

# NEBRASKA

A stylized landscape graphic at the bottom of the page. It features a large, solid blue area at the bottom, representing water or a field. Above this, there are rolling hills in shades of yellow and olive green. A thin, light blue line is visible on the right side, possibly representing a distant horizon or a path.

## **Rural Broadband Task Force**

Findings and Recommendations

October 2023



# Rural Broadband Task Force Members



**Ed Toner, Task Force Chair**  
Chief Information Officer  
State of Nebraska and  
Chair, Nebraska Information  
Technology Commission



**Senator Mike Moser**  
Chair, Transportation and  
Telecommunications  
Committee, Nebraska  
Legislature



**Senator Bruce Bostelman**  
Nebraska Legislature



**Dan Watermeier**  
Commissioner  
Nebraska Public Service  
Commission



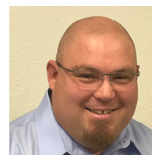
**Dave Dearmont**  
Research Division  
Administrator  
Nebraska Department of  
Economic Development



**Sherry Vinton**  
Director  
Nebraska Department of  
Agriculture



**Zachary Hunnicutt**  
Farmer  
Hunnicutt Farms



**Tom Shoemaker**  
President  
Pinpoint Communications



**Gwen A. Kautz**  
CEO/General Manager  
Dawson Public Power District



**Andrew Whitney**  
Director of Virtual Platforms  
Bryan Health



**Andrew Buker**  
Executive Director of  
Infrastructure Services  
University of Nebraska



**Ron Cone**  
Director of Network Information  
Services  
ESU 10

## Staff

**Anne Byers** Nebraska Information Technology Commission Office of the CIO

**Lori Lopez Urdiales** Nebraska Information Technology Commission Office of the CIO

**Cullen Robbins** Nebraska Public Service Commission

# Contents

<b>Executive Summary</b>	4
<b>Introduction</b>	8
<b>Findings and Recommendations</b>	10
Broadband Funding	10
Broadband Availability in Nebraska	16
Broadband Data and Mapping	21
Alternative Technologies and Providers	23
Nebraska Universal Service Fund and Reverse Auction	24
Public-Private Partnerships	28
Agriculture	31
Digital Inclusion, Homework Gap and Leveraging E-Rate Funding	36
<b>References</b>	47
<b>Photo Credits</b>	48
<b>Appendix</b>	
I. Nebraska Revised Statute 86-1102	49
II. Nebraska Rural Broadband Taskforce Subcommittee Members	51
III. Tables	52

Copies of the executive summary, full report, and appendices are available at:  
<https://ruralbroadband.nebraska.gov>



# Executive Summary

The Rural Broadband Task Force was created to “review issues relating to availability, adoption, and affordability of broadband services in rural areas of Nebraska” by LB 994 in 2018. The task force is chaired by Ed Toner, CIO for the State of Nebraska and Chair of the Nebraska Information Technology Commission. This is the third report presenting the task force’s findings and recommendations as required by LB 994.

## Key Findings and Recommendations

### Broadband Funding

Over \$130 million in funding has been awarded in Nebraska for broadband deployment projects through three state-administered grant programs since 2020, connecting over 39,000 unserved and underserved households.

The Broadband Access, Equity and Deployment (BEAD) Program will provide \$405 million in broadband deployment funding for Nebraska. The Nebraska Broadband Office is administering the funding and anticipates opening funding opportunities in 2024.

### Broadband Availability

The Nebraska Broadband Office has identified 37,166 underserved locations and 66,905 unserved locations in Nebraska. Approximately 99% of the unserved and underserved locations are located in rural areas. The five counties with the most unserved locations are Knox (2,655 locations), Saunders (2,075 locations), Platte (2,057 locations), Holt (2,023 locations), and Custer (1,935 locations).

### Broadband Data and Mapping

The Nebraska Broadband Office released a [new broadband map](#) in September 2022 which will be used to identify unserved and underserved locations which will be eligible for BEAD broadband deployment funding. The Nebraska Broadband Office’s [Initial Proposal to the National Telecommunications and Information Agency Volume I](#) for the BEAD Program lays out a process to challenge if a location is considered “served” or “unserved.”

### Key Recommendations

- Encourage the Nebraska Broadband Office to collaborate with the League of Nebraska Municipalities, Nebraska Association of County Officials and the Nebraska Regional Officials Council to inform local officials about the challenge process and to provide assistance to them in organizing and submitting challenges.
- Encourage the Nebraska Broadband Office to make the challenge process as easy as possible for local governments, economic development districts and non-profits.

### Alternative Technologies and Providers

Fixed wireless technologies using mid-band spectrum, low Earth orbit satellite service, and Fixed Wireless Access service offered by cellular providers are three technologies that may be suited for rural areas.

### Nebraska Universal Service Fund

The Nebraska Universal Service Fund (NUSF) provides support to price cap (large, multi-state carriers), rate of return (smaller rural carriers), and mobile wireless carriers in Nebraska. A total of \$34.2 million was made available for projects in high cost areas through the NUSF in 2023. Since 2019, over 21,000 households either have been connected or are in the process of being built to through projects funded through the Nebraska Universal Fund.

In order for providers to make decisions about broadband infrastructure investments, support from the NUSF should be sustainable and predict-

able. The total remittances to the NUSF have been stable between 2019 and 2023 due to modifications to the remittance methodology. Even with steps to stabilize the fund, however, the size of the fund is not sufficient to provide support for fiber deployment to all Nebraska residences and businesses.

### Key Recommendations

- Support and monitor the progress of the NUSF-139 docket to reform the NUSF high cost program, and support provisions to ensure the costs of maintaining broadband networks are supported.
- Coordinate the distribution of NUSF support with other funding sources to avoid duplication of funding and to target funding to areas most in need of support.

### Public-Private Partnerships

Counties, municipalities, and public power districts and cooperatives can facilitate broadband deployment by partnering with telecommunications providers on privately funded or grant-funded projects. Partnerships between counties or municipalities and telecommunications providers can take many forms, including:

- Providing a match for grant funded projects
- By deploying conduit
- By waiving fees or expediting permitting
- By entering into revenue neutral agreements

Public power districts and cooperatives could also play a role in advancing the deployment of broadband services in rural Nebraska through public-private partnerships.

### Key Recommendations

- Encourage the formation of public private partnerships with revenue neutral agreements.
- Encourage each county or region to have a broadband coordinator or champion to facilitate local challenges for BEAD eligible locations, as well as facilitate other broadband planning and coordination efforts.

- Encourage local and regional broadband planning. Each community, county or region is different and will likely require a unique solution. Bringing stakeholders together to develop a local, county or regional plan can lay the groundwork for public-private partnerships.

### Agriculture

Farmers and ranchers need upload speeds of 50-100+ Mbps to transfer the immense amount of data generated to the cloud. In the future even greater upload speeds may be required.

Different methods of connectivity are required for agriculture, including:

- Low-bandwidth connectivity for devices like sensors or monitors often called Internet of Things (IoT) devices
- High speed, centralized broadband with symmetrical gigabit connectivity for targeted agricultural operational headquarters such as a farm or ranch operations center
- High-speed decentralized coverage over large agricultural areas

Limited federal funding sources are available for providing wireless connectivity to farm and ranch lands. Senator Deb Fischer and Senator Ben Ray Lujan introduced the Linking Access to Spur Technology for Agriculture Connectivity in Rural Environments (LAST ACRE) Act in July 2023 to expand wireless high-speed broadband internet access on farms and ranches.

Recognizing the importance of precision ag, the Nebraska legislature created the Precision Agriculture Infrastructure Grant (PRO-AG) Program through LB 1144 in 2022. The Legislature appropriated \$1 million a year for fiscal years 2023-2024 and 2024-2025 for the program.

As farmers and ranchers are increasing their reliance upon next generation precision farming applications, the risk of cyberattacks is also increasing.

### Key Recommendations

- Review the initial round of the PRO-AG grant program to determine the impact and effectiveness of the program and if adjustments need to be made.

- Support federal funding for the deployment of 100/100 Mbps wireless connectivity for farm and ranch lands through the LAST ACRE Act or other programs.
- Encourage the Nebraska Farm Bureau, FBI Omaha Field Office and other stakeholders to build on the successful Agricultural Threats Conference and to continue to educate farmers, ranchers, food processors, suppliers and agribusinesses on cybersecurity best practices.
- Support federal funding for the deployment of 100/100 Mbps wireless connectivity for farm and ranch lands through the LAST ACRE Act or other programs.

### **Digital Inclusion, Homework Gap and Leveraging E-Rate Funding**

The State of Nebraska has been engaging in a statewide digital opportunities planning process led by the Nebraska Office of the CIO/Nebraska Information Technology Commission with funding from the National Telecommunications and Information Administration. States that complete digital opportunities plans will be able to apply for an estimated minimum of \$7 million over 5 years to implement their plans and set up a state grant program.

To be fully connected in today's digital economy and society, most individuals need two kinds of connectivity: mobile and fixed connectivity. Most also need two kinds of devices: a mobile device and a large screen devices such as a laptop, tablet or desktop computer. Approximately 40% of rural Nebraska residents have no connectivity or only one type of connectivity versus 26% of residents of urban counties.

Older adults, those with less than a high school education, those with low incomes, and those who do not speak English well are the demographic groups least likely to have internet access at home. Rural areas with a high percentage of these demographic groups may be especially challenged.

Libraries are key community partners in providing internet and computer access to students and the general public as well as assistance with technology.

- 177 or 65% of Nebraska's 273 public libraries have fiber optic connections
- 95 or 41% of Nebraska libraries have maker-spaces
- 223 or 97% provide public Wi-Fi Access
- 19 libraries have hotspot lending programs, loaning out 151 hot spots.<sup>1</sup>

A discount of \$30 per month for low-income households is currently being provided through the FCC Affordable Connectivity Program (ACP). Nearly 89,000 households out of 284,439 eligible households (31%) in Nebraska have enrolled in the program. Funding for the Affordable Connectivity Program is expected to be exhausted in April 2024 unless Congress reappropriates funding for the program.

### **Key Recommendations**

- Support efforts to build awareness of and support for digital inclusion efforts in the state, including the implementation of the state's digital opportunities plan and a state digital opportunities grant program.
- Support the appropriation of continued funding for the Affordable Connectivity Program.
- Support outreach efforts to promote the Affordable Connectivity Program by providing social capital and connecting organizations and government agencies for the most effective collaboration.
- Support efforts to improve broadband access in rural Nebraska libraries, senior centers, and community centers.
- Support efforts to build capacity in small, rural libraries, senior centers, and community centers in Nebraska to engage in digital inclusion activities.

## Key Definitions and Acronyms

**Broadband**—High-speed internet access. Speed definitions vary by program. The FCC currently defines broadband services as 25 Mbps down and 3 Mbps up or greater, but has proposed changing the definition to a minimum of 100/20 Mbps. Many programs define broadband as 100 Mbps down and 20-100 Mbps up or greater.

**Broadband Serviceable Location**—A business or residential location in the United States at which mass-market fixed broadband Internet access is, or can be installed.

**Census Block**—Census blocks are statistical areas that can be as small as 1/1,000 of a square mile up to 200 square miles.

**Connect America Fund (CAF)**—The FCC's universal service high cost program which provides support to carriers for broadband.

**Competitive Local Exchange Carrier (CLEC)**—A telecommunications provider competing with the incumbent local exchange carrier (ILEC).

**Fixed Broadband**—Any broadband transmission method to a home or business including Digital Subscriber Line (DSL), cable modem, fiber, fixed wireless, and satellite. Fixed broadband does not include mobile (cellular) broadband.

**Fixed Terrestrial Broadband**—Any broadband transmission method to a home or business including Digital Subscriber Line (DSL), cable modem, fiber, and fixed wireless. Fixed terrestrial broadband does not include mobile (cellular) broadband and satellite.

**Form 477**—Providers of fixed broadband (which includes providers of services via DSL, coaxial cable, fiber optic cable, fixed wireless, and satellite) report the type of technology, maximum advertised speeds in Mbps up and down, and whether the service is residential, business, or both by census block to the FCC using Form 477.

**Incumbent Local Exchange Carrier (ILEC)**—A local telephone company which provided landline service before the market was opened to competitive local exchange carriers.

**Price Cap Carriers**—Include the three largest incumbent exchange carriers in the state: CenturyLink (also known as Lumen Technologies), Frontier (also known as Citizens Telecommunications of Nebraska), and Windstream.

**Rate of Return Carriers**—Smaller, rural incumbent local exchange carriers.

**Rural Area**—Open countryside with population densities less than 500 people per square mile or places with fewer than 2,500 people.

**Rural Digital Opportunity Fund (RDOF)**—The FCC's reverse auction of universal service support. The first phase ended on November 25, 2020.

**Terrestrial Broadband**—Land-based methods of broadband transmission (DSL, cable modem, fiber, fixed wireless and mobile wireless). Terrestrial broadband does not include satellite.

**Unserved Areas or Locations**—The Rural Broadband Task Force defines unserved areas as areas with internet service at less than 25 Mbps down/3 Mbps up. The BEAD program defines unserved locations as locations lacking internet service of 25 Mbps down/3 Mbps up.

**Underserved Areas or Locations**—The Rural Broadband Task Force defines underserved areas as areas which have internet service at 25 Mbps down/3 Mbps up or greater but less than 100 Mbps down/20 Mbps up. The BEAD program defines underserved locations as locations lacking internet service of 100 Mbps down/20 Mbps up.





# Introduction

*Broadband and telecommunications service in rural areas of the state should be comparable in download and upload speed and price to urban areas.*

—Vision of the Rural Broadband Task Force, adopted September 24, 2018

The Rural Broadband Task Force was created to “review issues relating to availability, adoption, and affordability of broadband services in rural areas of Nebraska” by LB 994 in 2018. The task force is chaired by Ed Toner, CIO for the State of Nebraska and Chair of the Nebraska Information Technology Commission. This is task force’s third report presenting its findings and recommendations as required by LB 994.

**Importance of Broadband.** The COVID-19 pandemic underscored the importance of broadband to the state’s businesses, consumers, agricultural producers, students, educators, patients and health care providers. Households with broadband connections at home were better able to learn, access health care, and work remotely during the pandemic.

Rural broadband also impacts Nebraska’s economy and rural communities. Rural broadband availability and adoption are associated with:

- Attraction and retention of millennials
- Greater economic growth
- Attraction of new firms
- Higher household incomes
- Small business growth<sup>2</sup>

Next generation precision agriculture technologies which require connectivity can reduce costs for farmers and ranchers and yield more revenue. Here are three examples of the potential economic impact of connected agricultural technologies:

- Microclimate monitoring through satellites or on-site weather stations can reduce crop loss by up to 80%.

- Drone imagery or monitors in the field can collect nutritional and growth data used to calculate optimal inputs, saving \$12 per acre on corn farms.
- Ranchers using online cattle auctions can receive 65% more revenue per unit of beef.<sup>3</sup>

**Definitions and Prioritization.** In order to clarify terms and prioritize those areas most in need of assistance, the task force adopted the following definitions and priorities:

**Rural areas** are defined as open countryside with population densities less than 500 people per square mile or places with fewer than 2,500 people.

**Unserved areas** are defined as areas with internet service at less than 25 Mbps down/3 Mbps up.

**Underserved areas** are areas which have internet service at 25 Mbps down/3 Mbps up or greater but less than 100 Mbps down/20 Mbps up.

The task force recommends that policies and available funding target areas based on the following prioritization:

1. Unserved Areas Outside City/Town/Village Limits



2. Unserved Areas Within City/Town/Village Limits
3. Underserved Areas Outside City/Town/Village Limits
4. Underserved Areas Within City/Town/Village Limits

The task force's definition of rural recognizes that some efforts—particularly those involving public-private partnerships and digital inclusion—may require the participation of both small communities and surrounding areas outside municipal boundaries. The definition also recognizes that some small communities may be unserved or underserved.

The Nebraska Public Service Commission allocates high cost funding from the Nebraska Universal Service Fund using a more specific definition of rural. The Nebraska Public Service Commission defines rural areas as rural areas which meet the following criteria:

- Census blocks that contain fewer than 20 households with a density below 42 households per square mile
- Census blocks not classified as a city or village per census
- Census blocks not within census-designated city limits

The use of this definition to distribute NUSF fund is consistent with the task force's prioritization.



*Farm buildings near Arnold, Nebraska*

**Photo Credit:** Anne Byers, 2023



# Broadband Funding

Since the COVID-19 pandemic, the availability of federal and state funding for broadband deployment and digital equity has completely changed the broadband policy landscape.

## State-Administered Broadband Deployment Grant Funding

**State-administered broadband grant programs have facilitated broadband deployment in Nebraska.** Over \$130 million in funding has been awarded in Nebraska for broadband deployment projects through three state-administered grant programs since 2020, connecting over 39,000 unserved and underserved households. Grant programs such as the Broadband Bridge and BEAD grant programs are essentially a form of public-private partnerships in which public funds are used to provide

### Key Findings

- Over \$130 million in funding has been awarded in Nebraska for broadband deployment projects since 2020, connecting over 39,000 unserved and underserved households.
- The Broadband Access, Equity and Deployment (BEAD) Program will provide \$405 million in broadband deployment funding for Nebraska.

funding to telecommunications companies or public-private partnerships for broadband deployment.

**Remote Access Rural Broadband Grant Program.** Nebraska's first broadband grant program, the Remote Access Rural Broadband Grant Program,

demonstrated the impact of state broadband grant programs on broadband deployment. The program, which was funded by the CARES Act and administered by the Nebraska Department of Economic Development, provided \$29.5 million in funding in 2020 for 60 projects which brought broadband to 17,600 households.

### Nebraska Broadband Bridge Grant Program.

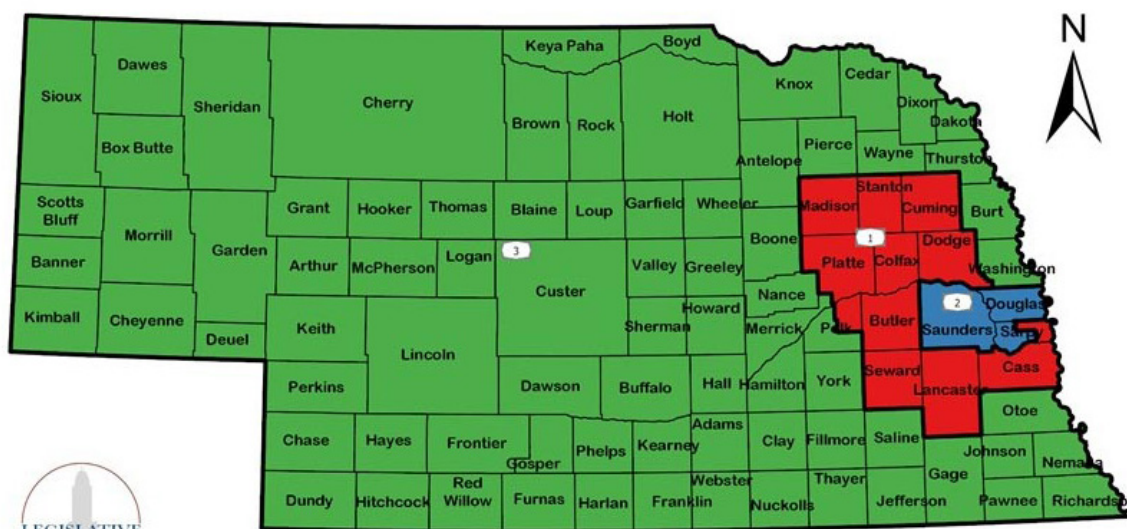
With the support of then Governor Ricketts, the Nebraska Legislature established the Nebraska Broadband Bridge grant program by enacting LB 388 in 2021 and appropriated \$20 million annually through 2024. The program is administered by the Nebraska Public Service Commission. In 2021 and 2022, the Nebraska Public Service Commission awarded nearly \$39.6 million in funding to connect 3,943 unserved households and 11,135 underserved households. Even though projects connecting unserved areas are prioritized over projects connecting underserved areas, the match requirement of 50% in 2021 limited the number of applications for unserved areas. LB 1144 reduced the match to 25% in high cost areas which resulted in an increase in the number of unserved locations connected. Applications for the third Broadband Bridge program were due in July 2023 and are expected to be announced on Tuesday, December 5, 2023.

Nebraska Broadband Bridge Grants				
Year	Funding Source	Funding Amount	Unserved Households	Underserved Households
2021	State General Funds	\$19,217,657.00	1,765	10,875
2022	State General Funds	\$20,370,449.00	2,178	260
Total		\$39,588,106.00	3,943	11,135
2023	State General Funds	Approx. \$20,000,000	TBA Dec. 5, 2023	TBA Dec. 5, 2023

**ARPA Capital Projects Broadband Funding.** Nebraska was allocated \$128.7 million in funding from the American Rescue Plan Act for capital projects “to carry out critical capital projects directly enabling work, education, and health monitoring, including remote options, in response to the public health emergency with respect to the Coronavirus Disease (COVID-19).” LB 1024 which was passed in 2022 allocated Capital Projects funding by Congressional District. Approximately \$87.7 million was allocated to Congressional Districts 1 and 3 for broadband deployment projects. Grant awards in Congressional District 3 were restricted to projects within cities of the second class and villages. No match was required, but applicants providing a match received additional points in the evaluation of proposals.

## United States House of Representatives - LB 1 (2021)

### CONG21-39002



Created by Legislative Research  
Source: US Census Bureau  
Date Created: 1/3/2022

CONG21-39001 Introduced  
Placed on General File by Committee  
Committee Adoption, 5-4  
Amended by CONG21-39002  
Passed 35-11-3 on Final Reading

District	Deviation
1	0%
2	0%
3	0%

0 12.5 25 50 75 100  
Miles

The Capital Projects broadband deployment funding is administered by the Nebraska Public Service Commission. The first round of grants were awarded on June 27, 2023. On May 26, 2023, LB 683 was approved by the Governor and removed the restriction that Capital Projects Fund grant projects awarded in Congressional District 3 be within cities of the second class and villages. The Nebraska Public Service Commission anticipates opening a second round of funding in 2024 for Congressional District 3.

Capital Project Fund Broadband Deployment Grants					
Year	Program	Funding Source	Funding Amount	Unserved Households	Underserved Households
2023	Capital Projects Congressional District 1	American Rescue Plan	\$40,311,361.47	627	2,387
2023	Capital Projects Congressional District 3	American Rescue Plan	\$21,033,925.62	173	3,562
TOTAL	\$61,345,287.09	800	5,949		
2023-2024	Capital Projects Congressional District 3	American Rescue Plan	Approx. \$19 million	TBD	TBD

The remaining \$35 million in Capital Projects funding was allocated for multi-purpose community centers which enable work, education and health monitoring in qualified census tracts in Omaha. The U.S. Department of the Treasury recently approved Nebraska's plan for this program. The Nebraska Department of Economic Development will administer the grant program.

**The Broadband Access, Equity and Deployment (BEAD) Program will provide significant broadband funding for Nebraska.** In late June 2023, the National Telecommunications and Information Administration announced the final allocations of broadband deployment funding for states through the BEAD program. Nebraska will receive \$405 million for broadband deployment projects. BEAD funding must first be used to fund projects which connect unserved locations. Only after all of the unserved locations have been connected, can funding be used for underserved locations.

The BEAD grant program will be administered by the Nebraska Broadband Office which was established by executive order by Governor Jim Pillen and codified by LB 683 in 2023. The Nebraska Broadband Office submitted a [5-Year Action Plan for the BEAD program](#) in August 2023 and released a [new broadband map](#) and a draft of the [initial proposal volume 1](#) in mid-September 2023. Although the new broadband mapping process is an improvement over the previous broadband mapping process which relied on reporting by census blocks, there are concerns that some providers have overstated available speeds to some locations. In order to clarify the mapping process providers should be required to provide address level reporting. If a provider reports providing service of 25/3 to a location, that area is ineligible for BEAD funding unless a challenge is filed and upheld. The initial proposal lays out plans for a process to challenge the determination that a location is unserved or underserved. The challenge phase is tentatively planned for January 3 to February 2, 2024. The Nebraska Broadband Office will accept speed tests as evidence for substantiating challenges and rebuttals.

### Other Federal Broadband Funding

**Enhanced A-CAM.** On July 23, 2023, the FCC released a Report and Order creating the Enhanced Alternative Connect America Cost Model. Rural telecommunications carriers which elect to participate in the program commit to provide 100/20 broadband (though not necessarily with fiber) to every location in all of its study areas in the state.



In exchange, their subsidies from the FCC's Universal Service Fund would be extended by 10 years. On October 4, 2023, the FCC released a list of carriers accepting Enhanced A-CAM Support. The following carriers in Nebraska have accepted Enhanced A-CAM support:

- Arapahoe Telephone Company
- BW Telcom
- Great Plains Communications
- K & M Telephone Company
- Nedelco
- Northeast Nebraska Telephone Company
- Pinpoint Holdings, Inc.
- Consolidated Companies, Inc.
- Southeast Nebraska Communications, Inc.
- American Broadband Holding Company
- The Nebraska Central Telephone Company
- DTC Holding Company
- USConnect Holdings, Inc.

This funding program has the potential to significantly impact broadband availability in Nebraska. Telecommunications Consultant Mike Conlow estimated that A-CAM areas in Nebraska included 24,776 unserved and underserved locations. Areas receiving Enhanced A-CAM funding would not be eligible for BEAD funding. This will help BEAD funding go further toward connecting every location in Nebraska.

### Precision Ag Funding

Recognizing the importance of precision ag, the Nebraska Legislature created the Precision Agriculture Infrastructure Grant (PRO-AG) Program through LB 1144 in 2022. The Legislature appropriated \$1 million a year for fiscal years 2023-2024 and 2024-2025 for the program. Half of the funding would be allocated for wireless farm connectivity projects. The remaining half would be allocated for:

- 1) On farm traceability solutions;

- 2) Products that improve soil health, water management tools and sensors that facilitate judicious use of water resources, and products that promote the use of water efficiency seed technologies that lower agriculture's water, carbon, and nitrate footprint; and
- 3) Products that use autonomous solutions in agricultural machinery, including, but not limited to, grain carts, spreaders, precision drone scouting, and scouting robots.

The Nebraska Public Service Commission opened a docket (BEAD-1/C-5529) on August 16, 2022 to implement the Act. The most recent order was issued on September 19, 2023. The Commission expects to open a grant round before the end of 2023.

### Digital Equity Funding

With \$600,000 in funding from the NTIA State Digital Equity Planning Grant Program, the State of Nebraska is developing a plan to ensure Nebraskans have internet connectivity, devices such as laptops and smartphones, and the skills to meaningfully use internet technologies. The grant is also promoting the use technologies such as telehealth and precision agriculture which have the potential to significantly impact the lives of Nebraskans and the state's economy.

The Nebraska Information Technology Commission (NITC)/Office of the CIO is leading the planning effort with the assistance of the state's regional economic development districts and the Nebraska Library Commission. The one-year grant began on December 1, 2022. States which complete plans can apply for \$7 million or more in funding over 5 years to implement a state digital access, skills and opportunities grant program.

### Tribal Funding

Several federal programs are providing broadband funding to tribal governments. The following tables show funding received by tribal governments in Nebraska.

## Federal Tribal Broadband Awards

Omaha Tribe of Nebraska			
Funding Program	NTIA Tribal Broadband Connectivity Program	NTIA Middle Mile Program	Treasury Capital Projects
Grant Funding	\$3,753,450.75	\$36,374,797.00	\$167,504
Project Description	The Broadband Infrastructure Deployment project proposes to install fiber to directly connect 19 unserved community anchor institutions, deploy a wireless network to connect 710 unserved Native American households and 12 Native American businesses with fixed wireless to the home 25 Mbps/3 Mbps service, and construct a data server building to house IT equipment.	The Omaha Tribe of Nebraska and its 100% Tribally owned subsidiary Quick Current LLC have proposed a project to deploy a fiber-based middle mile network to cover currently unserved and underserved Tribal and adjacent rural areas in eastern Nebraska and western Iowa with a specific focus on providing Middle Mile infrastructure and services to the tribal and surrounding areas of The Omaha Tribe of Nebraska and Iowa and the Winnebago Tribe of Nebraska and Iowa. The network will consist of 272 route miles of new fiber, 146 route miles of IRU dark fibers.	Funds will be used to renovate a multipurpose community facility to provide internet access.

Nebraska Indian Community College		
Funding Program	NTIA Connecting Minority Communities	NTIA Tribal Broadband Connectivity Program
Grant Funding	\$ 2,938,816.00	\$1,243,000.00
Project Description	Nebraska Indian Community College's "Tribal Broadband Wireless Expansion" project aims to bridge the digital divide for its students, the majority of whom are Native American. There are four main project activities: NICC will hire four key staff to significantly expand the school Information Technology department; increase campus cybersecurity; obtain and distribute laptops and hotspots for students and for select in-need community stakeholders; and purchase software for improved distance learning. On each campus, NICC will also build a One Button Studio, a simplified recording studio that gives users the ability to create a high-quality video recording.	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 1,272 unserved Native American households with fixed wireless to the home service of at least 25 Mbps/3 Mbps.

Ponca Tribe of Nebraska		
<b>Funding Program</b>	NTIA Tribal Broadband Connectivity Program	Treasury Capital Projects
<b>Grant Funding</b>	\$500,000.00	\$167,504
<b>Project Description</b>	This Planning, Engineering, Feasibility, and Sustainability project will enable network design and planning activities, including technical support for the development of deployment agreements with interconnection partners. These activities are necessary intermediate steps for the future deployment of the OSNI Ponca broadband network and its goal of connecting every household within the OSNI Ponca tribal lands with 1 Gbps service.	Funds will be used to purchase technology that enables Tribal members to access the internet.

Santee Sioux Nation		
<b>Funding Program</b>	Tribal Broadband Connectivity Program	Treasury Capital Projects
<b>Grant Funding</b>	\$500,000.00	\$167,504
<b>Project Description</b>	This project will deploy a portion of the 40 2.5 GHz channels for 25/3 Wireless Internet Service to provide Telehealth, Distance Learning, and other commercial LTE solutions and wireless services to the Tribal members living on Tribal land in Knox County.	Funds will be used to renovate a multipurpose community facility to provide internet access.

Winnebago Tribe of Nebraska		
<b>Funding Program</b>	Tribal Broadband Connectivity Program	Treasury Capital Projects
<b>Grant Funding</b>	\$35,252,376.44	\$167,504
<b>Project Purpose/ Type</b>	The Broadband Infrastructure Deployment project proposes to install fiber directly connecting 602 unserved Tribal households, 40 unserved Tribal businesses, and 16 unserved Tribal community anchor institutions with 100/100 Mbps qualifying broadband service.	Funds will be used to deploy fiber to connect Tribal-owned buildings, enhancing broadband access for the entire community.



# Broadband Availability in Nebraska

*Determine how Nebraska rural areas compare to neighboring states and the rest of the nation in average download and upload speeds and in subscription rates to higher speed tiers, when available.*

—Nebraska Revised Statutes 86-1102(3)(a)

**Note:** Due to changes in the FCC’s broadband reporting and mapping processes, comparing broadband and fiber availability data from 2022 to earlier years should be done with caution.

## Findings

**Fiber broadband availability in Nebraska has increased significantly, with 56.2% of households having fiber broadband available.** Nebraska ranks 3<sup>rd</sup> out of the 50 states in fiber broadband availability and 1<sup>st</sup> among our neighboring states.<sup>4</sup>

Percent of Residences with Fiber 100 Mbps 20 Mbps Available	
December 2022, FCC Broadband Map	
Geography	Percent of Residences
Nebraska	56.2%
South Dakota	43.7%
Iowa	45.3%
Kansas	47.3%
Missouri	38.0%
Colorado	28.9%
Wyoming	18.8%
United States	18.8%

## Key Findings

- Over 56% of Nebraska households have fiber broadband service available.
- The Nebraska Broadband Office has identified 37,166 underserved locations and 66,905 unserved locations in Nebraska. Approximately 99% of the unserved and underserved locations are located in rural areas.
- The five counties with the most unserved locations are Knox (2,655 locations), Saunders (2,075 locations), Platte (2,057 locations), Holt (2,023 locations), and Custer (1,935 locations).

## Understanding Broadband Data

**FCC Broadband Availability Data.** The primary purpose of the FCC map is to aid policy makers in determining where broadband is available. The National Telecommunications and Information Administration also used FCC broadband availability data to allocate funding amounts for the Broadband Equity, Access and Deployment (BEAD) program to states. Twice a year, the FCC requires telecommunications providers to report where they are currently providing broadband services or could readily provide service and the speeds available. Providers can report either by locations or by shape file. The FCC has implemented a challenge process to challenge location data or service availability data. The FCC broadband map is available at <https://broadbandmap.fcc.gov>.

**Nebraska Broadband Map Availability Data.** The primary purpose of the Nebraska Broadband Map is to identify served and unserved locations which may receive broadband deployment funding from the BEAD program. The Nebraska Broadband Availability Map shows:

- Locations that do not have internet service of 25 Mbps down and 3 Mbps up or greater (unserved locations)
- Locations that have internet service available that is 25 Mbps down or greater but less than 100 Mbps down and 20 Mbps up (underserved locations)
- Locations that have broadband internet service of 100 Mbps down and 20 Mbps up or greater available (served locations).

To create the map, the Nebraska Broadband Office accessed the data from the FCC National Broadband Map as of August 2023. The Nebraska Broadband Office has also utilized data on which locations have received funding to build out broadband service. Locations that have enforceable commitments are categorized as served. The Nebraska Broadband Map is available at <https://broadband.nebraska.gov/broadbandavailabilitymap/>.

**Ookla Speed Test Data.** Individual users across the world check their internet speeds by using speed tests such as Ookla's Speed test at <https://speedtest.net>. Ookla publishes quarterly reports that rank the average upload and download speeds for countries, states and large cities. Speed test data can be impacted by a number of factors, including the age of a household's router, the age of a household's digital device, the distance of the digital device taking the test from the router, and the number of devices connected to the household's network. Ookla's Speedtest results for the U.S. are available at <https://www.speedtest.net/global-index/united-states#fixed>.

Nebraska ranks 30<sup>th</sup> in the availability of 25/3 Mbps and 100/20 Mbps broadband (copper, cable, fiber or licensed fixed wireless). Nebraska ranks 5<sup>th</sup> among our neighboring states in these measures.

Percent of Residences with 25/3 Broadband Available	
Copper, Cable, Fiber, or Licensed Fixed Wireless	
December 2022, FCC Broadband Map	
Geography	Percent of Residences
Iowa	94.2%
Colorado	93.8%
South Dakota	93.6%
Kansas	93.0%
Nebraska	92.0%
Missouri	87.2%
Wyoming	85.6%
United States	92.8%

Percent of Residences with 100/20 Broadband Available	
Copper, Cable, Fiber, or Licensed Fixed Wireless	
December 2022, FCC Broadband Map	
Geography	Percent of Residences
South Dakota	90.5%
Iowa	90.1%
Colorado	90.0%
Kansas	88.8%
Nebraska	88.3%
Missouri	83.0%
Wyoming	77.3%
United States	89.9%

**The Nebraska Broadband Office has identified 37,166 underserved locations and 66,905 unserved locations.** Approximately 99% of the unserved and underserved locations in Nebraska are located in rural areas.

Broadband Serviceable Locations			
Measure	Nebraska	Rural Nebraska	Urban Nebraska
Broadband Serviceable Locations	791,617	320,279	471,338
Served Locations (100/20 or greater)	687,546	217,115	470,431
% Served Locations	86.9%	67.8%	99.8%
Underserved Locations (less than 100/20 but at least 25/3 available)	37,166	36,760	406
% Underserved Locations	4.7%	11.5%	0.1%
Unserved Locations (less than 25/3 available)	66,905	66,404	501
% Unserved Locations	8.5%	20.7%	0.1%

**Source:** Nebraska Broadband Office, Sept. 2023

The ten Nebraska counties with the most unserved locations are listed below.

Unserved and Underserved Rural Broadband Locations by Nebraska Counties, Ranked by Unserved Rural Locations		
County	Underserved Rural Locations	Unserved Rural Locations
Knox	620	2,655
Saunders	600	2,075
Platte	367	2,057
Holt	999	2,023
Custer	1,590	1,935
Cass	519	1,819
Lancaster	1,103	1,807
York	549	1,681
Dodge	330	1,670
Antelope	237	1,616

**Source:** Nebraska Broadband Office, Sept. 2023

The ten Nebraska counties with the highest percent of unserved rural locations are listed below.

Percent Rural Broadband Availability Nebraska Counties			
Ranked by % Unserved			
Nebraska Broadband Office, September 2023			
County	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
McPherson	16.0%	29.0%	55.0%
Hayes	24.0%	27.0%	49.0%
Knox	45.0%	10.0%	44.0%
Nance	55.0%	2.0%	43.0%
Boone	53.0%	7.0%	40.0%
Garden	50.0%	9.0%	40.0%
Sheridan	48.0%	14.0%	39.0%
Sioux	59.0%	2.0%	39.0%
Sherman	44.0%	19.0%	37.0%
Antelope	60.0%	5.0%	35.0%

Nebraska ranks 29th in Ookla's fixed broadband speed test rankings for the second quarter 2023 up from 34th in 2021.

Ookla Fixed		
Median Download and Upload Speeds		
July 2023		
Area	Down (Mbps)	Up (Mbps)
Kansas (23rd)	189.68	36.79
Missouri (28th)	179.67	22.70
Nebraska (29th)	178.78	33.17
Colorado (32nd)	176.52	20.45
South Dakota (40th)	160.38	32.86
Iowa (43rd)	148.14	38.78
Wyoming (50th)	93.14	14.38

Ookla United States Fixed Internet Speed Tests July 2021

Nebraska ranks 38th in Ookla's mobile broadband speed test rankings for the second quarter 2023, up from 47th in 2021.

Ookla Mobile		
Median Download and Upload Speeds		
July 2023		
Area	Down (Mbps)	Up (Mbps)
Missouri (20th)	80.28	7.33
Kansas (22nd)	78.32	7.94
Colorado (23rd)	77.19	8.03
South Dakota (36th)	62.33	9.54
Nebraska (38th)	60.02	9.27
Iowa (41st)	59.76	9.14
Wyoming (50th)	35.18	5.56

Ookla United States Mobile Internet Speed Tests July 2021



# Broadband Data and Mapping

*Determine other issues that may be pertinent to the purpose of the task force.*

–Nebraska Revised Statutes 86-1102(3)(g)

## Findings

**Starting in June 2022, the FCC began collecting broadband availability data from providers via shapefiles or addresses.** The new [FCC broadband map](#) shows broadband availability down to broadband serviceable locations. The new map and data collection process is more accurate than the previous map and data collection process. Prior to 2022, providers reported availability by census block. If they served or could readily provide service to one customer in the census block, the entire census block was reported as having broadband available.

### Key Recommendation

- Encourage the Nebraska Broadband Office to collaborate with the League of Nebraska Municipalities, Nebraska Association of County Officials and the Nebraska Regional Officials Council to inform local officials about the challenge process and to provide assistance to them in organizing and submitting challenges.

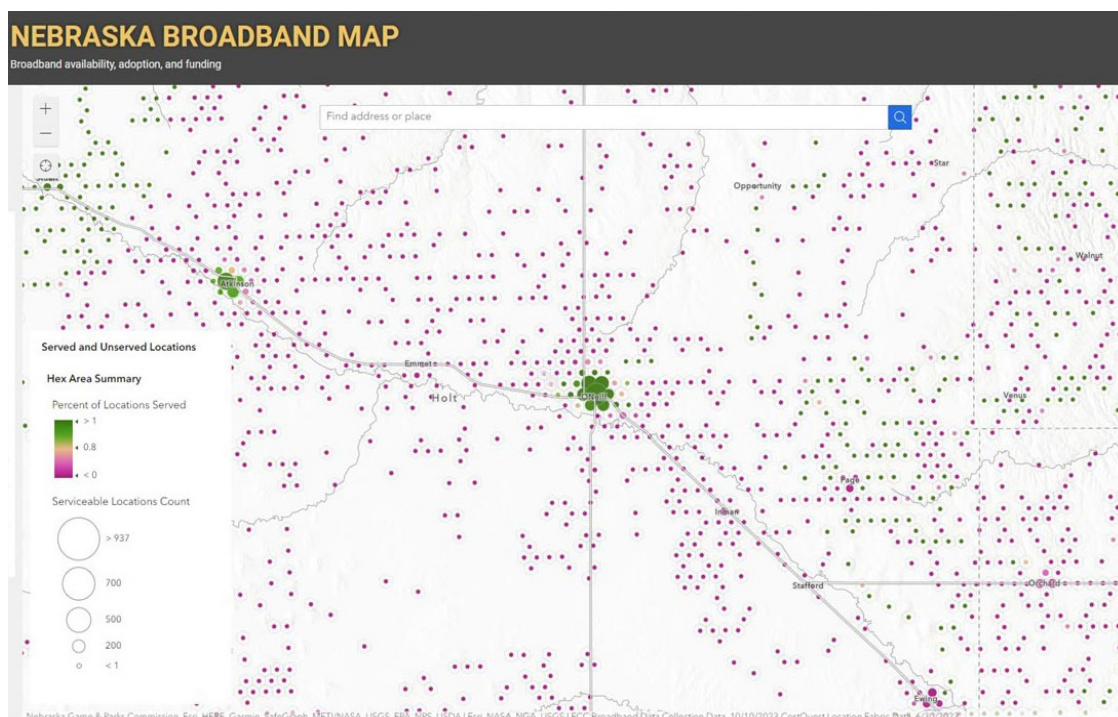
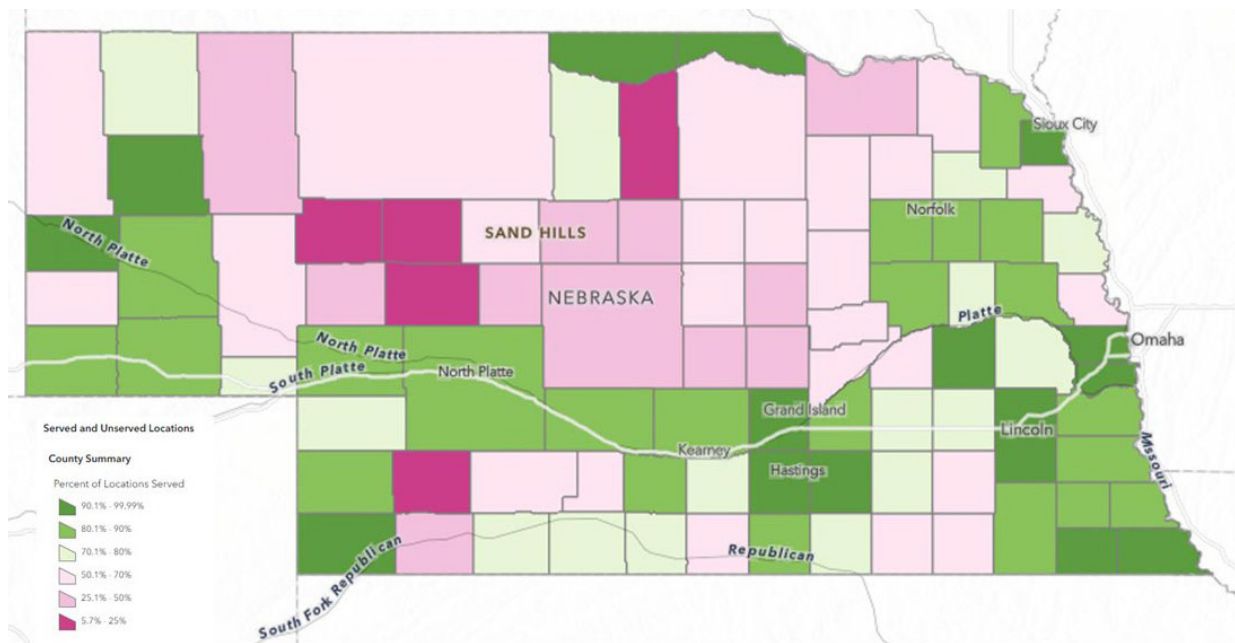
**The FCC has implemented challenge processes to challenge both location data and broadband availability data.** The Nebraska Public Service Commission submitted 1,046,931 availability challenges to the initial version of the new FCC map. Challenges to the map have resulted in further improvements to the map's accuracy. However, there are still con-

cerns that all locations are not accurate and that some providers have been overstating the speed of service available to some locations.

**The Nebraska Broadband Office released a [new broadband map](#) in September 2022.** The Nebraska Broadband [Office's Initial Proposal to the National Telecommunications and Information Agency Volume I](#) for the BEAD Program lays out a process to challenge if a location is considered "served" or "unserved."

The screenshots from the Nebraska Broadband Map on the following page show broadband availability in Rock and Holt Counties.

The BEAD Challenge Process will greatly impact the distribution of broadband funding in Nebraska. In order to ensure that funding is directed to areas that are unserved, Nebraskans, local governments, economic development districts, and nonprofits must be involved in the challenge process. Local governments and economic development districts have an opportunity can educate their residents on the challenge process and to organize and submit challenges. This process needs to be streamlined and made user friendly to encourage maximum participation. In addition to local governments and economic development districts, challenges may be submitted from nonprofit organizations and broadband service providers.



## Recommendations

- Encourage the Nebraska Broadband Office to collaborate with the League of Nebraska Municipalities, Nebraska Association of County Officials and the Nebraska Regional Officials Council to inform local officials about the challenge process and to provide assistance to them in organizing and submitting challenges.
- Encourage the Nebraska Broadband Office to make the challenge process as easy as possible for local governments, economic development districts and non-profits.



# Alternative Technologies and Providers

*Review the feasibility of alternative technologies and providers in accelerating access to faster and more reliable broadband service for rural residents.*

–Nebraska Revised Statutes 86-1102(3)(c)

## Findings

A review of alternative broadband technologies found that several emerging technologies may be well-suited for rural areas:

- Fixed wireless technologies using mid-band spectrums could potentially provide service of 100 Mbps or greater in rural areas.
- SpaceX (Starlink) is the first company to provide broadband service via low Earth orbit satellites and is now offering its service to users at many locations in Nebraska. Ookla speedtests found that Starlink users averaged 66.59 Mbps down and 7.74 Mbps up with 62 ms of latency.<sup>5</sup>
- Cellular Service Providers are now offering Fixed Wireless Access (FWA). Speeds may be fast for those living near a tower, but speeds decrease as distance from the tower increases. In a recent blog, consultant Doug Dawson showed speed test data indicating speeds of 300 Mbps within 1 mile of a tower, but speeds of 7 Mbps down within 3 miles of a tower.<sup>6</sup>
- TV white space has received significant attention. However, it may be better suited for lower bandwidth or non-line-of-sight applications.

## Key Finding

- Fixed wireless technologies using mid-band spectrum, low Earth orbit satellite service, and Fixed Wireless Access service offered by cellular providers may be suited for rural areas.



Starlink mission.

Photo Credit: SpaceX, Public Domain



# Nebraska Universal Service Fund and Reverse Auction

*Examine the role of the Nebraska Telecommunications Universal Service Fund in bringing comparable and affordable broadband services to rural residents and any effect of the fund in deterring or delaying capital formation, broadband competition, and broadband deployment.*

—Nebraska Revised Statutes 86-1102(3)(b)

*Examine alternatives for deployment of broadband services to areas that remain unserved or underserved, such as funding redirection programs described in section [86-330](#), public-private partnerships, funding for competitive deployment, and other measures, and make recommendations to the Public Service Commission to encourage deployment in such areas;*

—Nebraska Revised Statutes 86-1102(3)(d)

*Recommend state policies to effectively utilize state universal service fund dollars to leverage federal universal service fund support and other federal funding.*

—Nebraska Revised Statutes 86-1102(3)(e)

## NUSF Purpose

Defined in statute (Chapter 86, Section 324), the Nebraska Universal Service Fund (NUSF) was created in 1997 when the Legislature passed LB 686, authorizing the Nebraska Public Service Commission (NPSC) to create the Nebraska Universal Service Fund (NUSF). The NUSF was created in response to provisions in the federal Telecommunications Act of 1996 which embodied Congress's goal that consumers in all regions of the nation, including rural and high cost, should have access to telecommunications and information services at rates "reasonably comparable" to services and charges offered in urban areas. The goal of the NUSF, therefore, is to ensure that all Nebraskans have access to quality telecommunications and information services at affordable and comparable rates, in conjunction with federal universal service goals. This is accomplished through the provision of various programs that provide support to eligible telecommunications carriers operating in high-cost areas.

## Key Recommendations

- Support and monitor the progress of the NUSF-139 docket to reform the NUSF high cost program, and support provisions to ensure the costs of maintaining broadband networks are supported.
- Coordinate the distribution of NUSF support with other funding sources to avoid duplication of funding and to target funding to areas most in need of support.

## Findings

**The High Cost program is the primary mechanism by which the NPSC supports buildout and maintenance of rural networks.** When initially implemented, the state program was focused on ensuring universal access to telephone service in the newly

competitive market. Later, as broadband services emerged and rapidly expanded, both the state and federal programs began authorizing more funding towards broadband-capable networks. Over time, the NPSC has modified its high-cost universal service program in response to policy decisions made by the Federal Communications Commission (FCC) resulting in changes to the federal universal service support mechanisms, and also in response to specific changes driven by the communications landscape in Nebraska.

**The Nebraska Universal Service Fund (NUSF) provides support to price cap (large, multi-state carriers), rate of return (smaller rural carriers), and mobile wireless carriers in Nebraska.** A total of \$34.2 million was made available for projects in high cost areas through the NUSF in 2023. This amount includes \$19.35 million allocated for price cap carriers and \$8.89 million allocated for rate-of-return carriers. Additionally, approximately \$21 million in support is available for a reverse auction in 2023.

**Since 2019, over 21,000 households either have been connected or are in the process of being built to through projects funded through the Nebraska Universal Fund.**

**For projects that support voice-capable broadband networks funded through the NUSF, the NPSC has established a preference for fiber deployment.** This is supported with statutory requirements that have been in place since 2022 that require funds distributed from the NUSF for construction of new fixed broadband infrastructure provide broadband service scalable to at least 100 Mbps down and 100 Mbps up.

**In 2020, the Nebraska Legislature authorized the Nebraska Public Service Commission to redirect NUSF support through a reverse auction or community based plan.** After completing the rules promulgation process, the NPSC conducted a reverse auction in 2022, making available over \$13 million in support that was either unused or withheld from Frontier Communications. The NPSC approved 4 entities to participate in the auction, and put in place procedures for a reverse auction. Bidding was limited to bidding units defined by the NPSC, and consisted of census block groups made up of eligible census blocks. Bid prices were started at the amount of support that was required to build out the area with fiber according to a cost model. The prices would then go down by 5% in

each successive round if there were multiple bids for an area and/or if bids exceeded the budget available. After opening the reverse auction for bidding, only one bidding unit received a bid, so the auction closed after only one round. The bid unit was awarded at a price of \$22,814.50, which was well below the amount of support made available in the auction as a whole.

Because of the lack of participation, the NPSC opened a progression order in 2023 seeking to make modifications to the reverse auction in order to incentivize more bidding. Among modifications under consideration are reducing the size of bidding units to make them easier to serve, and increasing the starting bid price to an amount well above the modeled cost. The NPSC anticipates conducting a second reverse auction in late 2023 or early 2024.

The NPSC completed the rule promulgation process for adding a community-based redirection of support option for unused NUSF support. The NPSC will implement this option upon approval by the Attorney General and the Governor's Policy Research Office.

**In order for providers to make decisions about broadband infrastructure investments, support from the NUSF should be sustainable and predictable.** The total remittances to the NUSF have been stable between 2019 and 2023 due to modifications to the remittance methodology, where remittances were changed from a revenues-based surcharge mechanism to a connections-based mechanism. The surcharge has been set at \$1.75 per connection since the inception of the connections-based mechanism. For the first three years (2019-2022) only residential services remitted on a connections basis. For those three years, remittances varied between \$39.7 and \$42.6 million per year. Starting in 2022, business services also were required to remit on a connections basis. Remittances in 2022 totaled over \$47.1 million, with remittances in 2023 on pace to be approximately \$47.5 million.

**Even with steps to stabilize the fund, however, the size of the fund is not sufficient to provide support for fiber deployment to all Nebraska residences and businesses.** In September 2023, the NPSC opened a docket (NUSF-139) to examine potential changes to the NUSF in response to the changing telecommunications landscape statewide. The order in that docket states that

the NPSC initiated the proceeding “to consider appropriate modifications to the Nebraska Universal Service Fund (“NUSF”) high-cost distribution mechanism and associated reporting requirements. This proceeding is designed to take into account changes impacting the pace at which broadband services will be deployed and to investigate transitional mechanisms which will need to be in place to ensure that broadband networks are sustainable over the long term.” The buildout of telecommunications infrastructure through federal and state grant programs, changes to broadband availability data and modeling, and modifications to federal universal service programs have necessitated modifications to NUSF high cost mechanisms, and require a new look at if/how NUSF should be used to support those networks. The NPSC anticipates completion of the NUSF-139 docket in 2024.

**The NPSC has also put accountability measures in place to ensure support is used for its intended purpose.** Programs administered by the NPSC have moved the fund toward a grant-like method of distribution whereby carriers must build first before receiving reimbursement. LB 338 further improved accountability by requiring recipients of ongoing high-cost NUSF support to conduct and submit speed tests as determined by the NPSC. The NPSC has implemented a speed test program for NUSF recipients and now has a process in place to collect speed test data annually.

**The NPSC and the NUSF support rural telehealth networks through its NUSF-57 docket.** The NPSC has also put accountability measures in place to ensure support is used for its intended purpose. In 2021, modifications were made to the program to align it with the federal Healthcare Connect Fund, or HCF, and allocated up to \$1.5 million in support to the program. The federal HCF program provides support of up to 65% of eligible costs, and the state program will provide support up to a maximum of 25% of total eligible costs. Participation in the program has steadily increased year over year, with the number of applications for funding received nearly tripling between fiscal years 2021 and 2023. The NPSC held a workshop in 2023 to examine whether further modifications to the program are necessary. The NPSC may need to examine whether existing funding is sufficient to meet the demand in the program due to increased participation.

The NPSC issued an order in October 2023 adjusting some of the parameters for the E-Rate Special Construction Matching Funds program (NUSF-117, Progression Order 1). The program provides state matching funds to offset the costs of fiber construction to E-Rate eligible schools and libraries. The order made changes to the amount of matching funds that the NUSF will provide for participating entities, where the full cost of construction will be covered between the FCC/USAC contribution and 10% additional match and the NUSF contribution. Additionally, the order removed any timeframe associated with the program after it had originally been set to expire in 2024. These changes were in response to comments and feedback received by the Commission during the first few years of administration of the program, and were made with a goal of increasing participation from eligible entities.

**The NUSF Subcommittee found no evidence that the Nebraska Universal Service Fund has deterred or delayed capital formation, broadband competition, and broadband deployment in conversations with stakeholders or in the subcommittee’s research efforts.**

## Recommendations

- Continue to monitor the effectiveness of the connections-based contribution mechanism to stabilize the NUSF as implemented by Nebraska Public Service Commission.
- Monitor the Nebraska Public Service Commission’s efforts to modernize the distribution method and improve provider accountability through the system of grant-like awards for broadband infrastructure projects. Continue to support accountability in all NUSF programs.
- Evaluate the results of the 2<sup>nd</sup> Round of the Nebraska Public Service Commission’s reverse auction of NUSF support.
- Support and monitor the progress of the NUSF-139 docket to reform the NUSF high cost program, and support provisions to ensure the costs of maintaining broadband networks are supported.
- Coordinate the distribution of NUSF support with other funding sources to avoid duplication of funding and to target funding to areas most in need of support.

- Monitor the implementation of the FCC's Enhanced Alternative Connect America Fund Model (E-ACAM), Connect America Fund II, and Rural Digital Opportunity Fund reverse auctions to evaluate the success of the programs and to identify any key lessons learned.
- Monitor participation in the NUSF-57 Tele-Health program and support modifications to the program to encourage participation.
- Continue to support the efforts of the NPSC to modernize and modify the E-Rate Special Construction Matching Funds Program (NUSF-117, P.O. 1).

## NUSF Metrics

NUSF			
Measure	2019 Most Recent Data Nebraska Public Service Commission	2021 Most Recent Data Nebraska Public Service Commission	2023 Most Recent Data
Annual contributions to the Nebraska Universal Service Fund (By Calendar Year)	2017 - \$35,321,380 2018 - \$32,796,228 2019 - \$18,333,749 (Through 1st Half, 2019)	2019 - \$43,915,240 2020 - \$46,815,139 2021 - \$45,654,289	2022 - 50,828,818 2023 - \$17,154,345 (Through April, 2023)
Annual allocations from the Nebraska Universal Service Fund (By Calendar Year)	2017 - \$40,087,483 2018 - \$33,139,591	2019 - \$42,040,143 2020 - \$45,674,733 2021 - \$45,300,854	2022 - \$50,291,888 2023 - \$45,606,939
NUSF-108 (Rate of Return Carrier) project-specific households covered, by year		2019 - 500 2020 - 1,020 2021 - 558	2022 - 165 2023 - 107 (Through May, 2023)
NUSF-99 (Price Cap Carrier) project-specific households covered, by year	2017 - 643 2018 - 1,981	2019 - 7,769 2020 - 6,833 2021 - 3,094	2022 - 2,451 2023 - TBD





# Public-Private Partnerships

*Examine alternatives for deployment of broadband services to areas that remain unserved or underserved, such as funding redirection programs described in section [86-330](#), public-private partnerships, funding for competitive deployment, and other measures, and make recommendations to the Public Service Commission to encourage deployment in such areas;*

—Nebraska Revised Statutes 86-1102(3)(d)

## Findings

**Counties, municipalities, and public power districts and cooperatives can facilitate broadband deployment by partnering with telecommunications providers on privately funded or grant-funded projects.** Stakeholders should take the following considerations into account:

- Stakeholders should be aware that forming a public-private partnership takes time.
- Public-private partnerships should include consumer protections and ensure quality of service.
- Stakeholders should be careful about forming a public-private partnership that addresses business needs only and leaves out residential and/or rural areas.

## Key Recommendations

- Encourage the formation of public private partnerships with revenue neutral agreements.
- Encourage each county or region to have a broadband coordinator or champion to facilitate local challenges for BEAD eligible locations, as well as facilitate other broadband planning and coordination efforts.
- Encourage local and regional broadband planning.

**Partnerships between counties or municipalities and telecommunications providers can take many forms, including:**

- **Providing a match for grant funded projects.**
- **By deploying conduit.** The City of Lincoln facilitated broadband deployment by installing conduit and making the conduit available to providers. Lancaster County has been installing conduit to towns and county facilities. Allo received three Broadband Bridge Grants in 2021 to connect households in Holland, Martell, and Sprague and is considering using the Lancaster County conduit.
- **By waiving fees or expediting permitting**
- **By entering into revenue neutral agreements**

**Several counties used federal ARPA funding earmarked for water, sewer or broadband projects to partner with providers on broadband deployment projects.** In September 2022, the Gage County Board of Supervisors approved a \$4 million agreement with NextLink to deploy fiber to unserved areas in Gage County. The project kicked off in May 2023 with a ground-breaking ceremony northeast of Pickrell.

**Public power districts and cooperatives could play a role in advancing the deployment of broadband services in rural Nebraska through public-private partnerships.** Public power districts

and cooperatives may own fiber rings to connect necessary electric controls and data points. The communications network enables public power districts to safely operate and manage the electric grid. The communications network could be leveraged to facilitate the deployment of broadband in rural areas in several ways:

- A public power district or municipal utility could form a revenue neutral partnership with a telecommunications provider. For example, a provider could bring fiber to substations and, in return, could attach fiber to the district or utility's poles at no charge. The utility could own the hardware, but have the telecommunications provider manage the network.
- Fiber swaps between public power districts and providers are another form of revenue neutral public-private partnership and may be easier to implement than leasing dark fiber.
- A public power district or cooperative could work with a local telecommunications provider to put fiber in to connect electric communication needs. The local telecommunications provider could sell some of the fiber to the public power district or cooperative. The telecommunications provider could also connect homes and businesses passed by the newly installed fiber.
- A public power district or cooperative could work with a local telecommunications provider to put fiber in to connect electric communication needs and could then lease services from the telecommunications provider. The telecommunications provider could also connect homes and businesses passed by the newly installed fiber.
- As public power districts replace aging infrastructure, fiber could be placed overhead at a cost of a few dollars per foot. The dark fiber could be leased to telecommunications providers.
- Public power districts and other public entities could aggregate their demand for telecommunications services through a joint RFP which could be put out for bid by the State of Nebraska Office of the CIO or Network Nebraska. Telecommunications

providers could connect homes and businesses passed by the newly installed fiber.

- An electric cooperative could create a communications subsidiary and provide retail service, however a public power district could not.

NPPD provided partial funding to have NRTC conduct rural broadband feasibility studies for several public power districts and has worked with these power districts to explore developing public-private partnerships and identify funding opportunities.

**Leases of dark fiber owned by public entities remain limited.** LB 992, enacted in 2020, made the process of leasing dark fiber by public entities less burdensome and established a process to use private utility easements for communications. LB 992 also specified that leases of dark fiber to provide broadband in areas lacking broadband of 25 Mbps download and 3 Mbps upload do not need to contribute a portion of the proceeds to the Nebraska Universal Service Fund. The number of dark fiber leases by public entities has remained at one. Further elimination of restrictions on leasing dark fiber should be considered to facilitate the deployment of broadband in rural areas.

## Recommendations

- Encourage the Broadband Office to continue to involve providers and agriculture consumers to better understand the complexities and needs in expanding broadband statewide.
- Encourage each county or region to have a broadband coordinator or champion to facilitate local challenges for BEAD eligible locations, as well as facilitate other broadband planning and coordination efforts.
- Encourage local and regional broadband planning. Each community, county or region is different and will likely require a unique solution. Bringing stakeholders together to develop a local, county or regional plan can lay the groundwork for public-private partnerships.
- Encourage each county or region to leverage programs and resources such as the local economic development districts, the Rural Impact Hub's Lead for Nebraska fellows, and the state broadband Office.



- Encourage local or regional meetings of telecommunications providers and public power districts to explore how the communications needs of public power could be leveraged to improve broadband availability in rural areas.
- Explore the development of a joint RFP for public power districts which could be put out for bid by Network Nebraska or the Nebraska Office of the CIO.
- Encourage the formation of public private partnerships with revenue neutral agreements.
- Explore the creation of a statewide broadband association. The association could include telecommunications providers,

public power districts, schools, hospitals, municipalities, counties, and other stakeholders interested in advancing broadband in Nebraska. The association could convene regional and statewide discussions and develop and distribute resources such as model or sample agreements.

- Consider eliminating restrictions for leasing dark fiber by public entities and consider allowing public entry into retail broadband in remote, unserved areas.
- Encourage local governments to review their rights of way and permitting processes and take steps if necessary to make the processes less burdensome for telecommunications providers.

### Public-Private Partnership Metrics

Measure	2019 Most Recent Data	2021 Most Recent Data	2023 Most Recent Data
	July 2019, Nebraska Public Service Commission	August 2021, Nebraska Public Service Commission	October 2021, Nebraska Public Service Commission
Number of leases of dark fiber from public entities	1	1	1
Number of projects funded through state grant programs*	N/A	60 Remote Access Rural Broadband Grant Program 2020	
Number of households and businesses connected through state grant programs*	N/A	17,600 households Remote Access Rural Broadband Grant Program 2020	2021—12,640 households 2022—2,438 households
Total amount of grant funding awarded*	N/A	\$29.5 million Remote Access Rural Broadband Grant Program 2020	2021—\$19.2 million awarded state general funds 2022—\$20.37 million awarded



# Agriculture

*Determine other issues that may be pertinent to the purpose of the task force.*

–Nebraska Revised Statutes 86-1102(3)(g)

## Findings

**Agriculture is a significant part of Nebraska's economy.** The market value of crops and livestock produced in Nebraska in 2017 was \$21,983,430,000 with 8.4% of Nebraska farms and ranchers producing over \$1 million in crops and livestock. Nebraska ranks 4<sup>th</sup> in the total market value of agricultural products sold, 3<sup>rd</sup> in the total market value of grains, oilseeds, dry beans, and dry peas, and 3<sup>rd</sup> in the total market value of livestock, poultry and products.<sup>7</sup>

**Fully adopting next generation precision agriculture technologies in the United States would result in potential annual gross benefits of up to \$13 billion for row crops and \$20.6 billion for livestock and dairy with over a third of these benefits dependent on broadband.<sup>8</sup>**

### Key Recommendations

- Review the initial round of the Pro Ag grant program to determine the impact and effectiveness of the program and if adjustments need to be made.
- Support federal funding for the deployment of 100/100 Mbps wireless connectivity for farm and ranch lands through the LAST ACRE Act or other programs.
- Encourage the Nebraska Farm Bureau, FBI Omaha Field Office and other stakeholders to build on the successful Agricultural Threats Conference and to continue to educate farmers, ranchers, food processors, suppliers and agribusinesses on cybersecurity best practices.

**Benefits of precision agriculture extend beyond farms and ranches.** Precision agriculture and connectivity to the last acre is essential for water quality, better resource management of water, food safety, alleviating labor shortages, reducing the carbon footprint, and reducing food loss at the farm level. Improving connectivity for farms and ranches could also improve connectivity for other services in rural areas, including telehealth and emergency response.

**Nebraska is #2 in the use of precision ag technologies.** In 2023, 55% of Nebraska farmers and ranchers reported using precision ag technologies, up from 51% in 2021.<sup>9</sup>

Internet use and smart phone usage by Nebraska farmers and ranchers is increasing.

- 85% of Nebraska farmers and ranchers own or use a smart phone up from 80% in 2021.
- 90% of Nebraska farms have internet access, up from 85% in 2021.
- 77% of Nebraska farmers own or use a desktop or laptop computer up from 74% in 2021.<sup>10</sup>

Farmers and ranchers need upload speeds of 50-100+ Mbps to transfer the immense amount of data generated to the cloud. In the future even greater upload speeds may be required.

**66,905 locations in Nebraska—including 13,256 locations in Nebraska’s top 10 counties by agricultural sales—still lack 25/3 Mbps internet service and are considered unserved.** The table below shows broadband availability for the rural areas of Nebraska’s top-producing agricultural counties.

Underserved and Unserved Locations					
Top 10 Nebraska Counties by Agricultural Sales (2017)					
County	Agricultural Sales (\$)	% Rural Locations Served	Served Rural Locations	Underserved Rural Locations	Unserved Rural Locations
Cuming County	\$1,131,997,000	82%	4,070	58	821
Custer County	\$781,155,000	50%	3,457	1,590	1,935
Lincoln County	\$755,236,000	22%	3,598	1,112	1,282
Dawson County	\$748,426,000	53%	5,746	1,177	649
Platte County	\$688,562,000	18%	2,668	367	2,057
Phelps County	\$578,241,000	26%	1,223	629	144
Antelope County	\$529,502,000	60%	2,735	237	1,616
Boone County	\$473,778,000	53%	1,879	236	1,401
Holt County	\$453,539,000	56%	3,840	999	2,023
Chase County	\$440,113,000	86%	2,267	5	377
Total	\$6,580,549,000	62.7%	31,483	6,410	12,305

**Source:** USDA 2017 Census of Agriculture County Profiles data available at [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Nebraska/Nebraska](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Nebraska/Nebraska) Broadband Office September 2023

**Different methods of connectivity are required for agriculture, including:**

- Low-bandwidth connectivity for devices like sensors or monitors often called Internet of Things (IoT) devices
- High speed, centralized broadband with symmetrical gigabit connectivity for targeted agricultural operational headquarters such as a farm or ranch operations center
- High-speed decentralized coverage over large agricultural areas. The FCC Precision Ag Task Force is recommending wireless symmetrical connectivity of 100 Mbps over farms and ranches. While some connectivity may be available through public networks, private networks may need to be deployed to ensure complete coverage over farms and ranches.

The following connectivity profiles provide additional details about types of internet connectivity needed.

Connectivity Profiles for Next Generation Precision Agriculture			
	Low-Speed, Broad Coverage	High-Speed, Centralized	High-Speed, De-centralized
<b>Geographic Coverage</b>	Large areas (i.e., agricultural fields)	Targeted agricultural operational headquarters such as farm or ranch operations center, typically one site per producer.	Large areas (i.e., agricultural fields)
<b>Network Speed</b>	Slow (< 5 Mbps)	Symmetrical Gigabit	100/100 Mbps
<b>Network Latency</b>	High latency is tolerable	Low latency	Low latency
<b>Upload/Download Speeds</b>	Asymmetrical (faster download, slower upload)  Expect small upload and downloads over time from many sensors and field devices	Symmetrical (same download and upload speeds)  Expect large upload and downloads to support processing of large data files, and online training and support	Symmetrical  Expect large uploads to transmit live video for remote monitoring and real-time decision making
<b>Usage</b>	<ul style="list-style-type: none"> <li>· Transmit sensor data from fields</li> <li>· System automation and monitoring</li> <li>· Mobile access to systems and data for workers and decision makers</li> </ul>	<ul style="list-style-type: none"> <li>· Farm-level data aggregation and modeling</li> <li>· Raw data uploads for processing (drone and other sensor data)</li> <li>· Remote training and systems support</li> <li>· Online cattle auctions</li> </ul>	<ul style="list-style-type: none"> <li>· Field-level video streaming</li> <li>· Large uploads of HD videos and photos</li> <li>· Live video conferencing for support</li> </ul>

**Connectivity methods and spectrum should meet the unique needs of agriculture.** For example, as pivots using 3G were upgraded to 4G, growing corn created interference.

**Recognizing the importance of precision ag, the Nebraska legislature created the Precision Agriculture Infrastructure Grant (PRO-AG) Program through LB 1144 in 2022.** The Legislature appropriated \$1 million a year for fiscal years 2023-2024 and 2024-2025 for the program. Half of the funding would be allocated for wireless farm connectivity projects. The remaining half would be allocated for:

1. On farm traceability solutions
2. Products that improve soil health, water management tools and sensors that facilitate judicious use of water resources, and products that promote the use of water efficiency seed technologies that lower agriculture's water, carbon, and nitrate footprint
3. Products that use autonomous solutions in agricultural machinery, including, but not limited to, grain carts, spreaders, precision drone scouting, and scouting robots

The Nebraska Public Service Commission opened a docket (BEAD-1/C-5529) on August 16, 2022 to implement the Act. The most recent order was issued on September 19, 2023. The Commission expects to open up a grant round before the end of 2023.

**While significant federal broadband is currently available for connecting unserved and underserved locations, which should include farm and ranch headquarters, limited federal funding sources are available for providing wireless connectivity to farm and ranch lands.** Senator Deb Fischer and Senator Ben Ray Lujan introduced the Linking Access to Spur Technology for Agriculture Connectivity in Rural Environments (LAST ACRE) Act in July 2023. The LAST ACRE Act would establish the Last Acre Program at USDA to expand high-speed broadband internet access. This access would support ubiquitous last acre coverage across eligible agricultural land, including farmland, rangeland, and farm sites. The bill would also direct USDA to update the Census of Agriculture to include questions that would discover insights into producers' adoption of broadband internet access services. These updates would provide USDA with additional information about service speed and broadband usage purposes, including its use for precision agriculture technologies.

## Other Issues

**Legal and technical issues—including data ownership and portability, right to repair, and technical standards and interoperability—may impede the full adoption of next generation precision agriculture technologies.** Industry efforts to address these issues would likely accelerate the adoption of precision agriculture technologies.

**Research and outreach efforts on best practices in connected agriculture technologies and the associated return on investment could accelerate adoption.** Because farming varies from state to state and within regions of a state, research and outreach efforts should be localized and feature farmers and ranchers who are early adopters of next generation precision agriculture technologies.

**As farmers and ranchers are increasing their reliance upon next generation precision farming applications, the risk of cyberattacks is also increasing.** Food processors are also at risk as the 2021 ransomware attack on meatpacker JBS demonstrated. Industry-wide efforts to increase the security of next generation precision farming technologies and the industrial control systems used in food production will likely be needed to improve the cybersecurity of agriculture and the food industry. Small farms and ranches may be especially vulnerable because they do not employ full-time IT professionals and may be less likely to follow cybersecurity best practices.

Recognizing the importance of cybersecurity to agriculture, the Nebraska Farm Bureau and FBI Omaha Field Office hosted an Agricultural Threats Symposium at the University of Nebraska Innovation Campus on June 6-7, 2023. Approximately 400 individuals from 19 states attended.





*Field near Arnold, Nebraska.*

**Photo Credit:** Anne Byers

## Recommendations

- Establish a state goal of having broadband access to every farm or ranch headquarters.
- Focus a portion of broadband funding on the highest cost areas.
- Review state-administered broadband programs to determine if adjustments to program requirements could aid in funding extremely high cost rural areas.
- Review the initial round of the PRO-AG grant program to determine the impact and effectiveness of the program and if adjustments need to be made.
- Survey Nebraska farmers and ranchers on their broadband needs and broadband availability to their farms and ranches, including what percentage of their operations are covered by broadband and where broadband coverage is still needed.
- Encourage the Nebraska Farm Bureau, FBI Omaha Field Office and other stakeholders to build on the successful Agricultural Threats Conference and to continue to educate farmers, ranchers, food processors, suppliers and agribusinesses on cybersecurity best practices.
- Support federal funding for the deployment of 100/100 Mbps wireless connectivity for farm and ranch lands through the LAST ACRE Act or other programs.
- Encourage the Nebraska Broadband Office to track and map the availability of 100/100 Mbps wireless broadband to farm and ranch lands in Nebraska.



# Digital Inclusion, Homework Gap and Leveraging E-Rate Funding

*Determine other issues that may be pertinent to the purpose of the task force.*

–Nebraska Revised Statutes 86-1102(3)(g)

*Recommend state policies to effectively utilize state universal service fund dollars to leverage federal universal service fund support and other federal funding.*

–Nebraska Revised Statutes 86-1102(3)(e)

## Findings

**The State of Nebraska has been engaging in a statewide digital opportunities planning process led by the Nebraska Office of the CIO/Nebraska Information Technology Commission with funding from the National Telecommunications and Information Administration.** The digital opportunities planning process has engaged stakeholders, raised awareness of digital equity, and built capacity by:

- Working with the state's economic development districts to develop regional digital opportunities plans
- Compiling a digital opportunities asset inventory
- Hosting 14 webinars on topics related to digital opportunities
- Holding 26 listening sessions and 4 Tribal consultations in conjunction with the BEAD Program from April through July 2023
- Hosting a statewide digital opportunities planning workshop
- Working with the Nebraska Library Commission to improve broadband access in Nebraska libraries and to improve the capacity of Nebraska libraries to engage in digital inclusion activities

- Conducting focus groups of covered populations and a survey of Nebraska residents on digital skills and access

## Key Recommendations

- Support efforts to build awareness of and support for digital inclusion efforts in the state, including the implementation of the state's digital opportunities plan and a state digital opportunities grant program.
- Support the appropriation of continued funding for the Affordable Connectivity Program and outreach efforts to promote the program.
- Support efforts to improve broadband and build capacity to engage in digital inclusion activities in rural Nebraska libraries, senior centers, and community centers.

A draft digital opportunities plan is expected to be completed by late 2023. Information on the planning process is available at <https://nitc.nebraska.gov>.

**States that complete digital opportunities plans will be able to apply for an estimated minimum of \$7 million over 5 years to implement their plans**

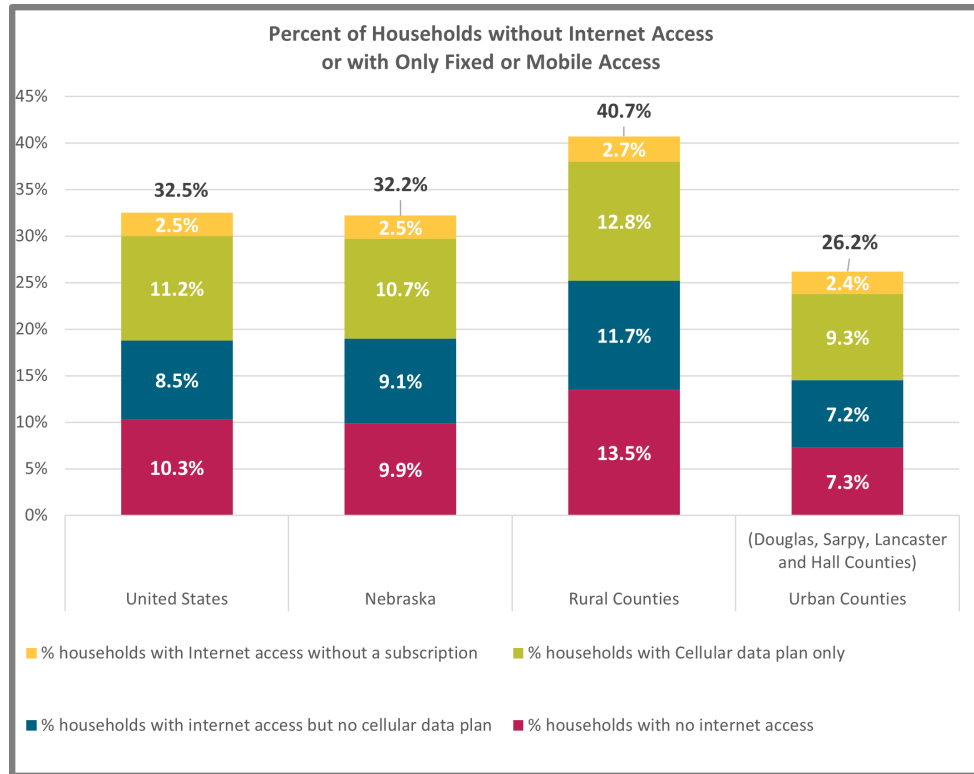


and set up a state grant program. The National Telecommunications and Information Administration will also be administering a national competitive digital inclusion grant program.

**Broadband availability and affordability were the two issues most frequently identified by participants in listening sessions across Nebraska.**

**Approximately 40% of rural Nebraska residents have no connectivity or only type of connectivity versus 26% of residents of urban counties.**

**To be fully connected in today's digital economy and society, most individuals need two kinds of connectivity: mobile and fixed connectivity.** Most also need two kinds of devices: a mobile device and a large screen device such as a laptop, tablet or desktop computer.

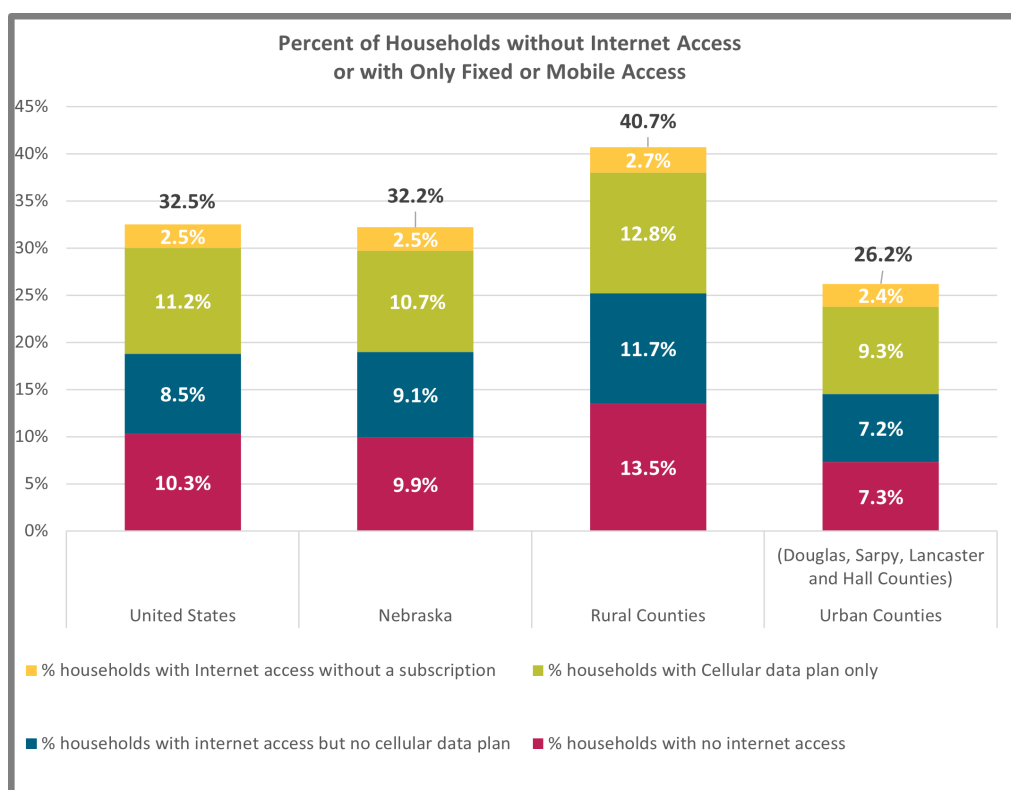


Source: 2021 ACS 5-Year (Table B28002)

**Residents of rural areas and residents of qualified census tracts in North and South Omaha have similar broadband subscription rates.** They also express similar needs for broadband access, including:

- The ability for businesses to grow in the community
- The need for older adults to access health care through telehealth
- The need for broadband for completing homework and accessing online classes
- The desire for their children to have opportunities to stay in their communities

Recognizing that similarities exist between rural areas and low-income urban areas may aid in building statewide support for digital opportunities initiatives.



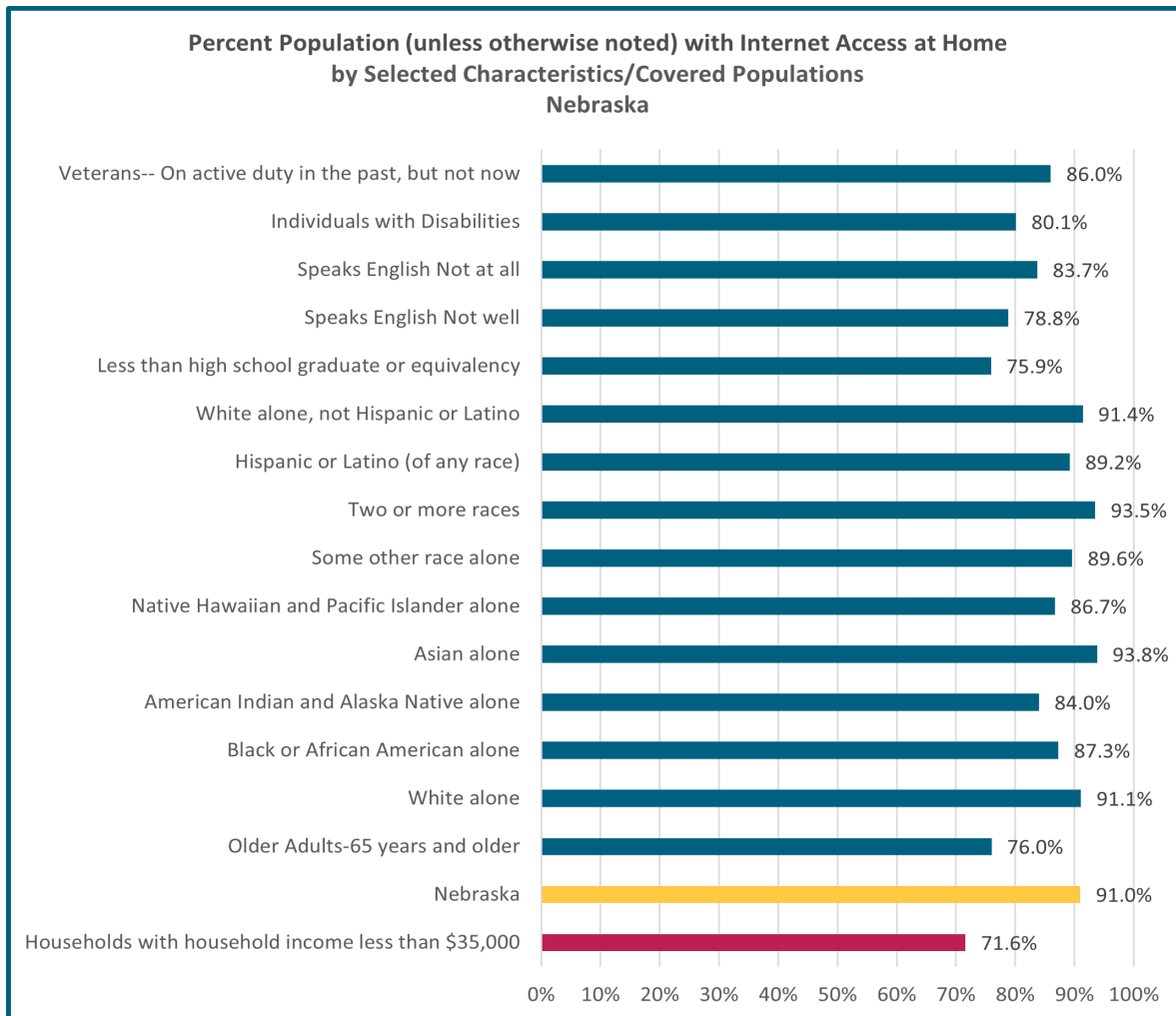
**Source:** 2021 ACS 5-Year (Table B28002)

**Note:** Qualified Census Tracts (QCTs) are areas where 50% or more of the households have incomes below 60% of the area median income, or where the poverty rate is 25% or higher.

**In comparison to urban residents, many rural residents face additional challenges:**

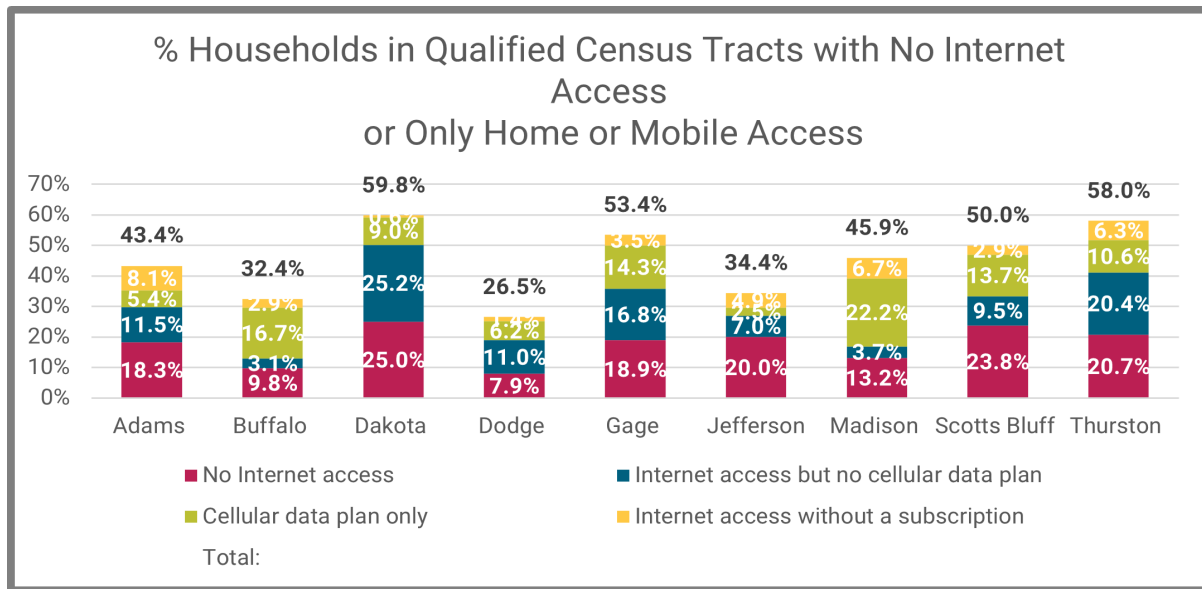
- Rural residents are more likely to not have broadband available with only 67.8% of rural locations in Nebraska having broadband available, compared to 99.8% of urban locations.<sup>11</sup>
- More rural residents (45%) report having at least some difficulty fitting their monthly internet bill into their household budget, compared to 39% of metropolitan residents.<sup>12</sup>
- Rural residents may also be miles away from the nearest library, senior center or community center with public internet access; from services offering device repair or new devices; and from social service agencies offering assistance with enrolling in the Affordable Connectivity Program.

**Older adults, those with less than a high school education, those with low incomes, and those who do not speak English well are the demographic groups least likely to have internet access at home. Rural areas with a high percentage of these demographic groups may be especially challenged.**



**Sources:** 2021 ACS 5-year estimates 2021 (Table S 2802); 2020 Micro-ACS 5-year estimates Public Use Microdata; 2021 ACS Five-year estimates Table B28004

The following table shows internet access in qualified census tracts in counties outside Lincoln and Omaha. Rates of internet access in qualified census tracts in Dakota, Thurston, and Gage and Scottsbluff Counties are significantly higher than the average rate in non-metropolitan counties in Nebraska.



Source: 2021 ACS 5-Year (Table B28002)

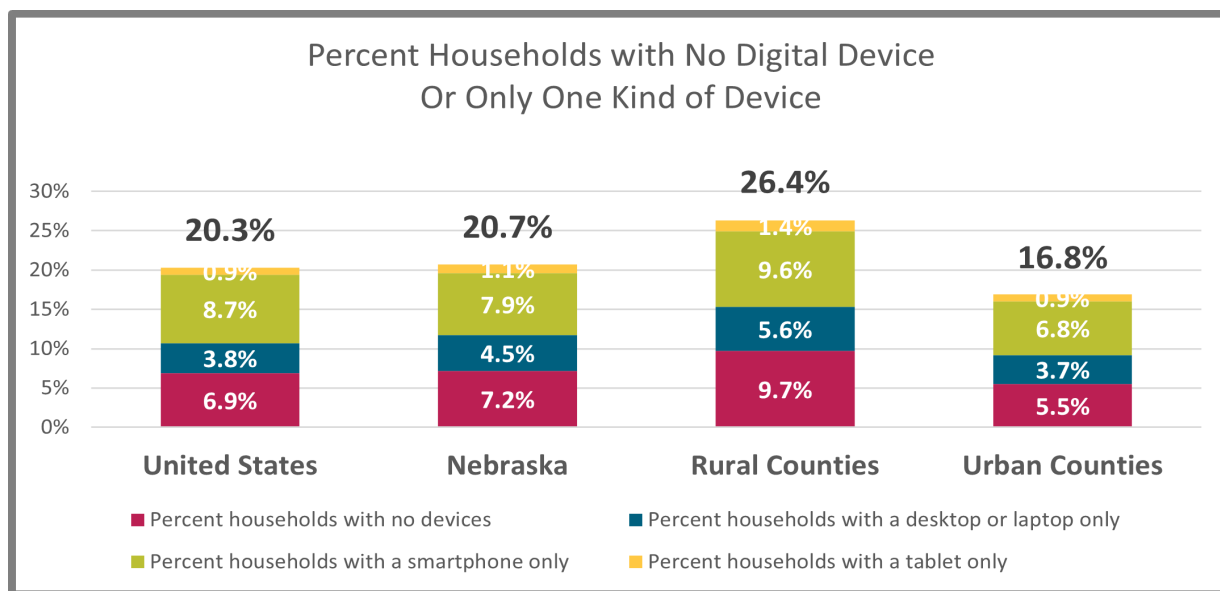
The following table shows the 15 counties in Nebraska with the lowest broadband subscription rates. Most of the counties also have low broadband availability rates. All of these counties with the exception of Thurston County, have a significantly older population and are less ethnically and racially diverse than Nebraska. These counties are very rural with twelve of the fifteen counties have a population density of less than 7 people square mile. Eleven have higher poverty rates and higher high school graduation rates than Nebraska. Nine counties have a higher disability rate than the state.

Nebraska Counties with Lowest Broadband Subscription Rates								
Label	% households with broadband subscription	Percent locations with 100/20 broadband available	% 65 and older	% white alone	% high school graduate	% with a disability	% in poverty	Population per square mile, 2020
Loup County	67.4%	44%	30.6%	98.0%	98.3%	11.1%	15.6%	1.1
Sioux County	71.0%	59%	31.7%	95.2%	94.8%	5.6%	15.5%	0.5
Wheeler County	71.2%	52%	29.2%	97.2%	95.0%	7.3%	11.2%	1.3
Pawnee County	71.8%	90%	29.0%	96.3%	85.2%	10.6%	12.4%	5.9
Hooker County	72.7%	16%	29.4%	97.7%	92.8%	4.2%	7.0%	1.0
Banner County	72.8%	64%	26.5%	97.1%	92.8%	7.0%	10.3%	0.9
Frontier County	73.0%	73%	25.9%	96.4%	94.2%	13.2%	12.0%	2.6
Thurston County	73.0%	52%	12.4%	36.9%	90.5%	9.7%	19.0%	17.2
Greeley County	74.3%	46%	24.8%	97.6%	91.7%	9.6%	13.0%	3.8
Hitchcock County	74.3%	32%	25.0%	96.6%	95.0%	14.7%	13.2%	3.7
Garfield County	74.9%	66%	29.9%	98.6%	96.7%	6.1%	11.3%	3.2
Cuming County	75.1%	82%	22.5%	96.3%	89.4%	5.5%	8.5%	15.8
Furnas County	75.1%	73%	25.7%	96.5%	90.4%	11.5%	11.9%	6.4
Jefferson County	75.8%	70%	24.6%	96.3%	91.7%	14.0%	9.7%	12.7
Franklin County	76.2%	62%	28.2%	96.7%	92.3%	11.2%	13.0%	5.0
Nebraska	90.2%	86.9%	16.9%	87.5%	91.7%	8.0%	11.2%	25.5

**Source:** American Community Survey 5-year estimates 2021 Table B28002, Nebraska Broadband Map (September 2023 using Dec 2022 FCC data and challenges) and Census Bureau Quick Facts

**In today's digital society and economy, individuals need to establish and maintain a digital identity.** Often, this requires an e-mail address and a consistent mobile phone. Individuals with low incomes who use pre-paid phone service which may lapse or who may change mobile numbers can experience difficulties in establishing and maintaining a digital identity. Those without smartphones and mobile services are less able to use two-factor authentication and may be more at risk of security breaches. Approximately 12.8% of Nebraska households and 16.7% of rural Nebraska households do not have a smartphone. (See the following chart on device access in Nebraska households.)

**Approximately 26% of rural households have no digital device or only one type of device versus approximately 17% of urban households.**



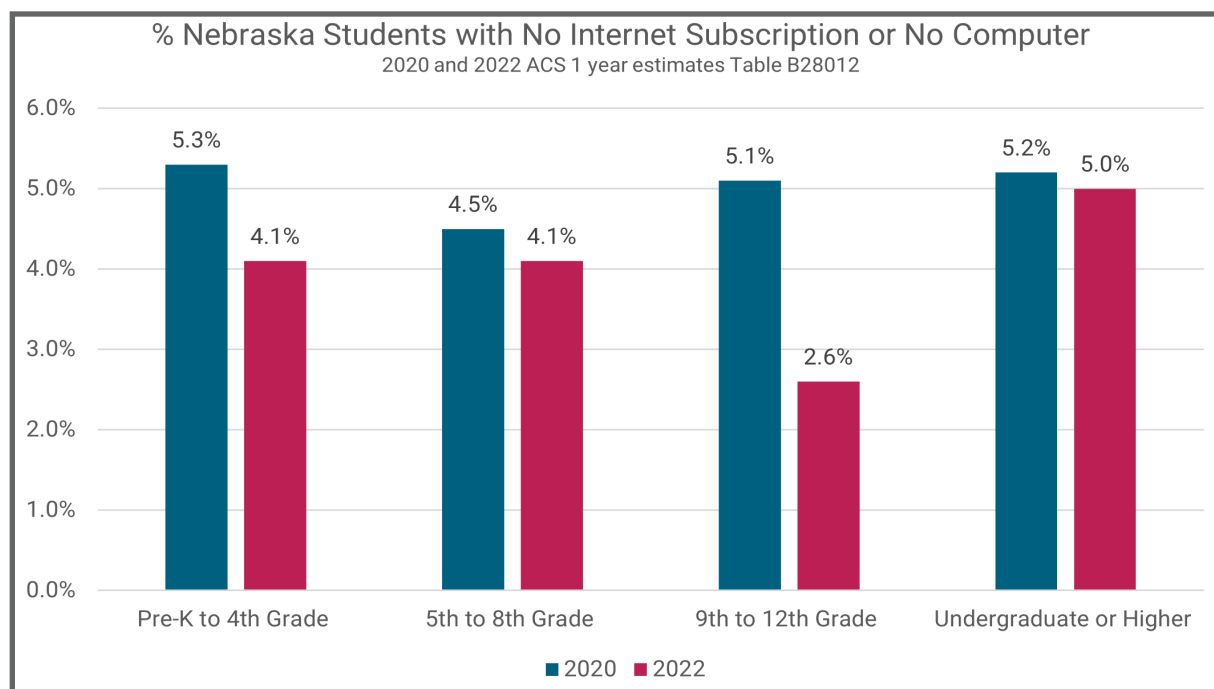
**Source:** 2021 ACS 5-Year Estimates Table B28001



Students access to the internet and a computer in order to complete homework and to participate in on-line learning. The lack of access to the internet and a computer is often called the homework gap.

**Efforts to address the homework gap have reduced the number of students without access.** Over 13,000 or 3.6% of Nebraska K-12 students lack access to the internet or a computer in 2022, down from over 18,000 or 5% of Nebraska K-12 students in 2020.

Number and Percent of Nebraska Students with No Internet Subscription or No Computer				
2020 and 2022 ACS 1 year estimates Table B28012				
	Nebraska 2020		Nebraska 2022	
Grade Level	# of students	%	# of students	%
Pre-K to 4th Grade	8,676	5.3%	6,324	4.1%
5th to 8th Grade	4,686	4.5%	4,371	4.1%
9th to 12th Grade	5,223	5.1%	2,923	2.6%
Undergraduate or Higher	5,827	5.2%	5,524	5.0%



**Libraries are key community partners in providing internet and computer access to students and the general public as well as assistance with technology.**

- 177 or 65% of Nebraska's 273 public libraries have fiber optic connections
- 95 or 41% of Nebraska libraries have maker-spaces
- 223 or 97% provide public Wi-Fi Access
- 19 libraries have hotspot lending programs, loaning out 151 hot spots.<sup>13</sup>

**Broadband funding programs, including E-Rate Special Construction Program, are helping many libraries get fiber connections.** The Nebraska Public Service Commission (NPSC) has allocated \$1 million from the Nebraska Universal Service Fund (NUSF) for the E-Rate Special Construction Matching Fund Program. Budget limitations at rural libraries challenge a libraries ability to upgrade to a fiber connection for secure, fast and reliable internet. The Nebraska Library Commission (NLC) is a proponent of libraries utilizing E-Rate funding for maintaining and upgrading internet services and equipment. The Nebraska Library Commission has reached out personally to all libraries in rural communities of less than 2,500 that are classified as unserved and underserved with internet speeds less than 25Mbps, encouraging them to apply for fiber to their library utilizing the FCC E-rate Special Construction Program. Over the last three years, twelve libraries have connected to fiber using the E-Rate Special Construction State Matching Fund Program. The E-Rate discount rate for eleven of the libraries was 80-90%, with one library at a 60% discount rate. For the 80-90% discount rate libraries, the fiber construction was at no cost to the library. The Commission has modified the program to make up for any deficit in construction costs between the E-Rate discounts and the full costs of construction, with the hope that it would encourage more eligible entities to participate. For all the libraries that have applied, this program has been a resounding success.

Other state funded opportunities have provided fiber optic connections to libraries. Over thirty libraries have connected to fiber through the Nebraska Broadband Bridge Program. This program initiated in 2021 at the same time as the E-rate Special Construction Matching Fund Program.

For some libraries and municipalities, the Nebraska Broadband Bridge Program offers the ability to

connect to fiber using an easier funding source.

**Limited staff time, inadequate broadband service, outdated networking, and access to technical support are issues that limit the ability of small, rural libraries to participate in digital inclusion activities.**

- 35% of Nebraska libraries serving communities with populations of less than 2,500 have internet access below 25 Mbps down and 3 Mbps up.<sup>1415</sup>

The federal E-Rate program which provides support for broadband connections in schools and libraries is underutilized by Nebraska libraries. Only 66 out of 246 public libraries in 2023. Reasons cited for not participating in the E-Rate program include the perceived difficulty in applying for funding, lack of time to learn the process and apply, and concerns about requirements for filtering internet content for children.

**Nebraska's 145 senior centers can be a resource for older adults.** The State Unit on Aging surveyed senior centers in 202 and found:

- 67% of multi-purpose senior centers provide Wi-Fi for everyone
- 30% of multi-purpose community centers provide computer access for everyone

Many senior centers that do not currently provide these services also indicated an interest in providing these services in the future:

- 30% would like to provide computer access for everyone
- 28% would like to offer telelearning
- 18% would like to offer Wi-Fi for everyone

A discount of \$30 per month for low-income households is currently being provided through the FCC Affordable Connectivity Program (ACP). Residents of tribal lands and those in high-cost areas can receive \$75 per month in support. Some participating telecommunications providers also offer discounted digital devices. Nearly 89,000 households out of 284,439 eligible households (31%) in Nebraska have enrolled in the program. Nebraska's enrollment rate is higher than six of our neighboring states but lags the U.S. participation rate of 39%.

Percent of Eligible Households Enrolled in Affordable Connectivity Program	
August 2023	
Geography	Percent of Eligible Households Enrolled
Colorado	28%
Iowa	22%
Kansas	28%
Missouri	35%
Nebraska	31%
South Dakota	16%
Wyoming	24%
United States	39%

The Southeast Nebraska Economic Development District received a grant from the Federal Communications Commission to promote the ACP and increase enrollment numbers in Nebraska statewide. SENDD partnered with the other economic development districts in order to collaborate and effectively reach each part of the state through informed outreach to Nebraska’s distinct communities. SENDD’s outreach includes building partnerships with community-based organizations that give direct services to qualifying participants – such as nonprofits, school districts, and government agencies – and conducting presentations filled with resources and best ACP outreach practices. Many social service agencies also provide information on the program and assistance in enrolling. Additional outreach efforts, however, could improve Nebraska’s enrollment rate.

Funding for the Affordable Connectivity Program is expected to be exhausted in April 2024 unless Congress reappropriates funding for the program.

### Recommendations

- Support efforts to build awareness of and support for digital inclusion efforts in the state, including the implementation of the state’s digital opportunities plan and a state digital opportunities grant program.
- Support the appropriation of continued funding for the Affordable Connectivity Program.
- Support outreach efforts to promote the Affordable Connectivity Program by providing social capital and connecting organizations and government agencies for the most effective collaboration. Public and private partnerships will lead the ACP to success.
- Support efforts to improve broadband access in rural Nebraska libraries, senior centers, and community centers.
- Encourage public libraries and schools without fiber connections to apply for support for fiber construction from the E-Rate Special Construction matching fund program administered by the Nebraska Public Service Commission.
- Encourage public libraries to participate in the E-Rate program.
- Support efforts to build capacity in small, rural libraries, senior centers, and community centers in Nebraska to engage in digital inclusion activities.
- Encourage school districts, ESUs, public libraries, and communities to implement programs such as Wi-Fi on buses, hotspot lending programs, low-cost pay-by-the-month internet access, or alternative wireless deployments for student access on school-issued devices in order to reduce the number of unserved and underserved students.

- Encourage education leaders and public library staff to be part of local community discussions involving broadband services and digital inclusion.
- Encourage communities and regions to develop digital inclusion plans to address multi-generational needs.
- Encourage higher education institutions, Network Nebraska, and other partners to pursue all available funding opportunities to increase the capacity and reach of the Network Nebraska backbone, build advanced cyberinfrastructure, and foster collaboration within the statewide research community to advance institutional research and economic development missions.



*State Broadband Director Patrick Haggerty shares information about the Broadband Office and BEAD program and the Nebraska State Digital Opportunities Planning Workshop on August 8th, 2023.*

**Photo Credit:** Clint Mangen, Nebraska Department of Transportation



# References

- 1 Nebraska Library Commission Data Dashboard available at <https://nlc.nebraska.gov/stats/Downloads/20212022stats/FY2022SummaryDashboard.pdf>. Updated information on fiber connections was provided by NLC staff.
- 2 Gallardo, R., Whitacre, B. and Grant, A. (January 2018). Research and Policy Insights: Broadband's Impact. Available at <https://pcrd.purdue.edu/wp-content/uploads/2018/12/Broadbands-Impact-Final.pdf>
- 3 USDA. (April 2019). Connected Technologies in Row Crops—A Case for Rural Broadband <https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf>
- 4 FCC Broadband map data (December 2022) downloaded Sept. 21, 2023.
- 5 Fomon, Josh. New Speedtest Data Shows Starlink Users Love their Provider. Ookla. May 8, 2023. Available at <https://www.ookla.com/articles/starlink-hughesnet-viasat-performance-q1-2023>
- 6 Dawson, Doug. FWA Cellular Speeds. September 18, 2023. Available at <https://potsandpansbycog.com/2023/09/18/fwa-cellular-speeds/>
- 7 USDA NASS. 2017 Census of Agriculture State Profile. Available at [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Nebraska/cp99031.pdf](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Nebraska/cp99031.pdf)
- 8 USDA. A Case for Rural Broadband: Insights on Rural Broadband Infrastructure and Next Generation Precision Ag Technologies. (April 2019). Available at <https://www.usda.gov/sites/default/files/documents/case-for-rural-broadband.pdf>
- 9 USDA NASS. Technology Use (Farm Computer Usage and Ownership). (August 2023). Available at <https://downloads.usda.library.cornell.edu/usda-esmis/files/h128nd689/4j03fg187/fj237k64f/fmpc0823.pdf>
- 10 USDA NASS. Technology Use (Farm Computer Usage and Ownership). (August 2023). Available at <https://downloads.usda.library.cornell.edu/usda-esmis/files/h128nd689/4j03fg187/fj237k64f/fmpc0823.pdf>
- 11 Nebraska Broadband Map September 2023 using December 2022 FCC data
- 12 Vogt, R. and Byers, A. Nebraska Digital Equity Survey: A Research Report. (Oct. 9, 2023)
- 13 Nebraska Library Commission Data Dashboard available at <https://nlc.nebraska.gov/stats/Downloads/20212022stats/FY2022SummaryDashboard.pdf>
- 14 Nebraska Library Commission 2022 Public Library Survey available at <https://nlc.nebraska.gov/stats/index.aspx>
- 15 Information on library broadband availability is from the Nebraska Library Commission.

**Copies of the executive summary, full report, and appendices are available at:**  
<https://ruralbroadband.nebraska.gov>



# Photo Credits

## **Page 9**

*Farm buildings near Arnold, Nebraska*, by Anne Byers

## **Page 23**

*Starlink Mission*, by SpaceX

[https://commons.wikimedia.org/wiki/File:Starlink\\_Mission\\_\(47926144123\).jpg](https://commons.wikimedia.org/wiki/File:Starlink_Mission_(47926144123).jpg)

Public Domain

## **Page 35**

*Field Near Arnold, Nebraska*, by Anne Byers

## **Page 46**

*August 8, 2023 Nebraska State Digital Opportunities Planning Workshop*, by Clint Mangen, Nebraska Department of Transportation



# Appendix I:

## Nebraska Revised Statute 86-1102

**Rural Broadband Task Force; created; members; terms; advisory groups; staff assistance; powers; duties; expenses; meetings; report.**

(1) The Rural Broadband Task Force is hereby created. Task force members shall include the chairperson of the Transportation and Telecommunications Committee of the Legislature and a member of the Legislature selected by the Executive Board of the Legislative Council who shall both serve as nonvoting, ex officio members, a member of the Public Service Commission who shall be selected by the chairperson of such commission, the chairperson of the Nebraska Information Technology Commission or his or her designee who shall act as chairperson of the task force, the Director of Economic Development or his or her designee, the Director of Agriculture or his or her designee, and the following members to be appointed by the Governor: A representative of the agribusiness community, a representative of the Nebraska business community, a representative of the regulated wireline telecommunications industry, a representative of the wireless telecommunications industry, a representative of the public power industry, a representative of health care providers, a representative of Nebraska postsecondary educational institutions, and a representative of rural schools offering kindergarten through grade twelve. The members appointed by the Governor shall serve for a term of two years and may be reappointed.

(2) The task force may appoint advisory groups to assist the task force in providing technical expertise and advice on any issue. The advisory groups may be composed of representatives of stakeholder groups which may include, but not necessarily be limited to, representatives from small and large wireline companies, wireless companies, public power districts, electric cooperative corporations, cable television companies, Internet service providers, low-income telecommunications and electric utility customers, health care providers, and representatives of educational sectors. No compensation or expense reimbursement shall be provided to any member of any advisory group appointed by the task force.

(3) The Nebraska Information Technology Commission shall provide staff assistance to the task force in consultation with staff from the Public Service Commission and other interested parties. The task force may hire consultants to assist in carrying out its duties. The task force shall review issues relating to availability, adoption, and affordability of broadband services in rural areas of Nebraska. In particular, the task force shall:

(a) Determine how Nebraska rural areas compare to neighboring states and the rest of the nation in average download and upload speeds and in subscription rates to higher speed tiers, when available;

(b) Examine the role of the Nebraska Telecommunications Universal Service Fund in bringing comparable and affordable broadband services to rural residents and any effect of the fund in deterring or delaying capital formation, broadband competition, and broadband deployment;

(c) Review the feasibility of alternative technologies and providers in accelerating access to faster and more reliable broadband service for rural residents;

- (d) Examine alternatives for deployment of broadband services to areas that remain unserved or underserved, such as funding redirection programs described in section 86-330, public-private partnerships, funding for competitive deployment, and other measures, and make recommendations to the Public Service Commission to encourage deployment in such areas;
- (e) Recommend state policies to effectively utilize state universal service fund dollars to leverage federal universal service fund support and other federal funding;
- (f) Make recommendations to the Governor and Legislature as to the most effective and efficient ways that federal broadband rural infrastructure funds received after July 1, 2018, should be expended if such funds become available; and
- (g) Determine other issues that may be pertinent to the purpose of the task force.
- (4) Task force members shall serve on the task force without compensation but shall be entitled to receive reimbursement for expenses incurred for such service as provided in sections 81-1174 to 81-1177.
- (5) The task force shall meet at the call of the chairperson and shall present its findings in a report to the Executive Board of the Legislative Council no later than November 1, 2019, and by November 1 every odd-numbered year thereafter. The report shall be submitted electronically.
- (6) For purposes of this section, broadband services means high-speed telecommunications capability at a minimum download speed of twenty-five megabits per second and a minimum upload speed of three megabits per second, and that enables users to originate and receive high-quality voice, data, and video telecommunications using any technology.

Source

- Laws 2018, LB994, § 2;
- Laws 2020, LB381, § 146;
- Laws 2020, LB992, § 14;
- Laws 2021, LB338, § 7.



# Appendix II:

## Nebraska Rural Broadband Task-force Subcommittee Members

### Agriculture

**Zachary Hunnicutt**, Farmer, Hunnicutt Farms

**Dan Watermeier**, Commissioner, Nebraska Public Service Commission

**Sherry Vinton**, Director, Nebraska Department of Agriculture

### NUSF

**Tom Shoemaker**, President, Pinpoint Communications

**Dan Watermeier**, Commissioner, Nebraska Public Service Commission

**Andrew Whitney**, Director of Virtual Platforms, Bryan Health

### Public-Private Partnerships

**Senator Bruce Bostelman**, Nebraska Legislature

**Ron Cone**, Director of Network Information Services, ESU 10

**Gwen A. Kautz**, CEO/General Manager, Dawson Public Power District

**Tom Shoemaker**, President, Pinpoint Communications

# Appendix III:

## Tables

**Table 1**  
**Unserved and Underserved Rural Broadband Locations by Nebraska Counties**

Ranked by Unserved Rural Locations  
 Nebraska Broadband Office, September 2023 using Dec 2022 FCC data and challenges

County	Underserved Rural Locations	Unserved Rural Locations
Knox	620	2,655
Saunders	600	2,075
Platte	367	2,057
Holt	999	2,023
Custer	1,590	1,935
Cass	519	1,819
Lancaster	1,103	1,807
York	549	1,681
Dodge	330	1,670
Antelope	237	1,616
Gage	710	1,512
Buffalo	988	1,502
Saline	576	1,450
Seward	536	1,408
Boone	236	1,401
Cedar	191	1,366
Sheridan	480	1,336
Lincoln	1,112	1,282
Hall	676	1,169
Polk	177	1,078

County	Underserved Rural Locations	Unserved Rural Locations
Dawes	198	1,023
Burt	175	1,017
Madison	662	1,006
Thayer	235	1,004
Nance	54	986
Sherman	491	954
Douglas	1,128	950
Pierce	346	930
Colfax	500	866
Howard	972	844
Kearney	154	844
Nuckolls	126	825
Cuming	58	821
Franklin	83	802
Fillmore	157	798
Cherry	498	777
Otoe	76	777
Cheyenne	266	748
Valley	499	743
Hitchcock	747	739
Merrick	719	715
Wayne	197	697
Sarpy	782	689
Red Willow	696	674
Garden	154	669
Dawson	1,177	649
Dakota	40	640
Nemaha	94	607
Jefferson	825	582
Greeley	374	570
Brown	29	463
Dixon	23	462
Stanton	16	447
Harlan	328	436
Morrill	33	434
Sioux	22	433
Webster	18	428

County	Underserved Rural Locations	Unserved Rural Locations
Perkins	49	407
Chase	5	377
Washington	2,831	341
Hayes	184	331
Richardson	26	330
Butler	117	323
Keith	553	323
Johnson	15	292
Frontier	416	280
Hamilton	289	268
Wheeler	103	265
Kimball	92	261
Box Butte	9	248
Clay	43	243
Furnas	739	212
Pawnee	33	181
McPherson	91	177
Banner	28	163
Gosper	530	152
Phelps	629	144
Loup	223	137
Garfield	330	134
Deuel	218	128
Thurston	1,143	122
Scotts Bluff	6	88
Grant	264	86
Logan	217	85
Adams	119	78



County	Underserved Rural Locations	Unserved Rural Locations
Dundy	6	75
Thomas	166	70
Blaine	119	69
Hooker	327	55
Keya Paha	0	53
Arthur	158	10
Rock	1,134	4
Boyd	0	1

**Table 2**  
**Percent Rural Broadband Availability Nebraska Counties**

Ranked by % Unserved  
Nebraska Broadband Office, September 2023 using Dec 2022 FCC data and challenges

County	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
McPherson	16.0%	29.0%	55.0%
Hayes	24.0%	27.0%	49.0%
Knox	45.0%	10.0%	44.0%
Nance	55.0%	2.0%	43.0%
Boone	53.0%	7.0%	40.0%
Garden	50.0%	9.0%	40.0%
Sheridan	48.0%	14.0%	39.0%
Sioux	59.0%	2.0%	39.0%
Sherman	44.0%	19.0%	37.0%
Antelope	60.0%	5.0%	35.0%
Wheeler	52.0%	13.0%	35.0%
Franklin	62.0%	4.0%	34.0%
Hitchcock	32.0%	34.0%	34.0%
Greeley	46.0%	21.0%	32.0%
Polk	63.0%	5.0%	32.0%
Banner	64.0%	5.0%	31.0%
Holt	56.0%	15.0%	29.0%
Custer	50.0%	23.0%	28.0%
Cedar	70.0%	4.0%	27.0%
Thayer	67.0%	6.0%	27.0%
Valley	55.0%	18.0%	27.0%
Nuckolls	71.0%	4.0%	26.0%
Dawes	25.0%	5.0%	24.0%
Howard	49.0%	27.0%	24.0%
Kearney	72.0%	4.0%	23.0%
Burt	74.0%	4.0%	22.0%
Cherry	64.0%	14.0%	22.0%
Grant	12.0%	66.0%	22.0%
Perkins	75.0%	3.0%	22.0%
Pierce	70.0%	8.0%	22.0%
Saline	38.0%	9.0%	22.0%
York	26.0%	7.0%	22.0%
Blaine	43.0%	36.0%	21.0%
Loup	44.0%	35.0%	21.0%

County	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Brown	78.0%	1.0%	20.0%
Fillmore	76.0%	4.0%	20.0%
Colfax	29.0%	10.0%	18.0%
Saunders	60.0%	5.0%	18.0%
Cuming	82.0%	1.0%	17.0%
Logan	38.0%	45.0%	17.0%
Seward	45.0%	6.0%	17.0%
Wayne	30.0%	5.0%	17.0%
Webster	83.0%	1.0%	17.0%
Frontier	60.0%	24.0%	16.0%
Merrick	67.0%	16.0%	16.0%
Harlan	74.0%	11.0%	15.0%
Stanton	65.0%	1.0%	15.0%
Cass	61.0%	4.0%	14.0%
Chase	86.0%	0.0%	14.0%
Dixon	85.0%	1.0%	14.0%
Morrill	85.0%	1.0%	14.0%
Nemaha	83.0%	2.0%	14.0%
Platte	18.0%	3.0%	14.0%
Thomas	53.0%	33.0%	14.0%
Cheyenne	28.0%	5.0%	13.0%
Gage	32.0%	6.0%	13.0%
Jefferson	24.0%	18.0%	13.0%
Hooker	16.0%	72.0%	12.0%
Red Willow	15.0%	12.0%	12.0%
Deuel	73.0%	17.0%	10.0%
Dodge	24.0%	2.0%	10.0%
Garfield	66.0%	24.0%	10.0%
Johnson	90.0%	0.0%	10.0%
Kimball	86.0%	4.0%	10.0%
Otoe	52.0%	1.0%	10.0%
Dakota	20.0%	1.0%	9.0%
Gosper	58.0%	33.0%	9.0%
Buffalo	26.0%	5.0%	8.0%
Lincoln	22.0%	7.0%	8.0%
Pawnee	90.0%	2.0%	8.0%
Keya Paha	93.0%	0.0%	7.0%
Madison	23.0%	5.0%	7.0%
Butler	92.0%	2.0%	6.0%

County	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Clay	93.0%	1.0%	6.0%
Dawson	53.0%	11.0%	6.0%
Furnas	73.0%	21.0%	6.0%
Hamilton	88.0%	6.0%	6.0%
Keith	44.0%	10.0%	6.0%
Richardson	51.0%	0.0%	6.0%
Box Butte	27.0%	0.0%	5.0%
Dundy	95.0%	0.0%	5.0%
Hall	10.0%	3.0%	5.0%
Thurston	52.0%	43.0%	5.0%
Washington	28.0%	32.0%	4.0%
Arthur	44.0%	53.0%	3.0%
Phelps	26.0%	13.0%	3.0%
Lancaster	10.0%	1.0%	2.0%
Adams	25.0%	1.0%	1.0%
Douglas	3.0%	1.0%	1.0%
Sarpy	6.0%	1.0%	1.0%
Scotts Bluff	37.0%	0.0%	1.0%
Boyd	100.0%	0.0%	0.0%
Rock	6.0%	94.0%	0.0%

**Table 3**  
**Percent Locations with Broadband Availability by Nebraska Counties**  
 Nebraska Broadband Office, September 2023 using Dec 2022 FCC data and challenges

County	Percent Served	Percent Underserved	Percent Un-served	Percent Served Rural	Percent Underserved Rural	Percent Un-served Rural
Adams	99.0%	1.0%	1.0%	25.0%	1.0%	1.0%
Antelope	60.0%	5.0%	35.0%	60.0%	5.0%	35.0%
Arthur	44.0%	53.0%	3.0%	44.0%	53.0%	3.0%
Banner	64.0%	5.0%	31.0%	64.0%	5.0%	31.0%
Blaine	43.0%	36.0%	21.0%	43.0%	36.0%	21.0%
Boone	53.0%	7.0%	40.0%	53.0%	7.0%	40.0%
Box Butte	95.0%	0.0%	5.0%	27.0%	0.0%	5.0%
Boyd	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Brown	78.0%	1.0%	20.0%	78.0%	1.0%	20.0%
Buffalo	87.0%	5.0%	8.0%	26.0%	5.0%	8.0%
Burt	74.0%	4.0%	22.0%	74.0%	4.0%	22.0%
Butler	92.0%	2.0%	6.0%	92.0%	2.0%	6.0%
Cass	82.0%	4.0%	14.0%	61.0%	4.0%	14.0%
Cedar	70.0%	4.0%	27.0%	70.0%	4.0%	27.0%
Chase	86.0%	0.0%	14.0%	86.0%	0.0%	14.0%
Cherry	64.0%	14.0%	22.0%	64.0%	14.0%	22.0%
Cheyenne	82.0%	5.0%	13.0%	28.0%	5.0%	13.0%
Clay	93.0%	1.0%	6.0%	93.0%	1.0%	6.0%
Colfax	71.0%	11.0%	18.0%	29.0%	10.0%	18.0%
Cuming	82.0%	1.0%	17.0%	82.0%	1.0%	17.0%
Custer	50.0%	23.0%	28.0%	50.0%	23.0%	28.0%
Dakota	90.0%	1.0%	9.0%	20.0%	1.0%	9.0%
Dawes	71.0%	5.0%	24.0%	25.0%	5.0%	24.0%
Dawson	83.0%	11.0%	6.0%	53.0%	11.0%	6.0%
Deuel	73.0%	17.0%	10.0%	73.0%	17.0%	10.0%
Dixon	85.0%	1.0%	14.0%	85.0%	1.0%	14.0%
Dodge	87.0%	2.0%	11.0%	24.0%	2.0%	10.0%
Douglas	99.0%	1.0%	1.0%	3.0%	1.0%	1.0%
Dundy	95.0%	0.0%	5.0%	95.0%	0.0%	5.0%
Fillmore	76.0%	4.0%	20.0%	76.0%	4.0%	20.0%
Franklin	62.0%	4.0%	34.0%	62.0%	4.0%	34.0%
Frontier	60.0%	24.0%	16.0%	60.0%	24.0%	16.0%
Furnas	73.0%	21.0%	6.0%	73.0%	21.0%	6.0%
Gage	80.0%	6.0%	13.0%	32.0%	6.0%	13.0%
Garden	50.0%	9.0%	40.0%	50.0%	9.0%	40.0%

County	Percent Served	Percent Underserved	Percent Un-served	Percent Served Rural	Percent Underserved Rural	Percent Un-served Rural
Garfield	66.0%	24.0%	10.0%	66.0%	24.0%	10.0%
Gosper	58.0%	33.0%	9.0%	58.0%	33.0%	9.0%
Grant	12.0%	66.0%	22.0%	12.0%	66.0%	22.0%
Greeley	46.0%	21.0%	32.0%	46.0%	21.0%	32.0%
Hall	91.0%	3.0%	6.0%	10.0%	3.0%	5.0%
Hamilton	88.0%	6.0%	6.0%	88.0%	6.0%	6.0%
Harlan	74.0%	11.0%	15.0%	74.0%	11.0%	15.0%
Hayes	24.0%	27.0%	49.0%	24.0%	27.0%	49.0%
Hitchcock	32.0%	34.0%	34.0%	32.0%	34.0%	34.0%
Holt	56.0%	15.0%	29.0%	56.0%	15.0%	29.0%
Hooker	16.0%	72.0%	12.0%	16.0%	72.0%	12.0%
Howard	49.0%	27.0%	24.0%	49.0%	27.0%	24.0%
Jefferson	70.0%	18.0%	13.0%	24.0%	18.0%	13.0%
Johnson	90.0%	0.0%	10.0%	90.0%	0.0%	10.0%
Kearney	72.0%	4.0%	23.0%	72.0%	4.0%	23.0%
Keith	84.0%	10.0%	6.0%	44.0%	10.0%	6.0%
Keya Paha	93.0%	0.0%	7.0%	93.0%	0.0%	7.0%
Kimball	86.0%	4.0%	10.0%	86.0%	4.0%	10.0%
Knox	45.0%	10.0%	44.0%	45.0%	10.0%	44.0%
Lancaster	97.0%	1.0%	2.0%	10.0%	1.0%	2.0%
Lincoln	85.0%	7.0%	8.0%	22.0%	7.0%	8.0%
Logan	38.0%	45.0%	17.0%	38.0%	45.0%	17.0%
Loup	44.0%	35.0%	21.0%	44.0%	35.0%	21.0%
Madison	88.0%	5.0%	7.0%	23.0%	5.0%	7.0%
McPherson	16.0%	29.0%	55.0%	16.0%	29.0%	55.0%
Merrick	67.0%	16.0%	16.0%	67.0%	16.0%	16.0%
Morrill	85.0%	1.0%	14.0%	85.0%	1.0%	14.0%
Nance	55.0%	2.0%	43.0%	55.0%	2.0%	43.0%
Nemaha	83.0%	2.0%	14.0%	83.0%	2.0%	14.0%
Nuckolls	71.0%	4.0%	26.0%	71.0%	4.0%	26.0%
Otoe	89.0%	1.0%	10.0%	52.0%	1.0%	10.0%
Pawnee	90.0%	2.0%	8.0%	90.0%	2.0%	8.0%
Perkins	75.0%	3.0%	22.0%	75.0%	3.0%	22.0%
Phelps	83.0%	14.0%	3.0%	26.0%	13.0%	3.0%
Pierce	70.0%	8.0%	22.0%	70.0%	8.0%	22.0%
Platte	83.0%	3.0%	14.0%	18.0%	3.0%	14.0%
Polk	63.0%	5.0%	32.0%	63.0%	5.0%	32.0%
Red Willow	76.0%	12.0%	12.0%	15.0%	12.0%	12.0%



County	Percent Served	Percent Underserved	Percent Unserved	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Richardson	93.0%	0.0%	6.0%	51.0%	0.0%	6.0%
Rock	6.0%	94.0%	0.0%	6.0%	94.0%	0.0%
Saline	70.0%	9.0%	22.0%	38.0%	9.0%	22.0%
Sarpy	97.0%	1.0%	1.0%	6.0%	1.0%	1.0%
Saunders	76.0%	5.0%	18.0%	60.0%	5.0%	18.0%
Scotts Bluff	99.0%	0.0%	1.0%	37.0%	0.0%	1.0%
Seward	77.0%	6.0%	17.0%	45.0%	6.0%	17.0%
Sheridan	48.0%	14.0%	39.0%	48.0%	14.0%	39.0%
Sherman	44.0%	19.0%	37.0%	44.0%	19.0%	37.0%
Sioux	59.0%	2.0%	39.0%	59.0%	2.0%	39.0%
Stanton	85.0%	1.0%	15.0%	65.0%	1.0%	15.0%
Thayer	67.0%	6.0%	27.0%	67.0%	6.0%	27.0%
Thomas	53.0%	33.0%	14.0%	53.0%	33.0%	14.0%
Thurston	52.0%	43.0%	5.0%	52.0%	43.0%	5.0%
Valley	55.0%	18.0%	27.0%	55.0%	18.0%	27.0%
Washington	63.0%	33.0%	4.0%	28.0%	32.0%	4.0%
Wayne	78.0%	5.0%	17.0%	30.0%	5.0%	17.0%
Webster	83.0%	1.0%	17.0%	83.0%	1.0%	17.0%
Wheeler	52.0%	13.0%	35.0%	52.0%	13.0%	35.0%
York	70.0%	7.0%	22.0%	26.0%	7.0%	22.0%

**Table 4**  
**Percent Locations with Broadband Availability by Nebraska Counties**  
 Nebraska Broadband Office, September 2023 using Dec 2022 FCC data and challenges

County	Percent Served	Percent Underserved	Percent Unserved	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Adams	99.0%	1.0%	1.0%	25.0%	1.0%	1.0%
Antelope	60.0%	5.0%	35.0%	60.0%	5.0%	35.0%
Arthur	44.0%	53.0%	3.0%	44.0%	53.0%	3.0%
Banner	64.0%	5.0%	31.0%	64.0%	5.0%	31.0%
Blaine	43.0%	36.0%	21.0%	43.0%	36.0%	21.0%
Boone	53.0%	7.0%	40.0%	53.0%	7.0%	40.0%
Box Butte	95.0%	0.0%	5.0%	27.0%	0.0%	5.0%
Boyd	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%
Brown	78.0%	1.0%	20.0%	78.0%	1.0%	20.0%
Buffalo	87.0%	5.0%	8.0%	26.0%	5.0%	8.0%
Burt	74.0%	4.0%	22.0%	74.0%	4.0%	22.0%
Butler	92.0%	2.0%	6.0%	92.0%	2.0%	6.0%
Cass	82.0%	4.0%	14.0%	61.0%	4.0%	14.0%
Cedar	70.0%	4.0%	27.0%	70.0%	4.0%	27.0%
Chase	86.0%	0.0%	14.0%	86.0%	0.0%	14.0%
Cherry	64.0%	14.0%	22.0%	64.0%	14.0%	22.0%
Cheyenne	82.0%	5.0%	13.0%	28.0%	5.0%	13.0%
Clay	93.0%	1.0%	6.0%	93.0%	1.0%	6.0%
Colfax	71.0%	11.0%	18.0%	29.0%	10.0%	18.0%
Cuming	82.0%	1.0%	17.0%	82.0%	1.0%	17.0%
Custer	50.0%	23.0%	28.0%	50.0%	23.0%	28.0%
Dakota	90.0%	1.0%	9.0%	20.0%	1.0%	9.0%
Dawes	71.0%	5.0%	24.0%	25.0%	5.0%	24.0%
Dawson	83.0%	11.0%	6.0%	53.0%	11.0%	6.0%
Deuel	73.0%	17.0%	10.0%	73.0%	17.0%	10.0%
Dixon	85.0%	1.0%	14.0%	85.0%	1.0%	14.0%
Dodge	87.0%	2.0%	11.0%	24.0%	2.0%	10.0%
Douglas	99.0%	1.0%	1.0%	3.0%	1.0%	1.0%
Dundy	95.0%	0.0%	5.0%	95.0%	0.0%	5.0%
Fillmore	76.0%	4.0%	20.0%	76.0%	4.0%	20.0%
Franklin	62.0%	4.0%	34.0%	62.0%	4.0%	34.0%
Frontier	60.0%	24.0%	16.0%	60.0%	24.0%	16.0%
Furnas	73.0%	21.0%	6.0%	73.0%	21.0%	6.0%
Gage	80.0%	6.0%	13.0%	32.0%	6.0%	13.0%

County	Percent Served	Percent Underserved	Percent Unserved	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Garden	50.0%	9.0%	40.0%	50.0%	9.0%	40.0%
Garfield	66.0%	24.0%	10.0%	66.0%	24.0%	10.0%
Gosper	58.0%	33.0%	9.0%	58.0%	33.0%	9.0%
Grant	12.0%	66.0%	22.0%	12.0%	66.0%	22.0%
Greeley	46.0%	21.0%	32.0%	46.0%	21.0%	32.0%
Hall	91.0%	3.0%	6.0%	10.0%	3.0%	5.0%
Hamilton	88.0%	6.0%	6.0%	88.0%	6.0%	6.0%
Hamilton	88.0%	6.0%	6.0%	88.0%	6.0%	6.0%
Harlan	74.0%	11.0%	15.0%	74.0%	11.0%	15.0%
Hayes	24.0%	27.0%	49.0%	24.0%	27.0%	49.0%
Hitchcock	32.0%	34.0%	34.0%	32.0%	34.0%	34.0%
Holt	56.0%	15.0%	29.0%	56.0%	15.0%	29.0%
Hooker	16.0%	72.0%	12.0%	16.0%	72.0%	12.0%
Howard	49.0%	27.0%	24.0%	49.0%	27.0%	24.0%
Jefferson	70.0%	18.0%	13.0%	24.0%	18.0%	13.0%
Johnson	90.0%	0.0%	10.0%	90.0%	0.0%	10.0%
Kearney	72.0%	4.0%	23.0%	72.0%	4.0%	23.0%
Keith	84.0%	10.0%	6.0%	44.0%	10.0%	6.0%
Keya Paha	93.0%	0.0%	7.0%	93.0%	0.0%	7.0%
Kimball	86.0%	4.0%	10.0%	86.0%	4.0%	10.0%
Knox	45.0%	10.0%	44.0%	45.0%	10.0%	44.0%
Lancaster	97.0%	1.0%	2.0%	10.0%	1.0%	2.0%
Lincoln	85.0%	7.0%	8.0%	22.0%	7.0%	8.0%
Logan	38.0%	45.0%	17.0%	38.0%	45.0%	17.0%
Loup	44.0%	35.0%	21.0%	44.0%	35.0%	21.0%
Madison	88.0%	5.0%	7.0%	23.0%	5.0%	7.0%
McPherson	16.0%	29.0%	55.0%	16.0%	29.0%	55.0%
Merrick	67.0%	16.0%	16.0%	67.0%	16.0%	16.0%
Morrill	85.0%	1.0%	14.0%	85.0%	1.0%	14.0%
Nance	55.0%	2.0%	43.0%	55.0%	2.0%	43.0%
Nemaha	83.0%	2.0%	14.0%	83.0%	2.0%	14.0%
Nuckolls	71.0%	4.0%	26.0%	71.0%	4.0%	26.0%
Otoe	89.0%	1.0%	10.0%	52.0%	1.0%	10.0%
Pawnee	90.0%	2.0%	8.0%	90.0%	2.0%	8.0%
Perkins	75.0%	3.0%	22.0%	75.0%	3.0%	22.0%
Phelps	83.0%	14.0%	3.0%	26.0%	13.0%	3.0%
Pierce	70.0%	8.0%	22.0%	70.0%	8.0%	22.0%
Platte	83.0%	3.0%	14.0%	18.0%	3.0%	14.0%

County	Percent Served	Percent Underserved	Percent Unserved	Percent Served Rural	Percent Underserved Rural	Percent Unserved Rural
Polk	63.0%	5.0%	32.0%	63.0%	5.0%	32.0%
Red Willow	76.0%	12.0%	12.0%	15.0%	12.0%	12.0%
Richardson	93.0%	0.0%	6.0%	51.0%	0.0%	6.0%
Rock	6.0%	94.0%	0.0%	6.0%	94.0%	0.0%
Saline	70.0%	9.0%	22.0%	38.0%	9.0%	22.0%
Sarpy	97.0%	1.0%	1.0%	6.0%	1.0%	1.0%
Saunders	76.0%	5.0%	18.0%	60.0%	5.0%	18.0%
Scotts Bluff	99.0%	0.0%	1.0%	37.0%	0.0%	1.0%
Seward	77.0%	6.0%	17.0%	45.0%	6.0%	17.0%
Sheridan	48.0%	14.0%	39.0%	48.0%	14.0%	39.0%
Sherman	44.0%	19.0%	37.0%	44.0%	19.0%	37.0%
Sioux	59.0%	2.0%	39.0%	59.0%	2.0%	39.0%
Stanton	85.0%	1.0%	15.0%	65.0%	1.0%	15.0%
Thayer	67.0%	6.0%	27.0%	67.0%	6.0%	27.0%
Thomas	53.0%	33.0%	14.0%	53.0%	33.0%	14.0%
Thurston	52.0%	43.0%	5.0%	52.0%	43.0%	5.0%
Valley	55.0%	18.0%	27.0%	55.0%	18.0%	27.0%
Washington	63.0%	33.0%	4.0%	28.0%	32.0%	4.0%
Wayne	78.0%	5.0%	17.0%	30.0%	5.0%	17.0%
Webster	83.0%	1.0%	17.0%	83.0%	1.0%	17.0%
Wheeler	52.0%	13.0%	35.0%	52.0%	13.0%	35.0%
York	70.0%	7.0%	22.0%	26.0%	7.0%	22.0%