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Nebraska Broadband

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Partnership leads to improvement in Lincoln City Libraries bandwidth

1 Through a unique partnership between Lincoln City Libraries, NebraskaLink, Lincoln Public Schools (LPS), Network Nebraska, and the Nebraska Public Service Commission, Lincoln City Libraries has increased its Internet capacity from 20 megabits per second (Mbps) to 1 gigabit per second (Gbps)—which is 50 times the current bandwidth. The project will benefit Lincoln Public Schools students who need Internet access to do their homework and other patrons accessing the Internet.

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6 The project was made possible through a \$334,000 grant from the Nebraska Universal Service Fund administered by the Nebraska Public Service Commission. The grant funds were used to build connections from all eight library locations to Network Nebraska, the state network serving K-20 educational entities. The only cost to Lincoln City Libraries was upgrading its own equipment. Through an Indefeasible

7 Right to Use agreement, Lincoln City Libraries will not pay for the use of the fiber for 20 years. Due to its aggregated purchasing power and low administrative costs, Network Nebraska is providing up to 1 Gbps of Internet at a price similar to what Lincoln City Libraries currently pays for 18 megabits. The project may act as a model for other libraries in Nebraska that need better broadband access.

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Two young library patrons use a computer to access the Internet at the Walt Branch Library. Through a unique partnership, Internet capacity at Lincoln City Libraries has increased from 20 megabits per second to 1 gigabit per second.

“The Nebraska Public Service Commission is

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pleased that the Lincoln Libraries made use of these grant funds in this manner and we appreciate the support of NebraskaLink in carrying out the construction of this project," said Frank Landis, Nebraska Public Service Commissioner. "We applaud the Lincoln Libraries and NebraskaLink for stepping forward to expand broadband access in Lincoln."

Several libraries are sited in areas with some of the lowest per capita incomes in Lincoln. Particularly at Bennet Martin Library, Williams Library, and Eiseley Library, better broadband means that the people who depend on the library for their most consistent Internet access will have strong access.

The project also supports Lincoln Public Schools' initiative to provide tablets to students.

"For low-income families with school-age children who do not have a broadband connection at home, the access provided by the Lincoln Library Network may be the only source of broadband Internet access available to the student," Leach said.

Lincoln Public Schools began supplying sixth-grade students with tablets in the 2015-2016 school year and will eventually provide devices for students from third through 12th grades. Through an arrangement with Lincoln Public Schools, students will have a direct connection to their school network as soon as they enter a Lincoln City Libraries facility.

"The Libraries' plan to increase access to global information is critical for our students, who will use this infrastructure to support their learning that, increasingly, requires access to digital content," said Kirk Langer, Chief Technology Officer for Lincoln Public Schools. "This timely community partnership means LPS students can use the safe learning environment of the Lincoln City Libraries outside the school day. They will now have the type of network access necessary to support the devices LPS provides for students from third through twelfth grade."

"This project strengthens Lincoln City Libraries' vitality by providing top-notch Internet services," said Leach. "The benefits to individuals include student curriculum access, faster information, streamlined internal processes, and the connection to the world that can be had only through the Internet. The whole community benefits when public libraries stand as strong, relevant places that uphold the value we place on education."

Do Space supports learning and doing

By Anne Byers, NITC

With a spacious computer lab, free classes, meeting rooms, hangouts for children and teen agers, and a small maker space, Omaha's Do Space is a space for everyone.

The Do Space provides access to technology and training to 500 visitors a day. Memberships and classes are free. Approximately 30,000 individuals have already signed up for memberships. Users range from technology novices to technology entrepreneurs. With over 200 volunteers and spaces designed to encourage collaboration, the Do Space is as much about building community as it is about utilizing technology.

In April, members of the Nebraska Information Technology Commission's Education and Community Councils were able to tour the Do Space and Metropolitan Community College's learning space on the second floor.

The maker space, with its 3D printers, laser cutter, and vinyl cutter, provides a place for entrepreneurs to create prototypes or for budding engineers to experiment with 3D printing.

The upstairs space, occupied by Metropolitan Community College, has classrooms as well as seating areas for studying, working, or collaborating. A certified testing lab is available for students wishing to take certification tests. The facility averages approximately 100 users per day. A high-tech lab is also under development.

Before leaving, I signed up for my Do Space membership. Now I just need to sign up for a class on 3D printing.

More information is available at www.dospace.org.



Do Space Volunteer Coordinator Cherie Gossett shows examples of 3D printed objects to members of the NITC Education and Community Councils.

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Projects recognized for advancing broadband in Nebraska

The Nebraska Broadband Initiative recognized three outstanding broadband projects at the Rural Futures Institute pre-conference on Oct. 21, 2015:

- Rural Nebraska Healthcare Network Broadband Fiber Network (Outstanding Infrastructure Project)
- Interface: The Web School (Outstanding Digital Literacy Project)
- Nebraska 4-H Robotics FIRST Lego League (FFL) (Outstanding Youth Project)

The Rural Nebraska Healthcare Network Broadband Fiber Network. The Rural Nebraska Healthcare Network (RNHN), a non-profit healthcare network with nine member hospitals in the Nebraska Panhandle, built a broadband fiber network in 2012 with funding from the Federal Communications Commission's Rural Health Care Pilot Program. The 36-fiber redundant ring network in western Nebraska connects 10 hospitals, with leased circuits connecting an additional 13 hospitals in central/eastern Nebraska. The network has long-haul circuits to Omaha and Denver.



Nebraska Public Service Commissioner Jerry Vap presents the award for outstanding infrastructure project to Bonni Carrell, representing the Rural Nebraska Health Care Network Broadband Fiber Network.

The network is connected to the Nebraska Statewide Telehealth Network and has direct access to radiologists, laboratories, clinical pharmacists, and other specialists nationwide. Participating facilities transmit medical records, data, patient files, radiology, billing and other important patient and business-related information.

RNHN initially partnered with Mobius Communications in Hemingford. Mobius Communications brought the FCC funding opportunity to RNHN's attention and assisted with the application process. Construction of the RNHN fiber network was made possible through a unique partnership with Zayo, a broadband provider. RNHN installed 84 fibers

and leased 48 of them on a long-term basis to Zayo. The money that RNHN received from Zayo for the lease was sufficient to cover the RNHN's portion of network construction costs. The Zayo 48-fiber commercial component has been developed by several Panhandle communication providers.

The 2 Gigabits per second redundant backbone allows images to be sent in real-time and the transfer of files in seconds or minutes, allowing easier access to patient records and information and supporting greater use of telemedicine and telehealth. The backbone capacity, which can be expanded as needed, is allowing member hospitals to provide off-site backup and disaster recovery services to each other.

RNHN members include Box Butte General Hospital, Chadron Community Hospital, Gordon Memorial Hospital, Kimball Health Services, Morrill County Community Hospital, Perkins County Health Services, Regional West Garden County, Regional West Health Services, and Sidney Regional Medical Center.

Interface: The Web School works to provide opportunities to learn code to everyone who wants to learn to do so. According to the Nebraska Department of Labor, there are currently over 4,000 unfilled tech jobs in the state of Nebraska alone. Interface: The Web School is addressing the need for a skilled IT workforce by providing introductory web development workshops to youth and adults as well as intensive web development training for those looking to enhance their skills and/or change careers.



Shonna Dorsey accepts Interface: The Web School's award for outstanding digital literacy project.

Over 50 youth ages 6 to 12 have participated in web development workshops through Interface. The partnership with AIM, FUSE Coworking, and Omaha Public Library provided an opportunity to reach young girls, currently underrepresented in tech, to web development, one area of the tech

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field. Additionally, by offering these workshops at no/low cost to families and providing laptops for those who needed them, girls from all over the community were able to take advantage of this opportunity. One youth participant started a business inspired by the site she created.

Additionally over 100 adults have participated in Interface's web development workshops. Following these sessions, adult participants report feeling more confident about working with code and find that some of what they learn in the free sessions can be immediately applied to their day-to-day tasks such as sending e-mail newsletters.

Over 100 adults have participated in Interface's 11- to 15-week intensive web developer training courses. Students have gone from positions such as social worker and barista to technology specialist and junior web developer. In partnership with First National Bank, Interface ran a 10-week web developer training course during the fall of 2014 where four non-technical First National employees and eight external applicants were selected to participate in training with all tuition paid and full-time pay during the course. Through this program, First National transitioned the four employees into technical roles and hired one of the external candidates, who had been a full-time stay-at-home mom for 12 years prior to the course, as a developer at \$55,000 per year. Another one of the external candidates was a barista before joining the course. Following the 10-week course, she landed a position with an agricultural technology company and is now a junior web developer. She has more than doubled her income in under one year and has moved her family out of her parents' home.

Nebraska 4-H Robotics FIRST Lego League (FLL). To meet the need for more engineers and other STEM (Science, Technology, Engineering, and Mathematics) leaders, Nebraska 4-H Extension and our community partners have provided youth the opportunity to compete in the FIRST LEGO League (FLL) educational robotics competition program across Nebraska.

In 2015 Nebraska 4-H Extension hosted competitions for more than 100 FLL teams (about 714 youth) in six qualifying events in communities across the state (Omaha, Bellevue, Sidney, Kearney, Nebraska City, and South Sioux City) and one 48-team state championship hosted at the Nebraska Air and Space Museum in Ashland, Nebraska. Youth that participate in these robotics competitions build and program robots to accomplish specific tasks, communicate their engineering design processes, and complete a

related research project.

Through their participation in the FLL competition, youth display increased interest in and understanding of science and technology, and the engineering design process.

Through FLL participants are exposed to a wide array of different career professions.

Nearly every team meets with STEM-career professionals and researches various STEM careers as part of FLL.

FLL program develops participants as leaders who support innovation. The program promotes innovation through the Core Value "What we discover is more important than what we win," and by evaluating innovative project solutions and robot designs. Youth in FLL believe leadership is important, report high levels of leadership capacity, and perceive improvement in leadership capacity as a result of participating. With their high levels of engagement and interest in STEM, educational robotics program participants are in the STEM pipeline and are likely to build their self-efficacy in STEM, work harder as they expect achievement, and experience additional success as they continue in STEM.



Bradley Barker accepts Nebraska 4-H Robotics FIRST Lego League's award for outstanding youth project.

\$2.7 million grant advances health information exchange in Nebraska

The Nebraska Information Technology Commission (NITC) received over \$2.7 million in funding on July 27, 2015 from the U.S. Department of Health and Human Services Office of the National Coordinator for Health Information Technology. The grant supports greater adoption of health information exchange and to help health care facilities integrate health information technology into their workflow.

The NITC is partnering with the Nebraska Health Information Initiative (NeHII) and the University of Nebraska Medical Center (UNMC) on the grant. NeHII is one of the largest health information exchanges (HIEs) in the country with data on over 3 million individuals and over 5,000 us-

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ers. This two-year grant builds upon NeHII's successful track record by adding additional Critical Access Hospitals, long-term care facilities, and other providers to NeHII; increasing utilization by providing additional value-added functionality and workflow integration training; and increasing interoperability and integration with a focus on public health and research.



Project team members met with Zoe Barber, ONC project officer, and Nance Shatzkin, Bronx RHIO CEO, on Jan. 27, 2016. Pictured from left to right: Vicki Kennel, Don Klepser, Zoe Barber, Jessica Gilson, Anne Byers, Gary Cochran, Rachel Houseman, Lianne Stevens, Marsha Morien, Deb Bass, Nance Shatzkin, Nathan Bills, and Roger Van Epps.

UNMC will provide assistance in workflow integration to facilities in Auburn and O'Neill. Initial use cases for health information are being currently being identified. Lessons learned will be shared through use case-based training modules.

The grant project is employing a multi-faceted approach to increase adoption of health information exchange technologies and to increase utilization. Grant activities include:

- Implementing 18 Critical Access Hospitals and labs for exchange with NeHII;
- Implementing five ambulatory clinics for exchange with NeHII;
- Implementing Direct secure messaging for 50 long-term care and other facilities;
- Implementing a gateway with five HIEs to enable the exchange of exchange of data across HIEs;
- Implementing Admission Discharge and Transfer (ADT) alerting via mobile messaging for 40 providers;
- Connecting eight Critical Access Hospitals to the State's syndromic surveillance system through NeHII;

- Implementing population health analytics for five facilities;
- Providing assistance in workflow analysis and integration to facilities participating in integrated communities;
- Developing six use-case based training modules; and
- Developing two demonstration projects which integrate HIE data for comparative effectiveness research.

Association focuses on tech talent

An advisory council of high-level Information Technology (IT) business executives formed by the Nebraska Department of Economic Development (DED) two years ago has now branched off and incorporated as the non-profit Technology Association of Nebraska (TAN).

"We were pleased to play a large role in this group's formation as it related to initial recommendations made by the Battelle Study," said Courtney Dentlinger, DED Director. "It is equally gratifying to see this group now grow beyond the limits of what they could achieve with our help alone. Having spoken with many company officials statewide, the evidence supports a critical need for workers trained and skilled in information technology if all of our industries are to grow and flourish."

The group's goal is to focus on technology workforce issues that impact businesses across all industries and raise the overall visibility and viability of the industry.

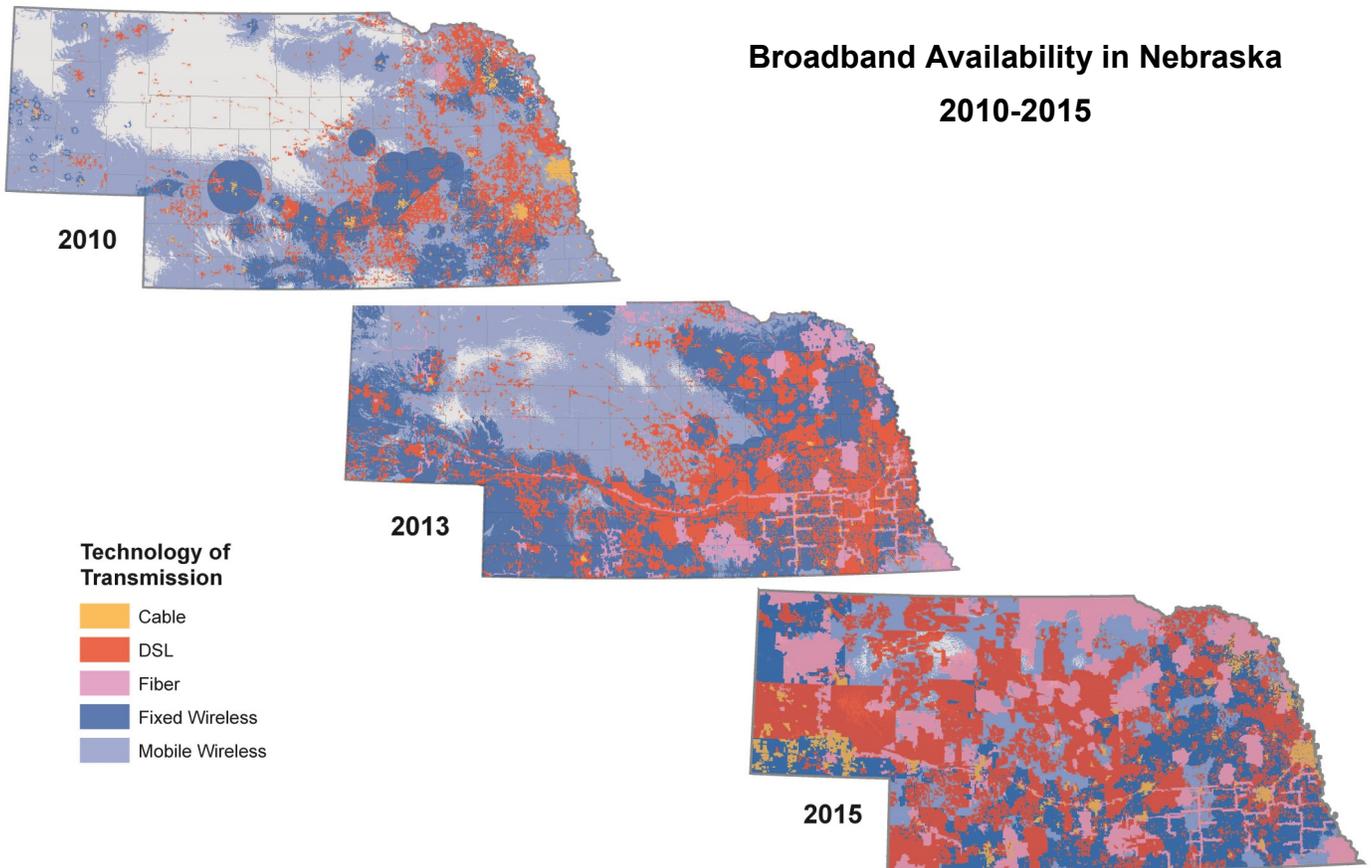
The TAN Board of Directors hired Stan Pierce to be its executive director. Pierce, a 33-year veteran of the tech industry, was most recently a senior vice president at Fiserv, overseeing all production software engineering departments of the company's Bank Solutions business.

For more information, visit www.nebraskatech.org.

NITC welcomes new commissioners

Governor Ricketts has appointed Shane Greckel, owner/operator of Greckel Farms, LLC, and Daniel Spray, president of Precision Technology, Inc. as Nebraska Information Technology Commissioners. Welcome, Commissioners Greckel and Spray.

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Updated map shows improvements in broadband availability in Nebraska

The Nebraska Public Service Commission (PSC) has updated the broadband mapping website (broadbandmap.nebraska.gov). The map above highlights the rapid deployment of broadband technologies between 2010 and 2015. The increased deployment of fiber-based broadband is particularly noteworthy.

The website allows users to look up provider information for a variety of geographic locations, from as granular as a point or address to an area as large as a county or region. New features include aerial imagery to allow for better visualization of locations, the ability to view Incumbent Local Exchange Carrier boundaries, and updated speed information. The updated website is also mobile-friendly.

From 2010 to 2014, the PSC collected broadband deployment

information directly from carriers. This information detailed where, and at what speeds, broadband was being provided. The PSC used this information to support their broadband mapping website. Beginning in 2015, the Federal Communications Commission (FCC) assumed responsibility for collecting the broadband deployment data through its Form 477 data collection, with promises to eventually release the data for public consumption. Because of the heretofore irregular release of that information, the PSC has once again requested the data directly from providers starting with the March 2016 collection cycle. That data was used to update the broadband map, and coincident with that data collection, the design of the map itself was also updated. Data collection directly by the PSC has allowed for broadband deployment to be tracked over time, as well.

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State education network decreases cost by aggregating demand

Network Nebraska-Education connects nearly every K-12 school district, educational service unit, and public college, enabling distance education and providing Internet access. By aggregating demand, Network Nebraska-Education has reduced costs for participating schools.

The unit cost for Internet access to Nebraska schools and colleges has decreased by 99% over eight years due to the aggregation of demand, competitive bidding, and market forces. Nebraska schools and colleges responded by increasing their purchase of Internet many times over the same time period to enhance the on-campus learning environments.

Network Nebraska-Education has established five major backbone aggregation points across the state where telecommunications providers can co-locate their equipment for greater access to educational customers.

Because the State of Nebraska leases these facilities, investments in infrastructure made by telecommunications companies can also benefit other customers.

Nebraska conference connects providers and communities

Approximately 160 community leaders, resource providers, and telecommunications providers attended the Nebraska Broadband Today conference on May 24 at the Cornhusker Marriott in Lincoln. The conference was sponsored by the Nebraska Telecommunications Association in partnership with the Nebraska Broadband Initiative.

Highlights included a welcome from State of Nebraska CIO Ed Toner and a keynote presentation from Rural Futures Institute Executive Director Chuck Schroeder.

A panel on broadband and sports was a fan favorite with Kelly Mosier discussing the importance of social media in promoting Husker athletics. Taylor Siebert shared how Striv.TV, based in Henderson, Nebraska is helping schools share their stories through live video streaming. Hunter Radenslaben, a high school student in Waverly, is building a business based off his popular Twitter account, @AthleteNation.

Other sessions highlighted the use of broadband in agricul-

ture, understanding broadband technologies and policies, technology jobs and training opportunities, and putting your business on the map with an online presence.

Project brings fiber to Lindsay

Darci Lindgren, Technology Coordinator for Lindsay Holy Family, met with Brandon Schmidt, Account Executive for NebraskaLink, at the Nebraska Broadband Today Conference in Lincoln on Tuesday, May 24. There they were able to put the finishing touches on the summer 2016 fiber optic installation plans. With the help of Klint Arnold from Mid-states Data Transport of Pierce, Nebraska, fiber optic cable will be laid to the private school. The new connection will allow greater flexibility for Network Nebraska distance learning and digital field trip events, as well as student and teacher access to digital tools. After comparing the NebraskaLink bid to two other providers that were almost three times higher for similar services, principal Andy Bishop and the Holy Family Finance Committee decided to move forward with the upgrade on May 19. Contributions from grants and federal E-rate funds make this project possible. Holy Family upgraded their entire internal wireless network last summer (including fiber between their two buildings) with the help of Heartland Communications from David City using Category 2 E-rate funds, so the internal network is ready to maximize the increased bandwidth made possible with fiber optic data transport. The school will no longer be limited to outdated copper connection speeds. Other Lindsay area businesses could benefit from this fiber build if requested.

Nebraska selected to participate in IMLS grant to aid rural libraries

The State of Nebraska was recently selected by Internet2 as one of five states to take part in a grant to assist rural and tribal libraries in achieving faster broadband. Nebraska was chosen because of its high percentage of small (96.3%) and rural (76.9%) public libraries, as defined by the Institute of Museum and Library Sciences (IMLS). The four other participating states include Alaska, Kansas, Oklahoma, and Washington.

The grant will produce a broadband toolkit and technology self-assessment that can be used by rural and tribal libraries to improve the speed of internal and external Internet

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connections.

Nebraska's role will be to pilot the toolkit over the next 12 months with at least six rural libraries that meet a set of selection criteria. The staff responsible for the grant activities are Holly Woldt, Nebraska Library Commission, and Tom Rolfes, State of Nebraska--Office of the CIO. Holly and Tom flew to Chicago on May 19 to participate in a grant planning workshop.

New labels will help consumers understand broadband plans

The Federal Communications Commission announced new broadband labels to provide consumers of mobile and fixed broadband Internet service with easy-to-understand information about price and performance on April 4, 2016. These labels should help consumers make informed decisions about the purchase of broadband service.

The consumer broadband labels will provide consumers with more information on service speed and reliability and greater clarity regarding the costs of broadband service, including fees and other add-on charges that may appear on their bills. The FCC's Open Internet transparency rules require broadband Internet access service providers to disclose this information to consumers in an accurate, understandable and easy-to-find manner. These formats, while not mandated by the agency, are recommended by the Commission and will serve as a "safe harbor" to meet those requirements.

Library makerspaces grow in Nebraska

The Nebraska Library Commission surveyed libraries in Nebraska earlier this year on their maker space capabilities. Thirty-seven out of 150 respondents, indicated that they have a makerspace in their library. Of the 37 respondents with makerspaces, 14 reported having a permanent spot for a makerspace with the remaining 23 having a temporary space such as a meeting or conference room. Arts and crafts and legos were the most popular makerspace items. Fewer than five libraries reported having a 3D printer.

A number of libraries without makerspaces indicated interest in having a makerspace in their library, with 11 indicating an interest in 3D printing, computer app creation, and robotics equipment. Twelve libraries indicated an interest in computer programming equipment.

2016 Legislative session addresses 911, prescription drug monitoring

Several laws relating to telecommunications and health information exchange were passed by the legislature and signed by Governor Ricketts during the past session, including:

- LB 471 (Sen. Howard) Change provisions relating to prescription drug monitoring.
- LB 938 Smith Adopt the 911 Service System Act and transfer funds from the Enhanced Wireless 911 Fund to the 911 Service System Fund

Additionally, the Transportation and Telecommunications Committee will be conducting an interim study (LR 538) to examine telecommunications services in Nebraska.

NITC Community Council uses social media to share broadband successes

The NITC Community Council is undertaking a social media campaign including Twitter and Facebook accounts to share broadband development success stories and resources.

Twitter: @NITCcommunity1

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

Broadband Nebraska is produced by the NITC Community Council in partnership with the Nebraska Broadband Initiative. To subscribe go to: <http://nitc.ne.gov/news/community/index.html>

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

Twitter: @NITCcommunity1

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



The **Nebraska Broadband Initiative**

(broadband.nebraska.gov) promotes the adoption and utilization of broadband in Nebraska. Project partners

include the Nebraska Public Service Commission, University of Nebraska-Lincoln, Nebraska Information Technology Commission, Nebraska Department of Economic Development, and AIM.

