NITC Strategic Initiatives
Overview and Staff Recommendations
**July 14, 2015**

Strategic Initiatives	Status
Network Nebraska	Updated
Community IT Development	Updated, renamed
eHealth	Updated
Digital Education	Updated
State Government IT Strategy	Updated, renamed
Nebraska Spatial Data Infrastructure (NESDI)	Continue
IT Security	Updated, renamed
Cloud Strategy	Under Development
State IT Spending Analysis	Under Development

Network Nebraska

Objective: *To develop a broadband, scalable telecommunications infrastructure that optimizes the quality of service to every public entity in the State of Nebraska.*

Description: Network Nebraska interconnects disparate networks into a multipurpose core backbone extending from Omaha to Lincoln to Grand Island and Scottsbluff, with Ethernet clouds and aggregated Internet service extending out to the furthest corners of the state.
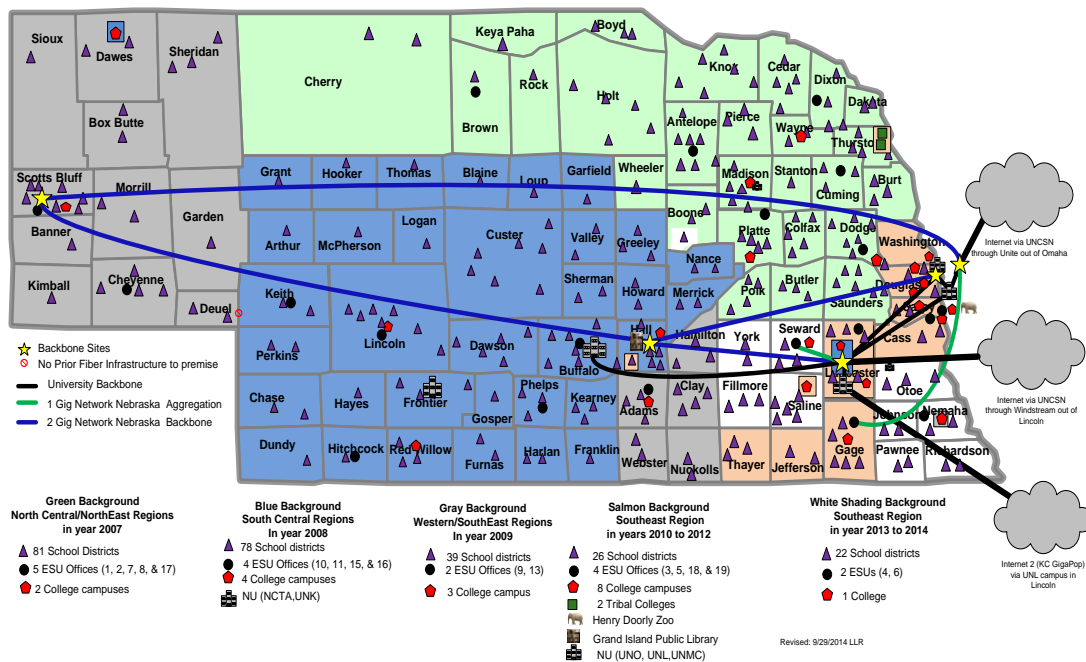
Collaborators

- Collaborative Aggregation Partnership: Office of the CIO, University of Nebraska Computing Services Network, Nebraska Educational Telecommunications, Public Service Commission, Nebraska Department of Education, Nebraska Information Technology Commission
- Network Nebraska Advisory Group: 8 K-12 members; 8 higher education members
- Educational Service Unit (ESU) Coordinating Council, ESU-Network Operations Committee, ESU-Distance education Advisory Committee, higher education chief technology officers

Strengths/Assets

- Nearly every K-12 school district, educational service unit, and public college and university participate in Network Nebraska and share in its annual costs
- Network Nebraska is a completely voluntary, self-funded project, which contributes to its resilience, sustainability and focus on customer service
- Shared personnel support within the Office of the CIO, Administrative Services, and the University of Nebraska Computing Services Network contributes to its ultra-low cost and affordability
- Having all of the K-20 education entities on Network Nebraska provides not only a sense of pride in ownership of the network, but the daily offsets in Internet access peaks between K-12 and higher education also saves on the cost of Internet access
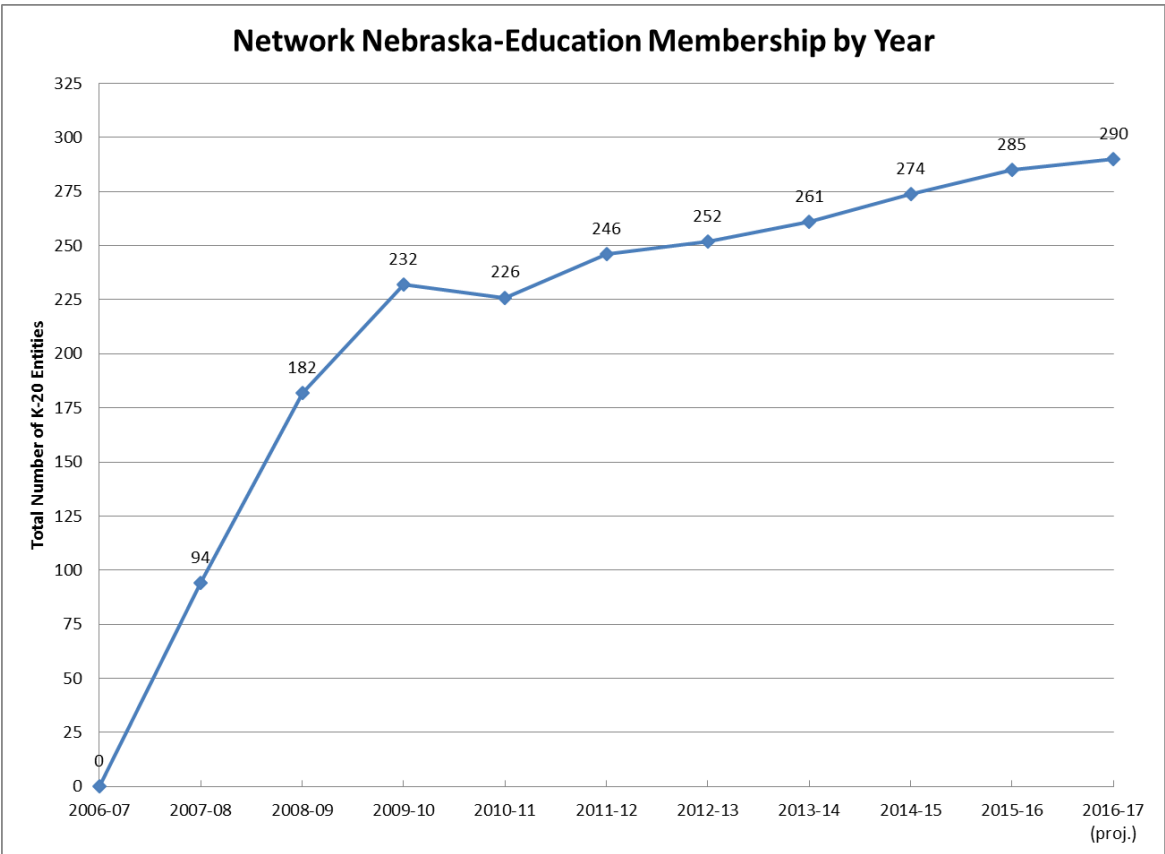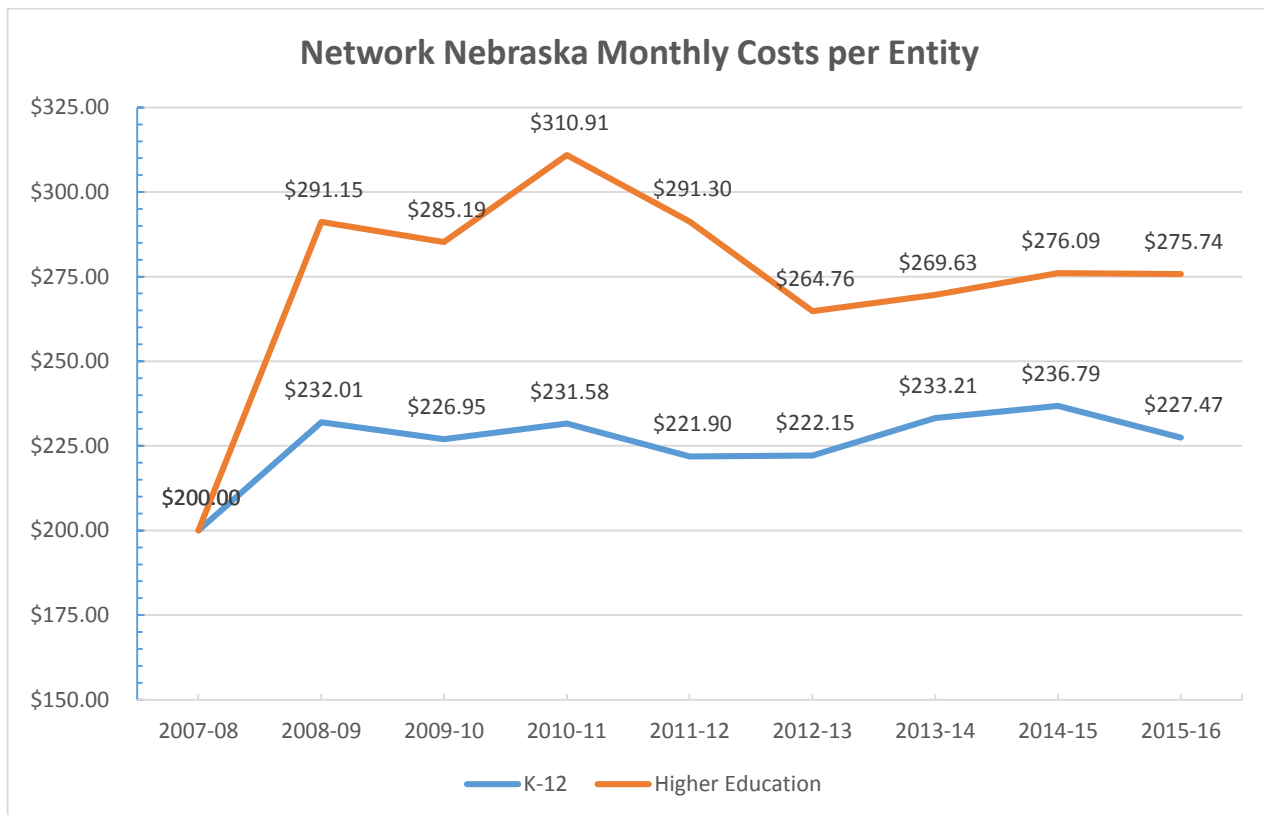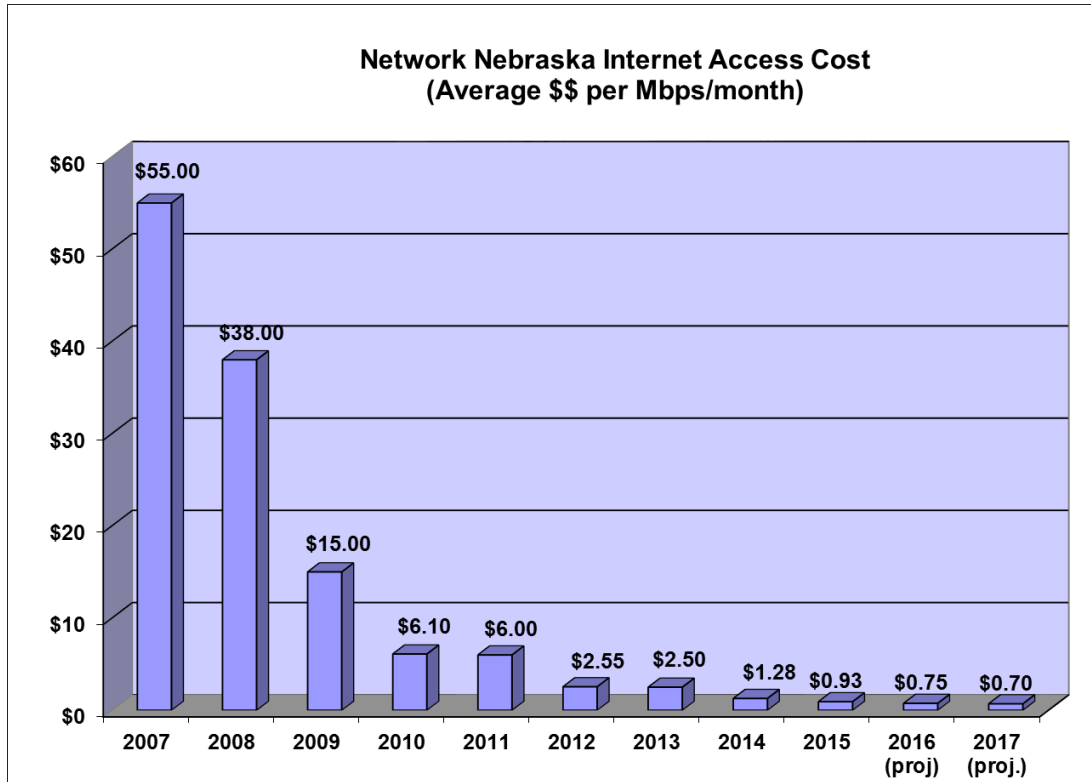
Challenges

- The absence of full-time network employees reduces the capacity of such things as marketing, communications, research & development, and customer follow-up
- The Network Nebraska cost recovery rates, although small in comparison to other state networks, are still above what rural public libraries and private K-12 schools can afford to pay.

Recent Accomplishments

- Increased public school district participation to 99.6% starting 7/1/2015
- Public higher education participation at 100% by 7/1/2012
- Achieved one of the lowest commodity Internet rates in the entire country, made possible through aggregation of demand and statewide bidding
- Achieved 100% retention of voluntary membership, now reaching 290 entities by 7/1/2015

Metrics

Network Nebraska-Education Membership by Year

Total Number of K-20 Entities

Year	Value
2006-07	0
2007-08	94
2008-09	182
2009-10	232
2010-11	226
2011-12	246
2012-13	252
2013-14	261
2014-15	274
2015-16	285
2016-17 (proj.)	290

Network Nebraska Internet Access Cost
(Average $$ per Mbps/month)

Year	Cost
2007	$55.00
2008	$38.00
2009	$15.00
2010	$6.10
2011	$6.00
2012	$2.55
2013	$2.50
2014	$1.28
2015	$0.93
2016 (proj)	$0.75
2017 (proj.)	$0.70

Network Nebraska Monthly Costs per Entity

| Year	K-12	Higher Education
2007-08	$200.00	$200.00
2008-09	$232.01	$291.15
2009-10	$226.95	$285.19
2010-11	$231.58	$310.91
2011-12	$221.90	$291.30
2012-13	$222.15	$264.76
2013-14	$233.21	$269.63
2014-15	$236.79	$276.09
2015-16	$227.47	$275.74

Community IT Development

Objective: *To stimulate demand for broadband and foster economic development in Nebraska communities through the effective use of information technology.*

Description: Although broadband availability in Nebraska continues to improve, some areas of the state are underserved or unserved. This action item leverages the resources of partner organizations in the state to stimulate demand for broadband and to enhance economic development by helping communities, businesses, and residents understand how to use new technologies.
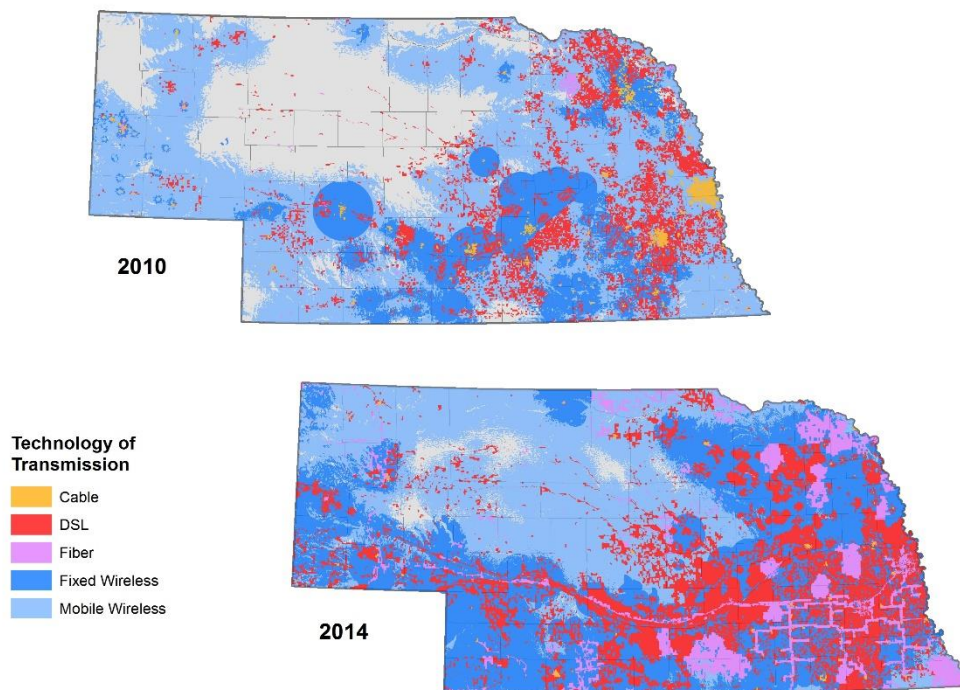
Collaborators

- Nebraska Public Service Commission
- University of Nebraska-Lincoln
- AIM
- Nebraska Department of Economic Development
- Nebraska Library Commission
- Other stakeholders

Strengths/Assets

- Broadband service is available to nearly all Nebraskans, with 99.8% of Nebraskans having access to service with download speeds of greater than 10 Mbps.[3] Nebraska ties for 9th on this measure. (June 30, 2014 data from broadbandmap.gov)

- Most households (82%) and nearly all businesses in Nebraska subscribe to broadband service.

- A number of innovative programs are addressing the need for IT professionals. These include coding programs for youth, career academies, internship programs, higher education programs, and code schools.

- The Nebraska Universal Service Fund administered by the Nebraska Public Service Commission provides grants for broadband infrastructure programs. A pilot program in 2015 also provided funding for 5 broadband adoption programs.

- Libraries are key partners in technology training programs in communities. The Nebraska Library Commission's Library Broadband Builds Nebraska Communities grant improved the capacity of libraries to provide public access to computers and the Internet and to serve as essential digital connectors. Through the grant, 147 library outlets received computers, software and other hardware, and broadband connections.

- The Nebraska Information Technology Commission, Nebraska Public Service Commission, University of Nebraska, Nebraska Department of Economic Development and AIM have formed a strong partnership through the Nebraska Broadband Initiative. Even though federal grant funding for broadband mapping and planning is no longer available, partners can leverage existing resources to continue efforts to promote the effective use of technology in communities.
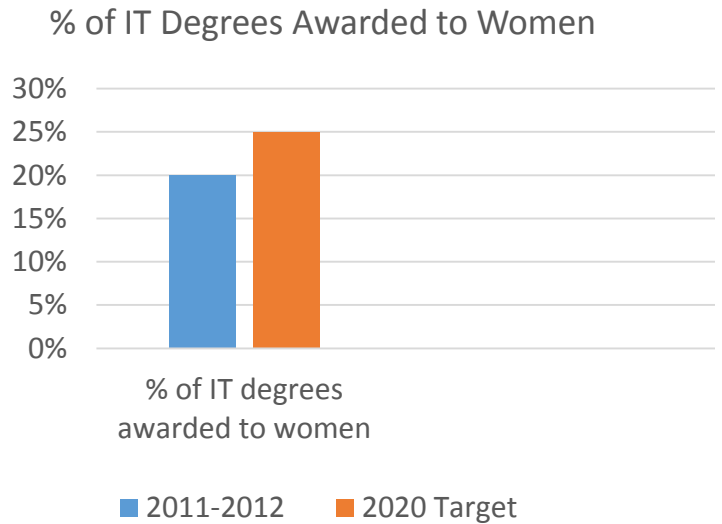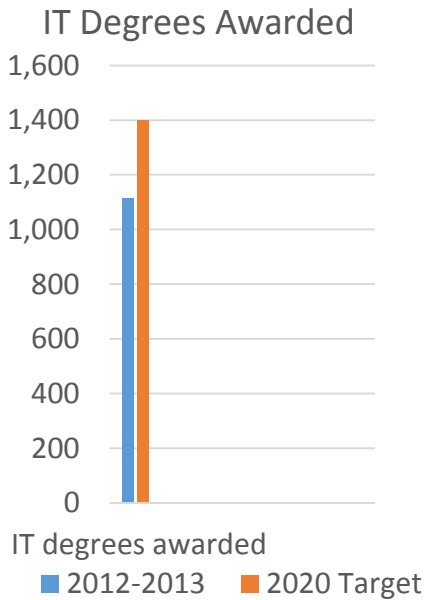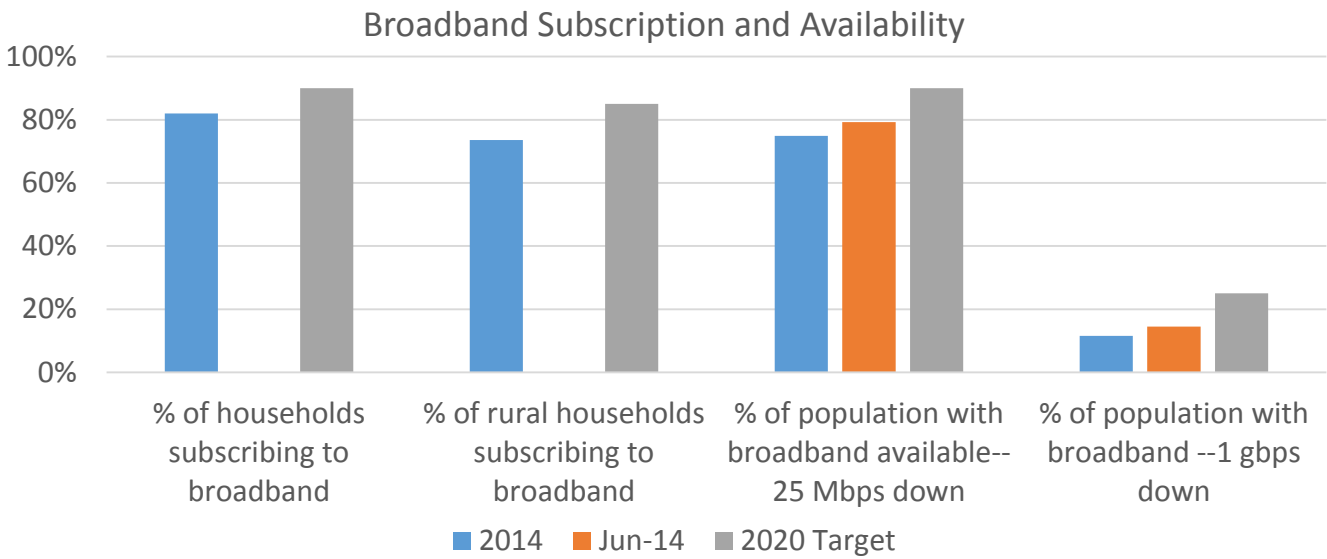
Challenges

- Approximately 20% of Nebraskans lack access to broadband service with download speeds of greater than 25 Mbps. Limited upload speeds can also be a barrier to utilizing broadband technologies. Twenty-six percent of Nebraskans lack broadband access with upload speeds of over 6 Mbps. (June 30, 2014 data from broadbandmap.gov)

- Internet applications relying on broadband networks are becoming increasingly important for agricultural producers. Many of these applications use mobile broadband. While most areas of the state have access to mobile broadband, those areas that lack coverage are rural, agricultural areas of the state. This could impede the use of broadband technologies in agriculture.

- Broadband utilization by businesses varies by region and community size, with businesses outside of Lincoln and Omaha and in very small towns reporting lower utilization of Internet technologies. (Nebraska Broadband eSolutions Benchmarking Report)

- Broadband utilization by households also varies by region. Most households in Nebraska (82%) have broadband service. However, there are significant rural-urban differences with subscription rates of 90% in Lincoln and 87% in Omaha, compared to 72% to 77% in other regions of the state. (Internet Connectivity and Use in Nebraska: A Follow Up Study)

- The availability and development of a skilled IT workforce is a key need in Nebraska.

- Limited funding is available for initiatives which promote the effective use of technologies in Nebraska communities.

Recent Accomplishments

- Development of a state broadband plan (2014)
- Development of a state broadband map (2010-2014)
- Development of a community broadband planning workbook, household and business surveys, and best practice videos
- Annual broadband conferences (2011-2014)

Metrics from Statewide Broadband Plan

Broadband Subscription and Availability

Legend: 2014 | Jun-14 | 2020 Target

Categories:
- % of households subscribing to broadband
- % of rural households subscribing to broadband
- % of population with broadband available-- 25 Mbps down
- % of population with broadband --1 gbps down

IT Degrees Awarded

IT degrees awarded

Legend: 2012-2013 | 2020 Target

% of IT Degrees Awarded to Women

% of IT degrees awarded to women

Legend: 2011-2012 | 2020 Target
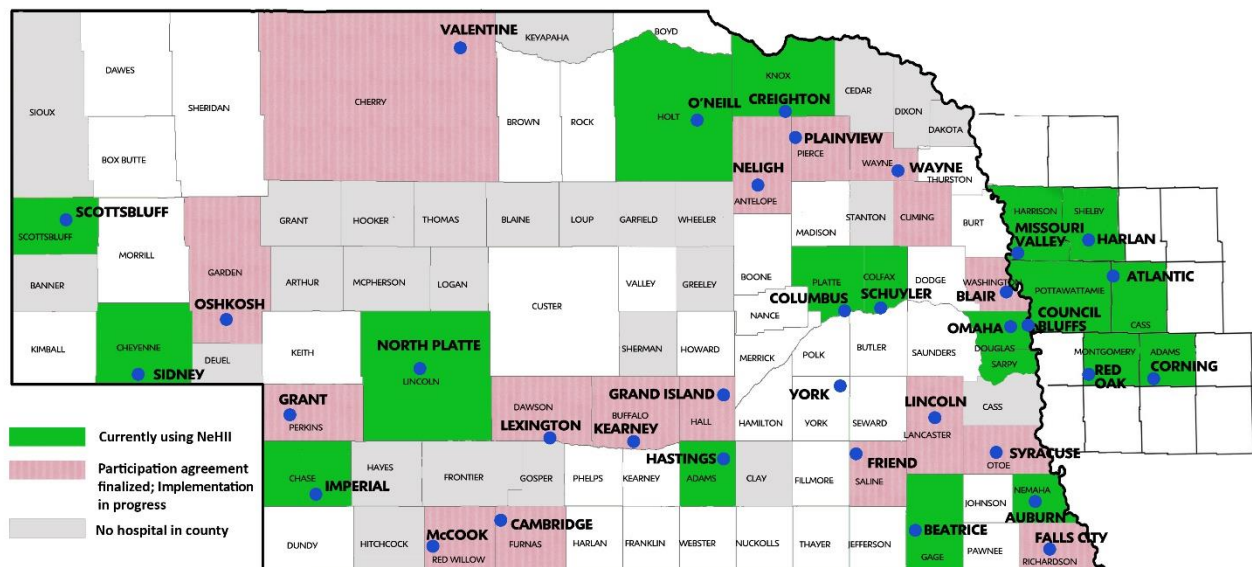
eHealth

Objective: *To foster the collaborative and innovative use of eHealth technologies through partnerships between public and private sectors, and to encourage communication and coordination among eHealth initiatives in Nebraska.*

Description: The eHealth Council supports the adoption of electronic health records, e-prescribing, and health information exchange through NeHII (Nebraska Health Information Initiative). The following map shows pending and current NeHII hospital implementations.

Collaborators

- Nebraska Department of Health and Human Services
- NeHII
- UNMC
- Other stakeholders

Strengths/Assets

- NeHII is one of the largest statewide health information exchanges in the U.S., with over 4,500 users**.**
- Nebraska is currently a leader in e-prescribing controlled substances (EPCS).

Challenges

- Interoperability remains a challenge as standards are still being developed.
- Additional efforts may be needed to better integrate health IT into provider workflows.
- Adoption of technologies which allow patients to access their health information and better manage their care may require outreach efforts and education for both health care providers and patients.
- Providers not eligible for Meaningful Use incentive payments (including long-term and post- acute care providers and behavioral health providers) may find investing in health IT to be financially challenging.
- Sustainability of health information exchanges remains a challenge.

Recent Accomplishments:
- Prepared and submitted an application for nearly $3 million in grant funding from the Office of the National Coordinator for Health IT (2015).
- Completed a four-year $6.8 million State Health Information Exchange grant from the Office of the National Coordinator for Health IT (2010-2014). During the four year grant period, the number of NeHII users grew from 464 users to 3,590 users. Nebraska also ranked 13th in e-prescribing adoption in 2013, with 89% of physicians e-prescribing.

Metrics

% of Nebraska Hospital Beds Covered by NeHII

(bar chart: % of hospital beds — 3/10, 3/14, 3/15, Target 2016)

Total Number of NeHII Users

(bar chart: Number of NeHII Users — Mar-10, Mar-14, Mar-15)
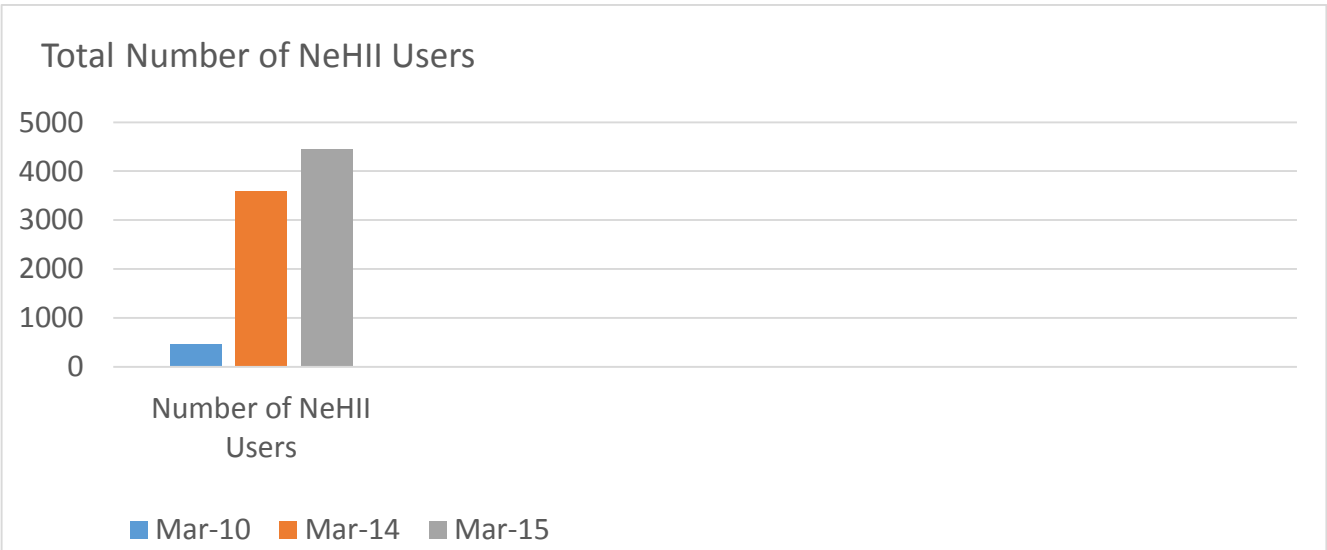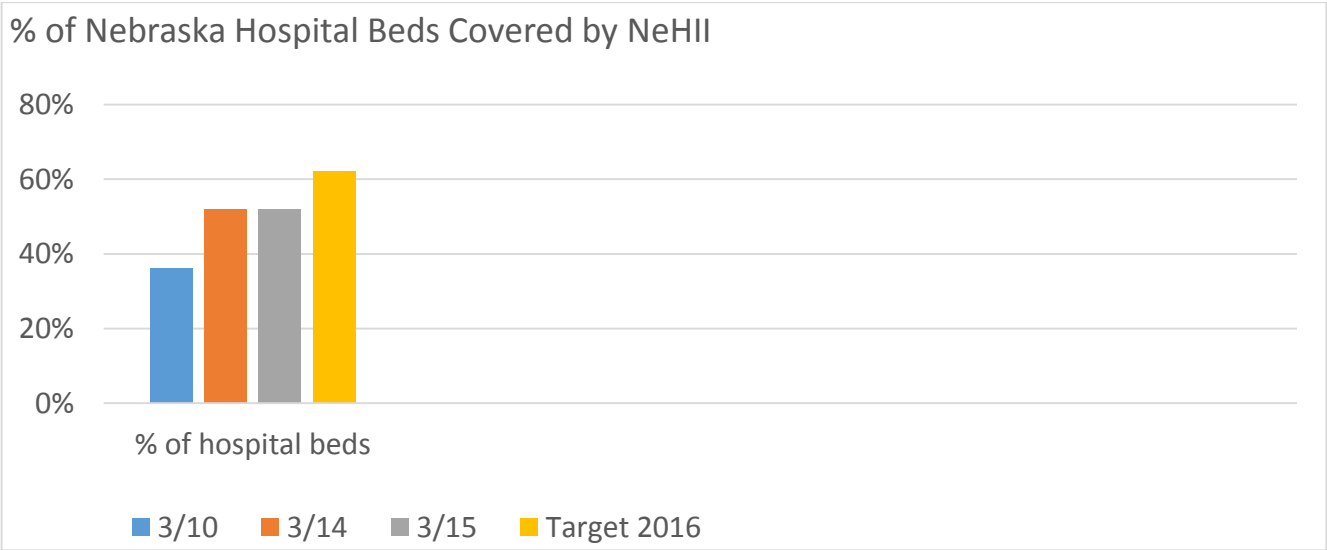
Digital Education

Objective: *To promote the effective and efficient integration of technology into the instructional, learning, and administrative processes and to utilize technology to deliver enhanced digital educational opportunities to students at all levels throughout Nebraska on an equitable and affordable basis.*

Description: The Digital Education initiative will involve the coordination and promotion of several major systems and applications that heretofore have either been developed mostly at the local level or have not been replicated statewide.

Initiative progress will be dependent upon adequate Internet connectivity and transport bandwidth for learners, instructors, administrators, and for educational attendance sites. A minimum acceptable level of classroom technology will have to be established for the initiative to be successful.

Collaborators

- Educational Service Unit (ESU) Coordinating Council
- ESU BlendEd Initiative
- ESU Distance Education Advisory Committee
- ESU Technology Affiliate Group
- Nebraska Department of Education

Strengths/Assets

- The enhancement of Digital Education is the combined focus of public and private K-12 entities and public and private higher education entities working together through Network Nebraska
- The recent developments in learning management software, content management software, and longitudinal data tracking and depiction make it a particularly important time to improve on the statewide deployment of these systems
- The high bandwidth transport and Internet capacity of Network Nebraska makes it possible to implement private cloud and public cloud applications to every education entity on Network Nebraska

Challenges

- While collaboration among entities is strong, the Initiative lacks a "champion" and any additional implementation funding is a scarce commodity

Recent Accomplishments

- Collaborators and stakeholders testified at the LB 1103 and LB 519 hearings
- ESU collaborators have developed BlendEd briefing materials
- The Nebraska Department of Education has made progress on the Digital Dashboard pilot project involving nine Nebraska school districts

Metrics

- This strategic initiative is still in its developmental phase and no measures or metrics are apparent at this time

State Government IT Strategy

Objective: *To address multiple items improving efficiency in state government, including implementing enterprise shared services and adopting standards and guidelines.*

Description: The primary components of this initiative are the implementation of shared services and the development of standards and guidelines.

Collaborators:

- Office of the Chief Information Officer
- State government agencies
- Nebraska.gov

Recent Accomplishments:

- *Shared Services.* Over the past two years efforts have focused on the following shared services:
  - Enterprise Maintenance / Purchase Agreements. The Office of the CIO manages or supports several enterprise agreements that benefit state agencies. These include: Adobe; Enterprise Content Management (ECM) solutions development; IBM; Microsoft; and the Western States Contracting Alliance (WSCA).
  - E-mail and Collaboration Services
  - Enterprise Content Management
  - Interactive Voice Response
  - Server Virtualization
- *Standards and Guidelines.* In order to encourage interoperability and standardization, over 40 standards and guidelines have been adopted. Within the past two years, 10 new or revised standards and guidelines have been adopted.

Metrics:

Adoption Rate of Shared Services
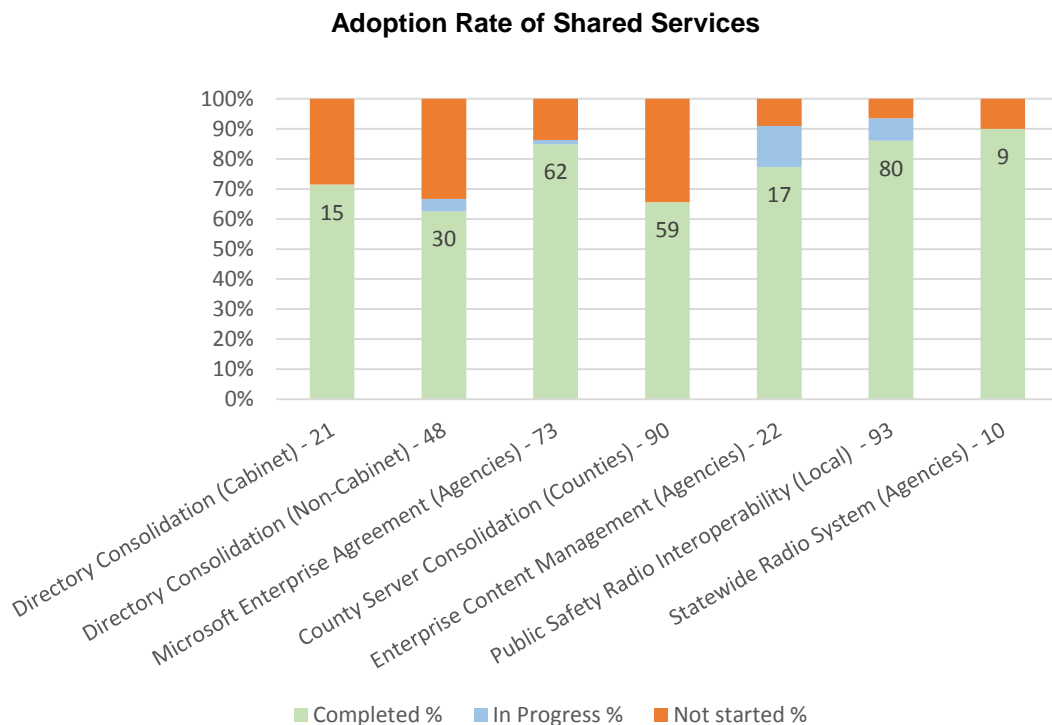
Nebraska Spatial Data Infrastructure (NESDI)

Objective: *To develop and foster an environment and infrastructure that optimizes the efficient use of geospatial technology, dat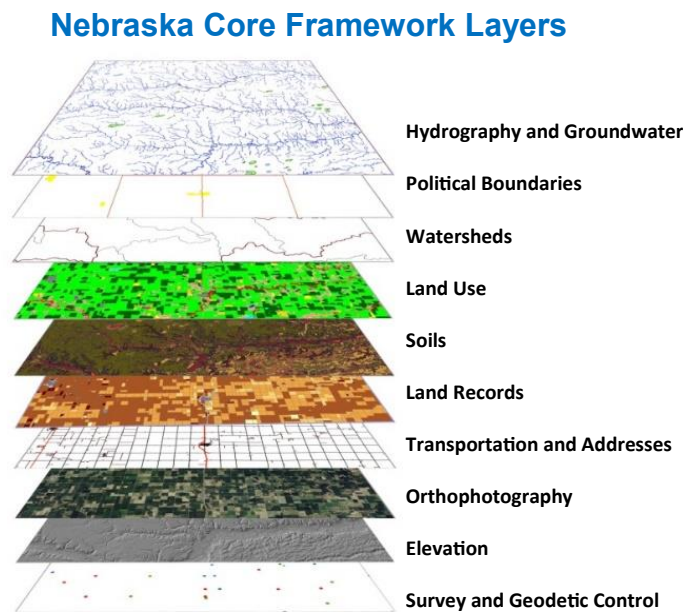a, and services to address a wide variety of business and governmental challenges within the state. Geospatial technologies and data will be delivered in a way that supports policy and decision making at all levels of government to enhance the economy, safety, environment and quality of life for Nebraskans.*

- Facilitate the creation, maintenance, analysis and publishing of quality and authoritative data and information systems. Priority layers include: imagery, elevation, street centerlines, point addressing, and land records.

- Formalize data stewardship and encourage data sharing and provide widespread access to data and services through NebraskaMAP.gov.

- Facilitate technical assistance and education outreach opportunities for furthering the adoption of the NESDI and geospatial applications.

- Achieve sustainable and efficient allocation of resources to support the implementation and wise governance of GIS services and geospatial data.

Nebraska Core Framework Layers

Hydrography and Groundwater
Political Boundaries
Watersheds
Land Use
Soils
Land Records
Transportation and Addresses
Orthophotography
Elevation
Survey and Geodetic Control

Collaborators
- The State of Nebraska
- Local and County Government
- League of Municipalities
- Nebraska Association of County Officials
- Nebraska GIS LIS Association
- Natural Resource Districts
- Public Power Districts
- Federal Agencies
- Private Industry
- K-12, College, and University of Nebraska

Strengths/Assets

- Existing governance structure established by statute representing a broad range of stakeholder interests. GIS Council According to Neb. Rev. Stat. § 86-572(2).
- Standards which are foundational to the NESDI are in place or in development.
- Existing State GIS Coordinator and one GIS staff member in CIO GIS Shared Services Office.
- Several strong state agency and local county-based GIS programs.
- Several NESDI data layers and applications exist with coverage in priority areas or statewide.
- Strategic Plan completed in 2012 with stakeholder input from across the state. It serves as roadmap to setting statewide priorities and was used to develop the NESDI strategic initiative and action items.
- Centralized data file infrastructure established to host and share state agency data layers.

Challenges

- Insufficient legislative or executive sponsor to support GIS Council efforts.
- Resources are inadequate to develop and maintain all framework layers.

- Resources are inadequate for a stewardship infrastructure that supports comprehensive stewardship of framework data.
- Outreach and training needs of GIS and geospatial data use and applications are broad given the level of different users.
- Reluctance to share data or making data available easily or timely.
- Technical limitations in current infrastructure and networks to host and exchange data.
- Sustainability of data maintenance and updates.
- Lack of metadata and appropriate documentation of data layers to support data discovery, sharing, and reliability of data.
- Lack of understanding of standards and no authoritative enforcement to data stewards not following standards. Local counties do not see NITC standards as a requirement but a guideline.

Recent Accomplishments

- Working groups established involving our collaborators to gather information and develop plans.
- New standards adopted for elevation, imagery, street centerlines and addresses. Metadata standards have been updated to reflect federal ISO requirements.
- Elevation business plan completed and implementation started with collaborators working to acquire data through a 4,400 acre project in western Nebraska.
- Established a statewide K-12 GIS Education Initiative by leveraging a statewide enterprise license agreement for software and services to private and public schools.

Metrics

The current metrics are used to evaluate the status of the NESDI and overall GIS program for the state is measured by several criteria and methods.

Core NESDI Data Development and Maintenance Criteria and Status

Core Framework Layers	Executive Sponsor	Charter/Business Plan	Data Steward	Data Model	Pilot Project	Adopted Standard	Infra-structure	Fully Implemented	Shared	Sustained Funding
Geodetic/Survey Control	Inactive	Inactive	Inactive	Inactive	Inactive	Complete	Inactive	Inactive	Inactive	Unfunded
Imagery	In Progress	In Progress	In Progress	In Progress	In Progress	Complete	In Progress	Inactive	Complete	Partially Funded
Elevation	In Progress	Complete	In Progress	In Progress	In Progress	Complete	In Progress	Inactive	Complete	Partially Funded
Land Records / Parcels	In Progress	In Progress	In Progress	In Progress	In Progress	Complete	In Progress	Inactive	In Progress	Unfunded
Street Centerline	In Progress	In Progress	In Progress	In Progress	Inactive	In Progress	In Progress	In Progress	In Progress	Partially Funded
Address	Inactive	In Progress	In Progress	In Progress	In Progress	Inactive	In Progress	Inactive	Inactive	Partially Funded
Boundaries	Complete	Inactive	In Progress	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Unfunded
Hydrography	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Partially Funded
Soils	Complete	Complete	Complete	Complete	Complete	Complete	In Progress	Complete	Complete	Funded
Land Use Land Cover	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Inactive	Unfunded
Wells	Complete	Complete	Complete	Inactive	Inactive	Complete	Complete	Complete	Complete	Unfunded
Watersheds	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Complete	Unfunded

Legend: Complete, In Progress, Inactive — Funded, Partially Funded, Unfunded

Status of Nebraska based on NSGIC Coordination Criteria

The National States Geographic Information Council (NSGIC) has published a listing of "9 Criteria for a Successful Statewide GIS Program." While these are not firm, binary criteria, they provide a measure by which different states can be compared. In general, the most successful states tend to have these things in common.

Criterion	Status
1. A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans:	**Partially meets criterion.** NITC has a full-time State GIS Coordinator. Authority to implement Business and Strategic Plans will come through NITC and Office of the CIO. Limited funds are available to carry out specific action items.
2. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production:	**Partially meets criterion.** NITC GIS Council provides governance to statewide coordination efforts along with the Office of the CIO based on statutory authority for state entities. Rely on partnerships from local involvement.
3. The statewide coordination office has a formal relationship with the state's Chief Information Officer (CIO):	**Meets criterion.** The State GIS Coordinator is positioned in the Office of the CIO.
4. A champion (executive and other legislative champions) is aware and involved in the process of geospatial coordination:	**Does not meet criterion.** There are no strong, active champions currently involved in the process.

5. Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse are assigned:	**Partially meets criterion.** A complete Nebraska Spatial Data Infrastructure (NESDI) has not been fully developed. The NebraskaMAP state clearinghouse exists, but has limited capability and lags behind other states. Both require sustained resources to develop and exist.
6. The ability exists to work and coordinate with local governments, academia, and the private sector:	**Partially meets criterion.** These entities are represented on the NITC GIS Council. There is some evidence of local government involvement with state functions, but overall GIS adoption across the state remains low.
7. Sustainable funding sources exist to meet project needs:	**Partially meets criterion.** There is funding for the State GIS Coordinator and various resources for projects through other agencies. However, long-term, sustainable funding and allocation of resources is still needed.
8. GIS Coordinator has the authority to enter into contracts and become capable of receiving and expending funds:	**Meets criterion.** The State GIS Coordinator in the Office of the CIO can enter into contracts.
9. The Federal Government works through the statewide coordinating authority:	**Partially meets criterion.** The Federal Government recognizes the Nebraska GIS Council and their efforts and has worked with the state (e.g. via NAIP, Homeland Security, FEMA, NebraskaMAP)

IT Security

Objective: *To define and clarify policies, standards and guidelines, and responsibilities related to the security of the state's information technology resources.*

Description: Information security serves statutory goals pertaining to government operations and public records. These include: insure continuity of government operations (Nebraska State Constitution, Article III, Section 29; Neb. Rev. Stat. § 28-901 and 84-1201); protect safety and integrity of public records (Neb. Rev. Stat. §§ 28-911, 29-2391, and 84-1201); prevent unauthorized access to public records (Neb. Rev. Stat. §§ 29-319, 81-1117.02, and 84-712.02); insure proper use of communications facilities (Neb. Rev. Stat. § Section 81-1117.02); and protect privacy of citizens (Neb. Rev. Stat. § 84, Article 7).

Major activities include:
- Development of an overall security strategy, including policies, security awareness, and security infrastructure improvements;
- Network security standards and guidelines;
- Education and training;
- Authentication (directory services);
- Disaster recovery for information technology systems (as part of a broader business continuity planning);
- Compliance with federal privacy and security mandates; and
- Security assessments.

Collaborators

- Security Architecture Workgroup
- State government agencies

Recent Accomplishments

- *Security.* The Security Architecture Workgroup has worked with the State Government Council, the Technical Panel, and agencies to formulate new polices for emerging technologies and to update existing policies. The Workgroup has also worked to develop a unified approach to federal audits to reduce individual agency work and to ensure consistent and accurate responses to audits. Also, the OCIO has annually hosted the Nebraska Cyber Security conference.

Metrics