VAN WERT COUNTY

TECHNOLOGY ACTION PLAN

PREPARED BY CONNECT OHIO
AND THE
VAN WERT COUNTY BROADBAND COMMITTEE

CONNECT **OHIO.**

CONNECTED℠
Community Engagement Program

AUGUST 21, 2013

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, and to provide an action plan for broadband acceleration.

Background

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. 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. Due in large part to private investment and market-driven innovation, broadband in America has improved considerably in the last decade. More Americans are online at faster speeds than ever before.

Despite the progress, there are still critical problems that slow the progress of the access, adoption, and use of broadband. Connected Nation estimates that approximately 70 million, or 30% of, Americans do not subscribe to home broadband service, and adoption varies significantly across socioeconomic lines.[1] 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. Connected Nation also estimates that at least 1.8 million businesses - 24% - in the United States do not utilize broadband technology today.[2]

In early 2009, Congress directed the Federal Communications Commission (FCC) to develop a National Broadband Plan (NBP) to ensure every American has "access to broadband capability."[3] Congress also required that the plan include a detailed strategy for achieving affordability and maximizing use of broadband to advance "consumer welfare, civic participation, public safety and homeland security, community development, health care delivery, energy independence, and efficiency, education, employee training, private sector investment, entrepreneurial activity, job creation and economic growth, and other national purposes."[4]

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[1] *Consumer Broadband Adoption Trends*, Connected Nation, Inc., March 2013, http://www.connectednation.org/survey-results/residential
[2] Connected Nation, *Broadband and Business: Leveraging Technology to Stimulate Economic Growth,* http://www.connectednation.org/survey-results/business
[3] *Connecting America: The National Broadband Plan,* Federal Communications Commission, April 2010, http://www.broadband.gov/download-plan/
[4] Ibid.

To fulfill Congress's mandate, the National Broadband Plan, released in 2010, makes recommendations to the FCC, the Executive Branch, Congress, and state and local governments that influence the broadband ecosystem – networks, devices, content, and applications – in four ways:

1. Design policies to ensure robust competition and, as a result, maximize consumer welfare, innovation, and investment.
2. Ensure efficient allocation and management of assets and government controls or influences, such as spectrum, poles, and rights-of-way, to encourage network upgrades and competitive entry.
3. Reform current universal service mechanisms to support deployment of broadband and voice in high-cost areas; and ensure that low-income Americans can afford broadband; and in addition, support efforts to boost adoption and utilization.
4. Reform laws, policies, standards, and incentives to maximize the benefits of broadband in sectors that government influences significantly, such as public education, healthcare and government operations.[5]

In addition to these recommendations, the plan recommended that the country set the following six goals for 2020 to serve as a compass over the 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.[6]

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[5] Ibid.
[6] Ibid.

Meeting these six goals will help achieve the Congressional mandate of using broadband to achieve national purposes, while improving the economics of deployment and adoption. While the National Broadband Plan recommends significant action by the FCC, the Executive Branch, and Congress, it requires a strong partnership among all broadband stakeholders. Federal action is necessary, but state, local, and Tribal governments, corporations, and community-based organizations must all do their part to build a high-performance America.

To assist communities in localizing the goals and recommendations made by the National Broadband Plan, Connected Nation developed the Connected Community Engagement Program.[7] The program is designed to help communities identify local technology assets, complete an assessment of local broadband access, adoption, and use, and develop an action plan for accelerating broadband's integration into the community's priorities.

Methodology

By actively participating in the Connected Community Engagement Program, the Van Wert County Broadband Committee is boosting the community's capabilities in education, healthcare, and public safety, and stimulating economic growth and spurring job creation. The Van Wert County Broadband Committee 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.

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[7] Connected Nation, parent company for Connect Ohio, 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.

CONNECTED ASSESSMENT

The Connected Assessment framework is comprised of three elements: access, adoption, and use. Each sub-assessment has a maximum of 40 points. To achieve Connected certification, the community must have 32 points in each sub-assessment and 100 points out of 120 points overall.

- The access assessment reviews whether an adequate broadband foundation exists for the community. The criteria within the access sub-assessment endeavors to identify gaps that could affect a local community broadband ecosystem including: last mile 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."[8]

- Broadband adoption is important for consumers, institutions, and communities alike to take the next step in fully utilizing broadband appropriately. The adoption sub-assessment seeks to ensure the ability of all individuals to access and achieve meaningful use of broadband service by measuring the community's capability and commitment to eliminating the major barriers that keep non-adopters from getting broadband.

- Broadband use is the most important component of the framework 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 NBP, meaningful use of broadband includes those areas of economic opportunity, education, government, and healthcare where values to individuals, organizations, and communities can be realized.

Connected Assessment Criteria

The criteria for the Connected Assessment stems from the Federal Communication Commission's National Broadband Plan, as well as the broadband speed tiers used under the National Telecommunications and Information Administration's State Broadband Initiative Grant Program. The Connected Assessment's thirteen questions are as follows:

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[8] *Connecting America: The National Broadband Plan,* Federal Communications Commission, April 2010, http://www.broadband.gov/download-plan/

ACCESS

- **Broadband Availability:** What percentage of homes in the community has access to fixed broadband speeds of 3 Mbps or higher?[9]
- **Broadband Speeds:** What is the highest speed level available to at least 75% of the households in your community?
- **Broadband Competition:** What percentage of homes in the community has access to more than one broadband provider?
- **Middle Mile Access:** What is the availability of middle mile access to the community?
- **Mobile Broadband Availability:** What is the mobile broadband availability in your community?

ADOPTION

- **Digital Literacy:** What is the number of digital literacy program graduates over the past year in the community?
- **Public Computer Centers:** What is the number of public computer hours available per low-income resident per week?
- **Broadband Awareness:** What percentage of the community is reached by broadband awareness campaigns?
- **Vulnerable Population Focus:** How many vulnerable population groups are being targeted within the community?

USE

- **Economic Opportunity:** What economic opportunity applications are currently in place utilizing broadband technology?
- **Education:** What broadband-enabled applications are currently being utilized by the education sector?
- **Government:** What broadband-enabled applications are currently being utilized by the government sector?
- **Healthcare:** What broadband-enabled applications are currently being utilized by the Healthcare sector?

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[9] The Broadband Availability criterion is based on the speed tiers required by the National Telecommunications and Information Administration's State Broadband Initiative Grant Program. The closest combination of speeds for which NTIA collects data that would allow a consumer, according to the Federal Communications Commission's National Broadband Plan, to "access a basic set of applications that include sending and receiving e-mail, downloading web pages, photos and video, and using simple video conferencing" is 3 Mbps downstream and 768 kbps upstream. Downstream speed measures the rate at which a user can download data from the Internet, including viewing Web pages, receiving e-mails, or downloading music. Upstream speed measures the rate at which a user can upload data to the Internet, including sending e-mail messages and files. For more information, go to: http://www.ntia.doc.gov/files/ntia/publications/usbb_avail_report_05102013.pdf.

Community Technology Scorecard

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 to meeting these national benchmarks to universal fixed broadband service, 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 32 out of a possible 40 points in broadband access primarily because Van Wert County has a high percentage of availability and competition.
- The community scored 36 out of a possible 40 points in broadband adoption. Local efforts to offer training, public computers, and awareness are helping area residents overcome adoption barriers.
- The community scored 33 out of a possible 40 points in broadband use. Local organizations are working hard to keep up with technology and offer better services to Van Wert County residents.
- Van Wert County achieved a score of 101 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 and has surpassed the score of 100 required for Connected certification.
- Van Wert County exceeded the 32 points in each focus area that are required for certification and has qualified for full certification as Ohio's first certified Connected community.

While the results indicate that the community has made tremendous strides and investments in technology, this technology action plan will provide some insight and solutions that will help the community continue to achieve success.

Community Technology Scorecard
Community Champions: Kim Brandt
Community Advisor: Jeff Beebe

FOCUS AREA	ASSESSMENT CRITERIA	DESCRIPTION	SCORE	MAXIMUM POSSIBLE SCORE
ACCESS	Broadband Availability	98% to 100% of households have access to fixed speeds of 3 Mbps	10	10
	Broadband Speeds	75% of households with access to at least 3Mbps	1	5
	Broadband Competition	95.0% to 100% of households with access to more than 1 Broadband Provider	5	5
	Middle Mile Access	Availability of middle mile fiber infrastructure from only 1 provider	6	10
	Mobile Broadband Availability	99.0% to 100.0% of households with access to mobile broadband	10	10
	ACCESS SCORE		**32**	**40**
ADOPTION	Digital Literacy	Program grads are greater than 7 per 1,000 residents over the past year	8	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	4 groups	8	10
	ADOPTION SCORE		**36**	**40**
USE	Economic Opportunity	1 advanced, 8 basic uses	10	10
	Education	5 advanced, 5 basic uses	10	10
	Government	0 advanced, 3 basic uses	3	10
	Healthcare	3 advanced, 4 basic uses	10	10
	USE SCORE		**33**	**40**
	COMMUNITY ASSESSMENT SCORE		**101**	**120**

Itemized Key Findings

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

ACCESS

- 15 last mile broadband providers currently provide service in Van Wert County:
  - 99.16% of households have access to 3 Mbps.
  - More than 71% of Van Wert County homes have access to 50 Mbps service.
  - 96.47% of Van Wert County households have access to more than 1 provider.
- Middle mile fiber infrastructure is available from multiple providers in Van Wert County.
- 99.99% of Van Wert County households have access to mobile broadband.

ADOPTION

- 3 Digital Literacy Programs exist in the community resulting in 199 graduates over the past year.
- 8 Public Computer Centers (PCC) with a total of 20 computers are open to the public.
- 2 Broadband Awareness Campaigns are reaching 100% of Van Wert County.
- 4 organizations are working with vulnerable populations.

USE

- At least 9 uses of broadband were identified in the area of economic opportunity including 1 advanced use and 8 basic uses.
- At least 10 uses of broadband were identified in the area of education including 5 advanced uses and 5 basic uses.
- At least 3 basic uses of broadband were identified in the area of government.
- At least 7 uses of broadband were identified in the area of healthcare including 3 advanced uses and 4 basic uses.

In addition to the items identified above, the Van Wert County Broadband Committee identified the following technology resources in the community:

Technology Providers

- 18 broadband providers were identified in Van Wert County
- 2 hardware providers
- 3 network developers
- 5 web developers

Technology Facilities

- 3 wireless hotspots

Community Websites
- 187 Business-related websites (excluding private businesses)
- 4 Education-related websites
- 6 Government-related websites
- 7 Healthcare-related websites
- 1 Tourism-related website

Community Priority Projects

The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. Below are 3 priority projects, each describing a project plan with suggested steps. This is followed by a complete list of all proposed projects.

County & City Community Fiber Loop Completion

Hiring a County Information Technology Manager

Implement Countywide GIS System for Residents and Businesses

Proposed Projects

Below is a complete list of 21 proposed projects. Detailed descriptions of each project can be found in the *Action Plan* section later in this report.

ACCESS

Broadband Availability
1. Perform an Analysis of Local Policies and Ordinances

Broadband Speeds
2. Identify, Map, and Validate Broadband Demand

Broadband Competition – No priority projects

Middle Mile Access
3. Develop Public-Private Partnerships to Deploy Broadband Service
4. Develop & Issue an RFP for Build-out
5. Study and Possibly Reassess Major Telecom Purchase Contracts

Mobile Broadband Availability
6. Complete a Vertical Assets Inventory

ADOPTION

Digital Literacy

7. Distribute Digital Literacy Content
8. Facilitate Internet Safety Classes

Public Computer Centers – No priority projects

Broadband Awareness

9. Facilitate a Technology Summit

Vulnerable Population Focus

10. Initiate a Community Computer Refurbishment Program
11. Develop a Technology Mentorship Program

USE

Economic Opportunity

12. Establish a "Digital Factory"
13. Develop or Identify a Broadband Training and Awareness Program for Small and Medium Businesses

Education

14. Improve Education through Digital Learning
15. Connect all School Classrooms to the Internet

Government

16. Improve Public Safety Communications
17. Perform a Municipal Information Technology Assessment
18. Improve the Online Presence of Government
19. Pursue Next Generation 911 Upgrades
20. Improve Online Business Services Offered by the Government

Healthcare

21. Promote Telemedicine in Remote Areas

DETAILED FINDINGS

Van Wert County Assessment Findings

Residents in Van Wert County (or sections of the community) are served by 18 providers. Currently, broadband is defined as Internet service with advertised speeds of at least 768 Kbps downstream and 200 Kbps upstream.[10] According to Connect Ohio's latest broadband mapping update, the following providers have a service footprint in the Van Wert County Community:

Broadband Providers	Technology Type	Website Reference
AT&T Mobility LLC	Mobile Wireless	www.wireless.att.com
Benton Ridge Telephone Company	Fixed Wireless	www.brtelco.com
Cellco Partnership and its Affiliated Entities	Mobile Wireless	www.verizonwireless.com
CenturyTel, Inc.	DSL	www.centurylink.com
Continental Telephone Company	DSL	www.tdstelecom.com
Frontier North, Inc.	DSL	www.frontier.com
GoldStar Communications	Fixed Wireless	www.nktelco.net
Hughes Network Systems, LLC	Satellite	www.hughesnet.com
MetaLINK Technologies, Inc.	Fixed Wireless	www.metalink.net
North West Net, Inc.	Fixed Wireless	www.nwbright.net
Skycasters	Satellite	www.skycasters.com
Spacenet, Inc.	Satellite	www.starband.com
Sprint Nextel Corporation	Mobile Wireless	www.sprint.com
The Middle Point Home Telephone Company	DSL	www.middlepointtel.com
Time Warner Cable Inc.	Cable	www.timewarnercable.com
T-Mobile USA, Inc.	Mobile Wireless	www.t-mobile.com
ViaSat, Inc.	Satellite	www.wildblue.com
Wabash Communications	Fixed Wireless	www.wabash.com

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[10] Organizations define broadband in different ways. For information to be included on the National Telecommunications and Information Administration's National Broadband Map, the technology must provide a two-way data transmission (to and from the Internet) with advertised speeds of at least 768 kilobits per second (Kbps) downstream and at least 200 Kbps upstream to end users. The Connected Community Engagement Program defines basic broadband as 768 Kbps downstream and 200 Kbps upstream.

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

Organization Name	Website	Website Category
A&A Mechanical, LLC	www.aamechanicaloh.com	Business
Aarons Sales & Lease	www.shopaarons.com	Business
Advanced Biological Marketing	www.abm1st.com	Business
Alexander & Bebout, Inc.	www.alexanderbebout.com	Business
Alspach-Gearhart Funeral Home & Crematory	www.alspachgearheart.com	Business
Arend, Laukhuf & Stoller, Inc.	www.als-cpa.com	Business
Ayers Mechanical Group, LLC	www.ayersmechanical.com	Business
Baker Built Products, Inc.	www.bakerbuilt.com	Business
Be Scene Advertising & Video Productions & Website Design	www.besceneadvertising.com	Business
Bebout & Houg Roofing & Siding	www.bebouthoug.com	Business
Bee Gee Realty & Auction Co	www.beegeerealty.com	Business
Better Business Bureau	www.lima.bbb.org	Business
Big Brothers Big Sisters of Mercer, Auglaize, & Van Wert Counties	www.bbbsma.com	Business
Black Swamp Bistro	www.blackswampbistro.webs.com	Business
Brand It Marketing Communications	www.branditimage.com	Business
Braun Industries, Inc.	www.braunambulances.com	Business
Bright.Net-NorthWest Net, Inc.	www.nwbright.net	Business
Capital Advisory Services, LLC	www.CapAdvisor.net	Business
Central Insurance Companies	www.central-insurance.com	Business
Citizens National Bank	www.CNBOHIO.com	Business
Collins Fine Foods	www.vanwert.com/collins	Business
Computer & Networking Technologies	www.cntcomputers.com	Business
Convention & Visitors Bureau	www.visitvanwert.org	Business
COOL Machines	www.coolmachines.com	Business
Cooper Farms Cooked Meats	www.cooperfarms.com	Business
Cowan & Son Funeral Home	www.cowanfuneralhome.com	Business
Crestview Local Schools	www.crestviewknights.com	Business
Custom Audio Concepts	www.customaudioohio.com	Business
Delphos Granite Works-Van Wert Showroom	www.delphosgraniteworks.com	Business
Delphos Herald, The	www.delphosherald.com	Business
Derry Drugs	www.derrydrugs.com	Business
DPL Energy	www.dplenergy.com	Business

Eaton Corporation	www.eaton.com	Business
Eisenhauer Manufacturing Co.	www.eisenhauermfg.com	Business
El Monte Plastics	www.elmonteplastics.com	Business
Elmco Engineering OH, Inc.	www.elmcoindustrialservices.com	Business
Essential Solutions	www.essential-solutions.net	Business
F & S Floor Covering	www.fandsfloorcovering.com	Business
Federal Mogul Corporation	www.federalmogul.com	Business
Fettig's Flowers	www.fettigsflowers.com	Business
First Bank of Berne	www.firstbankofberne.com	Business
First Federal Savings & Loan	www.1stfedvw.com	Business
First Financial Bank	www.bankatfirst.com	Business
Flag City Water Systems	www.flagcitywater.com	Business
Flat Lands Supply, Inc.	www.flatlandssupply.com	Business
Fort Wayne TinCaps	www.tincaps.com	Business
Foster Family Chiropractic	www.fosterfamilychiropractic.com	Business
Francis Furniture of Van Wert, Inc.	www.francisfurniture.net	Business
Gardner's Home Improvement	www.gardnerswindows.com	Business
Greif	www.greif.com	Business
Greve Chrysler	www.grevechrysler.com	Business
Hickory Sticks Golf Club	www.hickorysticksohio.com	Business
Holiday Inn Express	www.hiexpress.com/vanwertoh	Business
Hubbard Company, The	www.hubbardcompany.com	Business
Hughes Inn Bed & Breakfast	www.hughesinn.com	Business
Iberdrola Renewables	www.iberdrola.com/us	Business
J. C. Colville Crop Insurance	www.cropman.com	Business
K & L Ready Mix	www.kandlreadymix.com	Business
KAM Manufacturing	www.stephaniedawn.net	Business
Keister and Baker Law Office LLC	www.keisterbaker.com	Business
Kennedy Kuhn, Division of Kenn-Feld Group, LLC	www.kennfeldgroup.com	Business
Kennedy Manufacturing	www.kennedymfg.com	Business
Kernel Cooper's Corn Maze	www.kernelcoopers.com	Business
Koorsen Fire & Security	www.koorsen.com	Business
Lane's Records Storage, Inc.	www.lanesrecordsstorage.com	Business
Laudick's Jewelry	www.laudicks.com	Business
Laurie's Naturescapes	www.lauriesnaturescapes.com	Business
Lee Kinstle GM	www.leekinstle.com	Business
Lee's Ace Hardware	www.leesacehardware.com	Business
Leland Smith Insurance Services	www.lelandsmith.com	Business
Life Star Rescue, Inc.	www.lifestarrescue.com	Business
Lima News, The	www.limaohio.com	Business
Lincolnview Local School District	www.lincolnview.k12.oh.us	Business
Manpower-Decatur	www.manpower.com	Business

Marsh Foundation, The	www.marshfoundation.org	Business
Marsh Supermarkets, Inc.	www.marsh.net	Business
McCoy's Flowers & Diamonds	www.mccoysflowershop.com	Business
McDonald's of Van Wert	www.mcohio.com	Business
Merkle Heavy Moving, Inc	www.merkleheavymoving.com	Business
Merkle Insurance	www.merkleinsurance.com	Business
Metals Recycling Technology, LLC	https://www.facebook.com/pages/Metals-Recycling-Technology-LLC/233528583408337	Business
Miller Precision	www.millerprecision.com	Business
Miller Vision Center	www.millervisioncenter.com	Business
Motor Inn Auto Truck Stop	www.motorinntruckstop.com	Business
Natural Design and Graphics	www.naturaldesignandgraphics.com	Business
Niswonger Performing Arts Center of Northwest Ohio	www.npacvw.org	Business
Northwest Ohio Regional Economic Development	www.nored.org	Business
Northwest Ohio Welch Trophy	www.nwohiowelchtrophy.com	Business
Northwestern Mutual Financial Network	www.jefferyperkins.nmfn.com	Business
NOW Marketing Group	www.now-marketing-group.com	Business
NuWave Technology, Inc	www.nuwavetechinc.com	Business
Oce' Document Printing Systems	www.oceusa.com	Business
Okuley, Roger DDS	www.okuleydentistry.com	Business
One Stop Employment and Training Network	www.area8workforce.com	Business
Open Minded	www.facebook.com/openmindedvw	Business
P & L Fertilizer Co.	www.plfertilizer.com	Business
P & R Medical Connection	www.prhomeiv.com	Business
Paulding Chamber of Commerce	www.pauldingchamber.com	Business
PERRY PROTECH	www.perryprotech.com	Business
Pick 'N' Save	www.picknsavefoods.com	Business
PLA-MOR LANES	www.plamorlanes.net	Business
Precision Painters LLC	www.precisionpaintersllc.com	Business
Purmort Brothers Insurance	www.purmortbros.com	Business
Quail Run Apartments	www.yournextplacetolive.com	Business
Quality Painting & Roofing	www.qualitypaintingroofing.com	Business
R&R Employment/R&R Medical Staffing	www.rremployment.com	Business
Rager Home Improvement, Inc.	www.vanwert.com/rager	Business
Rainey Chiropractic	www.doctorrainey.com	Business
RCS Construction	www.rcsshowroom.com	Business
Real Cre8tive	www.facebook.com/getrealcre8tive	Business

Regional Growth Partnership	www.rgp.org	Business
ReHab Fab	www.rehabfab.com	Business
Returned To You, Ltd	www.returnedtoyou.net	Business
RG Sound & Communications, Inc.	www.rgsound.com	Business
Runser & Putman, LLC	www.runserandputman.com	Business
Rural Energy Products	www.rualenergyproducts.com	Business
Sarah Jane Living Center	www.vancrest.com	Business
Save-A-Lot Food Stores	www.save-a-lot.com	Business
Shultz, Huber & Associates	www.sha-cpa.com	Business
Shutterbugg Studio	www.shutterbuggstudio.com	Business
Signs In Time, Inc.	www.signsintimeinc.com	Business
Simply Irresistible	www.facebook.com/simplyirr	Business
Slusher's Jewelry	www.slushersjewelry.com	Business
Something from the Garden	https://www.facebook.com/pages/Something-from-the-Garden/169669176419388	Business
Sonit Systems, LLC	www.sonit.com	Business
Staffmark	www.staffmark.com	Business
Stahl Stoller Meyer Insurance Center	www.ssm-insurance.com	Business
State of the Heart Hospice	www.stateoftheheartcare.org	Business
Statewide Ford Lincoln	www.statewideford.com	Business
Steve Bailey - State Farm Insurance	www.statefarm.com	Business
Stoller Wealth Management, LLC	www.stollerwealthmgt.com	Business
Straightline Body & Paint	www.straightlinebodyandpaint.com	Business
Straley Realty & Auctioneers Inc.	www.straleyrealty.com	Business
Superior Collision	www.supcolvw.com	Business
Swan Memorials	www.swanmemorials.com	Business
Taylor's Auto Sales, Inc.	www.taylorautosalesinc.com	Business
Taylor's Floor Covering	www.taylorsfloorcovering.com	Business
Tecumseh Packaging Solutions, Inc.	www.akers-pkg.com/tecumseh-vanwert.html	Business
Thatcher Insurance	www.T-Kinsurance.com	Business
The Brumback Library	www.brumbacklib.com	Business
The Delphos Museum of Postal History	www.postalhistorymuseum.org	Business
The Salvation Army	www.salvationarmy.org	Business
Thomas Edison Center	www.vanwertmrdd.org	Business
Three Rivers Credit Union	www.3riversfcu.org	Business
Thrivent Financial for Lutherans	www.thrivent.com	Business
Times Bulletin Media	www.timesbulletin.com	Business
UltraSound Special Events, Inc./The Kangaroo Cave	www.ultraparty.com	Business
United Way of Van Wert County	www.vanwert.com/unitedway	Business
Universal Lettering	www.universallettering.com	Business

Van Wert Bedrooms	www.vanwertbedrooms.com	Business
Van Wert Chamber of Commerce	www.vanwertchamber.com	Business
Van Wert Cinemas	www.vanwertcinemas.com	Business
Van Wert City Schools	www.vanwertcougars.com	Business
Van Wert Civic Theatre	www.vwct.org	Business
Van Wert Community Site	www.vanwert.com	Business
Van Wert County Agricultural Society	www.vanwertcountyfair.com	Business
Van Wert County Extension Office	www.vanwert.osu.edu	Business
Van Wert County Farm Bureau	www.ofbf.org/counties/vanwert	Business
Van Wert County Foundation	www.vanwert.com/foundation	Business
Van Wert Family Physicians	www.vanwertfamilyphysicians.com	Business
Van Wert Federal Savings Bank	www.vanwertfederal.com	Business
Van Wert Fire Equipment	www.vanwertfireequiptment.com	Business
Van Wert Independent	www.thevwindependent.com	Business
Van Wert Manor	www.vanwertmanor.com	Business
Van Wert Massotherapy	www.facebook.com/vanwert.massotherapy	Business
Van Wert Peony Festival Committee	www.vanwert.com/peony	Business
Van Wert Rotary Club	https://www.facebook.com/VanWertRotary?fref=ts	Business
Van Wert Soil & Water Conservation District	www.vanwertswcd.org	Business
Van Wert Solid Waste Management District	www.recyclevw.org	Business
Van Wert Terminal, LLC	www.vanwertterminal.com	Business
Van Wert Vision Ltd.-Dr. Bidlack & Dr. Karcher	www.vwvision.com	Business
Vancrest Health Care Center	www.vancrest.com	Business
Vantage Career Center	www.vantagecareercenter.com	Business
Village of Convoy	www.villageofconvoy.com	Business
Village of Ohio City	www.villageofohiocity.com	Business
Wallace Plumbing and Underground, LLC	www.wallaceplumbingunderground.com	Business
Wannemacher Packaging	www.wanntl.com	Business
Wassenberg Art Center	www.wassenburgartcenter.org	Business
WATCH Communications	www.watchtv.net	Business
WERT/WKSD Radio	www.vwindependent.com	Business
Wetzel Motorcycle Club, Inc.	www.wetzelmc.com	Business
Wild Willy's	www.wildwillyspizza.com	Business
Willow Bend Country Club	www.willow-bend.com	Business
Wright State University-Lake Campus	www.wright.edu/lake	Business
YMCA	www.vwymca.org	Business
YWCA	www.ywca.org/vanwertcounty	Business
YWCA Child Care Resource & Referral	www.ywcatoledo.org	Business

Northwest State Community College (Shannon Station)	www.northweststate.edu	Education
OSU Extension Van Wert County	www.vanwert.osu.edu	Education
Peak Community Wellness Center 24/7	www.peakcommunitywellness.com	Education
Rhodes State College	www.rhodesstate.edu	Education
City of Delphos	www.cityofdelphos.com	Government
City of Van Wert	www.vanwert.org	Government
Main Street Van Wert	www.mainstreetvanwert.org	Government
Van Wert County	www.vanwertcounty.org	Government
Van Wert County Economic Development	www.whyvanwert.org	Government
Van Wert Family Dentistry, Jerry Burgei, DDS	www.vwfamilydentistry.com	Government
Community Health Professionals	www.comhealthpro.org	Healthcare
Family Health Care of Northwest Ohio	www.vanwertfamilyhealth.com	Healthcare
Home Health Care Solutions	www.solutions-healthcare.org	Healthcare
Reed Chiropractic of Van Wert	www.reedspinalcare.com	Healthcare
Ridgeview Hospital	www.ridgeviewhospital.net	Healthcare
Van Wert County Hospital	www.vanwerthospital.org	Healthcare
West Central Ohio Regional Healthcare Alliance	www.wcorha.org	Healthcare
Westwood Behavioral Health Center	www.westwoodbehavioralhealth.com	Healthcare
Van Wert Convention & Visitors Bureau	www.visitvanwert.org	Tourism

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

Company Name	Website	Provider Type
Time Warner Cable Business Class	www.twcbc.com	Broadband Provider
WATCH Communications	www.watchtv.net	Broadband Provider
Bright.Net	www.nwbright.net	Broadband Provider
AT&T Mobility LLC	www.wireless.att.com	Broadband Provider
Verizon Wireless	www.verizonwireless.com	Broadband Provider
CenturyLink	www.centurylink.com	Broadband Provider
TDS Telecom	www.tdstelecom.com	Broadband Provider
Frontier North, Inc.	www.frontier.com	Broadband Provider
Gold Radio Group	www.nktelco.net	Broadband Provider
Hughes Network Systems, LLC	www.hughesnet.com	Broadband Provider
MetaLINK Technologies, Inc.	www.metalink.net	Broadband Provider
North West Net, Inc.	www.nwbright.net	Broadband Provider
Skycasters	www.skycasters.com	Broadband Provider

StarBand Communications	www.starband.com	Broadband Provider
Sprint	www.sprint.com	Broadband Provider
The Middle Point Home Telephone Company	www.middlepointtel.com	Broadband Provider
T-Mobile	www.t-mobile.com	Broadband Provider
ViaSat, Inc.	www.wildblue.com	Broadband Provider
The Cellular Connection - RG Sound and Communications	www.rgsound.com	Hardware Provider
Wal-Mart	www.walmart.com	Hardware Provider
Computer & Networking Technologies, LTD	www.cntcomputers.com/index.htm	Network Integrator
Essential Solutions	www.essential-solutions.net	Network Integrator
Nuwave Technology	www.nuwavetechinc.com	Network Integrator
Real Cre8tive	www.facebook.com/getrealcre8tive	Web Developer
Times Bulletin Media	www.timesbulletin.com	Web Developer
The Lima News	www.limaohio.com	Web Developer
Brand It Marketing Communications	www.branditimage.com	Web Developer
Be Scene Advertising	www.besceneadvertising.com	Web 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	Website	Resource Type
Perks Café	www.visitvanwert.org/restuarant.html	Wireless Hotspot
McDonald's	www.jerrylewismcdonalds.com	Wireless Hotspot
McDonald's	www.jerrylewismcdonalds.com	Wireless Hotspot

Connected Assessment Analysis

A ACCESS SCORE EXPLANATION

Broadband Availability (10 out of 10 Points Possible) – is measured by analyzing the percentage of households in the community with access to fixed broadband speeds of 3 Mbps or higher. Data are collected by Connected Nation's broadband mapping program.[11] 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 April 2013 data collected by Connect Ohio, 99.16% of Van Wert 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. 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 data collected by Connect Ohio, 99.16% of Van Wert County residents have access to broadband speeds of 3 Mbps.**

Broadband Competition (5 out of 5 Points Possible) – 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 data collected by Connect Ohio, at least 95% of Van Wert County residents have access to more than one broadband provider.**

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[11] Connected Nation is working across states and with the federal government to implement the State Broadband Initiative (SBI) program created by the Broadband Data Improvement Act of 2008 and managed by the National Telecommunications and Information Administration (NTIA) within the Department of Commerce. One of the main components of the SBI program is the creation of a detailed, nationwide map of broadband coverage in order to accurately pinpoint remaining gaps in broadband availability across the nation. Connected Nation is the largest mapping agent across the nation supporting the SBI program, and has worked in thirteen jurisdictions to collect, process, integrate, and validate provider data, and map the broadband inventory across these jurisdictions. Connected Nation has received, processed, and submitted records to the NTIA from over 1,400 service providers.

Middle Mile Access (<u>6 out of 10 Points Possible</u>) – 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. The community, in collaboration with Connected Nation, collected and analyzed middle mile access data.

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

Mobile Broadband Availability (<u>10 out of 10 Points Possible</u>) – 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 data collected by Connect Ohio, 99.99% of Van Wert County residents had access to mobile broadband service.**

A ADOPTION SCORE EXPLANATION

Digital Literacy (<u>8 out of 10 Points Possible</u>) – 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
Vantage Career Center	Connect Ohio Every Citizen Online basic computer training	94
Vantage Career Center	Basic computer classes	100
Council On Aging	Basic computer and internet training	5
Total Graduates		199

Public Computer Centers (<u>10 out of 10 Points Possible</u>) – 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 Van Wert County is below.

Organization Name	Number of Open Hours per Week	Number of Computers	Available Computer Hours per Week
Brumback Library	53.5	8	428
Convoy Branch	44	2	88
Middle Point Branch	24.5	2	49
Ohio City Branch	20	2	40
Willshire Branch	20	2	40
Wren Branch	20	2	40
Van Wert County Veterans Service Commission	38.5	1	38.5
Van Wert County Council On Aging	40	1	40

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 Van Wert County is below.

Organization Name	Campaign Description	Community Reach
Connect Ohio	Promotion of Connect Ohio's Every Citizen Online Program	100%
Vantage Career Center	Mailers to promote classes	100%

Vulnerable Population Focus (8 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 Van Wert County is listed below.

Organization Name	Program Description	Vulnerable Group
Vantage Career Center	Connect Ohio ECO computer classes	Low-income
Veterans Services Office	One-on-One training to help veterans with computer skills	Veterans
Council On Aging	Basic computer and internet training	Senior Citizens

Vantage Career Center	Basic computer classes	Low-skilled workers

USE SCORE EXPLANATION

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
Van Wert Economic Development Website	Information about the economic opportunities in Van Wert - www.whyvanwert.org	Basic
Van Wert Area Convention and Visitors Bureau Website	Information on historical attractions, cultural activities, unique shopping venues and outstanding restaurants in Van Wert County	Basic
Van Wert Area Chamber of Commerce	Chamber of Commerce Mission is to aggressively promote the interests of the business community. - vanwertchamber.com	Basic
Main Street Van Wert Program	Promotes business planning and coordination in the county - www.mainstreetvanwert.org	Basic
Regional Growth Partnership	Northwest Ohio's lead economic development organization – www.rgp.org	Basic
NORED (Northwest Ohio Regional Economic Development	Online resources for business in Northwest Ohio. – www.nored.org	Basic
Free Online Banking	Several area banks offer free online banking	Basic
Multiple Agricultural websites	Some web sites have up-to-date agriculture prices for commodities	Basic
Area 8 Workforce website	Online resources for employers to find employees including applicant screening and interviewing	Advanced

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
School Website	Lincolnview Local Schools informational website - www.lincolnview.k12.oh.us	Basic
Moodle	Online Classroom Assignments - moodle.lincolnview.k12.oh.us	Advanced
Renaissance Place	Online Accelerated Reading Program - www.renlearn.com/rprt	Advanced
Teachers Web Pages	Teacher Web Pages - www.lincolnview.k12.oh.us/TeacherWebPages	Basic
Edline	Edline - Parent/Teacher/Student Assessment & Communication – www.edline.com	Basic
Google Apps for Education	This is an online productivity tool - available from anywhere and usable with all devices - where everyone can create, save, and even collaborate on school projects such as word processing, presentations, spreadsheets, forms & surveys, etc.	Advanced
Lincolnview Messaging	Provides updates for school delays, closings, and other important announcements concerning Lincolnview.	Advanced
Board of Education - Lincolnview Local Schools	Online resource with information on the Lincolnview Board of Education - www.lincolnview.k12.oh.us/BoardofEducation	Basic
Progressbook	Online gradebook and homework posting system - www.noacsc.org/dnn	Basic
Atomic Learning	Online Learning Management System - www.atomiclearning.com	Advanced

Government (3 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
City and County Web sites	Majority of local government with websites	Basic
City and County Government Forms	Many local government forms online	Basic
Online Utility Bill payments	AEP & Dominion East Ohio provide online bill payments for Electric and Gas	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
Online Health Updates	Ability to allow patients to check their patient info online	Basic
Online New Patient Application	Ability for patients to apply for hospital services through website	Basic
HomeMed Monitoring	Capturing patient vitals and telemetry for daily monitoring. System is completely automated to call home with information	Advanced
Free Wi-Fi	Free Wi-Fi for patients and families at the inpatient hospice service	Basic
Proproffs Training	Most staff training and testing is done online	Advanced
Obihai ATAs	Utilizing VOIP ATA to provide communications for staff, patients, and home Med monitoring units	Basic
ClinicSync	Ohio's statewide Health Information Exchange (HIE). Healthcare professionals can exchange patient information statewide	Advanced

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ACTION PLAN

Community Priority Projects

The Connected Assessment has culminated in the outlining of projects designed to empower the community to accelerate broadband access, adoption, and use. Below are three priority projects. This is followed by a complete list of all proposed solutions.

County & City Community Fiber Loop Completion

Project Description:
Communicate with local middle mile and last-mile broadband provider(s) to identify existing fiber that the county and city governments are currently using. Once existing infrastructure is identified, work with provider(s) in a legal capacity to improve and finalize fiber loop to provide redundancy to area organizations. The project has the opportunity to expand access and speeds to existing and future customers within the community.

Goals:
1. Work with local middle mile and last-mile provider(s) to complete community fiber loop for government and business use to improve and enhance fiber capability in the Van Wert community by the end of 2013.

Benefits:
1. By working with local broadband provider(s), the Van Wert community can increase broadband speeds, redundancy and availability to local government agencies, organizations, and businesses who may not be able to do so currently due to existing or unknown broadband infrastructure.

Action Items:
1. Contact local middle mile and last mile provider(s) at earliest convenience.
2. Identify existing fiber loop infrastructure within community.
3. Create measurable result for success to complete fiber loop.
4. Utilize legal options (i.e. Port Authority, issue RFP, Public-Private partnership, etc.) to create a process to complete existing fiber infrastructure loop for utilization and redundancy.
5. Implement needed financial model to maintain fiber loop for future enhancement and development as needed.

Implementation Team:

Local middle mile provider(s), local last-mile provider(s), Van Wert city and county broadband committee; local businesses and organizations.

Hiring a County Information Technology Manager

Project Description:
Hiring a County Information Technology Manager allows the government to realize cost savings and achieve greater efficiency and effectiveness. The position will discuss departmental needs, review all information technology requests, and act in an advisory capacity to the Van Wert Board of County Commissioners. Technology requests may include hardware, software, networking, website design, disaster recovery, policy and procedures, and others as required.

Goals:
1. Create the position for a county-wide Information Technology Manager to improve upon the County's information and technology infrastructure in a cost-effective manner.

Benefits:
1. Facilitates interaction with government and businesses for better technology implementation and utilization.
2. Lowers the cost to residents and businesses for transaction and time costs with local government. The cost to groups for any interaction decreases as more technology and fewer staff resources are needed.
3. Provides a greater amount of information to residents and businesses and provides information in a more organized and accessible manner.
4. Increase the amount of and the ability of government services online, which also saves in transportation costs.

Action Items:
1. Determine position needs and description for Information Technology Manager position including daily duties and responsibilities.
2. Identify budget line item needs for Information Technology Manager position (i.e. whether part-time or full-time, benefits, etc.).
3. Identify process for hiring (i.e. through direct hire, RFP process, Ohio Revised Code, etc.).
4. Interview candidates for position and hire desired candidate.

Implementation Team:
Van Wert County Commissioners and officials.

Implement Countywide GIS system for Residents and Businesses

Project Description:

A GIS (Geographical Information System) is an advanced computer system capable of collecting, storing, displaying and analyzing geographical or spatial data using latitude and longitude lines of measurement. This information can be viewed on a computerized map and is a powerful tool for many government, residential, and business specialists. By implementing a GIS system, Van Wert County can provide a valuable community resource to help meet current and future governmental, residential, and business needs.

Goals:
1. Build a Countywide GIS system to improve the ability of residents and businesses to conduct business within Van Wert County on computers and over the Internet.

Benefits:
1. Supports the sharing of data, services, and applications among government departments, area governments, utilities, residents, and businesses.
2. Facilitates interaction with government and businesses for better technology implementation and utilization.
3. Lowers the cost to residents and businesses for transaction and time costs with local government. The cost to groups for any interaction decreases as more technology and fewer staff resources are needed.
4. Provides a greater amount of information to residents and businesses; provides information in a more organized and accessible manner.
5. Increases the amount of and the ability of government services online, which also saves in transportation costs.
6. Includes a list of computer mapped items that may only currently exist on traditional paper maps including: airports, bridges, buildings, tax maps, aerial photography, railroads, school districts, political districts, etc.

Action Items:
1. Create a subcommittee from the Broadband Committee to learn the details of creating a countywide GIS system.
2. Evaluate outside county government websites to identify examples.
3. Refine ideas and create an outline for proposed GIS system.
4. Develop an RFP to submit to GIS developers.
5. Identify funding for current project and ongoing maintenance of project.
6. Select GIS development vendor and begin implementation.

Implementation Team:
Van Wert City and County Officials, Van Wert Broadband Committee; Local Business and Community Leaders.

All Proposed Projects

ACCESS

Broadband Availability

1. Perform an 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.

Goals:
1. Ensure that local policies are conducive to broadband build-out.

Benefits:
1. Lowers cost barriers to improve the business case for broadband deployment.
2. Encourages good public policy and provider relations.

Action Items:
1. Review local policies, ordinances, and other barriers to broadband deployment and consult with community leaders, providers, utilities and other members of the community to ensure that they are supporting policies (local ordinances, pole attachments, right-of-way) that are conducive to broadband build-out.
2. Develop an awareness campaign targeted towards community leaders to inform them of the benefits of broadband to the entire community derived from access to global resources that outweigh the need for some policies.

Broadband Speeds

2. 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.

Goals:
1. To understand existing and potential markets for broadband subscribers (both residential and business).

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

Action Items:
1. The project team should be prepared to provide research project design, data collection services, data analysis and reporting, and presentation development and delivery.

Broadband Competition – No priority projects

Middle Mile Access

3. 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 that 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.

Goals:
1. Fund broadband network deployment.

Benefits:

1. 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.
2. 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. A good partnership concentrates investment on non-duplicative networks and aims to ensure that all residents have access to adequate broadband service.

Action Items:

1. Decide on the technology (e.g. cable, DSL, fiber, etc.).
2. Issue an RFP.
3. Develop a finance and ownership model.

4. 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 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.

Goals:

1. To identify the most credible and reliable broadband provider to serve your region's households and businesses.

Benefits:

1. After completing an RFP, your community will have a good handle on the potential project risks, as well as benefits, associated with build-out.
2. 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.

Action Items:

1. Content: The RFP should include a project overview, background information, scope of work, and selection criteria. Additionally, the RFP should require that vendors provide a

cover letter, a statement of project understanding, a business plan, a proposed project schedule, qualifications, references, and cost.

2. Distribution: The RFP could be posted to the community's website. Alternatively, one method of efficiently distributing an RFP is to send out to a wide audience a one-page document announcing the availability of the full RFP. Vendors and consultants who are interested in your project can then contact you to obtain the full RFP.

5. 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.

Goals:
1. Leverage the demand for broadband across community institutions to promote competition and investment in broadband services.

Benefits:
1. 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.
2. The increased backhaul capacity can, in turn, benefit the whole community.

Action Items:
1. Develop partnerships between local high-capacity demand institutions, including local civic leaders, government entities, public safety agencies, libraries, hospital or clinics, and schools, in a coordinated effort to aggregate local demand needs for increased broadband capacity and service.

Mobile Broadband Availability

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 conditions, 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.

Goals:
1. Develop a single repository of vertical assets, such as communications towers, water tanks, and other structures potentially useful for the support of deploying affordable, reliable wireless broadband in less populated rural areas or topographically challenged areas.

Benefits:
1. 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.
2. The inventory can encourage the expansion of affordable, reliable wireless broadband services to underserved areas by shortening project development time.

Action Items:
1. Identify or develop a vertical assets inventory toolkit to provide guidelines to identify structures or land that could serve as a site for installation of wireless communications equipment.
2. Data to collect would include vertical asset type, owner type, minimum base elevation, minimum height above ground, and location.
3. Identify and map elevated structures utilizing your community's GIS resources. The resulting database should be open ended; localities should be encouraged to continuously map assets as they are made available.

ADOPTION

Digital Literacy

7. 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.

Goals:
1. Facilitate partnerships in order to provide digital literacy training.

Benefits:
1. 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.

8. Facilitate Internet Safety Classes

Some of the best ways to make sure community members are aware of how to navigate the Internet safely include instituting security-awareness training initiatives that include, but are not limited to, classroom style training sessions, security awareness website(s), helpful hints via e-mail, or even posters. These methods can help ensure that community members have a solid understanding of cyber threats. 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. Awareness training can also be used to alleviate anxiety for community members who are not using the Internet because of fear of cyber threats.

Goals:
1. 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.

Public Computer Access – No priority projects

Broadband Awareness

9. Facilitate a Technology Summit

Develop and host a technology summit for 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.

Goals:
1. A technology summit should bring together community stakeholders to develop a dialogue about how public and private stakeholders can collectively improve broadband access, adoption, and use.

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

Action Items:
1. Create community partnerships.
2. Identify funding sources and hosts.
3. Identify suitable speakers.
4. Develop relevant content.

Vulnerable Population Focus

10. Initiate a Community Computer Refurbishment Program

The first step in establishing computer refurbishing is recruiting community members to sanitize old computers and install new software. There are several target groups for performing refurbishments: community volunteers, high school and college students, and prison inmates. Community computer refurbishing provides an opportunity for volunteers and students to gain valuable new skills and training that can be used for career enhancement, and in some cases earn credits for school or college, while reinvesting in their communities. Communities also have the option of using prison inmates to refurbish computers so that they leave prison with some valuable job skills.

There are also established residential recycling programs that your community can take advantage of. For example, Dell's Reconnect program is a residential computer recycling program that offers a convenient way to recycle your used computer equipment. You can drop off any brand of used equipment at participating Goodwill donation centers in your area. It's free, and participants receive a receipt for tax purposes. To view a full list of acceptable products and locations, visit the Dell Reconnect website.

Computer recycling is also good for the environment. Explore these additional resources for computer recycling and refurbishment.

- Earth 911 Earth 911 is a comprehensive communication medium for the environment. Earth 911 has taken environmental hotlines, websites, and other information sources nationwide, and consolidated them into one network. Once you contact the Earth 911 network, you will find community-specific information on e-Cycling and much more.
- Electronic Industries Alliance's Consumer Education Initiative The Electronic Industries Alliance's e-Cycling Central website helps you find reuse, recycling, and donation programs for electronics products in your state.

Goals:

1. Initiate a computer refurbishment program designed to help recycle computers donated by local businesses, government, schools and other organizations, and then distribute them to low-income households and other households who face affordability barriers to computer ownership.

11. Develop 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 them 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:
1. Utilize student technology knowledge to implement community programs.

Benefits:
1. 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.
2. It helps to build character by awarding students opportunities to give back to their communities and embrace responsibilities associated with community service.
3. 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 community that have experience with broadband technology and those who are currently not using it.
4. 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.

USE

Economic Opportunity

12. Establish a "Digital Factory"

A digital factory is a hybrid between an employment agency and a co-working facility that connects residents with online training courses and connections with companies that lack a physical presence in the community. Digital factories provide office space, computer and broadband access, and conference space, as well training ranging from computer and digital literacy skills to computer programming.

"VisionPerry," located in Perry County, Tennessee, provides an ideal example of the digital factory concept. VisionPerry provides office space, high-speed Internet service, a conference room, and training/work rooms that all act as a hub for employees, remote employers, and online training courses. Training at VisionPerry currently follows two main courses: Customer Service Representative and Programmer Training.

VisionPerry currently partners with companies such as LiveOps, Salesforce.com, and Kodak, that desire customer service representatives and remote programmers. Just like a co-working

facility, workers who are employed and working at the digital factory pay, according to their salary and job levels, a small monthly fee for using the facilities and services of the digital factory, making the operation sustainable without ongoing government support. For more information, visit: http://www.visionperry.com.

Another example would be Connected Nation's recently unveiled Digital Works program. The Digital Works program creates jobs in areas facing high unemployment by leveraging broadband technology for call center and IT outsourcing. Extended training is available for HTML programming, and other technical positions as well. The program is providing an avenue for communities to create a job incubator, retaining workers in the area and attracting corporate jobs while providing a pathway for improving a worker's competitive advantage in the twenty-first century workforce with specified coursework and training.

At the end of training, workers are placed in available positions that match their skills and interests. All jobs pay above minimum wage and the training provides opportunities for placement at levels for upward mobility. This is work that can be done from home or at the Digital Works center, which is provided through a partnership with the community. For more information, visit: http://www.connectednation.org/sites/default/files/connected-nation/files/cn_digital_works_launch_final.pdf.

Goals:
1. Connect IT training and education with remote employment opportunities.

Benefits:
1. This type of project can educate, train, employ, and has the potential to ultimately increase the productivity and economic competitiveness of your community's workforce.
2. The physical infrastructure and training exposes a broad spectrum of residents to the benefits of telecommunications and productive uses of the Internet.
3. Through training and work, participants will rely heavily on local ISPs, broadband technology, and emerging IT technologies to provide services to a global marketplace, in turn fostering the demand-driven strengthening of your community's physical Internet infrastructure.

Action Items:
1. The digital factory concept requires a site suitable for establishing office infrastructure, educational partners to develop the workforce, and business relationships with enterprises willing to hire workers through the digital factory.
2. Identify the physical, financial, and technological resources needed to establish a digital factory.
3. Space to house workspace and training and support offices will be needed, as well as the equipment, such as computers and monitors for video conferencing and training.
4. Develop partnerships with companies who would provide contractual employment to program graduates.

5. This employment-focused program can be coupled with a digital literacy program, such as Connected Nation's Every Community Online program, in order to provide basic computer and Internet skills. Connected Nation provides a discounted, turnkey training lab solution, including refurbished or new computers, presentation equipment, training curriculum, and broadband service.

13. Develop or Identify a Broadband Training and Awareness Program for Small and 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 about 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, cyber-security, 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.

Goals:
1. Businesses adopt and use broadband-enabled applications, resulting in increased efficiency, improved market access, reduced costs, and increased speed of both transactions and interactions.

Benefits:
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. 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.

Action Items:
1. Identify federally or state sponsored business support programs (e.g. Chamber of Commerce, SBA, EDA, Agriculture, or Manufacturing extension) that include assistance with broadband or IT content.
2. Identify or develop a business awareness and training program.
3. Identify or develop online training modules for businesses. For example, the Southern Rural Development Center, in partnership with National Institute of Food and Agriculture, USDA, administers the National e-Commerce Extension Initiative. As the sole outlet nationally for e-Commerce educational offerings geared at Extension programming, the National e-Commerce Extension Initiative features interactive online learning modules. In addition, the program's website offers a library of additional resources and a tutorials section for greater explanation on website design and function. Modules and presentations include: A Beginner's Guide to e-Commerce, Doing Business in the Cloud, Electronic Retailing: Selling on the Internet, Helping Artisans Reach Global Markets, and Mobile e-Commerce. To see some examples, click here: http://srdc.msstate.edu/ebeat/small_business.html#.

Education

14. 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 features 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 instruct teachers how to integrate PowerMyLearning into their classrooms.

Goals:
1. Increase student attention and engagement, encourage students to take ownership of their learning, and make it easier for teachers to differentiate instruction without embarrassing students.

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

15. Connect all School Classrooms to the Internet

A K-12 broadband network should provide adequate performance and reach, including abundant wireless coverage in and out of school buildings. "Adequate" means enough bandwidth to support simultaneous use by all students and educators anywhere in the building and the surrounding campus to routinely use the Web, multimedia, and collaboration software. To reach the goal of sufficient broadband access for enhanced K-12 teaching and learning and improved school operations, the State Educational Technology Directors Association (SETDA) recommends that broadband speeds in schools should equate to a minimum of 100 Kbps per student/staff. However, given that bandwidth availability determines which online content, applications, and functionality students and educators will be able to use effectively in the classroom, additional bandwidth will be required in many, if not most, K-12 districts in the coming years.

In order to evolve with technology, school districts must continue to update local educational policies and curriculum, assess their broadband and classroom technology needs, evaluate the professional development requirements of teachers, and provide tech support.

Goals:
1. Facilitate the connection of all classrooms to broadband Internet so that teachers and students can take advantage of global educational resources.

Benefits:
1. Students can actively utilize school computers to access rich, multimedia-enhanced educational content and the Internet.
2. Students can post their content (including audio and video podcasts) to school learning management systems, access their e-textbooks and get their assignments online, and collaborate daily across the network with other students via wikis and other Internet-based applications.
3. Teachers can videoconference or download streaming media to classrooms and take their students on virtual field trips to interact with subject area experts.
4. School systems can utilize online courses.
5. Teachers can actively participate in online professional learning communities to share lessons and to participate in professional development.

Action Items:

1. Assess current and future bandwidth needs.
2. Utilize E-Rate funding. E-Rate is the commonly used name for the Schools and Libraries Program of the Universal Service Fund, which is administered by the Universal Service Administrative Company (USAC) under the direction of the Federal Communications Commission (FCC). The program provides discounts to assist most schools and libraries to obtain affordable telecommunications and Internet access. Funding is requested under four categories of service: telecommunications services, Internet access, internal connections, and basic maintenance of internal connections. Discounts for support depend on the level of poverty and the urban/rural status of the population served and range from 20% to 90% of the costs of eligible services. Eligible schools, school districts and libraries may apply individually or as part of a consortium.
3. If broadband capacity is lacking at the local level, seek partnerships with other local high-capacity demand institutions, including local civic leaders, government entities, public safety agencies, libraries, and hospitals or clinics, in a coordinated effort to aggregate local demand needs for increased broadband capacity and service. 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. That increased backhaul capacity can in turn benefit the whole community.

Government

16. Improve Public Safety Communications

Broadband offers a unique opportunity to achieve a comprehensive vision for enhancing the safety and security of your community's residents. Broadband can help public safety personnel prevent emergencies and respond swiftly when they occur. Broadband can also provide your community with new ways of calling for help and receiving emergency information.

For example, first responders from different jurisdictions and agencies often cannot communicate during emergencies due to disparate communication systems and the lack of integration between these systems. However, wireless broadband supports the interoperability of communications systems that would allow first responders anywhere in the nation to communicate with each other to send and receive critical voice and data to save lives, reduce injuries, and prevent acts of crime and terror.

Furthermore, with broadband, 911 call centers (also known as public safety answering points or PSAPs) could receive text, pictures and videos from the public and relay them to first responders. Similarly, the government could use broadband networks to disseminate vital information to the public during emergencies in multiple formats and languages.

To overcome the challenges posed by disparate communication systems and dated technology, your community's public safety agencies should collaborate with state and federal agencies in order to improve communication across organizational and jurisdictional boundaries. This is

one of the priorities of the First Responder Network Authority (FirstNet). Created by the Middle Tax Relief and Job Creation Act of 2012, FirstNet was established as an independent authority within the National Telecommunications and Information Administration (NTIA) in order to establish a single nationwide, interoperable public safety broadband network.

To find out more information on FirstNet and the Nationwide Public Safety Network, visit http://www.ntia.doc.gov/category/firstnet.

To find out more information regarding your state's efforts and point of contact for FirstNet planning, check with your Governor's office and/or statewide interoperability coordinator.

Other relevant initiatives include:

- Assistance to Firefighters Grants (AFG): The primary goal of the AFG Program is to meet the firefighting and emergency response needs of fire departments and non-affiliated emergency medical service organizations. AFG funds have helped firefighters and other first responders to obtain critically needed equipment, protective gear, emergency vehicles, training, and other resources needed to protect the public and emergency personnel from fire and related hazards.
- Community Connect Grant Program: The Community Connect Grant Program provides financial assistance to furnish broadband service in un-served, often isolated, rural communities. The grants are used to establish broadband service for critical facilities such as fire or police stations, while also providing service to residents and businesses.

Goals:
1. Leverage broadband technologies to enhance emergency communications to and from the public.

17. Perform a Municipal Information Technology Assessment
Conduct a Community IT Assessment of current environment performed through an interview process (onsite, video conferencing, e-mail/web based) to determine overall IT operational efficiency. Once complete, an end deliverable provides detailed assessment results including a relative "grade" in each area as well as suggested action plans for any areas that are found to be below standards.

Goals:
1. Determine overall IT operational efficiency and establish an informed process for strategic IT decisions.

Benefits:
1. Eliminates performance gaps, redundancies, inefficiencies, and unintended information silos.
2. Assists in providing a clear, repeatable, streamlined and informed process for making strategic IT decisions.

Action Items:
1. Identify a complete list of all IT equipment including age, condition, and capacity/specifications currently in use.
2. Assess server infrastructure (hardware, operating systems, and storage) and network topology (design, cable plant, and Internet connectivity).
3. Identify all currently used applications/uses and backup procedures.
4. Identify and assess security measures (firewall, perimeter, physical and wireless security).
5. Identify "Best Practices" for each office as appropriate.

18. Improve the Online Presence of Government

The government's website must meet the needs of the citizen; should equal or exceed the standards of private company websites; design must be uncluttered, informative, and easy to navigate; and website best practices must be continuously monitored and implemented. Further, website administrators should be funded and required to follow the latest best practices in design and web search optimization. They should have a process for archiving content that is no longer in frequent use and no longer required to be posted on the website. In addition, the local government should regularly solicit public opinion and analyze citizens' online preferences before making changes to their website or before launching a new website.

Goals:
1. The goal should be to make the website relevant, useful, convenient, and the go-to for local information and services.

Benefits:
1. Makes government more efficient, resulting in greater public convenience and cost effectiveness.
2. Improves the quality and accessibility of government information, and helps agencies deliver the services most requested by their customers.

Action Items:
1. Review the current e-Government applications to identify gap areas. Compare current applications to other comparable government websites of like size from around the state to identify improvement areas.
2. Conduct an assessment of the usability of current applications.
3. Use current and draft survey instruments to identify applications of public interest. Use this survey to examine potential e-Government applications.
4. Identify high-volume services to target for online automation. Emergency and first responder applications will be included.
5. Identify partners and entities to assist in implementation.
6. Develop and launch applications.

19. Pursue Next Generation 911 Upgrades

The overall system architecture of Public Safety Answering Points (PSAPs) has essentially not changed since the first 911 call was made in 1968. These 911 systems are voice-only networks based on original wireline, analog, circuit-switched infrastructure that prevents easy transmission of data and critical sharing of information that can significantly enhance the decision-making ability, response, and quality of service provided to emergency callers. To meet growing public expectations of 911-stystem functionality (capable of voice, data, and video transmission from different types of communication devices), that framework should be replaced. This would require replacing analog phone systems with an Internet Protocol (IP)-based system. This system would provide an enabling platform for current technology, as well as future upgrades.

For example, in January 2013, the Federal Communications Commission proposed to amend its rules by requiring all wireless carriers and providers of "interconnected" text messaging applications to support the ability of consumers to send text messages to 911 in all areas throughout the nation where 911 Public Safety Answering Points (PSAPs) are also prepared to receive the texts (which requires an IP-based system). Text-to-911 will provide consumers with enhanced access to emergency communications in situations where a voice call could endanger the caller, or a person with disabilities is unable to make a voice call. In the near term, text-to-911 is generally supported as the first step in the transition to a Next Generation 911.

Goals:
1. Design a system that enables the transmission of voice, data, or video from different types of communication devices to Public Safety Answering Points (PSAPs) and onto emergency responder networks.

Benefits:
Transitioning to a "Next Generation" IP-based network will enable the public to make voice, text, or video emergency calls from any communications device. With Next Generation 911, responders and PSAPs will gain greater situational awareness, which will enable better-informed decisions, resulting in better outcomes and, ultimately, a safer community. By capitalizing on advances in technologies, you are enabling:

1. Quicker and more accurate information to responders
2. Better and more useful forms of information
3. More flexible, secure and robust PSAP operations
4. Lower capital and operating costs

Action Items:
If you're involved in PSAP decision making and are faced with replacing aging systems or purchasing new technology for the very first time, you need to consider what your most immediate requirements are and where you need to be 10 years from now. Your community can take a measured and practical approach that spreads the operational impact and costs of a Next Generation 911 transition over time. Your local agency should choose a starting point that

makes the most sense and provides immediate benefits for their PSAP, responders, and communities they serve. For example, according to Intrado, Inc., a provider of 911 and emergency communications infrastructure to over 3,000 public safety agencies, local public-safety agencies can implement any of the following next-generation 911 components today, and provide immediate benefits with little to no disruption of current operations:

1. A public-safety-class, IP-based network
2. IP-based call processing equipment (CPE) in public-safety answering points (PSAPs)
3. Geographic information system (GIS) data enhancements
4. Advanced 911 data capabilities and applications

20. Improve Online Business Services Offered by the Government

Developing more e-Government applications not only provides value to businesses, but also allows the government to realize cost savings and achieve greater efficiency and effectiveness. Examples of activities include paying for permits and licensing, paying taxes, providing services to the government and other operations.

Goals:
1. Build an e-Government solution that improves the ability of businesses to conduct business with the government over the Internet.

Benefits:
1. Facilitates business interaction with government, especially for urban planning, real estate development, and economic development.
2. E-Government lowers the cost to a business conducting all of its interaction with government. Further, as more businesses conduct their business with government online, their transaction costs will be lowered. The cost to a business for any interaction decreases as more technology and fewer staff resources are needed.
3. E-Government provides a greater amount of information to businesses and provides it in a more organized and accessible manner.

Action Items:
1. The first step in the process of providing e-Government services to constituents is developing a functional web portal that allows businesses to have access to resources easily. Such a portal can enable outside businesses looking for new opportunities to make informed decisions about working in a certain community.
2. In addition, often overlooked in e-Government deployment are the issues of audiences and needs. Local governments must determine who will visit the website and what sort of information and services they will typically seek. A first step toward meeting general needs of constituents is to provide online access to as broad a swath of governmental information and data as is possible. The sort of information that should be included is:
   - Hours of operation and location of facilities.

- Contact information of key staff and departments.
- An intuitive search engine.
- Access to documents (ideally a centralized repository of online documents and forms).
- Local ordinances, codes, policies, and regulations.
- Minutes of official meetings and hearings.
- News and events.

Healthcare

21. Promote Telemedicine in Remote Areas

Promote the delivery of healthcare services from a distance using video-based technologies. Telemedicine can help to address challenges associated with living in sparsely populated areas and having to travel long distances to seek medical care - particularly for patients with chronic illnesses. It also addresses the issue of the lack of medical specialists in remote areas by awarding access to specialists in major hospitals situated in other cities, states, or countries. While telemedicine can be delivered to patient homes, it can also be implemented in partnership with local clinics, libraries, churches, schools or businesses that have the appropriate equipment and staff to manage it. The most critical steps in promoting telemedicine are ensuring that patients and medical professionals have access to broadband service, understand the main features of telemedicine, are aware of the technologies required for telemedicine, and understand how to develop, deliver, use, and evaluate telemedicine services.

One relevant funding opportunity includes 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. Three kinds of financial assistance are available: a full grant, grant-loan combination, and a full loan.

Goals:
1. Deliver improved healthcare services to rural residents.

APPENDIX 1: STATEWIDE PERSPECTIVE OF BROADBAND

Statewide Infrastructure

Connect Ohio was commissioned by the Ohio Office for Information Technology to work with each of the state's broadband providers to create detailed maps of broadband coverage and to assess the current state of broadband adoption - community-by-community - across Ohio.

As part of the Ohio State Broadband Initiative (SBI), and in partnership with the Ohio Office for Information Technology, Connect Ohio 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 Ohio 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. Vertical assets that can be utilized for broadband network facilitation or transmission were added to the interactive mapping application in October 2012. Statewide broadband maps can be found at http://connectohio.org/mapping/state. County-specific maps and data can be found at: http://connectohio.org/community_profile/find_your_county/ohio/van-wert.

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

SBI Download/Upload Speed Tiers	Un-served Households '000	Served Households '000	Percent of Served Households by Speed Tier
At Least 768 Kbps/200 Kbps	65	4,539	98.59 %
At Least 1.5 Mbps/200 Kbps	70	4,533	98.48 %
At Least 3 Mbps/768 Kbps	113	4,490	97.55 %
At Least 6 Mbps/1.5 Mbps	579	4,025	87.43 %
At Least 10 Mbps/1.5 Mbps	602	4,002	86.93 %
At Least 25 Mbps/1.5 Mbps	777	3,827	83.13 %
At Least 50 Mbps/1.5 mbps	779	3,825	83.09 %
At Least 100 Mbps/1.5 Mbps	4,540	64	1.38 %
At Least 1 Gbps/1.5 Mbps	4,603	0	0.00 %

Source: *Connect Ohio, October 2012*

Table 1 reports updated summary statistics of the estimated fixed, terrestrial broadband service inventory (excluding mobile and satellite service) across the state of Ohio; it presents the number and percentage of un-served and served households by speed tiers. The total number of households in Ohio, based on the 2010 Census, is 4,603,435, for a total population of approximately 11,536,504 people. Table 1 indicates that 98.59% 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 Connect Ohio to be un-served has dropped from 81,694.46 households in the fall of 2010 to 64,807.87 households in the fall of 2012. Further, approximately 4,490,460.50 households across Ohio have broadband available of at least 3 Mbps download/768 Kbps upload speeds. The percentage of Ohio households having fixed broadband access available of at least 6 Mbps download and 1.5 Mbps upload speeds is estimated at 87.43%.

Taking into account both fixed and mobile broadband service platforms, an estimated 99.73% of Ohio households have broadband available from at least one provider at speeds of 768 Kbps download/200 Kbps upload or higher. This leaves 12,425.77 households in the state completely un-served 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 Ohio 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, which 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 Ohio 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 Ohio has been sent on a semi-annual basis to the NTIA to be used in the National Broadband Map, and comprises the source of Ohio's 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 Ohio's data can be found here: http://www.broadbandmap.gov/summarize/state/ohio.

Connect Ohio also maintains an interactive version of its broadband inventory maps, My ConnectView™, available at: http://connectohio.org/mapping/_interactive_map_interface/?q=map.

Business and Residential Technology Assessments

To complement the broadband inventory and mapping data, Connect Ohio 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 Ohio. Key questions the data address are: who, where, and how are households in Ohio using broadband technology? How is this technology impacting Ohio 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 Ohio's research, many insights are able to be collected. The most recent residential technology, released in December 2012, revealed the following key findings:

- Approximately 71% of adult Ohioans have a home broadband subscription, an increase of five percentage points from both 2010 and 2011 when the broadband adoption rate was 66%. Still, just over 2.6 million Ohioans do not have home broadband service.
- Broadband adoption among rural Appalachian residents in Ohio has stagnated since 2011: the 2012 broadband adoption rate is 53%, while the 2011 rate was 55%.
- Nearly three out of ten Ohioans with a home broadband subscription (28%) report that the main reason they subscribed to the service was because they needed it for business or school: 14% report that they needed the service to conduct business online and 14% report that someone at home needed it for school.

For more information on the statewide information described, visit the research section of the Connect Ohio website at http://connectohio.org/research.

Additionally, an assessment on technology in businesses released in the spring of 2011 in a report titled Broadband & Business: Leveraging Technology in Ohio to Stimulate Economic Growth revealed the following key findings:

• Approximately 88,000 Ohio businesses (33%) do not use broadband.
• Nearly one-half (47%) of all Ohio firms in the healthcare industry do not subscribe to broadband.
• The median self-reported annual revenue of broadband-connected businesses in Ohio is $200,000 higher than businesses that do not use broadband.

Analyzing Ohio's Broadband Adoption and Usage among Residents and Businesses

Ohio broadband adoption and usage estimates were analyzed and presented as part of a recent report titled, "The Impact of Teleworking on Ohio's Workforce and Businesses," which was released in March 2013. This report analyzes how broadband impacts teleworking and the state's workforce and employers. This complementary research found that 783,000 Ohioans, or 17% of employed adults in the state, work from home using an Internet connection instead of commuting to their workplace. It also suggests that Ohio teleworkers tend to be more highly educated and have higher annual household incomes. Nearly nine out of ten Ohio teleworkers (88%) have a college education, and six out of ten have annual household incomes of $75,000 or more. In addition, approximately 59,000 Ohio businesses allow their employees to telework, reducing the cost of office space and the number of miles that employees are forced to commute for work. This report is available at: http://connectohio.org/sites/default/files/connected-nation/Ohio/files/oh_teleworking_report_final.pdf

Other reports that have been compiled by Connect Ohio include:

Broadband and Education: Enriching Ohio's Students through Technology, http://connectohio.org/sites/default/files/connected-nation/Ohio/files/oh_elearning_final.pdf

Bridging the Divide: Broadband and Businesses in Appalachian Ohio, http://connectohio.org/sites/default/files/connected-nation/Ohio/files/oh_appalachia_biz_final.pdf

Technology Barriers and Adoption in Rural Appalachian Ohio,
http://connectohio.org/sites/default/files/connected-
nation/Ohio/images/oh_adoption_barriers_final_12022011.pdf

Connect Ohio, in partnership with the Ohio Office of Information Technology, supports Ohio's reinvention and technological transformation through innovation, job creation, and entrepreneurship via the expansion of broadband technology and increased usage by Ohio residents. In 2009, Connect Ohio partnered with the Ohio Office of Information Technology 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://connectohio.org

The **Ohio Department of Administrative Services (DAS) Office of Information Technology (OIT)** delivers statewide information technology and telecommunication services to state government agencies, boards, and commissions as well as policy and standards development, lifecycle investment planning, and privacy and security management. Six specialized OIT sections carry out these responsibilities according to the division's mission, vision, goals, and principles.
http://oit.ohio.gov

Connected Nation (Connect Ohio'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.
www.connectednation.org

The **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, the 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.

The 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 Ohio 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 the NTIA to update the National Broadband Map, the first public, searchable nationwide map of broadband availability launched February 17, 2011.

APPENDIX 3: WHAT IS CONNECTED?

The goal of Connect Ohio's 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 Process

The Connected process consists of a 4-step process:

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, Connect Ohio 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 Connect Ohio's mapping and market research, the Van Wert County Broadband Committee will work with community members to determine their overall broadband and technology grade on a thirteen-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.

Broadband Catalysts for Change

CN Initiatives and Interventions
- Expand Access
- Expand Adoption
- Expand Use

Broader ADOPTION

ACCESS to Better and Broader Networks

Expanded USE

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.

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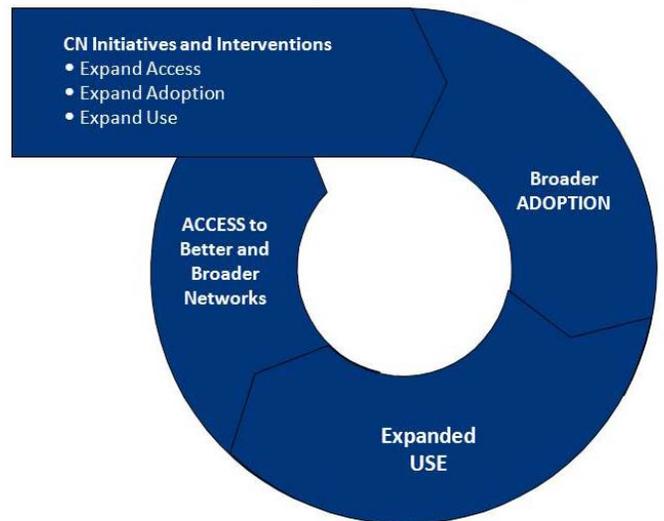
3G Wireless - Third Generation - Refers to the third generation of wireless cellular technology. It has been succeeded by 4G wireless. Typical speeds reach about 3 Mbps.

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.

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.