

**Nebraska Information Technology Commission  
Community Council  
Wednesday, Feb. 28, 2018  
1:30 P.M. CT – 4:00 P.M. CT  
1526 K Street, 4<sup>th</sup> Floor, Room 4D, Lincoln, NE**

**Desk Top Video Sites Public Participation Sites Available Upon Request:**

**Tentative Agenda**

1:30	<p>Roll Call  Notice of Posting of Agenda  Notice of Nebraska Open Meetings Act Posting  Approval of <a href="#">May 12, 2017 minutes</a>*  Approval of <a href="#">Oct. 4, 2017 minutes</a>  Public Comment</p>
1:40	<p><b>Updates</b></p> <p><b>Broadband Reports</b></p> <ul style="list-style-type: none"> <li>• <a href="#">FCC 2018 Broadband Deployment Report</a></li> <li>• <a href="#">FCC Internet Access Services: Status as of Dec. 31, 2016</a></li> </ul> <p><b>Legislation</b></p> <ul style="list-style-type: none"> <li>• <b><a href="#">LB 389</a></b> Adopt the Small Wireless Facilities Act (Lowe Priority Bill)</li> <li>• <b><a href="#">LR 701</a></b> Provide for telehealth practice by physicians and physician assistants</li> <li>• <b><a href="#">LB 856</a></b> Adopt the Internet Neutrality Act, change communications provider requirements under the Nebraska Telecommunications Regulation Act, and change financial assistance provisions relating to the Nebraska Internet Enhancement Fund</li> <li>• <b><a href="#">LB 966</a></b> Provide a sales and use tax exemption relating to dark fiber</li> <li>• <b><a href="#">LB 989</a></b> Authorize testing of autonomous vehicles by a city of the primary class on its roadways (Wishart Priority Bill)</li> <li>• <b><a href="#">LB 993</a></b> Create the 911 Service System Advisory Committee and change the 911 Service System Act and eliminate the act's termination date (Geist Priority Bill)</li> <li>• <b><a href="#">LB 994</a></b> Create the Rural Broadband Study Task Force, change provisions relating to the Nebraska Telecommunications Universal Service Fund, and change powers and duties of the Public Service Commission as prescribed (Transportation and Telecommunications Committee Priority Bill)</li> <li>• <b><a href="#">LB 1031</a></b> Change excavation notification and marking requirements and provide for large project planning meetings, rulemaking authority, and cost allocation under the One-Call Notification System Act</li> <li>• <b><a href="#">LB 1057</a></b> Change provisions relating to prescription drug monitoring</li> <li>• <b><a href="#">LB 1113</a></b> Provide an exception for leasing dark fiber or providing broadband, Internet, telecommunications, or video services by an agency or political subdivision of the state (Walz Priority Bill)</li> <li>• <b><a href="#">LB 1114</a></b> Provide for creation and maintenance of a statewide geographic information system map under the Nebraska Telecommunications Regulation Act</li> <li>• <b><a href="#">LB 1122</a></b> Authorize testing of automated motor vehicles as prescribed</li> </ul>
2:15	<p><b>Nebraska Schools and Libraries—Sparks Grant: Breaking the Ice and Igniting Internet Relationships</b> —Holly Woldt, Nebraska Library Commission and Tom Rolfes, NITC</p>

2:35	<b>Nebraska Broadband Partnership Discussion</b>
3:15	<b>Membership*</b> <ul style="list-style-type: none"> <li>• Johnathan Hladik, Center for Rural Affairs</li> </ul>
3:05	<b>Rural Broadband and Community IT Development Strategic Initiative and Action Item *</b>
4:00	<b>Adjourn</b>

Meeting announcement posted on the NITC Website and Nebraska Public Meeting Website on Feb 22, 2018.  
 Agenda posted on the NITC Website on Feb. 22, 2018

**NEBRASKA INFORMATION TECHNOLOGY**  
Commission Community Council  
Friday, May 12, 2017 9:30 a.m.-12:00 noon CT  
Nebraska Public Service Commission  
1200 N Street, Suite 300, Hearing Room Lincoln, Nebraska  
Desk Top Video Sites Upon Request  
University of Nebraska Extension-Sidney 902 Jackson Street, Sidney, Nebraska  
**MINUTES**

**ROLL CALL NOTICE OF POSTING OF AGENDA NOTICE OF NEBRASKA OPEN MEETINGS ACT POSTING**

Anne Byers called the meeting to order at 9:30 a.m. There were eleven members present. A quorum was present to conduct official business. A copy of the Nebraska Open Meetings Act was available on the wall. The meeting announcement was posted on the NITC Website and Nebraska Public Meeting Website on May 5, 2017. The agenda was posted on the NITC Website on May 8, 2017.

**Members Present:** Pam Adams, Jay Anderson, Rod Armstrong, Randy Bretz, Jessica Chamberlain, Steve Fosselman, Connie Hancock, Steve Henderson, Megan McGown, Cullen Robbins, and Holly Woldt

**Members Absent:** Chris Anderson, Brett Baker, Shonna Dorsey, Phil Green, Jacob Knutson, David Lofdahl, and Joan Modrell

**Alternates Present:** Charlotte Narjes

**APPROVAL OF SEPTEMBER 14, 2015 MINUTES\*, MARCH 31, 2016 MINUTES\* AND SEPTEMBER 19, 2016 MINUTES\***

**Mr. Anderson moved to approve the September 14, 2015, the March 31, 2016, and the September 19, 2016 minutes as presented. Mr. Bretz seconded. Roll call vote: Adams-Yes, Anderson-Yes, Armstrong-Yes, Bretz-Yes, Chamberlain-Yes, Fosselman-Yes, Hancock-Yes, Henderson-Yes, McGown-Yes, Robbins-Yes, and Woldt-Yes. Results: Yes-10, No-0, Abstained-1. Motion carried.**

**PUBLIC COMMENT**

There was no public comment.

**TV WHITE SPACE UPDATE**

Tom Rolfes, NITC, Education IT Manager

TV White Space uses portions of licensed UHF radio spectrum that licensees do not use. UHF radio frequencies are non-line-of sight (NLOS) and are able to penetrate trees and buildings. It can cover a 10 kilometer (6 mile) radius. The Office of the CIO met with interested parties, including the University of Nebraska, tribal entities, libraries and schools in March about interest in a possible funding opportunity for pilot projects in March.

Beatrice Public Library in cooperation with ESU 5 received a \$15,000 grant from the Gigabit Libraries Network for a project to use TV White Space as an extension of the library's network. The base station has to have an internet source but it can be located anywhere. Remote homework hotspots would include the Scott Street Ball Fields, Hannibal Park, and the Community Players Theaters.

## **BROADBAND AND LIBRARIES**

Tom Rolfes and Holly Woldt

In Nebraska, there are approximately 350,000 students who do not have internet in their homes. There is fiber in 100% of the school districts, however, over 75% of libraries have broadband below the FCC's definition of broadband of 25 Mbps down and 3 Mbps up. Libraries are foregoing federal dollars in support primarily due to the perceived complexity of eRate filing. Most communities are not aware that by forming a community consortium made up of the school district, the ESU and the library, the consortium would become eRate eligible. It could mean increased business for local providers and shared Internet would bring costs down. Mr. Rolfes will be working on public awareness and developing partnerships. He asked members to share the information.

The IMLS/Internet2 Toward Gigabit Libraries project targets small, rural and tribal libraries to improve library staff understanding of broadband and to help them develop a plan to improve the library's broadband access. Nebraska was the first state to pilot the IMLS/Internet II Toward Gigabit Libraries Toolkit with rural libraries. Public libraries in Wymore, Walthill, Atkinson, Valley and Gering participated in the pilot. Only one of these libraries had an IT staff person. The pilot process consist of the following:

- Pilot Site Selection
- Intake Survey
- Pilot Visit Toolkit
- Broadband Improvement Plan
- Post Pilot Survey

The toolkit includes the following sections:

- Technology Inventory
- Broadband Services and Activities
- Broadband Technology and Operations Support
- Broadband Funding
- Additional Resources and Best Practices
- Glossary

Oklahoma, Iowa, Kansas, Alaska and one other state are also participating in the project. The toolkit should be available by the end of summer.

## **PUBLIC-PRIVATE PARTNERSHIPS/COOPS AND BROADBAND**

Connie Hancock University of Nebraska Extension; Timothy Lindahl, Wheat Belt Public Power; Eric Carstenson, Nebraska Telecommunications Association

Nationally, there is a drive to implement broadband. It is estimated that 5-7 customers per mile are needed in order for broadband to be cost effective. Currently, the business case is just not there in many areas. Public private partnerships need to occur to provide cost-sharing and cost-savings to the customer. Public power can possibly be a partner.

Mr. Carstenson indicated that the Nebraska Telecommunications Association would like to see broadband deployment in rural Nebraska. The average cost is \$20,000 per mile for fiber on the ground. NTA researched what it would cost to run fiber on a pole. Due to added needs of the fiber on a pole, it was really not cost-effective. There are federal funding sources such as the Connect America Fund (CAF) in addition to the Nebraska Universal Service Fund which are supporting the deployment of broadband.

Mr. Anderson stated that providers and consumers can also work to be more efficient in their use of broadband. He has a 3 Mbps down connection and can run multiple devices. NebraskaLink approached Google, Amazon, and Netflix and asked if they would put servers on NebraskaLink's network to better manage network traffic.

## **MEMBERSHIP**

Commissioner Jerry Vap has left the Public Service Commission. Ms. Byers e-mailed Jeff Pursley and Commissioner Schram to ask the PSC to name a new representative. Ms. Byers has not received a response.

## **NEBRASKA AND THE DIGITAL DIVIDE INDEX 2015**

Roberto Gallardo's report on the Digital Divide Index provided some interesting figures on broadband deployment and adoption in Nebraska. Nebraska fares fairly well on socioeconomic indicators, ranking 21 out of the 50 states and District of Columbia and 35 on the composite index for both socioeconomic and infrastructure measures. However, the report ranks Nebraska 48<sup>th</sup> on infrastructure measures, ahead of only Mississippi, Montana, and Alaska. Ms. Byers discussed some of the findings:

- Broadband availability in Nebraska is improving. Broadband of at least 25 Mbps down and 3 Mbps up was available to 84.6% of Nebraskans in 2015, up from 79.3% in 2014. Nebraska ranked 34<sup>th</sup> out of the 50 states and the District of Columbia on this measure—certainly a far better ranking than the Digital Divide Infrastructure ranking of 48.
- Average advertised download and upload speeds in Nebraska also lag behind the United States and most neighboring states. Nebraska had an average advertised fixed download speed of 20.4 Mbps compared to the U.S average of 32.6 Mbps and an average advertised fixed upload speed of 8.5 Mbps compared to the U.S. average of 12.8 Mbps.
- There are significant differences in average upload and download speeds between the state's more populous and less populous counties. Nebraska counties with populations greater than 20,000 had an average advertised fixed download speed of 36.5 Mbps and an average advertised fixed upload speed of 16.2 Mbps. In comparison, Nebraska counties with populations less than 20,000 had an average advertised fixed download speed of 16.8 Mbps and an average advertised fixed upload speed of 6.8 Mbps.
- Although the data seems to indicate that there is an urban-rural divide in Nebraska, this paints an overly simplistic picture of Nebraska.
- Additionally, affordability and adoption of broadband at higher speed tiers—especially in some of the state's more rural counties—may be exacerbating the Digital Divide in Nebraska. Nebraska lags the U.S. and our neighboring states in the subscription rate to higher speed tiers of broadband (10 Mbps down and 3 Mbps up or greater). In over half of the counties in Nebraska, fewer than 20% of households subscribe to broadband at speeds of 10 Mbps down and 1 Mbps up or greater.
- There are limitations to any method of ranking states. The Digital Divide Infrastructure Score was derived by first calculating county scores for broadband availability, average download speed, average upload speed, and subscription rates. The state score for each indicator was calculated by averaging the county scores. Using this method McPherson County which has no incorporated towns is given the same weight as Douglas County. This method provides a good picture of a measure across the geography of the state—but not the population of a state. Because Nebraska's population is highly concentrated in a few counties in eastern and central Nebraska

and has more counties with fewer than 1,000 people than any other state, this method probably disadvantaged Nebraska to a greater extent than other states.

Federal programs such the Connect America Fund should support the continued buildout of broadband in underserved areas. The contribution base of both the federal and state universal service funds has been shrinking and needs to be modernized.

### **NEBRASKA BROADBAND TODAY!**

Eric Carstenson

The 2017 Nebraska Broadband Conference will be held on October 26, 2017 at the Cornhusker Marriott in Lincoln. This is a collaborative project with the Nebraska Telecommunications Association and the Nebraska Broadband Initiative. The goal is to bring together economic developers, community leaders, telecommunications providers and others to better understand how communities and telecommunications providers can work together. As plans develop, more conference details and information will be available at [www.ntaonline.net](http://www.ntaonline.net).

### **FIRSTNET UPDATE**

Bob Wilhelm

Congress enacted the public law 112-96 on February 22, 2012. The vision of the law is to provide emergency first responders with the first high-speed, wireless nationwide public safety broadband network (NPSBN) in full operation by 2022. AT&T was awarded the national contract. It was challenged and taken to court. The court awarded the contract. All law enforcement, first responders, and emergency entities will be able to communicate via this network. At the end of summer, the federal government is scheduled to release the guidelines for states to develop their state plan. States have the option to buy into the plan or develop their own plan to build the system according to the FCC requirements. The public law states AT&T must provide "significant rural coverage." If AT&T does not provide coverage, there are financial penalties. Currently, the state of is paying \$40 per device for our Public Safety Radio System. When Nebraska's plan has been finalized, it will go to the Governor to decide to opt in or opt out.

### **MAKERSPACE UPDATES**

**Sidney Create!** Ms. Hancock reported that the kickoff was in March. Summer activities have been planned with 4H. These will end up being exhibits for county fair. Fall activities are being planned. The project will be applying for a mobile maker space grant.

**Blair Public Library and Technology Center.** Ms. Byers reported that the Blair Public Library & Technology Center and the Creative Commons (makerspace) opened to the public on April 1, 2017. Policies and procedures are being developed and ventilation systems are being installed. Library staff also plan to work with Metropolitan Community College to begin training classes for the new Cube Pro 3-element 3D printer and Laser Systems 50 watt laser cutter / engraver.

### **Nebraska Library Commission Grant, Library Innovation Studios: Transforming Rural Communities.**

JoAnn McManus, Grants Coordinator, Library Commission

Partners for the grant are the Library Commission, the University of Nebraska-Lincoln Innovation Studio, Nebraska Extension and the Regional Library Systems. The Library Commission and the University of Nebraska are providing a 1 to 1 match. The project kickoff is scheduled for July 1st and will be complete in June 30, 2020. This multi-faceted effort will:

1. Establish local Community Action Team in 30 rural communities;

2. Purchase equipment and related materials for four rotating Innovation Studies;
3. Develop instructional materials and equipment certification processes
4. Employ sustainability strategies for permanent studios
5. Provide training on the use of the equipment, including Train the Trainer strategies
6. Provide marketing efforts and programming/events, including Open Houses and Maker Showcases; and
7. Host annual Inventors Showcases in Lincoln.

Three goals will guide the project:

1. Rural community residents will be empowered with the tools and guidance to explore, collaborate, create, learn and invent.
2. Libraries will transform their rural communities through participatory learning spaces, while establishing themselves as strong community catalysts for community change.
3. Libraries (and communities) nationwide will have access to a replicable model.

The 30 libraries have not been selected yet. There will be an application process. Half of the participants will be picked for the first round. Second round will occur a few months later. Communities have to be under 25,000. That leaves out only 6 communities in Nebraska. The Library Commission and Nebraska Innovation Studio have hired additional staff to assist with this grant.

#### **NEWSLETTER IDEAS**

Ms. Byers stated that she is always looking for newsletter ideas. She plans are to publish the next issue sometime during the summer. Mr. Armstrong suggested the upcoming October conference as well as an update on the FirstNet plan. Members were asked to send Ms. Byers their ideas.

#### **ADJOURNMENT**

With no further business, the Mr. Armstrong adjourned the meeting at 11:46 a.m.

Meeting minutes were taken by Lori Lopez Urdiales and reviewed by Anne Byers, Office of the CIO/NITC.

## **COMMUNITY COUNCIL**

Nebraska Information Technology Commission  
Wednesday, October 4, 2017 1:30-4:00 P.M. CT  
Varner Hall-Video Conference Room  
3835 Holdrege, Lincoln

Desk Top Video Sites and Public Participation Sites Available Upon Request:

### **MEMBERS PRESENT:**

Phil Green, Co-Chair  
Rod Armstrong, Co-Chair  
Jay Anderson  
Chris Anderson  
Randy Bretz  
Charlotte Narjes  
Tim Lindahl  
Cullen Robbins  
Holly Woldt

Participating Video Sites or Phone (Non-voting): Connie Hancock, Megan McGown

**MEMBERS ABSENT:** Pam Adams, Brett Baker; Jessica Chamberlain; Shonna Dorsey; Steve Fosselman, Steve Henderson; Jacob Knutson; David Lofdahl; Joan Modrell

### **ROLL CALL, NOTICE OF POSTING OF AGENDA, NOTICE OF NEBRASKA OPEN MEETINGS ACT POSTING**

Co-chair Phil Green called the meeting to order at 1:40 p.m. There were 8 members present. A quorum did not exist to conduct official business. The meeting proceeded with informational items. The meeting announcement was posted on the NITC and Nebraska Public Meeting websites on September 19, 2017. The agenda was posted on the NITC website on Sept. 20, 2017.

### **APPROVAL OF MAY 12, 2017 MINUTES\***

Approval of the minutes was tabled until the next meeting.

### **PUBLIC COMMENT**

There was no public comment.

### **CITY OF LINCOLN BROADBAND INFRASTRUCTURE EFFORTS**

David Young, City of Lincoln

In 2012, the City of Lincoln started efforts to improve broadband for Lincoln businesses after Yahoo passed up Lincoln for a data center and Gallup moved its headquarters to Omaha. The City of Lincoln invested \$700K in a downtown conduit system which now covers every street. The City attracted four Internet carriers to provide competitive service to downtown businesses.

In 2014, the City of Lincoln began focusing on residential service. It established a 100 Mbps minimum "broadband" definition and required a 25-year agreement from companies using the City's duct. In 2015, Windstream announced deployment of gigabit speeds to 5,000 homes. In 2016, Allo began a citywide buildout to bring 100Mbps/1,000Mbps fiber to every home by 2019. Their deployment is now 60% complete. In 2017, Spectrum announced an upgrade to a minimum 60Mbps for all residences in the city. In 2017 Bluestem Fiber announced fiber deployment to select neighborhoods. The City jointly owns 4-6 fiber conduits down every arterial. Competitive providers own 1-2 fiber conduits to every neighborhood. Residential fiber buildout has resulted in:

- 400+ new jobs
- \$20 million/year in new salaries
- \$200 million infrastructure investment
- 1,000 miles of new fiber (2,000 miles by 2020)

In 2018, the City will begin a Wireless Initiative to provide free public Wi-Fi planned for citizens, students, and visitors. The City of Lincoln is planning for 100 small cell light pole placements by 2018 via Verizon, Sprint (d.b.a. Mobilitie) and AT&T (d.b.a. wireless aggregator). In addition, future plans include 200 small cell light pole placements by 2019 and 400 small cell light pole placements by 2022.

The city has standardized the design of light poles and now has a contract for 25,000 replacements. Wireless companies are invited to propose placement or re-placement of single small cell light poles. The company purchases and pays for the construction; the city then owns the pole. Backhaul to each light pole will be fiber through one of the fiber companies serving the City of Lincoln.

Members commented that there are towns right outside Lincoln that have problems with connectivity. There is a need for a statewide broadband plan.

### **PUBLIC-PRIVATE PARTNERSHIPS**

Tim Lindahl, Wheatbelt Public Power District

Mr. Lindahl distributed a map indicating the coverage (green color areas) of 2,400 miles of installed electrical service in the Panhandle area of Nebraska. The black dots are distribution centers. The blue color area indicates NebraskaLink's infrastructure. Mr. Lindahl commented that a statewide broadband plan is needed. Solving the last mile will require extending the existing backbone. One concept is to use wireless for the last mile. The second concept is to partner with municipalities. A public/private partnership may be the only way that broadband to everyone in remote rural areas can be provided. Representatives of public power are meeting with representative of the telecommunications industry later this month. Easement and liability issues will also need to be worked out.

### **QUESTIONS FOR BROADBAND TASK FORCE**

Nebraska Public Service Commissioner Mary Ridder has formed a broadband task force in response to the expected availability of federal funds for broadband infrastructure projects. At the July NITC meeting, commissioners were very interested in broadband. Commissioner Ridder invited two representatives of the NITC, Ms. Byers and Commissioner Shane Greckel, to serve on the Broadband Task Force. The Broadband Task Force meets next week. Task force members have been asked to provide input on five questions. Ms. Byers shared input from Commissioners with the Council and asked members for their input.

1. Should there be a Nebraska-specific definition of broadband? Should it be based on minimum speeds or some other measurement?

*The Council did not make a recommendation on this question. The Council needed more information on how the definition would be used, how it would be adjusted, etc. in order to make an informed recommendation.*

2. Should Nebraska formally adopt a policy goal of ensuring ubiquitous broadband availability, regardless of cost?

*The Council felt that Nebraska should adopt a policy goal of ensuring ubiquitous broadband availability, but that cost should be a consideration.*

3. Should there be technology preferences for the means by which broadband availability is deployed?

*The Council did not recommend establishing a technology preference. The Council recognized that while fiber offers the best performance, it may not be cost-effective to deploy fiber in all areas. Wireless technologies may be the most cost-effective method of deploying broadband in some areas. Since wireless technologies require fiber to the tower, small cell or other transmitting device, consideration should be given to getting fiber further out.*

4. Should the State of Nebraska maintain restrictions on the provision of broadband services by political subdivisions of the state? In the alternative, should exception be allowed that would enable the formation and operation of public-private partnerships that enable broadband deployment?

*Council members supported maintaining restrictions on the provision of broadband services by political subdivisions of the state. Council members were very supportive of private-public partnerships. The City of Lincoln provides a good model for public-private partnerships. Public power may be a potential partner.*

5. Are existing cost recovery mechanisms adequate to ensure that all Nebraskans will have access to broadband services that are reasonably comparable in cost and service quality?

*Council members felt that the PSC and those in the industry would be better able to answer this question.*

*Council members felt that if existing cost recovery mechanisms were adequate to ensure that all Nebraskans will have access to broadband services that are reasonably comparable in cost and service quality, we probably would not be having these conversations.*

## **MEMBERSHIP**

The PSC nominated Mary Ridder to serve as their representative on the NITC Community Council. It was agreed by group consensus to approve the nomination.

The membership recommendation will go to the NITC at their meeting on November 9.

## **ACTION ITEMS**

Ms. Byers drafted action items for the Council's consideration. Members expressed their support for the following action items:

**Action: Support the efforts of communities to address broadband-related development by sharing broadband-related news and highlighting exemplary programs through the Broadband Nebraska newsletter, social media, and other activities through the Nebraska Broadband Initiative.**

**Lead:** NITC Community Council, University of Nebraska-Lincoln Extension and Center for Applied Rural Innovation, Nebraska Public Service Commission, and Nebraska Library Commission

**Participating Entities:** NITC Community Council, Nebraska Public Service Commission, University of Nebraska-Lincoln Extension and Center for Applied Rural Innovation, the AIM Institute, and other interested stakeholders.

**Timeframe:** 2017-2018

**Funding:** Leveraging existing resources

**Targets/Deliverables:**

1. At least 4 issues of Broadband Nebraska Newsletter per year
2. Other partnership activities

**2. Action: Expand awareness and address the need for digital inclusion and equitable**

**broadband access through educational materials, best practices and community outreach.**

**Lead:** Community Council and Education Council

**Participating Entities:** NITC Community Council, Education Council, Nebraska Broadband Initiative

**Timeframe:** 2017-2018

**Funding:** Leveraging Existing Resources

**Targets/Deliverables:**

1. Develop and share educational materials and profiles of exemplary programs.
2. Work with the Community Council, Education Council and Nebraska Broadband Initiative to develop an outreach program to help communities better understand and address digital equity issues.

**3. Action: Support the efforts of Network Nebraska and the Education Council to address digital equity and to explore partnerships to improve library broadband access.**

Ms. Byers will flesh out the third action item.

## **UPDATES**

**2017 Nebraska Broadband Today Conference.** The 2017 Nebraska Broadband Conference will be held on October 26 at the Lincoln Marriott Cornhusker Hotel. Members were asked to share the information with their sectors and others who would be interested.

**Makerspace Grants and Library Broadband Updates.** Nebraska Library Commission was recently awarded a National Leadership Grant of \$530,732 by the Institute of Museum and Library Services (IMLS) to establish rotating makerspaces with the University of Nebraska Lincoln (UNL), Nebraska Innovation Studio, Nebraska Extension, Regional Library Systems, and local public libraries.

The initial local library partners that will host one of the four rotating makerspaces are:

- Ainsworth Public Library
- Ashland Public Library
- Bridgeport Public Library
- Broken Bow Public Library
- Central City Public Library
- Crete Public Library
- Geneva Public Library
- Loup City Public Library
- Nebraska City, Morton-James Public Library
- Neligh Public Library
- Norfolk Public Library
- North Platte Public Library
- Plattsmouth Public Library
- Ravenna Public Library
- Scottsbluff, Lied Scottsbluff Public Library
- Sidney Public Library, Special Model Program Partner
- South Sioux City Public Library
- Wayne Public Library

Twelve additional libraries will be selected in 2018 to host makerspaces in 2019/20. This project began July 1, 2017 and will conclude June 30, 2020. For more information about the project or equipment that will be featured in the rotating makerspaces, see <http://nlc.nebraska.gov/grants/InnovationStudios>.

The University of Nebraska-Lincoln received a two-year, \$300,000 National Science Foundation-funded Early-concept Grant for Exploratory Research to establish an Innovation Makerspace Co-Laboratory in Sidney. The grant was profiled in the last issue of [Nebraska Broadband](#).

Efforts are also underway to help libraries get better Internet access. Mr. Rolfes and Ms. Woldt are giving several presentations at the Nebraska Library Association/Nebraska School Librarians Association Conference in Kearney Oct. 12-13. The sessions are entitled Toolkit for Public Libraries, The Next Best Thing to Having Your Own Gigabit Internet, and Next Gen Wi-Fi to Enhance Your Public Library.

**Other Updates from Members.** There were no other updates.

## **ADJOURN**

With no further business, Mr. Green adjourned the meeting at 4 p.m.

*Meeting minutes were taken by Lori Lopez Urdiales and reviewed by Anne Byers, Office of the CIO/NITC.*

## Broadband in Nebraska: Availability

### Broadband Available to 88.9% of Nebraskans, 65.5% of Rural Nebraskans

Broadband availability in Nebraska improved in 2016 with 88.9% of Nebraskans and 65.5% of rural Nebraskans having access to broadband at 25 Mbps down and 3 Mbps up. Nebraska lags the U.S. with 92.3% of Americans and 69.3% of rural Americans having broadband access according to the FCC's [2018 Broadband Deployment Report](#).

Nebraska ranked 32<sup>nd</sup> out of the 50 states and the District of Columbia on broadband availability—up two spots from 2015. Nebraska ranked in the middle of our neighboring states in broadband availability of 25 Mbps/3Mbps. (See Table 1.)

**Table 1**  
**% Population with Access to Fixed 25 Mbps/3 Mbps Service (2016)**  
**Ranked By Statewide Average**

	U.S./State (Urban and Rural)	Rural Areas	Urban Areas
United States	92.3%	69.3%	97.9%
Colorado	94.9%	72.1%	99.0%
Iowa	90.5%	77.4%	97.9%
Kansas	89.2%	66.5%	97.2%
Nebraska	88.9%	65.5%	97.5%
South Dakota	88.3%	75.1%	98.9%
Missouri	83.5%	49.5%	97.9%
Wyoming	78.2%	45.5%	97.6%

Table 2 shows data on fixed and mobile broadband availability for Nebraska counties. An analysis of the data shows that the gap in availability between rural and urban counties in Nebraska exists, but has narrowed since 2015. In 2016, over one-quarter (25 out of 93 counties) of Nebraska's counties had broadband of at least 25 Mbps down and 3 Mbps up available to over 90% of residents, up from 12 counties in 2015.<sup>1</sup> Approximately 1,460,000 people live in these 25 counties.

On the other side of the Digital Divide, broadband of at least 25 Mbps down and 3 Mbps up was **not** available to over 95% of residents in 10 Nebraska counties, down from 18 counties in 2015. Approximately 53,000 people live in these 10 counties.

**Table 2**  
**Nebraskans with Access to Fixed Terrestrial 25 Mbps/3 Mbps Services**  
**and/or Mobile LTE with a Minimum Advertised Speed of 5 Mbps/1 Mbps by State and County**  
**Ranked by % of Population with Fixed Broadband (Data as of December 2016)**

State, County or County Equivalent	Population Evaluated	% of Pop. with Fixed 25 Mbps/3 Mbps	% of Pop. with Mobile 5 Mbps /1 Mbps	% of Pop. with Fixed & Mobile	Population Density	Per Capita Income (\$2016)
<b>Nebraska</b>	<b>1,903,270</b>	<b>88.90%</b>	<b>99.90%</b>	<b>88.90%</b>	<b>24.774</b>	<b>.</b>
<b>Nance County</b>	3,578	99.90%	99.80%	99.70%	8.102	\$26,179
<b>Polk County</b>	5,221	99.90%	100.00%	99.90%	11.911	\$30,947
<b>Kearney County</b>	6,557	99.30%	100.00%	99.30%	12.701	\$31,563
<b>Boyd County</b>	1,978	99.20%	91.40%	90.60%	3.663	\$25,507
<b>Buffalo County</b>	49,302	99.20%	100.00%	99.20%	50.926	\$27,218
<b>Phelps County</b>	9,267	99.20%	100.00%	99.20%	17.168	\$27,882
<b>Madison County</b>	34,955	98.90%	100.00%	98.90%	61.031	\$24,458
<b>Douglas County</b>	553,394	98.80%	100.00%	98.80%	1,684.84	\$30,548
<b>Dawson County</b>	23,632	98.40%	99.90%	98.30%	23.327	\$24,042
<b>Lancaster County</b>	308,802	98.20%	100.00%	98.20%	368.697	\$28,600
<b>Hall County</b>	61,494	98.10%	100.00%	98.10%	112.567	\$24,617
<b>Howard County</b>	6,434	97.70%	100.00%	97.70%	11.301	\$28,301
<b>Saunders County</b>	20,959	97.60%	100.00%	97.60%	27.937	\$30,348
<b>Keya Paha County</b>	794	96.90%	93.10%	90.80%	1.027	\$28,086
<b>Platte County</b>	32,800	96.20%	100.00%	96.20%	48.66	\$27,052
<b>Lincoln County</b>	35,576	95.70%	99.80%	95.50%	13.875	\$27,474
<b>Sarpy County</b>	178,092	94.80%	100.00%	94.80%	745.185	\$31,906
<b>Adams County</b>	31,703	93.90%	100.00%	93.90%	56.284	\$27,609
<b>Box Butte County</b>	11,226	93.90%	100.00%	93.90%	10.44	\$27,751
<b>Butler County</b>	8,072	93.30%	100.00%	93.30%	13.8	\$28,045
<b>York County</b>	13,805	93.00%	100.00%	93.00%	24.113	\$27,962

State, County or County Equivalent	Population Evaluated	% of Pop. with Fixed 25 Mbps/3 Mbps	% of Pop. with Mobile 5 Mbps /1 Mbps	% of Pop. with Fixed & Mobile	Population Density	Per Capita Income (\$2016)
Richardson County	8,061	92.00%	99.90%	91.90%	14.607	\$26,638
Seward County	17,232	90.80%	100.00%	90.80%	30.156	\$28,491
Dakota County	20,436	90.40%	100.00%	90.40%	77.335	\$21,710
Keith County	8,021	90.40%	100.00%	90.40%	7.556	\$26,699
Valley County	4,181	88.90%	99.90%	88.80%	7.36	\$26,384
Cheyenne County	10,078	87.90%	100.00%	87.90%	8.424	\$30,929
Stanton County	5,939	87.90%	100.00%	87.90%	13.878	\$29,282
Dodge County	36,785	85.90%	100.00%	85.90%	69.576	\$26,141
Scotts Bluff County	36,318	85.90%	100.00%	85.90%	49.118	\$25,863
Burt County	6,558	84.10%	100.00%	84.10%	13.341	\$24,613
Saline County	14,306	83.50%	100.00%	83.50%	24.923	\$21,880
Washington County	20,557	82.10%	100.00%	82.10%	52.716	\$31,776
Harlan County	3,478	81.90%	99.90%	81.90%	6.284	\$25,997
Brown County	2,956	80.80%	96.20%	79.90%	2.42	\$30,135
Dundy County	1,830	78.70%	87.70%	67.50%	1.99	\$28,161
Clay County	6,164	78.50%	100.00%	78.50%	10.771	\$25,472
Cass County	25,737	76.70%	100.00%	76.70%	46.169	\$30,637
Wayne County	9,351	74.20%	100.00%	74.20%	21.112	\$26,732
Pierce County	7,172	73.90%	99.90%	73.80%	12.511	\$27,386
Otoe County	16,055	73.60%	99.90%	73.60%	26.079	\$27,251
Gage County	21,814	72.80%	100.00%	72.80%	25.619	\$26,347
Antelope County	6,347	72.00%	100.00%	72.00%	7.404	\$27,048
Dixon County	5,785	71.10%	100.00%	71.10%	12.147	\$24,983
Nemaha County	6,972	69.40%	100.00%	69.40%	17.114	\$28,690
Kimball County	3,680	68.80%	99.90%	68.80%	3.866	\$23,727
Colfax County	10,393	66.80%	100.00%	66.80%	25.247	\$23,619
Johnson County	5,167	62.70%	100.00%	62.70%	13.74	\$21,890

State, County or County Equivalent	Population Evaluated	% of Pop. with Fixed 25 Mbps/3 Mbps	% of Pop. with Mobile 5 Mbps /1 Mbps	% of Pop. with Fixed & Mobile	Population Density	Per Capita Income (\$2016)
Cedar County	8,703	62.20%	99.90%	62.20%	11.756	\$28,663
Holt County	10,236	58.90%	99.20%	58.80%	4.243	\$26,267
Jefferson County	7,208	58.70%	99.70%	58.70%	12.642	\$26,305
Sherman County	3,057	55.50%	100.00%	55.50%	5.403	\$26,348
Cuming County	9,000	55.10%	100.00%	55.10%	15.772	\$26,061
Fillmore County	5,731	55.10%	100.00%	55.10%	9.961	\$29,361
Franklin County	3,007	55.00%	98.90%	54.50%	5.222	\$28,373
Morrill County	4,791	54.40%	98.90%	54.40%	3.365	\$24,216
Wheeler County	769	52.40%	99.60%	52.40%	1.337	\$30,800
Nuckolls County	4,259	51.60%	100.00%	51.60%	7.405	\$24,096
Cherry County	5,841	50.70%	92.70%	49.40%	0.98	\$27,891
Pawnee County	2,655	50.30%	100.00%	50.30%	6.159	\$27,039
Perkins County	2,888	48.60%	99.90%	48.60%	3.269	\$30,429
Deuel County	1,876	48.20%	100.00%	48.20%	4.265	\$28,640
Arthur County	465	47.70%	100.00%	47.70%	0.65	\$21,174
Thayer County	5,109	45.40%	99.80%	45.40%	8.904	\$30,057
Boone County	5,335	42.80%	100.00%	42.80%	7.771	\$28,288
Webster County	3,600	41.90%	99.60%	41.60%	6.262	\$24,534
Furnas County	4,794	40.60%	98.50%	40.60%	6.666	\$23,307
Gosper County	1,970	39.90%	100.00%	39.90%	4.3	\$29,393
Hitchcock County	2,838	33.60%	100.00%	33.60%	3.998	\$23,967
Blaine County	490	33.50%	82.40%	25.90%	0.689	\$23,001
Frontier County	2,621	32.10%	98.80%	31.70%	2.689	\$26,798
Greeley County	2,396	29.60%	100.00%	29.60%	4.205	\$25,054

State, County or County Equivalent	Population Evaluated	% of Pop. with Fixed 25 Mbps/3 Mbps	% of Pop. with Mobile 5 Mbps /1 Mbps	% of Pop. with Fixed & Mobile	Population Density	Per Capita Income (\$2016)
Thomas County	713	26.20%	100.00%	26.20%	1	\$30,746
Grant County	642	22.90%	98.10%	21.20%	0.827	\$21,925
Hamilton County	9,188	22.30%	100.00%	22.30%	16.925	\$31,565
Thurston County	7,097	18.90%	100.00%	18.90%	18.032	\$19,100
Hayes County	910	17.50%	99.10%	17.50%	1.276	\$27,080
Chase County	3,939	17.20%	99.60%	17.20%	4.404	\$29,239
Rock County	1,404	16.00%	94.70%	11.90%	1.392	\$30,247
Sioux County	1,240	8.70%	84.50%	7.20%	0.6	\$27,279
Red Willow County	10,725	7.20%	99.00%	6.80%	14.958	\$24,529
Garfield County	2,019	6.00%	97.50%	6.00%	3.543	\$24,379
Hooker County	709	3.90%	99.40%	3.90%	0.983	\$22,094
Dawes County	8,986	3.20%	100.00%	3.20%	6.435	\$23,307
Loup County	597	3.20%	98.50%	2.80%	1.051	\$28,063
Sheridan County	5,248	3.20%	96.50%	3.20%	2.15	\$25,077
Garden County	1,907	2.30%	97.30%	2.30%	1.119	\$30,900
Knox County	8,595	2.10%	98.00%	1.40%	7.755	\$26,675
Custer County	10,831	2.00%	99.90%	2.00%	4.205	\$29,986
Logan County	765	0.40%	100.00%	0.40%	1.341	\$24,693
Banner County	792	0.00%	99.40%	0.00%	1.061	\$30,095
McPherson County	495	0.00%	95.20%	0.00%	0.576	\$25,352

<sup>i</sup> The 2015 figure was calculated from the Digital Divide Index county dataset 2015 which was obtained using the FCC Form 477 December v2 data set. See the Nebraska Broadband Special Report: Nebraska and the Digital Divide Index available at [http://nitc.ne.gov/community\\_council/documents/newsletters/Nebraska\\_and\\_DDIApril2017.pdf](http://nitc.ne.gov/community_council/documents/newsletters/Nebraska_and_DDIApril2017.pdf)

## Broadband in Nebraska: Adoption/Subscription

### FCC report finds 78% of Nebraska households subscribe to fixed Internet service

**Household Adoption/Subscription.** In 2016, 82% of U.S. households and 78% of Nebraska households subscribed to fixed internet service of at least 200 kbps according to the FCC’s newly released [Internet Access Services Report](#). At higher speed tiers, the gap in subscription rates between Nebraska and the U.S. average widens. In 2016, 50% of U.S. households, but only 38% of Nebraska households subscribed to broadband of at least 25 Mbps down and 3 Mbps up. Nebraska ranked in the middle of our neighboring state on this measure—behind Colorado (60%), South Dakota (47%) and Wyoming (45%) but tightly clustered with Iowa (38%), Missouri (37%), and Kansas (36%). (See Table 1).

**Table 1**  
**% of Households with Fixed Connections at Various Speeds by State as of Dec. 2016**

State	At least 200 kbps in at least one direction	At least 10 Mbps Down and 1 Mbps Up	At least 25 Mbps Down and 3 Mbps Up	At least 100 Mbps Down and 10 Mbps Up
U.S. Total	82%	66%	50%	15%
Colorado	89%	66%	60%	*
Iowa	74%	47%	38%	7%
Kansas	79%	59%	36%	16%
Missouri	75%	55%	37%	10%
Nebraska	78%	55%	38%	7%
South Dakota	76%	64%	47%	4%
Wyoming	77%	54%	45%	0%

*\*Data withheld to maintain firm confidentiality*

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

Adoption of higher speed internet service is growing. Between December 2015 and December 2016, the percent of Nebraska households subscribing to internet service of at least 25 Mbps down and 3 Mbps up increased from 33% to 38%. During the same time period, the percent of Nebraska households subscribing to broadband internet service of at least 100 Mbps down and 10 Mbps up increased from 5% to 7%. (See Tables 2 and 3).

**Table 2**  
**% of Households with Fixed Connections at 25 Mbps/3 Mbps by State (Dec. 2015- Dec. 2016)**

State	Dec. 31, 2015	June 30, 2016	Dec. 31, 2016
U.S. Total	44%	47%	50%
Colorado	55%	57%	60%
Iowa	10%	24%	38%
Kansas	32%	34%	36%
Missouri	30%	33%	37%
Nebraska	33%	35%	38%
South Dakota	43%	47%	47%
Wyoming	42%	43%	45%

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

**Table 3**  
**% of Households with Fixed Connections at least 100 Mbps/10 Mbps Up (Dec. 2015- Dec. 2016)**

State	Dec. 31, 2015	June 30, 2016	Dec. 31, 2016
U.S. Total	11%	13%	15%
Colorado	*	*	*
Iowa	1%	5%	7%
Kansas	12%	14%	16%
Missouri	7%	9%	10%
Nebraska	5%	6%	7%
South Dakota	4%	5%	4%
Wyoming	0	0%	0%

*\*Data withheld to maintain firm confidentiality*

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

**Internet Connections.** The total number of internet connections (residential and business) in the United States increased from 369.4 million in 2015 to 376.2 million in 2016, an increase of about 6% according to the FCC's newly released [Internet Access Services Report](#). Mobile internet connections accounted for 72% of all internet connections in the United States in 2016. Mobile internet connections increased from 265.4 million in 2015 to 270.5 million in 2016, an increase of 7%. The number of fixed connections grew from 104.1 million to 105.7 million, an increase of 3%.

In December 2016, 60% of fixed connections had a downstream speed of at least 25 Mbps, with 27% of fixed connections having a downstream speed of at least 100 Mbps. In Nebraska, 48% of fixed connections had a downstream speed of at least 25 Mbps down. Only 9.5% of fixed internet connections in Nebraska had a downstream speed of at least 100 Mbps down. Nebraska lagged behind four of our neighboring states on this measure: Colorado (41.9%), Missouri (35.0%), Kansas (19.9%), and Iowa (11.0%). (See Table 4.)

**Table 4**  
**% of Fixed Connections (Residential and Business) at Various Speeds By State as of Dec. 2016**

State	At least 200 kbps Down	At least 3 Mbps Down	At least 10 Mbps Down	At least 25 Mbps Down	At least 100 Mbps Down
U.S. Total	99.6%	96.3%	82.2%	60.0%	23.2%
Colorado	99.7%	95.1%	86.0%	65.5%	41.9%
Iowa	99.6%	92.6%	72.4%	49.5%	11.0%
Kansas	99.7%	95.4%	75.4%	44.1%	19.9%
Missouri	99.4%	94.0%	76.8%	48.8%	35.0%
Nebraska	99.6%	95.7%	74.7%	48.5%	9.5%
South Dakota	99.6%	96.6%	84.9%	61.2%	6.3%
Wyoming	99.6%	91.8%	76%	57.1%	1.2%

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

Nebraska also has a smaller percent of fiber connections than the U.S. and five out of six neighboring states. In 2016, 8 percent of internet connections in Nebraska were fiber, compared to 11% in the United States. Iowa (16%), Kansas (18%), and South Dakota (19%) had a higher percent of fiber connections than the U.S. Nebraska and all of our neighboring states have a higher percent of fixed wireless connections than the U.S. (See Table 5.)

Nebraska and our neighboring states also have a higher percentage of fixed wireless connections than the U.S. In Nebraska, 3.7% of fixed internet connections were fixed wireless, compared to 1.2% in the U.S. (See Table 5.)

**Table 5**  
**Connections by Technology by State as of Dec. 31, 2016 (in thousands) and by % of Non-Mobile Connections**

State	# ADSL	% ADSL	# Cable	% Cable	# Fiber	% Fiber	# Fixed Wireless	% Fixed Wireless	# Mobile Connections	Total Connections	Total Non-Mobile Connections
Total U.S.	26,526	25%	63,352	60%	12,041	11%	1,230	1.2%	270,494	376,221	105,727
Colorado	*	*	1,155	59%	203	10%	63	3.2%	4,574	6,540	1,966
Iowa	305	30%	469	47%	165	16%	31	3.1%	2,493	3,496	1,003
Kansas	257	27%	470	49%	170	18%	39	4.1%	3,208	4,170	962
Missouri	741	38%	898	46%	177	9%	39	2.0%	4,896	6,834	1,938
Nebraska	162	26%	381	60%	53	8%	23	3.7%	1,433	2,063	630
South Dakota	48	17%	159	57%	53	19%	12	4.3%	623	901	278
Wyoming	52	26%	108	55%	11	6%	19	9.6%	468	666	198

\*Data withheld to maintain firm confidentiality.

Data on connections for SDSL, other wireline, and satellite were not included because data on these technologies for many states was withheld to maintain firm confidentiality or so such a small number of connections were reported that it rounded to 0.

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

The number of fiber connections in the United States, Nebraska, and neighboring states significantly increased between December 2015 and December 2016. Nebraska saw a 26.2% increase in fiber connections during this time period. In comparison, the U.S. saw a 14.8% increase in fiber connections and our neighboring states saw increases ranging from 15.2% to 54.5%.

**Table 6**  
**Fiber Connections by State Dec. 31, 2015- Dec. 31, 2016 (in thousands) and % Increase**

	<b>Dec. 31, 2015</b>	<b>June 30, 2016</b>	<b>Dec. 31, 2016</b>	<b>Increase Dec. 2015-Dec. 2016</b>	<b>% increase Dec. 2015-Dec. 2016</b>
Total U.S.	10,492	11,129	12,041	1,549	14.8%
Colorado	150	177	203	53	35.3%
Iowa	130	145	165	35	26.9%
Kansas	110	130	170	60	54.5%
Missouri	124	151	177	53	42.7%
Nebraska	42	46	53	11	26.2%
South Dakota	46	50	53	7	15.2%
Wyoming	8	9	11	3	37.5%

Source: [Internet Access Services: Status as of Dec. 31, 2015](#)

Source: [FCC Internet Access Services: Status as of June 30, 2016](#)

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

## **Nebraska Schools and Libraries—Breaking the Ice and Igniting Internet Relationships Abstract**

The Nebraska Library Commission, in collaboration with the State Office of the Chief Information Officer, plans to use the SPARKS Grant of \$25,000 to partner with, and incentivize five rural public school districts and five rural public libraries to create a mini-consortium E-rate application model that will dramatically increase the frequency of applications and funding to rural public libraries in Nebraska, as well as across the United States, and to work together to increase the internet speeds at the public library.

The **time frame** for this project will be from **May 1, 2018-April 30, 2019**, with a preliminary, pre-grant activity of competitive applications submitted and evaluated between January and March, 2018.

The **project will address the need** of the rural public library to become a key Community Anchor Institution within the community by becoming the fastest (and often the only) source of free Wi-Fi internet in rural communities with a legal service area of under 25,000. This project will also provide homework hotspots for students who lack internet at home, estimated to be 17% of all Nebraska households, or over 50,000 students statewide, and to emphasize continuing education for patrons of all ages by sharing virtual field trips.

The **intended audience** of these grant activities are the local school district and local public libraries, their students, staff, and patrons. If this E-rate application and infrastructure sharing model proves successful, it will be replicated statewide and communicated nationally to the top 15 states that have over 2/3 of their public libraries labeled as “Rural” (IMLS locale codes 41, 42, 43) and “Small” (service populations <25,000).

The **specific project activities** will include: A competitive application process to determine community project sites; competitive procurement, purchase, and installation of fixed wireless equipment to interconnect the public school and public library buildings; purchase and installation of a new 802.11ac internal network within each public library; 6-month test of augmented internet model within the library; training and guidance to support each school district/public library mini-consortium as they make their first-ever joint E-rate application in 2019-2020; evaluation of IMLS performance measures; composing the final project report; and construction of a descriptive project model and promotion via Nebraska and national media outlets.

### **The specific performance goals, project outcomes and results include:**

- Delivering training and assistance in establishing credentials within the USAC E-rate Productivity Center (EPC) so that E-rate applications and funding can be maximized to improve external and internal networks;
- Augmenting rural public library internet speeds to the FCC minimum of 25Mbps down/3Mbps up or more;
- Upgrading internal public library networks to 802.11ac and Cat 6 and/or 6a wiring;
- Creating at least one supervised homework hotspot in each public library so that K-12 students can access public school networks and resources while in a public library setting;
- Improving the equity of access and digital inclusion of rural community citizens by increasing the speed of public Wi-Fi locations, and enable selected partners’ staff to travel and share their experiences;
- Exploring cloud-based videoconferencing to bring museum virtual field trip programs to rural communities;
- Constructing an exportable model to replicate project success across Nebraska and within similarly situated states across the U.S.

The **Nebraska Schools and Libraries—Breaking the Ice and Igniting Internet Relationships** project intends to address: Rural library directors’ inability to apply for Category 1/Category 2 E-rate funding by using a personalized training and a mini-consortium application model; the lack of infrastructure sharing among public school districts and public libraries in rural communities by providing free equipment to incentive their collaboration and participation; the dismissive attitudes of rural residents who say that “nothing much ever goes on in the library and their Wi-Fi is too slow” by demonstrating the fastest internet they’ve ever experienced; the criticism by rural taxpayers that their taxes are too high by showing an increase in efficiency of having two major political subdivisions work together to achieve better service at lower costs; and to convince the school technology coordinator that public libraries are not the administrative burden that they think they are.

# Nebraska Broadband Partnership

## Who We Are

A broad partnership of Nebraska stakeholders with an interest in promoting the deployment and adoption of broadband technologies. The Nebraska Information Technology Commission, Nebraska Public Service Commission, and University of Nebraska, Nebraska Library Commission, and USDA?? (should others be included?) invite other stakeholders to join as members of the partnership and/or the partnership's steering committee.

Steering Committee Members will likely meet once a month to identify issues that should be addressed, to recommend what resources should be developed to meet those needs, and to assist in the development of resources.

Partnership members can assist by promoting and/or disseminating information and resources, by attending webinars, meetings and events, and by providing feedback to the steering committee.

## What We Do

- Convene Stakeholders
- Build Trust
- Identify Issue and Opportunities
- Develop Resources
- Share Information

## Goals

- To be a trusted resource of information related to broadband development.
- To improve broadband literacy and awareness among community leaders, policy makers, and other stakeholders.
- To build partnerships and trust among stakeholders with an interest in broadband in Nebraska.
- To provide resources to help community leaders better understand broadband and to be aware of strategies that they can use to accelerate broadband deployment and adoption.
- To support and disseminate research related to broadband.

## Outcomes

The activities of the Nebraska Broadband Partnership will:

- Encourage the development of a robust digital learning environment which supports learning both in schools and after school
- Enhance the economic vitality of Nebraska communities

## **Johnathan Hladik**

Johnathan Hladik is Policy Director at the Center for Rural Affairs. His work involves analysis and advocacy at the state and federal level. Focus areas include renewable energy, farm policy, economic development, and income inequality. Mr. Hladik holds a JD and Masters of Environmental Law and Policy from Vermont Law School, and a BS in Natural Resource Economics from the University of Nebraska.

# Rural Broadband and Community IT Development

## Overview

### Objectives:

- *To support efforts to accelerate the deployment of broadband services in unserved and underserved rural areas of the state and to address issues related to the adoption and utilization of broadband technologies.*

### Description:

Broadband availability, widespread adoption of broadband technologies, and a skilled IT workforce have become requirements for communities wishing to grow their economies. In the past, the Community Council has focused primarily on encouraging the widespread adoption of broadband technologies. However, as gigabit broadband has become available in an increasing number of communities in Nebraska and in the United States, the gap in service availability has grown between areas with access to very high speed broadband and those areas without access to internet at speeds of 25 Mbps down/3 Mbps up which is the FCC’s current definition of broadband. Accordingly, this initiative is being refocused to address the need for better broadband availability in unserved and underserved rural areas of the state.

### Broadband Availability

A rural-urban broadband gap exists in both Nebraska and the United States. Broadband of at least 25 Mbps down and 3 Mbps up was available to 88.9% of Nebraskans, but only 65.5% of rural Nebraskans in 2016. Nebraska lags the U.S. in broadband availability, with broadband of 25 Mbps down and 3 Mbps up available to 92.3% of Americans and 69.3% of rural Americans in 2016.

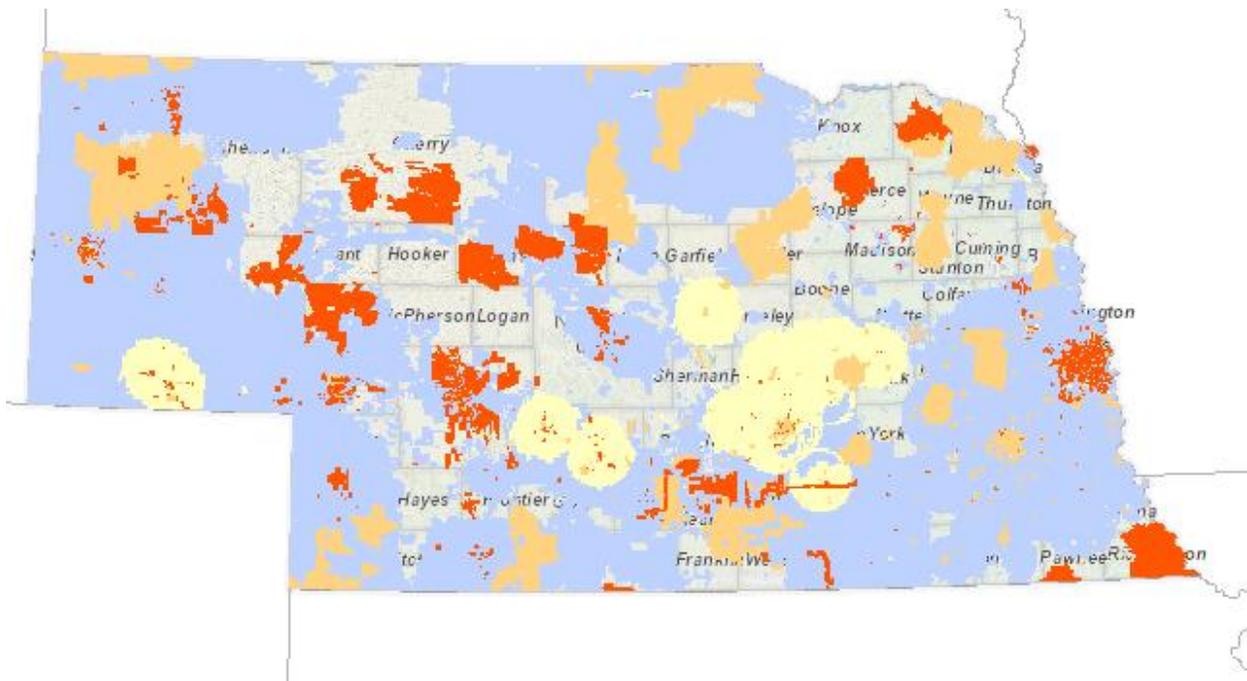
**% Population with Access to Fixed 25 Mbps/3 Mbps Service (2016)**

	U.S./State (Urban and Rural)	Rural Areas	Urban Areas
United States	92.3%	69.3%	97.9%
Nebraska	88.9%	65.5%	97.5%

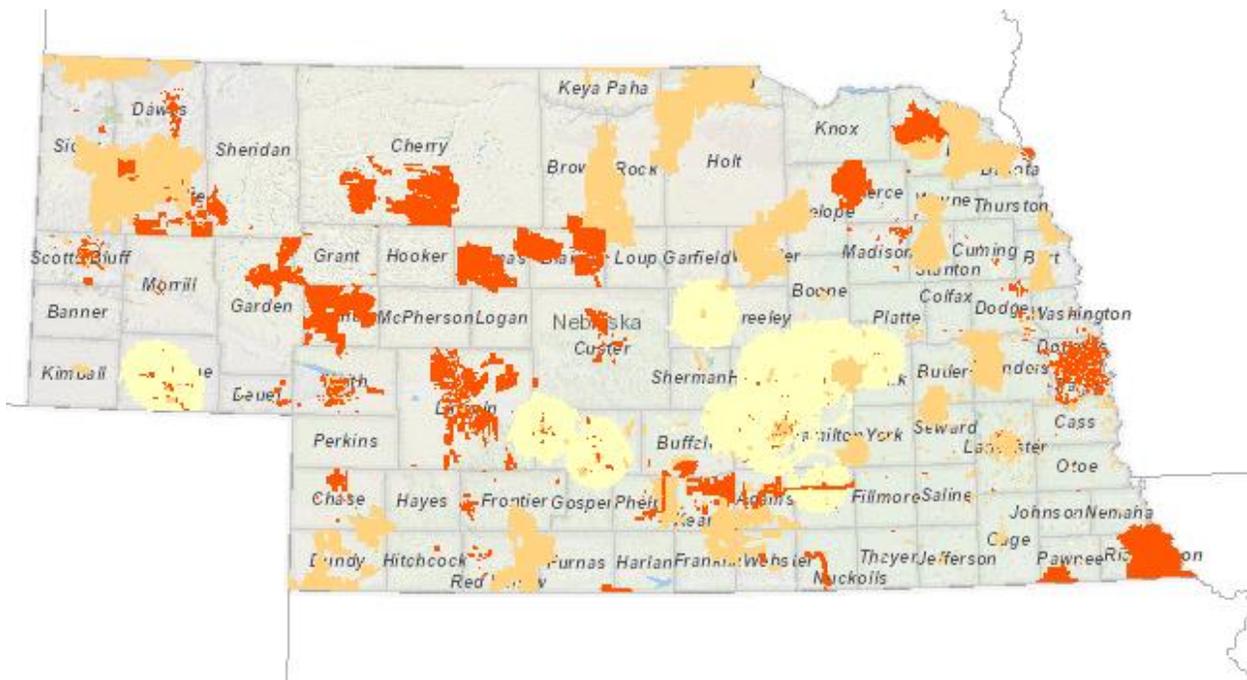
Source: FCC’s [2018 Broadband Deployment Report](#)

The maps on the following page show that most areas of the state have broadband availability of greater than 10 Mbps download/1 Mbps upload. However, broadband at greater than 25 Mbps download/3 Mbps is available in most of Nebraska’s larger communities, but only in limited rural areas.

**Broadband Availability by Speed Tiers—Greater than 10 Mbps DL/1 Mbps UL (2016)**



**Broadband Availability by Speed Tiers—Greater than 25 Mbps DL/3Mbps UL (2016)**



- Speed Tiers
- > 100 Mbps DL / 10 Mbps UL
- >50 Mbps DL / 3 Mbps UL
- >25 Mbps DL / 3 Mbps UL
- > 10 Mbps DL / 1 Mbps UL

Source: Nebraska Broadband Map [broadbandmap.nebraska.gov](http://broadbandmap.nebraska.gov) using 2016 FCC Form 477 data

**Broadband Adoption.** Although broadband availability is important for economic development, broadband adoption appears to have a stronger economic impact than broadband availability. One study found that broadband adoption—rather than broadband availability—contributes to growth in household income, lower unemployment and other measures of economic success in non-metropolitan counties.<sup>i</sup>

Broadband adoption in Nebraska lags adoption in the U.S. In 2016, 82% of U.S. households and 78% of Nebraska households subscribed to fixed internet service of at least 200 kbps according to the FCC’s [Internet Access Services Report](#). At higher speed tiers, the gap in subscription rates between Nebraska and the U.S. average widens. In 2016, 50% of U.S. households, but only 38% of Nebraska households subscribed to broadband of at least 25 Mbps down and 3 Mbps up. Nebraska ranked in the middle of our neighboring states on this measure—behind Colorado (60%), South Dakota (47%) and Wyoming (45%), but tightly clustered with Iowa (38%), Missouri (37%), and Kansas (36%).

**% of Households with Fixed Connections at Various Speeds by State as of Dec. 2016**

State	At least 200 kbps in at least one direction	At least 10 Mbps Down and 1 Mbps Up	At least 25 Mbps Down and 3 Mbps Up	At least 100 Mbps Down and 10 Mbps Up
U.S. Total	82%	66%	50%	15%
Colorado	89%	66%	60%	*
Iowa	74%	47%	38%	7%
Kansas	79%	59%	36%	16%
Missouri	75%	55%	37%	10%
Nebraska	78%	55%	38%	7%
South Dakota	76%	64%	47%	4%
Wyoming	77%	54%	45%	0%

*\*Data withheld to maintain firm confidentiality*

Source: [FCC Internet Access Services: Status as of Dec. 31, 2016](#)

It is important to note that these figures do not include households who use mobile broadband as their only source of home internet access. The number of households with phone only internet has been growing, with a 2015 Pew Internet survey finding that 13% of adults have phone-only internet access. With households with phone only access added, the percent of Nebraska households with internet access may be closer to 90%. Because many mobile internet plans include data caps, households with phone only internet may face significant limitations on their usage.

**Strengths/Assets:**

- Stakeholder support for rural broadband is high nationally and in Nebraska.
- Pending legislation, especially LB 994 which would create a rural broadband task force, may help the state better address the need for better broadband in some rural areas.
- Representatives of the Nebraska Information Technology Commission’s Community and Education Councils, Nebraska Public Service Commission, University of Nebraska, Nebraska Library Commission, and USDA Rural Development have formed a strong partnership through the Nebraska Broadband Initiative. The group is sharing information on best practices and broadband-related developments through the *Broadband Nebraska* newsletter. The group also partnered with the Nebraska Telecommunications Association to organize broadband

conferences in 2017 and 20167. The [Broadband 101 and 102 sessions](#) at the 2017 Nebraska Broadband Today conference were videotaped by staff of the Office of Chief Information Officer to help community leaders better understand broadband technologies and policy as well as to help them better work with telecommunications providers.

- Libraries are key partners in providing internet access and technology training in communities. Recent grants to the Nebraska Library Commission are improving the capacity of Nebraska libraries to act as community anchors. The Nebraska Library Commission was awarded a National Leadership Grant of \$530,732 by the Institute of Museum and Library Services (IMLS) to develop 4 mobile makerspaces which will be hosted by 30 public libraries across Nebraska during the three years of the grant. Partners in this project include the University of Nebraska Lincoln (UNL), Nebraska Innovation Studio, Nebraska Extension, Regional Library Systems, and local public libraries. The Nebraska Library Commission also partnered with the Nebraska Information Technology Commission on an innovative grant proposal to the Institute of Museum and Library Services develop partnerships between schools and libraries to improve internet service in local libraries.

#### **Challenges/Issues:**

- Although there is funding for broadband, primarily through the federal Connect America Fund and the Nebraska Universal Service Fund, these funding sources fall short of fully funding the deployment of broadband to all Nebraskans based on current cost estimates.
- The Nebraska Broadband Initiative may need to broaden its stakeholder base to better address the need for information and best practices related to broadband development.

#### **Collaborators:**

- Nebraska Information Technology Commission Community Council and Education Council
- Nebraska Public Service Commission
- University of Nebraska-Lincoln
- Nebraska Library Commission
- Other stakeholders

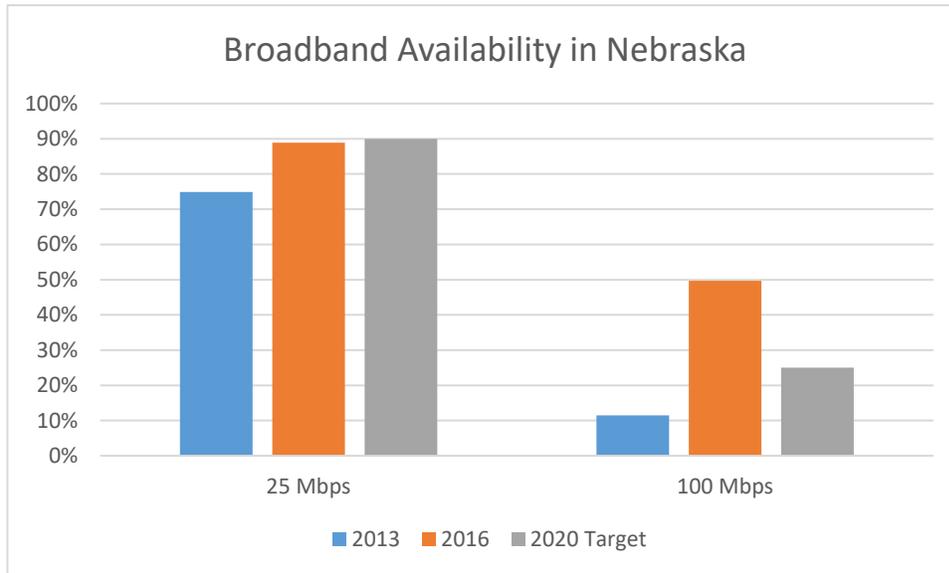
#### **Recent Accomplishments:**

- The Nebraska Broadband Initiative has engaged in the following activities:
  - The Broadband Nebraska Newsletter has profiled:
    - Ravenna leverages technology, wireless broadband (Feb./March 2018)
    - Seward County Attracts Investments in Broadband Infrastructure (Feb./March 2018)
    - [Lincoln Leverages Partnerships, Becomes Smart Gigabit Community \(Dec. 2017\)](#)
    - [Hartington, Hartelco Receive Smart Rural Community Recognition \(Dec. 2017\)](#)
    - NSF grant brings makerspace, collaborative opportunities to Sidney ([Fall 2017](#))

- FirstNet, AT&T begin work in Nebraska; Verizon may compete ([Fall 2017](#))
- Grant supports adoption of health information exchange in 31 counties ([Fall 2017](#))
- PSC docket, hearing look at revising NUSF contribution methodology ([Fall 2017](#))
- Nebraska Broadband Special Report: Nebraska and the Digital Divide Index. ([Spring 2017](#))
- Gallup Builds IT Talent Pipeline ([Jan. 2017](#))
- Broadband and Homework: How Do We Address the Homework Gap? ([Jan. 2017](#))
- Lincoln Public Schools Hotspot Lending Program Expands Home Access ([Jan. 2017](#))
- Norfolk Public Library Lends Hotspots, Starts Community Discussions ([Jan. 2017](#))
- Responsive Countryside: The Digital Age and Rural Communities An Interview with Roberto Gallardo ([Sept./Oct. 2016](#))
- Six Simple Ways to Address Broadband Development ([Sept./Oct. 2016](#))
- Steps You Can Take if You Want Better Broadband Service ([Sept./Oct. 2016](#))
- The group also partnered with the Nebraska Telecommunications Association to organize the Nebraska Broadband Today conferences in 2017 and 2016.
- The [Broadband 101 and 102 sessions](#) at the 2017 Nebraska Broadband Today conference were videotaped by staff of the Office of Chief Information Officer to help community leaders better understand broadband technologies and policy as well as to help them better work with telecommunications providers.
- The Nebraska Library Commission also partnered with the Nebraska Information Technology Commission on an innovative grant proposal to the Institute of Museum and Library Services develop partnerships between schools and libraries to improve internet service in local libraries.

## Metrics

### Broadband Availability



## Action Items

- 1. Action: Support the efforts of communities to address broadband-related development by sharing broadband-related news and highlighting exemplary programs through the Broadband Nebraska newsletter, social media, and other activities through an expanded Nebraska Broadband Initiative.**

**Lead:** NITC Community Council, University of Nebraska-Lincoln Extension and Center for Applied Rural Innovation, Nebraska Public Service Commission, and Nebraska Library Commission

**Participating Entities:** NITC Community Council, Nebraska Public Service Commission, University of Nebraska-Lincoln Extension and Center for Applied Rural Innovation, the AIM Institute, and other interested stakeholders.

**Timeframe:** 2017-2018

**Funding:** Leveraging existing resources

**Targets/Deliverables:**

1. At least 4 issues of Broadband Nebraska Newsletter per year
2. Other partnership activities

- 2. Action: Expand awareness and address the need for digital inclusion and equitable broadband access through educational materials, best practices and community outreach.**

**Lead:** Community Council and Education Council

**Participating Entities:** NITC Community Council, Education Council, Nebraska Broadband Initiative

**Timeframe:** 2017-2018

**Funding:** Leveraging Existing Resources

**Targets/Deliverables:**

1. Develop and share educational materials and profiles of exemplary programs.
2. Work with the Community Council, Education Council and Nebraska Broadband Initiative to develop an outreach program to help communities better understand and address digital equity issues.

**3. Action: Support the efforts of Network Nebraska and the Education Council to address digital equity and to explore partnerships to improve library broadband access.**

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<sup>i</sup> Whitacre, B., Gallardo, R., Strover, S. (March 26, 2013). Broadband's contribution to economic health in rural areas: A causal analysis and an assessment of the 'Connected Nation' program. Retrieved from [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2239876](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2239876)