites	City information available online	Basic
Wright County website	Payments online	Advanced
Code Red	Online database and sign up contacts for the Code Red Alert system	Advanced
Online training/webinars	Used by Wright County employees for training and webinars	Advanced

Healthcare (9 out of 10 Possible Points). 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
WiFi	Broadband available to guests and patients	Basic
Digital Libraries	Radiological images and medical records are available through an online database	Basic
Online bill payment	Pay bills online	Basic
Website	Information, directions, directories and other interactive services	Basic
Record backup	Disaster recovery point-to-point backup between Belmond/Clarion	Basic
Online training/webinars	Online training and webinars available for staff	Basic
Prescription sharing	Prescriptions sent and received online	Basic
Medical staff listing	Online listing of medical staff	Basic
Patient History	Online, private and confidential, listing of patient history	Basic

Action Plan

Complete List of Wright County Projects

The following is a comprehensive list of the priority projects Wright County proposes to accelerate broadband access, adoption, and use in Wright County. Detailed descriptions of each solution are provided.

Digital Literacy

Distribute Digital Literacy Content

Goal
Facilitate partnerships in order to provide digital literacy training.

Project Description
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.

Action Items

1. Develop partnerships with local organizations and equip them with digital literacy content
2. Train staff to deliver the curriculum to potential adopters
3. Promote local organizations as a source of broadband access and training
4. Engage non-adopters with a comprehensive public outreach campaign, helping them understand the benefits of broadband service and inviting them to experience the value at their libraries
5. Provide curriculum to teach computer and Internet use, as well as the skills required to utilize the Internet effectively for essential services, education, employment, civic engagement, and cultural participation
6. Offer compelling promotion to participants, giving them the opportunity to adopt the technology for everyday use in their homes

Facilitate Internet Safety Classes

Goal

Ensure that community members are aware of how to navigate the Internet safely.

Project Description

Create a program designed to help community members who are using the Internet to identify and avoid situations that could threaten their safety, threaten business or government networks, compromise confidential information, compromise the safety of children, compromise their identities and financial information, or destroy their reputations.

Benefits

1. This project helps ensure that community members have a solid understanding of cyber threats.
2. There are many risks, some more serious than others. Among these dangers are viruses erasing entire systems, a hacker breaking into a system and altering files, someone using someone else's computer to attack others, someone stealing credit card information, sexual predators making advances at children, and criminals making unauthorized purchases. Unfortunately, there's no 100% guarantee that even with the best precautions some of these things won't happen, but there are steps that can be taken to minimize the chances.

Action Items

1. Partner with a local library or community center to offer security awareness training initiatives that include classroom style training sessions and security awareness websites and information booklets.
2. Awareness training can also be used to alleviate anxiety for community members who are not using the Internet because of fear of cyber threats.

Establish a "Community Technology Academy"

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

Project Description
Develop partnerships 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
1. Creates a more digitally literate and competent populace.
2. Develops community's human capital.

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 develop content or leverage 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" among all organizations.

APPENDIX 1: STATEWIDE PERSPECTIVE OF BROADBAND

Statewide Infrastructure

As part of the Iowa State Broadband Initiative (SBI), and in partnership and at the direction of the Iowa Utilities Board, Connect Iowa 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, Connect Iowa 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 2014 depict a geographic representation of provider-based broadband data represented by cable, DSL, fiber, fixed wireless and mobile wireless. These maps also incorporate data such as political boundaries and major transportation networks in the state. A statewide map can be found at http://www.connectiowa.org/mapping/state. The county maps can be found athttp://www.connectiowa.org/community_profile/find_your_county/iowa/adair.

Table 1: Estimate of Broadband Service Availability in the State of Iowa By Speed Tier Among Fixed Platforms

SBI Download/Upload Speed Tiers	Unserved Households ('000)	Served Households ('000)	Percent Households by Speed Tier
At Least 768 Kbps/200 Kbps	20	1,202	98.38
At Least 1.5 Mbps/200 Kbps	42	1,180	96.59
At Least 3 Mbps/768 Kbps	73	1,148	93.99
At Least 6 Mbps/1.5 Mbps	215	1,006	82.37
At Least 10 Mbps/1.5 Mbps	237	985	80.62
At Least 25 Mbps/1.5 Mbps	308	913	74.76
At Least 50 Mbps/1.5 Mbps	333	889	72.74
At Least 100 Mbps/1.5 Mbps	388	834	68.27
At Least 1 Gbps/1.5 Mbps	1,187	35	2.86

Source: Connect Iowa, November 2014.

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile and satellite service) across the state of Iowa; it presents

the number and percentage of unserved and served households by speed tiers. The total number of households in Iowa in 2010 was 1,221,576, for a total population of 3 million people. Table 1 indicates that 98.38% of households are able to connect to broadband at download speeds of at least 768 Kbps and upload speeds of at least 200 Kbps. This implies that the number of households originally estimated by Connect Iowa to be unserved has dropped from 53,335 households in the fall of 2010 to 19,820 households in the fall of 2014. Further, approximately 1,148,167 households across Iowa have broadband available of at least 3 Mbps download and 768 Kbps upload speeds. The percentage of Iowa households having fixed broadband access available of at least 6 Mbps download and 1.5 Mbps upload speeds is estimated at 82.37%.

Taking into account both fixed and mobile broadband service platforms, an estimated 99.99% of Iowa households have broadband available from at least one provider at download speeds of 768 Kbps or higher and upload speeds of 200 Kbps or higher. This leaves about 50 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 2014 show, additional participating broadband providers can have a large impact upon Iowa 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. Connect Iowa 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 Connect Iowa has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Iowa's broadband availability estimates reported by the NTIA and the FCC in the National Broadband Map. The National Broadband Map can be found here: http://www.broadbandmap.gov and the Map's specific page for Iowa can be found here: http://www.broadbandmap.gov/summarize/state/iowa.

Interactive Map

Connect Iowa provides My ConnectView™, an online interactive map developed and maintained by Connected Nation, which allows users to create completely customized views and maps of broadband infrastructure across the state. The self-service nature of this application empowers Iowa's 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.connectiowa.org/interactive-map

For additional maps and other related information, visit:
http://www.connectiowa.org/broadband-landscape

Business and Residential Technology Assessments

To complement the broadband inventory and mapping data, Connect Iowa 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 Iowa. Key questions the data address are: who, where, and how are households in Iowa using broadband technology? How is this technology impacting Iowa households and residents? Who is not adopting broadband service and why? What are the barriers that prevent citizens from embracing this empowering technology?

Through Connect Iowa's research, many insights are able to be collected. The most recent residential technology assessment revealed the following key findings:

- Broadband adoption in Iowa increased by 5 percentage points between 2012 and 2013.
- More than 113,000 school-age children in Iowa still do not have broadband access at home.
- More than three out of ten (31%) or 90,830 non-adopters in Iowa cite relevance as their main barrier to broadband adoption, while nearly one-fifth (16%) or 46,880 cite cost as their biggest barrier.

Additionally, an assessment of technology use among Iowa businesses released in September 2014 on Connect Iowa's website revealed the following key findings:

- Across Iowa, 81% of businesses subscribe to broadband service, leaving approximately 16,000 Iowa businesses that still do not use or benefit from broadband.
- 31% of Iowa businesses that want faster Internet service cannot get it at their location.
- More than 1 in 8 Iowa businesses say it is "important" or "very important" for new employees to be able to create or edit mobile apps, while 1 in 11 say it is important for new employees to know at least one programming language.

- Online sales in Iowa accounted for approximately $20 billion in sales revenue last year, including nearly $7.7 billion for small businesses with fewer than twenty employees and more than $7 billion for rural Iowa businesses.

For more information on the statewide information described, visit the Connect Iowa website at http://www.connectiowa.org/research.

APPENDIX 2: PARTNER AND SPONSORS

Connect Iowa, in partnership with the Iowa Economic Development Authority (IEDA), supports Iowa's reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by Iowa residents. In 2009, Connect Iowa partnered with the Iowa Utilities Board 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.connectiowa.org/

The **Iowa Economic Development Authority (IEDA)** offers a variety of programs and services to individuals, communities, and businesses to attract and grow business, employment, and workforce in Iowa. Groundbreaking economic growth strategies focusing on cultivating start-up companies and helping existing companies become more innovative complement the activities already underway to retain and attract companies that are creating jobs for Iowans. Developing sustainable, adaptable communities ready for this growth is also an essential part of our work at IEDA — providing programs and resources that help communities reinvest, recover, and revitalize to make each community's vision a reality.
http://www.iowaeconomicdevelopment.com/

Connected Nation (Connect Iowa's 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 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 Connect Iowa 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 3: THE NATIONAL BROADBAND PLAN

The National Broadband Plan, released in 2010 by the Federal Communications Commission, has the express mission of creating a high-performance America – a more productive, creative, efficient America in which affordable broadband is available everywhere and everyone has the means and skills to use valuable broadband applications. The plan seeks to ensure that the entire broadband ecosystem – networks, devices, content, and applications – is healthy. The plan recommends that the country adopt and track the following six goals to serve as a compass over the next decade:

- **GOAL No. 1**: At least 100 million U.S. homes should have affordable access to actual download speeds of at least 100 megabits per second and actual upload speeds of at least 50 megabits per second.

- **GOAL No. 2**: The United States should lead the world in mobile innovation, with the fastest and most extensive wireless networks of any nation.

- **GOAL No. 3**: Every American should have affordable access to robust broadband service and the means and skills to subscribe if they so choose.

- **GOAL No. 4**: Every American community should have affordable access to at least 1 gigabit per second broadband service to anchor institutions such as schools, hospitals, and government buildings.

- **GOAL No. 5**: To ensure the safety of the American people, every first responder should have access to a nationwide, wireless, interoperable broadband public safety network.

- **GOAL No. 6**: To ensure that America leads in the clean energy economy, every American should be able to use broadband to track and manage their real-time energy consumption.

To learn more, visit: www.broadband.gov.

APPENDIX 4: WHAT IS CONNECTED?

The goal of : Connect Iowa's Connected program is to empower locally informed and collaborative technology planning that addresses each community's need for improved access, adoption, and use of technology:

- **ACCESS:** Does your community have access to affordable and reliable broadband service?
- **ADOPTION:** Is your community addressing the barriers to broadband adoption?
- **USE:** Are residents using technology to improve their quality of life?

Connected Nation leverages state-based public-private partnerships to engage residents at the local level. Regionally based staff provides "train-the-trainer" activities to local leaders, such as librarians, school administrators, economic development professionals, and public officials and help them organize multi-sector technology planning teams, inventory local technology resources and initiatives, assess local technology access, adoption, and use, and develop local strategies that target specific technology gaps in the community.

Connected's community technology-planning framework is cyclical. As with other forms of community planning – and especially so with technology planning – change is the only constant. At the community level, changing technology requirements, shifting demographics, economic drivers, and workforce requirements may expose or create new digital divides. Connected's community technology planning framework supports a sustained effort.

Connected Planning Process
Connected's community technology planning framework provides a clear path for the sustainable acceleration of broadband access, adoption, and use.

Step 1: Engage. Successful strategies to bridge the local digital divide and increase broadband access, adoption, and use are predicated on broad and sustained stakeholder participation. A successful local technology planning team should include people from multiple sectors, including:

- State and Local Government
- Public Safety
- Education (K-12, Higher Ed)
- Library
- Business & Industry, Agriculture, Recreation and Tourism
- Healthcare
- Community Organizations
- Technology Providers

Step 2: Assess. The Connected planning process guides the local technology planning team through an assessment of community technology resources, strengths, assets, needs, and gaps in order to identify and develop strategies to address specific technology gaps and opportunities in the community. Bolstered by benchmarking data that had been gathered through: Connect Iowa's mapping and market research, the local technology planning team works with community members to benchmark local broadband access, adoption, and use via the Connected Assessment, which measures:

Access	Adoption	Use
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: Plan. Once community resources and needs are identified, the community planning team begins to identify local priorities and policies, programs, and technical solutions that will accelerate broadband access, adoption, and use. Connected Nation provides recommended actions based on best practices from communities across the United States.

Step 4: Act. The technology planning team works together to ensure that selected policies, programs, and technical solutions are adopted, implemented, improved, and maintained. The Connected program provides a platform for collaboration and the sharing of best practices between communities. Connected Nation also provides communications support to raise awareness of your community's efforts. For communities that measurably demonstrate proficiency in broadband access, adoption, and use in the Connected Assessment, Connected Nation offers Connected certification, a nationally recognized certification that provides an avenue for pursuing opportunities as a recognized, technologically advanced community.

APPENDIX 5: GLOSSARY OF TERMS

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 implantations 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.

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.

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.

M

MAN - Metropolitan Area Network - A high-speed date 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. Mutiplexing, 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.

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.