

September 2017

# Nebraska Broadband

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## NSF grant brings makerspace, collaborative opportunities to Sidney

*By Anne Byers, Nebraska Information Technology Commission*

A new makerspace grant is encouraging learning, inspiring creativity, and building community. 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.

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—Connie Hancock,  
Community Vitality Extension Educator, Nebraska Extension

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Technology, including a telepresence robot and 3D virtual reality, will connect the makerspace in Sidney with experts at the Nebraska Innovation Studio in Lincoln. The makerspace co-laboratory in Sidney will serve as a model for other communities interested in establishing makerspaces and collaborating with the Nebraska Innovation Studio.

“This grant will help Sidney develop an entrepreneurial culture by providing opportunities to co-learn and network and help us learn differently,” said Connie Hancock, community vitality extension educator. “The creativity and the innovation is going to explode.”

The use of technology to facilitate learning is a unique aspect of the grant. Wi-Fi connected telepresence robots will enable experts at the Nebraska Innovation Studio to virtual-

**78.1%**

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ly move around the Sidney site, and to see, hear, and coach learners in Sidney. The use of 3D virtual reality will also enable learners in Sidney and experts at Nebraska Innovation Studio to collaboratively design objects. The project will examine how learning is happening in these spaces.

“Learning in a maker environment is different than learning in a school environment,” said Brad Barker, professor and 4-H youth development specialist who is leading the project. “Students won’t all make keychains. They can choose what they want to make and follow their own interests. Freedom of choice combined with being able to take a deep dive and spend as much time as they want in the space will change the learning experience. If students are interested, it will be easier for them to stick with the learning process.”

The maker learner environment may also encourage more youth, including girls, to pursue STEM careers. “This is great opportunity for females to pursue what they are interested in,” said Barker.

As the core team has been meeting with potential trainers and potential users, the school and library boards, county commissioners, and other stakeholders in Sidney, the response has been positive.

“We are working to help the community to understand the potential of having permanent makerspace in community,” said Hancock. “Community involvement is the key to the success of a makerspace. We need people to be trainers, marketers, champions and participants. We are building a foundation of openness inclusiveness and sustainability. This can’t be based on one person. We need the community as a whole to be involved.”

Equipment is being purchased. Team members at the Nebraska Innovation Studio will calibrate the equipment and will develop training materials. Sometime in October volunteers from Sidney will go to Innovation Studio to be trained to be trainers. Equipment is expected to be delivered to the Sidney Public Library in November. 4-H will develop curriculum for youth which includes using the pieces of equipment and the process of design.

In order to strengthen community building and collaboration, the grant will include community projects. Initial projects will focus on learning how to use the equipment and creating tinkering spaces for the Sidney makerspace. Grant partners are talking to community organizations to identify a larger collaborative project.

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The grant will also strengthen economic development opportunities. “Having access to a co-learning space is definitely going to inspire people as they create and refine prototypes and support their entrepreneurial mindset.” said Hancock. “This will move people to the next level of economic opportunity in ways that they would not have had otherwise. Once you have reinforcement from a network of people, it gets you thinking you can do something, that you can start a business, in a way that you would not have had by yourself.”

For more information, contact Brad Barker, Professor, 4-H Youth Development, 402-472-9008, [bbarker1@unl.edu](mailto:bbarker1@unl.edu) or Connie Hancock, Community Vitality Initiative Educator, Nebraska Extension, 308-254-4455, [chancock1@unl.edu](mailto:chancock1@unl.edu).



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Nebraska by responding to the comments we submitted, identifying and forming partnerships with Nebraska broadband providers, building or leasing infrastructure assets and reaching out to public safety agencies to provide them with information about services, coverage and costs so that these agencies can decide if subscribing to FirstNet/AT&T is beneficial to them.

As FirstNet/AT&T begin their work, Verizon has said that they will be moving forward to compete with FirstNet/AT&T

with a dedicated network and opportunities just for first responder customers.

How these competing networks will play out is uncertain, but generally competition is viewed as good. Perhaps public safety will be the big winners, because, after all, this all started to provide public safety with an opportunity to subscribe to a broadband network that will provide nationwide interoperability. If that happens and it is sustainable, then that is a great thing!

## PSC docket, hearing look at revising NUSF contribution methodology

*By Nebraska Public Service Commission Staff*

In August, the Nebraska Public Service Commission (PSC) held a hearing as part of a docket aimed at revising the Nebraska Universal Service Fund (NUSF) methodology. The NUSF methodology is the means by which the PSC collects contributions that fund state universal service programs. The goal of these programs is to ensure that all Nebraskans have access to quality telecommunications and information services at affordable and comparable rates.

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Through the NUSF, the PSC distributes funds to eligible telecommunications carriers for several programs that advance the goals of universal service. The high-cost program provides support to help ensure that the cost and availability of telecommunications and information services are reasonably comparable between rural and urban areas. The broadband pilot program provided grant funding to extend broadband service to unserved and underserved areas, while the dedicated wireless program provides funding to build towers in unserved and underserved areas. The tele-health program provides funding to connect rural and critical access hospitals to urban hub hospitals, expanding the availability of health care services to rural communities. The Nebraska Telephone Assistance Program assists qual-

ifying low-income individuals with keeping telephone services affordable by lowering monthly service rates. All of these programs advance the declared policy of the state as outlined by the Nebraska Legislature in statute. This policy includes providing access to all Nebraskans at affordable and comparable rates, and contains provisions outlining that the funding mechanisms “should be specific, predictable, sufficient, and competitively neutral to preserve and advance universal service.”<sup>1</sup>

The current NUSF surcharge, at 6.95%, is applied to intrastate retail telecommunications revenues. Changes in offerings of telecommunications providers and shifts in customer preferences have led to declines in money remitted to the NUSF, decreasing at a rate of about 3.9% since 2008. In recent years, the decrease has been more drastic, where remittances to the fund dropped about 12.9% annually. Similar declines are predicted in the new 2017/2018 fiscal year. The docket that was opened proposed looking at other alternatives to the current revenue-based surcharge methodology, including a connections-based contribution

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*The contribution methodology is a critical part of determining how much funding is available to support broadband buildout within rural Nebraska.*

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mechanism, where the surcharge would be assessed to every assessable “connection” to the network. Data from Federal Communications Commission (FCC) Form 477 reports indicate that the number of connections as defined

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by the FCC has been much more stable over time than assessable intrastate revenues.

The process for revising the NUSF methodology is ongoing, but the recent hearing included testimony on whether the methodology should move to a connections-based mechanism or remain on the current revenue-based mechanism. Representatives from the PSC, cable associations, mobile wireless associations, and wireline providers provided testimony regarding the issue. The first step within this docket, and as a result of the hearing, is to determine whether or not to move to a connections-based methodology. If a connections-based methodology is selected, the specific definition of a connection must be determined, and

subsequent steps would likely include determining the actual methodology used to assess connections, and the overall budget of the NUSF.

The contribution methodology is a critical part of determining how much funding is available to support broadband buildout within rural Nebraska. While there are still many steps that need to be completed in the contribution-reform process, significant progress is being made towards ensuring that a predictable and sufficient mechanism is in place to continue the goals of universal service in Nebraska.

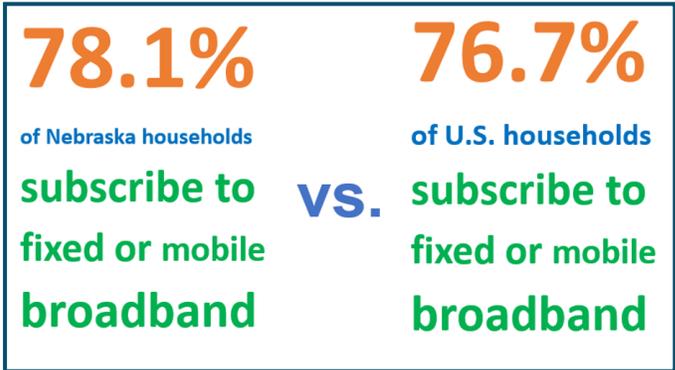
<sup>1</sup>Nebraska Revised Statutes – Chapter 86, Section 323, Legislature; declaration of policy

## New reports examine broadband availability, speed, and adoption

Here are highlights from several new reports on broadband availability, speed, and adoption.

### 78% of Nebraska households subscribe to fixed or mobile broadband

Approximately 78% of Nebraska households subscribed to either fixed or mobile broadband internet service in 2015. In comparison, 76.7% of households in the U.S. had either a fixed or mobile broadband subscription according to a new [American Community Survey report](#) from the U.S. Census Bureau. New Hampshire had the highest broadband subscription rate at 84.5%. Mississippi had the lowest rate at 61.0%. The table below shows the subscription rates for Nebraska, neighboring states, and the United States.



Geographical Area	% of Households with Broadband Subscriptions: 2015
Colorado	83.0%
Nebraska	78.1%
Wyoming	77.8%
UNITED STATES	76.7%
Kansas	76.2%
South Dakota	75.3%
Iowa	75.0%
Missouri	73.3%

The report also examined “high connectivity” households—households with a desktop or laptop, a handheld computer or smart phone, and a broadband internet subscription—and “hand-held only” households—households with a handheld computer or smart phone and a broadband internet subscription. Overall, 62% of households in the U.S. were highly connected. Eight percent of households headed by someone aged 15 to 34 were hand-held only households. Black, Hispanic, and low-income households were also more likely to be hand-held only households.

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## Omaha has faster fixed broadband than Lincoln; Lincoln has faster mobile broadband

A new report from [Ookla](#) using data from [speedtest.net](#) found that the average fixed broadband speed during the first two quarters in 2017 was 64.17 Mbps and the average mobile download speed was 22.69 Mbps. Both Omaha and Lincoln had average fixed broadband download speeds below the U.S. average. Omaha's average download speed was 57.82 Mbps with Cox ranking as the fastest ISP. Lincoln's average download speed was 53.71 Mbps with Allo as the fastest ISP.

Fixed Broadband			
Location	Download	Upload	Fastest ISP
U.S.	64.17	22.79	XFINITY
Omaha	57.82	17.78	Cox
Lincoln	53.71	24.15	Allo

Lincoln's average mobile download speed of 24.1 Mbps put Lincoln ahead of the U.S. average of 22.69 Mbps. Omaha's average mobile download speed of 20.38 Mbps was below the U.S. average.

Mobile Broadband			
Location	Download	Upload	Fastest ISP
Lincoln	24.1	9.13	Verizon Wireless
U.S.	22.697	8.51	T-Mobile
Omaha	20.38	8.32	T-Mobile

## Brookings report ranks Omaha 79<sup>th</sup> in broadband subscription, availability

A new report from the Brookings Metropolitan Policy Program examines broadband availability and subscription rates in America's 100 largest metropolitan areas. The report finds that nearly every large metro area includes neighborhoods with subscription rates below 40 percent. Geography and income levels are the two greatest drivers of broadband subscription gaps with lower-density, more agri-

culturally focused regions and neighborhoods with lower incomes and lower educational attainment levels lagging behind.

The report ranked Omaha 79<sup>th</sup> in broadband availability and subscription among the 100 largest metropolitan areas. Omaha ranked above many Midwestern metropolitan areas, including Wichita, St. Louis, Madison, Kansas City, Des Moines, Oklahoma City and Tulsa. The interactive map shows that availability is an issue for the rural areas on the outskirts of the Omaha metropolitan area, but that adoption is an issue in many Omaha neighborhoods with a poverty rate above 20%.

Explore the data and report at <http://brook.gs/2ww3Ma5>

## 89% of Americans can get broadband at 25 Mbps

A [report from USTelecom](#) using mid-2016 FCC data found that 89% of Americans could get broadband at 25 Mbps down and 3 Mbps up. Broadband of 100 Mbps down and 10 Mbps up was available to 68% of Americans, and 9% had 1 gigabit per second service available.

Comparing the mid-2016 data from the USTelecom report with mid-2014 data from the federal broadband map ([broadbandmap.gov](#)), we can see an increase in availability at 25 Mbps, 50 Mbps down, 100 Mbps down, and 1 gigabit per second down. There are no improvements in availability at the lowest speed tiers, however. See the table below:

Speed	Mid-2014 Broadbandmap.gov	Mid-2016 USTelecom*
3 Mbps download	95%	95%
10 Mbps down	93%	93%
25 Mbps down	85%	89%
50 Mbps down	83%	88%
100 Mbps down	65%	68%
1 gigabit per second	8%	9%

\*USTelecom also included minimum upload speeds in their analysis.

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## Upcoming Meetings

**NITC Community Council**—  
Wednesday, Oct. 4, Varner Hall--  
Videoconferencing Room, 3835  
Holdrege, Lincoln from 1:30 p.m. to  
4:00 p.m. CT

**NITC eHealth Council**—Thursday, Oct. 12, Varner Hall—  
Board Room, 3835 Holdrege, Lincoln from 9:30 a.m. to  
noon CT.

**NITC**—Thursday, location TBA, November 9 from 10:00  
a.m. to noon CT.

For more information on meetings, please go to the NITC  
website at [nitc.nebraska.gov](http://nitc.nebraska.gov).

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to: <http://nitc.ne.gov/news/community/index.html>



The **Nebraska Information Technology Commission (NITC) Community Council** ([nitc.ne.gov](http://nitc.ne.gov)) promotes the adoption and utilization of broadband technologies in Nebraska and provides recommendations to the NITC.

**Twitter:** @NITCcommunity1

**Facebook:** <https://www.facebook.com/NITCcommunity/>



The **Nebraska Broadband Initiative** ([broadband.nebraska.gov](http://broadband.nebraska.gov)) promotes the adoption and utilization of broadband in Nebraska. Project partners include the Nebraska Public Service Commission, University of Nebraska-Lincoln, Nebraska Information Technology Commission, Nebraska Department of Economic Development, and AIM.

## Make plans to attend Nebraska's premier broadband conference

Nebraska's premier conference on broadband availability, adoption and broadband-related development will be held Oct. 26, 2017 at the Cornhusker Marriott Hotel in Lincoln.

Nebraska Broadband Today! will bring together economic developers, community leaders, telecommunications providers, and others to better understand how communities and telecommunications providers can work together.

A series of sessions on Broadband 101, 102, and 103 will help participants:

- Increase understanding and awareness of broadband policies and their impact on broadband deployment as well.
- Increase knowledge and understanding of how to find solutions and advocate for your community/business/community anchor institutions.

Other sessions will cover the recruitment of the Facebook data center to Sarpy County, student equity of access, and makerspaces in public libraries.

Visit [www.NTAOnline.net](http://www.NTAOnline.net) to view the agenda and to register.

The conference is sponsored by the Nebraska Telecommunications Association in partnership with the Nebraska Broadband Initiative.



**OCTOBER 26, 2017**

**CORNHUSKER MARRIOTT HOTEL | LINCOLN, NE**

