Leveraging Broadband in Your Community

A Workbook to Help Communities Develop Broadband Plans

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Part 1

Is your community leveraging broadband?

Broadband or high-speed Internet is changing the way we communicate, listen to music, play games, watch television shows and movies, shop, learn, and work. Broadband access to the Internet is also impacting all sectors of a community—including local governments, schools, health care, libraries and businesses. Communities—large and small—can leverage broadband to create jobs, enhance economic opportunities, improve access to education and health care, and improve quality of life.

This workbook can help your community assess how broadband access to the Internet is currently being utilized and to identify ways in which broadband can enhance develop opportunities.

What is broadband?

The term broadband commonly refers to high-speed Internet access. There is no single universally-agreed up on definition regarding how fast a connection should be to be considered "broadband." To most users, anything faster than dial-up is considered "broadband." The National Broadband Plan released by the FCC in 2010 has defined broadband as 4 Mbps down and 1 Mbps up. In August 2014, the FCC launched an inquiry into changing the definition to 10 Mbps down and 1 Mbps up. The proposed change reflects the demand for increasing broadband speeds.

Video downloads or video streaming can demand broadband speeds of 5 Mbps or greater depending upon the size of the file or quality of the video being streamed. Standard definition video can be streamed at speeds from 1 Mbps to 2 Mbps. High quality video demands faster speeds, with full HD (1080p) demanding 5 Mbps or more for a single stream. Having multiple members of a household simultaneously streaming video on separate devices will require even greater connection speeds.

Connection Speed	Single song (5 MB)	Album 100 MB	TV Show 450 MB
4 Mbps	10 seconds	3 minutes 20 seconds	15 minutes
8 Mbps	5 seconds	1 minute 40 seconds	7 minutes 30 seconds
16 Mbps	2.5 seconds	50 seconds	3 minutes 45 seconds
32 Mbps	1.25 seconds	25 seconds	1 minute 52 seconds
50 Mbps	.8 seconds	16 seconds	1 minute 12 seconds
100 Mbps	.4 seconds	18 seconds	36 seconds

What technology trends are impacting my community?   The rapid pace at which technology continues to change can make it challenging for communities and residents to keep up.   Here is a list of ten technology trends impacting communities:

10 Technology Trends

1. Social media is changing how we communicate.
2. Broadband has gone mobile.
3. Online video is huge.
4. Services are moving online, making public access critical.
5. Location-based services know where you are.
6. Cloud computing is changing service models.
7. IT workers are in high demand.
8. Health applications will be the next killer app.
9. Tablets and e-readers are growing in popularity.
10. Technology is facilitating collaboration.

Learn more about these technology trends. (Link to Technology Trends article)

How can broadband help my community? Broadband access to the Internet is bridging the barriers of distance, providing access to specialists via telemedicine and expanding educational opportunities for K-12 students and adults. Businesses are using broadband to expand their markets, increase revenue, and create jobs. Agricultural producers are using broadband to monitor their livestock and control their irrigation systems. Residents are applying for jobs, renewing their driver's licenses, researching do-it-yourself projects, working from home, and planning trips. In short, broadband is becoming as essential as electricity and water.

10 ways broadband helps rural communities

1. Links local businesses to global markets
2. Allows consumers to tap into e-commerce savings
3. Expands access to educational opportunities
4. Increases local job growth
5. Connects patients to world class healthcare and reduces care costs
6. Enhances economic options for younger generations
7. Provides new tools to farmers and ranchers to grow their businesses
8. Enables entrepreneurs to locate their businesses locally
9. Attracts customers to local businesses
10. Offers families low cost options to stay in touch using the latest technology

Source: Internet Innovation Alliance

How can my community address broadband development? Broadband development usually starts with government, businesses, and educational entities coming together to address the challenges facing the community or region. Broadband-related development doesn't require community leaders who know all of the answers. It does, however, require community leaders who have the passion and commitment

A sense of hope for a better future helps sustain initial efforts. Collaborating on small projects builds trust and social capital. Community partners then work together on bigger projects which address:

- Technology adoption,
- Developing a skilled IT workforce,
- Innovation and entrepreneurship,
- Broadband availability and affordability,
- And quality of life.

This can lead to economic growth and job creation.

The following model shows the key elements of broadband-related development.

Take this quiz to see how your community rates. (Link to Is Your Community Leveraging Broadband?)

The following sections provide additional information on each of the elements of technology-related development. Part 2 (link) provides resources to help communities develop plans to address technology-related development.

Community Leadership and Support

Are community leaders aware of the importance of information technology and do they work together to address the broadband and technology needs of the community?

Are government, businesses, and educational entities working together to address broadband development?

Broadband-related development starts with community leadership. Forming a community technology committee with representatives of key sectors and institutions in a community, including local government, economic and community development organizations, business, the library, education, and health care is often the first step to leveraging broadband-related development.

Assess (Link to the following chart) your community's leadership and support for technology development.

Assessment : Community Leadership and Support	Yes	No
Are community leaders aware of the importance of information technology and do they work together to address the broadband and technology needs of the community?	☐	☐
Are government, businesses, and educational entities working together to address technology-related development?	☐	☐
Has a strategic information technology plan been developed?	☐	☐
Is there widespread support for information technology-related development?	☐	☐
Is there a local champion of information technology development?	☐	☐
Do local leaders utilize new technology applications including video applications and social networking?	☐	☐
Are public/private partnerships used to accelerate information technology development?	☐	☐
Have cooperative arrangements been made for entities to aggregate demand and share costs related to information technology?	☐	☐
Have local sources of funding for IT-related projects been identified?	☐	☐
Does the community have a group of people assigned to seek out and follow up on alternative funding strategies for IT development?	☐	☐

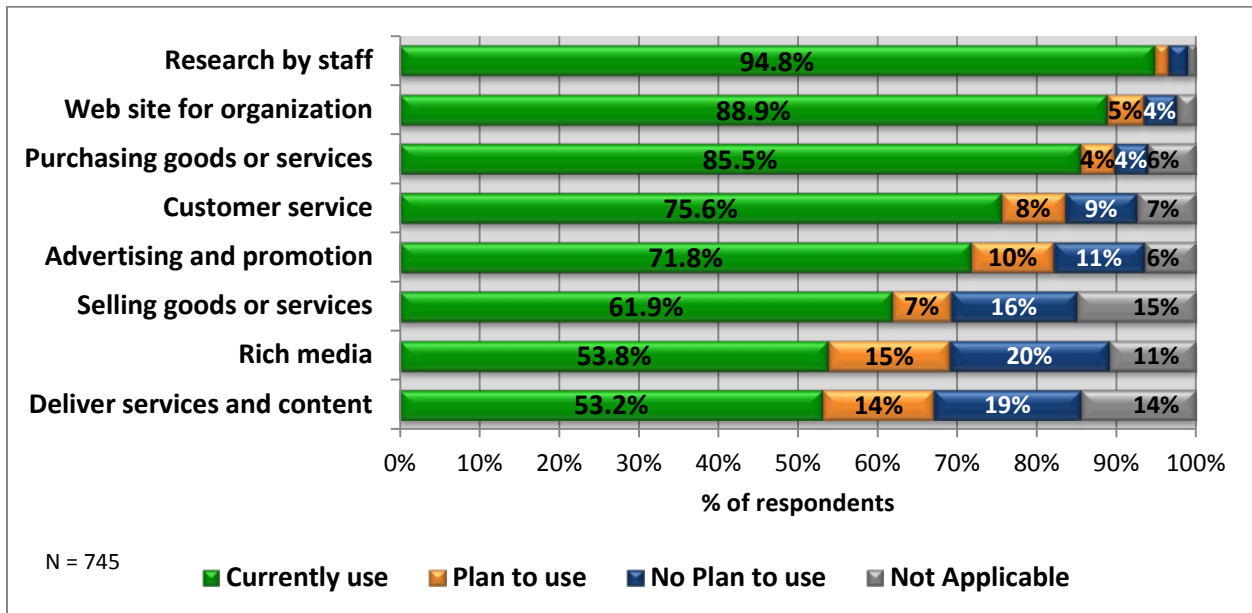|		
Have grant opportunities from federal, state, and private sources been researched?	☐	☐

Technology Adoption—Businesses

Are local businesses effectively utilizing broadband?

From Comfy Feet in Hartington to Dinklage Feed Yards in Sidney, Nebraska businesses are utilizing broadband to expand their markets and reduce costs. More importantly, these businesses are creating jobs and increasing revenue through the use of broadband. A 2013 survey of Nebraska businesses found that broadband use is having a positive impact on jobs, with 364 respondents reporting a net increase of 654 jobs due to using the Internet. Over 50% of net jobs reported by respondents were attributed to use of the Internet. Broadband use is also having a positive impact on business revenue with typical respondents reporting 25 to 45 percent of revenue from the Internet.

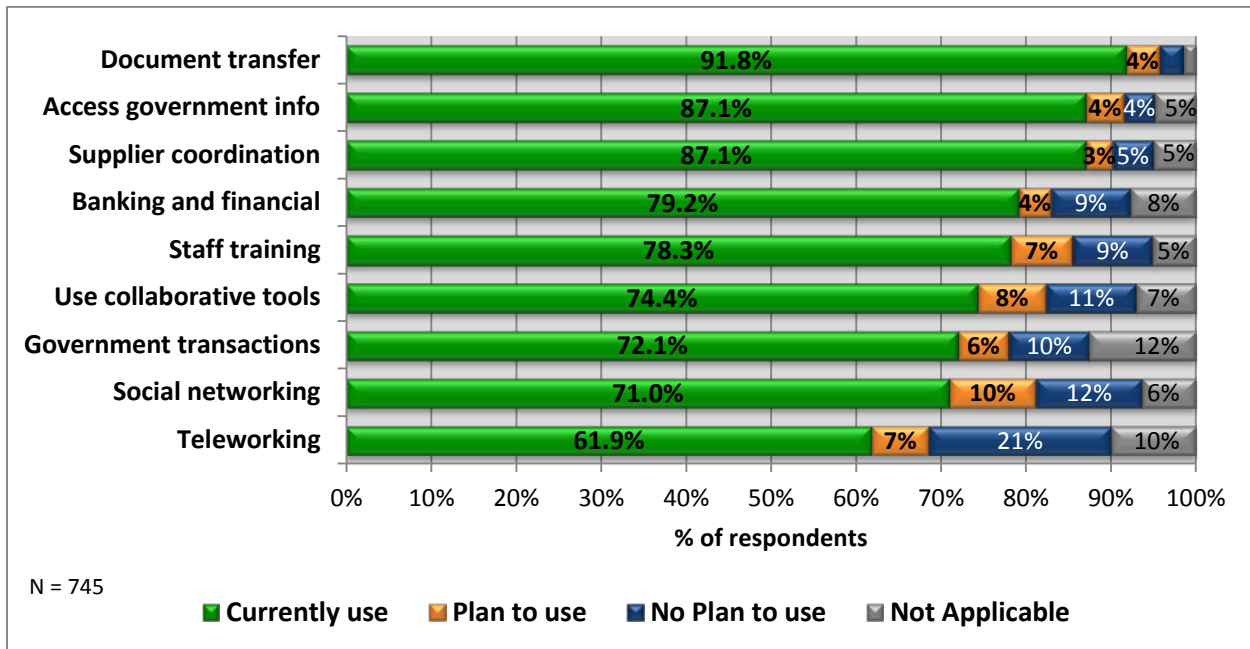How are businesses in Nebraska using broadband?

- Over 85 percent of businesses use the Internet to purchase goods and services online. In contrast, 61.9 percent of organizations sell goods and services online and 53.2 percent deliver services and content online.

- Broadband can transform how organizations conduct their operations. Over 80 percent of organizations use broadband for coordination with suppliers, while over 78 percent use broadband for employee training and another 75.6 percent for improving customer service.

e-Commerce Uses of Broadband

	Currently use	Plan to use	No Plan to use	Not Applicable
Research by staff	94.8%			
Web site for organization	88.9%		5%	4%
Purchasing goods or services	85.5%		4%	4% 6%
Customer service	75.6%	8%	9%	7%
Advertising and promotion	71.8%	10%	11%	6%
Selling goods or services	61.9%	7%	16%	15%
Rich media	53.8%	15%	20%	11%
Deliver services and content	53.2%	14%	19%	14%

% of respondents

N = 745

Source: Nebraska Broadband eSolutions Benchmarking Report

e-Process Uses of Broadband

	Currently use	Plan to use	No Plan to use	Not Applicable
Document transfer	91.8%	4%		
Access government info	87.1%	4%	4%	5%
Supplier coordination	87.1%	3%	5%	5%
Banking and financial	79.2%	4%	9%	8%
Staff training	78.3%	7%	9%	5%
Use collaborative tools	74.4%	8%	11%	7%
Government transactions	72.1%	6%	10%	12%
Social networking	71.0%	10%	12%	6%
Teleworking	61.9%	7%	21%	10%

% of respondents

N = 745

Source: Nebraska Broadband eSolutions Benchmarking Report

Learn how Nebraska businesses are using broadband

21st Century Equipment in Bridgeport, Nebraska—Miles don't matter for this equipment dealer. Broadband lets dealerships and customers in three states share information immediately.

MetalQuest in Hebron, Nebraska—Global markets find MetalQuest for precision manufacturing. Broadband makes this operation world-class, competitive – and successful

Dinklage Feed Yards in Sidney, Nebraska—They bring high tech tools to traditional livestock operations. Dinklage Feed Yards use high-speed Internet in all areas of monitoring, feeding and health care for their cattle

Comfy Feet in Hartington, Nebraska—This small town company meets customer requests worldwide. Broadband access makes promotions, jobs and sales possible for Comfy Feet.

Bassett Livestock in Bassett, Nebraska—Bassett Livestock brings cattle auctions from rural Nebraska to bidders and buyers nationwide.

Fred Lockwood and Company CPA in Chadron, Scottsbluff and Mullen— Broadband access adds up to positive impacts for these accounting offices. They connect – and succeed – with customers and employees to save time and money

Country Drawers in Cambridge, Nebraska—Eco-friendly operations are in place from every angle for Country Drawers. Natural and organic products are promoted, managed and sold internationally with online connections and capabilities.

Roe Buick in Grand Island, Nebraska— The car shopping and maintenance experience is upgraded at Roe Buick. Car shoppers can view inventory, schedule appointments and ask questions online. The car shopping and maintenance experience is upgraded at Roe Buick.

Agilx in Lincoln, Nebraska—Custom software and solutions are available anywhere. Lincoln goes global for Agilix customers though broadband.

C & C Processing near Diller, Nebraska— C & C Processing offers traditional high quality meat products online to shoppers anywhere in the country.

Assurity Life in Lincoln, Nebraska—In their new building or across the country, Assurity uses broadband to manage life insurance data for their tremendous customer base.

Miletta Vista Winery near St. Paul, Nebraska—The view is awesome; the wine is wonderful. With a new broadband connection, Miletta Vista Winery keeps high tech operations moving and customers wanting another glass.

Assess (Link to the following chart) how well businesses in your community are utilizing broadband technologies?

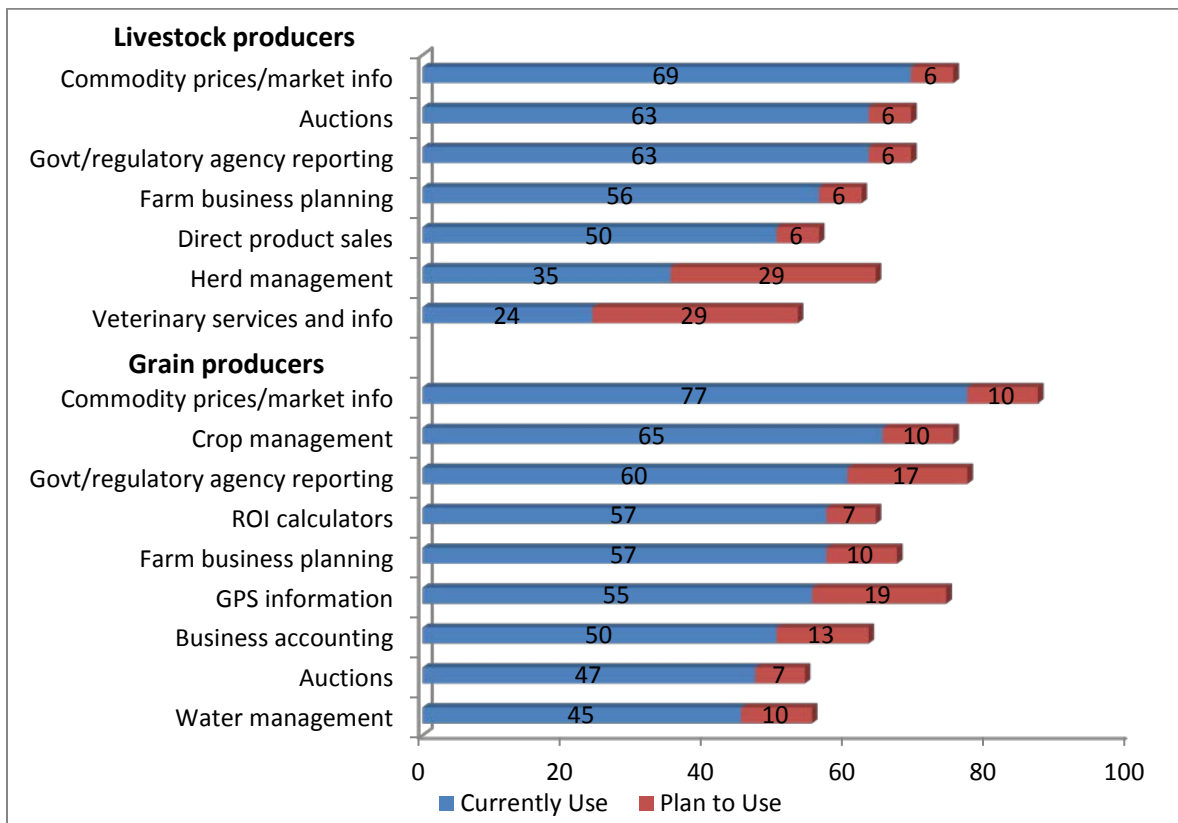| Assessment : Use of Broadband Technology By Businesses	Yes	No
Do almost all small businesses have broadband access?	☐	☐
Are most businesses satisfied with their broadband service?	☐	☐
Do most small businesses have a website?	☐	☐
Are many businesses selling goods and services online?	☐	☐
Are most businesses effectively using broadband technologies?	☐	☐
Is technical assistance/training available to businesses that wish to develop or expand their information technology capabilities?	☐	☐
Are there businesses in the community that offer web design services?	☐	☐
Does a local Internet service provider host websites for local businesses?	☐	☐
Are there technology support services available in the community?	☐	☐
Are there local outlets for shipping products in a timely manner?	☐	☐
Do travel/tourism organizations use the Internet to promote restaurants, lodging and attractions in the area?	☐	☐
Is the community/region using tools to track, benchmark, and understand business needs related to technology and broadband infrastructure?	☐	☐

Technology Adoption—Agriculture

Are agricultural producers and agribusinesses effectively utilizing broadband?

Broadband applications are becoming increasingly important for agricultural producers. A 2013 survey of Nebraska agricultural producers found that over 60% of livestock producers are using broadband for commodity prices/market information (69%), government/regulatory agency reporting (63%), and auctions (63%). Herd management and veterinary services are expected growth areas with 29% of livestock producers planning to use these applications in the future.

At least 60% of grain producers report using broadband for commodity prices/market information (77%), crop management (65%), and government or regulatory agency reporting (60%). The two applications with the greatest expected growth are GPS information and government/regulatory agency reporting.

Use of Broadband Applications by Nebraska Agricultural Producers

Livestock producers

Application	Currently Use	Plan to Use
Commodity prices/market info	69	6
Auctions	63	6
Govt/regulatory agency reporting	63	6
Farm business planning	56	6
Direct product sales	50	6
Herd management	35	29
Veterinary services and info	24	29

Grain producers

Application	Currently Use	Plan to Use
Commodity prices/market info	77	10
Crop management	65	10
Govt/regulatory agency reporting	60	17
ROI calculators	57	7
Farm business planning	57	10
GPS information	55	19
Business accounting	50	13
Auctions	47	7
Water management	45	10

Source: Nebraska eSolutions Benchmarking Report and Technology Use in Agriculture Cornhusker Economics.

Many smart farming technologies, including those utilizing GPS, may require a cellular connection. For example, precision guidance for row crop production requires GPS accuracy of +/- 1 inch accuracy. GPS correction through RTK (Real Time Kinematic) is often done through cellular connections. In some areas of the state, cellular coverage may be a barrier to utilizing RTK or other technologies. In some areas of

Nebraska, agricultural producers may need to subscribe to two different carriers to get the coverage needed locally.

Precision agriculture and remote sensing technologies produce large amounts of data. Limited upload speeds in some areas of the state may also present a barrier.

Learn How Nebraska Ag Producers and Agribusinesses Are Using Broadband

 Dinklage Feed Yards in Sidney, Nebraska

They bring high tech tools to traditional livestock operations. Dinklage Feed Yards use high speed Internet in all areas of monitoring, feeding and health care for their cattle.

 Miletta Vista Winery near St. Paul, Nebraska

The view is awesome; the wine is wonderful. With a new broadband connection, Miletta Vista Winery keeps high tech operations moving and customers wanting another glass.

21st Century Equipment in Bridgeport, Nebraska

Miles don't matter for this equipment dealer. Broadband lets dealerships and customers in three states share information immediately.

Assess how well your community/region is addressing the broadband-related needs of ag producers and agribusinesses:

Assessment: Use of Technology in Agriculture	Yes	No
Is fixed broadband service (fixed wireless, DSL, cable or fiber to the premise) available to ag businesses, farms, and residences?	☐	☐
Is mobile broadband service available?	☐	☐
Is there ample broadband speed for future agricultural needs?	☐	☐
Do agricultural service providers maintain active/interactive websites (this includes e-commerce, virtual technicians, instant messaging, and e-help)?	☐	☐
Do the following entities utilize broadband technologies effectively?	☐	☐
▪ Farmers/ranchers	☐	☐
▪ Crop consultants	☐	☐
▪ Livestock consultant	☐	☐
▪ Agribusinesses	☐	☐
▪ Educators (high school, post-secondary, outreach)	☐	☐
Are farmers/ranchers/consultants adopting the use of the following technologies?	☐	☐
▪ RFID (Radio Frequency IDentification) for animals or commodities (such as large round or square bales)	☐	☐
▪ Asset tracking using telematics (ex. AgCommand, JD Link)	☐	☐
▪ Precision guidance tools using pervasive automation (RTK- either cellular or radio, GPS)	☐	☐
▪ Crop sensor technology such as soil water blocks/probes, crop condition remote sensing, and aerial imaging	☐	☐
▪ Irrigation scheduling using GPS, cellular/radio uplink, remote sensing logic computers	☐	☐
Are agricultural producers using iPads, mobile PCs, tablet PCs, specific agricultural tablets (AgLeader, FarmWorks, SST)?	☐	☐
Are agricultural producers using grain bin sensing (moisture, air flow, temperature, volume) and remote operation?	☐	☐
Do supporting agricultural companies/producers use or rely on streaming video imaging, conferencing, or consulting to conduct businesses in the area?	☐	☐

Technology Adoption—Education, Health Care, Local Government, and Libraries

Broadband development crosses all sectors in a community, including education, health care, libraries, and government. In many communities, educational entities as well as hospitals and other health care providers may be among the largest users of telecommunications services. Many schools now have online content for students and online systems for parents to check grades or lunch account balances, making broadband access for students and families critical. As health care systems implement programs to help patients and care givers better manage care, broadband access for patients will likewise become important.

Local governments are also using technology to communicate with residents and to provide services, although funding and the ability to accept payment by credit card remain barriers for some local governments. Libraries play an important role in supporting broadband development by providing public access to computers and the Internet and by providing training. Some libraries in Nebraska have 3D printers for patrons to use. Libraries are also using broadband to allow patrons manage their accounts and to borrow e-books.

Education

Do local schools use technology to enhance educational opportunities and communication with families?

In many communities, schools are among the heaviest users of broadband, using broadband for distance education, content management systems to support classroom learning, web-based systems that let parents check grades or lunch balances, online assessments, and/or using web-based systems to schedule parent teacher conferences.

The state's education network, Network Nebraska-Education, has enabled the exchange of video distance learning classes and decreased the cost of commodity Internet for participating K-12 entities. Nebraska K-20 education now enjoys one of the lowest unit costs for commodity Internet in the entire country. The deployment of 1:1 computing devices in schools and the migration to digital content and online assessments are significantly increasing broadband utilization by schools. The federal E-Rate program provides discounts to assist most schools and libraries in the United States to obtain affordable telecommunications and broadband access.

Network Nebraska-Education acts as an anchor tenant by leasing facilities from telecommunications providers. As a result, investments made in the state's telecommunications infrastructure by the private sector to support Network Nebraska-Education benefit other customers as well.

Schools also play a role in providing opportunities for students to learn computer applications and coding. IT focus programs and career academies can encourage students to choose a career in IT and help students develop the necessary skills to enter the IT workforce.

Learn How Nebraska Schools Are Using Broadband
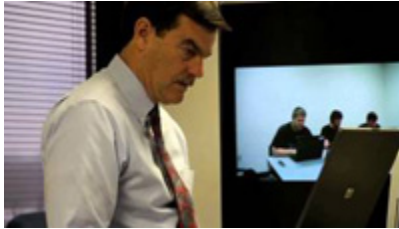
[Lincoln Public Schools Distance Learning](#) in Lincoln, Nebraska

The Lincoln Public Schools IT Focus Program serves 40 LPS students with advance computer programming and graphic design programs. In addition, broadband allows IT Focus Program instructors to simultaneously teach classes remotely to students in several other communities, particularly smaller districts who cannot afford to hire specialized instructors. Teacher Steve Carr describes the benefits of distance education and its use of broadband.

[Nancy Olsen uses Broadband in Education](#)

Nancy Olsen, Banner County Public Schools, uses broadband in her classroom to teach virtually and to partner with other schools.

Assess (link to table below) how broadband technologies are being used in education.

Assessment: Use of Broadband Technologies in Education	Yes	No
Does the public school system have a technology plan?	☐	☐
Is technology integrated throughout the K-12 curriculum? The International Society for Technology in Education (ISTE) has prepared suggested national technology standards for students, teachers, and administrators which can serve as a guide (http://cnets.iste.org).	☐	☐
Has the public school system devised a life cycle funding plan for technology incorporating total cost of ownership?	☐	☐
Are teachers continually trained and evaluated on their ability to use information technology as a teaching tool?	☐	☐
Are administrators and support staff continually trained and evaluated on their ability to use information technology as an administrative tool?	☐	☐
Are students required to attain or demonstrate some level of technology proficiency at particular grade levels?	☐	☐
Are opportunities to learn coding available to students either as a class or an afterschool activity?	☐	☐
Are computers, in laboratory or classroom settings, available for daily use by all students?	☐	☐
Is the Internet available throughout each school and used as an integrated teaching and learning tool?	☐	☐
Are school computers networked at high bandwidth within and between schools in the local system?	☐	☐

Are youth involved in technology projects with target groups (i.e., senior citizens, businesses, etc.) within the community?	☐	☐
Do schools have up-to-date web pages with information about programs, current events, student and teacher achievements, and PTA/PTO information?	☐	☐
Do teachers employ a learning management system and digital content repository to increase learning beyond the school day?	☐	☐
Does the public school system utilize a web-enabled student information system to display password-protected attendance and achievement?	☐	☐
Are students, teachers, parents, and administrators using e-mail or text messaging to communicate?	☐	☐
Are two-way interactive distance learning and/or web-based courses used to expand course offerings for students?	☐	☐

Health Care

Do local hospitals and health care providers use technology to improve patient care?

Health IT is impacting the way health care is delivered and managed. Electronic health records and health information exchange are making it easier for physicians and other health care providers to have more complete patient information at the point of care. Remote monitoring technologies are helping to reduce hospital readmissions. Patient portals, personal health records, and other applications are making it easier for patients to better manage their health care. Telehealth is making consultations with specialists more accessible to those living in rural Nebraska.

The bandwidth requirements for many health IT applications are similar to common business applications. However, transferring radiological images requires significant bandwidth (100 Mbps or more), making health systems one of the biggest users of broadband in many communities.

10 Benefits of Health IT

1. Enables more informed decision-making and enhanced quality of care
2. Saves lives through remote consultations, whether urgent or diagnostic
3. Creates more efficient, convenient and potentially more cost-effective delivery of care
4. Facilitates earlier—and more accurate—diagnoses
5. Provides greater, and faster, access to a patient's medical history, reducing the risk of negative drug interactions or poor response to a course of treatment
6. Improves administrative efficiency and coordination
7. Allows rural residents to receive expert diagnosis and treatment from distant medical centers

8. Increases timeliness of treatment and decreases transfer rates, while reducing medical costs through video technology
9. Supports real-time treatment by first responders through the use of wireless devices
10. Enhances senior wellness and preventative care through telemedicine and remote-in home monitoring

Source: Internet Innovation Alliance

The Nebraska Statewide Telehealth Network connects nearly all of the state's hospitals and all of the state's public health departments. The network is used for patient consultations via interactive video, teleradiology, administrative meetings and continuing medical education.

Nebraska State Telehealth Network 2013
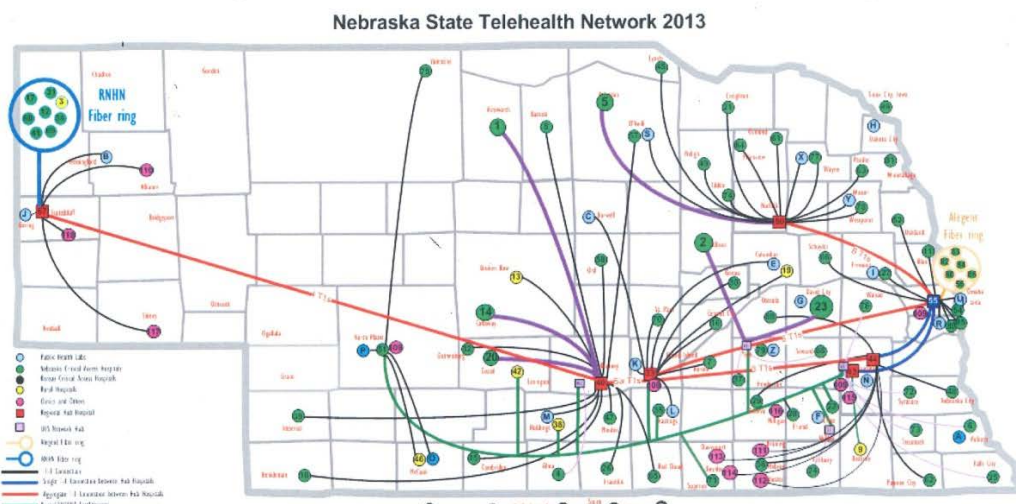
Nebraska is a leader in exchanging health information so health care providers have more complete patient information at the point of care. NeHII (the Nebraska Health Information Initiative) is one of the largest statewide health information exchanges in the country. By using NeHII, a doctor in an emergency room can view a patient's medication history, avoiding an adverse drug event. A patient's primary care physician and any specialists involved in his/her care can both have access to a patient's latest lab results and medications.

Nebraska also has one of the nation's only health information exchanges exclusively serving behavioral health information exchange providers. The Electronic Behavioral Health Information Network (eBHIN) went live with its HIE functionality in the summer of 2012.

Health IT is also making it easier for patients and care givers to be more informed and active participants in health care.   Several of the emerging health applications will require patients and/or their care givers to have broadband access and the skills to use these applications.

Learn how broadband is being used in health care

[Pioneer Memorial Rest Home Leads Telemedicine to Sandhills](#)

The Pioneer Memorial Rest Home in Mullen, Nebraska, is using broadband for telehealth consultations with medical specialists using interactive video.

[Nebraska Health Information Initiative](#)

All your medical records are available in one place – even if you are moving around. Nebraska Health Information Initiative coordinates consolidated patient medical history for doctors, providers and patients.

Assess (link to table below) how health care facilities are using broadband technologies.

Assessment: Use of Broadband Technologies in Health Care	Yes	No
Are local physicians and staff using electronic health records?	☐	☐
Are local hospitals using electronic health records?	☐	☐
Are local long term care facilities using electronic health records?	☐	☐
Are dentists, chiropractors, physical therapists, behavioral health providers, and other health care providers using electronic health records?	☐	☐
Are local physicians and staff participating in health information exchange?	☐	☐
Are local hospitals participating in health information exchange?	☐	☐
Are local long term care facilities participating in health information exchange?	☐	☐
Are dentists, chiropractors, physical therapists, behavioral health providers, and other health care providers participating in health information exchange?	☐	☐
Are physicians and other prescribers e-prescribing?	☐	☐

Do local pharmacies accept e-prescriptions?	☐	☐
Do health care practitioners use interactive video for specialist consultations?	☐	☐
Is interactive video available for emergency room consultation with primary care physicians?	☐	☐
Is teleradiology technology available for rapid reading of X-rays by radiologists?	☐	☐
Is interactive video used for continuing medical education for health care practitioners?	☐	☐
Are home telehealth technologies used for home health care visits to elderly and disabled persons?	☐	☐
Are there resources available in the community to help consumers learn about using electronic health records and other applications?	☐	☐

Local Government

Are local governments using technology to communicate with citizens, to provide information, and to provide services?

Does your community have a well-designed website which provides information for both prospective and current residents?

From driver's licenses to marriage licenses to pet licenses to property taxes and parking tickets, citizens and residents interact with local governments on a regular basis. Citizens expect to be able to find information online and to be able to complete transactions online. Local government websites also often serve as a source of more general community information for residents, visitors, and prospective residences.

Funding and the ability to accept payment by credit card are two of the major barriers to implementing e-government services by Nebraska municipalities and counties, according to 2012 surveys of members of the Nebraska Association of County Officials and Nebraska League of Municipalities.

- 46% of municipal officials and 25% of county officials indicated that the ability to accept payment by credit card was a large challenge.
- 39% of municipal officials and 41% of county officials indicated that funding to implement e-government services was a large challenge.
- Other barriers identified include having staff available for e-government projects and keeping up with new technology.

Local E-Government Best Practices

Local government websites should:

- Provide contact information for elected officials
- Provide Contact information for local government departments
- Provide Other information about local government operations and finances
- Provide information about the services they provide
- Allow individuals to download application forms for services or submit applications forms for services online
- Include links to other websites that provide useful information to individuals
- Include one or more navigations tool
- Have accessibility features
- Group related information and services on their websites, including in multiple ways when possible

Local governments should consider whether it is cost effective to:

- Enable websites to be easily viewed by individuals using mobile devices
- Offer mobile applications designed for multiple operating systems commonly used by mobile devices
- Accepting online payment for those services for which it can be done cost effectively.

Local government should make efforts to improve their websites by:

- Using website traffic statistics to analyze how their websites are used and could be improved
- Soliciting comments and feedback about their websites and then acting on the information received

Local governments should address privacy and security by:

- Implementing effective information technology security policies and procedures
- Training staff on information technology security policies and procedures
- Accessing free or low-cost resources for improving information technology security
- Establishing privacy policies that specify how they will collect and use personal information provided by individuals
- Posting established privacy policies on their websites

Local governments should consider using social media to communicate information to the public. If social media is being used, local governments should develop policies and procedures that specify staff responsibilities for maintaining social media accounts.

Source: State of Wisconsin Legislative Audit Bureau

Assess (link to table below) the use of technology in local government.

Assessment: Use of Broadband Technologies in Local Government and Community Services	Yes	No
Do city and county governments collaborate on telecommunications and information networking infrastructure?	☐	☐
Do local governments use mobile wireless data networks to enhance efficiency?	☐	☐
Do local governments regularly include budgeted funding for technology upgrades?	☐	☐
Do local governments regularly include budgeted funding for technology training for elected officials and employees?	☐	☐
Does the city government have a website?	☐	☐
▪ Are meeting agendas and minutes available online?	☐	☐
▪ Are budget documents available online?	☐	☐
▪ Are property tax appraisals available online?	☐	☐
▪ Are ordinances available online?	☐	☐
▪ Are land use and zoning maps available online?	☐	☐
▪ Is information for new or prospective residents available online?	☐	☐
▪ Are permits, forms, and applications available online?	☐	☐
▪ Can citizens perform online information searches?	☐	☐
▪ Can citizens perform online transactions such as paying utility bills or traffic violations?	☐	☐
▪ Is a version of the website customized for mobile devices?	☐	☐
▪ Are video and social networking applications used to provide information to the public?	☐	☐
Does the county government have a website?	☐	☐
▪ Are meeting agendas and minutes available online?	☐	☐
▪ Are budget documents available online?	☐	☐
▪ Are property tax appraisals available online?	☐	☐
▪ Are ordinances available online?	☐	☐
▪ Are land use and zoning maps available online?	☐	☐
▪ Is information for new or prospective residents available online?	☐	☐
▪ Are permits, forms, and applications available online?	☐	☐

▪ Can citizens perform online information searches?	☐	☐
▪ Can citizens complete online transactions?	☐	☐
▪ Is a version of the website customized for mobile devices?	☐	☐
▪ Are video and social networking applications used to provide information to the public?	☐	☐
Do local governments use the Internet to post bids and buy goods or services?	☐	☐
Do local officials play a role in state-level information networking policy formation?	☐	☐
Have existing local ordinances been reviewed and modified to remove anti-technology bias?	☐	☐
Do human service organizations have a centralized computer database of community resources?	☐	☐
Do human service organizations communicate with the public and each other electronically?	☐	☐
Does the community have a website for the community with links to other local home pages?	☐	☐
Do community websites have information of specific interest to newcomers and visitors?	☐	☐
Is there a community-maintained website for posting of community events and discussion of local issues?	☐	☐
Do the city and county governments cooperate in a computerized geographic information system?	☐	☐
Has there been an assessment of the overlapping data and/or mapping needs of local agencies such as the County Assessor, County Register of Deeds, city/county emergency response, city/county planning and zoning authorities, city/county public safety agencies, natural resources districts, local utilities and public works departments, economic development entities, and County Engineer/Highway Superintendent?	☐	☐
Has there been an effort to determine what digital maps, geospatial data or technical assistance is available through state government agencies?	☐	☐
Do city and county governments have a plan to use social media to provide information in the event of an emergency?	☐	☐

Libraries

Is the local library using technology to more effectively deliver services and information?

Does the local library offer access to computers and the Internet and free or affordable training on basic computer and Internet skills?

Libraries are a key partner in efforts to provide public access to computers and broadband and to provide access to training. Most Nebraska households (77%) have access to a local place, such as a library or school, in their neighborhood or community where they can use an Internet-accessible computer for free, according to a 2014 survey of Nebraska households. Thirty-two percent of the households without Internet access use the computer resources at the public use facility.

Through a three-year Building Broadband Technologies Opportunity Program (BTOP) grant awarded to the Nebraska Library Commission in 2010, libraries in Nebraska significantly improved their capacity of libraries in Nebraska to provide public access to computers and the Internet.   Nearly 150 library outlets serving high proportions of vulnerable and underserved populations participated in the project, receiving computers and other hardware as well as broadband upgrades.

The Edge Initiative is helping libraries in Nebraska and across the United States to better assess how they are using technology and the technology needs of the community. The program also provides a list of resources to help libraries develop a plan to better meet the technology needs of the community.

Learn how Nebraska libraries are using broadband

Oakland Public Library in Oakland, Nebraska

It's not just about books anymore. The Oakland Public Library connects the area with information and free onsite access for their guests.

Grant enhances library technology, programming

A three-year $2.4 million BTOP grant from the National Telecommunications and Information Administration with 1.25 million in matching funds provided by the Bill & Melinda Gates Foundation helped 129 libraries upgrade their public access computers and broadband. In addition, participating libraries worked with partnering organizations to provide training and educational programs. Here are comments from participating libraries:

La Vista: Because the library partnered with other entities through the BTOP training, we have become more open to other partnerships in training and educating our community.

Lincoln—Bennett Martin: When Bennett Martin Public Library received our new computers, we offered the use of our new training room to Lincoln Literacy to teach computer classes to refugees and immigrants. According to Clayton Naff Lincoln Literacy's executive director, "Most good jobs require online applications, and parents need to go online to access their children's grades at school, plus there is the whole world of news, social media, and information available on the computer." Women from Africa, Asia, the MIddle East, Eastern Europe and Latin American signed up for the 7-week computer class. The participant's children enjoyed storytime and literacy lessons from Library staff. Everyone received library cards. The classes were a great way to introduce new immigrants and refugees to library services. It was a great partnership and an excellent use of our new computer area. Plans are to continue the classes year round.   Thank you BTOP grant!]

Madison: Library users have not forgotten our classes and there have been a large number of requests for more classes, which we have now begun scheduling as part of our library programming. The classes provided by the BTOP project allowed us to be able to see how many people want technology classes from their library, and as a result are now offering those classes.

Scottsbluff: Thanks to the Broadband Technology Opportunities Program grant and the hard work of the Nebraska Library Commission staff, Lied Scottsbluff Public Library is now able to offer technology classes for free to all in our community. The twenty grant laptops now available provide registered participants the opportunity to learn technology skills in a hands-on environment. The ability to provide the needed equipment for our "Technology Tuesday" classes puts every participant on a level playing field, which allows the facilitator more time to provide hands-on instruction on things like the Internet, email, Facebook, online shopping, photo sharing and numerous other topics related to technology literacy." We would not have been able to offer our more formal computer/technology training classes to our community without the BTOP equipment we received.

Assess (Link to table below) how the local library is using technology.

Assessment: Use of Broadband Technologies in Public Libraries	Yes	No
Does the library use social media (i.e., blogs, Facebook, Twitter) to communicate with patrons?	☐	☐
Can patrons search the library catalog and request renewals or inter-library loans from the library's website?	☐	☐
Can patrons borrow electronic books?	☐	☐
Does the public library provide public access to computers and the Internet?	☐	☐
Does the public library have a sufficient number of computers to meet patron demand?	☐	☐
Does the public library offer basic computer and Internet training?	☐	☐

Does the public library provide a password-protected, wireless access hot spot for use by patrons?	☐	☐
Does the library have sufficient bandwidth?	☐	☐
Has the public library considered other municipal aggregation options to achieve a higher bandwidth connection (e.g. school district, city, county, etc…)?	☐	☐

Technology Adoption—Digital Literacy and Public Access

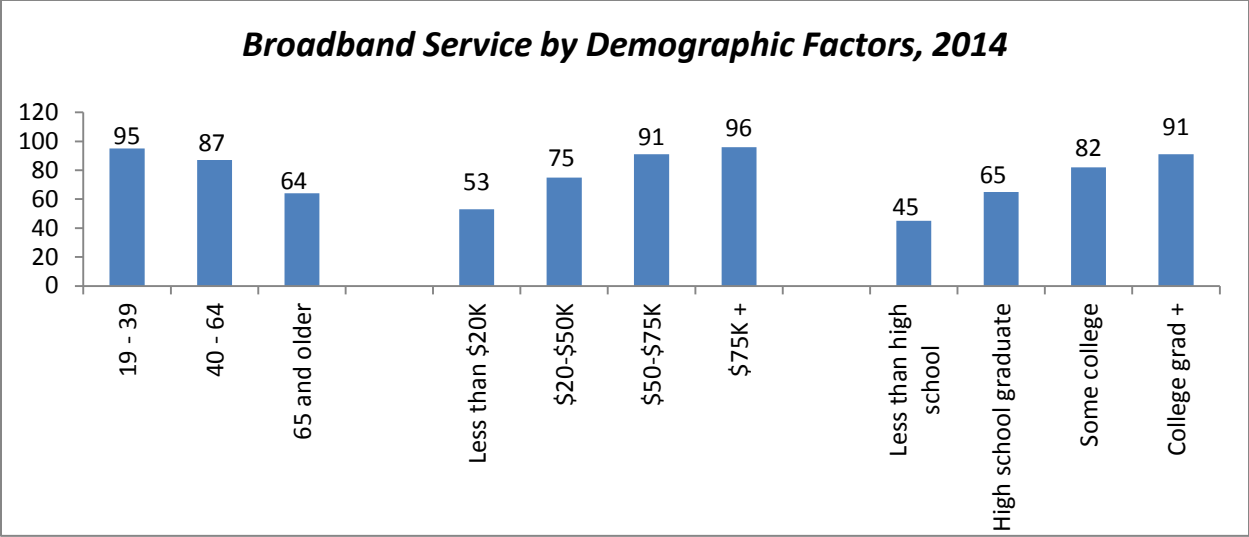*Do most households subscribe to broadband Service?*

Does the local library offer access to computers and the Internet and free or affordable training on basic computer and Internet skills?

Technology-related development requires widespread adoption of broadband technologies. Most households in Nebraska (82%) have broadband service, according to a 2014 survey of Nebraska households. However, there are significant-rural-urban differences in broadband adoption. Ninety percent of households in the Lincoln area and 87% of households in the Omaha have broadband service. In comparison, the percentage of households with broadband service in other regions of the state ranges from 72% to 77%.

Broadband Service at Home	2014
Nebraska Households with Broadband Service at Home	82%
By Region	
Lincoln Area	90%
Omaha Area	87%
Southeast	77%
South Central	76%
West Central	74%
Panhandle	73%
Central	73%
Northeast	72%

*For the survey, broadband was defined as anything faster than dial-up.

Older adults, those with lower incomes and those with lower levels of income are also less likely to have broadband service at home.

Broadband Service by Demographic Factors, 2014

Category	Value
19 - 39	95
40 - 64	87
65 and older	64
Less than $20K	53
$20-$50K	75
$50-$75K	91
$75K +	96
Less than high school	45
High school graduate	65
Some college	82
College grad +	91

Public libraries and other organizations play a vital role in providing public access to computers and broadband. Access to broadband and a computer has now become necessary for a whole range of activities from applying for jobs to downloading tax forms. Public libraries also often provide much-needed training to those new to computers and those who want to update their skills.

Learn more about some of the programs and resources (link to list of resources) in Nebraska which provide access to broadband-enabled computers and training.

Assess (Link to table below) the level of broadband literacy and adoption in your community.

Assessment: Broadband Adoption, Public Access, and Digital Literacy	Yes	No
Do at least 80% of homes subscribe to broadband service?	☐	☐
Do most adults in the community/region have the technology skills necessary to utilize broadband applications?	☐	☐
Is there a place in the library, schools, or a community technology center which provides public access to computers and broadband?	☐	☐
Are the public access facilities conveniently available for use within the community/region?	☐	☐
Are there free wireless access locations in the community at the library, coffee shops, restaurants or other locations?	☐	☐
Is assistance in using the Internet available at the public library or other locations?	☐	☐
Does the public library offer free or low-cost training in the use of computer applications and the Internet?	☐	☐
Are adult education classes on common computer applications (using the Internet, word processing, spreadsheets, etc.) offered in the community through a community college or other organization?	☐	☐
Do students graduate from high school with basic computer skills on the most common computer applications (using the Internet, word processing, spreadsheets, etc.)?	☐	☐
Are there organizations (i.e., tribal colleges, multicultural centers, or senior centers) that work with underserved populations who can help in increasing adoption?	☐	☐
Does the community have a group of people assigned to seek out and follow up on grant opportunities and/or alternative funding strategies for reaching underserved populations?	☐	☐

Skilled IT Workforce

Is there an adequate IT workforce to meet the demands of local businesses?

Are there opportunities for advanced information technology training through local high schools, colleges and universities, or other institutions?

Are technology programs for youth offered in local schools or by other organizations?

The availability and development of a skilled IT workforce is a key need in Nebraska. As a response, institutions of higher education in Nebraska are making efforts to increase the number of IT graduates. Code Schools in Omaha and Lincoln are also addressing the need for a skilled IT workforce by providing intensive training to participants over a 12-week period. However, many employers still report a shortfall. Businesses outside of Omaha and Lincoln may find it even harder to recruit IT employees.

- Efforts to engage young people to go into IT should start in grade school. Young people begin to form opinions of careers around third grade. However, many young people don't have a good idea of what IT workers do.
- Coding is one area in which many schools have not been providing training. However, there are several innovative programs, including both in school and after school programs, which are introducing students to coding. There are also a number of resources available including materials from the Khan Academy and MIT's Scratch program which can be used to teach coding to students.
- Nebraskacareertours.com (http://nebraskacareertours.com) provides information on jobs in several industries including IT.
- Career academies and programs like First Job Lincoln can encourage students to choose a career in IT and help students develop the necessary skills to enter the IT workforce.

A skilled workforce also requires workers knowledgeable on software commonly used in businesses. The Nebraska Department of Education is partnering with Microsoft on a Microsoft Academy program to allow students to receive Microsoft Office Certification. The program includes training for teachers and site licenses for certifications. The program is expected to begin rolling out in the fall of 2014, beginning with the training of teachers. Students are expected to begin taking certification tests in the spring semester of 2015.

Learn about additional programs and resources. (Link to Programs and Resources)

1ˢᵗ Job Lincoln connects high school students with businesses

[1st Job Lincoln](#) will be starting its second year in Lincoln. The program is a partnership of Lincoln Human Resource Management Association, the AIM Institute, and Lincoln Public Schools' IT focus program to provide IT-based internships for high school students. Through the pilot program, 15 high school students in the summer of 2013 experienced their first professional job. The program included workforce readiness preparation.

Hear from Champion Employers participating in 1ˢᵗ Job Lincoln
http://www.youtube.com/watch?v=i1bWZ4HDGNs&feature=youtu.be

Hear from 1ˢᵗ Job Lincoln student interns

http://www.youtube.com/watch?v=C3YvyY9ABI8&feature=youtu.be

A mentor works with young people at the April 26, 2014 Coder Dojo in Lincoln.

Assess (Link to table below) how your community is addressing IT workforce development.

Assessment: IT Workforce Development	Yes	No
Are local businesses able to find qualified applicants for IT positions?	☐	☐
Is coding being taught in middle and high schools?	☐	☐
Are local programs introducing youth to coding?	☐	☐
Do local schools offer a career academy?	☐	☐
Do businesses work with area high schools, community colleges, colleges, and/or universities to place interns?	☐	☐
Does the local community college offer courses and degree programs in technology?	☐	☐
Is there a university or college in the area which offers degree programs in computer science or engineering?	☐	☐
Are code schools available to provide intensive IT training?	☐	☐
Are there local groups which support IT professionals?	☐	☐
Are there opportunities for conferences and continuing education for IT professionals?	☐	☐

Innovation and Entrepreneurship

Does your community/region support entrepreneurship and innovation through business incubation facilities, meet ups for entrepreneurs, coworking facilities, maker spaces/clubs, or other programs for start-ups?

Over the past several years, Nebraska has made significant progress in supporting technology-related development, innovation and entrepreneurship—especially in the Omaha and Lincoln areas—through University programs, code schools, accelerators, contests, conferences, meet ups, maker spaces, coworking facilities, and venture capital firms. (Link to resources)

Smaller communities are also leveraging innovation and entrepreneurship to create jobs and economic growth. Xpansion has pioneered a rural sourcing model, providing a complete range of software quality assurance services in rural locations including Kearney, Nebraska; Loup City, Nebraska; Ames, Iowa; and Manhattan, Kansas. Brent Comstock, chief innovator and owner of Bcom Solutions, has started a coworking facility in Auburn. Alliance was the pilot site for Bella Minds (http://www.bellaminds.com), a crowd-funded technology training program for digitally literate rural women who want to improve their technology skills.

Nebraska's Ranking on State Entrepreneurship Index Climbs

Year	Ranking
2012	16
2011	24

Source: University of Nebraska-Lincoln Bureau of Business Research

What is a maker space?

A maker space is a space with tools and equipment where individuals can come together to work on projects and interact with others. It can be associated with a university, community college, high school, library, or just a group of individuals interested in making things. Maker spaces often charge a fee for access.

Maker spaces can lower the barriers to entry for startups by offering low-cost access to equipment which can be used to develop prototypes. The synergy created in maker spaces may be the biggest benefit, however.

Shane Farritor, a professor of mechanical and materials engineering and member of the committee, is leading the Maker Space effort at UNL's Innovation Campus.

"Nebraska is full of makers," Farritor said. "There are so many talented kids who grow up in rural areas building and creating things. It's one of the things I respect most about the state. It is also the reason why I believe the Maker Space will be a success."

For more information on the UNL Maker Space and Club, visit make.unl.edu. Other maker spaces in Nebraska include the Omaha Maker Group) and Metropolitan Community College Fab Lab.

Assess how your community is supporting innovation, entrepreneurship, and technology-related development.

Innovation, Entrepreneurship and technology-related development factors to assess:	Yes	No
Strategic Planning	☐	☐
Does the community's economic development strategic plan support innovation, entrepreneurship, and technology-related businesses?	☐	☐
Recruitment/Incentives	☐	☐
Have community leaders formally targeted information-based businesses for development and recruitment to the community?	☐	☐
Is the community assisting businesses by developing and/or recruiting information workers?	☐	☐
Does your community profile/website provide prospective businesses the information they need on commercial and household broadband services in your community?	☐	☐
Does your community website provide prospective new residents with the information they need on schools, recreation, housing, community services, and health care?	☐	☐
Have economic development leaders fashioned incentives that fit information-based businesses? These may be training programs, facilities, property tax incentives, capital investment incentives or other innovative programs?	☐	☐
Are city, county, and regional authorities prepared to "fast track" approvals for construction, site plans, utility extensions, inspection, etc. in order to meet a new or expanding business's time frame?	☐	☐
Supporting Innovation and Entrepreneurship	☐	☐
Does the community have a program to incubate or assist information technology businesses?	☐	☐
Does the community have a technology park or coworking facility that can house an information technology business?	☐	☐
Does the community have meet ups, maker clubs, maker spaces, contests, etc. to facilitate collaboration and a culture of entrepreneurship?	☐	☐
Do local community college, college or university programs support entrepreneurship?	☐	☐
Are seed capital, grants or loans available to local entrepreneurs from private or public sources?	☐	☐

Broadband Availability and Affordability

Is broadband service available to all businesses, organizations, and residents?

Does your community have affordable access to broadband service?

Does your community have adequate mobile broadband coverage?

Broadband service is available to nearly all Nebraskans, with 99.2% of Nebraskans having access to service with download speeds of greater than 3 Mbps and upload speeds greater than .768 mbps. Nebraska ties for 24th on this measure according to the federal broadband map (www.broadbandmap.gov).

What About Satellite Service?

Satellite service may be the only option for some households and businesses in very rural areas. ViaSat/Exede launched a new satellite in 2011 and began providing improved satellite service in parts of the eastern United States. Another satellite is expected be launched in 2016 and will provide service to Nebraska and the western portion of the United States. The improved satellite service provides a 12 Mbps downstream/3 Mbps upstream service. The new service also offers improved latency. A recent test by the FCC documented the latency at 671 ms, significantly less than the latency offered by older satellite technologies but still far above the average latencies of fiber to the premise (24 ms), cable (30 ms) or DSL (48 ms) providers. Exede's website says that the service can be used for VOIP, but may not work well for VPN connections or logging in remotely to remote servers.

Sources:

FCC. 2014 Measuring Broadband America Fixed Broadband Report. (June 2014)

http://data.fcc.gov/download/measuring-broadband-america/2014/2014-Fixed-Measuring-Broadband-Am

USwitch Download Calculator. http://www.uswitch.com/broadband/guides/broadband_download_times/

Exede. http://www.exede.com

Broadband availability in Nebraska improved between 2010 and 2013 as shown on the following map from the Nebraska Broadband Map (broadbandmap.nebraska.gov).   Some areas of the state remain unserved, however.   Note: The map shows broadband service from fixed and mobile wireless, DSL, cable, and fiber to the premise providers. Satellite service was not included.

Technology of Transmission
- Cable
- DSL
- Fiber
- Mobile Wireless
- Fixed Wireless
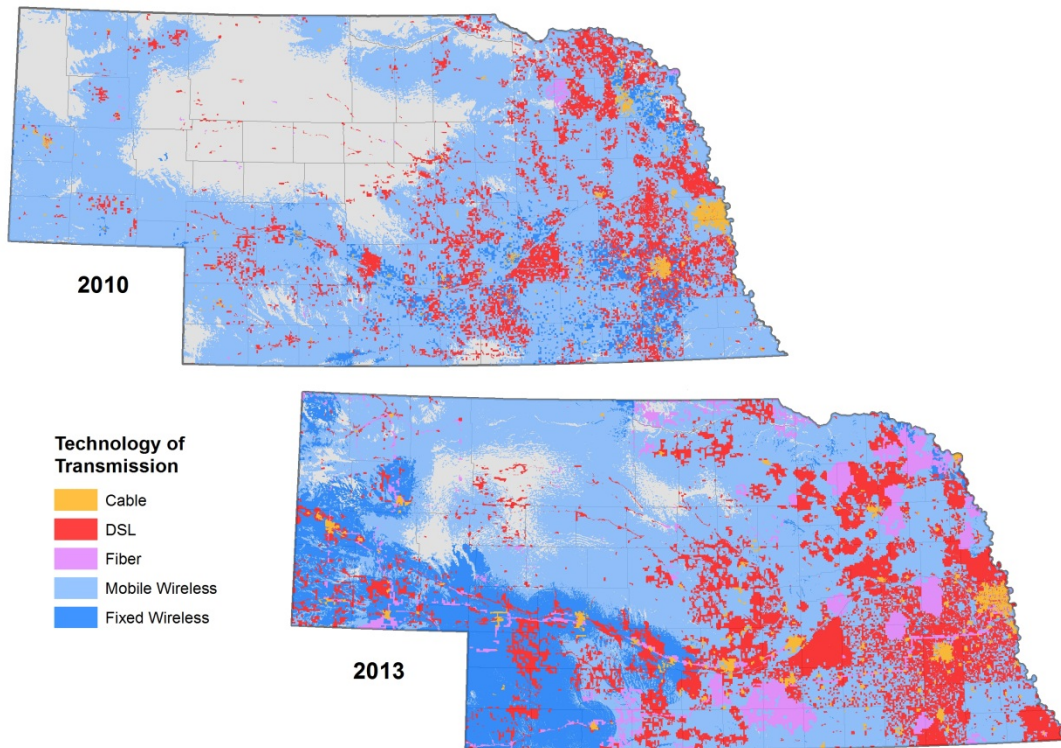
The following map shows that most areas of Nebraska have broadband service advertised as providing at least 10 Mbps down.
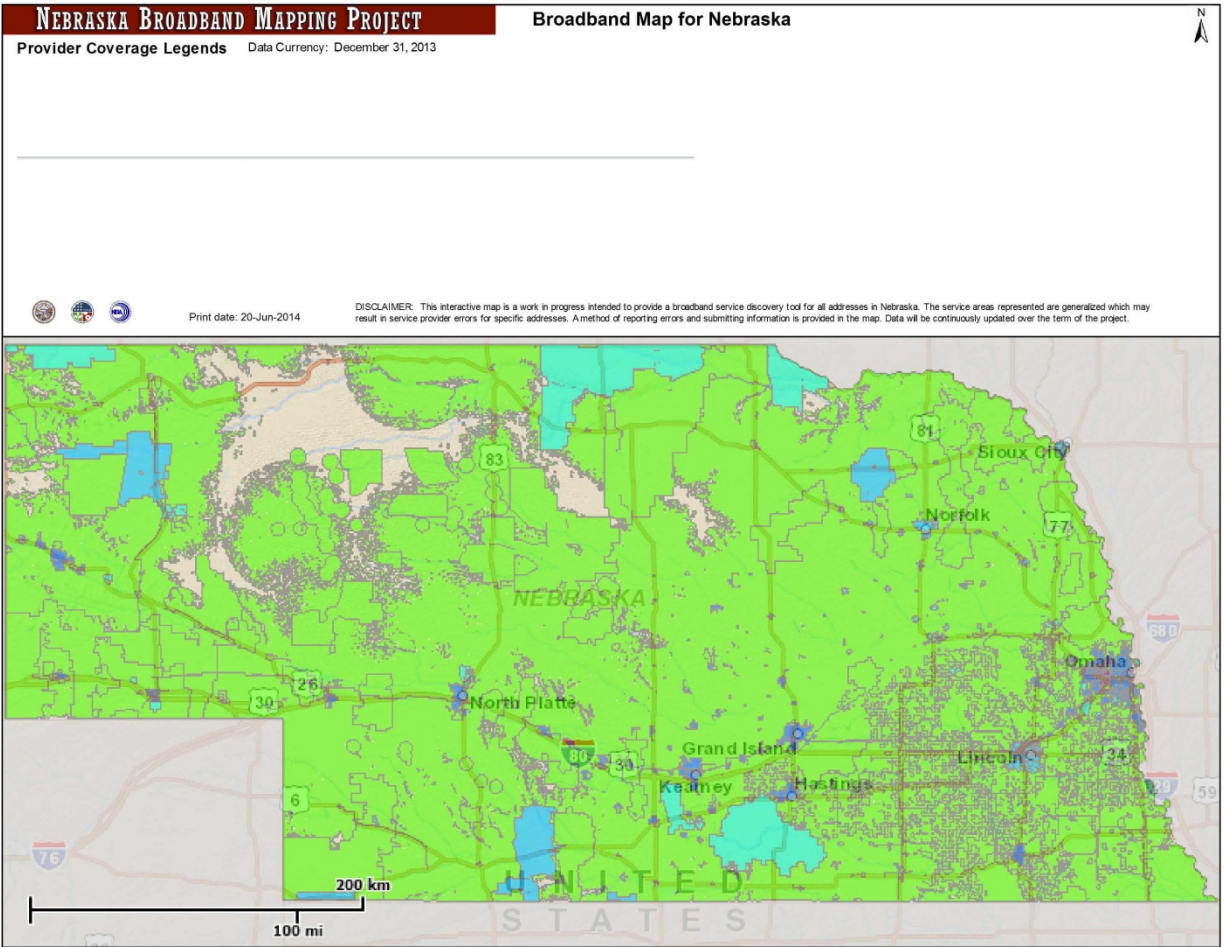
Fiber deployment in Nebraska is also increasing. Below is a map showing locations were fiber is used to provide broadband access to the Internet using data provided in December 2013. Going to the broadband map (http://broadbandmap.nebraska.gov) and zooming in shows additional areas in which broadband service is delivered using fiber optic cable.

NEBRASKA BROADBAND MAPPING PROJECT

Broadband Map for Nebraska

Provider Coverage Legends   Data Currency: June 30, 2013

Fiber

Service delivered through fiber optic cable.

Print date: 04-Apr-2014

DISCLAIMER: This interactive map is a work in progress intended to provide a broadband service discovery tool for all addresses in Nebraska. The service areas represented are generalized which may result in service provider errors for specific addresses. A method of reporting errors and submitting information is provided in the map. Data will be continuously updated over the term of the project.

Mobile connections are also important to residents and businesses. Over 88 percent of Nebraska businesses use some form of web-enabled mobile device according to a recent survey of Nebraska businesses (link to business survey).

	Currently use	Plan to use
Laptop computers	88.4%	4.8%
Web-enabled mobile phones	81.3%	6.7%
Other mobile devices	45.4%	10.4%

% of Respondents

N = 732

■ **Currently use**   ■ **Plan to use**
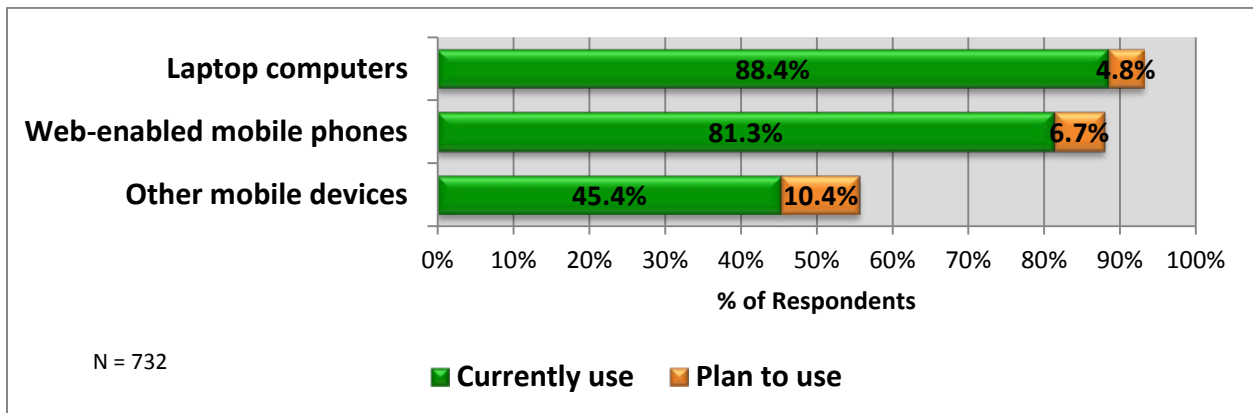
Steps you can take if you want better broadband service

- Talk to your current provider to see if you can upgrade your service.
- Go to the Nebraska Broadband Map (broadbandmap.nebraska.gov) to see if there are other providers in your area who may be better able to provide service.

- Find allies. Identify others in your area who are also interested in obtaining better broadband service. Working as a group can be more effective than working alone.

- If a telecommunications company is providing broadband service in an adjacent local exchange area, an individual may file an application with the Nebraska Public Service Commission (http://www.psc.nebraska.gov, 402-471-3101 or toll free 1-800-526-0017) to obtain broadband service from the telecommunications company serving the adjacent exchange area. See Nebraska Revised Statutes 86-135 to 86-138 for more information on the process.

- Work with other interested community leaders, individuals and businesses in your area to form a community broadband committee. Ideally, the committee should include representatives from local government, economic development, businesses (including agricultural producers), schools and libraries, health care providers, and local telecommunications providers.

  - Identify businesses, community anchor institutions (i.e., local government, schools, health care facilities) and residences interested in better broadband service and the level of service needed through a survey or other method. Discuss this information with local telecommunications providers.

  - Invite representatives of local government, health care systems, and schools to meet periodically to discuss any planned improvements in telecommunications infrastructure and ways in which costs could be shared.

  - Hold a forum to discuss the broadband needs of the community and involve interested stakeholders. Extend invitations to local telecommunications providers and officials.

  - Develop a broadband plan to address issues identified during the community forum and by the broadband committee.

  - Help community members stay up to date on new technology by hosting classes, lunch and learn sessions, etc. These kinds of activities help build demand for broadband service.

Learn More About Broadband and the Broadband Map

 Broadband Terms. Gene Hand from the Nebraska Public Service Commission explains many commonly used broadband terms.

Definitions for many terms are included in the glossary. (Link to glossary)

Broadband Map. Watch a demo of the Nebraska Broadband Map given by Cullen Robbins with the Nebraska Public Service Commission.

Assess (link to table below) broadband service and infrastructure in your community.

Assessment: Broadband Service and Infrastructure	Yes	No
Are the heaviest users of broadband services (schools, businesses, health systems, etc.) satisfied with broadband services available in the community?	☐	☐
Are small businesses and residents satisfied with broadband services available in the community?	☐	☐
Is adequate mobile broadband service available throughout the community?	☐	☐
Is adequate mobile broadband service available throughout the region?	☐	☐
Is there competition to provide broadband services in the community?	☐	☐
Is the current broadband infrastructure adequate to meet the growing needs of the communities heaviest broadband users?	☐	☐
Is there fiber to the community's main business areas?	☐	☐
Is there a fiber backbone that can be reached from many places in the community?	☐	☐
Is fiber available throughout the entire community?	☐	☐
Do community leaders talk periodically with private infrastructure providers about plans and needs in serving the local community?	☐	☐
Has the community identified the 15-20 biggest users of advanced telecommunications services?	☐	☐

Has the community inventoried its aggregated demand for telecommunications services?	☐	☐
Has the community inventoried its telecommunications infrastructure assets?	☐	☐
Has the community projected the need for broadband services and infrastructure for the next 3 to 5 years?	☐	☐
Do local governments use their purchasing power to support telecommunications services upgrades in the community?	☐	☐
Do representatives of local government, schools, and health systems meet periodically to discuss their plans for technology infrastructure improvements and ways to coordinate efforts and share costs?	☐	☐
Has the community made site visits to "leading edge" communities in the deployment of broadband services and infrastructure?	☐	☐
Are all new subdivisions required to set aside proper telecom right of way?*[1]	☐	☐
Are developers required to install telecom duct and turn it over to the community?*	☐	☐
Does the community install duct and/or fiber just before repaving streets?*	☐	☐
Do reasonable rights-of-way fees for all telecommunications providers and a simplified application process encourage competition?*	☐	☐
Has the community invested in telecommunications infrastructure such as duct, fiber, or access points which can be leased to providers?*	☐	☐

[1] Checklist items marked with * were drawn from "Telecommunications as Essential Public Infrastructure" by Andrew Cohilll available at http://www.designnine.com/library/docs/telecom_as_infrastructure.pdf.

Section 13: Quality of Life (Optional)

Does your community pay careful attention to quality of life issues? A high quality of life is essential to attract and retain new residents, workers and businesses.

Quality of life is an important component in building e-communities. However, quality of life issues are often beyond the scope of most information technology committees.   Yet, quality of life is too important to leave out altogether.

Windmill at Sunset - Valentine Nebraska
Kelly DeLay
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Showing Off
John Carrel

Nebraska State Capitol
Tim O.Brien

Carol Norquist
Soil Sisters and Misters GC, Nebraska

Jasperdo
Blair, Nebraska

Calumus Golf
Tim O'Brien

Jamison Hiner
Springfield,Nebraska Soaring Wings Winery
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Assess (link) how well your community is addressing quality of life issues.

Assessment: Quality of Life	Yes	No
Is your community/region visually attractive?	☐	☐
Does your community/region have good K-12 schools?	☐	☐
Are postsecondary educational opportunities available in the community/region?	☐	☐
Does your community have access to quality health care?	☐	☐
Are there ample cultural and recreational opportunities?	☐	☐
Is the local economy healthy?	☐	☐
Is the local environment clean?	☐	☐
Is affordable housing available?	☐	☐
Does the community have a variety of retail businesses?	☐	☐
Is the community safe?	☐	☐
Would a newcomer want to live in your community?	☐	☐

Part 2

Addressing Broadband Development in Your Community

Technology continues to change, challenging all sectors of a community to learn new skills and adapt. Developing a broadband plan can help communities meet these challenges.   A broadband plan can help your community:

1. Increase awareness of new technologies;
2. Stimulate demand for broadband;
3. Support technology-related development, entrepreneurship, and innovation;
4. Work with telecommunications providers to make sure that the broadband needs of the community are met;
5. Stimulate job creation and business revenue;
6. Improve health care quality and help patients better manage their care;

A broadband plan can be integrated into a broader economic development plan or can be a standalone plan. It can be a simple plan, focusing on adoption of broadband technologies or a more detailed plan addressing technology adoption, workforce development, innovation and entrepreneurship, broadband availability or affordability, and quality of life.

Six Simple Ways to Address Broadband Development

1. Organize monthly lunch and learn and/or evening sessions on new technologies.
2. Work with the local library to offer additional classes on new technologies.
3. Organize a technology week. Activities could include:
    a. Demos of 3D printers, Google Glass or other technologies,
    b. Lunch and learn sessions,
    c. Tours to see how local businesses are using technology.
4. Work with health care providers to schedule sessions on health care apps. This could be part of a lunch and learn series or a standalone session.
5. Form local user groups to share new apps and provide support to new users.
6. Explore ways to encourage youth to learn coding and pursue careers in IT. There are a number of great resources for learning to code. (Link to Programs and Resources-IT Workforce Development—Learn to Code—Youth/Young Adults)

Developing a Broadband Plan

Establish a Broadband Committee

The first step in developing a broadband plan is to establish a broadband committee. The committee should consist of representatives of the following sectors:

- Local government
- Business
- Economic development organizations
- Education
- Health care
- Libraries
- Agriculture
- Broadband providers
- Non-profits, arts, culture, and history groups (if possible)
- And other significant groups or sectors within the region

Extra effort should be made to recruit representatives of the region's largest users of telecommunications and information technology.

Suggested Planning Process

1. **Develop a common understanding of how the community is using broadband and the community's broadband-related needs.** Here are some suggested activities to help your committee develop a shared understanding of how broadband is currently being used and the needs of each sector:
   - Ask committee members to share how their organizations are currently using broadband and what they are planning in the near future.
   - Discuss where broadband is available. Go to the Nebraska Broadband Map (broadbandmap.nebraska.gov) to see where broadband is available.
   - Discuss broadband adoption and utilization in the community. Is broadband subscribership below, at or above the state average (link to broadband survey information below)?   Are residents satisfied with broadband service?
   - Discuss business utilization of broadband technologies. Are local businesses using broadband below, at or above the state level of utilization (link to business use of broadband information)?   Are businesses satisfied with broadband service?
   - Visit local businesses, schools, and/or hospitals to see how they are using technology.
   - Identify the largest telecommunication users in the community and meet with them to learn how they are using technology, how much they are spending on telecommunications and information technology, what their current and future technology needs are, and what the region/community can do to help them meet their technology needs.

2. **Develop a shared vision of how the community will be using broadband in the near future**
   - How will businesses be utilizing broadband?
   - How will broadband be used in education, health care, libraries, and local government?
   - How will residents be utilizing broadband?

3. **Identify priority areas and conduct an initial assessment of each area.** A broadband plan may address all of the following areas or just a few areas that have been prioritize by the committee:

   Broadband/Technology Adoption
   - Businesses (Link to business section)
   - Agriculture (Link to ag section)
   - Education (Link), Health Care (Link), Government (Link), and Libraries (Link)
   - Digital Literacy and Public Access (Link)

   Skilled IT Workforce
   - Workforce Development (Link)
   - Recruitment/Community Marketing (Link)

   Innovation/Entrepreneurship (Link)

   Broadband Availability/Affordability (Link)

   Quality of Life (Link)

4. **Identify areas in which more information needs be gathered or a more thorough assessment needs to be made.**

5. **Develop a plan to achieve this vision.** A simple plan may consist of just a few action items. Some communities may take a more comprehensive approach and may have a much more extensive plan. Either way, be sure to include a few relatively easy action items to help build momentum (see Six Simple Ways to Address Technology Development).

   Here are some additional activities to consider:

   - Hold a community forum to discuss broadband issues.
   - Encourage local businesses to work with area schools, community colleges, colleges, and/or universities on internship programs.
   - Encourage a culture of innovation and entrepreneurship by organizing meeting ups of entrepreneurs/start-ups.
   - Form a makers club or host meet ups.
   - Explore connectivity models for libraries such as partnering with schools or joining the State's education network, Network Nebraska.
   - Assess the demand for a coworking space or meeting room available for home-based businesses/start-ups. Discuss the community's broadband needs with broadband providers.
   - Partner with a local university, college, community college or high school or library to develop a maker space.
   - Work with public safety organizations/first responders to develop a plan to use social media to provide emergency information.

Sample Outline for a Community Broadband Plan

Vision

Address one or two of the following in your vision for broadband in your community:

- Describe how businesses will be using broadband.
- Describe how agricultural producers will be using broadband.
- Describe how residents will be using broadband.
- Describe how broadband will be used in education, health care, libraries, and local government.
- Describe how broadband will make your community a better place.

Here is a sample vision statement from the North Central Region Broadband Plan:

> Residents and businesses in the North Central region of Nebraska, a predominantly rural area, will have access to digital information and communication tools and the training to use them as skillfully as urban Nebraskans.

Here is a sample vision statement from the Western Region Broadband Plan.

> A long-term vision to increase youth retention and facilitate business transitioning, increase economic development, and decrease the digital divide and "digital deserts" was developed at the one-day regional summit.

Priority Areas

Identify priority areas (i.e., adoption of technology by businesses; adoption of technology by agricultural producers; adoption of technology by education, health care, government, and/or libraries; digital literacy/public access; workforce development; recruitment/community marketing; innovation, entrepreneurship, broadband availability/affordability).

For Each Priority Area:

- Describe the current state (optional)
- Describe your goal/objective for each priority area.

> Here is a sample from the Western Region Broadband Plan.
>
> **Priority 1: Education, Digital Literacy and Advanced Technology Training —** Coordinate and increase educational offerings around digital literacy skills and advanced technology training.
>
> **Priority 2: Economic Development —** Expand awareness and growth of technology educational offerings to strengthen economic development, agritourism and entrepreneurship.

- List planned activities to address this priority area. It is often helpful to include the entity or individual taking the lead, an approximate time frame, and how the project will be funded.

Note: A simple, brief plan that is implemented is better than a professionally produced plan that sits on the shelf. It is OK to start with one or two priority areas and just a couple of action items.

Regional Broadband Plans

Four priority areas were identified from the regional broadband plans:

- Economic Development (including entrepreneurship, workforce development, and retaining youth/attracting population)
- Agriculture
- Digital Literacy and Public Access
- Broadband Availability and Affordability

These areas may likely be priority areas for many communities.

Read the regional plans:

- Regional Priorities Summary
- Western Region
- Northeast Region
- New Frontier Region
- Southwest Region
- Central Region
- Southeast Region
- Northeast Region
- Omaha Area