Community Council

Thursday, March 31, 2016

9:30 a.m. to 12:00 noon CT (8:30 a.m. to 11:00 a.m. MT)

Nebraska Public Service Commission, 1200 N St., Suite 300, Lincoln, NE in the hearing room
Grand Island Public Library, 211 N Washington St. , Grand Island, NE
ESU 13, 1114 Toledo St., Sidney, NE
Norfolk Voc Rehab, 1212 Benjamin Ave., Norfolk, NE
University of Nebraska Kearney, CMCT 250, Kearney, NE

Tentative Agenda

Meeting Materials

9:30	Roll Call Notice of Posting of Agenda Notice of Nebraska Open Meetings Act Posting Approval of Sept. 14, 2015 minutes* Public Comment
9:40	Updates • Nebraska Broadband Today! Conference • Lincoln Skills Gap Report • Funding Resource for Broadband including the new Cool and Connected Program—Joint project of the Nebraska Broadband Initiative and USDA

10:00	Action Items to Support the Statewide Technology Plan
	• Community IT Development
	   o Developing Case Studies
	      ▪ 3 Broadband Award Winners
	      ▪ Lincoln City Libraries
	      ▪ Do Space
	      ▪ Other ideas? Sidney?
	   o Developing a social marketing plan for the Community Council
	• Education Council Broadband-Related Action Items:Equitable Access for Students/Network Nebraska Participation by other entities
	   o Lincoln City Libraries is now live with their new fiber connection
	   o Nebraska is participating in an Internet 2 grant from the Institute of Museum and Library Services (IMLS)
	   o New NTIA data on broadband adoption

11:15	Residential Internet Access Cost in Nebraska study by Tim Obermier, UNK
12:00 noon	Adjourn

1:00-3:00	Members are invited to participate in a joint work group meeting with Education Council members to address joint action items at the Nebraska Public Service Commmission

* Indicates action items

Meeting announcement posted on Nebraska Public Meeting website on March 4, 2016 and the NITC website on Feb. 25, 2016. Agenda posted on March 25, 2016.

Community Council
Monday, Sept. 14, 2015
1:30 p.m. to 3:30 p.m. CT (12:30 p.m. to 2:30 p.m. MT)

Lincoln: Executive Building, 521 South 14th St, 1st floor videoconferencing room
Public Participation Sites [NEB. REV. STAT. § 84-1411(6)]**:**
Sidney: ESU 13, 1114 Toledo Street
Grand Island: Grand Island Public Library, 211 N. Washington St.

MINUTES

ROLL CALL, NOTICE OF POSTING OF AGENDA, & NOTICE OF NEBRASKA OPEN MEETINGS ACT POSTING

Members Present:
Pam Adams
Chris Anderson
Jay Anderson
Rod Armstrong
Brett Baker
Randy Bretz
Jessica Chamberlain
Shonna Dorsey
Phil Green
Dave Hahn
Steve Henderson
Jacob Knutson
Joan Modrell
Commissioner Jerry Vap
Holly Woldt
Charlotte Narjes for Connie Hancock

Members Present at Public Participation Sites: Connie Hancock (Sidney), Steve Fosselman (Grand Island) Megan McGown (Grand Island)

Members Absent: Norene Fitzgerald, David Lofdahl, Monica Lueking-Crowe, and Marion McDermott

ROLL CALL, NOTICE OF POSTING OF AGENDA, & NOTICE OF NEBRASKA OPEN MEETINGS ACT POSTING
The meeting was called to order by co-chair Rod Armstrong. Fifteen members and alternates were present in Lincoln at time of roll. A quorum was present.

The meeting announcement was posted on the Nebraska Public Meeting calendar on Sept. 4, 2015 and the NITC website on Sept. 11, 2015. The agenda was posted Sept. 11, 2015. A copy of the Nebraska Open Meetings Act was available on the table.

PUBLIC COMMENT

There were no public comments.

APPROVAL OF APRIL 8, 2015 MINUTES*

There were no corrections to the minutes. Brett Baker moved to approve the April 8, 2015 minutes. Jay Anderson seconded the motion. **The vote was as follows: Adams-Yes, C. Anderson-Yes, J. Anderson-Yes, Armstrong-Yes, Baker-Yes, Bretz-Yes, Chamberlain-Yes, Dorsey-Yes, Green-Yes, Hahn-Yes, Henderson-Abstain, Knutson-Yes, Modrell-Yes, Vap-Yes, Woldt-Yes. (14-Yes, 0-Nay, 1-Abstain)** Motion carried.

Members Present at Public Participation Sites: Connie Hancock (Sidney), Steve Fosselman (Grand Island) Megan McGown (Grand Island)

Members Absent: Norene Fitzgerald, David Lofdahl, Monica Lueking-Crowe, and Marion McDermott

UPDATES

Community Broadband Awards. Anne Byers reported that Nebraska Community Broadband Awards will be awarded in three categories: Infrastructure, Digital Literacy, and Youth. Ms. Byers will be notifying those who submitted applications on Sept. 15. The award winners include the Rural Nebraska Healthcare Network Broadband Fiber Network (Infrastructure), Interface Web School (Digital Literacy), and Nebraska 4-H Robotics FIRST Lego League (Youth). Award winners will be invited to participate in a panel discussion at the Rural Futures Conference on Oct. 21. The nominees could be highlighted as best practices.

The Rural Futures Conference. Charlotte Narjes reported that the Rural Futures Conference will be held Oct. 21-23 at the University of Nebraska's Innovation Campus. Two sessions during the Oct. 21 pre-session will focus on broadband. Roberto Gallardo from Mississippi State University will lead a session at 8:30 a.m. on community planning. A session at 10:30 a.m. will focus on community success stories and will feature the winners of the Community Broadband Awards Program.

Best Practices. The group discussed ideas for best practices. Anne Byers suggested that the Council and the Nebraska Broadband Initiative consider partnering on the development of best practices as an action item supporting the Community IT Development strategic initiative in the statewide technology plan. Members were supportive. In addition to best practices on infrastructure, digital literacy and youth, members recommended focusing on workforce development.

Members were interested in highlighting innovative teachers and K-12 technology programs. Other ideas included addressing technology trends and how to approach public officials. Other potential partners include the Nebraska Library Commission, Nebraska Library Association, NACO, the League of Nebraska Municipalities.

Joan Modrell shared information on the Nebraska Re-employment Initiative. The new program recently announced by Governor Ricketts requires nearly all jobseekers who receive unemployment benefits to enroll in an individualized reemployment plan to remain eligible for benefits. Technology will play a role

in providing services across the state. The Department of Labor is interested in how consumers access services and what types of technologies employers are using.

COMMUNITY BROADBAND PLANNING WORKBOOK AND WORKING WITH COMMUNITIES

Connie Hancock shared efforts by members of the Sidney community to address broadband availability in the rural areas surrounding Sidney. A group has been meeting and is working on a checklist developed by Roberto Gallardo from Mississippi State University's Intelligent Communities Institute. The group is also using the broadband planning workbook. Members are considering developing a cooperative. Commissioner Vap commented that large non-rural telecommunications companies are reluctant to invest their own money in rural areas. The cost to install fiber is significant, with the cost of installing fiber estimated at $5,000 per mile. He offered to meet with interested community members on Monday, Sept. 21. Connie Hancock agreed to try to set up a meeting.

Members discussed the challenges of accessing broadband in some rural areas. Funding from the Connect America Fund Phase II to large non-rural providers may help. Commissioner Vap commented that the Nebraska Public Service Commission will also be issuing an order requiring telecommunications companies who receive funding from the Nebraska Universal Service Fund High Cost Fund to spend 50% of that funding on improving broadband services.

ACTION ITEMS TO SUPPOR THE STATEWIDE TECHNOLOGY PLAN

The Nebraska Information Technology Commission annually updates a statewide technology plan. The Commission has identified several strategic initiatives which will be included in the new plan. One of these strategic initiatives is Community IT Development. The Community Council has been tasked with developing action items to support this initiative. A draft of the initiative was included in the meeting materials. Members had earlier discussed identifying and highlighting best practices as a potential action item.

Tom Rolfes presented two draft action items from the Education Council which have a broadband focus:

Network Nebraska Initiative

1. Prepare for the future of Network Nebraska as a statewide, multipurpose, high capacity, scalable telecommunications network that shall meet the demand of state agencies, local governments, and educational entities as defined in section 79-1201.01.
    1.1. Challenge the Network Nebraska Advisory Group (NNAG) Participant Criteria subcommittee to develop a strategy for community affiliate connections into Network Nebraska. (This would relate mainly to libraries, zoos, science centers, museums, etc…)

Digital Education Initiative

1. Expand awareness of the need to address poverty as it relates to digital education.
    1.1. Education Council will work in collaboration with the Community Council Broadband Initiative to find solutions for available, accessible, reliable, secure and affordable Internet access as related to academic success.

Members were interested in supporting these action items. Connie Hancock recommended making a motion to support both of those initiatives. Phil Green made a motion to draft action items supporting the draft Education Council action items. Steve Henderson seconded the motion. The motion passed by unanimous voice vote.

Randy Bretz made a motion to draft an action item to identify and develop best practices related to the availability and use of broadband in communities. Steve Henderson seconded the motion. The motion passed by unanimous voice vote.

The meeting adjourned at 3:30 p.m.

Agenda available soon at http://unlcms.unl.edu/ianr/extension/nebraska-broadband/broadband-today

NEBRASKA BROADBAND TODAY!
Connecting. Engaging. Solutions.

SAVE THE DATE

May 24, 2016

Cornhusker Marriott | Lincoln, Nebraska

- Showcase broadband availability in Nebraska and promote its use.
- Help community leaders better understand broadband, funding sources, and how to work with providers.
- Encourage interest in broadband and technology-based careers.

The conference is convened by the Nebraska Telecommunications Association in collaboration with the Nebraska Broadband Initiative.

A Bureau of Business Research Report
From the UNL College of Business Administration

Excerpt from full report

Lincoln Skills Gap Report

Final Report

Prepared for the Nebraska Department of Labor

Prepared by
Dr. Eric Thompson, Associate Professor of Economics and Director Bureau of Business Research

January 18, 2016
Bureau of Business Research
Department of Economics
College of Business Administration
University of Nebraska—Lincoln
Dr. Eric Thompson, Director
www.bbr.unl.edu

UNIVERSITY OF
Nebraska
Lincoln

F. Computer and Mathematical Occupations (SOC CODE 15)

This occupation group contains computer and information research scientists and information analysts, software developers and programmers, data base and systems administrators, and network architects as well as actuaries, mathematicians and statisticians. Lincoln employers were eighth most likely to say it is difficult to hire Computer and Mathematical workers. As seen in Figure 4F.1 below, two-thirds of employers indicated that it was difficult to hire workers in this occupation, compared to 62.5 percent for all occupations.

Figure 4F.1
Percent of Employers Indicating It is Difficult to Hire, Computer and Mathematical Occupations
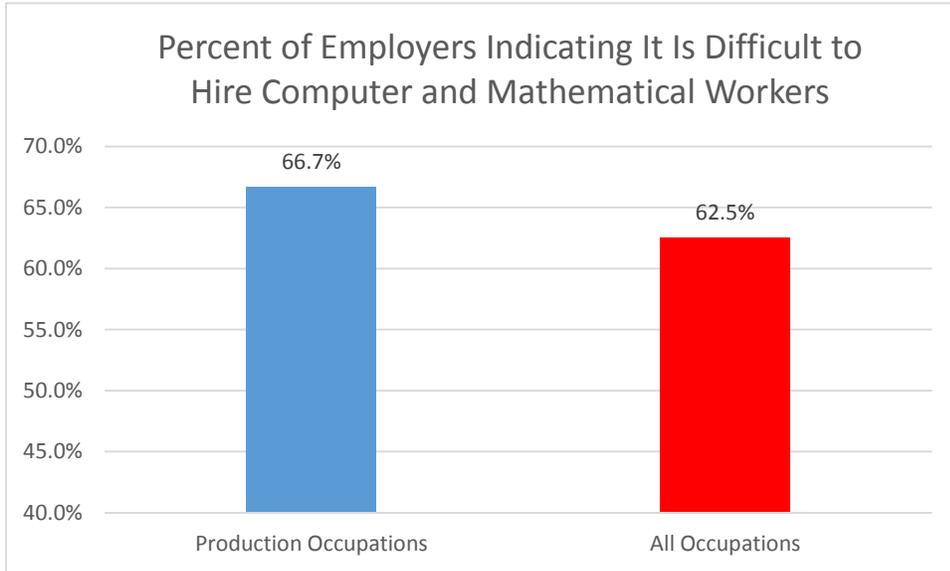
Source: Make It Work For Lincoln Survey

Table 4F.2 displays responses by Lincoln employers on why it was difficult to hire Computer and Mathematical workers. By far, the primary difficulty is occupation-specific skills. Employers were 28 percentage points more likely to select occupation-specific skills for Computer and Mathematical workers than for workers overall. In a related finding, employers also had some concerns about applicants with required licenses and certificates. By contrast, there is very little concern about poor work history and background checks. Skill is the primary issue.

Figure 4F.2
Reasons Why It Was Difficult to Hire, Computer and Mathematical Occupations
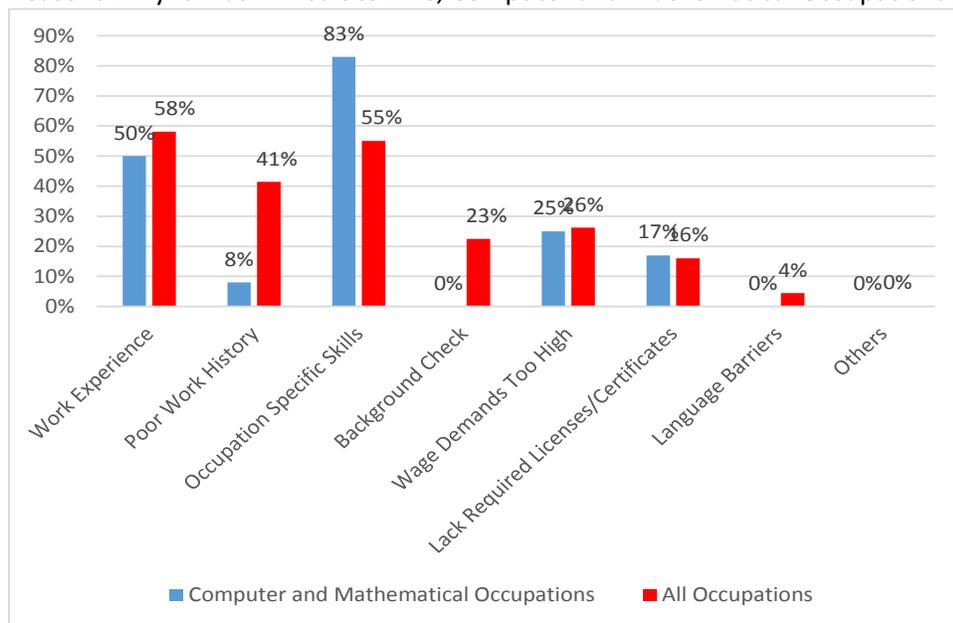
Source: Make It Work For Lincoln Survey

Figure 4F.3 examines the fundamental balance between net job openings and entrants in Computer and Mathematical occupations, on an annual basis. Data on annual job openings are based on estimates prepared by Labor Market Information of the Nebraska Department of Labor. Data on annual graduates are based on 2012-13 graduates reported by local community colleges, colleges and universities to the U.S. Department of Education, and summarized in the Department's IPEDS data base. Results show that annual net job openings are approximately 65 greater than annual entrants.

Figure 4F.3
Ratio of Annual Net Openings to Entrants, Computer and Mathematical Occupations
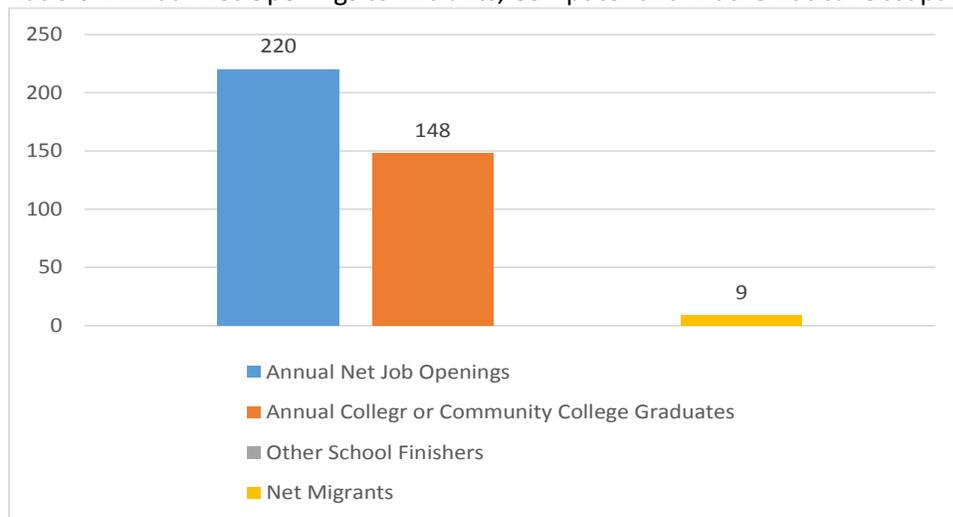
Source: Labor Market Information, Nebraska Department of Labor and IPEDS,
U.S. Department of Education, and U.S. Bureau of Census

Fortunately, work history and personal history are less of a concern for this occupation. This is seen in Figure 4F.4, which focuses on some of the data presented in Figure 4F.2. Figure 4F.4 shows the percentage of employers who indicated that issues in the background of applicants was a factor in making it difficult to hire Computer and Mathematical workers. In particular, only 8 percent of employers indicated that a poor work history made it difficult to hire Computer and Mathematical workers, and no employers had concerns about workers passing a background check.

Figure 4F.4
Applicants with Background Factors That May Influence Hiring, Computer and Mathematical Occupations
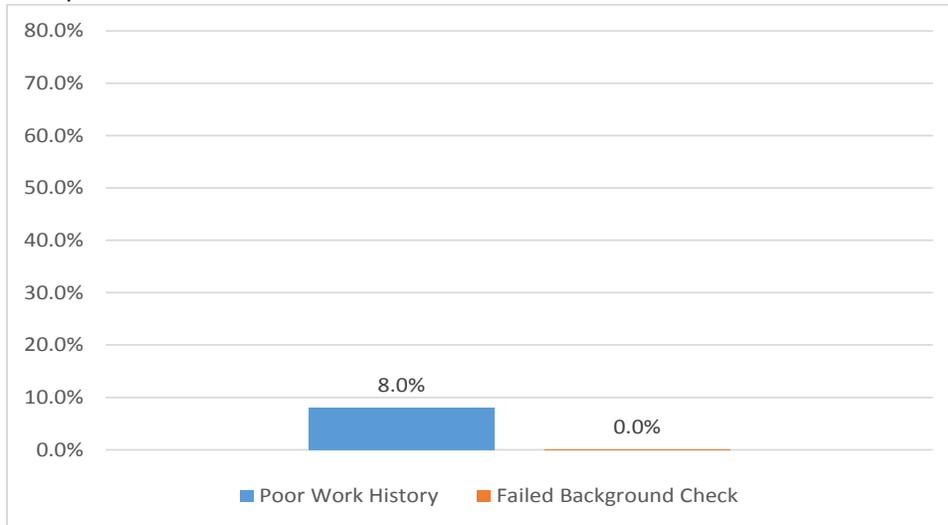
Source: *Make It Work For Lincoln Survey*

Figure 4F.5 below looks at the extent to which employed workers in Computer and Mathematical occupations are willing to consider a change in employers, or are even actively seeking work. Employed workers in Computer and Mathematical occupations are slightly less likely to be actively seeking new work than workers in all occupations. There is therefore somewhat less "churn" among employed workers in this occupation. However, a slightly lower level of active job search might be expected given the relatively high wage scale in this occupation.

Figure 4F.5
Share of Employed Workers with Potential to Take or Actively Search For a New Job
Computer and Mathematical Occupations versus All Occupations
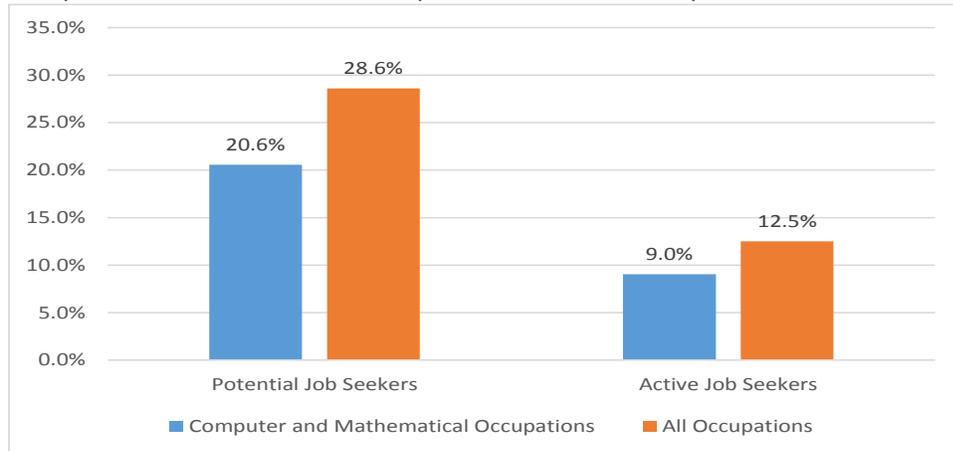
Source: Nebraska Metro Area Labor Availability Survey

Figure 4F.6 shows information for survey respondents who are not currently employed, whether they are unemployed or voluntarily out of the labor force, such as homemakers or retirees. There is a higher share of workers, 15.1 percent, who previously held a Computer and Mathematical occupation job and who are actively seeking new employment. This is significantly higher than the share across all occupations. This 15.1 percent share translates into approximately 370 workers who might be drawn back into the labor force by new opportunities to work in a Computer and Mathematical occupation.

Figure 4F.6
Share of Workers Note Currently Employed with Potential to Take or Actively Search for a New Job
Computer and Mathematical Occupations versus All Occupations
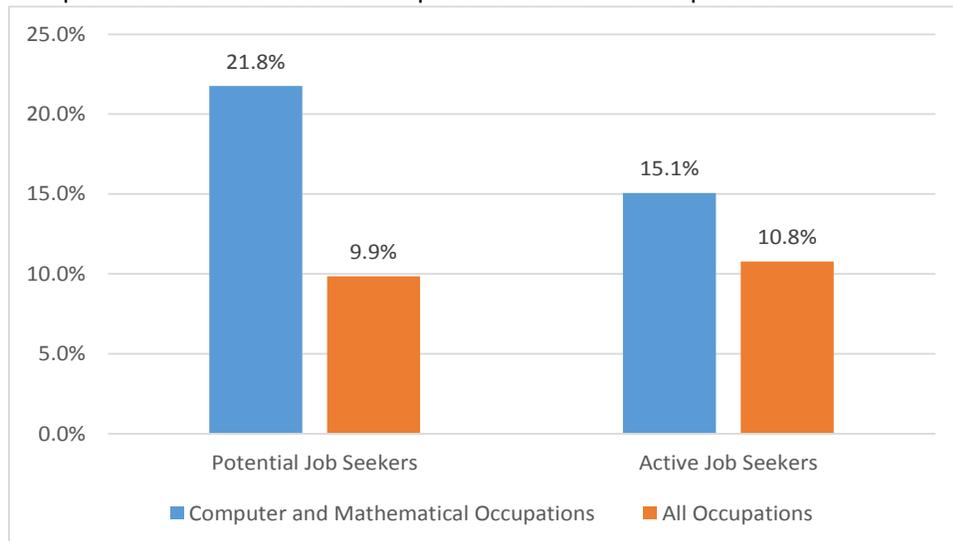

Source: Nebraska Metro Area Labor Availability Survey

What barriers do computer and mathematical workers face in looking for new employment? This information is presented in Figure 4F.7, which shows the most common obstacles mentioned by Computer and Mathematical workers when considering a change in job or reentering the workforce.

Figure 4F.7
Share of Computer and Mathematical Workers Citing an Obstacle to Changing Jobs or Reentering the Workforce
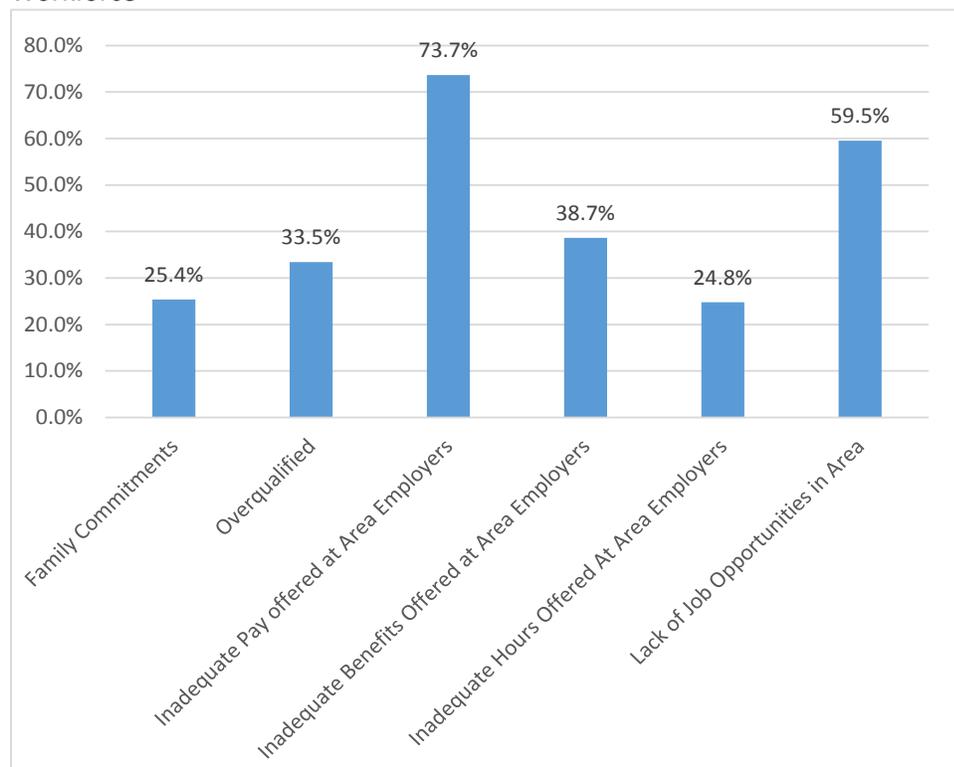

Source: Lincoln Household Survey

The figure only lists those obstacles which were mentioned more than 20 percent of the time. One-quarter of workers mentioned that family commitments were a significant obstacle to finding employment. Other than that, most concerns related to the availability of jobs. In particular, one-third of workers felt that they were overqualified for available jobs, at least to the point where it was a barrier to employment. Along the same lines, 69 percent indicated that a lack of job opportunities was an obstacle to employment. Further, seventy-four percent cited inadequate wages as an obstacle. There was less concern about benefits, at just 39 percent of respondents. Similarly, inadequate hours was not typically an issue, at just one-quarter of respondents. It is interesting to note that employees saw the same wage issue which was noted by employers. However, recall that the wages desired by Computer and Mathematical workers were only 13% above current wages (Table 3.5), a significant percentage but not outside of the initial expectations of a worker considering a change in job. Perhaps more interesting fewer than 20 percent of responding Computer and Mathematical workers saw inadequate education or inadequate training as a barrier to new employment, despite the concerns expressed by employers.

As seen in Figure 4F.8, the practices of employers in regards to post-hire training are consistent with their beliefs about the occupation-specific skills of applicants. A large share of employers provide post-hire training at all levels, particularly certificates and college and community college courses. More than three in five offer training in certificate courses, nearly double the percentage in occupations overall. Just over 15 percent offer training in college or community college courses, more than twice the rate for occupations overall. Employers of Computer and Mathematical workers are making an effort after hire to provide the occupation-specific skills they feel applicants lack.

Figure 4F.8
Types of Training Provided to Newly Hired Computer and Mathematical Workers
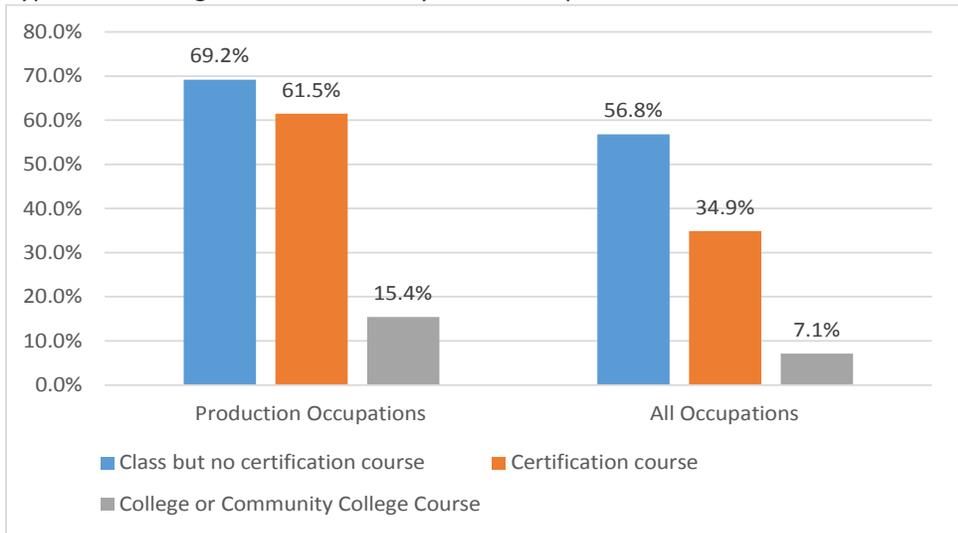
Source: Make It Work For Lincoln Survey

As in most occupations, nearly all potential job switchers in Computer and Mathematical occupations are willing to participate in employer-sponsored training after hire, as seen in Figure 4F.9. Computer and Mathematical workers also have a high level of interest in independent class work or degree completion.

Figure 4E.9
Willingness to Train Among Computer and Mathematical Workers
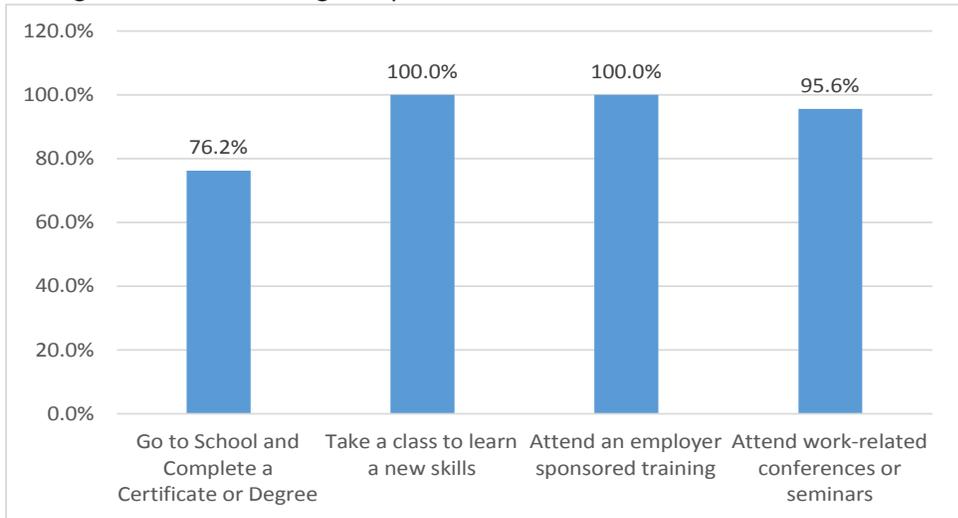
Source: Lincoln Household Survey

The overall picture once again is that there is a deficit of annual entrants relative to net job openings, even after accounting for migrants to the Lincoln labor market. There is some potential to meet part of this deficit by drawing former workers back into the labor market but the occupation most requires additional entrants through graduates and net migrants. There also appears to be some "churn" among

employed workers in Computer and Mathematical occupations, suggesting that there is ongoing improvement in the match between experienced workers and employers.

This situation leads to three sets of recommendations for production occupations:
1) There should be a selected expansion of certificate and degree programs for computer and mathematical production workers at the community college and college level, across a broad group of specific occupations (see below)
2) There should be expanded internship programs, in order to address firm concerns with inexperienced workers
3) There should be ongoing and enhanced efforts in the secondary and post-secondary education setting to inform students about career opportunities in Computer and Mathematical occupations, coordinating directly with employers when feasible.

Programs and training should be expanded across the broad group of specific computer occupations. The specific occupations, and an accompanying description of their duties, are:
1) Computer Systems Analysts (SOC CODE 15-1121) - study an organization's current computer systems and procedures and design information systems solutions to help the organization operate more efficiently and effectively (U.S. Bureau of Labor Statistics)
2) Computer Programmers and Software Developers (SOC Code 15-1131, 15-1132, 15-1133) - develop the applications that allow people to do specific tasks on a computer or other devices and write the code to implement the software design. (U.S. Bureau of Labor Statistics)
3) Network and Computer Systems Administrators (SOC Code 15-1142) – work with the physical computer networks of organizations with responsibility for the day-to-day operation of these networks (U.S. Bureau of Labor Statistics)
4) Computer User Support Specialists (SOC CODES 15-1151) - provide help and advice to people and organizations using computer software or equipment (U.S. Bureau of Labor Statistics)

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Stakeholder Announcement

Federal Planning Assistance for

Broadband and Sustainable Community Development

Cool & Connected

USDA Rural Utilities Service Administrator Brandon McBride encouraged communities interested in using broadband service to help revitalize small-town main streets and promote economic development to apply for Cool & Connected, a pilot program sponsored by USDA Rural Utilities Service and the U.S. Environmental Protection Agency Office of Sustainable Communities.

Through Cool & Connected, a team of experts will help community members develop strategies and an action plan for using planned or existing broadband service to promote smart, sustainable community development.

Quality broadband access can provide new opportunities for people and businesses. A growing number of communities have combined broadband service with other local assets such as cultural and recreational amenities to attract and retain investment and people, including young people. This can help diversify local economies. Such efforts typically require planning among community leaders, businesses, and internet service providers. The Cool & Connected program will provide assistance to this end, helping communities take advantage of new or existing broadband service to create walkable, connected, economically vibrant main streets and small-town neighborhoods.

Eligibility

- Any community representative is welcome to submit a letter of interest to participate in Cool & Connected.
- Special consideration will be given to small towns and rural communities that face economic challenges.
- Special consideration will be given to communities in places where USDA has provided loans or grants in support of broadband or other internet-related services.

Deadline and where to send letters of interest

Submit your letter of interest to Ed Fendley at Fendley.Ed@epa.gov by Wednesday, February 24, 2016. Kindly include "Cool & Connected" and the name of your community in your e-mail subject line.

What to include in your letter of interest

Your letter of interest can be in the text of an email or an attachment. It should be no longer than two printed pages. If you want, you can provide additional letters of support from partners, but this is not necessary.

Community representatives are encouraged to describe community needs and challenges related to downtown revitalization or other place-based development, and how a planning process might help. You should indicate any areas of interest related to internet service and place-based development, such as:

- Using new or existing broadband service to attract new types of businesses to main streets or existing rural communities
- Combining internet service with other local amenities to attract new investors, visitors, and residents
- Developing or marketing downtown Wi-Fi zones
- Extending broadband service beyond anchor institutions in ways that promote main street development
- Selecting centrally located anchor institutions or community facilities that will receive broadband service

Community representatives submitting letters of interest are also encouraged to indicate partners that can be expected to participate in a planning process, such as local internet service providers, local officials, business associations, or local schools or colleges.

#
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Community Council Action Items

1. **Action: Support the efforts of communities to address broadband-related development by recognizing outstanding programs and developing a series of best practices and case studies.**

   Lead: NITC Community Council and University of Nebraska-Lincoln Extension and Center for Applied Rural Innovation

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

   Timeframe: 2015-2016

   Funding: Leveraging existing resources

   Targets/Deliverables:

   1.1. First Community Broadband Awards awarded Oct. 21, 2015

   1.2. At least 6 best practices/case studies developed by Oct. 2016

2. **Action: Support the Network Nebraska Advisory Group's Efforts to develop a strategy to accommodate community affiliate connections into Network Nebraska.**

   Lead: Education Council

   Participating Entities: Collaborative Aggregation Partnership (CAP); Network Nebraska Advisory Group (NNAG)

   Timeframe: 2015-17

   Funding: Additional funding and/or resources will be required for this action item out of the Network Nebraska Participation Fee, which is a participant-funded budget.

   Targets/Deliverables:

   1.1 The NNAG Participant Criteria subcommittee will develop a strategy to accommodate community affiliate connections into Network Nebraska. [Participant Criteria Memo attached]
   2.1.

3. **Action: Support the Education Council's efforts to expand awareness and address the need for equity of access as it relates to digital education.**

   Lead: Education Council

   Participating Entities: NITC Community Council, K-12 and Higher Education professional and advisory groups

   Timeframe: 2015-17

   Funding: Additional funding may be required for this action item

   Targets/Deliverables:

   3.1 Form a joint study group comprised of stakeholders from across the state to identify opportunities and actions to ensure equitable access for students.

3.2 Education Council will work in collaboration with other Nebraska stakeholders, such as the Community Council Broadband Initiative to find solutions for available, accessible, reliable, secure and affordable Internet access as related to academic success.

3.3 Identify and promote the use of accessible products and services in achieving equity of access

Related Education Council Action Items

Network Nebraska

1.2 The NNAG Participant Criteria subcommittee will develop a strategy to accommodate community affiliate connections into Network Nebraska. [Participant Criteria Memo attached]

Digital Education

3.1. Form a joint study group comprised of stakeholders from across the state to identify opportunities and actions to ensure equitable access for students.

3.2. Education Council will work in collaboration with other Nebraska stakeholders, such as the Community Council Broadband Initiative, to find solutions for available, accessible, reliable, secure and affordable Internet access as related to academic success.

Outstanding Nebraska Broadband Projects Recognized

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 (Outstanding Infrastructure Project)
- Interface: The Web School (Outstanding Digital Literacy Project)
- Nebraska 4-H Robotics FIRST Lego League (FFL)

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. 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.

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.

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.

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 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.

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

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.

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

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.

*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.*

Partnership leads to improvement in library bandwidth

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

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 for upgrading its own equipment. Through an Indefeasible 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.

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.

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 tablet computers 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 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."

http://nitc.ne.gov/standards/4-205.html

NITC 4-205: Social Media Guidelines

Category: E-Government Architecture
Applicability: Applies to all state government agencies, excluding higher education
History: Adopted on November 9, 2010. Amended on June 30, 2011. References to Schedule
124 updated on July 12, 2011.

1. Purpose

The purpose of this document is to provide guidelines for the use of social media by state
government agencies. Agencies may utilize these guidelines as a component of agency policy
development for sanctioned participation using Social Media services, or simply as guidelines.
State employees or contractors creating or contributing to blogs, microblogs, wikis, social
networks, or any other kind of social media both on and off the Nebraska.gov domain need to be
made aware of these guidelines or the guidelines of their agency. The State expects all who
participate in social media on behalf of the State, to understand and to follow the appropriate
guidelines. These guidelines will evolve as new technologies and social networking tools
emerge.

The decision to utilize social media technology is a business decision, not a technology-based
decision. It must be made at the appropriate level for each department or agency, considering its
mission, objectives, capabilities, and potential benefits.

Since these technologies are tools created by third parties, these guidelines are separate from
state policies regarding privacy and cookies. Agencies may choose to author disclaimers to
remind users that, at their own risk, they are leaving an official state website for one which is not
hosted, created, or maintained by the State of Nebraska, and that privacy controls and the use of
cookies becomes the jurisdiction of that third-party utility.

2. Guidelines

2.1

These guidelines apply to all Social Media and Web tools. See definitions below.

2.2

The decision to utilize Social Media and Web tools is an organizational decision, not a technology-based decision. It must be made at the appropriate level for each department or agency, considering its mission, objectives, capabilities, and potential benefits.

2.3

All state agencies will email the webmaster of the State of Nebraska website (ne-support@nicusa.com) to have their Social Media pages initially linked or updated on the state website.

2.4 Branding of the Social Media pages

2.4.1

All Social Media pages will be branded with the words "Official Nebraska Government Page" either in the bio or profile/information section.

2.4.2

List your official agency name and provide a link back to your agency website.

2.5

Retention Policy (Schedule 124 – State Agencies General Records, Item Numbers 124-082, 124-112, and 124-125)

2.6

It is the agency's responsibility to assure that more than one staff member can access the agency logon, and edit the website/social media. This is a backup in case of staff turnover. For example: An agency may set up one nebraska.gov email account through the OCIO and have several email address aliases created. This will accommodate the requirement of unique email addresses on your Social Media accounts, yet keep all of the emails from all of the accounts going into one email inbox.

2.7

If the Social Media page is intended for pushing information only, indicate the proper channel for contacting the agency.

2.8

Below are some recommended key points to address in a Social Media webpage disclaimer/disclosure notice. Each agency may create their own or Link to this Guideline from their Social Media web page:

2.8.1 General statement of the intent/purpose of agency Social Media tool.

Example: The Library Commission uses Social Media as an outlet to show the Library community how they can interact with their public.

2.8.2 Notice to users of the following:

1. Communication of a personal or private nature in relation to agency business, as well as official state business interactions, should continue to be made via the traditional agency offices and communications channels and not via the public comment areas of the Social Media tool.

2. The agency is not responsible for any webpage author's personal content outside the work place.

3. The agency is not responsible for any 3rd party content of any kind.

4. All interactive communications made on this Social Media tool are subject to the state public records disclosure requirements.

5. If comments are allowed on a Social Media site, it is a limited forum and comments must be related to the subject matter of the Social Media posting. Comments may be monitored and the following forms of content will not be allowed:

- Comments not related to the subject matter of the particular Social Media article being commented upon;
- Comments campaigning for or against the nomination or election of a candidate or the qualification, passage, or defeat of a ballot question;
- Profane language or content;
- Content that promotes, fosters, or perpetuates discrimination on the basis of race, creed, color, age, religion, gender, marital status, national origin, physical or mental disability or sexual orientation;
- Sexual content or links to sexual content;
- Solicitations of commerce;
- Conduct or encouragement of illegal activity;
- Information that may tend to compromise the safety or security of the public or public systems; or
- Content that violates a legal ownership interest of any other party.

A copy of the content which is removed will be maintained in accordance with records retention policies.

2.9 Best Practices

Suggestions on how best to use and maintain social networking at work:

2.9.1

Ensure that your agency sanctions official participation and representation on Social Media sites. Stick to your area of expertise and provide unique, individual perspectives on what is going on at the State and in other larger contexts. All statements must be true and not misleading, and all claims must be substantiated and approved.

2.9.2

Post meaningful, respectful comments, no spam, and no remarks that are off-topic or offensive. When disagreeing with others' opinions, keep it appropriate and polite.

2.9.3

Pause and think before posting. Reply to comments in a timely manner when a response is appropriate unless you have posted a disclaimer that this is not official two-way communication.

2.9.4

Be smart about protecting yourself, your privacy, your agency, and any restricted, confidential, or sensitive information. What is published is widely accessible, not easily retractable, and will be around for a long time (even if you remove it), so consider the content carefully. Respect proprietary information, content, and confidentiality.

2.9.5

If you are under a generic name (see Section 2.6 above) consider using some form of tagging so staff and users can find out who this is.

2.9.6

Email or login names should lead the user back to a "state id", such as an official state email address or make a user name that indicates you are a state employee.

3. Definitions

Social Media and Web tools: Social Media and Web tools are umbrella terms that encompass various online activities that integrate the use of hardware/software to facilitate social interaction and collaborative content creation. Social Media authoring uses many forms of technology applications such as Twitter, Facebook, YouTube, Flickr, blogs, wikis, photo and video sharing, podcasts, social networking, and multiuser virtual environments.

4. Related Documents

- Acceptable Use Policy NITC 7-101
- Schedule 124 - State Agencies General Records, Item Numbers 124-082, 124-112, and 124-125.
- Personnel Rules Classified System Personnel Rules and Regulations, Chapter 14, Section 003.15

- [NAPE/AFSCME Labor Contract](#) Section 10.2

Internet2 Proposal for CFDA 45.313: Toward Gigabit Libraries

Project Abstract

Public libraries are evolving their mission to become a central community link and resource for digital literacy, broadband access, services, and national digital platforms, providing their patrons access to digital content, applications, and resources. In order for libraries to bring these digital resources to their patrons, they need robust and scalable broadband infrastructure to serve their facilities. However, many of the Nation's libraries, particularly in rural and tribal areas, lack the technical knowledge to effectively advocate for and deliver the highest quality broadband possible to their patrons and staff in order to support their evolving digital mission. In short, libraries everywhere are struggling to provide and manage the demand for robust and scalable broadband infrastructure needed to support free Internet access as a core community service.

Internet2, serving as lead applicant, will build on the Edge Initiative's Edge Toolkit approach, related IMLS-funded efforts such as Building Digital Communities: A Framework for Action, Inclusive Gigabit Libraries and other Broadband Technology Opportunities Program (BTOP) funded work in Colorado to develop and pilot the use of a technical broadband assessment "toolkit." This toolkit, developed with key library associations, and research and education networks in an advisory capacity, would provide hands on training to librarians to advance their understanding of and advocacy for broadband infrastructure in their libraries. The toolkit and related training will be developed and piloted to address library-specific broadband technology and infrastructure needs and delivered via an informal, hands-on training and assessment checklist written for non-technical library staff. With our deep, technical expertise and decades long record of serving community anchor institutions, the Internet2 R&E community is uniquely positioned to work together with rural and tribal libraries to assess their current broadband infrastructure, identify common networking problems, and suggest ways to solve them.

Over the course of this 24-month project, we will pilot the use of the broadband assessment toolkit with at least 30-50 library practitioners in at least 30 rural public and tribal libraries across 5-7 states. Library staff involved in the pilot will participate in a pre-assessment to self identify and assess their knowledge of E-rate, library-networking infrastructure, and other broadband related topics. A post-assessment survey will quantify the increase in the librarian's knowledge and understanding of the library's broadband environment. Leveraging the findings from the self-assessment, the librarian will be able to identify technical, operational, financial, and future planning issues related to library broadband provision and develop short and longer term action items. The results of the assessment can also be used to inform discussions with their broadband service provider or other available IT support.

Pete Ricketts
Governor

State of Nebraska
Office of the Chief Information Officer
Ed Toner
Chief Information Officer
P.O. Box 95045
Lincoln, Nebraska 68509-5045
402-471-3560

March 14, 2016

Dear Network Nebraska Participant:

This coming April marks the 10th Anniversary of the statewide education network that the Legislature dubbed "Network Nebraska". Over this past decade the statewide backbone and aggregated Internet demand have increased dramatically to meet the needs of a growing Participant list with more schools and colleges involved. The State Office of the CIO and the University of Nebraska Computing Services Network staff have administered and operated the network under the watchful eyes of the Network Nebraska Advisory Group (NNAG) that represents all 285 entities that voluntarily self-fund the network.

Since 2006, the legislative definition of education "entity" on Network Nebraska has stood the test of time: *"a school district, a private, denominational, or parochial school, an educational service unit, a community college, a state college, the University of Nebraska, or a nonprofit private postsecondary educational institution."*

The Office of the CIO has also maintained a "One entity, one fee" cost recovery model since 2009 that aligns with the Legislature's charge: *"The Chief Information Officer shall establish a cost structure based on actual costs, including necessary administrative expenses but not including administrative travel or conference expenses, and shall charge participants according to such cost structure."*

Over time, questions and issues have arisen that have tested the criteria for Participation and cost recovery modeling, but Network Nebraska has remained resilient and cost-effective. Scott Jones (scott.jones@esusixteen.org) and Debbie Schroeder (schroederd@unk.edu), co-chairs of NNAG, can provide more information as to how they deliberated upcoming changes for Network Nebraska.

In order to prepare for the second decade of Network Nebraska, the NNAG has recommended a more inclusive criteria for Participation, one that will recognize and accommodate lower bandwidth entities, potential nonprofit educational content providers, and those education entities that connect to Network Nebraska through other Participants. **The biggest change will be a new monthly rate for entities that connect to Network Nebraska with less than 40Mbps.**

We invite public libraries, nonpublic schools, new Participant-hosted entities, and those Participants that currently host education entities to contact tom.rolfes@nebraska.gov in the OCIO for more information about connections and costs for 2016-17. Attached to this memo is the new Participant Criteria developed by NNAG. For reference, when it reads .25 Participation and .25 Interregional Transport, the current 1.0 Participation Fee is $205.35/month and the 1.0 Interregional Transport Fee is $22.12 for K12/library entities and $70.39 for non-K12/library entities.

Sincerely,

Ed Toner
Chief Information Officer
State of Nebraska

Walter Weir
Chief Information Officer
University of Nebraska

Network Nebraska-Education Participant Types (revised 1/19/2016)

FULL PARTICIPANT ENTITY CATEGORY 1A [Neb. Rev. Stat. 79-1201.01(3)]

Education Entity (as described by Neb. Rev. Stat. 79-1201.01(3))

Upon agreement to the terms of the Network Nebraska-Education Memorandum of Agreement and connection to Network Nebraska-Education, the monthly Participation Fee and Interregional Transport Fee for the network are assessed to each *education entity**** as described in statute [N.R.S. 79-1201.01(3)]. The criteria that is used for the fee assessment follows:

- A) A public School District (one fee per school district including Unified and consolidated districts)
- B) A private, denominational, or parochial school (one fee per independently connected school)
- C) An Educational Service Unit (one fee per unit, regardless of the number of administrative offices)
- D) A Community College (one fee per community college area, and one fee per tribal college)
- E) A State College (one fee per state college)
- F) The University of Nebraska (one fee for the entire University system)
- G) A Nonprofit private postsecondary educational institution (one fee per AICUN* institution)

Neb. Rev. Stat. 79-1201.01(3)
(3) Educational entity means a school district, a private, denominational, or parochial school, an educational service unit, a community college, a state college, the University of Nebraska, or a nonprofit private postsecondary educational institution;

*AICUN = Association of Independent Colleges and Universities of Nebraska (www.aicunebraska.org)

FEES: Each Full Participant Entity, Category 1A shall pay the following fees, appropriate to their E-rate eligibility, effective 7/1/2016:

10-39Mbps WAN connection*   = .25 Participation; .25 Interregional Transport
> 40Mbps   WAN connection*   = 1.0 Participation; 1.0 Interregional Transport

*WAN connections can be direct to Network Nebraska or through an existing educational Participant.

*** For the purposes of this document, third party contractors operating on the premise of the full participant entity in the fulfilment of the mission of the full participant entity are considered to be an inseparable function of the entity.

Network Nebraska-Education Participant Types (revised 1/19/2016)

FULL PARTICIPANT ENTITY CATEGORY 1B [NDE Title 92 Rule 14 002.12]

Nonpublic School System

Upon agreement to the terms of the Network Nebraska-Education Memorandum of Agreement and connection to Network Nebraska-Education, the monthly Participation and Interregional Transport fees for the network are assessed to each *nonpublic school system* as identified by the Nebraska Department of Education [Title 92 Rule 14 (002.12)] providing it meets or exceeds certain technical and governance criteria:

- Possesses one administrative authority with the power to bind all school system members on issues of technology, as defined by Title 92 Rule 14
  - One technology aggregation point of like entities (e.g. nonpublic schools)
  - Operational data center
  - Technical support staff (1 or more FTE)
- Entity pays for aggregation circuit from operations data center to Network Nebraska-Education aggregation point
  - One internet bandwidth purchase
  - One multi-line invoice to Participant from State of Nebraska

   Title 92 Rule 14 Regulations and Procedures for the Legal Operation of Approved Nonpublic Schools:
   002.12 School *System* means a school or group of schools under a governing body organized to provide education in elementary, middle, secondary, or high school grades as provided in this Chapter.

FEES: Each Full Participant Entity, Category 1B shall pay the following fees, appropriate to their E-rate eligibility, effective 7/1/2016.

10-39Mbps WAN connection*   = .25 Participation; .25 Interregional Transport
> 40Mbps   WAN connection*   = 1.0 Participation; 1.0 Interregional Transport

* WAN connections can be direct to Network Nebraska or through an existing educational Participant.

Network Nebraska-Education Participant Types (revised 1/19/2016)

FULL PARTICIPANT ENTITY CATEGORY 1C [NDE Title 92 Rule 10 (013.04), Rule 51 (.004.06C)]

Special Purpose School or Special Purpose School System

Upon agreement to the terms of the Network Nebraska-Education Memorandum of Agreement and connection to Network Nebraska-Education, the monthly Participation and Interregional Transport fees for the network are assessed to each *special purpose school system* as identified by the Nebraska Department of Education [Title 92 Rule 10 (013.04)]. The criteria that is used for the fee assessment follows:

  A. Nebraska Dept of Health and Human Services School System
     a. Kearney West High School
     b. Geneva North High School

FEES: Each Full Participant Entity, Category 1C shall pay the following fees, effective 7/1/2016.

10-39Mbps WAN connection* = .25 Participation; .25 Interregional Transport
> 40Mbps WAN connection*   = 1.0 Participation; 1.0 Interregional Transport

* WAN connections can be direct to Network Nebraska or through an existing educational Participant.

Network Nebraska-Education Participant Types (revised 1/19/2016)

FULL PARTICIPANT ENTITY CATEGORY 2 [Neb. Rev. Stat. 86-5,100]

Public Library or Public Library System

Upon agreement to the terms of the Network Nebraska-Education Memorandum of Agreement and ~~direct~~ connection to Network Nebraska-Education, the monthly Participation and Interregional Transport fees for the network are assessed to each *public library or public library system* as identified by the Nebraska Library Commission [http://nlc.nebraska.gov/libraries/list.asp?libtype=PL].

> **Neb. Rev. Stat. 86-5,100 (excerpt)**
> The network shall consist of contractual arrangements with providers **to meet the demand of** state agencies, **local governments**, and educational entities as defined in section 79-1201.01.

FEES: Each Full Participant Entity, Category 2 shall pay the following fees, appropriate to their E-rate eligibility, effective 7/1/2016:

10-39Mbps WAN connection*   = .25 Participation; .25 Interregional Transport
$\geq$ 40Mbps   WAN connection*   = 1.0 Participation; 1.0 Interregional Transport

* WAN connections can be direct to Network Nebraska or through an existing educational or library Participant.

Network Nebraska-Education Participant Types (revised 1/19/2016)

<u>PARTICIPANT-HOSTED ENTITIES CATEGORY 3</u> [Neb. Rev. Stat. 86-5,100]

With the approval of the Chief Information Officer, a Full Participant Entity may "host" or share Network Nebraska access with one or more *unlike entities* to incentivize community aggregation and distance education providing that the:

- Hosted entity has an educational component to its mission and does not fit under Category 1 or 2
- Hosted entity and/or the Full Participant Entity regularly evaluate the potential of locally available Internet options
- Full Participant Entity has the authority or obligation to serve the hosted entity within a municipality or immediately adjacent geographic area. This authority or obligation may include, but not be limited to:
    - o Governing board minutes establishing a relationship with the hosted entity;
    - o An Institutional charter, role or mission recognizing the relationship with the hosted entity;
    - o A Contract or signed Agreement recognizing the authority or obligation to serve the hosted entity;
    - o A legal opinion approving the authority or obligation to serve the hosted entity;
    - o Statutory responsibility to serve the hosted entity.
- Full Participant agrees to be invoiced and pay for the Network Nebraska fees associated with a hosted entity or hosted entities
- Full Participant assumes the technical support and network sub-aggregation for the hosted entity or hosted entities
- Full Participant properly applies a defensible cost allocation formula to E-rate supported infrastructure, when the hosted entity is ineligible for E-rate

Neb. Rev. Stat. 86-5,100 (excerpt)
The network shall consist of contractual arrangements with providers **to meet the demand of** state agencies, local governments, and **educational entities** as defined in section 79-1201.01. Such network shall provide access to a reliable and affordable infrastructure capable of carrying a spectrum of services and applications, including distance education, across the state.

Participant-hosted entity relationships may include, but not be limited to:

- A community college hosting a political subdivision and/or nonprofit educational service provider
- A state college hosting a political subdivision and/or nonprofit educational service provider
- An educational service unit hosting a nonprofit educational content provider
- A public school district hosting a nonprofit educational content provider or a public library

<u>FEES</u>: Each Participant-hosted Entity Category 3 shall be assessed the following monthly Fees, effective 7/1/2016:

10-39Mbps WAN connection   = .25 Participation; .25 Interregional Transport
$\geq$ 40Mbps   WAN connection   = 1.0 Participation; 1.0 Interregional Transport

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First Look: Internet Use in 2015

March 21, 2016 by John B. Morris, Jr., Associate Administrator, Office of Policy Analysis and Development
John B. Morris, Jr., Associate Administrator, Office of Policy Analysis and Development
March 21, 2016

As the Obama Administration continues to focus on expanding broadband access and adoption [1], NTIA released new data today that shows that some of the demographic groups that have historically lagged behind in using the Internet—such as senior citizens, minorities, and Americans with lower levels of educational attainment—are making big strides.

Particularly promising, Internet use increased significantly among children and older Americans between 2013 and 2015. Children between the ages of 3 and 14 became substantially more likely to go online, as Internet use among this group increased from 56 percent in 2013 to 66 percent in 2015, and Internet use among those aged 65 or older increased from 51 percent to 56 percent during the same period. In contrast, usage remained largely unchanged among those who were previously most likely to go online, with 83 percent of Americans between the ages of 25 and 44 reporting Internet use in both 2013 and 2015.

The latest data comes from the Computer and Internet Use Supplement to the Current Population Survey (CPS), which included nearly 53,000 households and was conducted for NTIA by the U.S. Census Bureau in July 2015. The large sample size provides a detailed picture of where, why and how Americans go online.

During most of our first 20 years of computer and Internet use research, NTIA focused primarily on which households had Internet connections at home. We began asking households whether they had dial-up Internet connections at home in 1998, and added different types of broadband technologies starting in 2000. Today, only a small fraction of online households (about 400,000) rely on dial-up Internet connections. Our 2015 data shows that home Internet use among households, which includes both broadband and the small number of dial-up users, remained virtually flat in 2015 at 73 percent compared with 74 percent of households in 2013. Internet use has become much more of an individual activity in recent years, thanks to the spread of smartphones, mobile broadband, Wi-Fi, and a general proliferation of devices and connectivity. Accordingly, NTIA is now focusing primarily on Internet use among individual Americans from a range of locations—not just in their homes.

In this latest edition of our long-running series of surveys, we asked dozens of questions [2] about who goes online, where they do so, what devices, technologies, and applications they use, and what barriers stand in the way of all Americans realizing the Internet's full potential. We continued tracking long-running trends that shed light on Americans' shifting usage habits and the digital divide. In addition, we

gathered new data on a range of contemporary issues, from the use of wearables and connected household equipment to concerns about online privacy and security.

Over the coming months, our team at NTIA will continue analyzing this latest dataset and publishing our results here on the Digital Nation Blog. We also encourage researchers and the public at large to dive into the latest data. Our Data Explorer tool [3] now includes metrics from 2015, and we will soon post the public use dataset and sample statistical code in the Research Center [4].

Internet Use Increases Among Lagging Groups

Seventy-five percent of Americans (ages 3 and older) used the Internet from any location in 2015, up from 71 percent in 2013. As in previous years, Internet use continued to vary substantially based on age, with young and middle-aged adults going online at a higher rate than children and older Americans. For example, 85 percent of those between the ages of 15 and 24 went online in 2015, while adoption rates were lower among older and younger age groups. However, Internet usage rates were little-changed among relatively young adults, while they increased significantly for children and seniors (see Figure 1).

Figure 1: Internet Use by Age Group, Percent of Americans, 2013-2015

Along with increased use among the oldest and youngest Americans, the latest data suggests a slowly shrinking digital divide along other demographic lines, including educational attainment. While Internet use among those Americans with at least some post-secondary education remained steady between 2013 and 2015, it increased significantly among those with education up to a high school diploma. Although those with lower levels of educational attainment are gradually increasing their online presence, the gap in Internet use based on education remains quite large, with 88 percent of college graduates going online in 2015, compared with 58 percent of those with no high school diploma (see Figure 2).

**Figure 2: Internet Use by Educational Attainment,
Percent of Americans Ages 15+, 2013-2015**

Internet use also grew more rapidly among African Americans (to 68 percent in 2015 from 64 percent in 2013), Hispanics (66 percent from 61 percent), and American Indians and Alaska Natives (70 percent from 61 percent), compared with Whites (78 percent from 75 percent) and Asian Americans (77 percent from 75 percent).

Taken together, these findings suggest that Internet use may be nearing a plateau among segments of the population that have historically been more likely to go online, and that efforts to further boost adoption in the United States should target the particular challenges faced by those who have been less likely to use the Internet. At the same time, how Americans access the Internet is clearly changing, a subject we will explore more closely in our next blog post. Our latest data shows a continuance of the shift toward mobile devices that we previously observed [5], which is enabling a new range of applications and options for getting online.

Want to learn more? We are hard at work preparing more reports in our series on the 2015 survey results. In the meantime, you can sign up for our Data Central mailing list [6] to receive the latest news in your inbox.

Residential Internet Access Cost in Nebraska

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Abstract

This study compares the cost of accessing the Internet via digital subscriber line, terrestrial wireless, fiber optic cable, and television cable systems within each of the five classifications of cities including metropolitan, primary, first class, second class, and village in the State of Nebraska. Cost is analyzed on a megabit per second (Mbps) basis allowing for comparisons between access medium and the classes of cities. The analysis separates Internet access defined by the Federal Communications Commission as broadband at 4 Mbps download and 1 Mbps upload and Internet access at 25 Mbps download and 3 Mbps upload capable of supporting advanced telecommunications capability as defined by Congress. Findings reveal substantial differences in cost between broadband and non-broadband services and also substantial differences in cost between rural and urban population centers. The study holds value for community leaders, state telecommunications regulators, and Internet service providers as they attempt to provide equitable Internet services to both rural and urban locations in Nebraska.

Residential Internet Access Cost in Nebraska

Introduction

The small rural town of Westerville, Nebraska located within Custer County along highway 70 is little more than a small dot on the map. The town was platted August 11, 1880. It was an important center for trade for early pioneer families. According to the Westerville Centennial Committee (2004), Westerville was the first town of Custer County and host to many other firsts for the region; the first frame church, the first doctor, lawyer, banker, monument cutter, and general stores. It was host to the Custer County fair in 1881 and 1882. Westerville was a thriving community until it was bypassed by the critical economic infrastructure of the day, the railroad. The railroad came through Custer County in 1886, forgoing the bustling town of Westerville in favor of a route through Broken Bow, approximately 15 miles to the west. Today Westerville is an unincorporated community of 39 people, just a few homes, the Methodist church, and no businesses. It has more notoriety now as a stop on the annual Junk Jaunt trail (travelling garage sale) than as a previously bustling community. Broken Bow however, has become a thriving community of 3,559 people according to the latest United States Census Bureau report (2014).

This 19th century example of the economic impact of the railroad in Nebraska is analogous to Internet access today. Katz (2012) concluded that internet access, at rates defined as broadband contribute positively to both developed and developing countries GDP, economic growth, and job creation. The Katz study has validated "...the higher penetration of broadband, the more important is its contribution to economic growth" (p. 92). Coleman (2010) found that rural Kentucky communities had experienced economic growth attributable to broadband Internet although it wasn't quantifiable. Kolko's (2010) nationwide analysis of broadband data from the

Federal Communication Commission and economic data from several federal agencies reveals a

positive relationship between broadband expansion and economic growth. Furthermore the

results reveal the relationship is stronger within industries that rely upon information technology

and in areas of lower population densities. With striking similarity to the railroad example, a

nation-wide analysis of all counties in the United States reveals that counties that lack access to

broadband are losing population and counties with broadband services are actually growing in

population (Ross, 2014).

In the *Sixth Broadband Deployment Report* (2010) the Federal Communication

Commission adopted the National Broadband Plan recommended Internet access speeds of 4

megabit per second (Mbps) download and 1 Mbps upload as a benchmark for consumer

households, and as a baseline for Internet access speeds defined as broadband. In the most recent

2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate

Deployment report (2015) the Federal Communication Commission concluded the 4Mbps/1Mbps

benchmark cannot support advanced telecommunications capabilities. The new benchmark has

been set at 25Mbps download and 3Mbps upload. Advanced telecommunications capability has

been defined by Congress "without regard to any transmission media or technology, as high-

speed, switched, broadband telecommunications capability that enables users to originate and

receive high-quality voice, data, graphics, and video telecommunications using any technology."

(47 U.S.C. § 1302(d1)). The new benchmark will eventually be further dramatically increased

with the number one goal outlined in the *National Broadband Plan* for 100 million homes to

have download speeds of at least 100 Mbps and upload speeds of at least 50 Mbps by the year

2020 (Connecting America, 2010). According to the Federal Communication Commission

Measuring Broadband America Fixed Broadband Report: A Report on Consumer Fixed

Broadband Performance in the U.S. (2014), consumers are continuing to subscribe to faster

speed Internet access services, either through their current or competing Internet Service

Providers, or through the provider upgrading service for all subscribers within a service tier.

Although broadband has been implemented rapidly across the country, the *Eighth*

Broadband Progress Report from the Federal Communication Commission (2012) shows that

approximately 19 million Americans live in areas still unserved by broadband services. As stated

in the progress report "For these and other reasons, we must conclude that broadband is not yet

being deployed "to all Americans" in a reasonable and timely fashion" (p. 3). The Federal

Communication Commission further reports that as of December 31, 2013 53% of Americans

living in rural areas lack access to fixed 25 Mbps/3Mbps broadband service as compared to 8%

of Americans living in urban areas (2015).

Focusing upon Nebraska, currently 86% of Nebraska households have Internet access and

82% have "broadband" speeds, with the majority of those without Internet access residing in the

nonmetropolitan areas of the state (Vogt, Byers, Hancock, Narjes, & Terry, 2014). However, it is

important to note the Vogt, Byers, Hancock, Narjes, & Terry study defines broadband as anything

with higher speeds than dial-up Internet access.

Nebraskans access the Internet via a complex array of technologies; 14% don't have

Internet access, 1.5% are still using dial-up access, 19% use digital subscriber line enabled phone

lines, 4% via satellite, 10% use terrestrial fixed wireless, 43% use cable modems, 4% have fiber

directly to the home, 15% use a wireless mobile card or cellular, and 3% don't know what access

they use (Vogt, Byers, Hancock, Narjes, & Terry, 2014).

There are several ways to access the Internet. Dial-up access through a modem is an

antiquated technology providing minimal access speeds and is largely ineffective when trying to

explore more complex web pages. Digital subscriber line is a technology designed to use the

original copper wires that have been used for basic telephone service for decades. Satellite is not

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new to Internet access but it is typically very expensive compared to other services and requires a

more complex satellite dish/receiver to gain access. Terrestrial fixed wireless is as the term

implies a wireless transmission system mounted typically on tall structures with receiving

antennas located on the residence. Cable modem is a delivery medium based upon cable

television infrastructure. Due to the nature of the heavily insulated copper wire of a cable coax

system it is typically capable of very high data speeds. Fiber optic cable is a strand or series of

strands of glass fibers that transmit digital data via the transmission of light. While capable of

very high transmission rates fiber installed directly to the home has limited installations in

Nebraska. Fiber is typically used for transporting signals over distances of several miles. Mobile

Internet access is via cellular phone technology and is typically limited in data capacity as

determined by the specific subscription plan.

  The National Telecommunications and Information Administration found the second

most popular explanation for no home Internet use for all Americans is due to the expense. The

most cited reason for no home Internet access is the lack of need or no interest (2014). Over half

(53%) of non-broadband subscribers in Nebraska cite the service as too expensive as a primary

reason for not subscribing. While the clear majority of internet users in Nebraska are very or

somewhat satisfied with reliability, speed, and customer service, over half are somewhat or very

dissatisfied with the cost of their Internet service (Vogt, Byers, Hancock, Narjes, & Terry, 2014).

  The level of dissatisfaction with the cost of Internet service in Nebraska leads to the need

to better understand the pricing structure for Internet access. The purpose of this study was to

examine the cost and speed of residential Internet access so as to enable comparisons between the

various city classifications of Nebraska municipalities and the various delivery methods such as

digital subscriber line, terrestrial wireless, cable modems and fiber.

Research Questions

The following research questions provided the focus for this study:

- What is the average cost per Mbps for residential Internet access in Nebraska?

- What is the average cost per Mbps for residential internet access for each classification of Nebraska municipality?

- What is the average cost per Mbps for digital subscriber line, terrestrial wireless, fiber, and cable delivery methods of residential internet access in Nebraska?

- What is the average cost per Mbps for residential broadband Internet access in Nebraska?

Methodology

This study examined the cost of internet access between the five classes of cities established by statutory authority in the Nebraska Revised Statutes. The classes include metropolitan, primary, first class, second class, and village (Neb. Rev. Stat. § 14-101, 15-101, 16-101, 17-101, 2012). The current list of Nebraska cities with both population and statutory classification was obtained from the Nebraska Department of Economic Development. Lincoln is the only city qualified as primary and Omaha is the only city qualified as metropolitan. Thirty cities were randomly selected from each of the village, second class, and first class categories using a random number generator within a spreadsheet. Internet service providers for each of these cities were identified using the Nebraska Broadband Mapping project (2013). Each internet service provider in each city was consulted either via phone or through company specific websites to determine the Internet access data rate as measured in megabits per second (Mbps) in addition to the cost of the service. If websites failed to post specific data rates or service plan costs the internet service provider was contacted by phone. Only residential internet access

delivered via digital subscriber line, terrestrial wireless, cable modem, or fiber was examined.

Internet services via mobile wireless or satellite were excluded from the study. Once the dataset

was complete the cost per Mbps was determined for each level or tier of internet service offered.

The results were then aggregated into the specific classifications of cities.

Limitations of the Study

Satellite internet access and mobile wireless was excluded from the study. Pricing for

special rate packages, bundled packages and packages with data limits were not considered for

this study. The costs of special rate packages were found to revert to a standard rate after an

interim period. No attempt was made to determine which speeds and technologies offered by

service providers were most commonly subscribed by consumers.

Findings

What is the average cost per Mbps for residential Internet access in Nebraska? Referring to

Table 1, across all city classifications and Internet access platforms the overall average cost of all

Internet access is $13.84 per Mbps.

What is the average cost per Mbps for residential Internet access for each classification of

Nebraska municipality? Overall average cost for each statutory class of city in Nebraska is

presented in Table 1. Metropolitan is $11.96, Primary is $14.37, First Class is 13.29, Second

Class is $14.26, and Village is $15.31.

What is the average cost per Mbps for digital subscriber line, terrestrial wireless, fiber,

and cable delivery methods of residential internet access in Nebraska? As listed in Table 1 the

average cost for digital subscriber line access is $16.32, for terrestrial wireless access is $25.85,

for fiber access is $8.16, and for cable is $5.03 per Mbps.

What is the average cost per Mbps for residential <u>broadband</u> Internet access in Nebraska? Broadband cost was separated into two categories, the benchmark of the Federal Communication Commission defining access speeds as 4Mbps download and 1Mbps between 2010 and 2015 and the new benchmark of 25Mbps download and 3Mbps upload announced in February 2015. As can be seen in Table 1 the average cost of 4Mbps/1Mbps service is $5.46 per Mbps. The 25Mbps/3Mbps service is offered on a very limited basis, primarily through cable providers. The cost was found to be $.88 per Mbps.

Analysis

The column in Table 1 labeled as "n" lists the number of Internet access packages that meets the speed and delivery technology for the specific class of city. Package counts for first class, second class and village are higher than primary and metropolitan classes because 30 cities were examined in each of the first class, second class and village communities and only one city of the metropolitan and primary class exists in Nebraska.

Across all delivery speeds and technologies, residents of the metropolitan class experience the lowest Internet access cost of all Nebraskans. When the metropolitan and primary classes are combined as the urban residents of Nebraska and the first class, second class and village are combined as the rural residents of Nebraska, rural residents pay on average 8.5% more for Internet access than urban residents. Referring to Table 2, urban residents total 48% of the State population.

Residents in Nebraska who subscribe to 4Mbps/1Mbps broadband Internet access experience substantially lower cost per Mbps across all delivery means than packages not classified as broadband. Referring to 4Mbps/1Mbps service as listed in Table 1, residents in the primary class pay the least on average per Mbps compared to the other classes for broadband

Internet access. When examining the same rural/urban comparison as previously applied,

residents of the first class, second class and village pay on average 63% more for broadband

Internet access than residents of the primary or metropolitan class.

While access to 4Mbps/1Mbps Internet service is prevalent across all city classifications

and delivery technologies, access to the 25Mbps/3Mbps service is extremely limited by both

service type and city classification. Referring to Table 1 there are several access technologies not

delivering and city classifications that do not receive 25Mbps/3Mbps Internet access in

Nebraska. This new speed classification only announced in February of 2015 will provide

Nebraska Internet service providers with a new benchmark to pursue over the next few years.

The Federal Communication Commission has found the adoption rate between 2011 and 2013

has quadrupled for 25Mbps/3Mbps Internet access (2015).

One of the most striking findings is that consumers of 4Mbps/1Mbps digital subscriber

line services in the village, second, and first class communities combined in Nebraska pay on

average 170% more per Mbps than consumers of 4Mbps/1Mbps digital subscriber line in the

metropolitan and primary class combined. The same groupings of communities render a

difference of only 20% per Mbps for cable modem broadband internet that benefits residents in

the first, second and village classes of communities.

Table 1

Average Internet Access Cost per Megabit per Second (Mbps)

	Metropolitan		Primary		First Class		Second Class		Village		
	Cost/Mbps	n	Cost/Mbps	n	Cost/Mbps	n	Cost/Mbps	n	Cost/Mbps	n	Average
All Delivery Speeds											
Digital Subscriber Line	10.20	17	12.70	14	21.11	117	17.50	102	20.08	102	16.32
Terrestrial Wireless	27.40	11	29.72	18	26.16	276	21.72	106	24.24	146	25.85
Fiber	1.15	3	10.06	5	1.10	12	12.76	7	15.72	9	8.16
Cable	9.09	5	4.99	6	4.78	119	5.08	55	1.22	8	5.03
Average Cost	11.96		14.37		13.29		14.26		15.31		13.84
4Mbps download / 1Mbps upload											
Digital Subscriber Line	2.96	4	2.83	2	7.07	13	8.10	24	8.29	33	5.85
Terrestrial Wireless	11.49	2	5.11	3	8.87	92	8.84	39	8.59	38	8.58
Fiber	1.15	3	2.83	2	1.10	12	8.81	6	10.99	5	4.98
Cable	3.12	4	2.28	4	2.51	96	3.14	44	1.22	8	2.45
Average Cost	4.68		3.26		4.88		7.22		7.27		5.46
25Mbps download / 3Mbps upload											
Digital Subscriber Line - 25Mbps/3Mbps	1.86	2	0.00	0	0.00	0	0.00	0	5.60	1	1.49
Terrestrial Wireless - 25Mbps/3Mbps	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Fiber - 25Mbps/3Mbps	0.54	2	0.00	0	0.78	8	4.00	1	0.00	0	1.06
Cable - 25Mbps/3Mbps	0.89	3	0.00	0	1.31	56	1.39	22	1.22	8	0.96
Average Cost	0.82		0.00		0.52		1.35		1.71		0.88

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Table 2

Nebraska Population by City Classification

	Metropolitan	Primary	First Class	Second Class	Village	Total
Population	416,931	258,379	448,064	180,597	99,727	1,403,698
Percent	30%	18%	32%	13%	7%	100%

Conclusion

As many rural Nebraskan's would attest the delivery method for Internet access is not always a choice. Even though an area may have multiple Internet access providers available, there are often extenuating circumstances preventing actual consumer choice. Not all technologies in a geographic area are necessarily capable of serving all the residents.

The bigger picture revealed by this research is the need for regulators, community leaders and even service providers to examine methods to ensure all Nebraskan's have access to Federal Communication Commission defined broadband speeds at affordable and equitable rates. The challenge will be to meet the new Federal Communication Commission data rate benchmark of 25Mbps/3Mbps and to expand into the future to meet the 100Mbps rates envisioned by the year 2020. Failure to do so will result in another round of communities withering into the history books as population shift occurs in order for Nebraska residents to access high speed Internet services.

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