Technical Panel Meeting Agenda

Technical Panel

Tuesday, October 14, 2014 at 9:00 AM

Varner Hall – Board Room

3835 Holdrege Street

Lincoln, NE

Meeting Documents (139 pages)

Meeting Documents – Including Full Text of Projects (264 pages)

9:00 AM	1. Roll Call, Meeting Notice & Open Meetings Act Information 2. Public Comment 3. Approval of Minutes* - September 9, 2014	Chair
9:05 AM	4. Standards and Guidelines a. Requests for Waiver 1. Game and Parks Commission - Request for Waiver from the requirements of NITC 7-104* 2. DHHS - Three (3) Requests for Waiver from the requirements of NITC 8-302; and one (1) Request for Waiver from the requirements of NITC 8-301* (Documents available at the meeting)	R. Becker
9:20 AM	5. Enterprise Projects a. Project Status Dashboard b. Project Closures 1. Office of the CIO - Nebraska Statewide Radio System* 2. University of Nebraska and State College System - NeSIS ADA Compliance (Voluntary Review)* c. Project Designation 1. DHHS - Medicaid Eligibility & Enrollment System* (Eric Henrichsen)	A. Weekly
10:00 AM	6. Standards and Guidelines a. Recommendations to the NITC 1. NITC 3-201: Geospatial Metadata Standard (Amendment)* - No Comments 2. NITC 3-203: Elevation Acquisition using LiDAR Standards (New)* - No Comments 3. NITC 3-204: Imagery Standards (New)* - No Comments	R. Becker

	[Staff recommends tabling consideration of Items 4 and 5 below until the December 9 meeting.] 4. NITC 3-205: Street Centerline Standards (New)* - Two Comments 5. NITC 3-206: Address Standards (New)* - One Comment 6. NITC 7-104: Web Domain Name Standard (Amendment)* - No Comments	
10:15AM	7. Project Proposals - 2015-2017 Biennial Budget - Recommendations to the NITC* a. Reviewer Assignments b. Project summary sheets c. Full text of the projects (125 pages)	R. Becker
10:55AM	8. Work Group Updates and Other Business	Chair
11:00AM	9. Adjourn (Next Meeting - December 9, 2014)	Chair

Denotes action items

The Technical Panel will attempt to adhere to the sequence of the published agenda, but reserves the right to adjust the order of items if necessary and may elect to take action on any of the items listed.

Meeting notice was posted to the NITC website and Nebraska Public Meeting Calendar on September 16, 2014. The agenda was posted to the NITC website on October 10, 2014 and revised on October 12, 2014. Nebraska Open Meetings Act

TECHNICAL PANEL

Tuesday, September 9, 2014 at 9:00 a.m.
Varner Hall - Board Room
3835 Holdrege Street
Lincoln, Nebraska
MEETING MINUTES

MEMBERS PRESENT:
Walter Weir, Chair, CIO, University of Nebraska
Christy Horn, University of Nebraska
Kirk Langer, Lincoln Public Schools
Mike Winkle, Nebraska Educational Telecommunications

MEMBERS ABSENT: Brenda Decker, CIO, State of Nebraska (participated via telephone)

ROLL CALL, MEETING NOTICE & OPEN MEETINGS ACT INFORMATION

Mr. Weir called the meeting to order at 9:05 a.m. A quorum was present to conduct official business. The meeting notice was posted to the NITC website and Nebraska Public Meeting Calendar on August 5, 2014. The agenda was posted to the NITC website on September 5, 2014 and revised on September 7, 2014. Nebraska Open Meetings Act. The Nebraska Open Meetings Act was posted on the south wall of the room.

PUBLIC COMMENT

There was no public comment.

APPROVAL OF MINUTES*

Ms. Horn moved to approve the July 8, 2014 minutes as presented. Mr. Langer seconded. Roll call vote: Horn-Yes, Langer-Yes, Winkle-Yes and Weir-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

ENTERPRISE PROJECTS

Project Status Dashboard, Andy Weekly.

Mr. Weekly reviewed the report with the panel. The panel requested that the LINK-Procurement project be invited to report at a future Technical Panel meeting. The panel requested that Mr. Weekly speak with the Dashboard project to ask if there is a contingency plan regarding the project's timelines since they are behind schedule. The NRIN project is also behind schedule but the project has hired two contractors to assist with the installation, alignment and configuration of equipment. Discussion occurred regarding Network Nebraska and closure of the project.

STANDARDS AND GUIDELINES - POST FOR 30-DAY COMMENT PERIOD*

NITC 3-201: Geospatial Metadata Standard (Amendment)
Purpose: The purposes of this standard is to preserve the public's investment in geospatial data, to save public resources by voiding unnecessary duplication of expensive geospatial data acquisition, to minimize errors through inappropriate application

NITC 3-203: Elevation Acquisition using LiDAR Standards (New)
Purpose: The primary purpose of these standards/guidelines is to realize the maximum long-term benefit of elevation data acquisitions, and in doing so, help protect the public's investment in Nebraska's

geospatial infrastructure. These standards will help ensure that elevation data acquisitions are current, consistent, accurate, high-resolution, accessible, and cost-effective.

NITC 3-204: Imagery Standards (New)
Purpose: The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of aerial imagery data and services to support the Nebraska Spatial Data Infrastructure (NESDI). These standards will help ensure that imagery acquisition is consistent, accurate, publicly accessible, and cost-effective.

NITC 3-205: Street Centerline Standards (New)
Purpose: The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of street centerline and address range data to support a statewide NSCD. These standards will help ensure that street centerline and address range data creation and development are current, consistent, accurate, publicly accessible, and cost-effective.

NITC 3-206: Address Standards (New)
Purpose: The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of address point data to support a statewide NAD. These standards will help ensure that address data creation and development are current, consistent, accurate, publicly accessible, and cost-effective.

Nathan Watermeier took the Technical Panel's recommendations from the last meeting to the GIS Council and the Council has revised these documents. Mr. Weir recommended the council develop checklists for the standards.

Ms. Horn moved to approve posting the five recommended standards from the GIS Council for the 30-day comment period. Mr. Langer seconded. Roll call vote: Winkle-Yes, Weir-Yes, Langer-Yes and Horn-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

STANDARDS AND GUIDELINES - RECOMMENDATIONS TO THE NITC

NITC 7-104: Web Domain Name Standard (Amendment)*
Purpose: The purpose of this standard is to provide for consistent domain names for state government websites.

No comments were received during the 30-day comment period. The amendment change allows options for more domain names and requires that requests for other domains must come through the Office of the CIO for review and approval.

The Technical Panel requested that this agenda item be tabled until the State Government Council has reviewed the standard.

STANDARDS AND GUIDELINES – DISCUSSION

Questions regarding draft standard for external data hosting, Chris Hobbs. The Security Architecture Work Group has been meeting to develop a standard for external data hosting. As the work group discussed this topic, many different opinions were expresses. In addition, many questions were raised such as: what is external hosted data; how do we monitor the information on external sites; the use of Dropbox-type services; where is it stored; who would own the data; what are the issues/benefits of a public versus a private cloud. The work group recommended that confidential information should not be on the cloud due to the inability of protecting the data. Standard does have a checklist. A draft has been developed but the work group wanted direction from Technical Panel regarding the following:

- Given the different aspects and issues, should the standard be broken down into two standards – one for contractual data hosting and one for data sharing?
    - The Technical Panel agreed best to split.
- Should the records be archived?

- Records retention schedules should be followed.

Mr. Weir commented that the University is addressing these same issues and will send Mr. Hobbs a resource document.

DISCUSSION ITEMS

2015-2017 Biennial Budget – I.T. Project Review Timeline. Project proposals are due Monday, September 15. Each project will have three reviewers assigned to review and evaluate the project. Technical Panel members will also serve on the review committee. Other NITC Council members, as well as their alternates, may also serve as reviewers. After the reviews, agencies will have an opportunity to address issues/questions of the reviewers if needed. Other persons can serve as reviewers but need to be approved by the Technical Panel. If panel members have someone in mind, they were asked to contact Mr. Becker. The NITC meeting has been confirmed for October 28.

Cloud Computing. Mr. Weir wanted to have a discussion about cloud commuting and thought it would be good to form a work group to discuss the issue.

Mr. Weir had to leave the meeting. Don Mihulka conducted the rest of the meeting.

Data Centers. The agenda item was tabled until a future meeting.

WORK GROUP UPDATES AND OTHER BUSINESS

There were no Work Group reports.

ADJOURNMENT

With no further business, Mr. Mihulka moved to adjourn. Ms. Horn seconded. All were in favor. Motion carried. The meeting was adjourned at 10:02 a.m.

Meeting minutes were taken by Lori Lopez Urdiales and reviewed by Rick Becker of the Office of the CIO/NITC.

NEBRASKA
GAME PARKS

Nebraska Game and Parks Commission
2200 N. 33rd St. • P.O. Box 30370 • Lincoln, NE 68503-0370 • Phone: 402-471-0641 • Fax: 402-471-5528

Date: 10/7/2014

To: Nebraska Information Technology Commission, Technical Panel

From: Jim Douglas, Director

RE: Request for Waiver of NITC 7-104

The Nebraska Game and Parks Commission requests a waiver to the requirements of *NITC 7-104: Web Domain Name Standard*. The Commission uses OutdoorNebraska.org as the official agency URL.

Advertising displayed on our agency web site supports our partnerships with retail organizations, non-governmental agencies and conservation groups to promote outdoor recreation activities and tourism in Nebraska. This is accomplished using URLs for specific programs that redirect to OutdoorNebraska.org.

The Commission is not only responsible for the management and stewardship of the state's outdoor recreational resources, but also for recruiting participants to outdoor recreation opportunities, including visiting parks, attending events, hunting, fishing, camping, boating and wildlife viewing.

The Commission is primarily funded by user fees, including the sale of park-entry, hunting and fishing permits as well as camping and lodging fees. We also market and sell products such as NEBRASKAland Magazine, books, game calls and event registrations through our agency web site.

To better relate to consumers, the Commission has used OutdoorNebraska.org for the agency's promoted domain since 2001. By promoting OutdoorNebraska.org, rather than OutdoorNebraska.gov, we can better relate to consumers for tourism, recreation and other outdoor excitement. A critical component of recruitment is the positioning and marketing of outdoor recreation as time well spent and an activity of choice for Nebraska residents and potential tourists.

Our agency must continue to use OutdoorNebraska.org because it is recognized by the public and our customers. Additionally, the URL is advertised on hundreds of agency vehicles, buildings, signage, collateral material and other public facilities. A change in the promoted domain would confuse our customers and place an unfunded financial burden on the agency.

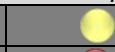
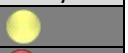
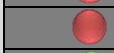
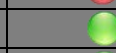
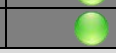
The preferred solution is to continue using the current domain and other domains that make it easy for consumers to quickly find information on the many programs, policies and activities the agency is responsible for marketing.

A list of current promoted and redirect URLS is attached. For more information, contact Christy Rasmussen, Communications Director, at 402-471-5593 or christy.rasmussen@nebraska.gov.

cc: Christy Rasmussen, Communications Director
Toni Knust, IT Manager

	A	B	K	L
1	**Domain Name**	**Redirect**	**Promoted**	**Ads**
2			**Site**	**On Site**
3	**outdoornebraska.org (OFFICIAL WEB URL)**	OutdoorNebraska.org	**yes**	**yes**
4	ArcheryOnFire.org	/Education/ArcheryOnFire/index.asp	yes	yes
5	boatsafenebraska.org	/boating/guides/boating/bgeducate.asp	yes	yes
7	focusonpheasants.org	/wildlife/programs/focus/	yes	yes
8	ftkearnyexpo.org	/odp	yes	yes
9	golakemac.com		yes	yes
11	huntsafenebraska.org	/hunting/programs/education/hunted.asp	yes	yes
12	missourriiverrexpo.com	http://www.missouririverexpo.com/	yes	yes
13	nebraskabow.com	/education/programs/bow/bow.asp	Yes	Yes
14	nebraskagameandparksfoundation.org	nebraskagameandparksfoundation.org	yes	yes
16	nebraskagrouse.org	/hunting/guides/upland_game/grouse	yes	yes
17	nebraskalandgifts.com	shopoutdoornebraska.ne.gov/	yes	yes
18	nebraskalandmagazine.org	/nebland/nebland.asp	yes	yes
19	nebraskamountainlions.org	/hunting/guides/MountainLion/	yes	yes
20	nebraskanaturallegacy.org	/wildlife/programs/legacy/	yes	yes
21	nebraskaprojectwild.org	/wildlife/programs/projectwild/	yes	yes
22	nebraskawildlifefund.com	/wildlife/programs/nongame/checkoff.asp	yes	yes
23	outdooredcenter.org	/outdooredcenter/	yes	yes
24	platteaccess.org	/apps/PlatteRiverApp	yes	yes

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project: **LINK – Procurement**				Contact: **Bo Botelho**		
Start Date	01/14/2013	Orig. Completion Date	10/31/2013	Revised Completion Date		~~01/06/2014~~
	October	September	July	May	March	Pending February
Overall Status						
Schedule						
Budget						
Scope						

Project Description

Workday Procurement standardizes business processes for procurement documents. Workday Procurement will be the data entry location for all procurement documents (requisitions, purchase orders and contracts). Approvals and printing of the documents will be processed in Workday. Selected supplier websites will be available for access to state contracted pricing through punch-out capability. Purchase Orders will be interfaced in to the State's financial system for encumbering, receipts, and accounts payable. Suppliers will be available for selection in Workday and their associated commodities and procurement contact information will be maintained within Workday.

Project Estimate: $1,895,800 ($1,624,009.27 has been expended)

Comments

October update:
The Workday Procurement project has been suspended. The Department will continue to prioritize the current upgrading of the EnterpriseOne financial system and ongoing support of the existing HCM solution.

September update:
The Workday solution is currently in the development and testing phase. However, development and implementation has been delayed by the Administrative Services HCM project as well as the current EnterpriseOne upgrade. Further, it has been determined that the Department does not have sufficient resources, staff or appropriations, to expand the original statement of work for this project enterprise wide, address the integration costs associated with the layering of Workday procurement onto the existing EnterpriseOne system, and sustain the integration costs on an ongoing operational basis. The Department will continue to prioritize the current upgrading of the EnterpriseOne financial system and ongoing support of the existing HCM solution.

Any further significant or future work or timelines related to the improvement or altering of the State's current EnterpriseOne based procurement process will be determined via the upcoming 2015-2017 biennial budget process; departmental request, Governor's recommendations, and legislative appropriations.

Additional Comments/Concerns:
None

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project: **Network Nebraska Education**			Contact: **Tom Rolfes**			
Start Date	05/01/2006	Orig. Completion Date	06/30/2012	Revised Completion Date		08/01/2015
	October	September	July	May	March	February
Overall Status						
Schedule						
Budget						
Scope						

Project Description

Network Nebraska-Education is a statewide consortium of over 260 K-12 and higher education entities working together to provide a statewide backbone, commodity Internet, distance education, and other value-added services to its participants. Network Nebraska-Education is managed by the State Office of the CIO partnering with the University of Nebraska Computing Services Network (UNCSN).

Project Budget (2014-15): $681,546 ($23,561 has been expended)

Comments

October update:

Looking ahead to the fall 2014 procurement, Omaha commodity Internet will be rebid, and there will be possible rebid of some WAN circuits and some segments of the statewide backbone. A provider information meeting was held on 8/19/2014 at Varner Hall, informing them of public safety and Network Nebraska-Education developments. After hearing from the FCC that there will be no national preferred master contracts for internal connections equipment, the ESU-NOC voted to have the Office of the CIO and State Purchasing procure maximum discounts on up to 9 different types of equipment such as wireless access points, cabling, switches/routers, etc… This will presumably be an invitation to bid to extend over the life of the FCC equipment funding (2015-2020) with a possible fiscal impact of $52 million for Nebraska K-12 schools.

September update:

Recapping the Summer 2014 network upgrade, 14 new K-12 entities in Southeast Nebraska were routed to Network Nebraska-Education over two new aggregation circuits, to ESU 6 (Milford) and a second aggregation circuit to ESU 5 (Beatrice). Over 40 school districts in central and south central Nebraska changed contracts to a new provider and are being directly routed to the Grand Island College Park aggregation point. Backbone bandwidth capacity will be purchased at 2Gbps on all main transport segments as per the current contract with NebraskaLink, but burstable to 5Gbps through the life of the backbone contract, 6/30/2016. UNCSN network engineers have gone live with the Internet2 Commercial Peering Service and are monitoring bandwidth demands. Work is continuing on the dark fiber project to Grand Island/Kearney. A second Internet provider, Windstream, was activated on 7/1/2014 with egress out of Lincoln-Nebraska Hall, with approximately 12.5Gbps of bandwidth. Looking ahead to the fall 2014 procurement, Omaha commodity Internet will be rebid, and possible rebid of some WAN circuits and some segments of the statewide backbone. A provider information meeting was held on 8/19/2014 at Varner Hall, informing them of public safety and Network Nebraska-Education developments.

Additional Comments/Concerns:

The Network Nebraska-Education Participation Fee fund account will be updated with the 2014-15 estimated costs and the 1st quarter UNCSN invoice should be submitted shortly.

Even though the Chief Information Officer fulfilled the Legislative benchmark of "providing *access* (the ability to connect) to every public K-12 and public higher education entity at the earliest date and no later than July 1, 2012" [Neb. Rev. Stat. 86-5,100], the NITC Technical Panel has extended the enterprise project designation for Network Nebraska-Education until 8/1/2015 so that all public school districts that want to participate have actually connected.

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project:	**Nebraska Statewide Radio System (formerly Public Safety Wireless)**		Contact:	**Mike Jeffres**		
Start Date	06/01/2009	Orig. Completion Date	09/30/2013	Project Completion Date		09/09/2014
	September	July	May	March	February	November
Overall Status						
Schedule						
Budget						
Scope						

Project Description

The Nebraska Statewide Radio System project is to establish a modern public safety communications system for state agencies. To improve coverage over 95% of the state, superior voice quality, and improved reliability, and to consolidate the state onto a common P25 digital radio standard.

Project Estimate: $11,038,000 ($10,158,000 has been expended)

Comments

October update:
The project is complete.

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project:	**Nebraska State Accountability (NeSA) (formerly Statewide Online Assessment)**		Contact:	**John Moon**		
Start Date	07/01/2010	Orig. Completion Date	06/30/2011	Revised Completion Date		6/30/2015
	October	September	May	March	February	November
Overall Status						
Schedule						
Budget						
Scope						

Project Description

Legislative Bill 1157 passed by the 2008 Nebraska Legislature required a single statewide assessment of the Nebraska academic content standards for reading, mathematics, science, and writing in Nebraska's K-12 public schools. The new assessment system was named Nebraska State Accountability (NeSA), with NeSA-R for reading assessments, NeSA-M for mathematics, NeSA-S for science, and NeSA-W for writing. The assessments in reading and mathematics were administered in grades 3-8 and 11; science was administered in grades 5, 8, and 11; and writing was administered in grades 4, 8, and 11.

Project Estimate: $5,364,408 ($821,296.75 has been expended)

Comments

October update:

During September, Nebraska Department of Education (NDE) staff members along with Data Recognition Corporation (DRC) test specialists constructed test forms for all NeSA - Reading, Math, and Science (NeSA-RMS) alternate and regular assessments for 2015. Students will take the tests between March 23rd and May 1, 2015.

DRC INSIGHT and Testing Site Manager Installation Training for NESA technology assessment contacts were completed on September 3-4, 2014. In addition, training on INSIGHT and Testing Site Management & Capacity/Load Testing was completed for N-TACs on September 16-17, 2014. Webex sessions were presented for eDIRECT Enrollments on Oct. 1-2.

Updated manuals for C4L User Guide for Administrators and State Users became available on September 30, 2014. Updated version of Installing and Configuring INSIGHT on iPads and Chromebooks were posted on Oct 1, 2014.

Issues reported by districts are being addressed by Ryne Keel and DRC helpdesk. NDE and Ryne of DRC are working to be present in districts to meet their needs for NeSA testing.

September update:

NeSA - Reading, Math, and Science (NeSA-RMS) reports for 2014 were reported to schools on July 16, 2014. The new contract was signed by Data Recognition Corporation (DRC) and Nebraska Department of Education (NDE) for the 2014-2015 school year, starting July 1, 2014 through June 30, 2015.

WebEx Training for N-TACs on INSIGHT and TSM (Testing Site Manager) Installation will be September 3-4 followed by INSIGHT and TSM Management and Capacity/Load Testing training on September 16-17. DRC INSIGHT and TSM software was released on August 29th.

Ryne Keel has joined DRC's Level II Technical Support Team and will work remotely for DRC in Lincoln, Ne. He will provide technical support and assist with technical training for NeSA and C4L online testing

NeSA Technology Trial to take place October 27 – November 7 will provide an opportunity for districts to vet their online testing systems, especially iPads and Chromebooks, using NeSA practice tests in the secure INSIGHT environment.

DRC has identified the following devices will be supported in Spring 2015 administration of NeSA-RMS.

- Chromebooks

- iPads
- Windows 8.1 Tablets (non-touch)

The following devices will be supported for all NeSA testing in Spring 2016.

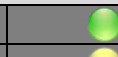
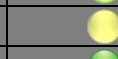
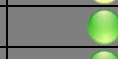
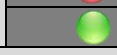
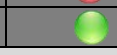
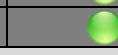
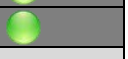
- Windows 8.1 Tablets with touch
- Android

Additional Comments/Concerns:

Nebraska State Accountability (NeSA) is a statewide assessment system mandated by Nebraska Statute. Nebraska Department of Education has contracted with Data Recognition Corporation (DRC) to continue the development of the assessment system including management, development, delivery, administration, scanning/imaging, scoring, analysis, reporting, and standard setting for the online and pencil/paper reading, science, writing, and mathematics tests (NeSA-RMS) for July 1, 2014 through June 30, 2015. DRC will facilitate the delivery, administration, scanning/imaging, scoring, analysis, and reporting for the alternate pencil/paper reading, science, and mathematics tests during the same assessment window. DRC will deliver the online writing assessment (NeSA-W) for grades 8 and 11 and the pencil/paper writing assessment for grade 4 as well.

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project:	**Nebraska Regional Interoperability Network (NRIN)**	Contact:	**Sue Krogman**

Start Date	10/01/2010	Orig. Completion Date	06/01/2013	Revised Completion Date	09/30/2015
	October	September	July	May	March	February
Overall Status						
Schedule						
Budget						
Scope						

Project Description

The Nebraska Regional Interoperability Network (NRIN) is a project that will connect a majority of the Public Safety Access Points (PSAP) across the State by means of a point to point microwave system. The network will be a true, secure means of transferring data, video and voice. Speed and stability are major expectations; therefore there is a required redundant technology base of no less than 100 mbps with 99.999% availability for each site. It is hoped that the network will be used as the main transfer mechanism for currently in-place items, thus imposing a cost-saving to local government. All equipment purchased for this project is compatible with the networking equipment of the OCIO.

Project Estimate: $9,354,009 ($8,175,337.50 has been expended)

Comments

NEMA is struggling with issues of governance and maintenance of the network. Governance would be needed at the local jurisdiction and not at the state agency (there is no state agency is heading the project, it's all run at the local jurisdiction). There is no formal governance heading the project.

October update:

Progress is slow because of the process of the Master Service Agreements with the OCIO. However, we are figuring out the system and expect for things to go much smoother in the near future. Estimated time for completion of the EC911 requirements for the East Central Region is 24 October 2014. At that time, both contractors will move to finish up links in the SE and NE Regions.

September update:

Because of a Master Service Agreement with the State OCIO, we were able to hire two contractors that both have experience with Ceragon Radio's. The contractors are working in conjunction with each other, one doing the equipment install and the other doing the alignment and configuration of all racked items. The OCIO will be configuring the routers for each of the places and working alongside the other two contractors.

Additional Comments/Concerns:

It's possible that upcoming target dates might be missed. Based on the uncertainty of the infrastructure needed for the project and the time involved in obtaining the environmental approvals to proceed with the project, any target dates are fluid. Delays are inevitable due to the difficulty in locating adequate tower sites and negotiating leasing agreements and/or MOU's.

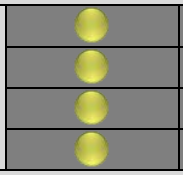
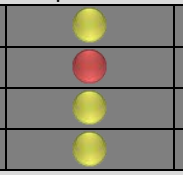
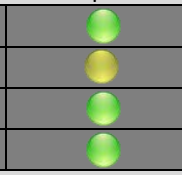
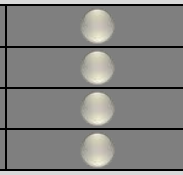
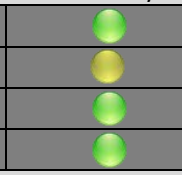
Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project: **MMIS**				Contact:		
Start Date	N/A	Orig. Completion Date	N/A	Revised Completion Date		N/A
	October	September	July	May	March	February
Overall Status						
Schedule						
Budget						
Scope						
Comments						

Project On Hold until renewed

Funding has been appropriated for a MMIS replacement in the current biennial budget starting July 1, 2014. Once the project moves forward (a RFP will be developed) DHHS will resume monthly reporting.

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project: **District Dashboards**				Contact: **Dean Folkers**		
Start Date 07/01/2013	Orig. Completion Date 06/30/2015			Revised Completion Date		
	October	September	July	April	March	February
Overall Status						
Schedule						
Budget						
Scope						

Project Description

Made possible by a Statewide Longitudinal Data System (SLDS) grant from the United States Department of Education in 2012, the focus of the Nebraska Ed-Fi Dashboard initiative is to provide readily available data to the Nebraska classrooms to facilitate informed decision-making. Potential users include teachers, counselors, and administrators. NDE intends to leverage the Ed-Fi dashboard solution made available by the Michael & Susan Dell Foundation to provide Nebraska with an advanced student performance dashboard system to be customized for Nebraska needs. The Ed-Fi data standard will serve to define the initial data elements powering the Nebraska Ed-Fi dashboard.

Our Plan of Work for design, development, and piloting of the Nebraska Dashboards will commence in three phases, each to proceed subsequently upon successful completion of the previous phase, between the months of September 2013 and December 2014. The phases include: Phase I - Dashboard Readiness (September 2013-February 2014), Phase II – Dashboard Development (February 2014-June 2014), and Phase III – Dashboard Deployment (June 2014-December 2014).

Project Estimate: $466,623.75 has been expended, grant funds only

Comments

October update:

Overall the project is running behind schedule by about four months for vendor implementation, SSO implementation, Ed-Fi v.Next on premise support and planned co-development/ knowledge transfer activities with Nebraska Department of Education staff. The project and sponsor have agreed to adjust the dashboard schedule due to vendor delays in development activities. The revised plan is to start staging activities in late fall 2014, dependent upon vendor progress, and reschedule the dashboard pilot testing for early 2015. Delays in vendor implementation and data staging will have an impact on the planned start of data warehouse validation. However, the project is still on schedule for data warehouse and accountability data mart pilot testing in the spring of 2015. The delay in co-development will not have an impact on planned staging activities with vendors nor the start of pilot testing.

September update:

Overall the project is running behind schedule by about three to four months for vendor implementation, SSO implementation, Ed-Fi v.Next on premise support and planned co-development/ knowledge transfer activities with NDE staff. The project team and sponsor are evaluating a revised timeline with a delay in the start of fall pilot testing until early 2015. The delay in co-development will not have an impact on planned staging activities with vendors nor the start of pilot testing. However, this delay could impact planned knowledge transfer and require a longer duration for planned co-development. NDE and DLP plan for extended period for co-development activities is being evaluated.

Additional Comments/Concerns:

None

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

Project: **EnterpriseOne System Upgrade**				Contact: **Lacey Pentland**		
Start Date	10/01/2013	Orig. Completion Date	10/03/2014	Revised Completion Date		TBD
	October	September	July	May	March	February
Overall Status						
Schedule						
Budget						
Scope						

Project Description

The State of Nebraska has been using JD Edwards to support the State's agencies for over ten years. The current EnterpriseOne 9.0 system is relatively stable with a medium level of modifications. The program is planned, as much as possible, to be a technical upgrade with minimal impact on the existing business processes, interfaces and the related applications. The current applications landscape is proposed to be upgraded as follows:

- Upgrade from E1 9.0 to E1 9.1 to stay current with the JD Edwards technology stack
- Migrate/Retrofit required customizations to E1 9.1 based on the keep drop analysis
- Be on the latest stack
- Simplification of the existing ecosystem – minimize customization, expand usage of JDE application
- Leverage standard functionalities provided by new features of E1 9.1

Project Estimate: $2,250,000 ($917,449.60 has been expended)

Comments

October update:

Adjustment to project dates is needed to get EnterpriseOne 9.1 code current and testing. The go-live date will be impacted.

Current work completed:

- Completed installing EnterpriseOne 9.1 code to bring the system current 9/15/2014.
- Developers were given access to proceed with checking in code on 9/18/2014.
- PY910 Full Package was built and deployed on 10/3/2014.
- PY910 was released to the Functional Team on 10/01/2014 for data validation (completed on 10/06/2014).
- Development is almost complete with BI Publisher objects still pending (approximately 145).
- Functional Testing started week of 10/06/2014.

Next Steps:

- An action plan to be created to get BI Publisher objects in sync so development can be completed.
- Complete the analysis of objects not in projects and get them promoted to PY910 for functional testing (Approximately 1000+).
- Complete pending CNC items found in further analysis. This includes syncing BI Publisher objects across environments; install dcLINK ASU in PS910 and PD910, complete JDE.INI, Data Dictionary and UDC changes.
- Continuation of Functional Testing.
- Review plan for onboarding additional Wipro resource for FA/CAMS.

September update:

The CNC (Configurable Network Computing, a term specific to JD Edwards architecture and methodology) work is behind to make sure EnterpriseOne is code current. Wipro has brought in additional resources starting August 11, 2014. There may be project delays to ensure all the objects to be retested based on the updated coded installed. Overall Project at risk in regards to development and retrofit, functional and UAT testing will be impacted to make the system code current.

Current work completed:

- Developed a plan to get EnterpriseOne 9.1 code current
- PD910 pathcode installation complete and is code current
- DV910 pathcode is complete (copy from PD910) and is code current

Next Steps:

- Validation of PD910 & DV910 by SON CNC team
- Update PY910 and PS910 (Pristine) to code current
- Retrofit of modifications by development (this work has to be completed again since DV910 has been reinstalled to get code current)
- Functional and UAT testing needs to be scheduled

Nebraska Information Technology Commission
Enterprise Project Status Dashboard – as of October, 2014

The project(s) listed below are reporting voluntarily and is not considered as an Enterprise Project by the NITC.

Project:	**NeSIS PeopleSoft Campus Solutions ADA Compliance**	Contact:	**Jim Zemke**

Start Date	08/01/2010	Orig. Completion Date	12/31/2011	Project Completion Date	09/09/2014

	September	July	May	March	February	November
Overall Status						
Schedule						
Budget						
Scope						

Project Description
Requested

Project Estimate: TBD

Comments

September update:
The project is complete.

Color Legend		
	Red	**Project has significant risk to baseline cost, schedule, or project deliverables.** **Current status requires immediate escalation and management involvement.** Probable that item will **NOT** meet dates with acceptable quality without changes to schedule, resources, and/or scope.
	Yellow	**Project has a current or potential risk to baseline cost, schedule, or project deliverables.** **Project Manager will manage risks based on risk mitigation planning.** Good probability item will meet dates and acceptable quality. Schedule, resource, or scope changes may be needed.
	Green	**Project has no significant risk to baseline cost, schedule, or project deliverables.** Strong probability project will meet dates and acceptable quality.
	Gray	**No report for the reporting period or the project has not yet been activated.**

Project Lessons Learned Form

General Information			
Project Name			Date
NeSIS PeopleSoft Campus Solutions ADA Compliance			9/19/2014
Sponsoring Agency			
University of Nebraska			
Contact	Phone	Email	Employer
Jim Zemke	402-472-5195	jzemke@nebraska.edu	UNCSN
Project Manager	Phone	Email	Employer
Don Mihulka	402-472-8344	dmihulka@nebraska.edu	UNCSN

Project Start Date	08/01/2010	Estimated End Date	12/31/2011	Project End Date	09/01/2014

Key Questions	Explanation
1. Did the scope of the project change? x Yes ☐ No	This project began as an effort to assess the level of ADA compliance for the Campus Solutions Student Information System and evolved into a project to also address the compliance short comings that were discovered. Staff were assigned to complete a comprehensive ADA compliance review of Campus Solutions to include not only the base Oracle Campus Solutions system but also all UN/State College system modifications and enhancements. A visually impaired student worker was also hired to assist in this evaluation and he was able to provide unique and very valuable insight into usability and access issues. Modifications were implemented to better align Campus Solutions with UN ADA compliance policy. Additionally, compliance guidelines were established to continually monitor both vendor distributed Campus Solutions system modifications and to guide future system development and modifications to insure future compliance.

2. Did the project meet the expectations of the stakeholders?	X Yes	Yes. The initial expectation was completion of an assessment of the level of Campus Solutions compliance. That was achieved. The project then moved forward to also address the compliance issues that were discovered and to put in place procedures to insure ADA compliance is addressed on a continual basis in the future.
3. Did the project costs exceed the budget provided?	X Yes	No specific budget was established for this project at its outset since the scope of the project could not be determined until the assessment of the level of compliance was determined. Oracle/PeopleSoft, the Campus Solutions vendor, had stated that Campus Solutions was, in their opinion, fully ADA compliant but that was their own subjective opinion. Our analysis did reveal some problems with the base Campus Solutions system when measured against what we (i.e. the University of Nebraska and the State Colleges) felt was a reasonable level of ADA compliance. That, in turn, led to extending the scope of the project to also address these issues and problems and put in place processes and procedure to insure a reasonable level of compliance was maintained in the future.

Significant Project Milestones
Insert additional lines as necessary.

Milestone	Met	Not Met	Original Date	Actual Date	Impact (if late)
Phase I - perform initial ADA compliance evaluation – base Campus Solutions system and core functions.	X		12/31/2011	12/31/2013	
Phase II – perform ADA compliance evaluation for in-house implemented base system modifications (i.e. campus portals, identity management/authentication, online admissions application, etc).	X			3/1/2014	

Phase III – perform ADA compliance evaluation for all in-house developed system modifications and enhancements and ancillary components (i.e. guest access, student dashboards, admin/staff dashboards, etc)	X			6/1/2014	
Develop mitigation strategy and implement modifications and enhancements to improve ADA compliance.	X			9/1/2014	Work continues to migrate the mods and enhancements that have been developed to address identified compliance issues into our production environments.
Put in place processes and procedures to continually monitor ADA compliance and insure future Campus Solutions modifications and enhancements meet the UN/SC reasonable level of ADA compliance standards.	X			9/1/2014	

What went wrong during the project and recommendations to avoid similar occurrences in the future
Provide a summary of what went wrong during the project, including the problem or issue, the impact and the recommendation to avoid those occurrences in the future.

This project evolved over time which resulted in significant scope creep.
However, that occurred because once the initial assessment of compliance was completed it was obvious that we needed to implement changes to address the issues and problems identified during the evaluation phase.
In hindsight, this project could've been broken down into multiple separate projects aligned with the project phases organized around the project milestones noted above.

Progress was slower than we would've liked due to a number of issues.
Staffing constraints and a general lack of knowledge concerning how to best go about evaluating ADA compliance was an issue initially. Additional staff were added to the project to address the staffing issue and time was spent researching and becoming familiar with the testing and evaluation tools and techniques required. We also employed a visually impaired student worker to assist in the evaluation process which was very beneficial.
Once we began the analysis we realized the definition of ADA compliance and "reasonable accommodation", which is institution specific, required clarification. That is, the ADA statutes are quite vague concerning any specific evaluation criteria. Considerable time was spent on research and establishing UN/SC evaluation criteria and finding appropriate tools to assist in the evaluation process.
Evaluation of compliance was then found to be a very time consuming process.
The vendor's position that Campus Solutions was ADA compliant complicated our ability to address some of the compliance issues that were exposed during our evaluation process since we have a policy to minimize modifications to any vendor supplied base system functionality. We did report the findings of our evaluation to Oracle, the Campus Solutions vendor, and they have agreed they will attempt to address the compliance issues we identified in future releases.

What went right during the project and how similar projects may benefit from this information
Provide a summary of what went right during the project, including the success or accomplishment, the impact and how future projects may benefit from this information.

Although this project did take much longer to complete than initially anticipated that was largely because the scope of the project was extended from evaluation of ADA compliance levels of the base Campus Solutions system to the actual implementation of modifications, enhancements, and processes and procedures to address compliance on a long-term basis for the entire Campus Solutions system and all associated additional components.

As noted above it may have been appropriate to break this entire effort down into multiple smaller projects with more distinct objectives. However, it is doubtful that would have resulted in any time or cost savings.

NITC Reporting/Process Improvements and Recommendations
Use this section to insert NITC Enterprise Reporting improvements and recommendations.

If it is desired that the monthly project status updates are cumulative for the duration of the project it is suggested that each monthly entry for each section include a date/time stamp and the initials of the person entering the update for tracking purposes and improved readability.

Additional Comments
Use this section to insert comments / concerns not included in any other section.

Monitoring and insuring ADA compliance is an ongoing issue. Not all of the modifications and enhancements required to address identified compliance issues identified to date have been fully implemented in all production environments.

NITC 3-201
Geospatial Metadata Standard

Review Version 2.0
(Date 9.3.2014)

Category: Data and Information Architecture
Applicability: See Each Section of Standards
History: Adopted on June 23, 2005, URL links updated on June 27, 2013

NEBRASKA INFORMATION TECHNOLOGY COMMISSION GIS COUNCIL

TABLE OF CONTENTS

1.0 Standard

All state agencies and entities that receive state funding used, directly or indirectly, for geospatial data development or maintenance shall ensure that geospatial data it collects, produces, maintains, or purchases and which is used for policy development, implementation, or compliance review is documented with metadata compliant with the latest version of the ISO 19115:2003 group of metadata standards for geographic information. Metadata created for datasets using Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata or other standards will need to be translated, updated, or recreated using the ISO 19115 standards.~~.~~

1.1 Steps/Timeline for Implementation

a. State agencies and other applicable state funded entities shall institute procedures for complying with standard for new geospatial data development or acquisition upon adoption of standard by the NITC.

b. State agencies shall complete initial listing of existing, applicable geospatial data holdings within three months of the adoption of standard by NITC.

c. State agencies shall complete metadata-lite documentation of existing, applicable geospatial data holdings within six months of the adoption of standard by NITC. More information about metadata-lite is identified in section 3.0 Definitions.

d. State agencies shall complete ~~FGDC~~ISO 19115-compliant metadata documentation of existing and applicable geospatial data holdings within 12 months of the adoption of standard by NITC.

1.2 Maintenance

The reporting of maintained metadata is important to assure correct documentation and support for intended uses of the data. Entities responsible for creating geospatial data will need to assure metadata is updated and maintained on an ongoing basis and in a timely manner. When modifications to the spatial or attribute data is completed the metadata information will also need to be updated. If necessary, these changes will need to be provided to the appropriate entity(s) responsible for performing quality control and maintenance of the metadata.

1.2.1 Reporting Errors and Handling Updates

The reporting of errors need to be directed to the primary contact identified in the metadata in a timely manner. Updated spatial and attribute information in the data will also need to be redistributed. The date field in the metadata when the last record was modified will also need to be updated to ensure proper records management and communication with others in the workflow.

2.0 Purpose and Objectives

The purposes of this standard is to preserve the public's investment in geospatial data, to save public resources by avoiding unnecessary duplication of expensive geospatial data acquisition, to minimize errors through inappropriate application of geospatial data, and to facilitate harmonious trans-agency public policy decision-making and implementation through the use of shared geospatial data.

2.1 Background

Broadly defined, geospatial data is any data that includes locational or positional information about features in the dataset. Geospatial data provides the data foundation for applications of Geographic Information System (GIS) technology.

The development and maintenance of geospatial data is usually the most expensive component in the implementation of GIS technology. In most cases, this high initial investment is justifiable because of the powerful capabilities of the technology and the fact that, if appropriately maintained, the data will be useful for a very long period, and in many cases, for a wide range of applications.

Most geospatial datasets include numerous attributes and parameters that relate to data variables, methodologies and assumptions. Knowledge and understanding of the implications of these variables is a key to the appropriate utilization of that data. Without appropriate documentation, this specialized knowledge usually resides only in the memory of the GIS specialist(s) who developed the original data. Because of the power of the GIS technology, geo-spatial analysis is increasingly being used to develop and implement a wide range of public policy. In many cases, these public policy applications endure long past the availability of the GIS-specialist(s) who developed one or more of the original geospatial datasets upon which the public policy and its subsequent implementation are based. Without appropriate documentation of attributes and parameters of a geospatial dataset assumptions and variables, it may be difficult for an agency to determine the appropriate use of a dataset after the GIS specialist who originally created the data is no longer available. Without this documentation, it may also be difficult to appropriately maintain the dataset and therefore maintain the value of the original public investment in the data. In the case of a legal challenge to a public policy or its implementation, for which geospatial data application is integral, it may be difficult to defend that application if the original data developer is no longer available and the dataset was not appropriately documented.

Due to the relatively high costs of developing and maintaining many geospatial datasets, it is important that public investments in this data are undertaken in a manner to maximize the long-term return on these public investments. Appropriately documenting a dataset is one way to ensure a dataset's long-term usability. It is also a key to enabling the use of that dataset for multiple applications by multiple users. Without documentation, it is difficult for other users within the same agency, in other state agencies, or other public entities at various levels of government to be confident they are appropriately utilizing a geospatial dataset.

One of the great strengths of GIS technology is the ability to integrate and analyze disparate data based on its common or adjacent location. GIS has evolved to be a mainstream technology, used for a very wide range of applications, highly integrated with other information technology, and employed by users with a wide range of technical expertise and knowledge. As GIS has evolved, users now routinely access geospatial data, via the Internet, from multiple sources and integrate that data with other geospatial data and make public policy decisions based on analysis of the interaction of those datasets. Only when a geospatial dataset is adequately documented is it prudent to incorporate that data into a GIS analysis.

To address this wide range of concerns and needs for geospatial data documentation, the Federal Geographic Data Committee (FGDC) has worked with a wide spectrum of geospatial data users to develop a national standard for documenting geospatial data. ~~This standard is~~The FGDC has endorsed and are transitioning users from the ~~known as the~~ Content Standard for Digital Geospatial Metadata (CSDGM) to the ISO Metadata Standards. ~~This standard has gone through a couple revisions and will be reviewed and updated as necessary.~~

2.2 Objectives

This standard requiring the documentation of geospatial data with standardized metadata has the following objectives:

2.2.1 Preserve public investment in data collection/development beyond the tenure or availability of the original data developer.

2.2.2 Preserve the background geospatial information used to justify and make public policy decisions and preserve the information needed to guide appropriate implementation of those decisions beyond the tenure of a particular data developer.

2.2.3 Save public resources by facilitating the sharing of expensive geospatial data among public agencies or sub-divisions of agencies and avoid the costly duplication of developing similar geospatial datasets.

2.2.4 Minimize problems and potential liability ~~the~~ that might be caused by the inappropriate use of undocumented geospatial data.

2.2.5 Facilitate harmonious, trans-agency public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use common geospatial datasets and thereby make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

3.0 Definitions

Content Standard for Digital Geospatial Metadata - A comprehensive national metadata standard developed and adopted by the Federal Geographic Data Committee (FGDC) under the authority of Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure," which was signed on April 11, 1994, by President William Clinton. Section 3, Development of a National Geospatial Data Clearinghouse, paragraph (b) states: "Standardized Documentation of Data, ... each agency shall document all new geospatial data it collects or produces, either directly or indirectly, using the standard under development by the FGDC, and make that standardized documentation electronically accessible to the Clearinghouse network." This standard is the data documentation standard referenced in the executive order. Since its initial development, this metadata content standard has undergone revision as deemed necessary by the FGDC, and will like undergo further revisions in the future.

Geospatial Data **-** A term used to describe a class of data that has a geographic or spatial nature. The data will usually include locational information (latitude/longitude or other mapping coordinates) for at least some of the features within the database/dataset.

ISO 19115:2003 **–** International Standards Organization (ISO) defines the schema required for describing geographic information and services. It provides information about the identification, the extent, the quality, the spatial and temporal schema, spatial reference, and distribution of digital geographic data. It is applicable to: the cataloguing of datasets, clearinghouse activities, and the full description of datasets; and geographic datasets, dataset series, and individual geographic features and feature properties. It defines: mandatory and conditional metadata sections, metadata entities, and metadata elements; the minimum set of metadata required to serve the full range of metadata applications (data discovery, determining data fitness for use, data access, data transfer, and use of digital data); optional metadata elements - to allow for a more extensive standard description of geographic data, if required; and a method for extending metadata to fit specialized needs. It is applicable to digital data, its principles can be extended to many other forms of geographic data such as maps, charts, and textual documents as well as non-geographic data.

Metadata - Data describing a GIS database or data set including, but not limited to, a description of a data transfer mediums, format, and contents, source lineage data, and any other applicable data processing algorithms or procedures.

Metadata-lite - A subset of the full FGDC-compliant metadata (data title, data subject matter, map projection, geographic extent, data owner and access information, etc.) used primarily for the purposes of cataloging and enabling the use of automated search tools to find and access available geospatial data. Does not fully document the dataset's variables, assumptions or development process that is commonly needed to guide appropriate use. ~~An online metadata-lite development tool is available through the Nebraska Department of Natural Resources website.~~

~~Content Standard for Digital Geospatial Metadata – A comprehensive national metadata standard developed and adopted by the Federal Geographic Data Committee (FGDC) under the authority of Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure," which was signed on April 11, 1994, by President William Clinton. Section 3, Development of a National Geospatial Data Clearinghouse, paragraph (b) states: "Standardized Documentation of Data, ... each agency shall document all new geospatial data it collects or produces, either directly or indirectly, using the standard under development by the FGDC, and make that standardized documentation electronically accessible to the Clearinghouse network." This standard is the data documentation standard referenced in the executive order. Since its initial development, this metadata content standard has undergone revision as deemed necessary by the FGDC, and will like undergo further revisions in the future.~~

4.0 Applicability

4.1 State Government Agencies

~~All State agencies are required to comply with this standard.~~State agencies that have the primary responsibility for geospatial data development, maintenance, or purchasing data which is used for policy development, implementation, or compliance review for a particular jurisdiction(s) or geographic area (e.g. for counties for which it has assumed the primary role) are required to comply with the standards as described in this standard. Those state agencies with oversight responsibilities in this area are required to ensure that their oversight guidelines, rules, and regulations are consistent with these standards.

4.2 State Funded Entities

Entities that are not State agencies but receive State funding, directly or indirectly, for geospatial data development (i.e. Legislative appropriations, Enhanced Wireless 911 Fund, Infrastructure Fund, etc.) are required to comply with this standard.

4.3 ~~Exemption~~Other

Other entities, such as city and local government agencies that receive state funds for geospatial data development, maintenance, or purchasing geospatial data which is used for policy development, implementation, or compliance review are required to comply with this standard.

~~Exemptions may be granted by the NITC Technical Panel upon request by an agency.~~

~~4.3.1 Exemption Process~~

~~Any agency may request an exemption from this standard by submitting a "Request for Exemption" to the NITC Technical Panel. Requests should state the reason for the exemption. Reasons for an exemption include, but are not limited to: statutory exclusion; federal government requirements; or financial hardship. Requests may be submitted to the Office of the NITC via e-mail or letter (Office of the NITC, 521 S 14th Street, Suite 301, Lincoln, NE 68508). The NITC Technical Panel will consider, in consultation with representatives of the Nebraska GIS Steering Committee, the request and grant or deny the exemption. A denial of an exemption by the NITC Technical Panel may be appealed to the NITC.~~

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. Neb. Rev. Stat. § 86-516(6)

5.2 State Agencies

Each state agency will be responsible for ensuring that geospatial data developed, maintained, or purchased and which is used for policy development, implementation, or compliance review ~~with~~ will be documented consistent with this standard. The State of Nebraska, Office of the CIO (OCIO) GIS Shared Services will be responsible for assuring that metadata is completed and the data is registered and available for distribution through NebraskaMAP.

5.3 Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring geospatial metadata documentation requirements are included in requirements and regulations related to fund disbursements.

5.4 Other

Local government agencies that have the primary responsibility and authority for developing geospatial datasets with state appropriated funds will be responsible for ensuring that those sub-sections defined in Section 1 will be incorporated in the overall data development efforts and publishing of metadata prior to distribution.

6.0 Authority

6.1 NITC GIS Council

According to Neb. Rev. Stat. § 86-572(2), the GIS Council shall: Establish guidelines and policies for statewide Geographic Information Systems operations and management (a) The acquisition, development, maintenance, quality assurance such as standards, access, ownership, cost recovery, and priorities of data bases; (b) The compatibility, acquisition, and communications of hardware and software; (c) The assessment of needs, identification of scope, setting of standards, and determination of an appropriate enforcement mechanism; (d) The fostering of training programs and promoting education and information about the Geographic Information Systems; and (e) The promoting of the Geographic Information Systems development in the State of Nebraska and providing or coordinating additional support to address Geographic Information Systems issues as such issues arise.

~~6~~7.0 Related Documents

7.1 Federal Geographic Data Committee (FGDC) Content Standards for Digital Geospatial Metadata (FGDC-STD-001-1998). http://www.fgdc.gov/standards/projects/FGDC-standards-projects/metadata/base-metadata/index_html

7.2 Federal Geographic Data Committee (FGDC) Geospatial ISO Metadata Standards Transition. http://www.fgdc.gov/metadata/geospatial-metadata-standards

7.3 ISO 19115:2003(E) North American Profile (NAP) Metadata Standards. National Oceanic and Atmospheric Administration (NOAA). January 2012.

7.4 International Standards Organization (ISO). ISO 19115:2003. http://www.iso.org

7.5 Technical Support Guides at NebraskaMAP.gov. Guides to translate existing metadata to the new standard, required core elements, and workbook for ISO standards.

NITC 3-203
Elevation Acquisition using LiDAR Standards

Review Version 7
(Date 9.3.2014)

Category: Data and Information Architecture
Applicability: See Each Section of Standards
History: Adopted on [Month Day, Year]

NITC | Nebraska Information Technology Commission
GIS Council

NEBRASKA INFORMATION TECHNOLOGY COMMISSION GIS COUNCIL

TABLE OF CONTENTS

1.0 Standards

These standards are intended for entities participating in collaborative efforts to acquire airborne LiDAR (Light Detection and Ranging) elevations that may contribute to a comprehensive statewide elevation dataset in Nebraska. The standards provide a consistent structure for data producers and users to ensure compatibility of datasets within the same framework layer and among other framework layers.

1.1 Federal Connection

At the national level, the 3D Elevation Program (3DEP) initiative is being developed to respond to growing needs for high-quality topographic data and for a wide range of other three-dimensional representations of the Nation's natural and constructed features. The primary goal of 3DEP is to systematically collect enhanced elevation data in the form of high-quality LiDAR data over the conterminous United States, Hawaii, and the U.S. territories, with data acquired over an 8-year period.

The U.S. Geological Survey (USGS) National Geospatial Program's (NGP) has published LiDAR Base Specification Version 1.0 to create consistency across NGP and partner funded LiDAR collections. The intent of Nebraska's standards is also to facilitate participation in collaborative efforts to acquire airborne LiDAR elevations and thus the LiDAR Base Specification Version 1.0 is adopted as the basis of the standards, guidelines, and recommendations in this document. The following Technical and Operation section provides additional detail to the Base Specification where Nebraska's requirements depart from the specifications in the document or where additional clarity is necessary. All such standards/guidelines, not specifically addressed in the body of this document are subject to the specifications in the LiDAR Base Specification Version 1.0.

1.2 Technical and Operation

The following standards are intended to provide additional detail specifically related to LiDAR projects in Nebraska:

1.2.1 Collection

1.2.1.1 Nominal Pulse Spacing (NPS)

a) Required: An NPS of 1.4 meters or less
b) Recommended: An NPS of 0.7 meters

1.2.1.2 Vertical Accuracy

a) Required: Fundamental Vertical Accuracy <= 24.5 centimeters (cm) AccuracyZ(Acc_z), 95 percent (12.5 cm Root Mean Square Error ($RMSE)_z$) for LiDAR acquired at a NPS greater than one meter.
b) Required: Fundamental Vertical Accuracy <= 18.2 centimeters (cm) AccuracyZ(Acc_z), 95 percent (9.25 cm Root Mean Square Error ($RMSE)_z$) for LiDAR acquired at a NPS of 1.0 meters or less.

1.2.1.3 Data Processing and Handling

a) Recommended: Coordinate Reference System - Nebraska State Plane, NAD83 HARN, NAVD88, U.S. Survey feet.
b) Optional: Hydro-Flattening – Optional (USGS required).

c) Optional: Hydro-Enforced – The state of Nebraska recommends collection of breaklines for the development of a *Hydro-enforced*, Bare-earth Digital Elevation Model (DEM).

1.2.1.4 Deliverables—In addition to the raw and classified point cloud and the metadata, deliverables will include:

a) Required: Bare-Earth DEM
   i. Cell size 2 meters for LiDAR acquired at greater than 1.0 meter NPS
   ii. Cell size 1 meter for LiDAR acquired at 1.0 meter or less NPS
b) Recommended: Hydro-Enforced, Bare-Earth DEM
   i. Cell size 2 meters for LiDAR acquired at greater than 1.0 meter NPS
   ii. Cell size 1 meter for LiDAR acquired at 1.0 meter or less NPS
   iii. Breaklines used for Hydro-Enforcement (required if hydro-enforced)

1.3 Maintenance

Entities responsible for data acquisition and deliverables will need to assure data meets standards and are updated and maintained in a timely manner. After spatial and attribute updates and/or modifications are performed to the data it shall be submitted to the appropriate entity(s) responsible for performing quality control and maintenance of the data acquisition.

Maintenance of elevation data determines the suitability to support the greatest range of applications. Many projects require up-to-date, accurate and consistent elevation data and maintenance of this data is necessary to provide the maximum return on investment.

1.3.1 Reporting Errors and Handling Updates

The reporting of errors need to be directed to the appropriate entity in a timely manner. Updated spatial and attribute information in the data will also need to be redistributed. The date field in the metadata when the last record was modified will also need to be updated to ensure proper records management and communication with others in the workflow.

2.0 Purpose and Objectives

2.1 Purpose

The primary purpose of these standards/guidelines is to realize the maximum long-term benefit of elevation data acquisitions, and in doing so, help protect the public's investment in Nebraska's geospatial infrastructure. These standards will help ensure that elevation data acquisitions are current, consistent, accurate, high-resolution, accessible, and cost-effective.

Background

Elevation data is foundational to the development of the Nebraska Spatial Data Infrastructure (NESDI). First, it is required for the rectification of imagery which is the foundation for most of the other geospatial data layers in the NESDI and is a valuable base map in its own right. The accuracy of infrastructure data layers, in part, determines the extent to which they can be integrated and ultimately their suitability to support the greatest range of applications. Additionally, many projects and programs in Nebraska require up-to-date, accurate and consistent elevation data.

LiDAR has been collected for approximately 59% of the state on a project by project basis. Applications that require high-quality elevation data have been limited in that the data is not always consistent across project boundaries, and the fact that LiDAR elevations are not available for the whole state, thus falling short of the maximum return on investment. A statewide elevation dataset would provide instantaneous access to accurate elevation data, reducing costs and time required to merge together projects, or worse, to acquire missing data via less cost-effective methods. A sample of applications that rely on high quality elevation data in Nebraska include:

2.1.1 Hydrology and hydraulics

a) Base Flood Elevation (BFE) determinations
b) Floodplain and flood inundation mapping
c) Dam breach analysis and hazard potential classification

2.1.2 Engineering design and design reviews

a) Bridge and roadway design
b) Siting of transmission lines, power lines, cell towers, pipelines
c) Flood control structures
d) Conservation structures

2.1.3 Emergency Management

2.1.3.1 The Hazards U.S. Multi-Hazard (HAZUS-MH) estimates of potential dollars lost during flood disasters

2.1.4 Natural resources applications

2.1.4.1 Sediment erosion and transport

2.1.4.2 Watershed delineation and flow analyses

2.1.4.3 Suitability analyses for plants, animals and other species

2.1.5 Conservation planning

2.1.5.1 Modeling of landforms, habitat, vegetation, etc.

2.1.5.2 Channel topography

2.1.5.3 Vegetation and land cover studies

2.1.5.4 Precision agriculture

2.1.6 Cartographic applications

2.1.6.1 Soil survey

2.1.6.2 Imagery rectification

2.1.6.3 Building and other structural footprints

2.1.7 Fire Modeling

2.1.7.1 Vegetative density and their placement in the landscape

2.2 Objectives

These standards and guidelines to guide the acquisition and development of LiDAR data in Nebraska have the following objectives.

2.2.1 Provide guidance to state and local officials as they work, either in-house or with private contractors, to develop and/or acquire LiDAR elevation data and thereby increase the likelihood that the data acquired and/or developed will be suitable for the range of intended applications and likely future applications. The maintenance of elevation data is necessary for the data to be current and accurate. The requirements of maintenance involving stewardship and reporting of errors and handling updates is located in the NESDI Governance Plan and current Elevation Business Plan. These plans are currently in draft and are forthcoming.

2.2.2 Improve public policy development and implementation by helping to make elevation data more current and readily accessible.

2.2.3 Enhance coordination and program management across jurisdictional boundaries by insuring that elevation data can be horizontally integrated across jurisdictional and/or project boundaries for regional or statewide applications.2.2.4 Save public resources by facilitating the sharing of elevation data among public agencies or sub-divisions of agencies by incorporating data standards and following guidelines which will make it more likely that the elevation data developed by one entity will also be suitable to serve the multiple needs of other entities and thereby avoid the costly duplication of developing and maintaining similar elevation data.

2.2.5 Make elevation data more readily accessible to the wide range of potential users.

2.2.6 Facilitate harmonious, trans-agency public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use common geospatial datasets and thereby make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

2.2.7 Lay the foundation for facilitating intergovernmental partnerships for the acquisition and development of high-quality elevation data by defining standards and guidelines that increase the likelihood that the elevation data will meet the needs of multiple users.

2.2.8 Establish and promote the integration and interrelationships of elevation data with related NESDI framework layers through geometric placement and attributes.

3.0 Definitions

Refer to the LiDAR Base Specification Version 1.0 glossary for a more complete set of definitions.

3.1 $Accuracy_z$ (ACCz) (Vertical Accuracy) - The NSSDA reporting standard in the vertical component that equals the linear uncertainty value, such that the true or theoretical vertical location of the point falls within that linear uncertainty value 95 percent of the time. ACCz = 1.9600x RMSEz.

3.2 Bare earth - Digital elevation data of the terrain, free from vegetation, buildings and other man-made structures. Elevations of the ground.

3.3 Breakline - linear feature that describes a change in the smoothness or continuity of a surface.

3.4 Contour - Lines of equal elevation on a surface. An imaginary line on the ground, all points of which are at the same elevation above or below a specified vertical datum. (FEMA's Definition)

3.5 Digital Elevation Model (DEM) - the digital cartographic representation of the elevation of the land at regularly spaced intervals in x and y directions, using z-values referenced to a common vertical datum.

3.6 Digital Surface Model (DSM) - Similar to Digital Elevation Models (DEMs) or digital terrain models (DTMs), except that they may depict the elevations of the top surfaces of buildings, trees, towers, and other features elevated above the bare earth.

3.7 Fundamental Vertical Accuracy (FVA) - The value by which vertical accuracy of LiDAR can be equitably assessed and compared among datasets. The fundamental vertical accuracy of a dataset must be determined with well-distributed checkpoints located only in open terrain, free of vegetation, where there is a high probability that the sensor will have detected the ground surface. It is obtained using standard tests for Root Mean Square Error (RMSE), where FVA = ACCz = RMSEz x 1.9600.

3.8 Hydrologically-conditioned (hydro-conditioned) - Processing of a DEM or Triangulated Irregular Network (TIN) so that the flow of water is continuous across the entire terrain surface, including the removal of all spurious sinks or pits.

3.9 Hydrologically-enforced (hydro-enforced) - Processing of water bodies so that lakes and reservoirs are level and streams flow downhill. For example, a DEM, TIN or topographic contour dataset with elevations removed from the tops of selected drainage structures (bridges and culverts) so as to depict the terrain under those structures. Hydro-enforcement enables hydrologic and hydraulic models to depict water flowing under these structures, rather than appearing in the computer model to be dammed by them because of road deck elevations higher than the water levels. Hydro-enforced TINs also use breaklines along shorelines and stream centerlines. An example of this is where breaklines form the edges of TIN triangles along the alignment of drainage features. Shore breaklines for streams would be 3-D breaklines with elevations that decrease as the stream flows downstream; however, shore breaklines for lakes or reservoirs would have the same elevation for the entire shoreline if the water surface is known or assumed to be level throughout.

3.10 Hydrologically-flattened (hydro-flattened) - Processing of a LiDAR-derived surface DEM or TIN Model so that mapped water bodies, rivers, reservoirs, and other cartographically polygonal water surfaces are flat, and where appropriate, level from bank-to-bank.

3.11 LiDAR - An instrument that measures distance to a reflecting object by emitting timed pulses of light and measuring the time difference between the emission of a laser pulse and the reception of the pulse's reflection(s). The measured time interval for each reflection is converted to distance, which when combined with position and altitude information from Global Positioning System (GPS), Inertial Measurement Unit (IMU), and the instrument itself, allows the derivation of the 3-dimensional point location of the reflecting target's location.

3.12 Nebraska Spatial Data Infrastructure - A framework of geospatial data layers that have multiple applications, used by a vast majority of stakeholders, meet quality standards and

have data stewards to maintain and improve the data on an ongoing basis. These layers are also consistent with the Federal National Spatial Data Infrastructure (NSDI).

3.13 Nominal Point Spacing (NPS) - A common measure of the density of a LiDAR dataset, it is the typical or average lateral distance between points in a LiDAR dataset, most often expressed in meters. Often it is simply calculated as the square root of the average area per point. This value is predicted in mission planning and empirically calculated from the collected data. In high-density collections (<1 meter NPS), this may be directly expressed as Points per Square Meter (PPSM). PPSM = $1/NPS^2$.

3.14 Points – In the context for elevation, points are geospatial objects that represent spot elevations of randomly intersected features. Attributes are X, Y, and Z coordinates at a minimum, but may also include pulse number, return number, intensity, flight line number, scan angle, GPS time and feature class.

4.0 Applicability

4.1 State Government Agencies

State agencies that are involved in the acquisition of elevation data are required to comply with the standards as described in Section 1.

4.2 State Funded Entities

Entities that are not state agencies but receive direct or indirect state funding for acquisition of elevation data are also required to comply with the standards as described in Section 1.

4.3 Other

Other entities, such as local government agencies (e.g. County Offices, Natural Resources Districts, municipalities) involved in the acquisition of elevation data are required to comply with the standards as described in Section 1.

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. Neb. Rev. Stat. § 86-516(6)

5.2 State Agencies

The OCIO GIS Shared Services will be responsible for assuring that metadata is completed and the data is registered and available for distribution through NebraskaMAP.

5.3 Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring that these standards are included in requirements and regulations related to fund disbursements as they relate to LiDAR acquisition.

5.4 Other

Local government agencies will be responsible for ensuring that these standards are included in requirements and regulations related to fund disbursements as they relate to LiDAR acquisition.

6.0 Authority

6.1 NITC GIS Council

According to Neb. Rev. Stat. § 86-572(2), the GIS Council shall: Establish guidelines and policies for statewide Geographic Information Systems operations and management (a) The acquisition, development, maintenance, quality assurance such as standards, access, ownership, cost recovery, and priorities of data bases; (b) The compatibility, acquisition, and communications of hardware and software; (c) The assessment of needs, identification of scope, setting of standards, and determination of an appropriate enforcement mechanism; (d) The fostering of training programs and promoting education and information about the Geographic Information Systems; and (e) The promoting of the Geographic Information Systems development in the State of Nebraska and providing or coordinating additional support to address Geographic Information Systems issues as such issues arise.

7.0 Related Documents

7.1 United State Geological Survey (USGS) National Geospatial Program (NGP) LiDAR Base Specification Version 1.0: http://pubs.usgs.gov/tm/11b4/

7.2 American Society for Photogrammetry and Remote Sensing (ASPRS) LAS Specification Version 1.4. November 2011.

8.0 Appendices

8.1 Nebraska LiDAR Base Specifications

The following is an adaptation of the LiDAR Base Specification Version 1.0 specific to Nebraska LiDAR acquisitions. Specific differences between the LiDAR Base Specification Version 1.0 and Nebraska specifications include:

Collection

- Nebraska requires a NPS of 1.4 meters or less.
- Nebraska projects typically collect LiDAR points at 1 of 2 Nominal Pulse Spacings, 0.7 and 1.4 meters. Each has specific accuracy requirements.

Data Processing and Handling

- Preferred CRS is Nebraska State Plane, NAD83, Feet, NAVD88, Feet
- Nebraska does not require Hydro-Flattening of DEMs

Deliverables

- Recommends 2 DEMs,
  - Bare-Earth topographic DEM (Required. Hydro-flattening not required)
  - Bare-Earth Hydro-conditioned DEM (Optional)

Collection

Multiple Discrete Returns
Data collection must be capable of at least three returns per pulse. Full waveform collection is acceptable.

Intensity Values
Intensity values are required for each return. The values are to be recorded in the .las files in their native radiometric resolution.

Nominal Pulse Spacing (NPS)
An NPS of **1.4** meters or less is required. Assessment of the NPS will be made against single swath, first-return only data, located within the geometrically usable center portion (typically 90 percent) of each swath, acceptable data voids excluded. NPS will be calculated as the square root of the average area per point. Average along-track and cross-track point spacing should be comparable (within 10 percent).
In general, the target NPS for a project should not be achieved through swath overlap or multiple passes. Such collection techniques may be permitted with prior approval.

Data Voids
Data voids within a single swath are not acceptable, except in the following circumstances:

- Where caused by water bodies,
- Where caused by areas of low near infra-red (NIR) reflectivity such as asphalt or composition roofing, or
- Where appropriately filled-in by another swath.

Spatial Distribution
The spatial distribution of geometrically usable points is expected to be uniform. Although it is understood that LiDAR instruments do not produce regularly gridded points, collections should be planned and executed to produce a first-return point cloud that approaches a regular lattice of points, rather than a collection of widely spaced high density profiles of the terrain. The uniformity of the point density throughout the dataset is important and will be assessed using the following steps:

- Generating a density grid from the data with cell sizes equal to the design NPS times 2, using a radius equal to the design NPS.

- Ensuring at least 90 percent of the cells in the grid contain at least one LiDAR point.
- The assessment is to be made against individual (single) swaths, using only the first-return points located within the geometrically usable center portion (typically 90 percent) of each swath.
- Excluding acceptable data voids previously identified in this specification.

  Note: This requirement may be relaxed in areas of substantial relief where it is impractical to maintain a consistent and uniform distribution.
  Note: The process described in this section relates only to the uniformity of the point distribution. It in no way relates to, nor can it be used for the assessment of point density or NPS.

Scan Angle
Scan angle will support horizontal and vertical accuracy within the requirements as specified in the next two sections. Note: This requirement primarily is applicable to oscillating mirror LiDAR systems. Other instrument technologies may be exempt from this requirement.

Vertical Accuracy
Vertical accuracy of the LiDAR data will be assessed and reported in accordance with the guidelines developed by the National Digital Elevation Program (NDEP) and subsequently adopted by the American Society for Photogrammetry and Remote Sensing (ASPRS). Complete definitions for vertical accuracy assessments are in Section 1.5 of the NDEP Elevation Guidelines (NDEP, 2004). The minimum vertical accuracy requirement for the unclassified LiDAR point cloud, using the NDEP/ASPRS methodology, is listed below:

- Fundamental Vertical Accuracy (FVA) <= 24.5 centimeters (cm) Accuracyz (ACCz), 95 percent (12.5 cm Root Mean Square Error (RMSE)z).
- The minimum vertical accuracy requirements for the derived DEM, using the NDEP/ASPRS methodology are listed below:
- Fundamental Vertical Accuracy (FVA) <= 24.5 cm ACCz, 95 percent (12.5cm RMSEz);
- Consolidated Vertical Accuracy (CVA) <= 36.3cm, 95th percentile, and
- Supplemental Vertical Accuracy (SVA) <= 36.3 cm, 95th percentile.
- The minimum vertical accuracy requirement for the unclassified LiDAR point cloud for LIDAR collected at 0,7 m NPS, using the NDEP/ASPRS methodology, is listed below:
- Fundamental Vertical Accuracy (FVA) <= 18.5 centimeters (cm) Accuracyz (ACCz), 95 percent (9.25 cm Root Mean Square Error (RMSE)z).
- The minimum vertical accuracy requirements for the derived DEM, using the NDEP/ASPRS methodology are listed below:
- Fundamental Vertical Accuracy (FVA) <= 18.5 cm ACCz, 95 percent (9.255cm RMSEz);
- Consolidated Vertical Accuracy (CVA) <= 27.7 cm, 95th percentile, and
- Supplemental Vertical Accuracy (SVA) <= 27.7 cm, 95th percentile**.**

Point cloud data accuracy is to be tested against a Triangulated Irregular Network (TIN) constructed from LiDAR points in clear and open areas. A clear and open area can be characterized with respect to topographic and ground cover variation such that a minimum of 5 times the NPS exists with less than 1/3 of the RMSEz deviation from a low-slope plane. Slopes that exceed 10 percent should be avoided. Ground that has been plowed or otherwise disturbed is not acceptable. All tested locations should be photographed showing the position of the tripod and the surrounding area ground condition.

Each land cover type representing 10 percent or more of the total project area must be tested and reported with an SVA.

In areas where a land cover category is something other than forested or dense urban, the tested point should not have any obstructions 45 degrees above the horizon to ensure a sufficient TIN surface. Additionally, tested areas should not be in proximity to low NIR reflective surfaces such as asphalt or composition roofing materials.

The SVA value is provided as a target. It is understood that in areas of dense vegetation, swamps, or extremely difficult terrain, this value may be exceeded.

The CVA value is a requirement that must be met, regardless of any allowed “busts” in the SVA(s) for individual land cover types within the project.

Checkpoints for each assessment (FVA, CVA, and all SVAs) are required to be well-distributed throughout the land cover type, for the entire project area. See Glossary for definition of well-distributed.

Exceptions: These requirements may be relaxed in cases:

- Where there exists a demonstrable and substantial increase in cost to obtain this accuracy.
- Where an alternate specification is needed to conform to previously contracted phases of a single larger overall collection effort, for example, multi-year statewide collections.
- Where the USGS agrees that it is reasonable and in the best interest of all stakeholders to use an alternate specification.

Relative Accuracy

The requirements for relative accuracy are listed below:

- Within individual swaths: <= 7 cm RMSEz
- Within overlap between adjacent swaths: <=10 cm RMSEz

Flightline Overlap

Flightline overlap of 10 percent or greater is required to ensure there are no data gaps between the usable portions of the swaths. Collections in high relief terrain are expected to require greater overlap. Any data with gaps between the geometrically usable portions of the swaths will be rejected.

Collection Area

- Data collection for the Defined Project Area, buffered by a minimum of 100 meters, is required. The buffered boundary is the Buffered Project Area.
- In order that all products are consistent to the edge of the Defined Project Area, all products must be generated to the limit of the Buffered Project Area. Since these areas are being generated, they shall also be delivered.

Collection Conditions

- Atmospheric conditions must be cloud and fog-free between the aircraft and ground during all collection operations.
- Ground conditions must be snow free. Very light, undrifted snow may be acceptable in special cases, with prior approval.
- Water conditions must be free of any unusual flooding or inundation, except in cases where the goal of the collection is to map the inundation.
- Leaf-off vegetation conditions are preferred, however, as numerous factors beyond human control may affect the vegetative condition at the time of any collection, the USGS NGP only requires that penetration to the ground must be adequate to produce an accurate and reliable bare-earth surface suitable for incorporation into the 1/9 (3-meter) NED. Collections for specific scientific research projects may be exempted from this requirement, with prior approval.

Data Processing and Handling

ASPRS LAS File Format

All processing should be carried out with the understanding that all point deliverables are required to be in fully compliant LAS format, either v1.2 or v1.3. The version selected must be used for all LAS deliverables in the project. Data producers are encouraged to review the LAS specification in detail (ASPRS, 2011).

Full Waveform
If full waveform data are collected, delivery of the waveform packets is required. LAS v1.3 deliverables with waveform data are to use external auxiliary files with the extension .wdp for the storage of waveform packet data. See the LAS v1.3 Specification for additional information (ASPRS, 2011).

Global Positioning System (GPS) Times
GPS times are to be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each pulse.

Adjusted GPS Time is defined to be Standard (or satellite) GPS time minus $1x10^9$. See the LAS v1.4 Specification for more detail (ASPRS, 2011).

Datums
All data collected must be tied to the datums listed below:

- Horizontal datum reference to the North American Datum of 1983/HARN adjustment (NAD83 HARN) is required.
- Vertical datum reference to the North American Vertical Datum of 1988 (NAVD 88) is required.
- The most recent National Geodetic Survey (NGS)-approved geoid model is required to perform conversions from ellipsoidal heights to orthometric heights.

Coordinate Reference System

- The Nebraska preferred Coordinate Reference System for projects conducted within the state is Nebraska State Plane, NAD83 HARN, Feet; NAVD88, Feet.
- The USGS preferred Coordinate Reference System for the Conterminous United States (CONUS) is Universal Transverse Mercator UTM, NAD83 HARN, Meters; NAVD88, Meters and this Coordinate Reference System may be used. Each discrete project is to be processed using the single predominant UTM zone for the overall collection area.

Units of Reference
All references to the unit of measure “Feet” and “Foot” must specify “International”, “Intl”, “U.S. Survey”, or “US”.

Swath Identification
Each swath will be assigned a unique File Source ID. It is required that the Point Source ID field for each point within each LAS swath file be set equal to the File Source ID before any processing of the data. See the LAS v1.3 Specification (ASPRS, 2011).

Point Families
Point families (multiple return “children” of a single “parent” pulse) shall be maintained intact through all processing before tiling. Multiple returns from a given pulse will be stored in sequential (collected) order.

Swath Size and Segmentation
Swath files will be 2 gigabytes (GB) in size or less. Long swaths (those which result in a LAS file larger than 2 GB) will be split into segments no greater than 2 GB each.

- Each sub-swath will retain the original File Source ID of the original complete swath.
- Points within each sub-swath will retain the Point Source ID of the original complete swath.
- Each sub-swath file will be named identically to the original complete swath, with the addition of an ordered alphabetic suffix to the name (“-a”, “-b” … “-n”). The order of the named sub-swaths shall be consistent with the collection order of the points (“-a” will be the chronological beginning of the swath; “-n” will be the chronological end of the swath).
- Point families shall be maintained intact within each sub-swath.
- Sub-swaths should be broken at the edge of the scan line.
- Other swath segmentation approaches may be acceptable, with prior approval.

Scope of Collection

- All collected swaths are to be delivered as part of the Raw Data Deliverable. This includes calibration swaths and crossties.
- This in no way requires or implies that calibration swath data are to be included in product generation. All collected points are to be delivered. No points are to be deleted from the swath LAS files. Excepted from this are extraneous data outside of the buffered project area (aircraft turns, transit between the collection area and airport, transit between fill-in areas, and the like).
- These points may be permanently removed. Busted swaths that are being completely discarded by the vendor and re-flown do not need to be delivered.

Use of the LAS Withheld Flag

- Outliers, blunders, noise points, geometrically unreliable points near the extreme edge of the swath, and other points the vendor deems unusable are to be identified using the Withheld flag, as defined in the LAS specification.
- This applies primarily to points that are identified during pre-processing or through automated post-processing routines.
- If processing software is not capable of populating the Withheld bit, these points may be identified using Class=11.
- Noise points subsequently identified during manual Classification and Quality Assurance/Quality Control (QA/QC) may be assigned the standard LAS classification value for Noise (Class=7), regardless of whether the noise is “low” or “high” relative to the ground surface.

Point Classification

- ALL points not identified as Withheld are to be classified.
- No points in the Classified LAS deliverable will be assigned Class=0.
- Use of the ASPRS/LAS Overlap classification (Class=12) is prohibited.
- If overlap points are required to be differentiated by the data producer or cooperating partner, they must be identified using a method that does not interfere with their classification:
- Overlap points are tagged using Bit:0 of the User Data byte, as defined in the LAS specification. (SET=Overlap).
- Overlap points are classified using the Standard Class values + 16.
- Other techniques as agreed upon in advance.

The technique used to identify overlap must be clearly described in the project metadata files.
Note: A standard bit flag for identification of overlap points has been included in LAS v1.4, released on November 14, 2011.

Positional Accuracy Validation

Before classification of and development of derivative products from the point cloud, verification of the vertical accuracy of the point cloud, absolute and relative, is required. The Fundamental Vertical Accuracy (absolute) is to be assessed in clear, open areas as described in the section called Vertical Accuracy above. Swath-to-swath and within swath accuracies (relative) are to be documented. A detailed report of this validation process is a required deliverable.

Classification Accuracy

It is required that due diligence in the classification process will produce data that meet the following tests:

- Following classification processing, no non-withheld points should remain in Class 0.
- Within any 1 kilometer (km) x 1 km area, no more than 2 percent of non-withheld points will possess a demonstrably erroneous classification value.
- Points remaining in Class 1 that should be classified in any other required Class are subject to these accuracy requirements and will be counted towards the 2 percent threshold.

Note: These requirements may be relaxed to accommodate collections in areas where the USGS agrees classification to be particularly difficult.

Classification Consistency
Point classification is to be consistent across the entire project. Noticeable variations in the character, texture, or quality of the classification between tiles, swaths, lifts, or other non-natural divisions will be cause for rejection of the entire deliverable.

Tiles
Note: This section assumes a projected coordinate reference system.

A single non-overlapped tiling scheme (the Project Tiling Scheme) will be established and agreed upon by the data producer and the USGS before collection. This scheme will be used for ALL tiled deliverables.

- Tile size is required to be an integer multiple of the cell size of raster deliverables.
- Tiles are required to be sized using the same units as the coordinate system of the data.
- Tiles are required to be indexed in X and Y to an integer multiple of the tile's X-Y dimensions.
- All tiled deliverables will conform to the Project Tiling Scheme, without added overlap.
- Tiled deliverables will edge-match seamlessly and without gaps.

Hydro-Enforcement
Processing of mapped water bodies so that streams flow downhill. Specifically, Nebraska Digital Elevation Models (DEMs) are derived with elevations removed from the tops of selected drainage structures (bridges and culverts) so as to depict the terrain under those structures. Hydro-enforcement enables hydrologic and hydraulic models to depict water flowing under these structures, rather than appearing in the computer model to be dammed by them because of road deck elevations higher than the water levels.

Hydro-Flattening
Note: Hydro-Flattening is not required for any known Nebraska application and imposes a significant increase in costs. This section applies only to LiDAR acquisitions in which USGS participation covers this cost increase in its entirety.

Hydro-flattening pertains only to the creation of derived DEMs. No manipulation of or changes to originally computed LiDAR point elevations are to be made. Breaklines may be used to help classify the point data. The goal of the NGP is for the delivered DEMs to represent water bodies in a cartographically and aesthetically pleasing manner. It is not the goal of the NGP to accurately map water surface elevations within the NED. The requirements for hydro-flattening are listed below.

Inland Ponds and Lakes

- 2 acres or greater surface area (approximately equal to a round pond 350 feet in diameter) at the time of collection.
- Flat and level water bodies (single elevation for every bank vertex defining a given water body).
- The entire water surface edge must be at or below the immediately surrounding terrain. The presence of floating water bodies will be cause for rejection of the deliverable.
- Long impoundments such as reservoirs, inlets, and fjords, whose water surface elevations drop when moving downstream, are required to be treated as rivers.

Inland Streams and Rivers

- 100 feet nominal width: This should not unnecessarily break a stream or river into multiple segments. At times it may squeeze slightly below 100 feet for short segments. Data producers should use their best professional cartographic judgment.
- Flat and level bank-to-bank (perpendicular to the apparent flow centerline); gradient to follow the immediately surrounding terrain. In cases of sharp turns of rapidly moving water, where the natural water surface is notably not level bank- to- bank, it is appropriate to represent the water surface as it exists in nature, while maintaining an aesthetic cartographic appearance.
- The entire water surface edge must be at or below the immediately surrounding terrain.

- Stream channels are required to break at road crossings (culvert locations). The roadway over a culvert should be continuous.
- A culvert, regardless of size, is defined as having earth between the road surface and the top of the structure.
- Bridges are required to be removed from the DEM. Streams and rivers should be continuous at bridge locations. Bridges are defined as having an elevated deck structure that does not rest on earth.
- When the identification of a structure such as a bridge or culvert cannot be made reliably, the feature should be regarded as a culvert.

Non-Tidal Boundary Waters

- Represented only as an edge or edges within the project area; collection does not include the opposing shore.
- Water surface is to be flat and level, as appropriate for the type of water body (level for lakes; gradient for rivers)
- The entire water surface edge must be at or below the immediately surrounding terrain.

Tidal Waters

- Tidal water bodies are defined as water bodies such as oceans, seas, gulfs, bays, inlets, salt marshes, large lakes, and the like. This includes any water body that is affected by tidal variations.
- Tidal variations over the course of a collection or between different collections will result in lateral and vertical discontinuities along shorelines. This is considered normal and these anomalies should be retained. The final DEM is required to represent as much ground as the collected data permits.
- Water surface is to be flat and level, to the degree allowed by the irregularities noted above.
- Scientific research projects in coastal areas often have specific requirements with regard to how tidal land-water boundaries are to be handled. For such projects, the requirements of the research will take precedence.

Islands

- Permanent islands 1 acre or larger shall be delineated within all water bodies.

Single-Line Streams

Cooperating partners may require collection and integration of single-line streams within their LiDAR projects. Although the USGS does not require these breaklines be collected or integrated, it does require that if used and incorporated into the DEMs, the following guidelines are met:

- All vertices along single-line stream breaklines are at or below the immediately surrounding terrain.
- Single-line stream breaklines are not to be used to introduce cuts into the DEM at road crossings (culverts), dams, or other such features. This is hydro-enforcement and as discussed in appendix 3 will create a non-topographic DEM that is unsuitable for integration into the NED.
- All breaklines used to modify the surface are to be delivered to the USGS with the DEMs.

Deliverables

The USGS requires unrestricted rights to all delivered data and reports, which will be placed in the public domain. This specification places no restrictions on the data provider’s rights to resell data or derivative products as they see fit.

Metadata

The term “metadata” refers to all descriptive information about the project. This includes textual reports, graphics, supporting shapefiles, and Federal Geographic Data Committee (FGDC)-compliant metadata files. Metadata deliverables include the following items:

- Collection report detailing mission planning and flight logs.

- Survey report detailing the collection of control and reference points used for calibration and QA/QC.
- Processing report detailing calibration, classification, and product generation procedures including methodology used for breakline collection and hydro-flattening.
- QA/QC Reports (detailing the analysis, accuracy assessment and validation of the following:
- Point data (absolute, within swath, and between swath)
- Bare-earth surface (absolute)
- Other optional deliverables as appropriate
- Control and calibration points: All control and reference points used to calibrate, control, process, and validate the LiDAR point data or any derivative products that are to be delivered.
- Georeferenced, digital spatial representation of the precise extents of each delivered dataset. This should reflect the extents of the actual LiDAR source or derived product data, exclusive of TIN artifacts or raster NODATA areas. A union of tile boundaries or minimum bounding rectangles is not acceptable. ESRI Polygon shapefile or geodatabase is preferred.
- Product metadata [FGDC compliant, eXtensible Markup Language (XML) format metadata]. Metadata files for individual files are not required. One XML file is required for the following examples:
- The Overall Project: Describing the project boundary, the intent of the project, the types of data collected as part of the project, the various deliverables for the project, and other project-wide information.
- Each Lift: Describing the extents of the lift, the swaths included in the lift, locations of GPS base stations and control for the lift, preprocessing and calibration details for the lift, adjustment and fitting processes applied to the lift in relation to other lifts, and other lift-specific information.
- Each tiled deliverable product group:
- Classified point data
- Bare-earth DEMs
- Breaklines (if used)
- Other datasets delivered under the contract (Digital Surface Models (DSM), intensity images, height surfaces, and others)
- FGDC compliant metadata must pass the USGS metadata parser (mp) with no errors.

Raw Point Cloud

Delivery of the raw point cloud is a standard requirement for USGS NGP LiDAR projects. Raw point cloud deliverables include the following items:

- All swaths, returns, and collected points, fully calibrated and adjusted to ground, by swath.
- Fully compliant LAS v1.2 or v1.3, Point Data Record Format 1, 3, 4, or 5.
- LAS v1.3 deliverables with waveform data are to use external auxiliary files with the extension .wdp for the storage of waveform packet data. See the LAS v1.3 Specification for additional information.
- Correct and properly formatted georeference information must be included in all LAS file headers.
- GPS times are to be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each pulse.
- Intensity values (native radiometric resolution).
- One file per swath, one swath per file, file size not to exceed 2 GB, as described under the section called Swath Size and Segmentation above.
- Vertical accuracy of the LiDAR point data will be assessed and reported in accordance with the guidelines developed by the NDEP and subsequently adopted by the ASPRS. The complete guidelines on vertical accuracy are in Section 1.5 of the NDEP Guidelines (NDEP, 2004).
- Vertical accuracy requirements using the NDEP/ASPRS methodology for the point cloud are FVA<= 24.5 cm ACCz, 95-percent confidence level (12.5 cm RMSEz) or, 18.5 cm ACC_z 95-percent confidence level (9.25cm $RMSE_z$) for LiDAR collected at 0.7m NPS

Classified Point Cloud
Delivery of a classified point cloud is a standard requirement for USGS NGP LiDAR projects. Specific scientific research projects may be exempted from this requirement. Classified point cloud deliverables include the following items:

- All project swaths, returns, and collected points, fully calibrated, adjusted to ground, and classified, by tiles. Project swaths exclude calibration swaths, cross-ties, and other swaths not used, or intended to be used, in product generation.
- Fully compliant LAS v1.2 or v1.3, Point Data Record Format 1, 3, 4, or 5.
- LAS v1.3 deliverables with waveform data are to use external auxiliary files with the extension .wdp for the storage of waveform packet data. See the LAS v1.3 Specification for additional information.
- Correct and properly formatted georeference information must be included in all LAS file headers.
- GPS times are to be recorded as Adjusted GPS Time, at a precision sufficient to allow unique timestamps for each pulse.
- Intensity values (native radiometric resolution).
- Tiled delivery, without overlap, using Project Tiling Scheme.
- Classification Scheme (minimum) as listed in table 1.

Bare-Earth Surface (Raster DEM)
Delivery of a bare-earth DEM is a standard requirement for USGS NGP and Nebraska LiDAR projects. Specific scientific research projects may be exempted from this requirement. Bare-earth surface deliverables include the following items:

- Bare-earth DEM, generated to the limits of the Buffered Project Area.
- Cell size no greater than 2 meters or 6 feet, and no less than the design Nominal Pulse Spacing (NPS).
- Delivery in an industry-standard, GIS-compatible, 32-bit floating point raster format (ERDAS .IMG preferred).
- Delivery of a hydro-enforced, bare-earth DEM is a requirement for Nebraska LiDAR projects. Bare-earth surface deliverables include the following items:
- Bare-earth DEM, generated to the limits of the Buffered Project Area.
- Cell size no greater than 2 meters or 6 feet, and no less than the design Nominal Pulse Spacing (NPS).
- Delivery in an industry-standard, GIS-compatible, 32-bit floating point raster format (ERDAS .IMG preferred).

Table 1. Minimum Classified Point Cloud Classification Scheme.

Code Description
1 Processed, but unclassified
2 Bare-earth ground
7a Noise (low or high; manually identified; if needed)
9 Water
10b Ignored Ground (Breakline proximity)
11 Withheld (if the Withheld bit is not implemented in processing software)

a. Class 7, Noise, is included as an adjunct to the Withheld bit. All noise points are to be identified using one of these two methods.
b. Class 10, Ignored Ground, is for points previously classified as bare-earth but whose proximity to a subsequently added breakline requires that it be excluded during Digital Elevation Model (DEM) generation.
    - Georeference information shall be included in each raster file.
    - Tiled delivery, without overlap.
    - DEM tiles will show no edge artifacts or mismatch. A quilted appearance in the overall project DEM surface, whether caused by differences in processing quality or character between tiles, swaths, lifts, or other non-natural divisions, will be cause for rejection of the entire deliverable.

- Void areas (for example, areas outside the Buffered Project Area but within the tiling scheme) shall be coded using a unique NODATA value. This value shall be identified in the appropriate location within the raster file header or external support files (for example, .aux).
- Vertical accuracy of the bare-earth surface will be assessed and reported in accordance with the guidelines developed by the NDEP and subsequently adopted by the ASPRS. The complete guidelines are in Section 1.5 of the NDEP Guidelines (NDEP, 2004).
- The following thresholds represent the minimum vertical accuracy requirements using the NDEP/ASPRS methodology:
- For LiDAR collected at 1.4 meter NPS:
    - FVA<= 24.5 cm ACCz, 95 percent Confidence Level (12.5 cm RMSEz)
    - CVA<= 36.3 cm, 95th percentile
    - SVA<= 36.3 cm, 95th percentile
- For LiDAR collected at 0.7 meter NPS:
    - FVA<= 18.5 cm ACCz, 95 percent Confidence Level (9.255 cm RMSEz) for LiDAR collected at 0.7M NPS
    - CVA<= 27.7 cm, 95th percentile
    - SVA<= 27.7 cm, 95th percentile
- All QA/QC analysis materials and results are to be delivered to the USGS.
- Depressions (sinks), natural or man-made, are not to be filled (as in hydro-conditioning and hydro-enforcement).
- Water bodies (ponds and lakes), wide streams and rivers (double-line), and other non-tidal water bodies as defined in the section called Hydro-flattening are to be hydro-flattened within the DEM. Hydro-flattening shall be applied to all water impoundments, natural or man-made, that are larger than 2 acres in area (approximately equal to a round pond 350 feet in diameter), to all streams that are nominally wider than 100 feet, and to all non-tidal boundary waters bordering the project area regardless of size. The methodology used for hydro-flattening is at the discretion of the data producer.

Note: Please refer to the section called Hydro-Flattening and appendix 3 for detailed discussions of hydro-flattening.

Breaklines

Breaklines are not required to meet the Nebraska LiDAR standards. Delivery of the breaklines used in hydro-flattening is a standard requirement for USGS NGP LiDAR projects. If LiDAR is collected as part of a USGS NGP LiDAR project and hydro-flattened with breaklines, breakline deliverables include the following items:

- Breaklines shall be developed to the limit of the Buffered Project Area.
- All breaklines developed for use in hydro-flattening shall be delivered as an ESRI feature class (PolylineZ or PolygonZ format, as appropriate to the type of feature represented and the methodology used by the data producer). Shapefile or geodatabase is required.
- Each feature class or shapefile will include properly formatted and accurate georeference information in the standard location. All shapefiles must include a correct and properly formatted *.prj file.
- Breaklines must use the same coordinate reference system (horizontal and vertical) and units as the LiDAR point delivery.
- Breakline delivery may be as a continuous layer or in tiles, at the discretion of the data producer. In the case of tiled deliveries, all features must edge-match exactly across tile boundaries in both the horizontal (*X*-*Y*) and vertical (*Z*) spatial locations.

NITC 3-204
Imagery Standards

Review Version 2
(Date 9.3.2014)

Category: Data and Information Architecture
Applicability: See Each Section of Standards
History: Adopted on [Month Day, Year]

NEBRASKA INFORMATION TECHNOLOGY COMMISSION GIS COUNCIL

TABLE OF CONTENTS

1.0 Standard

1.1 Description

This standard provides requirements necessary for the creation, development, delivery, and maintenance of aerial imagery acquisition to support a statewide Nebraska Imagery Program. There are multiple uses for imagery and data acquisition is expensive and requires preplanning. These standards are set at a minimum such that the majority of applications and needs are met across the state.

It is important to collect ortho-rectified imagery so that ground features can be measured and other data layers can be created from the data source which has a strong relationship to ground control. The data required for ortho-rectification include orientation parameters for the source image(s) and a digital elevation model (DEM) of the geographic area to be covered by the imagery. Ortho-rectification corrects for tip and tilt of the aircraft and displacement in the photograph caused by changes in the ground elevation.

Generally, the development of ortho-rectified imagery requires the acquisition of overlapping photography of the same geography and some combination of surveyed ground control and airborne (Global Positioning System) GPS collection at the time of photography. A photogrammetrist performs image correlation techniques and aero-triangulation on the resulting block of photographs to establish the orientation parameters of the individual image. Using a most recent DEM source or new LiDAR DEM provides the base for which the new imagery is rectified. These operations make ortho-rectified imagery more expensive than uncorrected aerial photography, but also make it far more accurate and useful.

Ultimately, accurate base maps can be derived from ortho-rectified imagery because the image has been geometrically corrected such that the scale is uniform. Streets and roads, curbs, manholes, water edge, tree inventories, fire hydrants, and numerous other features can be accurately mapped from the imagery. This also allows for accurate measurements of features and relationships between features, directly on the photograph.

The standard provides a consistent structure for data producers and users to ensure compatibility of datasets within the same framework layer and when used between other Nebraska Spatial Data Infrastructure (NESDI) framework layers such as survey and geodetic control and LiDAR.

This standard does not restrict or limit additional buy-ups of imagery data and services. These standards are meant to be a minimum set of standards and are subject to be updated based on technology enhancements, necessary workflow changes, and other data requirements. Other imagery data that is available at specifications that are above the minimum standard will be evaluated on a case-by-case basis.

The standard is not intended to be a substitute for an implementation design. These standards can be used at local, state and federal level to ensure interdisciplinary compatibility and interoperability with other framework layers. These standards integrate with existing standards such as the American Society for Photogrammetry and Remote Sensing (ASPRS) and other NITC related standards.

1.2 Acquisition and Processing

1.2.1 Flight Specifications

Proper planning and pre-flight requirements are necessary steps prior to acquiring imagery. This includes consideration of temporal requirements, proper flight planning, and ensuring that the characteristics of the sensors used in acquisition of imagery meet these requirements.

1.2.1.1 Temporal Requirements

Time of Day: Imagery will need to be acquired during minimal shadow conditions. Image acquisition shall occur when the sun angle is equal to or greater than 30-degrees.

Time of Year: All imagery shall be collected during the late-Winter / early-Spring flying season during leaf-off conditions for deciduous vegetation in Nebraska. Exceptions can be made on a case-by-case basis for certain applications requiring leaf-on imagery.

1.2.1.2 Flight Plans

Flight line orientation for all flight lines shall be in a cardinal direction, either north-south or east-west orientation when feasible. Flight plans must be approved prior to imagery acquisition. Information will need to be provided including project boundary, flight line numbers, flight line locations, and recommended ground control locations. If a frame sensor is used, exposure numbers should be included as well. For quality assurance purposes, the vendor shall submit copies of flight logs as part of the preliminary imagery deliverables.

1.2.1.3 Sensor Characteristics

The entire mission in a given year must be flown with sensors having the same specifications. The system shall use square pixels (ground footprint) at all times during processing. The technique of using aggregated detectors resulting in a rectangular pixel before blending with other channels shall not be used. The aerial camera shall be a precision aerial mapping camera equipped with a low distortion, high resolution lens. Camera characteristics shall be such that the aerial photographs taken can be satisfactorily used with the vendor’s proposed photogrammetric compilation equipment and environment. Calibration certificates for all systems to be used for acquisition will need to be provided.

1.2.1.4 Sun Angle

The images should be acquired only during the portion of the day when the sun angle exceeds the minimum of 30 degrees. To expedite acquisition within the photo periods, different sun angles may be permitted, provided the image does not have excessive shadows that preclude interpretation and data collection.

1.2.2 Ground Control

Ground control needs to be established of sufficient density and accuracy to meet the accuracy requirements of the ortho-rectified imagery.

Ground controls points used for aerial triangulation should be at least three times better than the expected accuracy of aerial triangulation solution. For example, in order to produce an orthophoto with an $RMSE_r$ of 15cm, the aerotriangulation results should have an $RMSE_{xyz}$ of 7.5 cm and the ground control used should have $RMSE_{xyz}$ of 2.5 cm. The control shall be sufficient to supplement the airborne GPS and Inertial Measurement Unit (IMU) in order to meet the required product accuracies.

For all photogrammetric data sets, the accuracy of the aerial triangulation or INS orientation (if used for direct orientation of the camera) should be at least twice the accuracy of derived products, as evaluated at higher accuracy check points using stereo photogrammetric measurements. Ground control and blind quality control points shall be required for softcopy aero- triangulation and ortho-photography generation to meet the accuracies specified.

Both ground control and quality control points will be based on a county or project area size depending on the scope of the project to be flown. The control diagrams, indicating the anticipated vertical and horizontal accuracies, will be reviewed before imagery collection begins.

The availability and/or quality of any existing ground control will need to be determined prior to flight acquisition. Any new control established for a project area will be delivered including sketches, pictures of control locations, and an ISO 19115 compliant metadata file. Those responsible for evaluating ground control should not assume that control exists, but it could be beneficial to use existing control if possible.

1.2.2.1 Global Positioning Systems (GPS)

If additional ground control needs to be established, the ground control shall be established with survey grade instrumentation. The GPS control survey needs to be conducted with a licensed surveyor or engineer representing the quality control process. A plan will need to be provided to recommend and coordinate the placement of ground control target locations of a sufficient quantity and size to control the photogrammetric accuracy specifications. Any new ground control established must be tied to the Nebraska NAD83 horizontal datum. All ground control points must be documented as such so that they are easily located by other surveyors throughout the duration of the project.

The horizontal root-mean-square error (RMSE) of the airborne GPS control data shall not exceed 0.2m. The vertical RMSE of the Airborne GPS control shall not exceed 0.3m.

1.2.2.2 Digital Elevation Model (DEM)

Elevation data is necessary for ortho-rectifying imagery. A digital elevation model (DEM) shall be developed at a density level necessary to support the imagery ortho-rectification process.

The elevation data may come from various sources to build a DEM. Elevation data may be derived from LiDAR, photogrammetry or autocorrelation as long as it provides sufficient accuracy and precision to support imagery horizontal accuracy requirements. Preference is to use LiDAR where it is available in the state. The DEM shall consist of points spaced at regular intervals along a grid, points of significant high or low elevations, and ortho-photography specific breaklines at all significant terrain breaks. In cases, where breaklines are not available suitable breaklines will need to be created to support an elevation dataset. It is not necessary to capture break lines at all curbs, ditches, stream banks, or other similar minor terrain breaks. The DEM shall be free of artifacts and data voids. The vertical accuracy of the DEMs developed to support production of the ortho-rectified imagery shall be sufficient to guarantee the horizontal accuracy specified in these standards.

The U.S. Geological Survey's National Elevation Dataset (NED) has 1/3 arc-second digital elevation model (DEM) data. Unless an area is very flat, the NED should not be used for less than 12 inch resolution data where higher accuracy is required.

There is no guarantee that the available DEM will be adequate to meet the final product accuracy specifications. An updated DEM is necessary in order to support the ortho-rectification production specifications and accuracy standards. This may require the acquisition of LiDAR to complete this task.

Updates to the existing DEM need only support the ortho-rectification process and are not required to support contour modeling or other applications. The DEM data is not to be stored as a record (Z component) for each pixel of the ortho-rectified image.

1.2.3 Ground (Spatial) Resolution

The final imagery output needs to be at a minimum of 12 inch ground sample distance (GSD). GSD is referred to as spatial resolution. This orthoimagery should meet ASPRS Class II horizontal accuracy standards for digital Orthoimagery and 1:2,400 Digital Planimetric Data.

A scale that equivalents higher resolutions (i.e., 6 inch) can be acquired as long as it meets the respective scales and horizontal accuracies associated to its desired spatial resolution found in section 1.2.6.

1.2.4 Spectral Resolution

Imagery will need to be provided in four primary spectral bands at 12 bit including Red (R), Green (G) and Blue (B) and Infrared (IR). All color imagery shall be the equivalent of natural true color, to include 256 levels of value for each color band for RGB. The sensor or camera shall save the bands in the following order: Red, Green, Blue, and infrared.

1.2.5 Radiometric Resolution

The digital aerial images shall be clear and sharp in detail and of high radiometric quality. The sensor shall capture the images in an uncompressed “lossless” image format. The

sensor shall, at minimum, utilize 12 bits per pixel radiometric resolution. Up-sampling from a lower bit depth to a higher bit depth is not allowed (e.g. resampling 8 bit data to 12 bit data). Color balancing shall result in colors which appear natural to a human observer. Image contract and brightness shall be adjusted to minimize perceptible differences within and between adjacent images.

1.2.6 Horizontal Accuracy

Horizontal accuracy assessment will be required for both in absolute and relative conditions. The pixel size of the final digital orthoimagery is being considered for this assessment not the GSD of the raw image that is used to establish the horizontal accuracy class.

- Absolute requires the use of ground control points for testing purposes. These points, found in the image and coordinates from the ortho-rectified image, are compared to the published coordinates.
- Relative horizontal accuracy assessment involves the visual inspection of adjacent images for edge matching, and the comparison of the ortho-rectified image to planimetric data. The relative displacement would be quantified.
- Recommendations for achieving the horizontal accuracy assessment shall be provided prior to acquisition including the number of and the distribution of check points within the project. QC points should be included in flight and control layout prior to acquisition.

The final imagery output needs to meet horizontal accuracy requirements established by ASPRS Class II accuracy for a minimum 12 inch GSD as defined in the following table.

Horizontal Data Accuracy Class	**RMSEx and RMSEy**	**Orthophoto Mosaic Seamline Maximum Mismatch**	**Aerial Triangulation or INS-based RMSEx RMSEy and RMSEz**
I	Pixel size x 1.0	Pixel size x 2.0	Pixel size x 0.5
II	Pixel size x 2.0	Pixel size x 4.0	Pixel size x 1.0
III	Pixel size x 3.0	Pixel size x 6.0	Pixel size x 1.5
…			
N	Pixel size x N	Pixel size x 2N	Pixel size x 0.5N

When producing digital orthoimagery, the GSD as acquired by the sensor (and as computed at mean average terrain) should not be more than 95% of the final orthoimagery pixel size. In extremely steep terrain, additional consideration may need to be given to the variation of the GSD across low lying areas in order to ensure that the variation in GSD across the entire image does not significantly exceed the target pixel size.

The following table serves as a guide for three common ASPRS horizontal accuracy standards for planimetric maps intended for use at common map scales.

Orthophoto Pixel Size	Horizontal Data Accuracy Class	RMSEx or RMSEy (cm)	RMSEr (cm)	Orthophoto Mosaic Seamline Maximum Mismatch (cm)	Horizontal Accuracy at the 95% Confidence Level (cm)
7.5-cm (~3 in)	I	7.5	10.6	15.0	18.4
	II	15.0	21.2	30.0	36.7
	III	22.5	31.8	45.0	55.1
15-cm (~6 in)	I	15.0	21.2	30.0	36.7
	II	30.0	42.4	60.0	73.4
	III	45.0	63.6	90.0	110.1
30-cm (~12 in)	I	30.0	42.4	60.0	73.4
	II	60.0	84.9	120.0	146.9
	III	90.0	127.3	180.0	220.3

1.2.7 Projection and Datum

Imagery for the project will be referenced to the North American Datum of 1983 (NAD83) using the 2007 HARN adjustment, and the North American Vertical Datum of 1988 (NAVD 88) with the latest ellipsoid and Geoid09 adjustments. Imagery shall be oriented to the appropriate Nebraska State Plane using U.S. Feet.

1.2.8 Pixel Clarity

Pixel clarity is defined by pixel size and relation to the ground sample distance (GSD) of the specified pixel size. It is not recommended to resample from a coarser image to obtain a finer image resolution. The image can be resampled from a sharper image for a coarser image (i.e., obtaining an 18-inch pixel resolution from one foot).

1.2.9 Image Quality

Images shall be tonally balanced and image mosaics shall be uniform in contrast without abrupt variations between image tiles. Imagery shall be free of blemishes, and artifacts that obscure ground feature detail. Pixel resolution shall not be degraded by excessive image smear. Imagery shall have a tonal range that prevents the clipping of highlights or shadow detail from the image.

1.3.0 Environmental Conditions and Obstructions

To the extent possible, no clouds, snow, fog, haze, smoke, or other ground obscuring conditions shall be present at the time of the flights. Ground conditions are free of snow, flooding and excessive soil moisture. Streams and rivers should be within their normal banks, unless otherwise negotiated. Spectral reflectance from water must be minimized and should not obscure shoreline features. In no case will the maximum cloud cover exceed 5% per image.

1.3.1 Edge Effects

Sufficient end and side laps need to be taken into consideration to prevent any gaps in coverage and to provide all necessary coverage for accurate ortho-rectification and visual

interpretation. The crab shall not be in excess of three (3) degrees; and, tilt of the camera from verticality at the instant of exposure shall not exceed three (3) degrees.

1.3.2 Building Lean

Additional supplemental flight lines should be acquired in areas of tall buildings to limit building lean in city blocks. Recommended supplemental flight lines should be provided in preliminary flight layout for prior review and approval.

1.3 Data Format

The data format provided will need to be in uncompressed tiles in a GeoTIFF format that can be interpreted by commercial imagery and GIS software. Tile schemes will need to be provided at 5,000 feet x 5,000 feet. If mosaic imagery is suggested, the area of interest (AOI) or collection area (i.e., county, quadrangle, city, etc) will need to be provided. The mosaic imagery need to be compressed and provided as JPEG2000 with a compression ratio of 20:1.

1.4 Maintenance

Entities responsible for data acquisition and deliverables will need to assure data meets standards and are updated and maintained in a timely manner. After spatial and attribute updates and/or modifications are performed to the data it shall be submitted to the appropriate entity(s) responsible for performing quality control and maintenance of the data acquisition.

Maintenance of elevation data determines the suitability to support the greatest range of applications. Many projects require up-to-date, accurate and consistent elevation data and maintenance of this data is necessary to provide the maximum return on investment.

1.4.1 Reporting Errors and Handling Updates

The reporting of errors need to be directed to the appropriate entity in a timely manner. Updated spatial and attribute information in the data will also need to be redistributed. The date field in the metadata when the last record was modified will also need to be updated to ensure proper records management and communication with others in the workflow.

1.5 Quality Control

A quality control process is required by a third-party to ensure the delivery of an image product that satisfies the requirements as defined by these standards. The quality of imagery acquisition is evaluated based on the overall functional correctness and completeness of the technical requirements that also include a horizontal accuracy test. In the event that data does not meet specific requirements of these standards, the imagery will be rejected and the vendor will be required to either reacquire or re-process data appropriately to meet these standards.

1.5.1 Horizontal Accuracy Test

A number of check points will need to be collected within each area of interest to verify the horizontal accuracy of the ortho-rectified production process. The check points must be completely independent of ground control used during aero-triangulation and data

production. The recommended number of check points based on the size of area will follow ASPRS guidelines.

1.5.2 Re-Flights

A plan for re-flights of areas will need to be provided in the event of image rejection during the quality control process, or where original imagery could not be collected because weather or ground cover conditions, or other factors outside the control of the vendor precluded collection at the scheduled time of the flyover. Mechanical or technical problems shall not be considered a legitimate reason for non-collection.

1.6 Integration with other Standards

1.6.1 Street Centerline Standards (NITC 3-205)

These minimum standards for imagery acquisition are designed to ensure the acquisition of imagery sufficient to meet the requirements for digitizing street centerlines as required in the Street Centerline Standards NITC 3-205.

1.6.2 Address Standards (NITC 3-206)

These minimum standards for imagery acquisition are designed to ensure the acquisition of imagery sufficient to meet the requirements for digitizing street centerlines as required in the Address Standards NITC 3-206.

1.7 Metadata

Complete and comprehensive metadata is required for the acquired imagery. The metadata will require detailing the characteristics and quality of submitted imagery files. Information needs to be provided to allow the user sufficient information so they can determine the data's intended purpose as well as how to access the data. The metadata requires a process description summarizing collection parameters such as: contact information, data source, scale, accuracy, projection, use restrictions, and imagery acquisition dates. The process description will also need to be included to describe methodology towards the deliverable products.

1.7.1 Federal Metadata

The ISO 19115:2003(E) North American Profile (NAP) Metadata Standards should be used when feasible and in every effort possible to assure high quality rigorous standards. Metadata will need to be supplied for each tile and be provided in an XML format. All imagery datasets, and their associated attribute databases should be documented with ISO 19115 compliant metadata. Supplemental metadata information includes the following: (1) tested horizontal accuracy statement, (2) lineage, including, but not limited to: flight height, photo acquisition dates (and re-flights if any), overlap, sidelap, number of flight lines, number of exposures, direction of flight lines, control, resolution, tiling scheme, file sizes, description of the process used to create digital orthophotos, source of DEM, and (3) spatial reference information: projection, ellipsoid, horizontal and vertical datum, and horizontal and vertical units.

1.7.2 State Metadata

These standards need to apply to Nebraska's metadata standards located within NITC 3-201 Geospatial Metadata Standard. All metadata from imagery files will need to be registered through the metadata portal at NebraskaMAP (http://NebraskaMAP.gov). All developers of Nebraska-related geospatial data are encouraged to use the site to either

upload existing metadata and/or use the online tools available on the site to create the metadata for imagery.

2.0 Purpose and Objectives

2.1 Purpose

The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of aerial imagery data and services to support the Nebraska Spatial Data Infrastructure (NESDI). These standards will help ensure that imagery acquisition is consistent, accurate, publicly accessible, and cost-effective.

2.2 Objectives

These standards will guide the statewide imagery program having the following objectives:

2.2.1 Provide guidance and necessary workflows to state and local officials as they work, either in-house or with private vendors, to create, develop and maintain aerial imagery data and services. This can increase the likelihood that the data created will be suitable for the range of intended applications and likely future applications. The maintenance of aerial imagery data is necessary for the data to be current and accurate.

2.2.2 Enhance coordination and program management across jurisdictional boundaries by insuring that aerial imagery data can be horizontally integrated across jurisdictional and/or project boundaries, and other framework data layers for regional or statewide applications.

2.2.3 Save public resources by facilitating the sharing of aerial imagery data among public agencies or sub-divisions of agencies by incorporating data standards and following guidelines. Data that is developed by one entity can be done in a way that is suitable to serve the multiple needs of other entities. This avoids the costly duplication of developing and maintaining similar data in the state.

2.2.4 Make aerial imagery data current and readily accessible to the wide range of potential users through NebraskaMAP and other necessary resources.

2.2.5 Facilitate harmonious, trans-agency and public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use current aerial imagery data. This can make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

2.2.6 Lay the foundation for facilitating intergovernmental partnerships for the acquisition and development of high-quality aerial imagery data by defining standards that increase the likelihood that this data will meet the needs of multiple users.

2.2.7 Establish and promote the integration and interrelationships of aerial imagery data with related NESDI framework layers through geometric placement and attributes.

3.0 Definitions

Accuracy

Absolute - A measure of the location of features on a map compared to their true position on the face of the earth.

Relative - A measure of the accuracy of individual features on a map when compared to other features on the same map.

Band - A range of wavelengths of electromagnetic radiation.

Check Point – One of the surveyed points in the sample used to estimate the positional accuracy of the data set against an independent source of higher accuracy.

Confidence Level – The percentage of points within a data set that are estimated to meet the stated accuracy; i.e., accuracy reported at the 95% confidence level means that 95% of the positions in the data set will have an error with respect to true ground position that are equal to or smaller than the reported accuracy value.

Datum – A set of values used to define a specific geodetic system.

Digital Elevation Model - A digital cartographic representation of the elevation of the land at regularly spaced intervals in x and y directions, using z-values referenced to a common vertical datum. A DEM also assumes bare-earth terrain, void of vegetation and manmade features. The USGS DEMs archived in the National Elevation Dataset (NED) have different formats based on 1-arc-second, 1/3-arc-second, and 1/9-arc-second grid spacing.

Forward Lap or End Lap - The extent to which sequential exposures in a flight line overlap

Ground Sample Distance (GSD) – The linear dimension of a sample pixel's footprint on the ground. Within these standards GSD is used when referring to the collection GSD of the raw image, assuming near-vertical imagery. The actual GSD of each pixel is not uniform throughout the raw image and varies significantly with terrain height and other factors. The GSD is assumed to be the value computed using the camera focal length and camera height above average mean terrain.

Ground (spatial) resolution or pixel size – As used within these standards, pixel size is the ground size of a pixel in a digital ortho-rectified imagery product, after all rectifications and resampling procedures.

Horizontal Accuracy - The horizontal component of the positional accuracy of a data set with respect to a horizontal datum, defined at the 95% confidence level.

Image Correlation – Directly comparing hardcopy or softcopy images, or patches of pixels on conjugate digital images, or indirectly comparing information derived from the stereo images, to determine that points on stereo images (viewed from different perspectives) represent the same points on the imaged surface. Automated image correlation is a computerized technique to match the similarities of pixels in one digital image with comparable pixels in its digital stereo image in order to automate or semi-automate photogrammetric compilation. Automated image correlation provides an efficient method for generating DEMs photogrammetrically, but automated correlation normally results in Digital Surface Models (DSMs) instead of DEMs because such correlation generates elevations of rooftops, treetops and other surface features as imaged on the stereo photographs.

Inertial Measurement Unit (IMU) - An electronic device that measures and reports velocity, orientation, and gravitational forces, using a combination of accelerometers and gyroscopes, sometimes also magnetometers. IMUs work to detect changes in pitch, roll, and yaw of an aircraft. IMUs are typically used to maneuver aircraft, including unmanned aerial vehicles (UAVs), among many others, and spacecraft, including satellites and landers.

Leaf-Off / Leaf-On - Leaf-off and leaf-on refer to the presence or lack of the foliage of woody species. Leaf-off means that there is no foliage or a reduced amount of foliage on the tree or shrub species. Leaf-on imagery means that there is foliage on the tree or shrub species (or the species of interest). Sometimes it is beneficial to have leaf-off imagery so that you can see ground features more distinctly. This is helpful for mapping features such as buildings and roads, which may be obscured by tree foliage during the growing season. Leaf-off imagery is also used in forestry applications because the lack of leaves on some trees facilitates the classification of tree types. There are times when you might want leaf-on imagery, especially if the tree or shrub species has a distinctive spectral reflectance that can be distinguished from other vegetation. Leaf-on imagery is also used in agricultural applications to measure the quantity and health of crops. Many woody species may have similar spectral reflectance or structure that may benefit from either a leaf-off or leaf-on flyover.

Map or Cartographic Scale - The relationship between a given distance on the ground and the corresponding distance on a photograph or image. Scale is expressed in at least two different ways. Both are ratios. In the first, commonly used measuring systems are compared; for example 1" = 200' (one inch on the map equals 200 feet on the earth). In the second, the map unit is arbitrary; for example, 1:200 means that one of anything (an inch, a foot, a centimeter, etc.) on the map equals 200 of that same unit on the earth. (1"=200' is the same scale as 1:2400). Scale is presented in several ways: as a bar at the bottom of the map, as a ratio (1:200), or as an equation (1"=200').

Nebraska Spatial Data Infrastructure (NESDI) - A framework of geospatial data layers that have multiple applications, used by a vast majority of stakeholders, meet quality standards and have data stewards to maintain and improve the data on an ongoing basis. These layers are also consistent with the Federal National Spatial Data Infrastructure (NSDI).

Ortho-rectification - The process by which a photograph is prepared from a perspective photograph by removing displacements of points caused by tilt, relief and perspective.

Planimetric - Data about non topographic features on the earth surface that are represented only by their horizontal position.

Projection – A map projection flattens the earth, allowing for locations to be systematically assigned new positions so that a curved surface can be represented on a flat map.

Resolution – The smallest unit a sensor can detect or the smallest unit an ortho-rectified image depicts. The degree of fineness to which a measurement can be made.

Root Mean Square Error (RMSE) – The square root of the average of the set of squared differences between data set coordinate values and coordinate values from an independent source of higher accuracy for identical points.

RMSEr – The horizontal linear RMSE in the radial direction that includes both x- and y-coordinate errors.

RMSEx – The horizontal linear RMSE in the X direction (easting).

RMSEy - The horizontal linear RMSE in the Y direction (northing).

RMSEz - The vertical linear RMSE in the Z direction (elevation).

Side Lap **-** The extent to which the exposures of adjacent flight lines overlap, typical side lap for a block of aerial photography is 30%.

State Plane Coordinate System - The State Plane Coordinate System is a set of 124 geographic zones or coordinate systems designed for specific regions of the United States. It uses a simple Cartesian coordinate system to specify locations rather than a more complex spherical coordinate system (the geographic coordinate system of latitude and longitude). By thus ignoring the curvature of the Earth, "plane surveying" methods can be used, speeding up and simplifying calculations. The system is highly accurate within each zone (error less than 1:10,000). Outside a specific state plane zone, accuracy rapidly declines, thus the system is not useful for regional or national mapping.

4.0 Applicability

4.1 State Government Agencies

State agencies that have the primary responsibility for developing and maintaining aerial imagery data for a particular jurisdiction(s) or geographic area (e.g. for counties for which it has assumed the primary role) are required to comply with the standards as described in Section 1. Those state agencies with oversight responsibilities in this area are required to ensure that their oversight guidelines, rules, and regulations are consistent with these standards. The Nebraska Department of Roads has other imagery acquisition requirements for wetland and reconnaissance projects. They will continue to adhere to their independent photogrammetry requirements as suggested in the NDOR On-Call Digital Aerial Photography, Photogrammetric and Airborne LiDAR Services.

4.2 State Funded Entities

Entities that are not State agencies but receive State funding, directly or indirectly, for aerial imagery development and maintenance for a particular jurisdiction or geographic area are required to comply with the standards as described in Section 1.

4.3 Other

Other entities, such as city and local government agencies (e.g. County Engineer, assessors, and municipalities) that receive state funds have the primary responsibility for developing and maintaining aerial imagery data are required to comply with the standards as described in Section 1.

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. Neb. Rev. Stat. § 86-516(6)

5.2 State Agencies

The State of Nebraska, Office of the CIO (OCIO) GIS Shared Services will be responsible for assuring that metadata is completed and the data is registered and available for distribution through NebraskaMAP.

5.3 Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring that these standards are included in requirements related to fund disbursements as they relate to aerial imagery.

5.4 Other

Local government agencies that have the primary responsibility and authority for aerial imagery acquisition will be responsible for ensuring that those sub-sections defined in Section 1 will be incorporated in the overall NSCD data development efforts and contracts.

6.0 Authority

6.1 NITC GIS Council

According to Neb. Rev. Stat. § 86-572(2), the GIS Council shall: Establish guidelines and policies for statewide Geographic Information Systems operations and management (a) The acquisition, development, maintenance, quality assurance such as standards, access, ownership, cost recovery, and priorities of data bases; (b) The compatibility, acquisition, and communications of hardware and software; (c) The assessment of needs, identification of scope, setting of standards, and determination of an appropriate enforcement mechanism; (d) The fostering of training programs and promoting education and information about the Geographic Information Systems; and (e) The promoting of the Geographic Information Systems development in the State of Nebraska and providing or coordinating additional support to address Geographic Information Systems issues as such issues arise.

7.0 Related Documents

7.1 American Society for Photogrammetry and Remote Sensing (ASPRS), ASPRS Accuracy Standards for Digital Geospatial Data (2014).

7.2 FGDC Content Standard for Digital Geospatial Data Version 2 (FGDC-STD-001-1998).

7.3 ISO 19115:2003(E) North American Profile (NAP) Metadata Standards. National Oceanic and Atmospheric Administration (NOAA). January 2012.

NITC 3-205
Street Centerline Standards

Review Version 4.0
(Date 9.3.2014)

Category: Data and Information Architecture
Applicability: See Each Section of Standards
History: Adopted on [Month Day, Year]

NEBRASKA INFORMATION TECHNOLOGY COMMISSION GIS COUNCIL

TABLE OF CONTENTS

1.0 Standard

1.1 Description

This standard provides requirements necessary for the creation, development, delivery, and maintenance of street centerline data to support a statewide Nebraska Street Centerline Database (NSCD). The database provides spatial location of a seamless road network including information tied to that location with appropriate attribute data. The standard provides a consistent structure for data producers and users to ensure compatibility of datasets within the same framework layer and when used between other Nebraska Spatial Data Infrastructure (NESDI) framework layers such as address points, parcels and administrative/political boundaries.

There are multiple uses for street centerline data. These requirements will enable the data to be integrated not only with Next Generation 9-1-1 (NG9-1-1) but with existing state road network databases, routing services, emergency management, and public safety. Furthermore, this standard will serve as a guideline for future maintenance activity data requirements.

This standard does not restrict or limit additional information collected and stored in a particular database. The specific requirements for street naming and road conditions are primarily the responsibility of the local jurisdiction. These standards are meant to be a minimum set of standards and are subject to be updated based on technology enhancements, necessary workflow changes, and other data requirements.

The standard is not intended to be a substitute for an implementation design. These standards can be used at local, state and federal level to ensure interdisciplinary compatibility and interoperability with other databases. These standards integrate with existing standards such as the US Federal Highways, National Emergency Number Association (NENA), U.S. Postal Service (USPS) Addressing Standard, and other NITC related standards.

1.2 Spatial Representation

1.2.1 Geometric Placement

The methodology for proper geometric placement of street centerlines will vary based on the application. Street centerlines can be placed either manually or by calculated placement. The calculated placement of the street centerline is completed by automated software techniques, typically in CAD or GIS. Calculations or manual placement methods can be made from the physical footprint referenced from imagery, LiDAR or from mapping grade GPS.

Providing an adequate seamless street centerline database to support public safety and emergency response is the primary focus and will need to support NG9-1-1 standards identified by NENA.

1.2.2 Data Development

All data will consist of visual and verifiable street centerline with address ranges and other information corresponding to some level of ground control. The geometric placement of street centerlines can be derived from digitizing and using field GPS data collection.

1.2.2.1 Digitizing

The data source used to digitize or place street centerlines must meet the following minimum requirements.

Capture Scale for digitizing: 1:2400
Projection: Nebraska State Plane Coordinate System
Datum: North American Datum of 1983 (NAD83)
Source: Using aerial imagery that meets verified horizontal accuracy requirements for spatial resolution (12 inch minimum), preferably leaf-off. In cases where tree cover or other obstructions are identified in imagery, it will be necessary to conduct field verification of that location with a mapping grade GPS unit. The NAIP imagery therefore does not meet these accuracy standards.

LiDAR can also be used as a guide to support spatial accuracy placement of certain aspects of roads.

Imagery, LiDAR, or other source document that was used to digitize street centerlines that is newly acquired or not made available for public access will need to be provided to entity conducting quality control of the data.

1.2.2.2 Global Positioning Systems (GPS)

The development of street centerlines can be utilized using field observation and data collection techniques using mapping grade stationary and vehicle equipped GPS. Data collected using a mapping grade GPS will need to meet spatial accuracy requirements in section 1.2.3. Additional post processing of GPS data may be necessary to meet these spatial requirements.

1.2.3 Spatial Accuracy

1.2.3.1 Minimum Horizontal Accuracy Standard

Data that has been collected through digitization or visual representation methods must have an accuracy level of 3.28 to 9.84 feet (1-3 meters) or better.

When using mapping grade GPS, data will need to be collected at 3.28 feet (1 meter) or better. Additional requirements and suggestions for acquiring data by field GPS is located in the NENA GIS Data Collection and Maintenance Standards.

1.2.3.2 Minimum Vertical Accuracy Standard

There are no vertical accuracy requirements at this time.

1.2.4 Feature Type and Tables

1.2.4.1 Lines (Polylines)

A line represents the estimated center of a street or road and is not the legal right of way. Attribute data consists of four address range fields representing low to high on odd and even side of road segments necessary for geocoding. Address range values represent the actual address ranges for the line segment and stored in the feature attribute table of the data set.

1.2.4.2 Centerline Points

These are points used to create and reference particular information on street centerlines useful for assisting topology, addressing, and routing. These include point features considered as nodes to represent intersections, changes in street names, crossings, bridges, and jurisdictional boundary changes. Corresponding attribute information tied to each point is further defined in Section 1.3.6 Data Schema and Descriptions.

1.2.4.3 Tables

Corresponding tables for representing alternative street names can be further represented in tabular format. See Section 1.3.6 Data Schema and Descriptions for description on information for tables.

1.2.5 Projection and Datum

For data to be made available for NG9-1-1 operations, the data will need to be in a geographic coordinate system and not projected. This is necessary for the Emergency Call Routing Function (ECRF) or the Location Validation Function (LVF) uses for display.

EPSG:	4326 WGS84 / Latlong
Projection:	Geographic Coordinates, Plate Carrée, Equidistant Cylindrical, Equirectangular
Latitude of the origin:	0°
Longitude of the origin:	0°
Scaling factor:	1
False easting:	0°
False northing:	0°
Ellipsoid:	WGS84
Horizontal Datum:	WGS84
Vertical Datum:	WGS84 Geoid
Units:	decimal degrees
Global extent:	-180, -90, 180, 90

The NSCD will also be projected and delivered in Nebraska (State) Plane Coordinate System projection and datum for North American Datum of 1983 (NAD83). The plane coordinate values for a point on the earth's surface should be expressed in feet. The data will also be made available as Web Mercator with WGS 1984 horizontal datum for use among other needed web services.

1.3 Address Attributes

1.3.1 General Address Components

There are several components that make up a street address. Many are required to accurately define a specific address and location. When an address is matched against other address database files or for the purpose of generating an address it must be broken down into the individual components separated by a single space between the components. These standards follow the FGDC United State Thoroughfare, Landmark and Postal Address Data standard for address components. The minimum components required to accurately define an address are:

Primary Address Number:	123
Prefix Directional Street:	W
Street Name:	Main

Street Type:	ST
Street Direction:	NW
Unit Address Identifiers:	STE
Unit Number:	5
City:	Lincoln
State:	NE
Zip Code:	68509

Not all of the elements are required to be filled out for an address to be valid. However, the placeholders need to be present in the attribute table to accurately represent the accepted USPS standards. The USPS uses a parsing logic to enter address information into their appropriate fields. When parsing an address into the individual components, start from the right element of the address and work toward the left. Place each element in the appropriate field until all address components are isolated. This process facilitates matching files and produces the correct format for standardized output as well as isolating the mismatches to the closest possible fit before failing.

Associated attributes pertain to formatting and storing of address data within attribute tables that are external to and associated with feature attribute tables of geospatial datasets. For example, a city's master address database could be associated with and address matched against a city-wide geospatial dataset of points.

Each jurisdiction shall develop a master address database that can be referenced when new street names are being created or assigned so that duplications are avoided. All street names and address numbers shall be kept consistent with geospatial datasets.

1.3.2 Unique Identification Code

A unique identifier is required for the statewide street centerline database. This unique identifier allows the data to be tied or joined to other spatial data sets having the same identifier. The field name for this unique code in NSCD is "NEStreetID."

1.3.3 Directional Prefixes and Suffixes

The street address directional prefixes and suffixes shall always be abbreviated and capitalized, and shall not include periods. For example, North should be abbreviated as N. A complete set of directional prefix and suffix abbreviations are listed in Appendix 8.1.

1.3.4 Street Name

The NENA and FGDC United State Thoroughfare, Landmark and Postal Address Data standards will be followed for numbering streets. Street names will use capital and lower case letters. Street names should not be abbreviated unless it is common practice. For example, Doctor (DR) or Junior (JR) could be abbreviated.

Numeric streets shall be written using numbers rather than spelled out. For example, using "1^{ST}" rather than "FIRST". The numeric street names should use "TH", "RD", "ST" or "ND" characters as part of the street name.

Vanity street names and numbers shall not be used as the primary street name or address range component.

For classifying new street names, a standard method of assigning numeric and character street names shall be developed and adopted for a jurisdiction. The primary objective is to establish a grid within each jurisdiction regardless of the detailed pattern of the individual grid. Streets that run primarily east and west would use a numeric street name

grid, while those that run primarily north and south would be based on names from a master street name grid, or vice versa. The spacing of numeric street names should be based on a standard increment. A numeric street name should not be used outside of its proper location and sequence as established by the grid. The spacing of character streets should be based on a similar pattern. A character street name that is part of the grid should not be used outside of its proper location and sequence as established by the grid.

1.3.5 Street Type

Street type is signified by Street (ST), Boulevard (BLVD), Court (CT), and Road (RD) to give you an example. A complete set of street type domains are listed in Appendix 8.1. Each street address will have only one street type based on a logical pattern of street types. The street type names used follow USPS Postal Addressing Standards Publication 28 and other standards through the NENA Civic Location Data Exchange Format (CLDXF). An exception to this rule would be where two streets in the same area have the same name (e.g., Destination Dr and Destination Ct).

1.3.6 Odd/Even Numbering (Address Parity)

Parity shall remain consistent within the system adopted by the local jurisdiction. Address ranges are sets of numbers, usually comprised of four (4) distinct values, representing a range of addresses along the sides of the street centerlines by addresses at either end of a street centerline segment. Two numbers of the range represent the lowest addresses, and the other two represent the highest. The numbers are further distinguished as being on either the left or the right side of the segment. In topological terms, the lower numbers are associates with the FROM node of the segment, while the high numbers are associated with the TO node. Likewise, left and right are determined by the direction of the segment, as defined by the FROM and TO nodes. Topology is critical when a set of addressed centerlines are developed. Implementation of the address parity (e.g., odd versus even) is usually determined by the addressing software.

1.3.7 Sequential Direction

Address ranges shall increase as you travel in the direction adopted by the jurisdiction. The direction of each line segment shall follow the sequence direction of the address ranges. Typically this is accomplished by controlling from-node and to-node topology. One-way streets are NOT an exception to this rule. Curvilinear streets may violate this standard for short stretches provided that they are in compliance with respect to the general direction of the full street segment. Where compliance with this standard is difficult or impossible, it may warrant considering a change in the street name at the point where it changes direction.

1.3.8 Consistency with Distance-Based Address Grid

Depending on the preference of the jurisdiction there must be a defined standard interval based grid system. Whether it is hundred blocks as in a city, a potential 1000 addresses per mile, (a possible address every 5.28 feet), or another variation the jurisdictions accepted standards should be adhered to as close as possible. In rural areas addresses can be assigned based on the distance south or west from the nearest section line. This standard is particularly useful in areas that are largely undeveloped (and thus don't have many cross streets) or in areas that have existing streets that are not in the standard street name grid. This standard should generally be considered to be less important, however, than staying consistent with the address designations of cross streets.

1.3.9 Use of Characters

Street addresses shall not contain characters such as hyphens, dashes, +, #, & or other non-alpha-characters or symbols. An alpha-character added to the address as a sub-number is preferable to a fraction (e.g., 123 A is preferable to 123 1/2).

1.3.10 Data Schema and Descriptions

The following are feature layers necessary for a comprehensive street centerline database. The data schema and descriptions table is provided for each of the features. Each table provides the minimum requirements for each feature type.

Feature	Type	Description
Street Centerlines	Line Layer	Contains street centerline segments
Alternate Street Names	Table/Value	Contains alternate street names
Centerline Points	Point Layer	Point locations used to create road centerlines and assisting with topology, addressing, and routing.

Street Centerlines

The minimum required fields for these standards are represented by the following identifiers: "**R**" – required, "**RC**" –Recommended, and "**O**" – Optional.

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
NEStreetID	Number	20	Unique ID of corresponding street centerline segment	N/A	R
PreModifier	String	15	Prefix directional component of segment name	PreModifier	R
PreDirectional	String	2	A street direction that precedes the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PreType	String	20	A street type that precedes the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
StreetName	String	30	Legal authoritative street name component of segment name	N/A	R
PostType	String	4	A street type that follows the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
PostDirectional	String	2	A street direction that follows the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PostModifier	String	12	A descriptor that follows the street name and is not a suffix or a direction (i.e., Access,	PostModifier	R

			Central, Crossover, Scenic, Terminal, Underpass)		
LFrom	Number	6	Left low address range	N/A	R
LTo	Number	6	Left high address range	N/A	R
RFrom	Number	6	Right low address range	N/A	R
RTo	Number	6	Right high address range	N/A	R
ParityLeft	String	1	Parity of address range on the left side of the road. E, O, B, Z for even, Odd, Both or Zero.	N/A	R
ParityRight	String	1	Parity of address range on the right side of the road. E, O, B, Z for even, Odd, Both or Zero.	N/A	R
LCityPostal	String	7	5-digit postal code on the left side of the road segment.	N/A	R
RCityPostal	String	7	5-digit postal code on the right side of the road segment.	N/A	R
FIPS_LCity	String	5	City FIPS code of left side of segment	N/A	R
FIPS_RCity	String	5	City FIPS code of right side of segment	N/A	R
FIPS_LCOUNTY	String	3	County FIPS code of left side of segment	CountyFIPS	R
FIPS_RCOUNTY	String	3	County FIPS code of right side of segment	CountyFIPS	R
FIPS_LSTATE	String	2	State FIPS code for left side of segment	StateFIPS	R
FIPS_RSTATE	String	2	State FIPS code for right side of segment	StateFIPS	R
ESNLeft	String	5	Emergency Service Number on left side of road segment	N/A	R
ESNRight	String	5	Emergency Service Number on right side of road segment	N/A	R
MSAGLeft	String	30	MSAG on left side of road segment	N/A	R
MSAGRight	String	30	MSAG on right side of road segment	N/A	R
StreetOwner	String	25	Current local entity responsible for creation of physical street segment	N/A	R
StreetMaint	String	25	Current local entity responsible for maintenance of street segment data	N/A	R
Create_DT	Date	26	Date/time stamp when data was first created	N/A	R

Update_DT	Date	26	Date/time stamp when data segment geometry/attribution last modified	N/A	R
SourceOfData	String	30	Entity that provided the data	N/A	R
Street_Status_CD	String	1	Status code indicating operational condition of street (1=open, 2=retired, 3=temporarily closed, 4=under construction)	StreetStatus	O
Interstate_Num	Number	2	Interstate Highway number of road segment, if appropriate	N/A	RC
US_Hwy_Num	Number	2	US Highway number of road segment, if appropriate	N/A	RC
State_Hwy_Num	Number	2	State Highway number of road segment, if appropriate	N/A	RC
Local_Rd_Num	Number	2	Local road number of road segment, if appropriate	N/A	RC
Alias1*	String	50	Alias name of road segment	N/A	RC
LZIP	String	10	Area descriptor to aid in geocoding, left side of centerline	N/A	R
RZIP	String	10	Area descriptor to aid in geocoding, right side of centerline	N/A	R
LOCAL_FUNC_CLASS	String	2	Functional Class assigned by road owner with possible suggestions guidelines for possible local classification schema	N/A	RC
STATE_FUNC_CLASS	String	2	Functional Class with classification schema define by standards TWG	N/A	RC
LRS_ID	String	20	ID associated to the road segment found in the NDOR Linear Referencing System	N/A	R
Length	Number	12	Calculated length in US Survey Feet	N/A	R
SpeedLimit	Number	2	The speed limit of the road segment in miles per hour (mph)	N/A	R

*Can have multiple Alias numbers relationship table to infinite number.

Alternate Street Names

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
NEStreetID	Number	20	Unique ID of corresponding street	N/A	R

			centerline segment		
PreModifier	Alpha	15	Alternate street prefix type	PreModifier	R
AltStreetName	Alpha	30	Alternate street name. Example: Main, 2nd, Country Creek, Third	N/A	R
PostType	String	4	A street type that follows the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
PostDirectional	Alpha	2	Alternate street directional suffice. Example: N, S, E, W, NW, NE, SW, and SE	Direction	R
ASN	Alpha	75	Concatenated Alternate Street Name (STR_PRE+STR_NAME+STR_TYPE+STR_DIR)	N/A	O

Centerline Points

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
Unique_ID	Number	9	Framework unique sequential identifier (generated by Framework data steward)	N/A	O
CPType	String	20	Type of point or node (intersection, bridge, railroad crossing, low water crossing, under pass, over pass, change of lane, change of street name in linear path)	N/A	O
X_COORD	Number	15	Points X coordinate	N/A	O
Y_COORD	Number	15	Points Y coordinate	N/A	O
Z_COORD	Number	6	Points Z elevation coordinate in feet	N/A	O
Agree_PT_IND	String	7	Indicator if point is or is not an agreement point.	AgreePoint	O
Create_DT	Date	26	Date/time stamp when that point geometry/attribution was first created	N/A	O
Update_DT	Date	26	Date/time stamp when geometry/attribution last modified	N/A	O
Status_CD	String	1	Code indicating operational condition of road segment point	N/A	O
Local_ID	Number	9	Local road centerline segment feature identifier, unique and permanent to the segment at the local level (generated by road authority/data custodian)	N/A	O

1.4 Data Format

The data format provided will need to be in an Esri enterprise geodatabase format that can be interpreted by commercial GIS software. A geodatabase schema including domains can be provided by contacting the State of Nebraska, Office of the CIO GIS Shared Services.

Tabular data will need to be provided in MS ACCESS, DBF, or MS SQL formats.

1.5 Maintenance

Authorities need to be identified for approval and assuring the data is implemented towards the database. This will ensure that the database is updated and maintained in a timely manner. After spatial and attribute updates and/or modifications are performed to the database it shall be submitted to the appropriate entity(s) responsible for performing quality control.

Maintenance of street centerline data determines the suitability to support the greatest range of applications. Spatial location of a seamless road network, including appropriate attribute data, is essential for many projects. Therefore, maintenance of this data is necessary to provide the maximum return on investment.

1.5.1 Reporting Errors and Handling Updates

The reporting of errors need to be directed to the appropriate entity in a timely manner. Updated spatial and attribute information in the database will also need to be redistributed. The date field in the database when the last record was modified will also need to be updated to ensure proper records management and communication with others in the workflow.

1.6 Quality Control

The quality of the NSCD is evaluated based on the overall functional correctness and completeness of the attribute and spatial data. The FGDC and NENA have adopted nationally recognized standards for accuracy testing of GIS data. NENA recommends that street centerline address data for use in data exchanges associated with NG-911 call processing be based on the FGDC compliant database. Refer to the FGDC United State Thoroughfare, Landmark and Postal Address Data standard and the NENA Civic Location Data Exchange Format (CLDXF) Standard for these data exchange standards.

1.6.1 Attribute Accuracy

a) Attribute fields are complete compared to source data having valid data elements, domain or range values.
b) Correct spelling in comparison of source data.
c) Standard first letter capitalized of every word and USPS capitalization of the State abbreviation.
d) Not to contain duplicate road segments, each road segment should be uniquely identifiable by the attributes.
e) Assure that the address range and information on the left or right of the street centerline are consistently either odd or even addresses.
f) For NG9-1-1 applications, the address ranges need to qualify and meet certain thresholds for the MSAG and ALI databases. For MSAG and ALI databases, the address for each point will need to be valid at a rate of 98 percent or better. For areas without an MSAG, the addresses will meet USPS Publication 28 standards. For the ALI database, this is determined by geocoding the addresses in the ALI database to the road layer with addresses developed for that area. Overall, the address data is consistent with source information from MSAG and ALI.

g) The correct formatting of street centerline attributes are used in these standards and are also included in the NENA standards and abbreviations as they are found in USPS Publication 28.
h) The temporal quality is met by being current through updating appropriate attributes and indicating the time the changes were made in the date updated field. Street centerlines that change due to add-on's from new construction or changes to the existing road structures will need to be updated frequently.
i) Quality checks for allowable domain values, summary statistics and record counts.

1.6.2 Physical Location

The quality of the physical location will be evaluated based on:
a) The placement of the street centerline representing it's real location and if it meets horizontal accuracy requirements. The National Standard for Spatial Data Accuracy (NSSDA) outlines a methodology for measuring positional accuracy. If additional testing is required, the NSSDA procedures outline the statistical procedures.
b) The geometric placement of the street centerline is consistently logical to the context of other features such as parcels and administrative/political boundaries.

1.6.3 Connectivity Validation (99% acceptance required with 1 foot tolerance)

a) Undershoots - Condition when the end of a linear geometry falls short of intersecting with another linear geometry
b) Overshoots - Condition when the end of a linear geometry extends beyond the point at which it should intersect and stop at another linear geometry
c) Node Mismatch - Condition when the end of a linear geometry falls short of intersecting with the end of another linear geometry
d) Non-coincident Intersecting Geometry - Condition when features intersect one another without creating corresponding vertices at the intersecting points
e) Nearly Coincident Geometry - Condition when a vertex of one geometry falls within the tolerance of a vertex of another geometry

1.6.4 Linear Referencing System (LRS) Validation (99% acceptance required)

a) Missing LRS Keys - Condition when records are missing required LRS keys: NLF_ID, Begin measure and/or End Measure
b) Begin Distance >= End Distance - Condition when begin distance measure greater than or equal to end distance measure
c) Overlapping Distances - Condition when records have the same NLF_ID and that contain overlapping distances between the end measure of one record and the begin measure of another record
d) Linear Measure/Geometry Ratio - Condition when the user-defined linear measure (end distance minus begin distance) compared to the measured map distance for each records exceeds specified tolerance (90-120 percent)
e) Geometry sequence/direction problems - Condition when the digitized direction of geometry is not consistent with direction of increasing measures.
f) Gaps between geometries - Condition when gaps exist between geometry of records with the same NLF_ID exceed specified tolerance (10 ft.).

1.7 Integration with other Standards

1.7.1 Address Standards (NITC 3-206)

The street centerline and address elements identified in these standards shall meet the same address related field names found in the Address Standards NITC 3-206. This is to

assure the connection of street addresses and routing to address points having the same address information.

1.8 Metadata

A requirement for street centerline and address range data is creating and maintaining its metadata. The metadata for street centerline data will require detailing the characteristics and quality of submitted street centerline data. Information needs to be provided to allow the user sufficient information so they can determine the data's intended purpose as well as how to access the data. The metadata requires a process description summarizing collection parameters such as: contact information, data source, scale, accuracy, projection, use restrictions, and date associated to each street centerline segment. The process description will also need to be included to describe methodology towards the deliverable products.

1.8.1 Federal Metadata

The Federal Metadata Content Standard from FGDC should be used when feasible and in every effort possible to assure high quality rigorous standards. All geospatial street centerline geodatabases, and their associated attribute databases should be documented with FGDC compliant metadata outlining how the data was derived, attribute field definitions and values, map projections, appropriate map scale, contact information, access and use restrictions, to name a few.

1.8.2 State Metadata

These standards need to apply to Nebraska's metadata standards located within NITC 3-201 Geospatial Metadata Standard. All metadata from street centerline data will need to be registered through the metadata portal at NebraskaMAP (http://NebraskaMAP.gov). All developers of Nebraska-related geospatial data are encouraged to use the site to either upload existing metadata and/or use the online tools available on the site to create the metadata for street centerline data.

2.0 Purpose and Objectives

2.1 Purpose

The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of street centerline and address range data to support a statewide NSCD. These standards will help ensure that street centerline and address range data creation and development are current, consistent, accurate, publicly accessible, and cost-effective.

2.2 Objectives

These standards will guide the statewide NSCD having the following objectives:

2.2.1 Provide guidance, street centerline schema, and necessary workflows to state and local officials as they work, either in-house or with private contractors, to create, develop and maintain street centerline and address range data. This can increase the likelihood that the data created will be suitable for the range of intended applications and likely future applications. The maintenance of street centerline and address range data is necessary for the data to be current and accurate.

2.2.2 Enhance coordination and program management across jurisdictional boundaries by insuring that street centerline and address range data can be horizontally integrated across jurisdictional and/or project boundaries, and other framework data layers for

regional or statewide applications.

2.2.3 Save public resources by facilitating the sharing of street centerline and address range data among public agencies or sub-divisions of agencies by incorporating data standards and following guidelines. Data that is developed by one entity can be done in a way that is suitable to serve the multiple needs of other entities. This avoids the costly duplication of developing and maintaining similar street centerline and address range data in the state.

2.2.4 Make street centerline and address range data current and readily accessible to the wide range of potential users through NebraskaMAP and other necessary resources.

2.2.5 Facilitate harmonious, trans-agency and public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use current street centerline and address range data. This can make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

2.2.6 Lay the foundation for facilitating intergovernmental partnerships for the acquisition and development of high-quality street centerline and address range data by defining standards that increase the likelihood that this data will meet the needs of multiple users.

2.2.7 Establish and promote the integration and interrelationships of street centerline and address range data with related NESDI framework layers through geometric placement and attributes.

3.0 Definitions

Accuracy

Absolute - A measure of the location of features on a map compared to their true position on the face of the earth.

Relative - A measure of the accuracy of individual features on a map when compared to other features on the same map.

Address

Actual or Real - The simple, everyday element that designates a specific, situs location, such as a house number or an office suite.

Range - Numbers associated with segments of a digital street centerline file that represent the actual high and low addresses at either end of each segment.

Theoretical - A location that can be interpolated along a street centerline file through geocoding software.

Vanity - A special address that is inconsistent with or an exception to the standard addressing schema.

Address matching – See Geocoding

Automatic Location Identification (ALI) - The automatic display at the PSAP of the caller's phone number, the address/location of the telephone and supplementary emergency services information of the location from which a call originates.

Attribute - Attributes are the properties and characteristics of entities.

Data Stewardship – Entity(s) responsible for developing and maintaining the data.

Datum – A set of values used to define a specific geodetic system.

Emergency Call Routing Function (ECRF) - A functional element in an ESInet which is a LoST protocol server where location information (either civic address or geo-coordinates) and a Service URN serve as input to a mapping function that returns a URI used to route an emergency call toward the appropriate PSAP for the caller's location or towards a responder agency.

Entity - A data entity is any object about which an organization chooses to collect data.

Geocoding – A mechanism for building a database relationship between addresses and geospatial features. When an address is matched to the geospatial features, geographic coordinates are assigned to the address.

Line - A linear feature built of straight line segments made up of two or more coordinates.

Location Validation Function (LVF) - A real time database that allows authorized service providers to validate a subscriber's location in real time using a pre-defined interface.

Master Street Address Guide (MSAG) - A listing of streets and house number hich describes the exact spelling of streets, street number ranges, and other address elements.

National Emergency Number Association (NENA) – A professional association consisting of emergency number agencies and telephone company personnel responsible for the planning, implementation, establishing national standards, management, and administration of emergency number systems.

Nebraska Spatial Data Infrastructure (NESDI) - A framework of geospatial data layers that have multiple applications, used by a vast majority of stakeholders, meet quality standards and have data stewards to maintain and improve the data on an ongoing basis. These layers are also consistent with the Federal National Spatial Data Infrastructure (NSDI).

Point - A geospatial feature that is stored as a single X-Y coordinate pair. Some data systems store X-Y-Z coordinates, where Z represents elevation of the point above a given surface (or datum).

Projection – A map projection flattens the earth, allowing for locations to by systematically assigned new positions so that a curved surface can be represented on a flat map

Public Safety Answering Point (PSAP) - An entity operating under common management which receives 9-1-1 calls from a defined geographic area and processes those calls according to a specific operational policy.

Road - Generally, this is the physical real-world feature that can be used for vehicular travel. However, this general definition is subject to the road owner's authority to define its accessibility (thus, while navigable by a vehicle, some linear features may be "trails" and thus excluded from the ORCDS). The federal definition used by ODOT for their purposes is appended below.

State Plane Coordinate System - The State Plane Coordinate System is a set of 124 geographic zones or coordinate systems designed for specific regions of the United States. It uses a simple Cartesian coordinate system to specify locations rather than a more complex spherical coordinate system (the geographic coordinate system of latitude and longitude). By thus ignoring the curvature of the Earth, "plane surveying" methods can be used, speeding up and simplifying calculations. The system is highly accurate within each zone (error less than 1:10,000). Outside a specific state plane zone, accuracy rapidly declines, thus the system is not useful for regional or national mapping

Topology – Spatial relationships and connectivity among graphic GIS features, such as points, lines and polygons. These relationships allow display and analysis of “intelligent” data in GIS. Many topological structures incorporate begin and end relationships, direction and right / left identification

Unique Identification Code - Every element is assigned an identification code, making it unique from other elements.

USGS United States Geological Survey - is a scientific agency of the United States government. The scientists of the USGS study the landscape of the United States and its natural resources.

4.0 Applicability

4.1 State Government Agencies

State agencies that have the primary responsibility for developing and maintaining street centerline and address range data for a particular jurisdiction(s) or geographic area (e.g. for counties for which it has assumed the primary role) are required to comply with the standards as described in Section 1. Those state agencies with oversight responsibilities in this area are required to ensure that their oversight guidelines, rules, and regulations are consistent with these standards.

4.2 State Funded Entities

Entities that are not State agencies but receive State funding, directly or indirectly, for street centerline, street naming, and address range development and maintenance for a particular jurisdiction or geographic area are required to comply with the standards as described in Section 1.

4.3 Other

Other entities, such as city and local government agencies (e.g. County Engineer, PSAPs, and municipalities) that receive state funds have the primary responsibility for developing and maintaining street centerline, street naming, and address range data are required to comply with the standards as described in Section 1.

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. Neb. Rev. Stat. § 86-516(6)

5.2 State Agencies

The State of Nebraska, Office of the CIO (OCIO) GIS Shared Services will be responsible for assuring that metadata is completed and the data is registered and available for distribution through NebraskaMAP.

5.3 Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring that these standards are included in requirements related to fund disbursements as they relate to street centerlines and address range data.

5.4 Other

Local government agencies that have the primary responsibility and authority for street naming and street centerline placement will be responsible for ensuring that those sub-sections defined in Section 1 will be incorporated in the overall NSCD data development efforts and contracts.

6.0 Authority

6.1 NITC GIS Council

According to Neb. Rev. Stat. § 86-572(2), the GIS Council shall: Establish guidelines and policies for statewide Geographic Information Systems operations and management (a) The acquisition, development, maintenance, quality assurance such as standards, access, ownership, cost recovery, and priorities of data bases; (b) The compatibility, acquisition, and communications of hardware and software; (c) The assessment of needs, identification of scope, setting of standards, and determination of an appropriate enforcement mechanism; (d) The fostering of training programs and promoting education and information about the Geographic Information Systems; and (e) The promoting of the Geographic Information Systems development in the State of Nebraska and providing or coordinating additional support to address Geographic Information Systems issues as such issues arise.

7.0 Related Documents

7.1 NENA."NENA Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard." NENA-STA-004. March 23, 2014. NENA Joint Data Technical/Next Generation Integration Committees, Next Generation Data Development Working Group.

7.2 National Emergency Number Association. “NENA Standard for NG9-1-1 GIS Data Model.”NENA-STA-XXX (Currently in Development),

7.3 NENA GIS Data Collection and Maintenance Standards, NENA 02-014, July 17, 2007

7.4 NENA Information Document for Synchronizing Geographic Information System databases with MSAG & ALI, NENA 71-501, Version 1.1, September 8, 2009

7.5 Federal Geographic Data Committee (FGDC) United States Thoroughfare, Landmark and Postal Address Data Standard. FGDC Document Number FGDC-STD-016-2011. February 2011.

7.6 NITC 3-201 Geospatial Metadata Standard – http://nitc.ne.gov/standards/3-201.html

7.7 NITC 3-206 Address Standards (Waiting Review and Approval)

7.8 United States Postal Service Publication 28. “Postal Addressing Standards.”

8.0 Appendices

8.1 Domains

Domains are provided for street centerline, alternate street names, and centerline points. This information provides consistency in reporting of data across multiple data sets.

SuffixAddressNumber

Domain	Description
A	A
B	B
C	C
D	D
E	E
F	F
G	G
H	H
I	I
J	J
K	K
L	L
M	M
N	N
O	O
P	P
Q	Q
R	R
S	S
T	T
U	U
V	V
W	W
X	X
Y	Y
Z	Z

PreModifier

Domain	Description
Alternate	Alternate
Archway	Archway
Behind	Behind
Business	Business
Bypass	Bypass
Center	Center
De	De
Del	Del
Drive	Drive
Entrance	Entrance
Extended	Extended
Head	Head
Historic	Historic
La	La
Le	Le
Loop	Loop
New	New
Old	Old
Olde	Olde
Our	Our
Out	Out
Private	Private
Public	Public
Spur	Spur
The	The
To	To

Direction

Domain	Description
N	North
S	South
E	East
W	West
NE	Northeast
NW	Northwest
SE	Southeast
SW	Southwest

SeperatorElement

Domain	Description
And	And
At	At
By The	By The
Con	Con
De Las	De Las
For	For
For The	For The
In The	In The
Of	Of
Of The	Of The
On The	On The
The	The
To	To
Y	Y

PostModifier

Domain	Description
Access	Access
Alternate	Alternate
Approach	Approach
Business	Business
Bypass	Bypass
Center	Center
Central	Central
Centre	Centre
Company	Company
Concourse	Concourse
Connector	Connector
Crossing	Crossing
Crossover	Crossover
Cut Off	Cut Off
Cutoff	Cutoff
Dock	Dock
End	End
Entrance	Entrance
Executive	Executive
Exit	Exit
Extended	Extended
Extension	Extension
Industrial	Industrial
Interior	Interior
Loop	Loop
Overpass	Overpass
Private	Private
Public	Public
Ramp	Ramp
Scenic	Scenic
Service	Service
Spur	Spur
Terminal	Terminal
Transverse	Transverse
Underpass	Underpass

State

Domain	Description
NE	Nebraska
CO	Colorado
WY	Wyoming
SD	South Dakota
IA	Iowa
MO	Missouri
KS	Kansas

StateFIPS

Domain	Description
31	Nebraska
08	Colorado
56	Wyoming
46	South Dakota
19	Iowa
28	Missouri
20	Kansas

StreetSource

Domain	Description
PSC	Public Service Commission street centerlines
CountySC	County street centerlines
MunicipalSC	Municipal street centerlines
StateSC	State street centerlines
Other	Other

StreetStatus

Domain	Description
1	Open
2	Retired
3	Temporarily closed
4	Under Construction

StreetType (for both PreType and PostType) Additional commonly used street suffixes and abbreviations are located within the USPS Publication 28.

Domain	Description
Acrs	Acres
Aly	Alley
Anx	Annex
Arc	Arcade
Ave	Avenue
Bay	Bay
Bch	Beach
Bg	Burg
Bgs	Burgs
Blf	Bluff
Blfs	Bluffs
Blvd	Boulevard
Bnd	Bend
Br	Branch
Brg	Bridge
Brk	Brook
Brks	Brooks
Btm	Bottom
Byp	Bypass
Byu	Bayou
Chas	Chase
Cir	Circle
Cirs	Circles
Clb	Club
Clf	Cliff
Clfs	Cliffs
Clos	Close
Cmn	Common
Cmns	Commons
Cnrs	Corners
Cor	Corner
Cors	Corners
County Hwy	County Road
County Rte	County Touring Route
Cp	Camp
Cpe	Cape

StreetType, continued	
Cres	Crescent
Crk	Creek
Crse	Course
Crst	Crest
Cswy	Causeway
Ct	Court
Ctr	Center
Ctrs	Centers
Cts	Courts
Curv	Curve
Cv	Cove
Cvs	Coves
Cyn	Canyon
Dl	Dale
Dm	Dam
Dr	Drive
Drs	Drives
Drwy	Driveway
Dv	Divide
End	End
Est	Estate
Ests	Estates
Expy	Expressway
Ext	Extension
Exts	Extensions
Fall	Fall
Farm	Farm
Fld	Field
Flds	Fields
Fls	Falls
Flt	Flat
Flts	Flats
Frd	Ford
Frds	Fords
Frg	Forge
Frgs	Forges
Frk	Fork
Frks	Forks
Frst	Forest
Fry	Ferry
Ft	Fort
Fwy	Freeway
Gate	Gate
Gdn	Garden
Gdns	Gardens
Gln	Glen
Glns	Glens
Grds	Grounds
Grn	Green
Grns	Greens
Grv	Grove
Grvs	Groves
Gtwy	Gateway
Hbr	Harbor
Hbrs	Harbors
Hl	Hill
Hls	Hills
Holw	Hollow
Hrbr	Harbor
Hts	Heights
Hvn	Haven
Hwy	Highway
I	Interstate
Inlt	Inlet
Is	Island
Isle	Isle
Iss	Islands
Jct	Junction
Jcts	Junctions
Knl	Knoll
Knls	Knolls
Ky	Key
Kys	Keys
Land	Land
Lck	Lock
Lcks	Locks
Ldg	Lodge
Lf	Loaf
Lgt	Light
Lgts	Lights
Lk	Lake
Lks	Lakes
Ln	Lane
Lndg	Landing
Loop	Loop
Mall	Mall
Mdw	Meadow
Mdws	Meadows
Mews	Mews
Ml	Mill
Mls	Mills
Mnr	Manor
Mnrs	Manors
Msn	Mission
Mt	Mount
Mtn	Mountain
Mtns	Mountains
Mtwy	Motorway
Nck	Neck
Opas	Overpass
Orch	Orchard
Otlk	Outlook
Oval	Oval
Ovlk	Overlook
Park	Park
Pass	Pass
Path	Path
Pike	Pike
Pkwy	Parkway
Pl	Place
Pln	Plain
Plns	Plains
Plz	Plaza
Pne	Pine
Pnes	Pines
Pr	Prairie
Prom	Promenade
Prt	Port
Prts	Ports
Psge	Passage
Pt	Point
Pts	Points

StreetType, continued

Radl	Radial
Ramp	Ramp
Rd	Road
Rdg	Ridge
Rdgs	Ridges
Rds	Roads
Rdwy	Roadway
Rise	Rise
Riv	River
Rnch	Ranch
Row	Row
Rpd	Rapid
Rpds	Rapids
Rst	Rest
Rte	Route
Rue	Rue
Run	Run
Shls	Shoals
Sho	Shoal
Shr	Shore
Shrs	Shores
Skwy	Skyway
Smt	Summit
Spg	Spring
Spgs	Springs
Spur	Spur
Sq	Square
Sqs	Squares
St	Street
Sta	Station
State Hwy	State Touring Highway
State Pkwy	State Parkway
State Rte	State Route
Stra	Stravenue
Strm	Stream
Sts	Streets
Ter	Terrace
Tlpk	Trailer Park
Tpke	Turnpike
Trak	Track
Trce	Trace
Trfy	Trafficway
TrkTrl	Truck Trail
Trl	Trail
Trlr	Trailer
Trwy	Thruway
Tunl	Tunnel
Turn	Turn
Twrs	Towers
Un	Union
Uns	Unions
Upass	Underpass
US Hwy	Federal Highway
US Rte	US Route
Vale	Vale
Via	Viaduct
Vis	Vista
Vl	Ville
Vlg	Village
Vlgs	Villages
Vls	Villas
Vly	Valley
Vlys	Valleys
Vw	View
Vws	Views
Walk	Walk
Wall	Wall
Way	Way
Ways	Ways
Wds	Woods
Wels	Wells
Wl	Well
Wood	Wood
Xing	Crossing
Xrd	Crossroad
Xrds	Crossroads

UnitType

Domain	Description
APT	Apartment
BSMT	Basement
	Blank, unable to determine
BLDG	Building
DEPT	Department
FL	Floor
FRNT	Front
HNGR	Hanger
KEY	Key
LBBY	Lobby
LOT	Lot
LOWR	Lower
OFC	Office
PH	Penthouse
PIER	Pier
REAR	Rear
RM	Room
SIDE	Side
SLIP	Slip
SPC	Space
STOP	Stop
STE	Suite
TRLR	Trailer
UNIT	Unit
UPPR	Upper

AgreePoint

Domain	Description
Y	Yes
N	No

CountyFIPS

Domain	Description	Domain	Description	Domain	Description
1	Adams	63	Frontier	125	Nance
3	Antelope	65	Furnas	127	Nemaha
5	Arthur	67	Gage	129	Nuckolls
7	Banner	69	Garden	131	Otoe
9	Blaine	71	Garfield	133	Pawnee
11	Boone	73	Gosper	135	Perkins
13	Box Butte	75	Grant	137	Phelps
15	Boyd	77	Greeley	139	Pierce
17	Brown	79	Hall	141	Platte
19	Buffalo	81	Hamilton	143	Polk
21	Burt	83	Harlan	145	Red Willow
23	Butler	85	Hayes	147	Richardson
25	Cass	87	Hitchcock	149	Rock
27	Cedar	89	Holt	151	Saline
29	Chase	91	Hooker	153	Sarpy
31	Cherry	93	Howard	155	Saunders
33	Cheyenne	95	Jefferson	157	Scotts Bluff
35	Clay	97	Johnson	159	Seward
37	Colfax	99	Kearney	161	Sheridan
39	Cuming	101	Keith	163	Sherman
41	Custer	103	Keya Paha	165	Sioux
43	Dakota	105	Kimball	167	Stanton
45	Dawes	107	Knox	169	Thayer
47	Dawson	109	Lancaster	171	Thomas
49	Deuel	111	Lincoln	173	Thurston
51	Dixon	113	Logan	175	Valley
53	Dodge	115	Loup	177	Washington
55	Douglas	117	McPherson	179	Wayne
57	Dundy	119	Madison	181	Webster
59	Fillmore	121	Merrick	183	Wheeler
61	Franklin	123	Morrill	185	York

October 9, 2014

Mr. Rick Becker
Legal Counsel & Government Information Technology Manager
Nebraska Information Technology Commission
501 South 14th Street, 4th Floor
P.O. Box 95045
Lincoln, NE 68509-5045

Re: NITC 3-205: Street Centerline Standards

Dear Mr. Becker:
GeoComm, a 19 year public safety industry veteran, respectfully submits comments on the draft document "NITC 3-205: Street Centerline Standards."

GeoComm supports the standards outlined in the document. If the standards are adopted by the Nebraska Public Service Commission, there will be additional work required to bring existing county datasets into compliance – beyond the work which is currently being done by GeoComm in the State of Nebraska. Original GIS data development contracts and methodology were based on enhanced 9-1-1 requirements. GeoComm has continued to maintain GIS data to these standards for the PSAPs and, upon request, created supplemental data to enrich E9-1-1 technology capabilities. The newly emerging standards for NG9-1-1 differ from E9-1-1 standards due to the new uses, including criticality of spatially accurate GIS data, requiring additional attribute and spatial development. As such, additional funding should be provided via the existing wireless fund or via a future NG9-1-1 fund to support the data update processes and services.

Comments and questions pertaining to specific standards within the document follow.

1.2 Spatial Representation

1.2.2.1 Digitizing

Imagery, LiDAR, or other source document that was used to digitize street centerlines that is newly acquired or not made available for public access will need to be provided to entity conducting quality control of the data.

- Who is reviewing the data quality?

1.2.4 Feature Type and Tables

1.2.4.1 Lines (Polylines)

A line represents the estimated center of a street or road and is not the legal right of way. Attribute data consists of four address range fields representing low to high on odd and even side of road segments necessary for geocoding. Address range values represent the actual address ranges for the line segment and stored in the feature attribute table of the data set.

- "Actual address ranges" should be further defined. In rural settings, theoretical address ranges (following the addressing scheme) allow for more accurate address geocoding. It is best to consider both actual and theoretical address ranges when adding address attributes to a road centerline.

1.3.4 Street Name

Numeric streets shall be written using numbers rather than spelled out. For example, using "1ST" rather than "FIRST". The numeric street names should use "TH", "RD", "ST" or "ND" characters as part of the street name.

- There may be exceptions to this standard if a jurisdiction's Master Street Address Guide (MSAG) reflects the number written out. GeoComm's recommendation is to state whether or not jurisdictions are required/encouraged to update MSAGs according to this standard.

Please contact me directly, Stacen Gross, Regional Sales Consultant, if you have questions throughout this evaluation process. I can be reached via email at sgross@geo-comm.com or by telephone at (320) 281-2186.

Sincerely,

Stacen Gross
Regional Sales Consultant

9th October, 2014

Rick.becker@nebraska.gov
NITC

Re: Comments regarding NITC 3-205: Street Centerline Standards

Dear Mr. Becker and the Technical Panel of the Nebraska Information Technology Commission:

As both a vendor working in this arena and as a resident of the State of Nebraska that utilizes E911 services GIS Workshop, Inc. (GISW) and its employees appreciate the hard work and dedication that have gone into creating and drafting these standards. GISW thanks you for the opportunity to comment and provide input on these important standards.

Where possible we will attempt to reference the appropriate page number and section on the standards document. Comments and questions that don't reference a particular section and are more general in nature will be confined to the end of this document.

Page 2, 1.2.2.1 Digitizing
The document refers to several elements related to map accuracy. The primary references being "Capture Scale for digitizing: 1:2400" and "…verified horizontal accuracy requirements for spatial resolution (12 inch minimum)…" Are we to assume that the document is referring to National Map Accuracy Standard (NMAS) 1:2400 mapping accuracy requirements per the National Standard for Spatial Data Accuracy (NSSDA)? If so, we recommend this be explicitly stated AND the actual statistical test for this accuracy be stated somewhere in the document and referenced in the document. This will help draw attention to the (well intentioned) but unnecessarily high accuracy requirements. In addition it will help GIS practitioners perhaps more completely understand the statistical requirements of the NSSDA. Note: section 1.6.2 goes a little further in expressing accuracy requirements, but we feel it is still not enough.

Page 2, 1.2.2.1 Digitizing
"…The NAIP imagery therefore does not meet these accuracy standards"

We applaud the effort to increase the accuracy of digital products. However, if NITC (via these standards) forces the acquisition of leaf off, higher accuracy imagery, this will cost NE tax payers will cost several million dollars per acquisition and this expenditure will need to occur every few years…the benefit in higher spatial accuracy just simply isn't worth the expense especially as the proposed standard will only mean meaningful gains in accuracy of centerlines measured in a handful of feet and inches. In practical language…the majority of in car navigation systems and smart phones today use data digitized from NAIP imagery…and it looks and works very well.

The NAIP imagery provides an excellent, “free” source of imagery that is updated periodically by the federal government. As an agricultural state, Nebraska is unlikely to be cut from the NAIP program, thus this “free” imagery will be available for many years to come.

We recommend the NITC technical panel revert to accuracy standards that allow use of the free NAIP imagery, but maintain a recommendation to use higher accuracy imagery where it is already available.

Page 5, 1.3.6 Odd/Even Numbering (Address Parity)
There is a broader problem regarding addressing in Nebraska and this is as good a section as any to once again address it. County to county addressing schemes for many counties do not match. In other words, not only is there no numbering parity, but the road names are also different. This occurs at approximately 50% of the county borders in NE. These standards do not address this issue, neither do these standards provide a way to handle or record these mismatches (and note, these issues were born because each PSAP/County was allowed to implement their own addressing/naming conventions across the state and were not caused by NEPSC or NITC).

We recommend that the NITC educate themselves about this issue and resolve to support an effort to get county to county border addressing to match. Without resolution of this issue, NE will **NEVER** be able to enjoy a seamless, statewide street centerline database….

Page 10, 1.4 Data Format
“The data format will need to be in an Esri Enterprise Geodatabase format…”

Historically, NITC and the State of Nebraska have employed a “vendor neutral” stance with regards to GIS data. As an Esri “Gold” business partner and long time Esri data user, this standard certainly assists GISW! However it amounts to a “sponsorship” of a private corporation by the State of Nebraska. We might add it is also becoming increasingly difficult to move data in and out of these proprietary formats and maintain ALL the information. By its nature, the proprietary Esri Enterprise Geodatabase contains functions and capabilities that no other format does…thus making export/import of all the information within the database impossible.

We recommend that NITC consider additional suitable data formats so as to not favor one particular vendor.

General Comments:

1. When does the NITC propose to adopt these standards? The documentation only refers to the public comment period.
2. When does the NITC propose these standards become enforceable? Will existing data be “grandfathered in”? Will there be a grace period for adoption? These standards in their current form, while laudable, will put a very heavy fiscal burden on PSAPs, counties and the NEPSC (to the tune of millions of dollars) as it will require a complete rebuild of

402.436.2150
4949 NW 1st Street, Lincoln NE 68521

all existing 911 street centerline data to meet these standards….we recommend a grace period of at least 5 years to ease adoption of these standards

Thank you once again for inviting our participation. If you should have any further questions, please contact me using the information below.

Sincerely

Claire Inbody
Executive Vice President, Technical Services
GIS Workshop, Inc.

Email: cinbody@gisworkshop.com
Tel: 402 436 2150

NITC 3-206
Address Standards

Review Version 4.0
(Date 9.3.2014)

Category: Data and Information Architecture
Applicability: See Each Section of Standards
History: Adopted on [Month Day, Year]

NEBRASKA INFORMATION TECHNOLOGY COMMISSION GIS COUNCIL

TABLE OF CONTENTS

1.0 Standard

1.1 Description

This standard provides requirements necessary for the creation, development, delivery, and maintenance of address point data to support a statewide Nebraska Address Database (NAD). The address database provides the spatial location and information tied to that location with appropriate attribute data. The standard provides a consistent structure for data producers and users to ensure compatibility of datasets within the same framework layer and when used between other Nebraska Spatial Data Infrastructure (NESDI) framework layers such as street centerlines and parcels.

There are multiple uses for address point data. These requirements will enable the data to be integrated not only with Next Generation 9-1-1 (NG9-1-1) but with existing state address databases, routing services, emergency management, public safety, tax assessment, and the state's enterprise geocoding application databases. Furthermore, this standard will serve as a guideline for future maintenance activity data requirements.

This standard does not restrict or limit additional information collected and stored in a particular database. The specific requirements for address naming and point placement are primarily the responsibility of the local jurisdiction. These standards are meant to be a minimum set of standards and are subject to be updated based on technology enhancements, necessary workflow changes, and other data requirements.

The standard is not intended to be a substitute for an implementation design. These standards can be used at local, state and federal level to ensure interdisciplinary compatibility and interoperability with other databases. These standards integrate with existing standards such as the National Emergency Number Association (NENA), Federal Geographic Data Committee (FGDC), U.S. Postal Service (USPS) Addressing Standard, and other NITC related standards.

1.2 Spatial Representation

1.2.1 Geometric Placement

The methodology for proper geometric placement of address points will vary based on the application. Address points can be placed either manually or by calculated placement. The calculated placement is completed by automated software techniques, typically in GIS. Calculations or manual placement methods can be made from the structure's visual footprint seen in imagery, LiDAR or a determined boundary. Site or structures that have an address assigned to it would be considered an address point.

Providing adequate address point locations to support public safety and emergency response is the primary focus and will need to support NG9-1-1 standards identified by NENA. At a minimum, one address point placed per address is suggested by these standards. For NG9-1-1 applications, there will be one address point provided for dispatching as to not create conflict in interpretation among other address point locations tied to the same street address when responding to emergencies. For other applications, additional address points can be created as long as they are notated in the attribute table for purpose of the point type. The following suggestions are recommended in priority of address point placement. If a primary structure is not addressable on the property parcel then a property access point is placed within the property driveway or access location. In cases where the primary structure is not visible from the addressable road, an additional access point will need to be placed in the middle of the entrance or access location within that property parcel. Additional address points are required for public safety at entrance locations for public structures such as schools, hospitals, and government offices.

Specific requirements for the placement of entrance locations are located within NENA standards source located in section 7.0.

There are additional standards and best practices for the placement of address points within structures outlined by NENA. This includes single address with multiple structures or entrances, single structure or entrances with multiple addresses, multiple addresses with one structure or entrance. In addition, there are address point placement recommendations for exterior and interior entrance locations within a structure.

1.2.1.1 Primary Structure

The primary address point should be placed within every principal address structure's location or footprint. Placement can be achieved either manually or calculated. When placed manually, the point should reflect the center or entrance to the addressed structure as long as it is within the structure's footprint (Figure 1). When calculated, it typically refers to placement of a centroid in the middle of the building footprint or polygon. Either of these two placement techniques assign the address with that structure.

Figure 1. Placement of address point within structure's footprint.

If a structure is not visible on aerial imagery or LiDAR, but it's physical location is represented by other supplemental resources, the point can be placed according to the supplement resources and needs to be confirmed with field verification.

For multiple units within a structure, there does not need to be additional address points placed for each unit. The single point can relate to a table having multiple listings of addresses for each unit. Consider using this method when addresses are relatively within 10 feet of each other.

1.2.1.2 Property Access

This is the placement of the address point to accessing the property of interest. This typically is a driveway, access road, or other entrance path to a property that is connected to a named road or other path from a different

property. Address points should be located at the primary driveway entrance within a parcel boundary. This point is placed only after the primary structure address point has been identified and placed or if there is no primary addressable structure on the property parcel. If parcel data exists to the property, then the point should fall within the parcel boundary in the middle of the driveway or other access area.

Figure 2. Placement of address point on primary entrance path within a parcel boundary as shown on the left address point for 7909. The illustration also shows the placement of the address point on the primary structure footprint. This is helpful in cases where the primary building is difficult to see from the primary entrance path off an addressed road.

Interim placement of address points can exist if a site or structure is not available at the time of recording. This can include conditions where site or building is under construction or new developments that may have future sub-addresses. The expectation is that these interim locations are noted during time of creation and future modifications can occur to both the geometric placement and attributes.

1.2.1.3 Other Placement Options

After the primary and/or secondary address points have been placed or in special cases where the primary and secondary conditions are not able to be met, then there are other address point placement options. Specific requirements for these placement options are located within NENA standards source located in section 7.0. The following are a few descriptions for other placement options.

a) Parcels

This section addresses the placement of the address point within a parcel boundary when there are no addressed structures or visible access road to the property. The address point can either be placed in the center of the parcel, within a parcel where an internal road or main structures are located, within a parcel at the center of the parcel frontage next to the road that

references the address, and within and front of a parcel using address ranges to guide placement. Parcels that do not have an addressable structure present will have the address point at the centroid within the boundary of the parcel. If there is discrepancy in the placement accuracy of the parcel itself, it is best to have the point located in the middle of the parcel until or at an offset distance from the boundary line from the road that references the address. This will assure that the address point is well within the parcel boundary in case the spatial location of parcel boundary is updated in the future. It also assures that other spatial relationships exist with other GIS layers.

b) Site

A site is defined as a place that has no known or recognized structure or boundary. These can include places such as parks, camp sites, recreational areas, and other large areas. In this case, either an address point is placed based on the centroid of a defined boundary or is associated as a landmark. Point location can also be manually located at the entrance or area of concentration of structures or activities within the site.

c) Geocoding from Road Centerlines

Address point placement is achieved by interpolation of road centerline address ranges. Points are placed based on a calculated method of directional offset representing left or right of the street and providing a desired distance to the property based on address range breaks located in the street centerline layer. This practice should be considered last resort as it provides inconsistency with distances to the actual structure or access location to a property. This technique is useful when establishing and double checking the correct attributes between the street centerline database corresponding to the address point database.

1.2.2 Data Development

All data will consist of visual and verifiable address point information corresponding to some level of ground control. The geometric placement of address points can be derived from digitizing and using field GPS data collection.

1.2.2.1 Digitizing

Address point placement can be completed by visual registration using aerial imagery, site plans or other graphical resources that have been spatially adjusted to meet minimum spatial accuracy requirements. The data source used to digitize or place address points must meet the following minimum requirements.

Capture Scale for digitizing: 1:2400
Projection: Nebraska State Plane Coordinate System
Datum: North American Datum of 1983 (NAD83)
Source: Using aerial imagery that meets verified horizontal accuracy requirements for spatial resolution (12 inch minimum), preferably leaf-off. In cases where tree cover or other obstructions are identified in imagery, it will be necessary to conduct field verification of that location with a mapping grade GPS unit. The NAIP imagery therefore does not meet these accuracy standards.

LiDAR can also be used as a guide to support spatial accuracy placement of certain aspects of building footprints.

Imagery, LiDAR, or other source document that was used to digitize street centerlines that is newly acquired or not made available for public access will need to be provided to entity conducting quality control of the data.

1.2.2.2 Global Positioning Systems (GPS)

The development of address points can be utilized using field observation and data collection techniques using mapping grade GPS. Data collected using a mapping grade GPS will need to meet spatial accuracy requirements in section 1.2.3. Additional post processing of GPS data may be necessary to meet these spatial requirements, particularly when placement of address point falls within the boundary of a structure.

1.2.3 Spatial Accuracy

1.2.3.1 Minimum Horizontal Accuracy Standard

Data that has been collected through digitization or visual representation methods must have an accuracy level of 3.28 to 9.84 feet (1-3 meters) or better.

When using mapping grade GPS, data will need to be collected at 3.28 feet (1 meter) or better. Additional requirements and suggestions for acquiring address point data by field GPS is located in the NENA GIS Data Collection and Maintenance Standards.

1.2.3.2 Minimum Vertical Accuracy Standard

There are no vertical accuracy requirements at this time. These standards are subject to change in the future as data maintenance and accuracy of address point placement is further needed in places such as structures having multiple floors.

1.2.4 Feature Type and Tables

1.2.4.1 Points

Single points will represent the address point features. Corresponding attribute information tied to each point is further defined in Section 1.3.6 Data Schema and Descriptions. Having one point per valid address ensures a one to one match for the purposes of geocoding.

1.2.4.2 Tables

Corresponding tables for one address point location but reference to multiple locations or sub-addresses can be further represented in tabular format. See Section 1.3.6 Data Schema and Descriptions for description on information for tables.

1.2.5 Projection and Datum

For data to be made available for NG9-1-1 operations, the data will need to be in a geographic coordinate system and not projected. This is necessary for the Emergency Call Routing Function (ECRF) or the Location Validation Function (LVF) uses for display.

EPSG:	4326 WGS84 / Latlong
Projection:	Geographic Coordinates, Plate Carrée, Equidistant Cylindrical, Equirectangular
Latitude of the origin:	0°
Longitude of the origin:	0°
Scaling factor:	1
False easting:	0°
False northing:	0°
Ellipsoid:	WGS84
Horizontal Datum:	WGS84
Vertical Datum:	WGS84 Geoid
Units:	decimal degrees
Global extent:	-180, -90, 180, 90

The NAD will also be projected and delivered in Nebraska (State) Plane Coordinate System projection and datum for North American Datum of 1983 (NAD83). The plane coordinate values for a point on the earth's surface should be expressed in feet. The data will also be made available as Web Mercator with WGS 1984 horizontal datum for use among other needed web services.

1.3 Address Attributes

1.3.1 General Address Components

There are several components that make up an address. Many are required to accurately define a specific address and location. When an address is matched against other address database files or for the purpose of generating an address it must be broken down into the individual components separated by a single space between the components. These standards follow the FGDC United State Thoroughfare, Landmark and Postal Address Data standard for address components. The minimum components required to accurately define an address are:

Primary Address Number:	123
Prefix Directional Street:	W
Street Name:	Main
Street Type:	ST
Street Direction:	NW
Unit Address Identifiers:	STE
Unit Number:	5
City:	Lincoln
State:	NE
Zip Code:	68509

Not all of the elements are required to be filled out for an address to be valid. However, the placeholders need to be present in the attribute table to accurately represent the accepted USPS standards. The USPS uses a parsing logic to enter address information into their appropriate fields. When parsing an address into the individual components, start from the right element of the address and work toward the left. Place each element in the appropriate field until all address components are isolated. This process facilitates matching files and produces the correct format for standardized output as well as isolating the mismatches to the closest possible fit before failing.

Associated attributes pertain to formatting and storing of address data within attribute tables that are external to and associated with feature attribute tables of geospatial

datasets. For example, a city's master address database could be associated with and address matched against a city-wide geospatial dataset of points.

Each jurisdiction shall develop a master address database that can be referenced when new street names are being created or assigned so that duplications are avoided. All street names and address numbers shall be kept consistent with geospatial datasets.

Additional information and guidelines for directional prefixes and suffixes, street naming, street type, address parity, sequential direction and consistency with distance-based address grid can be found in the Street Centerline Standards (NITC 3-205).

1.3.2 Unique Identification Code

A unique identifier is required for the statewide address point database. This unique identifier allows the data to be tied or joined to other spatial data sets having the same identifier. The field name for this unique code in NAD is "NEAddressID." The first four (4) digits are the county name followed by number associated from the local addressing authority.

1.3.3 Use of Characters

Street addresses shall not contain characters such as hyphens, dashes, +, #, & or other non-alpha-characters or symbols. An alpha-character added to the address as a sub-number is preferable to a fraction (e.g., 123 A is preferable to 123 1/2).

1.3.4 Data Schema and Descriptions

The following table represents the necessary data schema including field names, descriptions, and associated domains for the address point database. The minimum required fields for these standards are represented by the following identifiers: "**R**" – required, "**RC**" –Recommended, and "**O**" – Optional.

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
NEAddressID	String	12	Unique ID of address point where first 4 characters are the first 4 letters of each County name. The remaining 8 characters of the number are provided by the local addressing authority.	N/A	R
NEStreetID	Integer	20	Unique ID of corresponding street centerline segment	N/A	R
State_PID	String	30	County FIPS code plus local government PID number (See Statewide Parcel Database ID requirements)	N/A	R
County_ID	String	3	County FIPS code of where address point resides	CountyFIPS	R
PrefixAddressNumber	String	10	An extension that precedes the address number	N/A	R
AddressNumber	Integer	6	The numeric identifier of a location along a thoroughfare (i.e., 100, 2345, 31)	N/A	R
SuffixAddressNumber	String	15	An extension that follows the address number (i.e., A through Z)	SuffixAddressNumber	R

PreModifier	String	15	A street name modifier that precedes the street name. (i.e., Alternate, bypass, loop, private, spur, etc.)	PreModifier	R
PreDirectional	String	2	A street direction that precedes the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PreType	String	4	A street type that precedes the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
SeparatorElement	String	10	An element that precedes the StreetName which separates the PreType and StreetName	SeparatorElement	R
StreetName	String	30	Legal authoritative street name component of segment name	N/A	R
PostType	String	4	A street type that follows the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
PostDirectional	String	2	A street direction that follows the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PostModifier	String	12	A descriptor that follows the street name and is not a suffix or a direction (i.e., Access, Central, Crossover, Scenic, Terminal, Underpass)	PostModifier	R
Building	String	60	The name of one among a group of buildings that have the same address number and street name, that are multiple independently named structures at the same address	N/A	R
Floor	String	10	A floor, story, or level within a building	N/A	O
NumberFloors	String	4	Number of floors in building	N/A	O
Room	String	10	A room identification in a building	N/A	RC
NumberRooms	String	4	Number of rooms in building or structure.	N/A	O
Seat	String	5	The place where a person may be located within a room or building.	N/A	O
Unit	String	4	A group or suite of rooms within a building that are under common ownership or tenancy, typically having a common primary entrance. (ie, A, 4, etc.)	N/A	R
UnitType	String	4	The unit type abbreviation. (ie, APT, BLDG, DEPT, FL, STE, UNIT	UnitType	C
Location	String	20	For sub-address, other than building, floor, unit, room or seat. For example, northeast	N/A	O

			corner of building.		
Subdivision	String	60	Subdivision name	N/A	C
City	String	40	Name of the municipality where the site is located. Also the postal community name associated to the zip code or postal code.	N/A	R
State	String	2	State name abbreviation	State	R
ZipCode	String	5	5 digit zip code	N/A	R
Ph_Zip4	String	4	Mailing post code +4 designation for the tax parcel	N/A	RC
FullAddress	String	75	Concatenated street address consisting of address number, pre direction, pre type, street name, street type, suffix direction, unit number, building, floor.	N/A	RC
SubAddress	String	75	Entire sub-address string that consists of Building, Floor, Unit, and Location fields concatenated together	N/A	RC
LandmarkName	String	60	Common Place Name such as library, town hall, Chimney Rock, stadium	N/A	R
MSAG	String	30	Service community name associated with the location of the address.	N/A	R
ESN	String	5	Emergency Service Number associated with the location of the address identified by MSAG.	N/A	R
PSAP	String	25	Public Service Access Point identifier number	N/A	R
PrimaryPoint	String	3	Is this the primary point? Yes or No. Distinguishes between Primary and SubAddress points.	PrimaryPoint	R
PointType	String	3	Address point type (primary structure, primary property entrance, secondary structure, secondary property entrance, parcel centroid, etc.)	PointType	R
PlaceType	String	75	Description of the type of feature for address (House, duplex, trailer, apartment, secondary structure, utility, school, hospital, commercial business, industrial, etc.)	N/A	RC
AddOwner	String	25	Current local entity responsible for creation of address data	N/A	R
AddMaint	String	25	Current local entity responsible for maintenance of address data	N/A	R
AddressSource	String	30	The primary data source for the attributes used in this	AddressSource	R

			record		
SourceOfData	String	30	Entity that provided the data	N/A	R
Create_DT	Date	26	Date/time stamp data was collected	N/A	R
Update_DT	Date	26	Date/time stamp the record was last modified	N/A	R
RecentFieldEditor	String	30	Recent field editor of data	N/A	R
Add_Status__Code	String	2	Status code indicating operational condition of address point (1=active, 2=retired, 3=unknown)	N/A	R
Basement	String	3	Is there a basement? Yes, No	N/A	O
StrmShelter	String	25	The type of storm shelter	N/A	O
OccupTime	String	50	Time when the site/structure is typically occupied (7:00 – 6:00 pm)	N/A	O
X_COORD	Numeric	15	Points X coordinate	N/A	R
Y_COORD	Numeric	15	Points Y coordinate	N/A	R
Z_COORD	Numeric	7	Points Z elevation coordinate in feet. Height above mean sea level.	N/A	O
Comments	String	100	Comments or notes	N/A	O

1.4 Data Format

The data format provided will need to be in an enterprise geodatabase format that can be interpreted by commercial GIS software. A geodatabase schema including domains can be provided free upon request by contacting the State of Nebraska, Office of the CIO GIS Shared Services.

Tabular data will need to be provided in MS ACCESS, DBF, or MS SQL formats.

1.5 Maintenance

Addressing authorities need to be identified at the local level for approval of new addresses and assuring the addresses are implemented towards the database. This will insure that the physical location and the attribute database is updated and maintained in a timely manner. After spatial and attribute updates and/or modifications are performed to the database it shall be submitted to the appropriate entity(s) responsible for performing quality control and maintenance of the NAD.

Maintenance of address points requires capturing addresses and locations associated with new developments as soon as possible. This means mapping new structures by creating a geographic point as soon as (a) an address is assigned by the municipality and, if possible, (b) the physical location of the structure can be determined. For example, if a building permit has been issued and it includes a street address for the construction of a new residence, once a foundation is poured, then it would be possible to visit the site and capture that location.

1.5.1 Reporting Errors and Handling Updates

The reporting of errors need to be directed to specific local (city and/or county) and/or state entity(s) involved in the workflow in a timely manner. Updated spatial and attribute information in database will also need to be redistributed. The date field in the database when the last record was modified will also need to be updated to ensure proper records management and communication with others in the workflow.

1.6 Quality Control

The quality of the NAD is evaluated based on the overall functional correctness and completeness of the attribute and spatial data. The FGDC and NENA have adopted nationally recognized standards for accuracy testing of GIS data. NENA recommends that address data for use in data exchanges associated with NG-911 call processing be based on the FGDC compliant database. Refer to the FGDC United State Thoroughfare, Landmark and Postal Address Data standard and the NENA Civic Location Data Exchange Format (CLDXF) Standard for these data exchange standards.

1.6.1 Attribute Accuracy

a) Attribute fields are complete compared to source data having valid data elements, domain or range values.
b) Correct spelling in comparison of source data.
c) Standard first letter capitalized of every word and USPS capitalization of the State abbreviation.
d) Not to contain duplicate address points, each address point should be uniquely identifiable by the attributes.
e) Assure that the address points on the left or right of the street centerline are consistently either odd or even addresses.
f) The address point database has a thematic approach to accuracy. In other words, the type of address points recorded reflect the appropriate attribute values associated to that type. The data schema is setup with several field names that help qualify these relationships and thematic criteria to ensure accuracy of address point information.
g) For NG9-1-1 applications, the address for each point need to qualify and meet certain thresholds for the MSAG and ALI databases. For MSAG and ALI databases, the address for each point will need to be valid at a rate of 98 percent or better. For areas without an MSAG, the addresses in the point file will meet USPS Publication 28 standards. For the ALI database, this is determined by geocoding the addresses in the ALI database to the point layer with addresses developed for that area. Overall, the address data is consistent with source information from MSAG and ALI.
h) The correct formatting of address attributes are used in these standards and are also included in the NENA standards and abbreviations as they are found in USPS Publication 28.
i) The temporal quality is met by being current, updating appropriate attributes, and indicating the time the changes were made in the date updated field. Address points assigned early on due to missing or unknown structures may end up being incorrect later on as construction begins and structures are further identified.
j) Internal QA/QC checks for allowable domain values, summary statistics and record counts.

1.6.2 Physical Location

The quality of the physical location will be evaluated based on:

a) The placement of the address point representing it's real location and if it meets horizontal accuracy requirements. The National Standard for Spatial Data Accuracy (NSSDA) outlines a methodology for measuring positional accuracy. If additional testing is required, the NSSDA procedures outline the statistical procedures.
b) The geometric placement of the address point is consistently logical to the context of other features such as street centerlines, parcels, emergency service zones, and other address points.

1.7 Integration with other Standards

1.7.1 Street Centerline Standards (NITC 3-205)

The address elements identified in these standards shall meet the same address field relationships found in the Street Centerline Standards NITC 3-205. This is to assure the connection of street addresses and routing to address points having the same address information.

1.8 Metadata

A requirement for address point data is creating and maintaining it's metadata. The metadata for address point data will require detailing the characteristics and quality of submitted address points. Information needs to be provided to allow the user sufficient information so they can determine the data's intended purpose as well as how to access the data. The metadata requires a process description summarizing collection parameters such as: contact information, data source, scale, accuracy, projection, use restrictions, and date associated to each street centerline segment. The process description will also need to be included to describe methodology towards the deliverable products.

1.8.1 Federal Metadata

The Federal Metadata Content Standard from FGDC should be used when feasible and in every effort possible to assure high quality rigorous standards. All geospatial address point geodatabases, and their associated attribute databases should be documented with FGDC compliant metadata outlining how the data was derived, attribute field definitions and values, map projections, appropriate map scale, contact information, access and use restrictions, to name a few.

1.8.2 State Metadata

These standards need to apply to Nebraska's metadata standards located within NITC 3-201 Geospatial Metadata Standard. All metadata from address point data will need to be registered through the metadata portal at NebraskaMAP (http://NebraskaMAP.gov). All developers of Nebraska-related geospatial data are encouraged to use the site to either upload existing metadata and/or use the online tools available on the site to create the metadata for address point data.

2.0 Purpose and Objectives

2.1 Purpose

The purpose of this standard is to provide the necessary requirements for the creation, development, delivery, and maintenance of address point data to support a statewide NAD.

These standards will help ensure that address data creation and development are current, consistent, accurate, publicly accessible, and cost-effective.

2.2 Objectives

These standards will guide the statewide NAD having the following objectives:

2.2.1 Provide guidance, address database schema, and necessary workflows to state and local officials as they work, either in-house or with private contractors, to create, develop and maintain address point data. This can increase the likelihood that the data created will be suitable for the range of intended applications and likely future applications. The maintenance of address data is necessary for the data to be current and accurate.

2.2.2 Enhance coordination and program management across jurisdictional boundaries by insuring that address point data can be horizontally integrated across jurisdictional and/or project boundaries, and other framework data layers for regional or statewide applications.

2.2.3 Save public resources by facilitating the sharing of address point data among public agencies or sub-divisions of agencies by incorporating data standards and following guidelines. Data that is developed by one entity can be done in a way that is suitable to serve the multiple needs of other entities. This avoids the costly duplication of developing and maintaining similar address point data in the state.

2.2.4 Make address point data current and readily accessible to the wide range of potential users through NebraskaMAP and other necessary resources.

2.2.5 Facilitate harmonious, trans-agency and public policy decision-making and implementation by enabling multiple agencies and levels of government to access and appropriately use current address data. This can make it more likely that intersecting public policy decisions, across levels of government, will be based on the same information.

2.2.6 Lay the foundation for facilitating intergovernmental partnerships for the acquisition and development of high-quality address point data by defining standards that increase the likelihood that this data will meet the needs of multiple users.

2.2.7 Establish and promote the integration and interrelationships of address data with related NESDI framework layers through geometric placement and attributes.

3.0 Definitions

Accuracy

Absolute - A measure of the location of features on a map compared to their true position on the face of the earth.

Relative - A measure of the accuracy of individual features on a map when compared to other features on the same map.

Address

Actual or Real - The simple, everyday element that designates a specific, situs location, such as a house number or an office suite.

Range - Numbers associated with segments of a digital street centerline file that represent the actual high and low addresses at either end of each segment.

Theoretical - A location that can be interpolated along a street centerline file through geocoding software.

Vanity - A special address that is inconsistent with or an exception to the standard addressing schema.

Address matching – See Geocoding

Automatic Location Identification (ALI) - The automatic display at the PSAP of the caller's phone number, the address/location of the telephone and supplementary emergency services information of the location from which a call originates.

Attribute – The properties and characteristics of entities.

Datum – A set of values used to define a specific geodetic system.

Data Stewardship – Entity(s) responsible for developing and maintaining the data.

Entity – a data entity is any object about which an organization chooses to collect data.

Geocoding – A mechanism for building a database relationship between addresses and geospatial features. When an address is matched to the geospatial features, geographic coordinates are assigned to the address.

Geospatial feature – A point, line or polygon stored within geospatial software.

Line – A linear feature built of straight line segments made up of two or more coordinates.

Master Street Address Guide (MSAG) - A listing of streets and house number hich describes the exact spelling of streets, street number ranges, and other address elements.

National Emergency Number Association (NENA) – A professional association consisting of emergency number agencies and telephone company personnel responsible for the planning, implementation, establishing national standards, management, and administration of emergency number systems.

Nebraska Spatial Data Infrastructure (NESDI) - A framework of geospatial data layers that have multiple applications, used by a vast majority of stakeholders, meet quality standards and have data stewards to maintain and improve the data on an ongoing basis. These layers are also consistent with the Federal National Spatial Data Infrastructure (NSDI).

Point - A geospatial feature that is stored as a single X-Y coordinate pair. Some data systems store X-Y-Z coordinates, where Z represents elevation of the point above a given surface (or datum).

Projection – A map projection flattens the earth, allowing for locations to by systematically assigned new positions so that a curved surface can be represented on a flat map

Public Safety Answering Point (PSAP) - An entity operating under common management which receives 9-1-1 calls from a defined geographic area and processes those calls according to a specific operational policy.

State Plane Coordinate System - The State Plane Coordinate System is a set of 124 geographic zones or coordinate systems designed for specific regions of the United States. It uses a simple Cartesian coordinate system to specify locations rather than a more complex spherical coordinate system (the geographic coordinate system of latitude and longitude). By thus ignoring the curvature of the Earth, "plane surveying" methods can be used, speeding up and simplifying calculations. The system is highly accurate within each zone (error less than 1:10,000). Outside a specific state plane zone, accuracy rapidly declines, thus the system is not useful for regional or national mapping

Unique Identification Code – Every element is assigned an identification code, making it unique from other elements. For these standards, the first four (4) digits are the county name followed by number associated from the local addressing authority.

4.0 Applicability

4.1 State Government Agencies

State agencies that have the primary responsibility for developing and maintaining address point data for a particular jurisdiction(s) or geographic area (e.g. for counties for which it has assumed the primary role) are required to comply with the standards as described in Section 1. Those state agencies with oversight responsibilities in this area are required to ensure that their oversight guidelines, rules, and regulations are consistent with these standards.

4.2 State Funded Entities

Entities that are not State agencies but receive State funding, directly or indirectly, for address point development and maintenance for a particular jurisdiction or geographic area are required to comply with the standards as described in Section 1.

4.3 Other

Other entities, such as city and local government agencies (e.g. County Engineer, PSAPs, and municipalities) that receive state funds have the primary responsibility for developing and maintaining address point data are required to comply with the standards as described in Section 1.

5.0 Responsibility

5.1 NITC

The NITC shall be responsible for adopting minimum technical standards, guidelines, and architectures upon recommendation by the technical panel. Neb. Rev. Stat. § 86-516(6)

5.2 State Agencies

The State of Nebraska, Office of the CIO (OCIO) GIS Shared Services will be responsible for ensuring that standards and guidelines relative to development, meeting quality control

standards, and approving address points for the statewide address point database for distribution are conducted according to subsections in Section 1. The OCIO GIS Shared Services will be responsible for assuring that metadata is completed and the data is registered and available for distribution through NebraskaMAP.

5.3 Granting Agencies and Entities

State granting or fund disbursement entities or agencies will be responsible for ensuring that these standards are included in requirements related to fund disbursements as they relate to address points.

5.4 Other

Local government agencies that have the primary responsibility and authority for address naming and point placement will be responsible for ensuring that those sub-sections defined in Section 1 will be incorporated in the address point data development efforts and contracts.

6.0 Authority

6.1 NITC GIS Council

According to Neb. Rev. Stat. § 86-572(2), the GIS Council shall: Establish guidelines and policies for statewide Geographic Information Systems operations and management (a) The acquisition, development, maintenance, quality assurance such as standards, access, ownership, cost recovery, and priorities of data bases; (b) The compatibility, acquisition, and communications of hardware and software; (c) The assessment of needs, identification of scope, setting of standards, and determination of an appropriate enforcement mechanism; (d) The fostering of training programs and promoting education and information about the Geographic Information Systems; and (e) The promoting of the Geographic Information Systems development in the State of Nebraska and providing or coordinating additional support to address Geographic Information Systems issues as such issues arise.

7.0 Related Documents

7.1 NENA."NENA Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard." NENA-STA-004. March 23, 2014. NENA Joint Data Technical/Next Generation Integration Committees, Next Generation Data Development Working Group (NGDD).

7.2 National Emergency Number Association. “NENA Information Document for Development of Site/Structure Address Point GIS Data for 9-1-1.”NENA-STA-XXX (Currently in Development), http://www.nena.org/?NG911_Project.

7.3 National Emergency Number Association. “NENA Standard for NG9-1-1 GIS Data Model.”NENA-STA-XXX (Currently in Development).

7.4 NENA GIS Data Collection and Maintenance Standards, NENA 02-014, July 17, 2007

7.5 NENA Information Document for Synchronizing Geographic Information System databases with MSAG & ALI, NENA 71-501, Version 1.1, September 8, 2009

7.6 Federal Geographic Data Committee (FGDC) United States Thoroughfare, Landmark and Postal Address Data Standard. FGDC Document Number FGDC-STD-016-2011. February 2011.

7.7 NITC 3-201 Geospatial Metadata Standard – http://nitc.ne.gov/standards/3-201.html

7.8 NITC 3-205 Street Centerline Standards. (Waiting Review and Approval)

7.9 United States Postal Service Publication 28. “Postal Addressing Standards.”

8.0 Appendices

8.1 Domains

Domains are provided for street centerline, alternate street names, and centerline points. This information provides consistency in reporting of data across multiple data sets.

SuffixAddressNumber

Domain	Description
A	A
B	B
C	C
D	D
E	E
F	F
G	G
H	H
I	I
J	J
K	K
L	L
M	M
N	N
O	O
P	P
Q	Q
R	R
S	S
T	T
U	U
V	V
W	W
X	X
Y	Y
Z	Z

PreModifier

Domain	Description
Alternate	Alternate
Archway	Archway
Behind	Behind
Business	Business
Bypass	Bypass
Center	Center
De	De
Del	Del
Drive	Drive
Entrance	Entrance
Extended	Extended
Head	Head
Historic	Historic
La	La
Le	Le
Loop	Loop
New	New
Old	Old
Olde	Olde
Our	Our
Out	Out
Private	Private
Public	Public
Spur	Spur
The	The
To	To

Direction

Domain	Description
N	North
S	South
E	East
W	West
NE	Northeast
NW	Northwest
SE	Southeast
SW	Southwest

SeperatorElement

Domain	Description
And	And
At	At
By The	By The
Con	Con
De Las	De Las
For	For
For The	For The
In The	In The
Of	Of
Of The	Of The
On The	On The
The	The
To	To
Y	Y

PostModifier

Domain	Description
Access	Access
Alternate	Alternate
Approach	Approach
Business	Business
Bypass	Bypass
Center	Center
Central	Central
Centre	Centre
Company	Company
Concourse	Concourse
Connector	Connector
Crossing	Crossing
Crossover	Crossover
Cut Off	Cut Off
Cutoff	Cutoff
Dock	Dock
End	End
Entrance	Entrance
Executive	Executive
Exit	Exit
Extended	Extended
Extension	Extension
Industrial	Industrial
Interior	Interior
Loop	Loop
Overpass	Overpass
Private	Private
Public	Public
Ramp	Ramp
Scenic	Scenic
Service	Service
Spur	Spur
Terminal	Terminal
Transverse	Transverse
Underpass	Underpass

State

Domain	Description
NE	Nebraska
CO	Colorado
WY	Wyoming
SD	South Dakota
IA	Iowa
MO	Missouri
KS	Kansas

PointType

Domain	Description
1	Primary Structure
2	Primary Property Entrance
3	Secondary Structure
4	Secondary Property Entrance
5	Parcel Centroid
6	Other location in Parcel
7	Site
8	Geocoded from Street Centerlines
9	Other

AddressSource

Domain	Description
County911AL	County 911 Address List
CountyAP	County Address Points
CountyBF	County Building Footprint
CountyCP	County Common Places
CountyParcels	County Parcels
GDRAP	GDR Address Points
MunicipalAP	Municipal Address Points
MunicipalParcels	Municipal Parcels
StateAP	State Address Points
Other	Other

PrimaryPoint

Domain	Description
Y	Yes
N	No

StreetType (for both PreType and PostType) Additional commonly used street suffixes and abbreviations are located within the USPS Publication 28.

Domain	Description
Acrs	Acres
Aly	Alley
Anx	Annex
Arc	Arcade
Ave	Avenue
Bay	Bay
Bch	Beach
Bg	Burg
Bgs	Burgs
Blf	Bluff
Blfs	Bluffs
Blvd	Boulevard
Bnd	Bend
Br	Branch
Brg	Bridge
Brk	Brook
Brks	Brooks
Btm	Bottom
Byp	Bypass
Byu	Bayou
Chas	Chase
Cir	Circle
Cirs	Circles
Clb	Club
Clf	Cliff
Clfs	Cliffs
Clos	Close
Cmn	Common
Cmns	Commons
Cnrs	Corners
Cor	Corner
Cors	Corners

StreetType, continued

County Hwy	County Road
County Rte	County Touring Route
Cp	Camp
Cpe	Cape
Cres	Crescent
Crk	Creek
Crse	Course
Crst	Crest
Cswy	Causeway
Ct	Court
Ctr	Center
Ctrs	Centers
Cts	Courts
Curv	Curve
Cv	Cove
Cvs	Coves
Cyn	Canyon
Dl	Dale
Dm	Dam
Dr	Drive
Drs	Drives
Drwy	Driveway
Dv	Divide
End	End
Est	Estate
Ests	Estates
Expy	Expressway
Ext	Extension
Exts	Extensions
Fall	Fall
Farm	Farm
Fld	Field
Flds	Fields
Fls	Falls
Flt	Flat
Flts	Flats
Frd	Ford
Frds	Fords
Frg	Forge
Frgs	Forges
Frk	Fork
Frks	Forks
Frst	Forest
Fry	Ferry
Ft	Fort
Fwy	Freeway
Gate	Gate
Gdn	Garden
Gdns	Gardens
Gln	Glen
Glns	Glens
Grds	Grounds
Grn	Green
Grns	Greens
Grv	Grove
Grvs	Groves
Gtwy	Gateway
Hbr	Harbor
Hbrs	Harbors
Hl	Hill
Hls	Hills
Holw	Hollow
Hrbr	Harbor
Hts	Heights
Hvn	Haven
Hwy	Highway
I	Interstate
Inlt	Inlet
Is	Island
Isle	Isle
Iss	Islands
Jct	Junction
Jcts	Junctions
Knl	Knoll
Knls	Knolls
Ky	Key
Kys	Keys
Land	Land
Lck	Lock
Lcks	Locks
Ldg	Lodge
Lf	Loaf
Lgt	Light
Lgts	Lights
Lk	Lake
Lks	Lakes
Ln	Lane
Lndg	Landing
Loop	Loop
Mall	Mall
Mdw	Meadow
Mdws	Meadows
Mews	Mews
Ml	Mill
Mls	Mills
Mnr	Manor
Mnrs	Manors
Msn	Mission
Mt	Mount
Mtn	Mountain
Mtns	Mountains
Mtwy	Motorway
Nck	Neck
Opas	Overpass
Orch	Orchard
Otlk	Outlook
Oval	Oval
Ovlk	Overlook
Park	Park
Pass	Pass
Path	Path
Pike	Pike
Pkwy	Parkway
Pl	Place
Pln	Plain
Plns	Plains
Plz	Plaza
Pne	Pine
Pnes	Pines
Pr	Prairie
Prom	Promenade
Prt	Port

StreetType, continued

Prts	Ports
Psge	Passage
Pt	Point
Pts	Points
Radl	Radial
Ramp	Ramp
Rd	Road
Rdg	Ridge
Rdgs	Ridges
Rds	Roads
Rdwy	Roadway
Rise	Rise
Riv	River
Rnch	Ranch
Row	Row
Rpd	Rapid
Rpds	Rapids
Rst	Rest
Rte	Route
Rue	Rue
Run	Run
Shls	Shoals
Sho	Shoal
Shr	Shore
Shrs	Shores
Skwy	Skyway
Smt	Summit
Spg	Spring
Spgs	Springs
Spur	Spur
Sq	Square
Sqs	Squares
St	Street
Sta	Station
State Hwy	State Touring Highway
State Pkwy	State Parkway
State Rte	State Route
Stra	Stravenue
Strm	Stream
Sts	Streets
Ter	Terrace
Tlpk	Trailer Park
Tpke	Turnpike
Trak	Track
Trce	Trace
Trfy	Trafficway
TrkTrl	Truck Trail
Trl	Trail
Trlr	Trailer
Trwy	Thruway
Tunl	Tunnel
Turn	Turn
Twrs	Towers
Un	Union
Uns	Unions
Upass	Underpass
US Hwy	Federal Highway
US Rte	US Route
Vale	Vale
Via	Viaduct
Vis	Vista
Vl	Ville
Vlg	Village
Vlgs	Villages
Vls	Villas
Vly	Valley
Vlys	Valleys
Vw	View
Vws	Views
Walk	Walk
Wall	Wall
Way	Way
Ways	Ways
Wds	Woods
Wels	Wells
Wl	Well
Wood	Wood
Xing	Crossing
Xrd	Crossroad
Xrds	Crossroads

UnitType

Domain	Description
APT	Apartment
BSMT	Basement
	Blank, unable to determine
BLDG	Building
DEPT	Department
FL	Floor
FRNT	Front
HNGR	Hanger
KEY	Key
LBBY	Lobby
LOT	Lot
LOWR	Lower
OFC	Office
PH	Penthouse
PIER	Pier
REAR	Rear
RM	Room
SIDE	Side
SLIP	Slip
SPC	Space
STOP	Stop
STE	Suite
TRLR	Trailer
UNIT	Unit
UPPR	Upper

CountyFIPS

Domain	Description	Domain	Description	Domain	Description
1	Adams	63	Frontier	125	Nance
3	Antelope	65	Furnas	127	Nemaha
5	Arthur	67	Gage	129	Nuckolls
7	Banner	69	Garden	131	Otoe
9	Blaine	71	Garfield	133	Pawnee
11	Boone	73	Gosper	135	Perkins
13	Box Butte	75	Grant	137	Phelps
15	Boyd	77	Greeley	139	Pierce
17	Brown	79	Hall	141	Platte
19	Buffalo	81	Hamilton	143	Polk
21	Burt	83	Harlan	145	Red Willow
23	Butler	85	Hayes	147	Richardson
25	Cass	87	Hitchcock	149	Rock
27	Cedar	89	Holt	151	Saline
29	Chase	91	Hooker	153	Sarpy
31	Cherry	93	Howard	155	Saunders
33	Cheyenne	95	Jefferson	157	Scotts Bluff
35	Clay	97	Johnson	159	Seward
37	Colfax	99	Kearney	161	Sheridan
39	Cuming	101	Keith	163	Sherman
41	Custer	103	Keya Paha	165	Sioux
43	Dakota	105	Kimball	167	Stanton
45	Dawes	107	Knox	169	Thayer
47	Dawson	109	Lancaster	171	Thomas
49	Deuel	111	Lincoln	173	Thurston
51	Dixon	113	Logan	175	Valley
53	Dodge	115	Loup	177	Washington
55	Douglas	117	McPherson	179	Wayne
57	Dundy	119	Madison	181	Webster
59	Fillmore	121	Merrick	183	Wheeler
61	Franklin	123	Morrill	185	York

9th October, 2014

Rick.becker@nebraska.gov
NITC

Re: Comments regarding NITC 3-206: Address Standards

Dear Mr. Becker and the Technical Panel of the Nebraska Information Technology Commission:

As both a vendor working in this arena and as a resident of the State of Nebraska that utilizes E911 services GIS Workshop, Inc. (GISW) and its employees appreciate the hard work and dedication that have gone into creating and drafting these standards. GISW thanks you for the opportunity to comment and provide input on these important standards.

Where possible we will attempt to reference the appropriate page number and section on the standards document. Comments and questions that don't reference a particular section and are more general in nature will be confined to the end of this document.

Page 4, 1.2.2.1 Digitizing
The document refers to several elements related to map accuracy. The primary references being "Capture Scale for digitizing: 1:2400" and "…verified horizontal accuracy requirements for spatial resolution (12 inch minimum)…" Are we to assume that the document is referring to National Map Accuracy Standard (NMAS) 1:2400 mapping accuracy requirements per the National Standard for Spatial Data Accuracy (NSSDA)? If so, we recommend this be explicitly stated AND the actual statistical test for this accuracy be stated somewhere in the document and referenced in the document. This will help draw attention to the (well intentioned) but unnecessarily high accuracy requirements. In addition it will help GIS practitioners perhaps more completely understand the statistical requirements of the NSSDA. Note: section 1.6.2 goes a little further in expressing accuracy requirements, but we feel it is still not enough.

Page 4, 1.2.2.1 Digitizing
"…The NAIP imagery therefore does not meet these accuracy standards"

We applaud the effort to increase the accuracy of digital products. However, if NITC (via these standards) forces the acquisition of leaf off, higher accuracy imagery per the standards, this will cost NE tax payers several million dollars per acquisition and this expenditure will need to occur every few years. The most likely method of building these data will be manual placement of points on top of structures via imagery. The differences in accuracy between NAIP accuracy standards and the proposed standards for purposes of database construction to serve NextGen 911 are negligible

The NAIP imagery provides an excellent, "free" source of imagery that is updated periodically by the federal government. As an agricultural state, Nebraska is unlikely to be cut from the NAIP program, thus this "free" imagery will be available for many years to come.

We recommend the NITC technical panel revert to accuracy standards that allow use of the free NAIP imagery, but maintain a recommendation to use higher accuracy imagery where it is already available.

Page 6, 1.3.1 General Address Components
"Each jurisdiction shall develop a master address database that can be referenced when new street names are created or assigned so that duplications are avoided."

- What format should this "master address database" be in?
- What should it contain?
- Which jurisdiction does NITC recommend maintain it? The PSAP? The State? The County? The PSAP? The incorporated cities, towns and villages?
- Most counties in Nebraska already contain duplication of street names because of individual towns within a county/PSAP each containing "1st Street", "5th Avenue" etc. How does NITC propose these existing cases are handled?

Page 7, 1.3.2 Unique Identification Code
"A unique identifier is required for the statewide address point database."
Although this sounds useful initially, the proposed standard will quickly become a logistical nightmare without further recommendations from the NITC for jurisdictions to follow regarding the implementation and maintenance of these data elements:

- May a unique ID be reused? If so, how and when?
- What are the rules for the "stickiness" of a unique ID? For example, what if a property is demolished and later rebuilt in the same or similar physical location with the same address, does the ID remain (and therefore history) or should it receive a new ID?

We recommend some basic guidelines are considered and offered for comment…otherwise NITC runs the risk for numerous slightly different processes for the maintenance of the proposed ID scheme will result across the state, causing confusion and effecting the efficacy of the proposed standard.

Page 10, 1.4 Data Format
"The data format will need to be in an Esri Enterprise Geodatabase format…"

Historically, NITC and the State of Nebraska have employed a "vendor neutral" stance with regards to GIS data. As an Esri "Gold" business partner and long time Esri data user, this standard certainly assists GISW! However it amounts to a "sponsorship" of a private corporation by the State of Nebraska. We might add it is also becoming increasingly difficult to move data in and out of these proprietary formats and maintain ALL the information. By its nature, the proprietary Esri Enterprise Geodatabase contains functions and capabilities that no other format does…thus making export/import of all the information within the database impossible.

402.436.2150
4949 NW 1st Street, Lincoln NE 68521

We recommend that NITC consider additional suitable data formats so as to not favor one particular vendor.

Page 10, 1.5 Maintenance
"Addressing authorities need to be identified at the local level for approval of new addresses and assuring the addresses are implemented towards the database. This will insure that the physical location and the attribute database is updated and maintained in a timely manner."

- Identification of the numerous addressing authorities in NE is just the beginning. We believe only a thorough and ongoing training and education program will equip the "addressing authorities" with the knowledge and skills to comply with these standards. What does NITC propose to combat this?
- What would the NITC consider a "timely manner" for providing updates to the central database by the jurisdiction?

"This means mapping new structures by creating a geographic point as soon as (a) an address is assigned by the municipality and, if possible, (b) the physical location of the structure can be determined. For example, if a building permit has been issued and it includes a street address for the construction of a new residence, once a foundation is poured, then it would be possible to visit the site and capture that location."

Just an informational note…there are a handful of jurisdictions in NE that do not have zoning and may not issue building permits. Therefore address assignment is hit and miss so to speak. In those jurisdictions where they DO have zoning/building permits, the general convention is that a permit MUST be issued and an address MUST be issued before any construction activity can begin (including simple dirt work). The address must be clearly displayed at the construction site before construction begins. This may render comment "b" above meaningless as address assignment always occurs before permit issuance and construction occurs in NE or we may simply be misreading the meaning of section b.

Page 12 1.6.2 Physical Location
"The quality of the physical location will be evaluated based on: a) The placement of the address point representing it's real location and if it meets horizontal accuracy requirements. The National Standard for Spatial Data Accuracy (NSSDA) outlines a methodology for measuring positional accuracy. If additional testing is required, the NSSDA procedures outline the statistical procedures."

This comment is a follow on from the first comment in the document regarding the overreaching accuracy requirement in section 1.2.2.1. As one would expect, probably the most common way to check accuracy requirements of the data per the NSSDA would be to use survey grade GPS (mapping grade may or may not be guaranteed to reach the accuracy requirement) and measure a subset of point locations relative to their locations on the imagery. Surely this would entail climbing up onto the roofs of structures to accurately measure the location of the point data using a GPS? Ergo: the accuracy requirement specified in 1.2.2.1 is over reaching not only

because a human or machine digitizer will hit the roof top using 1:24000 NAIP or using expensive 1:2400 “specialty” imagery, but the means to test the accuracy is simply not possible!

General Comments:

- When does the NITC propose to adopt these standards? The documentation only refers to the public comment period.
- When does the NITC propose these standards become enforceable? Will existing data be “grandfathered in”? Will there be a grace period for adoption? These standards in their current form will put a heavy fiscal burden on those PSAPs/counties that have already constructed an address point database and in fact will penalize those PSAPs/counties that have chosen to move forward with this more accurate type of database as they will be forced to rebuild.
- The name “NAD” as it stands for “Nebraska Address Database” is:
    a. too easily confused with NAD (North American Datum)
    b. not an accurate description of the database

  Something along the lines of “Nebraska Address Point Database” is more appropriate.

Thank you once again for inviting our participation. If you should have any further questions, please contact me using the information below.

Sincerely

Claire Inbody
Executive Vice President, Technical Services
GIS Workshop, Inc.

Email: cinbody@gisworkshop.com
Tel: 402 436 2150

State of Nebraska
Nebraska Information Technology Commission
Standards and Guidelines

AMENDMENTS TO NITC 7-104

NITC 7-104 (Web Domain Name Standard) is amended as follows:

1. Section 1 is amended to read:

1. Standard

1.1
The official Nebraska ~~government domain is nebraska.gov~~state government domain names are nebraska.gov and ne.gov. The State CIO may also allow other domain names using the .gov top level domain.

1.2
All web domain name registrations, purchases, and renewals must be made by the Office of the CIO. Top level domain names other than .gov may be registered but cannot serve content or be publicly promoted. The domain state.ne.us is a supported legacy domain which may serve content but which should not be publicly promoted.
~~All public facing domains shall be registered as at least a third-level domain within the nebraska.gov domain. The third-level domain name shall uniquely identify the state agency or service. In addition to nebraska.gov, the domain ne.gov may be registered as an alternate domain to the corresponding nebraska.gov domain name.~~

1.3
All registered ~~nebraska.gov and ne.gov~~.gov domains ~~shall~~ must adhere to all federal .gov domain ~~registration requirements and~~policies and guidelines.

1.4
~~Domains other than nebraska.gov and ne.gov may be purchased but cannot serve content or be publicly promoted. The domain state.ne.us is a supported legacy domain which can serve content but which should not be publicly promoted.~~

~~1.5~~
Nonconforming domains in existence when this standard is adopted will be exempt from ~~the~~ these requirements ~~in Section 1.4~~ until December 31, 2014.

2. Effective January 1, 2015, Section 1.4 is repealed.

Project #	Agency	Project Title
09-01	SECRETARY OF STATE	Business Services Filing System

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

The purpose of this project is to replace the existing custom software utilized by the Business Services Division of the Secretary of State's Office.

The existing business services software is used to file and generate a variety of documents within the Secretary of State's Office. These documents include all corporate filings and filings made pursuant to the Uniform Commercial Code (UCC), revised article 9. The software is also utilized to file federal and state tax liens, farm product security filings, trade names and trademarks, and a variety of other statutory filings. The software also interacts with an image library, online filing services, and an accounts receivable system.

The existing business services software is 15 years old and is extremely difficult to modify and support. It was written in Visual Basic (VB6) which was released in mid-1998 and has been unsupported by Microsoft since April 2008. The company that initially developed our filing system stopped providing ongoing support, maintenance and enhancements in 2011. Programming and technical support is nearly extinct. The OCIO's office does not have programmers to support this system. We are at the mercy of a part-time contracted programmer who assists us outside of regular business hours 8:00 AM – 5:00 PM due to having other full time employment. This makes communications, updates, enhancements and support very difficult and costly. Having minimal support often makes it difficult to meet statutory changes for business processes. Replacement software is needed at this time in order to prevent system failure and to continue to provide the level of service currently expected by the business community.

FUNDING SUMMARY

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$180,000			40,000	140,000	
Project Management	$0					
Data Conversion	$0					
Other	$0					
Total	$180,000	$0	$0	$40,000	$140,000	$0
Capital Expenditures						
Hardware	$0					
Software	$2,000,000				700,000	1,300,000
Network	$130,000					130,000
Other	$320,000					320,000
Total	$2,450,000	$0	$0	$0	$700,000	$1,750,000
Total Request	$2,630,000	$0	$0	$40,000	$840,000	$1,750,000

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$0					
Cash Fund	$2,630,000			40,000	840,000	1,750,000
Federal Fund	$0					
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$2,630,000	$0	$0	$40,000	$840,000	$1,750,000

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	15	12	15	14	15
Project Justification / Business Case	25	19	25	23	25
Technical Impact	5	16	20	14	20
Preliminary Plan for Implementation	5	7	10	7	10
Risk Assessment	2	7	10	6	10
Financial Analysis and Budget	5	20	20	15	20
			TOTAL	**79**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- Goals appear to be logical, realistic and straight forward - Good project, desire to integrate all aspects of the process. - Well written and easy to understand. This project has a significant profile and has the potential to impact the public and the State in a very positive manner. It is far reaching in the customer base it serves. The information is critical to both the public and the State.	- The project appears to be headed in the same direction as the existing. If a solution is picked using similar software that could become outdated like the existing process. With 3 years to develop, existing items within the office may no longer be useable.
Project Justification / Business Case	- Potential revenue, from filings is estimated to be 10 Million per year per the report - Well written and the metrics provided are valuable in determining the size and scope of this project.	- Unsure what benefits are new to the proposed system versus what may already exist. The document sounds like all of these benefits are new and will be achieved with the project, yet filings were completed and fees collected. (configured by non-IT staff, yet changes to the application would quite likely require programming/application changes, confusing statements)
Technical Impact		- I did not get the sense that the Agency knows if a solution is actually available. While they know what they want - is there an off the shelf solution or are we looking at creating something? - Numerous vendors and applications available, yet only one mentioned in the prior section for justification.
Preliminary Plan for Implementation		- Based on what I read, I think the Agency needs to do a lot more research. Is there a solution or do they need to build one.
Risk Assessment		- While the project is well intended there are just not enough facts to assign a level of risk to the project. When they have a vendor in mind or a more definitive solution they should re-submit.
Financial Analysis and Budget		- From what I read these budget numbers cannot be justified.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	**Yes**	**No**	**Unknown**	**Comments**
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
09-02	SECRETARY OF STATE	Collection Agency Online Renewal Application

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

The Secretary of State's Office is requesting funding to develop an online renewal application for collection agency licenses. The online renewal application will allow collection agencies to renew their license online, update relevant contact information with the State and submit the required renewal documentation. Most licensed collection agencies are not physically located in Nebraska and desire the ability to communicate with the State licensing office electronically.

FUNDING SUMMARY

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$40,275			40,275		
Project Management	$25,680			25,680		
Data Conversion	$0					
Other	$0					
Total	$65,955	$0	$0	$65,955	$0	$0
Total Request	$65,955	$0	$0	$65,955	$0	$0

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$0					
Cash Fund	$65,955			65,955		
Federal Fund	$0					
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$65,955	$0	$0	$65,955	$0	$0

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	15	15	13	14	15
Project Justification / Business Case	25	23	23	24	25
Technical Impact	20	16	20	19	20
Preliminary Plan for Implementation	10	8	10	9	10
Risk Assessment	10	7	8	8	10
Financial Analysis and Budget	20	20	20	20	20
			TOTAL	**94**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The goals are well expressed and make sense. - Well written, easy to understand and all points addressed.	
Project Justification / Business Case	- The project justification is sound and reasonable. - Well written, easy to understand and all points addressed.	
Technical Impact	- Use of Nebraska.Gov makes very good sense from a technical perspective. - A good approach to the development of this	

Section	Strengths	Weaknesses
	project.	
Preliminary Plan for Implementation	- Implementation plan looks to be solid.	
Risk Assessment	- Plan to minimize risks looks appropriate.	
Financial Analysis and Budget	- Financial proposal appears appropriate.	

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
18-01	DEPT OF AGRICULTURE	Paperless Inspection Project

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

Phase II of the paperless inspection project.

FUNDING SUMMARY

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$260,000	0	200,000	30,000	30,000	
Project Management	$0					
Data Conversion	$0					
Other	$0					
Total	$260,000	$0	$200,000	$30,000	$30,000	$0
Total Request	$260,000	$0	$200,000	$30,000	$30,000	$0

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$260,000		200,000	30,000	30,000	
Cash Fund	$0					
Federal Fund	$0					
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$260,000	$0	$200,000	$30,000	$30,000	$0

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	12	13	9	11	15
Project Justification / Business Case	19	23	20	21	25
Technical Impact	16	19	15	17	20
Preliminary Plan for Implementation	6	9	5	7	10
Risk Assessment	7	8	4	6	10
Financial Analysis and Budget	19	18	12	16	20
			TOTAL	**78**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- Phase I must have gone well enough that Dept. of Ag is ready to make enhancements. - Had to look at the phase I document to understand the phase II work. When reviewed together, the project was easier to evaluate and understand. Without the phase I information, the scores would have been much lower. - A very worthy project but I felt the narrative for this project shown on the 2015-2017 request to be lacking in detail and substance. A link to the 2013-2015 request would be essential to understand the scope of this project. As a result	- Could have been a bit more description on what these enhancements are to be as well as new ones being developed that were not a priority during Phase I.

Section	Strengths	Weaknesses
	my scoring is based on a review of both request documents. In the Executive Summary for 2013-2015 it was cited as a 'one time biennium cost' which would appear to raise a question of why the 2015-2017 request is made. I also think it would be appropriate to provide the status on the development of this project. My understanding is that the Department would be the recipient of most of the efficiencies as opposed to the public.	
Project Justification / Business Case	- If the project justification provided in the FY 14/15 budget submission is still valid, this continues to be a good use of technology for Agriculture.	- It would have been beneficial for the Dept of Ag to provide more information about what has been accomplished on this project through the funding provided in FY 14/15. No indication if this is a result of a state or federal mandate although in the last submission there is a statement that alludes to good cooperation between state and federal.
Technical Impact	- If the technical impact provided in the FY 14/15 budget submission is still valid, this continues to be a good use of technology for Agriculture. They are using the solution required by the NITC.	- It would have been beneficial for the Dept of Ag to provide more information about what has been accomplished on this project through the funding provided in FY 14/15.
Preliminary Plan for Implementation		- It is hard to determine if the preliminary plan is adequate as no detail has been provided on what has been accomplished to date. - Current status of the project would be very helpful in determination. I found that the various phases were not very well defined nor was the expected completion date, as 2013-2015 request indicated full implementation by January 2015.
Risk Assessment	- If the risk justification provided in the FY 14/15 budget submission is still valid, this continues to be a good use of technology for Agriculture.	- It would appear that the risks are minimal but due to lack of detail regarding the status of Phase I, it is difficult to determine. - I did not find that risks were enumerated in either request.
Financial Analysis and Budget	- It would appear that projects were not completed in Phase I, causing the $200,000 re-appropriation. That in addition to the $60,000 they are requesting, appears to be reasonable.	- It would appear that the funding is adequate, but due to lack of detail regarding the status of Phase I, it is difficult to determine. - The narrative is confusing.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
24-01	DEPT OF MOTOR VEHICLES	Nebraska Systems Update and Modification (NSUM)

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

The Department of Motor Vehicles (DMV) is beginning the process of developing a single DMV system that will, over time, host all DMV services. The system will be 'customer centric' and be designed to provide a single, fully integrated access point for all customers to conduct business with the DMV.

This project will be approached from the view point of the customer's needs and expectations. Applications and technologies will be built to support redefined and modernized business processes. Although the entire project will span several budget periods, this project phase will focus on the preliminary events required for the recreation of the DMV Vehicle, Title and Registration (VTR) business processes, applications and technologies.

In 2014 LB 905 was passed by the Nebraska Legislature and states; "There is included in the appropriation to this program for FY2014-15 $271,128 Cash Funds to identify a replacement vehicle title and registration system, associated costs, and financing options."

"The VTR system, now over 20 years old, no longer meets the evolving business requirements of stakeholders and expectations of Nebraska residents. Implementation of a new VTR system should be considered. Revenues to support a new VTR system may be derived from a variety of sources. … The DMV should move immediately to collaboratively develop a funding model that is supported by key stakeholders. Upon approval, the DMV should create a project structure, conduct a business process analysis, and further refine the analysis with a concept of operations and system requirements. With that information, the DMV and its stakeholders will be positioned to evaluate how it will approach VTR system replacement. …. Upon determination of a direction, a project plan will be further developed and the contracting/tasking of VTR system development and implementation will be undertaken. Based on the experience of other states, VTR system implementation projects typically have taken between 4 to 10 years from initial planning through implementation of the production system." (1)

(1) Excerpts from: "2013 DMV VTR Business Case" - Prepared for the Nebraska Department of Motor Vehicles by Nancy Shank, PhD, MBA, Associate Director, University of Nebraska Public Policy Center.

FUNDING SUMMARY

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$0					
Project Management	$1,677,806	127,500		383,000	385,848	781,458
Data Conversion	$0					
Other	$0					
Total	$1,677,806	$127,500	$0	$383,000	$385,848	$781,458
Other Operating Costs						
Personnel Cost	$875,032	132,418		180,530	184,592	377,492
Supplies & Materials	$8,500	2,500		3,500	2,500	
Travel	$44,890	8,710		16,745	10,835	8,600
Other	$0					
Total	$928,422	$143,628	$0	$200,775	$197,927	$386,092
Total Request	$2,606,228	$271,128	$0	$583,775	$583,775	$1,167,550

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$0					
Cash Fund	$2,606,228	271,128		583,775	583,775	1,167,550
Federal Fund	$0					
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$2,606,228	$271,128	$0	$583,775	$583,775	$1,167,550

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	12	10	14	12	15
Project Justification / Business Case	25	15	25	22	25
Technical Impact	15	13	15	14	20
Preliminary Plan for Implementation	10	5	10	8	10
Risk Assessment	8	5	8	7	10
Financial Analysis and Budget	15	5	15	12	20
			TOTAL	**75**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- Planning approach appears sound. - The Business Case document was a comprehensive look at the issues with the current system. It articulates all users of the information and a nice review of what other state are doing as well as emerging trends. - The DMV VTR business case is well written.	- Measurable efficiencies and ROI could use more definition. - Neither the Project Proposal Report nor the Business Case document clearly articulated the goals and problems to be resolved. IT Project Proposal did not list beneficiaries, outcomes or assessments. It was focused on the tasks needed to get to the project plan stage, not why the project is needed. It is implied through the faults of the current system. While this project is in the early planning stage, and "how" it is to be accomplished is not yet determined, the project will have better success if it the organization clearly articulates what they want to accomplish and what problems they intend to solve. That will also give them a better assessment tool to measure success. - A broader "green field" approach with more collaboration of stakeholders should be considered.
Project Justification / Business Case	- Preparation of the business case document demonstrates a thoughtful and thorough approach to the project. - Identifies that older technology is expensive to maintain and is not adaptable to our changing business needs. - Clearly, although there is no mandate, an alternative to the existing DMV VTR system is required.	- While this is in the initial phase of the project and there are still many questions, the proposal does not articulate the customer centric reasons to justify the project. - (As the project evolves provision should be made to consider new alternatives approaches.)
Technical Impact	- Compliance with state systems, standards and management practices is a notable strength. - The project will conform to NITC standards and utilize OCIO facilities and resources. - Good approach by designing with guidance from the OCIO - and looking at what some other states are doing in this area.	- Technical impact difficult to assess in this stage of the process. - Vague in approach; however, that will be determined as part of the initial phase of the project. - More research should be done to determine current "state of the art" alternative approaches being considered in other similar collaborative efforts.
Preliminary Plan for Implementation	- Inclusive of stakeholders. Governance model seems very reasonable. - Input from user/stakeholder team that includes private industry is a positive element. Additional staff approved prior to the project, more resources. - Good overall implementation timeframe and related objectives - need to ensure commitment of stakeholders as project evolves.	- No description of project team roles. Who is the project champion? Executive sponsor? - More detail needed - (as an example) - footnote comment #26 from the 2013 AAMVA conference.

Section	Strengths	Weaknesses
Risk Assessment	- Scoring for this stage only: funding solution is project's largest risk. - They have studied other projects and know some of the pitfalls. They plan to utilize outside resources. - This area is a significant revenue generator for the state, and the current system is outdated and unsustainable.	- No solution for their largest and most immediate obstacle - funding. - Conversion to a new system will be complex and must be done with minimum impact to the state revenue streams.
Financial Analysis and Budget	- No request for general funds. Seeks authorization for cash funds. - Year 1 is exploration. It is good that they are taking the time to explore and plan before jumping in to the project. They have funding for the exploration. - Some budget estimates from the experience of other states for "similar projects" were considered.	- Cash fund model is one of the deliverables, in form of future legislation. Lack of detail regarding our project management estimates. - The Business Case document suggests the project will cost $13-50 Million and take from 4 to 10 years to complete; however, the budget is less than $3 million over a 4 year period. Based on the Business Case document and research, this seems inadequate and not sustainable. Consider allowing more time and more money to complete the project. - More detailed budget planning needs to be done to identify project financing options - with active participation of all project stakeholders.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
40-01	MOTOR VEHICLE INDUSTRY LICENSING	Replacement Software Program

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

Effective January, 2015, the software program "FOXPRO", that Agency 40 uses to license all of our members, will no longer be supported.

This agency, along with other agencies, are in the planning stage of how to go about replacing FOXPRO with a new software program.

FUNDING SUMMARY

[No information provided.]

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	11	8	9	9	15
Project Justification / Business Case	15	10	15	13	25
Technical Impact	0	10	12	7	20
Preliminary Plan for Implementation	0	0	5	2	10
Risk Assessment	0	0	5	2	10
Financial Analysis and Budget	0	0	12	4	20
			TOTAL	**37**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The agency is aware of the need to replace an old software program that is no longer supported. They are also cognizant of the need for something that is user friendly. - Awareness that their existing licensing software needs to be replaced due to the end of support effective 01-01-2015. - Rationale for project pretty straight forward - application vendor support expiring. Since vendor support expires January 2015 will need to be addressed in some fashion but also too early in the process to have all the information at submission. Minimum Score only reflects fact that information not available and not relative importance.	- The agency does not describe in a clear manner what the goals are that the new system will need to address. Is there a need for self service? Is there a need for reporting to another agency or partner? Are they looking for a website with a database behind it or a fully functioning application? - No separate IT Plan was submitted.
Project Justification / Business Case	- The agency states clearly that they are attempting to serve the licensees and the car buying public in a timely manner. - Acknowledgement that in order to continue to provide services to the Auto industry a replacement app is required and needs to be as good or better than their current application and that it needs to serve their customers in a timely manner.	- There is no detail behind why the agency needs to provide this software program. Is it a legislative mandate? Something that tracks information for the agency and the state and is required (and by who)? Or is this a nice to have item? - Unknown as to whether other solutions have been considered.
Technical Impact	- It is a known requirement that the licensing software application needs to be replaced.	- The agency does not address any technical elements. - Currently, no proposed replacement.
Preliminary Plan for Implementation		- Agency states this is not applicable. - No implementation plan presented.

Section	Strengths	Weaknesses
Risk Assessment		- The agency states that this is not applicable. - No replacement plan proposed.
Financial Analysis and Budget	- The Motor Vehicle Industry Licensing Board did participate in a meeting held at the Office of the CIO with other Licensing agencies, to discuss common interests in a replacement licensing software product.	- There are no costs addressed, nor does the agency address how they would support a new system financially. - No estimated dollars included.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
41-01	REAL ESTATE COMMISSION	Licensee Database

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

The Nebraska Real Estate Commission is seeking funding for the replacement of the current real estate license database, which was acquired in 1998. The licensee database keeps general contact information on licensees, tracks the relationship between designated brokers (licensees with authority to operate independently) and affiliated licensees (licensees with authority to act as a licensee only under the supervision of the designated broker. In addition, the database tracks and records payments for license applications, renewals and transfers. The database also generates reports and licensee lists, as well as recording and tracking disciplinary matters and generating form letters with the appropriate licensee information inserted (late renewal notices, etc.).

FUNDING SUMMARY

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$43,000		13,000	15,000	15,000	
Project Management	$0					
Data Conversion	$0					
Other	$0					
Total	$43,000	$0	$13,000	$15,000	$15,000	$0
Telecommunications						
Data	$31,500		10,500	10,500	10,500	
Video	$0					
Voice	$0					
Wireless	$0					
Total	$31,500	$0	$10,500	$10,500	$10,500	$0
Other Operating Costs						
Personnnel Cost	$157,055		43,527	56,764	56,764	
Supplies & Materials	$0					
Travel	$0					
Other	$0					
Total	$157,055	$0	$43,527	$56,764	$56,764	$0
Capital Expenditures						
Hardware	$14,020		7,000	3,510	3,510	
Software	$550,500		500	550,000		
Network	$0					
Other	$0					
Total	$564,520	$0	$7,500	$553,510	$3,510	$0
Total Request	$796,075	$0	$74,527	$635,774	$85,774	$0

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$0					
Cash Fund	$796,075		74,527	635,774	85,774	
Federal Fund	$0					
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$796,075	$0	$74,527	$635,774	$85,774	$0

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	13	12	14	13	15
Project Justification / Business Case	19	20	22	20	25
Technical Impact	15	15	16	15	20
Preliminary Plan for Implementation	7	5	7	6	10
Risk Assessment	6	5	7	6	10
Financial Analysis and Budget	16	18	16	17	20
			TOTAL	**78**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The agency has clearly defined the overall goals of the project and the types of issues they are attempting to overcome. They also address the need to interface with other items such as payment systems and web based filing. - Well described goals and need for a replacement of their 1998 licensing system. Replacement is required due to discontinued support of Sybase. - Rationale for project pretty straight forward - need to upgrade old system (1998) to enable greater access, self-service direction, overall flexibility & functionality and ongoing support. Goals cover the key points even though selection not yet known. Need to replace existing system (16 years old?) should carry higher priority when fully vetted.	- The agency could have made a stronger case about what success looks like. For example, is the intent to have the system take an online application and move it through an automated workflow that steps the agency through each of the steps it takes to obtain a license? If given the opportunity to dream - what would the system be? - Several interfaces desired.
Project Justification / Business Case	- Agency has issued an RFI to at least find out what the potential replacement options are. - An RFI for a potential replacement licensing system was issued in 2013. Three responses were received. - Rationale for upgrade clear in ability to eliminate the need for specialized support by OCIO, simplify ongoing support, enhanced reporting capabilities and reducing costs longer term.	- It is an old system that needs to be replaced - but what is the business case? Is it costing you too much money to support it? When is the payback of a new system? What does the agency do if it is not replaced? What happens to the agency if this system dies? - Two of the three responses indicated a replacement cost of a system to be approximately $550,000. - Should make a stronger case upfront in narrative of the fact the Sybase/SAP support has/will go away and support critical moving forward?
Technical Impact	- The technical impact of no longer having support for the system is large and well described. The point of the audit finding is strong support. - A new system would provide the opportunity to acquire a system that would meet state standards - including an audit finding deficiency of only one level of login/security. Potentially could provide better reporting capability to the public. - Good points made toward identifying impact/risks to the business operation and to conform to. Score assigned recognizing unknowns.	- Does the system meet any NITC standards? Not understanding the business of the agency, what is so important about disciplinary information? This would make the technical impact of a non-supported system stronger. - Did not address hardware or networking requirements. - Would some verbiage on selection options to include consideration for an SaaS model?
Preliminary Plan for Implementation	- The agency understands the need for an RFP - but may need to include more than the internal agency IT staff and the Director in the process. - If funding is approved, would draft an RFP per State Purchasing guidelines for the replacement product.	- Your plan for how quickly the plan may be implemented is a bit aggressive. Additionally, since this will be an Enterprise project as defined by the NITC, the agency needs to also add the NITC process to their plan. - No other details given as relates to this section.

Section	Strengths	Weaknesses
	- Rated 7 only because intent to RFP/select and information not available. As noted earlier might help to identify what options for delivery would be considered from vendors in an RFP?	
Risk Assessment	- They pledge to do a thorough assessment of any proposed replacement system and to follow policies and guidelines of the Office of the CIO. - High level risks well defined but since solution not fully known at submission made a 7. Definitive risks would likely change or new risks ID'd once defined/assessed at selection?	- Not sure the agency understands the risks of this project. What if the requirements are not clearly defined and the product does not address the main issues the agency is attempting to resolve? With a small IT staff, there is a risk that the provider chosen does not have the skills to pull the project off - and that is not known until the end of the project. Is the agency willing to change their business process to meet the needs of the solution chosen? - Acknowledgement of risk but no actual description of that risk.
Financial Analysis and Budget	- Agency seems to have a plan on how they can fund this project, assuming that they don't lose licensees in the process. Also it is unclear whether this is a one-time hike or a forever hike and paying this bill over time. - Have included dollar amounts for the IT expenditures. - Understand acquisition costs not fully known yet. Inclusion of commentary on fees to support overall funding reflect "foresight" for any subsequent Appropriations discussions. Again score reflects know aspects of project at submission.	- Fee increase required in order to fund this purchase.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

Project #	Agency	Project Title
81-01	COMM FOR BLIND & VISUALLY IMPAIRED	AWARE Client Data Tracking System Procurement

SUMMARY OF REQUEST (Executive Summary from the Proposal)

[Full text of all proposals are posted at: http://nitc.nebraska.gov/commission/project_proposals/2015-2017.html]

AWARE (Accessible Web Activity Reporting Environment), produced by Alliance Enterprises, is used by over 31 State Rehab Agencies to manage grants from U.S. Department of Education's Rehabilitation Services Administration.

Strengths:
Financial component can be linked to the Edge system to track obligations and payments for case services
Required changes to federal reporting requirements are added through semiannual software upgrades
Continuity of Operations can be assured as developments and modifications are developed by the vendor
Nonvisual accessibility is maintained through close partnerships between vendor and software manufacturers
Current case management system is heavily customized and updates are costly and time-consuming; it is not feasible to add financial component.

AWARE is a product of Alliance Enterprises of Lacey, WA. It is designed to specifically meet the reporting needs of Vocational Rehabilitation agencies that report to the Rehabilitation Services Administration (RSA), which is part of the Department of Education. The system is used by 31 states and other agencies to manage grants awarded to them by the RSA. The AWARE system has a financial component that creates obligations for products and services procured for clients as a part of their case services. It is our goal to utilize this component in conjunction with data exchange with the Edge system to track obligations and payments for case services. To meet our current case management needs, we are utilizing a system that was given to us by the state of Iowa, which we have heavily customized. Although the system currently performs effectively, a change to the AWARE (Accessible Web Activity Reporting Environment) would benefit us in the future from a continuity of operations standpoint, as well as ensuring that modifications to the system necessitated by changes in federal reporting requirements are not as costly or time-consuming to implement. In addition, upgrades to the system can be insured to be accessible to our blind staff as Alliance Enterprises works closely with manufacturers of screen access technology, operating systems, and backend database and related software.

FUNDING SUMMARY

(Images from the Budget Request and Reporting System.)

IT Project Costs

Contractual Services	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
Design	$0					
Programming	$100,000		100,000			
Project Management	$103,000		103,000			
Data Conversion	$50,000		50,000			
Other	$0					
Total	$253,000	$0	$253,000	$0	$0	$0
Training						
Technical Staff	$6,871		6,871			
End-user Staff	$11,353		11,353			
Total	$18,224	$0	$18,224	$0	$0	$0
Capital Expenditures						
Hardware	$0					
Software	$100,276		100,276			
Network	$0					
Other	$0					
Total	$100,276	$0	$100,276	$0	$0	$0
Total Request	$371,500	$0	$371,500	$0	$0	$0

Funding

	Total	Prior Exp	FY15 Appr/Reappr	FY16 Request	FY17 Request	Future Add Request
General Fund	$0					
Cash Fund	$0					
Federal Fund	$371,500		371,500			
Revolving Fund	$0					
Other Fund	$0					
Total Funding	$371,500	$0	$371,500	$0	$0	$0

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	15	10	9	11	15
Project Justification / Business Case	25	18	22	22	25
Technical Impact	18	15	15	16	20
Preliminary Plan for Implementation	10	8	8	9	10
Risk Assessment	10	8	4	7	10
Financial Analysis and Budget	13	15	15	14	20
			TOTAL	**79**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The goals are to update software that will allow the agency to fulfill federal guidelines. - Want to utilize a system that is easy to maintain and not be heavily customized; want to produce more accurate data. - Goals are clear.	- Start date listed at 09-01-2014 although many decisions have not been made; indication of being a sole source acquisition. - Very Brief. Didn't see how they would measure the effectiveness of the solution. Outcomes are vague.
Project Justification / Business Case	- CFVI has significant issues in terms of accessibility. They did a good job of assessing what software could fit their requirements that is accessible. It is a part of fulfilling federal reporting requirements and has been used by other VR agencies. - Indicate they need to stay current with federal reporting requirements. (Do not specifically state it is a federal mandate.) Would provide capability of several staff knowing how to utilize the system in lieu of one or two analysts. - I thought this was very clear on the benefits and review of other solutions.	- Only one other case management system was explored. - They mentioned linking this to the Payroll and Financial Center, but nothing about working with DAS. Is the assumption that they will be able to interface with no problems?
Technical Impact	- The proposal clearly discusses how the project enhances the current technology and the software, hardware, and communication requirements. - Indicate they are working with the Office of the CIO and the vendor to determine the best hosting solution. The system is used by 31 other states. - They are aware of the options available to them for implementing the system. They know the standards that must be followed.	- There could have been a clearer description of reliability, security and scalability. - Current system will need to go through a data conversion process. An interface may be required to the State's mainframe. - Too many questions as to how this should be implemented. Based on my experience, there will be a cost difference between hosting it internally and externally. Is the cost based on the most expensive option? I would have liked to see a breakdown of the development that is required.
Preliminary Plan for Implementation	- The implementation plan is clear. The project team is outlined and the strategies to minimize risk seem appropriate. - Milestones, deliverables, dates and Project Team are stated. Have acknowledged considerable training will be required. - Good description of training and on-going	- Timeline seems aggressive since the system has yet to be purchased. - Since and interface with the Payroll and Financial Center will be required, I expected to see someone from DAS as part of the team. This isn't part of the timeline either.

Section	Strengths	Weaknesses
	support.	
Risk Assessment	- A good description of possible barriers and of strategies to address problems. - They have identified possible barriers and risks and did identify strategies to help minimize risks. A part of that is to leave the old system in place for a number of years. - Identified a number of strategies that could be used to minimize risks.	- They indicate the system will be supported by NCBVI staff, the vendor and the OCIO. The type and amount of that support is not fully defined. - I don't see how the strategies are related to the risks defined. Identified risks should have strategies that explain how to minimize the risk and what will be done if the risk occurs.
Financial Analysis and Budget	- Funding is appears to be 100 per cent federally funded.	- Budget doesn't really explain where the numbers are coming from although the project is still in the initial planning stages. - There were no hardware or networking costs identified. Since the hosting solution has not yet been determined was not sure if the need for hardware and networking had yet been decided as well. - It's reasonable but since there are two options and they haven't decided which way to go, I'm concerned that it may cost more or they may sacrifice something in order to stay within budget.

TECHNICAL PANEL COMMENTS

Technical Panel Checklist	Yes	No	Unknown	Comments
1. Is the project technically feasible?				✓
2. Is the proposed technology appropriate for the project?				
3. Can the technical elements be accomplished within the proposed timeframe and budget?				

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Business Services Filing System

General Section

Contact Name :	Chad Sump	**E-mail :**	chad.sump@nebraska.gov	**Agency Priority :**	1
Address :	1445 K St., Suite 2300	**Telephone :**	402-471-8779	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68509		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	180,000	0	0	40,000	140,000	0
Project Management	0	0	0	0	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	180,000	0	0	40,000	140,000	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	2,000,000	0	0	0	700,000	1,300,000
Network	130,000	0	0	0	0	130,000
Other	320,000	0	0	0	0	320,000
Subtotal Capital Expenditures	2,450,000	0	0	0	700,000	1,750,000
TOTAL PROJECT COST	2,630,000	0	0	40,000	840,000	1,750,000

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	2,630,000	0	0	40,000	840,000	1,750,000
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**2,630,000**	**0**	**0**	**40,000**	**840,000**	**1,750,000**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Business Services Filing System

EXECUTIVE SUMMARY:

The purpose of this project is to replace the existing custom software utilized by the Business Services Division of the Secretary of State's Office.

The existing business services software is used to file and generate a variety of documents within the Secretary of State's Office. These documents include all corporate filings and filings made pursuant to the Uniform Commercial Code (UCC), revised article 9. The software is also utilized to file federal and state tax liens, farm product security filings, trade names and trademarks, and a variety of other statutory filings. The software also interacts with an image library, online filing services, and an accounts receivable system.

The existing business services software is 15 years old and is extremely difficult to modify and support. It was written in Visual Basic (VB6) which was released in mid-1998 and has been unsupported by Microsoft since April 2008. The company that initially developed our filing system stopped providing ongoing support, maintenance and enhancements in 2011. Programming and technical support is nearly extinct. The OCIO's office does not have programmers to support this system. We are at the mercy of a part-time contracted programmer who assists us outside of regular business hours 8:00 AM – 5:00 PM due to having other full time employment. This makes communications, updates, enhancements and support very difficult and costly. Having minimal support often makes it difficult to meet statutory changes for business processes. Replacement software is needed at this time in order to prevent system failure and to continue to provide the level of service currently expected by the business community.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

Specific goals and objectives are contained in the supporting information section.

1. Describe the project, including:

- Specific goals and objectives;
- Expected beneficiaries of the project; and
- Expected outcomes

Specific goals and objectives:

The specific goal of this project is to replace the existing Business Services filing and image retrieval software system with a new system within the next 3 years.

The new system must meet the following criteria:

1. Use modern technology that is supportable using local resources and can be configured using Secretary of State internal IT resources.
2. Improve the level of functionality of the existing system and expand services currently provided.
3. Interface with existing online services provided by the Secretary of State's Office and allow the expansion of these services.
4. Eliminate existing silos in the current system so that filing processes, accounts receivable and deposit preparation are completed in one system.
5. Interface with the existing image library and with barcode label printers, barcode label hand scanners and document imaging scanners or contain a document imaging solution.
6. Provide extensive reporting capabilities both standard and ad hoc.

Beneficiaries:

Banks and other financial institutions, business entities, attorneys, law offices, accountants, registered agents, insurance companies, lenders, debtors, other state agencies, the Internal Revenue Service, county clerks, buyers of farm products, grain elevators, livestock yards, Legislators, general public, taxpayers, internal processors.

Expected Outcomes:

The expected outcome is to obtain a modern, reliable, efficient, flexible, redundant filing system which easily accommodates statutory changes, reporting, tracking and online services.

2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

Extensive system testing by internal staff and internal operational beta testing by external users will be utilized to determine whether the system meets pre-determined criteria.

Project deliverables will be monitored to ensure the system is fully functional with all components operating 99.9 percent of scheduled production hours. The system will be subjected to penetration testing, intrusion testing and vulnerability scans for both internal and external systems. The results of these scans will be reviewed and a mitigation plan created if vulnerabilities or weaknesses are found.

3. Describe the project's relationship to your agency comprehensive information technology plan.

This project is included in our agency's comprehensive information technology plan. Our agency will be able to use some existing infrastructure (i.e. PCs, printers and scanners) to utilize the system. The new system will incorporate technology that has application support, maintenance, redundancy and provides a more efficient filing process for our business services customers and internal staff. It will be developed with current technology making it easier to find programming support and developers than what's available for our current system.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).

The existing business services software system is 15 years old and is likely to fail. It is extremely difficult to modify, maintain and support.

The system had two major failures in 2012. One of the failures lasted five business days. During that time, no new filings were able to be received for three days and documents remained irretrievable for the full five days. During this time period, lenders were not able to file any financing statements evidencing loans made. In addition, businesses, lenders and other constituents were unable to obtain any corporate records. While the true economic impact of the downtime is unknown, it likely had a significant impact on commerce.

Businesses which operate in Nebraska are not required to organize in Nebraska. In order to attract and keep businesses in the State of Nebraska, the processes used to organize and register in the state must be convenient and user friendly and must utilize modern and efficient technology. Delays in the processing of business filings or financing statements could detract from the business climate in the State.

While the precise economic impact of system downtime is unknown, the revenue derived from filings and record requests processed using the system is known. During fiscal years 2013 and 2014, 453,879 filings were completed and 826,912 requests were processed utilizing the existing system. The revenue generated from these filing fees totaled approximately $19 million, including $15 million in general fund dollars.

Benefits to external customers:

1. Provide electronic email capabilities.
2. Provide more efficient tracking of filing statuses via system dashboard or in-box capabilities.
3. Provide business owners and registered agents electronic notification when filing changes are made to their entities as tracking and fraud detection tools.
4. Provide direct electronic notifications for annual and biennial tax reports as they are assessed to deliver notices timely and help ensure entities remain in good standing.
5. Improve processing time for filings.

Benefits for staff:

1. Improved access to system data, standard and ad hoc reports.
2. Ability to make statutory changes through configurable software via internal information technology staff.
3. Improved workflow of staff assignments.
4. Ability to track output of individual staff to increase efficiency and productivity.

5. Reconciliation capabilities for related online services.
6. More efficient retrieval of filing information/documents.
7. Built in tracking of accounting and financial information including recording and generating receipts.

5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

A state system has been sold to two other states at a fraction of the cost of a new system. However, this system only includes the base code of the original state that created it. In order to use such a system (required by current statutes) the code must be modified by each State's own programming team to meet the State's standards and statutory requirements. Our agency needs software that can be configured by in-house non-programmer IT staff. This approach would require a new vendor or OCIO programmers to customize and enhance the code to meet our current business needs plus add functionality and modifications to improve filing processes. Overall this type of system is not an improvement to our current system and does not meet all statutory requirements. This application does not include farm service product security filing capabilities nor the functionality to produce a master lien list which is a requirement for Nebraska. The system would not allow for fees to be split between fund types, has many servers and independent processing parts and is not a central system. This system was developed using .Net 2.0 running on SQL server 2005, both are outdated technology. It also uses .Net 4.0 that will be no longer supported by Microsoft after January 2016. To summarize this system does not meet our needs and provides no real advantages over our current system.

Another option which was considered was to modify the current system from VB6 language to a VB.Net environment which Microsoft has designated as the successor. An automated conversion tool exists but for most projects a fully automated conversion is impossible. Upon consultation with the OCIO, this option has been discouraged as it is likely that some functionality will be lost during the conversion. In addition, this conversion does not enhance the existing system and does not address existing silos within the current system.

Continuing to utilize our current system is not viable. This system is 15 years old and the company that initially developed the application is no longer providing ongoing support, maintenance and enhancements. The technology used by our system has not been supported by Microsoft since April, 2008 and the OCIO's office does not have programmers to support the system. If we lose our existing contracted programmer we will not be able to implement or comply with statutory changes. If the system fails, filings and associated fees cannot be accepted and deposited, and the state will suffer an economic loss as described previously. In addition, the business community will suffer and the business climate of the state will suffer.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

This project is not the result of a state or federal mandate; however our office is required to make changes to the business services filing system in a timely manner based on multiple statutory changes that take place on an annual basis.

TECHNICAL IMPACT (20 PTS):

7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.

This project will replace our current business services software with new technology. Our software was written in VB6 which Microsoft stopped providing maintenance and support for on April, 2008. The system runs on SQL Server 2005 which Microsoft stopped providing maintenance and support for on April, 2011. This technology is dated and finding technical support is nearly impossible. We know of only one part-time programmer that we've contracted with to make needed updates, enhancements and support our system. We are at the mercy of this programmer who assists us outside of regular business hours 8:00 AM – 5:00 PM due to having other full time employment.

The software and hardware for the system must utilize current supported technology and services available for each product. We cannot define yet what the software and hardware requirements are as there are numerous vendors and applications available. We do know that we want the system to be setup on a virtual infrastructure. The system will be configurable to allow for ease of programming changes and there will be an increased pool of programmers and network support. The technology will be newer and have an extended range of programming language support. The technology purchased will be something that can be supported by the OCIO if needed. The system must have the functionality to interface with Hyland OnBase or have a document imaging management solution. The system needs to interact with barcode label printers, barcode label hand scanners and document imaging scanners or have an alternative built into the system. The system will be able to add older entities and filings currently not in the system and have the ability to upload documents currently not imaged from past filings.

It is anticipated that the new system will have the following enhancements:

1. Improved system security and sign-on for individual staff.
2. Allow the ability to easily set permissions based on individual(s), group access or roles.
3. Contain an interface to the state accounting system, Enterprise One.
4. Reoccurring tasks or job processes that can easily be scheduled on a regular basis.
5. More flexibility to add new filings or change funding information when needed.
6. Configuration changes can be supported and managed in a simplified manner.
7. Workflow configuration to route filings and requests to the right user or user group for more efficient processing.
8. Customized templates that can be formatted for filing acknowledgements, certificates, notices, and other documents.
9. Electronic communications that can be sent automatically for notices and alerts.
10. Extensive system reports and ad-hoc reporting.
11. Integrations for online credit, debit, and ACH processing (E-commerce).
12. XML submissions for UCC filings.
13. Internal filers can automate tasks or processes and setup notifications when completed.
14. Apply and install software updates automatically versus current manual process.
15. Auto populated technology that can capture frequently entered information by applicant and prepopulate it into the system when reviewed.
16. Disability compliant.

8. Address the following issues with respect to the proposed technology:

- Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.
- Address conformity with applicable NITC technology standards and guidelines (available at http://nitc.ne.gov/standards/) and generally accepted industry standards.
- Address the compatibility with existing institutional and/or statewide infrastructure.

The new system will comply with NITC standards and guidelines as well as adapt to the statewide infrastructure. The software and hardware for the system must utilize updated and supported technology and services available for each product. By upgrading this system we are drastically improving the reliability and security of the information. Individual staff sign on will be more secure and will provide the ability to easily set permissions based on individual(s), group access or roles. A redundancy plan will be established and the system will be on a scheduled backup plan. The system will have separate test, training, and production environments and have a version control system in place to be able to track changes. Any data integrity problems must be easily identified and fixed. The system must be fully functional with all components operating 99.9 percent of the scheduled production hours. The system will be subjected to penetration testing, intrusion testing and vulnerability scans for both internal and external systems. The results of these scans will be reviewed and a mitigation plan created if vulnerabilities or weaknesses are found. We envision the new system will utilize the State of Nebraska's Active Directory Domain (STN).

The system would allow enhanced future growth for new business service filings and have the overall capability to expand and meet future needs of the application.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

This project will replace our current outdated business services software with new technology and will eliminate existing silos so that application filings and other processes are all in one system that provides accurate and extensive standard reports. The level of service will be enhanced to customers by increasing the speed, accuracy, and ease of data filing and retrieval. Greater stability will reduce downtime and eliminate the opportunity for system failure through newer technologies and increased system support.

Stakeholders' acceptance will be gathered by ensuring the new software is simplified, time saving, and user friendly. It will provide better communication and tracking tools for filers on the front-end, with quicker and more accurate retrieval of filing data on the back-end to create efficiencies in answering customer questions.

The Project Team involves a cross-section of resources from several groups which include the following:

- Project Sponsor: John A. Gale, Secretary of State.
- Ann Hinkle – SOS – Deputy for Business Services and Technology. Ann has previously directed IT projects and developed RFPs for other government agencies.
- Teri Sefrna – SOS – Business Services Office Manager. Teri brings extensive business knowledge gained over the 29 years with the Secretary of State's Office.

- Jody Damian – SOS – Business Services Senior Filing Officer. Jody brings extensive business knowledge gained over the 23 years of experience with the Secretary of State's Office.
- Colleen Byelick – SOS – General Counsel. Colleen serves as the Legal Counsel and has experience in business services processes, legal and RFP requirements.
- Suzie Hinzman – SOS – Deputy for Finance and Human Resources Division. Suzie serves as our Finance Deputy.
- Chad Sump – SOS – IT Systems Analyst. Chad has 12 years' prior experience working at the Kansas Secretary of State's Office doing IT work for the Business Services Division.
- Gavin Crowl – SOS – IT Elections Officer. Gavin has technology experience and provides information technology support to the office.
- Current IT Contracted Support – Has extensive knowledge of the existing system.
- OCIO – (TBD)
- DAS – (TBD)
- External Resource

10. List the major milestones and/or deliverables and provide a timeline for completing each.

Milestones: Project to take entire FY 16-17 and carry over into the next biennium FY 18-19.

- Define specifics that will be delivered and note how they meet statutory requirements. (June 2015)
- Completion of Request for Proposal (RFP) (September 2015)
- Release RFP (January 2016)
- Contract award (June 2016)
- Start date (July 2016)
- Design, Development and Documentation of system and any necessary interfaces (July - October 2016)
- Corporations (October 2016 – June 2017)
    - Conversion of Data
    - Training Documentation
    - Testing of Application
    - Training & Onsite Assistance
    - Communication and Partnership Coordination for Implementation
    - Production Implementation and System Launch
- UCC (April 2017 – December 2017)
    - Conversion of Data
    - Training Documentation
    - Testing of Application
    - Training & Onsite Assistance
    - Communication and Partnership Coordination for Implementation
    - Production Implementation and System Launch

11. Describe the training and staff development requirements.

Prior to the new system going live staff will receive onsite training by the vendor. The vendor will provide the project manager with the proposed training schedule, training curriculum, and delivery of training for approval. The training will ensure all users are adequately trained on the system including front-line, administrative, and technical support end-users. A training environment will be available so new or existing staff can use it for additional training and future updates. Users attending training will receive handouts and instructional aides.

12. Describe the ongoing support requirements.

Ongoing support will be noted in the contract and will define being hosted either via the vendor or OCIO to ensure hardware, redundancy, back-up, retention, and disaster recovery needs are met and conform to NITC and Secretary of State standards. Key staffing will be identified for ongoing tasks that will be available for the duration of the warranty period to provide software and database support. The system will be supported and warrantied after final acceptance.

RISK ASSESSMENT (10 PTS):

13. Describe possible barriers and risks related to the project and the relative importance of each.

- Implementation of the software must have good communication and coordination, stay on track, eliminate scope creep and adhere to set timelines for delivery.
- Possible issues with database conversion to a new system. Some of the existing data may need to be cleaned before it can be placed into the new system.
- Changes in internal staff could slow or delay the project as new staff will need to be trained and brought up to date.
- New statutes or rules may change defined requirements.
- Any system issues, defects or errors that do not meet the Secretary of State's expectations will need to be addressed as minor or substantial fixes.
- Vendor resources don't meet expectations. The timeline for the project is dependent on key vendor staff devoting sufficient time and resources to the project.
- Vendor could misunderstand requirements or deliver components not requested. Must ensure the vendor fully understands processes and requirements so time can be allocated appropriately.
- Additional and unforeseen expenses could push the project over budget.
- Training and learning curve for Secretary of State staff could delay incoming filings and services.

14. Identify strategies which have been developed to minimize risks.

Present well defined requirements in the RFP with specific criteria, expectations, timelines, and deliverables to minimize risk. Staff involvement will take place beginning with design and development through testing and implementation to help identify problems and mitigate risks. All databases will be backed up prior to conversion. Project will adhere to NITC technology standards for both security and technology platforms and best practices.

Selection will be made by identifying the best vendor equipped to meet project outcomes and goals as evidenced by prior experience, proven project successes and references provided by prior customers.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

15. Financial Information

This project will be funded through current and future cash funds from the UCC and Corporations cash funds. The agency has previously addressed the need to keep these cash funds intact and to be able to build fund balances to sufficient levels to complete this project.

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Collection Agency Online Renewal Application

General Section

Contact Name :	Chad Sump	**E-mail :**	chad.sump@nebraska.gov	**Agency Priority :**	2
Address :	1445 K St., Suite 2300	**Telephone :**	402-471-8779	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68509		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	40,275	0	0	40,275	0	0
Project Management	25,680	0	0	25,680	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	65,955	0	0	65,955	0	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	0	0	0	0	0	0
TOTAL PROJECT COST	65,955	0	0	65,955	0	0

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	65,955	0	0	65,955	0	0
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**65,955**	**0**	**0**	**65,955**	**0**	**0**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 009 - SECRETARY OF STATE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Collection Agency Online Renewal Application

EXECUTIVE SUMMARY:

The Secretary of State's Office is requesting funding to develop an online renewal application for collection agency licenses. The online renewal application will allow collection agencies to renew their license online, update relevant contact information with the State and submit the required renewal documentation. Most licensed collection agencies are not physically located in Nebraska and desire the ability to communicate with the State licensing office electronically.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

Specific goals and objectives are contained in the supporting information section.

1. Describe the project, including:

- Specific goals and objectives;
- Expected beneficiaries of the project; and
- Expected outcomes.

The specific goal of the project is to create an online renewal application where licensed collection agencies can renew their license electronically by transmitting the appropriate renewal documentation and associated fees via an online renewal application. The renewal documents will then be transmitted to the Secretary of State's Office and reviewed by licensing staff. If all requirements are met, licensing staff will accept the renewal electronically and the collection agency will be electronically notified the renewal has been processed and accepted. It is anticipated that the online licensing application will be launched for the 2015 renewal cycle.

It is expected that this application will benefit licensed collection agencies as they will be able to renew their license in a timely and efficient manner. Currently, license renewal applications are mailed to each licensed agency and all requested forms and documentation are submitted to the licensing office using paper documents. Due to the existing manual paper process, it is difficult to reply to licensing inquiries regarding the status of the renewal application along with other licensing matters in a timely fashion. It is anticipated that this project will allow the licenses to be processed more quickly and efficiently. It is also anticipated that this project will reduce staff time spent communicating deficiencies in the renewal documentation as the online process will require all application questions to be answered before the application is submitted. The online process will also lessen staff time spent currently updating licensing information in the licensing database as this information will be collected by the online application and will be used to update the licensing database.

2. Describe the measurement and assessment methods that will verify that the project outcomes have been achieved.

Licensing staff will thoroughly test the application to make sure the application is functioning properly. In addition, several licensed agencies will be asked to be beta testers to ensure the application is functional and meets user expectations.

3. Describe the project's relationship to your agency comprehensive information technology plan.

This project is consistent with our agency technology plan and will be integrated with our currently-in-development license application system. Software, hardware, and system licenses are not needed as we already possess the necessary software, hardware, and system licenses.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

4. Provide the project justification in terms of tangible benefits (i.e. economic return on investment) and/or intangible benefits (e.g. additional services for customers).

The tangible benefits to our office include the decreased costs associated with office supplies such as paper, toner and postage. The collection agencies utilizing the online application will also save money in postage since they will not have to return a paper renewal form and will likely save staff time in completing the renewal application.

There are also many intangible benefits to collection agencies. They will be able to easily determine the status of their renewal application. The processing time for their application will lessen and the number of applications returned for corrections, missing documents, or incorrect renewal fees will be lessened as the online system will have checks in place to ensure correct information, documents, and fees are collected.

There are also intangible benefits to our licensing staff. Greater focus can be given to high value tasks such as investigating licensee application renewals and answering citizen questions more quickly as opposed to low value tasks such as opening mail and depositing renewal fees.

5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

No other solutions were evaluated. Using an online renewal process would increase efficiency for our office as well as the collection agencies licensed in the State. If nothing was done we would still continue to send paper renewal forms to licensed collection agencies. Collection agencies would review the document, make any changes, and send it back to the office with appropriate renewal fees. The internal staff would then process the paper documents. Each renewal application received would be manually scanned and corresponding metadata entered into our digital library.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

N/A

TECHNICAL IMPACT (20 PTS):

7. Describe how the project enhances, changes or replaces present technology systems, or implements a new technology system. Describe the technical elements of the project, including hardware, software, and communications requirements. Describe the strengths and weaknesses of the proposed solution.

The current process for collection agencies to renew is by paper only. The State's current portal manager, Nebraska.gov, will be used to create the online renewal application. No software or hardware is needed as Nebraska.gov provides the online infrastructure necessary to host the application.

8. Address the following issues with respect to the proposed technology:

- Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.
- Address conformity with applicable NITC technical standards and guidelines (available at http://nitc.ne.gov/standards/) and generally accepted industry standards.
- Address the compatibility with existing institutional and/or statewide infrastructure.

Nebraska.gov is the current State portal manager and adheres to NITC standards. In addition, Nebraska.gov has developed many other online filing services for our office and other state agencies. It is anticipated that this application will function in a similar manner as the Corporate E-Doc Delivery Service which was developed by Nebraska.gov for our office.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

9. Describe the preliminary plans for implementing the project. Identify project sponsor(s) and examine stakeholder acceptance. Describe the project team, including their roles, responsibilities, and experience.

Key licensing staff and members of Nebraska.gov will identify all project requirements and create project specifications. Nebraska.gov will develop the application based upon the approved system specifications. Once developed, licensing staff from the Secretary of State's office will thoroughly test the application to ensure it meets the necessary requirements. In additional, several licensed collection agencies will be asked to test the system to make sure it functions properly and ensure a positive end user experience.

- Project Sponsor: John A. Gale – SOS – Secretary of State
- Colleen Byelick – SOS – General Counsel, Colleen is familiar with all licensing requirements and has worked on many online projects.
- David Wilson – SOS – Licensing Director & Assistant General Counsel, David is familiar with all licensing requirements and supervising the licensing division.
- Bess Boesiger – SOS – Rules & Regulations, Bess is familiar with all licensing requirements and has processed renewal applications in previous years.
- Ashley Reiter – SOS – Licensing Assistant, Ashley is familiar with the licensing requirements and will be the primary staff person handling renewal applications.
- Chad Sump – SOS – Systems Analyst, Chad is familiar with all technology needs of the office and will be assisting with any communication or other technology requirements for the project.
- NE.gov – TBD—It is anticipated that Nebraska.gov will be developing the application and will provide development and project management support for the project as well as host the application.

Stakeholders: Licensed Collection Agencies, the Nebraska Collection Agency Licensing Board, and the Secretary of State's Office.

10. List the major milestones and/or deliverables and provide a timeline for completing each.

Major Milestones:

1. Sign-off on System Specifications (August 2015)
2. Internal System Testing (September 2015)

3. Beta Testing (October 2015)
4. Signoff on the completed system. (October 2015)

11. Describe the training and staff development requirements.

Minimal training will be necessary for our four (4) end users (two licensing staff and two managers). We anticipate one to three days of training with staff as part of the testing and implementation process.

12. Describe the ongoing support requirements.

Nebraska.gov will provide technical and application support for the collection agency online renewal application. There will be no additional fee for this support.

RISK ASSESSMENT (10 PTS):

13. Describe possible barriers and risks related to the project and the relative importance of each.

A potential risk would be conversion issues associated with any transition from a paper system to a digital system.

14. Identify strategies which have been developed to minimize risks.

Testing will be required, as will executive review and signoff before the online renewal application is fully implemented and deployed. Application requirements will be identified in the planning phase and specifications will be reviewed to ensure all application requirements are identified.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

15. Financial Information

This project would be funded through available cash funds in the Collection Agency Cash fund. This request would be for cash fund authority only. The current cash balance in the Collection Agency fund is sufficient to cover the costs associated with this project.

IT Project Proposal Report - Detail
Agency: 018 - DEPT OF AGRICULTURE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Paperless Inspection Project

General Section

Contact Name :	Tom Jensen	**E-mail :**	tom.jensen@nebraska.gov	**Agency Priority :**	
Address :	301 Centennial Mall South	**Telephone :**	402-471-6801	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68509		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	260,000	0	200,000	30,000	30,000	0
Project Management	0	0	0	0	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	260,000	0	200,000	30,000	30,000	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 018 - DEPT OF AGRICULTURE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	0	0	0	0	0	0
TOTAL PROJECT COST	260,000	0	200,000	30,000	30,000	0

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	260,000	0	200,000	30,000	30,000	0
Cash Fund	0	0	0	0	0	0
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**260,000**	**0**	**200,000**	**30,000**	**30,000**	**0**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 018 - DEPT OF AGRICULTURE
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Paperless Inspection Project

EXECUTIVE SUMMARY:

This what is referred to as phase II of the paperless project.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

For phase II the goals are to:

1. Enhance current applications developed and being developed to incorperate an updated version of software.

   A. Ultilize developers through the OCIO's office to make the conversion.

   B. Test the test applications.

   C. Provide necessary training to the users.

2. Develop applications that were not identified as priority in the first round of development.

   A. Program software to parallel current application.

   B. Conduct all inspections via the computer.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

Paperless inspections justification details can be found as part the agency expanded budget needs submitted for the FY 2013-14 and FY 2014-15 biennium budget request. The justification showed paperless inspections will create efficiencies for the inspector as well provide office efficiencies in less data entry, postage, printing costs.and filing.

TECHNICAL IMPACT (20 PTS):

The technical impact is to use hand held computer to complete inspections. Electronically upload inspection through OnBase for approval routing, record storage and direct upload to the department central database. The department has over 60 field staff located across the State that perform inspections from food, weights and measures, livestock, feed pesticide, nursery, and noxious weeds.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

As current applications are being developed the scope of work is prioritized into phases. By the end of FY 2014-15 when phase I work is completed we will have a document of work desiring to be done during phase II development.

RISK ASSESSMENT (10 PTS):

The risk is all about efficiencies and desiring to be as efficient as possible. Available funding will determine how complete the project will be.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

The cost for Phase II is an estimate based on work completed in phase I. The cost will be a third general funds, third cash funds, and a third federal funds to extent dollars are available and this an appropriate use of federal dollars. Funding appropriated for this project is budgeted separately for general funds and any unused funds will be returned and reduced from the base in future bienniums.

IT Project Proposal Report - Detail
Agency: 024 - DEPT OF MOTOR VEHICLES
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Nebraska Systems Update and Modification (NSUM)

General Section

Contact Name :	Keith Dey	**E-mail :**	keith.dey@nebraska.gov	**Agency Priority :**	1
Address :	301 Centennial Mall So.	**Telephone :**	402-471-3906	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68509		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	0	0	0	0	0	0
Project Management	1,677,806	127,500	0	383,000	385,848	781,458
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	1,677,806	127,500	0	383,000	385,848	781,458
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 024 - DEPT OF MOTOR VEHICLES
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	875,032	132,418	0	180,530	184,592	377,492
Supplies & Materials	8,500	2,500	0	3,500	2,500	0
Travel	44,890	8,710	0	16,745	10,835	8,600
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	928,422	143,628	0	200,775	197,927	386,092
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	0	0	0	0	0	0
TOTAL PROJECT COST	2,606,228	271,128	0	583,775	583,775	1,167,550

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	2,606,228	271,128	0	583,775	583,775	1,167,550
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**2,606,228**	**271,128**	**0**	**583,775**	**583,775**	**1,167,550**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 024 - DEPT OF MOTOR VEHICLES
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Nebraska Systems Update and Modification (NSUM)

EXECUTIVE SUMMARY:

The Department of Motor Vehicles (DMV) is beginning the process of developing a single DMV system that will, over time, host all DMV services. The system will be 'customer centric' and be designed to provide a single, fully integrated access point for all customers to conduct business with the DMV.

This project will be approached from the view point of the customer's needs and expectations. Applications and technologies will be built to support redefined and modernized business processes. Although the entire project will span several budget periods, this project phase will focus on the preliminary events required for the recreation of the DMV Vehicle, Title and Registration (VTR) business processes, applications and technologies.

In 2014 LB 905 was passed by the Nebraska Legislature and states; "There is included in the appropriation to this program for FY2014-15 $271,128 Cash Funds to identify a replacement vehicle title and registration system, associated costs, and financing options."

"The VTR system, now over 20 years old, no longer meets the evolving business requirements of stakeholders and expectations of Nebraska residents. Implementation of a new VTR system should be considered. Revenues to support a new VTR system may be derived from a variety of sources. … The DMV should move immediately to collaboratively develop a funding model that is supported by key stakeholders. Upon approval, the DMV should create a project structure, conduct a business process analysis, and further refine the analysis with a concept of operations and system requirements. With that information, the DMV and its stakeholders will be positioned to evaluate how it will approach VTR system replacement. …. Upon determination of a direction, a project plan will be further developed and the contracting/tasking of VTR system development and implementation will be undertaken. Based on the experience of other states, VTR system implementation projects typically have taken between 4 to 10 years from initial planning through implementation of the production system." (1)

(1) *Excerpts from: "2013 DMV VTR Business Case" - Prepared for the Nebraska Department of Motor Vehicles by Nancy Shank, PhD, MBA, Associate Director, University of Nebraska Public Policy Center*.

Attachments:

LB905.pdf

LB906.pdf

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

The Vision of the DMV is to have quality, accessible, secure services available for all DMV customers. With that as our guide, we are compelled to keep our business process and systems current. The NSUM project is designed to provide the modernization that will allow the DMV to match its vision.

The initial phase (through FY 2017) of the NSUM project will include the following objectives, goals and deliverables:

- Develop a funding model that is supported by key stakeholders
- A report on the use of the funds and of the progress made in the identification of a new system shall be submitted electronically by the Department of Motor Vehicles to the Legislature on or before July 31, 2015. – Required by LB 905 – **Document Deliverable**
- Create a project structure/team
- Conduct business process analysis – **Document Deliverable**
- Develop a concept of operations and system requirements – **Document Deliverable**
- Evaluate how to approach VTR system replacement
- Issue a Request for Proposal (RFP) for products and services required to complete the

  project – **Document Deliverable**
- Select vendor(s)/partner(s)
- Develop a detailed project plan – **Document Deliverable**

Updates to this project proposal will be provided to the Nebraska Information Technology Commission (NITC) as milestones are reached.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

The VTR business process model, applications and systems that support the existing system are over 20 years old. As business models and technical systems age they lose the efficiencies they once provided, incur disproportionate expenses to support, run a higher risk of system failure and inhibit future opportunities. The initial phase of the NSUM project will provide the DMV with the necessary information to evaluate how to approach replacement of the VTR system and select the best partners and stakeholders to assist in the project.

In 2013 the DMV contracted with the University of Nebraska to compile a business case for the modernization of the VTR application. In that business case it is stated:

“The current VTR system prevents county treasurers and the DMV from providing services that are customer?]centric, capitalizing on efficiencies available through new technologies, ensuring revenues are collected, operating with full information resources, and flexibly responding to changes and opportunities.” (2)

(1) *Excerpts from: “2013 DMV VTR Business Case” - Prepared for the Nebraska Department of Motor Vehicles by Nancy Shank, PhD, MBA, Associate Director, University of Nebraska Public Policy Center*.

Attachments:

VTR Business Case.pdf

TECHNICAL IMPACT (20 PTS):

The purpose of this modernization project is to re-align the business process with the expectations of the customer, to establish a systems architecture that will provide security, longevity and scalability to establish a single, fully integrated access point for all DMV services.

To accomplish the goals of this project it should be expected that the DMV will migrate to a new hardware platform and utilize current software, software development tools and modern development methodologies. All new systems and applications will conform to the standards and guidelines established by the NITC.

The new platform and applications for the NSUM project is expected to leverage the resources and statewide infrastructure developed and managed by the Office of the CIO. It is expected that the hardware to support the new applications will reside in the secure OCIO facility, utilize backup facilities and redundancy offered within the OCIO infrastructure, utilize the shared communications network and utilize the field hardware and field support services of the Intergovernmental Division of the OCIO.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

The DMV has created an internal governance team that will guide the project on a DMV enterprise level. The internal governance team includes DMV Division Administrators, plus a Project Manager and an Administrative support position. The two new positions will be filled as part of the project and are accounted for in both the implementation plan and the budget request.

The DMV will create a user/stakeholder team that will provide input to and feedback on the project as it progresses. The exact membership of the user/stakeholder team will be determined in the near future but will include representatives from the Office of the Chief Information Officer, County Officials, State agencies and private industry.

The attached worksheet is a preliminary outline of the steps that will be taken to accomplish the goals of the NSUM project.

Attachments:

NSUM Action Plan Prog 70.pdf

RISK ASSESSMENT (10 PTS):

For years the DMV has monitored the projects that other jurisdictions have undertaken to modernize their business processes and systems. There have been obvious failures, marginal successes and successes. To minimize the risks and ensure success, the approach that the DMV has planned will be very measured and methodical. The DMV will perform extensive research and produce detailed business process designs and utilize internal and external professional support to accomplish its goals.

The DMV has created an internal governance team that will guide the project on a DMV enterprise level. The DMV will create a user/stakeholder team that will provide input to and feedback on the project as it progresses.

The most obvious challenge will be the development and approval of a funding mechanism to complete the project and provide long term support. LB 906, passed in 2014, provides set-aside funding to initiate the project. A long term and ongoing funding mechanism will be defined and proposed in future legislative sessions.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

IT Project Proposal Report - Detail
Agency: 024 - DEPT OF MOTOR VEHICLES
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

The attached spreadsheet includes the projected, known, expenditures for the NSUM project. The initial phase of this project is defined to be investigative and provide additional details for the project and determine the associated costs. Additional costs to complete the project and provide for the long term maintenance and support will be requested in future legislative and budget requests.

Updates to this project proposal will be provided to the Nebraska Information Technology Commission (NITC) as milestones are reached.

Attachments:

NSUM Financial Worksheet.xls

Program No. 614 - Professional Practices Commission

	FY2013-14	FY2014-15
CASH FUND	39,381	-0-
PROGRAM TOTAL	39,381	-0-
SALARY LIMIT	35,870	-0-

Sec. 21. AGENCY NO. 14 — PUBLIC SERVICE COMMISSION
Program No. 686 - Nebraska Telecommunications Universal Service Fund

	FY2013-14	FY2014-15
CASH FUND	-0-	-0-
PROGRAM TOTAL	-0-	-0-
SALARY LIMIT	-0-	-0-

Sec. 22. AGENCY NO. 16 — DEPARTMENT OF REVENUE
Program No. 13 - Tax Commissioner

	FY2013-14	FY2014-15
SALARY LIMIT	16,500	-0-

Sec. 23. AGENCY NO. 16 — DEPARTMENT OF REVENUE
Program No. 132 - Property Tax Credit Program

	FY2013-14	FY2014-15
CASH FUND	-0-	25,000,000
PROGRAM TOTAL	-0-	25,000,000

There is included in the appropriation to this program for FY2014-15 $25,000,000 Cash Funds for state aid, which shall only be used for such purpose.

Sec. 24. AGENCY NO. 19 — DEPARTMENT OF BANKING AND FINANCE
Program No. 66 - Enforcement of Standards - Securities

	FY2013-14	FY2014-15
CASH FUND	200,000	-0-
PROGRAM TOTAL	200,000	-0-
SALARY LIMIT	-0-	-0-

Sec. 25. AGENCY NO. 24 — DEPARTMENT OF MOTOR VEHICLES
Program No. 70 - Enforcement of Standards - Motor Vehicles/Motor Vehicle Drivers

	FY2013-14	FY2014-15
CASH FUND	-0-	271,128
PROGRAM TOTAL	-0-	271,128
SALARY LIMIT	-0-	94,584

The unexpended Cash Fund appropriation balance existing on June 30, 2015, from the appropriation made in this section, is hereby reappropriated.

There is included in the appropriation to this program for FY2014-15 $271,128 Cash Funds to identify a replacement vehicle title and registration system, associated costs, and financing options. A report on the use of the funds and of the progress made in the identification of a new system shall be submitted electronically by the Department of Motor Vehicles to the Legislature on or before July 31, 2015.

Sec. 26. AGENCY NO. 25 — DEPARTMENT OF HEALTH AND HUMAN SERVICES
Program No. 33 - Administration

LEGISLATIVE BILL 906

Approved by the Governor March 29, 2014, with line-item vetoes overridden April 1, 2014.

(CORRECTED)

Introduced by Speaker Adams, 24; at the request of the Governor.

FOR AN ACT relating to appropriations; to amend sections 2-1588, 2-1592, 2-3225, 2-3226.05, and 81-1204, Reissue Revised Statutes of Nebraska, sections 24-205, 24-227.01, 39-1390, 48-622.01, 58-708, and 81-1205, Revised Statutes Cumulative Supplement, 2012, and sections 71-7611 and 81-2516, Revised Statutes Supplement, 2013; to provide for transfers of funds; to create and eliminate funds; to change provisions relating to the source of revenue and use of funds in the Nebraska Resources Development Fund, for water and related land resources, by natural resources districts, for judges' education and retirement, for Supreme Court automation, for employment security settlements, from the Affordable Housing Trust Fund, from the Nebraska Health Care Cash Fund, and for job training grants; to require reports; to harmonize provisions; to repeal the original sections; to outright repeal sections 2-3226.06, 2-3226.07, 2-3226.08, and 2-3226.09, Reissue Revised Statutes of Nebraska; and to declare an emergency.

Be it enacted by the people of the State of Nebraska,

Section 1. The State Treasurer shall transfer six million eight hundred thousand dollars from the Health and Human Services Cash Fund to the General Fund on or before July 15, 2014, on such date as directed by the budget administrator of the budget division of the Department of Administrative Services.

Sec. 2. The Vehicle Title and Registration System Replacement and Maintenance Cash Fund is hereby created. The fund shall be administered by the Department of Motor Vehicles. The fund shall be used by the department to pay for costs associated with the acquisition, implementation, maintenance, support, upgrades, and replacement of the vehicle titling and registration computer system. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Sec. 3. The State Treasurer shall transfer twelve million five hundred thousand dollars from the Department of Motor Vehicles Cash Fund to the Vehicle Title and Registration System Replacement and Maintenance Cash Fund on July 1, 2014, or as soon thereafter as administratively possible.

Sec. 4. The Game and Parks State Park Improvement and Maintenance Fund is created. The fund shall consist of transfers made by the Legislature and any gifts, grants, bequests, or donations to the fund. Money in the fund shall be used to build, repair, renovate, rehabilitate, restore, modify, or improve any infrastructure in the state park system. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Sec. 5. The State Treasurer, at the direction of the budget administrator of the budget division of the Department of Administrative Services, shall transfer fifteen million dollars from the General Fund to the Game and Parks State Park Improvement and Maintenance Fund on or before July 31, 2014.

Sec. 6. The State Treasurer, at the direction of the budget administrator of the budget division of the Department of Administrative Services, shall transfer two million five hundred thousand dollars from the State Recreation Road Fund to the Game and Parks State Park Improvement and Maintenance Fund on or before July 31, 2014.

Sec. 7. The Water Sustainability Fund is created in the Department of Natural Resources. The fund shall be used in accordance with the provisions established in Legislative Bill 1098, One Hundred Third Legislature, Second Session, 2014, and for costs directly related to the administration of the fund.

The fund shall consist of money transferred to the fund by the Legislature, other funds as appropriated by the Legislature, and money donated as gifts, bequests, or other contributions from public or private entities. Funds made available by any department or agency of the United States may also

be credited to the fund if so directed by such department or agency. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act. Investment earnings from investment of money in the fund shall be credited to the fund.

It is the intent of the Legislature that twenty-one million dollars be transferred from the General Fund to the Water Sustainability Fund in fiscal year 2014-15 and that eleven million dollars be transferred from the General Fund to the Water Sustainability Fund each fiscal year beginning in fiscal year 2015-16.

Sec. 8. The State Treasurer shall transfer twenty-one million dollars from the General Fund to the Water Sustainability Fund no later than July 15, 2014, on such date as directed by the budget administrator of the budget division of the Department of Administrative Services.

Sec. 9. Section 2-1588, Reissue Revised Statutes of Nebraska, is amended to read:

2-1588 (1) ~~Any money in the Nebraska Resources Development Fund may be allocated by the commission in accordance with sections 2-1586 to 2-1595 for utilization by the department, by any state office, agency, board, or commission, or by any political subdivision of the state which has the authority to develop the state's water and related land resources. Such money~~ No money in the Nebraska Resources Development Fund may be reallocated by the commission in accordance with sections 2-1586 to 2-1595 for utilization by the department, by any state office, agency, board, or commission, or by any political subdivision of the state which has the authority to develop the state's water and related land resources after the effective date of this act. The commission may commit appropriated funds to projects approved as of the effective date of this act, not to exceed amounts specifically allocated to such projects prior to the effective date of this act. Prior to the effective date of this act, the fund may be allocated in the form of grants or loans or for acquiring state interests in water and related land resources programs and projects undertaken within the state. The allocation of funds to a program or project in one form shall not of itself preclude additional allocations in the same or any other form to the same program or project. Funds may also be allocated to assist natural resources districts in the preparation of management plans as provided in section 46-709. Funds so allocated shall not be subject to sections 2-1589 to 2-1595.

(2) No project, including all related phases, segments, parts, or divisions, shall receive more than ten million dollars from the fund. On July 1 of each year after 1993, the director shall adjust the project cost and payment limitation of this subsection by an amount equal to the average percentage change in a readily available construction cost index for the prior three years.

(3) Prior to September 1 of each even-numbered year, a biennial report shall be made to the Governor and the Clerk of the Legislature describing the work accomplished by the use of such development fund during the immediately preceding two-year period. The report submitted to the Clerk of the Legislature shall be submitted electronically. The report shall include a complete financial statement. Each member of the Legislature shall receive an electronic copy of such report upon making a request to the director.

Sec. 10. Section 2-1592, Reissue Revised Statutes of Nebraska, is amended to read:

2-1592 (1) Any organization qualified to apply for and receive funds from the Nebraska Resources Development Fund may file an application with the department for a grant or loan from such fund. Applications for grants to the department itself shall be filed by the department. Each application shall be filed in such manner and form and be accompanied by such information as may be prescribed by the director and the commission. No applications may be made to receive funds by grant or loan from the Nebraska Resources Development Fund after the effective date of this act.

(2) Any such application shall:

(a) Describe the nature and purpose of the proposed program or project;

(b) Set forth or be accompanied by a plan for development of the proposed program or project, together with engineering, economic, and financial feasibility data and information, and such estimated costs of construction or implementation as may be required by the director and the commission;

(c) State whether money other than that for which the application is made will be used to help in meeting program or project costs and whether such money is available or has been sought for this purpose;

(d) When appropriate, state that the applicant holds or can acquire

title to all lands or has the necessary easements and rights-of-way for the project and related lands and has or may acquire all water rights necessary for the proposed project;

(e) Show that the applicant possesses all necessary authority to undertake or participate in the proposed program or project; and

(f) Demonstrate the probable environmental and ecological consequences that may result from such proposed program or project.

(3) Upon receipt of an application, the director shall evaluate and investigate all aspects of the proposed program or project and the proposed schedule for development and completion of such program or project, determine the eligibility of the program or project for funding, and make appropriate recommendations to the commission pursuant to sections 2-1586 to 2-1595. As a part of his or her investigation, the director shall consider whether the plan for development of the program or project is satisfactory. If the director determines that the plan is unsatisfactory or that the application does not contain adequate information upon which to make determinations, the director shall return the application to the applicant and may make such recommendations to the applicant as are considered necessary to make the plan or the application satisfactory.

(4) Requests for utilization of the Nebraska Resources Development Fund for state participation in any water and related land-water resources projects through acquisition of a state interest therein shall also be filed with the department for the director's evaluation, investigation, and recommendations. Such requests shall be filed in the manner and form and be accompanied by such information as shall be prescribed by the department and the commission.

Sec. 11. Section 2-3225, Reissue Revised Statutes of Nebraska, is amended to read:

2-3225 (1)(a) Each district shall have the power and authority to levy a tax of not to exceed four and one-half cents on each one hundred dollars of taxable valuation annually on all of the taxable property within such district unless a higher levy is authorized pursuant to section 77-3444.

(b) Each district shall also have the power and authority to levy a tax equal to the dollar amount by which its restricted funds budgeted to administer and implement ground water management activities and integrated management activities under the Nebraska Ground Water Management and Protection Act exceed its restricted funds budgeted to administer and implement ground water management activities and integrated management activities for FY2003-04, not to exceed one cent on each one hundred dollars of taxable valuation annually on all of the taxable property within the district.

(c) In addition to the power and authority granted in subdivisions (1)(a) and (b) of this section, each district located in a river basin, subbasin, or reach that has been determined to be fully appropriated pursuant to section 46-714 or designated overappropriated pursuant to section 46-713 by the Department of Natural Resources shall also have the power and authority to levy a tax equal to the dollar amount by which its restricted funds budgeted to administer and implement ground water management activities and integrated management activities under the Nebraska Ground Water Management and Protection Act exceed its restricted funds budgeted to administer and implement ground water management activities and integrated management activities for FY2005-06, not to exceed three cents on each one hundred dollars of taxable valuation on all of the taxable property within the district for fiscal year 2006-07 and each fiscal year thereafter through fiscal year 2017-18.

(d) In addition to the power and authority granted in subdivisions (a) through (c) of this subsection, a district with jurisdiction that includes a river subject to an interstate compact among three or more states and that also includes one or more irrigation districts within the compact river basin may annually levy a tax not to exceed ten cents per one hundred dollars of taxable valuation of all taxable property in the district. The proceeds of such tax may be used for the payment of principal and interest on bonds and refunding bonds issued pursuant to section 2-3226.01. ~~or for the repayment of financial assistance received by the district pursuant to section 2-3226.07.~~ Such levy is not includable in the computation of other limitations upon the district's tax levy.

(2) The proceeds of the tax levies authorized in subdivisions (1)(a) through (c) of this section shall be used, together with any other funds which the district may receive from any source, for the operation of the district. When adopted by the board, the tax levies authorized in subdivisions (1)(a) through (d) of this section shall be certified by the secretary to the county clerk of each county which in whole or in part is included within the

district. Such levy shall be handled by the counties in the same manner as other levies, and proceeds shall be remitted to the district treasurer. Such levy shall not be considered a part of the general county levy and shall not be considered in connection with any limitation on levies of such counties.

Sec. 12. Section 2-3226.05, Reissue Revised Statutes of Nebraska, is amended to read:

2-3226.05 (1) A district with an integrated management plan as described in subsection (1) of section 2-3226.01 may levy an occupation tax upon the activity of irrigation of agricultural lands within such district on an annual basis, not to exceed ten dollars per irrigated acre, the proceeds of which may be used for (a) repaying principal and interest on any bonds or refunding bonds issued pursuant to section 2-3226.01 for one or more projects under section 2-3226.04~~,~~ ~~(b) the repayment of financial assistance received by the district pursuant to section 2-3226.07,~~ ~~or (c)~~ or (b) payment of all or any part of the costs and expenses of one or more qualified projects described in section 2-3226.04. If such district has more than one river basin as described in section 2-1504 within its jurisdiction, such district shall confine such occupation tax authorized in this section to the geographic area affected by an integrated management plan adopted in accordance with section 46-715.

(2)(a) Acres classified by the county assessor as irrigated shall be subject to such district's occupation tax unless on or before March 1 in each year the record owner certifies to the district the nonirrigation status of such acres.

(b) A district may exempt from the occupation tax acres that are enrolled in local, state, or federal temporary irrigation retirement programs that prohibit the application of irrigation water in the year for which the tax is levied.

(c) Except as provided in subdivisions (2)(a) and (b) of this section, a district is prohibited from providing an exemption from, or allowing a request for a local refund of, an occupation tax on irrigated acres regardless of the irrigation source while the record owner maintains irrigated status on such acres in the year for which the tax is levied.

(d) Notwithstanding subdivisions (2)(b) and (c) of this section, the record owner may present evidence of the nonirrigation status of the acres subject to the tax within twelve months after the date the tax was levied and the district may refund amounts collected upon such acres if an occupation tax was not levied by the district the previous year and the district had not adopted an integrated management plan as described in subsection (1) of section 2-3226.01 by March 1 in the current year. Subdivision (2)(d) of this section terminates on October 1, 2012.

(3) Any such occupation tax shall remain in effect so long as the natural resources district has bonds outstanding which have been issued stating such occupation tax as an available source for payment and for the purpose of paying all or any part of the costs and expenses of one or more projects authorized pursuant to section 2-3226.04.

(4) Such occupation taxes shall be certified to, collected by, and accounted for by the county treasurer at the same time and in the same manner as general real estate taxes, and such occupation taxes shall be and remain a perpetual lien against such real estate until paid. Such occupation taxes shall become delinquent at the same time and in the same manner as general real property taxes. The county treasurer shall publish and post a list of delinquent occupation taxes with the list of real property subject to sale for delinquent property taxes provided for in section 77-1804. In addition, the list shall be provided to natural resources districts which levied the delinquent occupation taxes. The list shall include the record owner's name, the parcel identification number, and the amount of delinquent occupation tax. For services rendered in the collection of the occupation tax, the county treasurer shall receive the fee provided for collection of general natural resources district money under section 33-114.

(5) Such lien shall be inferior only to general taxes levied by political subdivisions of the state. When such occupation taxes have become delinquent and the real property on which the irrigation took place has not been offered at any tax sale, the district may proceed in district court in the county in which the real estate is situated to foreclose in its own name the lien in the same manner and with like effect as a foreclosure of a real estate mortgage, except that sections 77-1903 to 77-1917 shall govern when applicable.

Sec. 13. Section 24-205, Revised Statutes Cumulative Supplement, 2012, is amended to read:

24-205 The Supreme Court Education Fund is created. The State Court Administrator shall administer the fund. The fund shall consist of money

remitted pursuant to section 33-154. ~~Except as otherwise directed by the Supreme Court during the period from November 21, 2009, until June 30, 2013, the~~ The fund shall only be used to aid in supporting the mandatory training and education program for judges and employees of the Supreme Court, Court of Appeals, district courts, separate juvenile courts, county courts, and Nebraska Probation System as enacted by rule of the Supreme Court.

On July 1, 2014, or as soon thereafter as administratively possible, the State Treasurer shall transfer one hundred nine thousand three hundred eighty-three dollars from the Supreme Court Education Fund to the Nebraska Retirement Fund for Judges as an offset to the increase in the state's contribution to the Nebraska Judges Retirement System.

Any money in the ~~fund~~ Supreme Court Education Fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Sec. 14. Section 24-227.01, Revised Statutes Cumulative Supplement, 2012, is amended to read:

24-227.01 The Supreme Court Automation Cash Fund is created. The State Court Administrator shall administer the fund. ~~Except as otherwise directed by the Supreme Court during the period from November 21, 2009, until June 30, 2013, the~~ The fund shall only be used to support automation expenses of the Supreme Court, Court of Appeals, district courts, separate juvenile courts, county courts, and Nebraska Probation System from the computer automation budget program.~~, except that the State Treasurer shall, on or before June 30, 2011, on such date as directed by the budget administrator of the budget division of the Department of Administrative Services, transfer the amount set forth in Laws 2009, LB1, One Hundred First Legislature, First Special Session.~~

On July 1, 2014, or as soon thereafter as administratively possible, the State Treasurer shall transfer six hundred thousand dollars from the Supreme Court Automation Cash Fund to the Nebraska Retirement Fund for Judges as an offset to the increase in the state's contribution to the Nebraska Judges Retirement System.

Any money in the Supreme Court Automation Cash Fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Sec. 15. Section 39-1390, Revised Statutes Cumulative Supplement, 2012, is amended to read:

39-1390 The State Recreation Road Fund is created. The money in the fund shall be transferred by the State Treasurer, on the first day of each month, to the Department of Roads and shall be expended by the Director-State Engineer with the approval of the Governor for construction and maintenance of dustless-surface roads to be designated as state recreation roads as provided in this section, except that transfers may be made from the fund to the ~~General Fund~~ Game and Parks State Park Improvement and Maintenance Fund at the direction of the Legislature through ~~June 30, 2011.~~ July 31, 2014. Except as to roads under contract as of March 15, 1972, those roads, excluding state highways, giving direct and immediate access to or located within state parks, state recreation areas, or other recreational or historical areas, shall be eligible for designation as state recreation roads. Such eligibility shall be determined by the Game and Parks Commission and certified to the Director-State Engineer, who shall, after receiving such certification, be authorized to commence construction on such recreation roads as funds are available. In addition, those roads, excluding state highways, giving direct and immediate access to a state veteran cemetery are state recreation roads. After construction of such roads they shall be shown on the map provided by section 39-1311. Preference in construction shall be based on existing or potential traffic use by other than local residents. Unless the State Highway Commission otherwise recommends, such roads upon completion of construction shall be incorporated into the state highway system. If such a road is not incorporated into the state highway system, the Department of Roads and the county within which such road is located shall enter into a maintenance agreement establishing the responsibility for maintenance of the road, the maintenance standards to be met, and the responsibility for maintenance costs. Any money in the State Recreation Road Fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

Sec. 16. Section 48-622.01, Revised Statutes Cumulative Supplement, 2012, is amended to read:

48-622.01 (1) There is hereby created in the state treasury a special fund to be known as the State Unemployment Insurance Trust Fund. All state unemployment insurance tax collected under sections 48-648 to 48-661, less refunds, shall be paid into the fund. Such money shall be held in

trust for payment of unemployment insurance benefits. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act, except that interest earned on money in the fund shall be credited to the Nebraska Training and Support Trust Fund at the end of each calendar quarter.

(2) The commissioner shall have authority to determine when and in what amounts withdrawals from the State Unemployment Insurance Trust Fund for payment of benefits are necessary. Amounts withdrawn for payment of benefits shall be immediately forwarded to the Secretary of the Treasury of the United States of America to the credit of the state's account in the Unemployment Trust Fund, provisions of law in this state relating to the deposit, administration, release, or disbursement of money in the possession or custody of this state to the contrary notwithstanding.

(3) If and when the state unemployment insurance tax ceases to exist as determined by the Governor, all money then in the State Unemployment Insurance Trust Fund less accrued interest shall be immediately transferred to the credit of the state's account in the Unemployment Trust Fund, provisions of law in this state relating to the deposit, administration, release, or disbursement of money in the possession or custody of this state to the contrary notwithstanding. The determination to eliminate the state unemployment insurance tax shall be based on the solvency of the state's account in the Unemployment Trust Fund and the need for training of Nebraska workers. Accrued interest in the State Unemployment Insurance Trust Fund shall be credited to the Nebraska Training and Support Trust Fund.

(4) Upon certification from the commissioner that disallowed costs by the United States Department of Labor for FY2007-08, FY2008-09, and FY2009-10, or any one of them, have been reduced to an amount certain by way of settlement or final judgment, the State Treasurer shall transfer the amount of such settlement or final judgment from the State Unemployment Insurance Trust Fund to the Employment Security Special Contingent Fund. The total amount of such transfers shall not exceed $2,816,345. The amount of the reappropriation of Federal Funds appropriated in FY2004-05 under section 903(d) of the federal Social Security Act shall be reduced by the amount transferred.

(5) Upon certification from the commissioner that the amount needed to settle pending class action litigation and terminate the contributory retirement system established pursuant to section 48-609 has been reduced to an amount certain, the State Treasurer shall transfer the amount certified by the commissioner as needed to effectuate the settlement from the State Unemployment Insurance Trust Fund to the Employment Security Special Contingent Fund. The amount transferred pursuant to this subsection shall not exceed two million seven hundred seventy-three thousand dollars.

Sec. 17. Section 58-708, Revised Statutes Cumulative Supplement, 2012, is amended to read:

58-708 (1) During each calendar year in which funds are available from the Affordable Housing Trust Fund for use by the Department of Economic Development, the department shall allocate a specific amount of funds, not less than ~~twenty-five~~ thirty percent, to each congressional district. ~~Entitlement area funds allocated under this section that are not awarded to an eligible project from within the entitlement area within one year shall be made available for distribution to eligible projects elsewhere in the state.~~ The department shall announce a grant and loan application period of at least ninety days duration for all ~~nonentitlement areas.~~ projects. In selecting projects to receive trust fund assistance, the department shall develop a qualified allocation plan and give first priority to financially viable projects that serve the lowest income occupants for the longest period of time. The qualified allocation plan shall:

(a) Set forth selection criteria to be used to determine housing priorities of the housing trust fund which are appropriate to local conditions, including the community's immediate need for affordable housing, proposed increases in home ownership, private dollars leveraged, level of local government support and participation, and repayment, in part or in whole, of financial assistance awarded by the fund; and

(b) Give first priority in allocating trust fund assistance among selected projects to those projects which serve the lowest income occupant and are obligated to serve qualified occupants for the longest period of time.

(2) The department shall fund in order of priority as many applications as will utilize available funds less actual administrative costs of the department in administering the program. In administering the program the department may contract for services or directly provide funds to other governmental entities or instrumentalities.

(3) The department may recapture any funds which were allocated to a qualified recipient for an eligible project through an award agreement if such funds were not utilized for eligible costs within the time of performance under the agreement and are therefor no longer obligated to the project. The recaptured funds shall be credited to the Industrial Recovery Fund except as provided in section 81-1213.

Sec. 18. Section 71-7611, Revised Statutes Supplement, 2013, is amended to read:

71-7611 (1) The Nebraska Health Care Cash Fund is created. The State Treasurer shall transfer (a) fifty-six million one hundred thousand dollars no later than July 15, 2009, ~~and~~ (b) fifty-nine million one hundred thousand dollars on or before July 15, 2010, July 15, 2011, ~~and~~ July 15, 2012, and July 15, 2013, and (c) sixty million one hundred thousand dollars on or before July 15, 2014, and on or before every July 15 thereafter from the Nebraska Medicaid Intergovernmental Trust Fund and the Nebraska Tobacco Settlement Trust Fund to the Nebraska Health Care Cash Fund, except that such amount shall be reduced by the amount of the unobligated balance in the Nebraska Health Care Cash Fund at the time the transfer is made. The state investment officer upon consultation with the Nebraska Investment Council shall advise the State Treasurer on the amounts to be transferred from the Nebraska Medicaid Intergovernmental Trust Fund and from the Nebraska Tobacco Settlement Trust Fund under this section in order to sustain such transfers in perpetuity. The state investment officer shall report electronically to the Legislature on or before October 1 of every even-numbered year on the sustainability of such transfers. Except as otherwise provided by law, no more than the amount specified in this subsection may be appropriated or transferred from the Nebraska Health Care Cash Fund in any fiscal year.

It is the intent of the Legislature that no additional programs are funded through the Nebraska Health Care Cash Fund until funding for all programs with an appropriation from the fund during FY2012-13 are restored to their FY2012-13 levels.

(2) Any money in the Nebraska Health Care Cash Fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

(3) The University of Nebraska and postsecondary educational institutions having colleges of medicine in Nebraska and their affiliated research hospitals in Nebraska, as a condition of receiving any funds appropriated or transferred from the Nebraska Health Care Cash Fund, shall not discriminate against any person on the basis of sexual orientation.

Sec. 19. Section 81-1204, Reissue Revised Statutes of Nebraska, is amended to read:

81-1204 (1) Except as otherwise provided in subsection (2) of this section, the Department of Economic Development shall not approve a job training grant (a) which exceeds an average expenditure of five thousand dollars per job created if the proposed wage levels do not exceed thirty thousand dollars per year, (b) ~~or~~ which exceeds an average expenditure of ten thousand dollars per job if the proposed wage levels exceed thirty thousand dollars per year but do not exceed fifty thousand dollars per year, or (c) which exceeds an average expenditure of twenty thousand dollars per job if the proposed wage levels exceed fifty thousand dollars per year or if the jobs created are located in a high-poverty area as defined in section 81-1203.

~~The~~ (2) If the application is approved with provisions described in subsection (3) of section 81-1203, the Department of Economic Development may approve a job training grant (a) up to ten thousand dollars per job created if the proposed wage levels do not exceed thirty thousand dollars per year, (b) ~~or a job training grant~~ up to fifteen thousand dollars per job if the proposed wage levels exceed thirty thousand dollars per year~~, if the application is approved with provisions described in subsection (3) of section 81-1203.~~ but do not exceed fifty thousand dollars per year, or (c) up to twenty-five thousand dollars per job if the proposed wage levels exceed fifty thousand dollars per year or if the jobs created are located in a high-poverty area as defined in section 81-1203.

Sec. 20. Section 81-1205, Revised Statutes Cumulative Supplement, 2012, is amended to read:

81-1205 A business which is awarded a job training grant or a training grant shall provide annual performance reports to the Department of Economic Development and a final performance report upon the completion of the project. The department shall ~~include information relating to such grants in the department's annual status report under section 81-1201.11.~~ provide a status report to the Appropriations Committee of the Legislature on July 1 of each year. The status report shall include information on each active grant, including specific information regarding the number of positions to be

trained, whether new or existing employees are to be trained, the length of time that the project has been active, the amount of funding committed to the project, the amount of funding paid out to date, and the projected completion date. The status report shall also provide information on grants closed during the reporting year, including the total number of employees trained, whether new or existing employees were trained, total project expenditures, and the duration time of the project. The status report shall also provide information summarizing the use of community college areas to provide training services and list specific projects where a community college area is providing all or a component of the training services. If private or inhouse training services are used, the status report shall provide information regarding the name of the private or inhouse training service and the qualifications of the training service. The report submitted to the Appropriations Committee shall be submitted electronically.

Sec. 21. Section 81-2516, Revised Statutes Supplement, 2013, is amended to read:

81-2516 The Commission on Indian Affairs Cash Fund is created. The fund shall be administered by the Commission on Indian Affairs. The fund shall consist of money ~~received by the state in the form of~~ from contracts, fees, grants, or gifts from nonfederal sources received by the state and any investment income earned on the fund. The fund may be used to support the commission's operations pursuant to sections 81-2501 to 81-2508. The Department of Administrative Services may for accounting purposes create subfunds of the fund to segregate awards or allocations received. Any money in the fund available for investment shall be invested by the state investment officer pursuant to the Nebraska Capital Expansion Act and the Nebraska State Funds Investment Act.

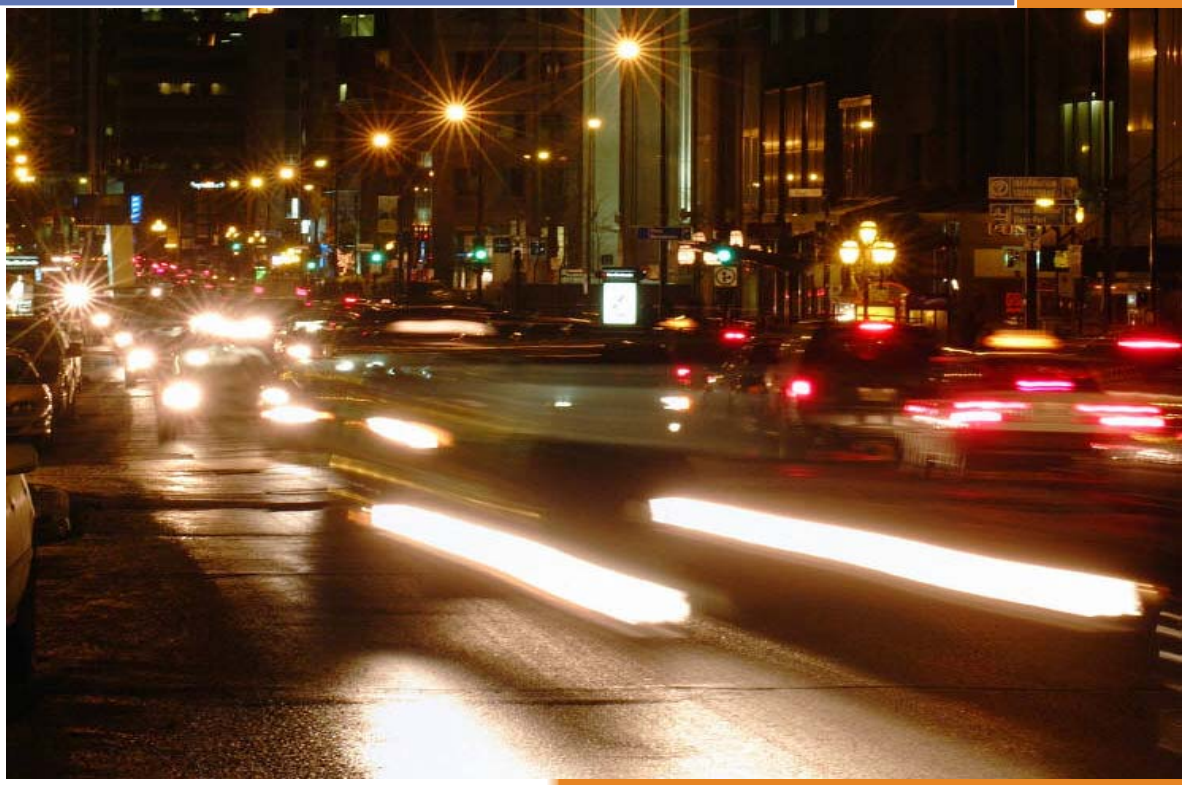
Sec. 22. Original sections 2-1588, 2-1592, 2-3225, 2-3226.05, and 81-1204, Reissue Revised Statutes of Nebraska, sections 24-205, 24-227.01, 39-1390, 48-622.01, 58-708, and 81-1205, Revised Statutes Cumulative Supplement, 2012, and sections 71-7611 and 81-2516, Revised Statutes Supplement, 2013, are repealed.

Sec. 23. The following sections are outright repealed: Sections 2-3226.06, 2-3226.07, 2-3226.08, and 2-3226.09, Reissue Revised Statutes of Nebraska.

Sec. 24. Since an emergency exists, this act takes effect when passed and approved according to law.

2013

DMV VTR BUSINESS CASE



Prepared for the Nebraska Department of Motor Vehicles

By:
Nancy Shank, PhD, MBA
Associate Director
University of Nebraska Public Policy Center Lincoln, NE 68588
nshank@nebraska.edu
http://ppc.unl.edu

Table of Contents

Executive Summary

The Nebraska Department of Motor Vehicles (DMV) collects nearly $600,000,000 annually through its Vehicle Titling and Registration (VTR) system. Most of the revenues are not kept by the DMV, but rather are distributed to a variety of local and state agencies and organizations. In Nebraska, county treasurers and the DMV have primary responsibility for vehicle titles and registrations; however, a large number of local, state, and federal agencies rely on the information collected through the VTR system.

The VTR system, now over 20 years old, no longer meets the evolving business requirements of stakeholders and expectations of Nebraska residents. Implementation of a new VTR system should be considered. Revenues to support a new VTR system may be derived from a variety of sources. At this early exploratory point in the process, it is difficult to estimate how much a new VTR system may cost; other states have expended between $13 and $50 + million.

The DMV should move immediately to collaboratively develop a funding model that is supported by key stakeholders. Upon approval, the DMV should create a project structure, conduct a business process analysis, and further refine the analysis with a concept of operations and system requirements. With that information, the DMV and its stakeholders will be positioned to evaluate how it will approach VTR system replacement (i.e., contracted customized development, in house customized development, modified off the shelf product purchase, commercial off the shelf product purchase, or some combination). Upon determination of a direction, a project plan will be further developed and the contracting/tasking of VTR system development and implementation will be undertaken. Based on the experience of other states, VTR system implementation projects typically have taken between 4 to 10 years from initial planning through implementation of the production system.

Vehicle Titling and Registration Background

VTR System Usage and Volumes

The Department of Motor Vehicles (DMV) Vehicle Titling and Registration system (VTR) is used to issue vehicle and motorboat titles, note liens, collect motor vehicle sales tax, register vehicles and collect all motor vehicle taxes and registration fees. In 2012, well over 3 million transactions were processed through the VTR system (Table 1).

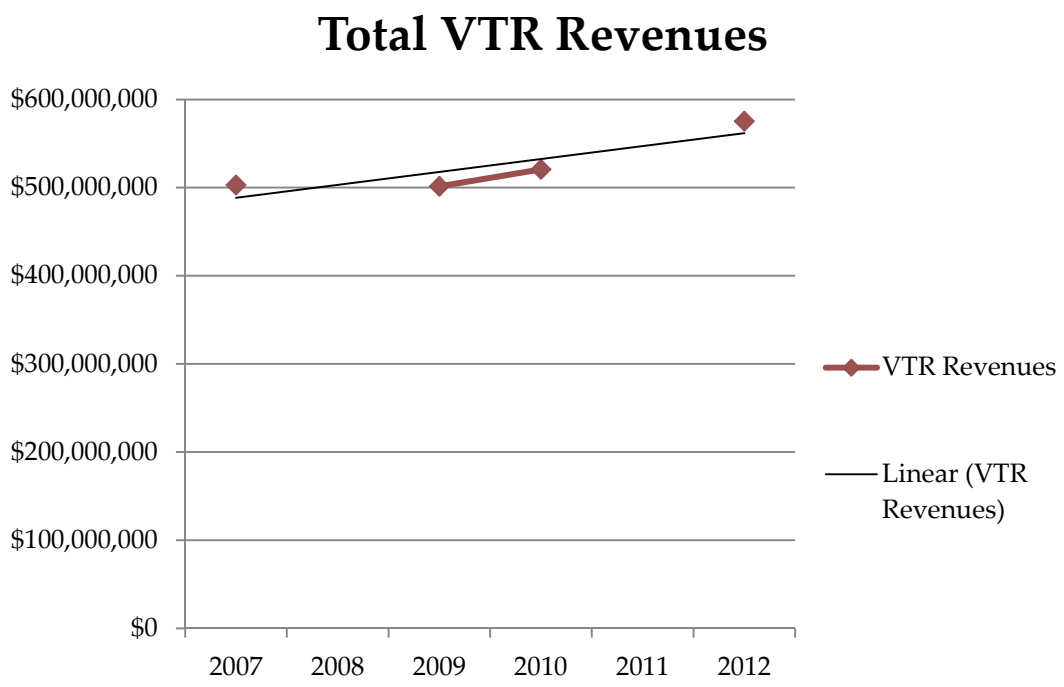
Table 1. 2012 Vehicle and Motorboat VTR System Transactions

	Number of Transactions
Titles (vehicles and motorboats)	747,719
Liens noted	226,570
Registrations - vehicles	2,291,182
Registrations - motorboats[1]	28,749

Nebraska and local statutes set fees and taxes for all VTR-related fees and taxes (*Appendix A*). In 2012, revenues collected through the VTR system totaled $575,272,893. Over the past several years, revenues processed through the VTR system have been steadily rising. Figure 1 displays actual revenues collected through the VTR system for years 2007, 2009, 2010, and 2012 (data is not available for years 2008 and 2011), and a linear trend of revenue growth over the period.

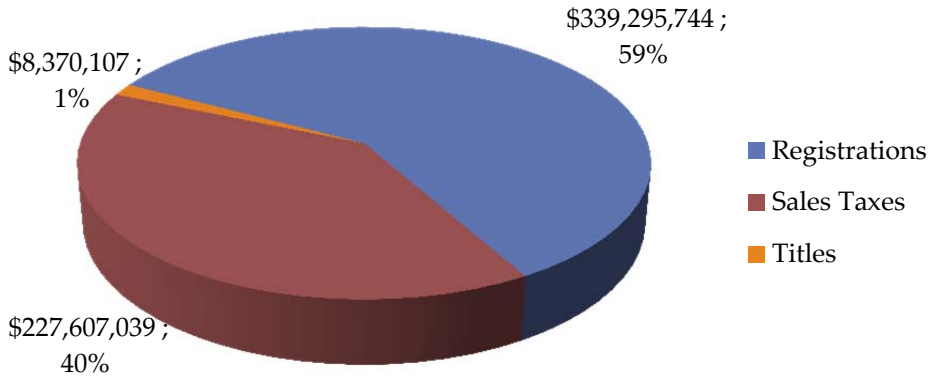
[1] The number of motorboat registrations is based on a rolling three year average.

Figure 1. Actual and Trend of Revenues Collected through VTR System



Most revenues collected through the VTR system are the result of vehicle registrations ($339,295,744; 59% of revenues), followed by sales tax ($227,607,039; 40% of revenues) and titles ($8,370,107; 1%) (Figure 2).

Figure 2. VTR System Receipted Revenues by Type



Revenues receipted through VTR system transactions are allocated to a variety of local and state funds (Table 2).

Table 2. Receipts to Funds through VTR System	
Revenue Fund	**2012 Revenues**
State of Nebraska General Fund	$199,042,131
City and County Funds	$180,145,531
School Districts	$125,026,522
Highway Trust Fund	$54,113,100
DMV Cash Fund	$8,991,807
Department of Roads	$3,456,555
Emergency Management Services Fund (HHS)	$1,146,129
Game & Parks (Boats)	$1,124,599
Spirit Plate Funds	$1,055,495
Tire Tax (DEQ)	$458,459
State Patrol	$264,678
Motor Carrier Services Cash Fund	$256,701
Consumer Protection (AG)	$117,342
Dealer Board	$58,014
Veteran's Cemetery	$15,830
Grand Total	**$575,272,893**

The DMV also uses the current VTR system to title and note liens for *apportioned vehicles* (i.e., generally these are large commercial vehicles for interstate transport). For apportioned vehicles, the current VTR system is not used to collect sales tax, to register vehicles, or collect registration fees. However, since apportioned vehicles **may** be included in a future VTR system, the volume and revenue data are provided in Tables 3 and 4.

Table 3. 2012 Apportioned Vehicle Transactions	
	Number of Transactions
Titles*	18,551
Liens Noted	7,268
Registrations	110,281

**Apportioned vehicle titling uses current VTR system*

Apportioned registration and vehicle titling transactions total approximately $76 million annually. Revenues are shared with other states, as well as allocated to a variety of Nebraska funds (Table 4).

Table 4. 2012 Distributions of Apportioned Vehicles Titling and Registration Revenues*	
Registration Revenues	**Amount**
Other States	$45,927,984
Nebraska Funds	$30,476,311
Nebraska Department of Roads' Highway Trust Fund and Highway Cash Fund	$21,333,418
Motor Vehicle Tax Fund (Cities and Counties)	$8,868,606
Department of Revenue Property Assessment Division Cash Fund	$274,287
Sales Tax Revenues	
State Tax	$1,457,103
City Tax	$243,164
Tire Fee	$105,913
County Tax	$4,080

**Apportioned vehicles are not registered using the current VTR system. Revenue figures are included since a future VTR system may include this option.*

VTR Statutory Roles and Responsibilities

Nebraska statute defines the roles and responsibilities for vehicle titling and registration (*Appendix B* contains the major statutes concerning these responsibilities). Vehicles include those that are non-apportioned, those that are apportioned, and also those that operate on the water. *Non-apportioned vehicles* are vehicles used on highways and roads that are generally not used for interstate commercial transportation. These would include personal cars and trucks and business cars and trucks not transporting goods between states. *Apportioned vehicles* are generally large commercial trucks that are used for interstate transportation of goods and are covered by the International Registration Plan for distributing fees to multiple states. *Water vehicles* are generally vessels powered by any mechanical device capable of propelling the vessel over any public or private waters of Nebraska.

Non-apportioned Vehicles

Nebraska's 93 county treasurers use the VTR system in their primary role of non-apportioned vehicle titling and registration. In this role, county treasurers are responsible for issuing titles, noting liens, collecting title and registration fees, assessing and collecting sales taxes, assigning plate numbers and issuing plates, managing inventories and placing orders to the DMV for plates, distributing decals, creating renewal notice data, printing hard copy documentation for owners, and allocating fees due to the variety of Nebraska funds.

For certain cases of non-apportioned vehicles, the DMV, rather than county treasurers, performs title issuance and registration.[2] For these cases, the DMV uses the VTR to fulfill these responsibilities.

Apportioned Vehicles

The DMV has primary responsibility for titling and registering apportioned vehicles. These responsibilities include issuing titles, noting liens, collecting title and registration fees, assessing and collecting sales taxes, assigning plate numbers and issuing plates, managing license plate inventories, creating and mailing renewal notices, printing hard copy documentation for owners, and allocating fees due to Nebraska funds and to other states and provinces. The DMV uses the current VTR system only to title and note liens for apportioned vehicles. Another computer system is used to collect sales tax, to register vehicles, and collect registration fees.

Water Vehicles

The DMV is responsible for oversight of motorboat titling. The Nebraska Game and Parks Commission is responsible for oversight of boat registrations. Through an agreement between the DMV and Game and Parks, county treasurers use the VTR system for issuing motorboat registrations and collecting associated fees and taxes.

Other Responsibilities

The DMV is responsible for prescribing the vehicle titling and registration computer system (i.e., the VTR system), maintaining and updating the system, and providing training and support to the county treasurers.

[2] For example, DMV issues bonded titles, titles and registers state-owned vehicles and historical vehicles, and issues transporter plates, boat-dealer trailer plates, and repossession plates.

Starting October 1, 2013, the DMV will be responsible for printing and mailing vehicle registration renewal notices, which had previously been the responsibility of counties.

The DMV receives license plate requests from county treasurers, approves the requests, and places orders with the Department of Corrections.

Current VTR System

History

The current VTR system application has been operating for more than 20 years (*Appendix C* shows key milestones). After several years of planning and design, the application development started in January 1991 and took 18 months to complete. State Central Data Processing division employees (now the Office of the Chief Information Officer-OCIO) and contract staff wrote the application using COBOL (Common Business-Oriented language).[3] Implementation throughout Nebraska's 93 counties took five years and was completed in June 1997.

The application was built in three distinct components that reflected the business processes of that era: county clerks issued titles, county assessors valued and taxed vehicles, and county treasurers registered vehicles and collected taxes. Over the years, legislative changes have consolidated this workflow under the aegis of the county treasurers' offices.[4] Unfortunately, the VTR system's structure is immutable and continues to reflect the original tri-partite division of responsibilities. The DMV has created user sequences to mimic the county treasurer process, but this and other changes by a succession of programmers (*Appendix C*) have resulted in increasingly confusing and complicated coding.

The information flows similarly reflect former visions of information sharing needs. There is no comprehensive information source for VTR data. Rather, the counties maintain current and historical information about registrations (the state only has information about the latest registration for a vehicle), the state maintains current and historical data about titles (counties retain only the latest title transaction for a vehicle), only counties have any information about fees and taxes and transaction type for county actions, and none of the VTR system information is interfaced with driver's license data.

---

[3] VTR has in excess of 170 files/tables/databases and more than 3,400 fields.

[4] Two major initiatives have dramatically impacted the business process performed by county officials. In 1998, the ad valorem tax assessment process was replaced by an assessment based on the manufacturer's suggested retail price and age of a vehicle. This change removed the need for the county assessors to participate in the process of titling and registering vehicles. In 2009, all counties were converted to a one-stop business model, removing the county clerks from the process. The changes to the business processes were made to improve the flow of the process, minimize costs and to better meet the needs of the customers.

VTR System Architecture

Architecture

The VTR system application was designed to operate within a distributed processing architecture. The distributed architecture for the VTR system application comprises a replication of the VTR application software and database for each of Nebraska's 93 county treasurers [5] and one for Game and Parks (Figure 3). The DMV also has a replication and database (AS400) it uses for titling and registration along with other related applications to fulfill its VTR responsibilities.

Communications

The physical communications network used by the VTR system is sublet from the wide area network (WAN) administered by the Intergovernmental Data Services Division (IDSD) within OCIO. The network is configured using both private and public (encrypted) DSL connections[6] with available bandwidths ranging from 1 to 10 Mbps.[7] The WAN is currently used primarily by the DMV and the Court Administrators Office.

Hardware and Software

The county VTR applications are physically located in either the county office or on a consolidated AS400 in the OCIO offices.[8] At each county treasurer's office, the DMV provides thin client computers for access to the VTR application. Counties also have the option to use their own computers. The DMV provides the counties with sophisticated laser printers to print out VTR forms. The DMV, through a contract with OCIO, provides hardware and communications support to all county treasurers.

---

[5] The counties and DMV have been migrating to a "regional" approach in which the VTR software and data is maintained for each county on a computer that holds software and data from adjacent regions. The 93 instances of the county databases, therefore, represent both physical, as well as virtual replications.

[6] Digital Subscriber Line (DSL) is a type of high speed Internet access.

[7] Network transmissions are generally measured in megabits per second (Mbps). A megabit is just over one million bits, so "Mbps" indicates the transfer of one million bits of data each second.

[8] By fall 2013, 60 of the 93 county databases will have been moved to an OCIO computer, from the county locations. The remaining counties will be moved by December 2014.

The AS400 has the DMV Central Office-generated VTR data. The DMV Central Office uses desktop PCs to access the VTR application. As at the counties, laser printers are used to produce print output. The DMV Central Office VTR application (AS400) is hosted by the OCIO.

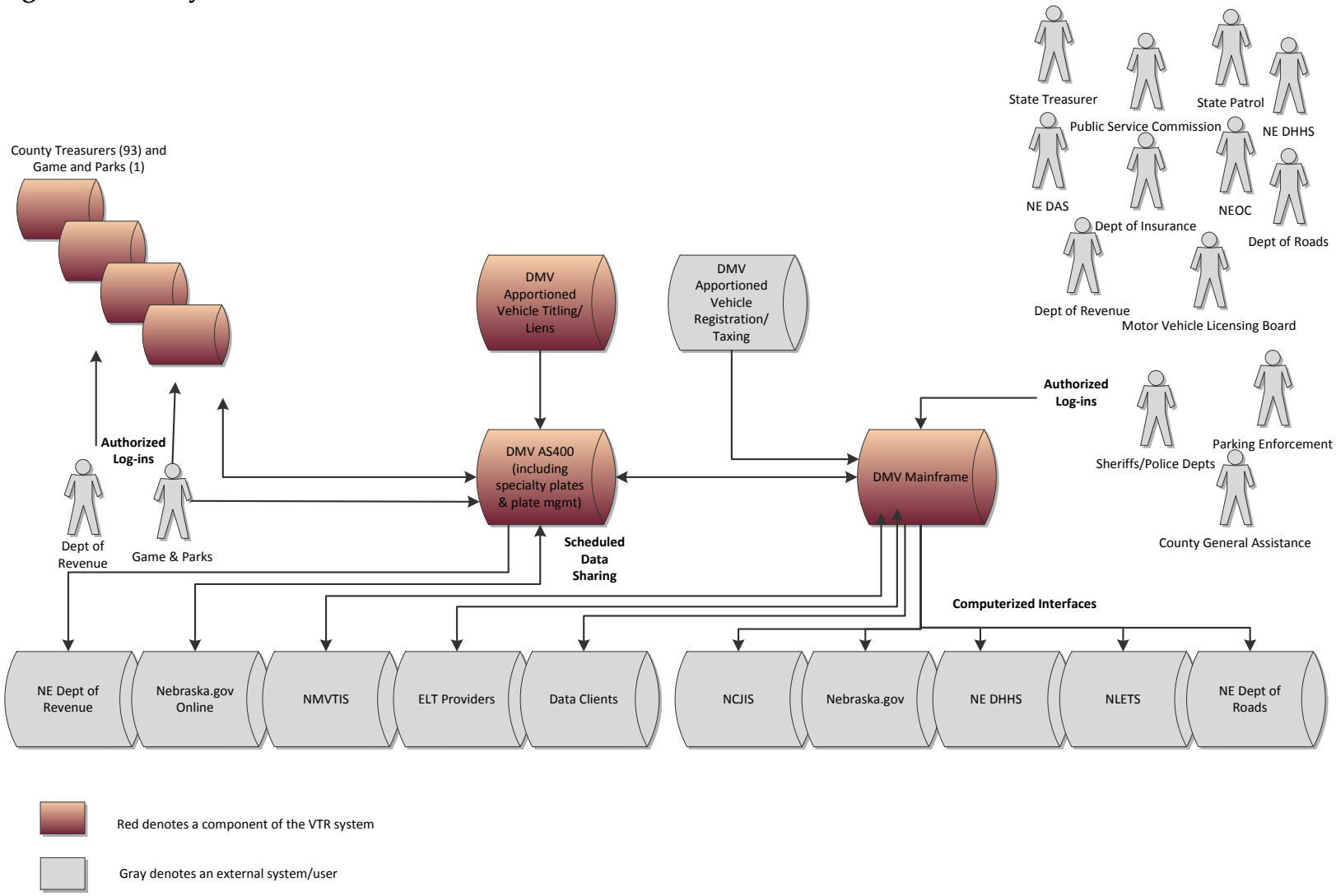
The DMV Mainframe is the repository for a subset of VTR information from the counties and the AS400. It is hosted by the OCIO.

VTR System Users

The DMV, county treasurers, and Game and Parks, use the VTR system to fulfill their responsibilities for vehicle titling and registration, and related responsibilities. Although each of the replications of the application are essentially the same, some county treasurers use additional functionality through VTR system menu options that offer a variety of options, such as creating accounting ledger data extracts and creating interfaces that aggregate all transactions to simplify payments.

Along with the DMV, county treasurers, and Game and Parks, there are multiple other users of the VTR system and functions it provides (Figure 3). Visibility into VTR system data is provided by the DMV through scheduled data sharing, programmed interfaces with other computer systems, and authorized log-ins.

Figure 3. VTR System Users



Authorized Log-ins to the County Treasurers' Databases

Nebraska Department of Revenue staff have access to each of the county databases to view specific record and report information.

Game and Parks staff have access to each of the county database to view specific record and report information.

Scheduled Data Sharing with DMV AS400 and DMV Mainframe

Game and Parks staff use the VTR system for issuing motorboat registrations and collecting associated fees and taxes.

Nebraska Department of Revenue receives a nightly file from the VTR system containing all transactions that were subject to the sales tax requirements.

Nebraska.gov Online provides the Internet "face" to the public for web-based vehicle registrations and specialty plate applications.[9] The VTR system sends and receives the data from Nebraska.gov Online and then processes the requests.

National Motor Vehicle Title Information System (NMVTIS) receives daily updates from the VTR system about titling activity in Nebraska. NMVTIS notes and returns to the VTR system when Nebraska titles have been surrendered to another state. Information about surrendered titles is also sent back to counties.

ELT (Electronic Lien and Title) Providers receive daily updates from VTR of lien activity that is used by their lender customers. The providers also return to VTR daily updates to lien records.

Data Clients are entities that provide payment to the DMV for selected VTR system data. Current clients include e-470 (toll road billing in Colorado), Experian (weekly and monthly – national vehicle databases) and Polk (weekly-national vehicle databases).

Computerized Interfaces with DMV Mainframe

Nebraska Criminal Justice Information System (NCJIS) is Nebraska's consolidated data source for law enforcement that exchanges information with the DMV Mainframe regarding vehicle and owner information.

[9] Nebraska.gov Online also provides the Internet face for Driver's License renewals. Currently there is no connection between the VTR and drivers licensing data.

Nebraska.gov is the payment portal for all online DMV transactions, provides online services for title lookup to any user, and provides vehicle title and registration look up services to subscribers.

Nebraska Department of Health and Human Services (DHHS) accesses the VTR system to obtain vehicle owner information that is used for some social service programs.

Nlets (an interstate justice and public safety network) uses the VTR system to look up license plate numbers and vehicle identification numbers.

Nebraska Department of Roads pulls vehicle information for accident records from the VTR system.

Authorized Log-ins to the DMV Mainframe

State Treasurer accesses information for unclaimed property.

Public Service Commission uses the VTR system to access vehicle information for regulating taxis, grain elevators, and party vehicles.

State Patrol accesses vehicle information for investigations and road stops from the VTR system.

DHHS uses the VTR system to access vehicle owner information for child support enforcement.

Department of Administrative Services/Transportation Services Bureau uses the VTR system for State of Nebraska fleet management.

Department of Insurance uses the VTR system for investigations.

Nebraska Equal Opportunity Commission uses the VTR system for investigations.

Department of Revenue uses the VTR system for investigations.

Department of Roads uses the VTR system in accident reporting.

Motor Vehicle Industry Licensing Board uses the VTR system for investigations of vehicle dealers.

Sheriffs and Police Departments throughout the state access the VTR system for vehicle information for investigations and road stops.

Parking Enforcement personnel from a variety of organizations (municipalities, Nebraska State College System, University of Nebraska campuses) use the VTR system for enforcing organizational parking policies.

County General Assistance programs access the VTR system for vehicle owner information.

Support Personnel

Both the DMV and OCIO have staff provide maintenance and support for VTR system operations (Table 5). At the DMV, 12.25 FTE[10] are devoted to VTR system programming, training, and help desk functions. The DMV contracts with a 1.0 FTE programmer at OCIO for DMV Mainframe operations.

Table 5. VTR System Personnel	
DMV Personnel	**FTE**
Senior programmer	1.0
Programmer (unfilled)	1.0
Business analyst	1.25
Help desk	9.0
OCIO Contractual Personnel	
Mainframe programmer	1.0
Total	**13.25**

Costs of Current VTR System Operations

Operations and support of the VTR system in 2012 totaled $1,684,694 (Table 6).[11] This figure excludes apportioned title and vehicle registration costs since those functions are not currently executed using the current VTR.

[10] Full-time equivalent (FTE) is a unit that indicates the workload of an employee that makes time commitments comparable across contexts. In this report, an FTE of 1.0 means that total person hours are equivalent to a full-time worker (40 hours a week, or 2,080 hours annually). The responsibilities may be fulfilled, however, by more than one person. Similarly, an FTE of 1.25 signals that the person hours would total 50 hours a week, or 2,600 hours annually; this indicates that the role is almost certainly fulfilled by more than one individual.

[11] DMV's assumption of registration notices, starting October 1, 2013, will increase VTR-related cost an additional $1,021,966 (printing, supplies, postage, etc.).

Table 6. 2012 VTR System Costs	
	Total
Personnel	*$854,922*
Operating Costs	
AS/400 Retainer	$423,272
County Treasurer Equipment	$278,000
Communications Lines	$128,500
Subtotal Operational Costs	*$829,772*
Annual VTR System Costs	**$1,684,694**

Limitations of the Current VTR System and Desired Future

The current VTR system prevents county treasurers and the DMV from providing services that are customer-centric, capitalizing on efficiencies available through new technologies, ensuring revenues are collected, operating with full information resources, and flexibly responding to changes and opportunities. Other states are facing similar issues with their aging VTR systems. Two recent surveys (2011 & 2012) conducted by the American Association of Motor Vehicle Administrators (AAMVA) identified 36 states that are in process of, or have recently completed, implementation of new VTR systems. Many of these states are moving from legacy systems from the 1980s and 1990s to overcome limitations from those systems and to take advantage of opportunities available from new technologies and business process improvements.

Vehicle-centric Structure

The current VTR system has a vehicle-centered structure that does not have the capability to link vehicles to drivers or households. In the past, many states have used vehicle-centric models, as well. But many states are moving to a customer-centric model in which customers are linked to multiple vehicles to improve identification, notification, and payment.

The vehicle-centric model results in a wide variety of inefficiencies for customers, county treasurers, and state agencies. For example, customers (including individuals and businesses) receive separate notifications and have unique renewal months for each vehicle. County treasurers must receipt each as a separate transaction. While this may only be an inconvenience for individuals, it is time-consuming for businesses with fleets of vehicles.[12] Numerous businesses in Nebraska have fleet vehicles (e.g., large organizations that maintain "company cars," automobile rental companies, agricultural producers). In a recent Lincoln Journal Star article, Lancaster County officials estimated that there are more than 150 businesses that have 10 or more vehicles and that it takes approximately one hour to process 10 vehicles. The current VTR makes it difficult for DMV and the

[12] Pascale, J. (2013, August 17). Farmers get DMV 'fleet' desk. *Lincoln Journal Star*.

county treasurers to efficiently issue and manage registrations for these organizations.

The vehicle-centric nature of the VTR system also presents difficulties for law enforcement and other government agencies, in determining all vehicles owned by an individual or household. For example, knowing all the vehicles owned by an individual can be crucial for law enforcement in apprehending suspects.

The vehicle-centric VTR system also poses difficulties as the DMV attempts to support court orders. According to state law, all vehicles owned by a person convicted of a second or subsequent DUI violation are immobilized.[13] Immobilization means revocation or suspension of the registration of motor vehicle(s), including the license plates. The current VTR system is unable to identify all vehicles, is hampered in identifying the authoritative registration, and is unable to apply a time-limited brand/status on the record to prevent transfer of ownership.

Old Technology

When the VTR system was developed, the Internet was only just emerging as a means for information, communication, and business transactions. The VTR system is unable to efficiently provide on-line functionality. Although the DMV does have several on-line services, they are silo-ed systems that require manual intervention and are not integrated into the current VTR system.

The public increasingly demands web-based information and services that are impracticable with the current VTR system. A new VTR system, native to web-based services, could allow users (individuals or businesses) to create a "myDMV" account from which they identify what channel of notifications/alerts they prefer, update addresses, register vehicles, authorize electronic payments, print copies of past transactions, and synchronize expirations. These types of on-line services would reduce supplies, printing, and postage costs and may ultimately reduce personnel costs.

[13] The court determines the period, from not less than five days and not more than eight months.

Unrealized Revenues

The original partitioned structure makes it possible for residents to circumvent paying fees and taxes. Three examples illustrate how this is possible given the current structure of the VTR system. In the first example, it is possible for an individual to register a lesser-valued vehicle they no longer own in place of a more expensive vehicle, which would allow them to pay less in taxes but appear to have valid plates and registration. An individual could also register the same vehicle in multiple counties, in error or for fraudulent purposes. A second example is the case of "leased to buy" vehicles. When a "leased to buy" vehicle is purchased, the purchaser must be aware of and understand how to pay the outstanding sales tax. The purchaser receives no invoicing or other notice because the VTR system is unable to identify the need to pay because it lacks the necessary link between titling to registration data. A third example of missed revenues is the lack of tracking of dealer-issued in-transit stickers. When dealers sell vehicles, they may issue in-transit stickers that give the owner a single thirty (30) day period to title and register the vehicle. However, there is no tracking of in-transit stickers, meaning that some owners have illegally gained access to additional in-transit stickers to extend the grace period for titling and registration.

A new VTR system could provide improved fraud prevention. Although it is not possible to know who is perpetrating fraud or how much in revenue is being lost, it is known that limitations of the current system have allowed the evasion of payment.

Incomplete Analytics

The current VTR system lacks a central, comprehensive source of past and current information. This has made it difficult for the DMV to monitor trends and provide complete information about current operations. For example, the DMV has struggled to provide to state senators the projected impacts of alternative fee structures because there is no single source of annual statewide registrations.

A new VTR system could provide more logical and comprehensive data management so that information for analytics would be readily available.

Inefficient Operations

County treasurers and the DMV must use inefficient processes in order to work around the VTR system's limitations. County treasurers must dual-entry data that already exists elsewhere in the system, but is not importable. For example, county treasurers must re-enter previous owner name on title and sales tax forms. A new VTR system could re-use existing data to logically populate fields.

County treasurers, the DMV, and other users are currently keying information into the system that may be available through other systems. For example, Treasurers Offices must assign tax districts even though there are other databases that could automatically search and assign them. Current programs are able to more easily interface with external databases to send and receive information. A new VTR system would be expected to take advantage of information available from external sources.

The distributed architecture of the current VTR system means there are nearly 100 replications of the application. This makes application maintenance difficult because each replication may have a unique opportunity for failure. A new VTR system could have a single source that serves the application. This would streamline upgrades, bug fixes, and patches.

Changes are Difficult and Time-intensive

Changes to the application are difficult and time-intensive because much of the system is hard-coded, rather than modular or tabular. The result has been characterized as a "confusing mass of programming code that no one completely understands. Changing one line of code can result in a failure in another seemingly unrelated area of the VTR system."[14] As changes continue to be needed to the system, DMV administrators and programmers believe the risk of catastrophic failure increases.

Because COBOL is the VTR system's programming language, there are concerns about the state's ability to maintain it. Across the IT world, many believe COBOL is an outdated language, pointing to the fact that many universities no longer teach courses on COBOL. However, many businesses and governmental agencies

[14] Quote from a DMV systems administrator.

continue to run COBOL applications (though it is true that COBOL-based applications are systematically being replaced with those using newer languages). The combination of fewer workers learning COBOL and its continued legacy use in older applications and large platforms has made it increasingly difficult for the State, and DMV, to locate and hire developers who are trained and willing to work in the COBOL environment.[15] Some local Associate's level institutions in Nebraska still teach COBOL, but often students have already been hired by other companies, prior to graduation. The State has difficulty competing in the information technology workforce marketplace, particularly in the scarce COBOL labor force. At this time the DMV only has one developer that supports the VTR system application.

In some cases, the VTR system's limitations have prevented implementation of needed change. For example, the state legislature proposed that previous and current military members be eligible for an initial specialty plate at no cost and an additional specialty plate at full cost. The DMV has no way to link multiple vehicles to an individual, so is unable to proactively offer one free specialty plate and ensure subsequent plates are normally charged.

Many legislative mandates and administratively-driven changes have required programmers to manipulate hard coding for the VTR system.[16] Such changes are difficult and time-consuming given the application's age and structure. Further, this type of hard coding change introduces risks to the viability of the entire application. Since the DMV has scant personnel resources available to implement legislative and only the very highest priority changes to VTR system, most desired business operational changes are simply not achievable.

[15] This observation was communicated to the report author by a DMV Central Office administrator who, over the years, has been involved in hiring COBOL-skilled individuals.
[16] New approaches to application development minimize this type of time-intensive and risky interference with the original source code, and instead use more modular or tabular approaches to changes in application functionality.

Emerging VTR System Practices

There are a range of emerging practices, opportunities and possible future mandates, that would directly impact titling and registration practices.[17] Many of these would be impracticable to execute in the current VTR system. Nationally, there are a number of initiatives of note:

1. National Motor Vehicle Title Information System (NMVTIS). Nebraska participates in NMVTIS, but is unable to use the full information sharing functionality possible. A new VTR system would enable Nebraska to verify the validity of all titles prior to issuance (inhibiting title fraud and auto theft) and eliminate the time consuming standalone check of NMVTIS for only a portion of the titles issued.

2. National eTitling initiative. eTitling uses electronic records to track a new vehicle from its manufacturer to its first title issuance and as vehicle titles transfer between states. Electronic title programs are being implemented in Virginia, Texas, and Wisconsin, and South Dakota has passed enabling legislation. It is anticipated that most states will consider electronic titling as they continue to look for ways to reduce cost, enhance efficiency, and reduce fraud.

3. Vehicle Miles Traveled (VMT) fee. Oregon is moving to become the first state to replace state fuel excise tax with a VMT fee. Both the state House and Senate have passed the bill that is awaiting gubernatorial signature. The Congressional Budget Office (2011)[18] and the Government Accountability Office (2012)[19] have named VMT fees as a viable alternative to the gas tax. There have been discussions, at the federal level, that VMT, or some other

---

[17] The implementation of some of these opportunities may first require changes to Nebraska statute.

[18] Congressional Budget Office. (2011, March). *Alternative approaches to funding highways*. Washington, DC: Congress of the United States. http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/121xx/doc12101/03-23-highwayfunding.pdf

[19] Government Accountability Office. (2012, December). *Highway Trust Fund: Pilot program could help determine the viability of mileage fees for certain vehicles*. (Report GAO-13-77). Report to the Subcommittee on Transportation, Housing, and Urban Development, and Related Agencies, Committee on Appropriations, House of Representatives. Washington, DC: Congress of the United States. http://www.gao.gov/assets/660/650863.pdf

alternative, is needed to provide long-term solvency for the federal Highway Trust Fund. Any solution, like VMT, that requires sophisticated use of titling and registration data will be difficult for Nebraska to implement using the current VTR.

4. Performance and Registration Information Systems Management (PRISM). This national program, administered by the Federal Motor Carrier Safety Administration, uses state commercial vehicle registration sanctions as an incentive for motor carriers to improve safety. Nebraska participates in PRISM, but due to current VTR system limitations, can only apply PRISM sanctions to apportioned vehicles. PRISM relies on the ability of the state to link a motor carrier's U.S. Department of Transportation (DOT) number to any commercial vehicle associated with that motor carrier. Nebraska is able to link all vehicles to a DOT number for apportioned vehicles – because Nebraska uses a different computer system to perform those functions that enables that crucial association. But Nebraska is unable to do so for non-apportioned vehicles because the current VTR system does not capture DOT numbers and lacks the capability to link multiple vehicles to an individual or organization. The fact that Nebraska can only apply PRISM sanctions to one group of commercial motor vehicles (i.e., interstate) and not another (i.e., intrastate) is problematic.

There are many business process opportunities that have been identified by Nebraska VTR system stakeholders. Some of those opportunities have already been identified elsewhere in the report. Those that have not yet been mentioned, but would offer significant improvements, include:

5. Dealer automated services. Participating auto dealers would use a new VTR system to record vehicle sales, issue titles and registrations, and collect taxes. This would improve the collection of tax monies due, reduce opportunities for fraud, and provide a convenience for the public.

6. In-transit stickers. A special case of Dealer Automated Services is in-transit stickers. A new VTR system could also allow dealers to enter vehicle sales so that in-transits could be monitored immediately. In-transits are not currently monitored: this hampers law enforcement from identifying the current owner of a vehicle, provides opportunities for fraud (e.g., issuing multiple sets of in-transits so that the owner may delay or avoid taxes), and allows for the quick re-sell of a vehicle to avoid payment of sales tax. With in-transit monitoring,

the DMV would have information needed to send sales tax notices to buyers (if not collected by the dealer).

7. Forms technology. Titling and registration, inevitably, require printing out a variety of forms for the public and for agency records. The current VTR system is unable to use forms that are offered by modern software programs (e.g., Adobe Acrobat forms). Instead, Nebraska's VTR system uses set forms that must be installed on printers[20] in order to operate. Thus, the VTR system requires costly printers that have the capability to store and produce forms. When DMV needs to update forms, significant testing must be conducted and the forms must then be installed on all printers in the VTR system. A new VTR system could use more flexible, modern software that could be centrally-generated and that would require "typical," and less costly, printers.

8. On-demand decals. A new VTR system could enable county treasurers to print on-demand validation and tonnage decals. This improvement to the current practice would provide three benefits: 1) county treasurers would not run out of DMV-provided decal supplies that may be depleted based on unusually large volumes of transactions; 2) county treasurers would have improved inventory control, not currently available using hard copy decals, that could prevent and/or identify fraud; and 3) waste of hard copy decals would be eliminated since DMV, to minimize the likelihood the supply of decals will be depleted, currently provides more decals to county treasurers each month than expected to be needed -- meaning that every month there is likely waste at all 94 locations.

Regardless of which specific practices emerge as priorities, it is likely that the DMV will be challenged to continue to evolve its practices and improve its systems to create efficiencies internally and for its partnering organizations.

[20] There are currently approximately 200 specialized VTR printers in use throughout the state.

VTR System Alternatives

The DMV has two major courses to choose from in moving forward:

1. Maintain current system. Under this alternative, the current VTR system would continue to operate as the information source for the DMV and county treasurer activities. Through this option, it is expected that no major improvements would be possible, since historically, the availability of resources has limited updates only to those that are legislatively mandated.

2. Implement new system. Under this alternative, the state would replace the current VTR system with a new architecture and application. To achieve this, the state may choose from among several approaches:
    - Contracted Customized Development
    - In House Customized Development
    - Modified Off the Shelf Product Purchase
    - Commercial Off the Shelf Product Purchase
    - Combination of the Above

    Should the state determine a new system should be implemented, the above approaches should be carefully evaluated against the specifications, timeline, and costs available. It is both too early in the process as well as beyond the scope of this document to make a recommendation as to the specific direction of a new system.

Criteria for Evaluation of Alternatives

There are many criteria to consider when making a determination whether to maintain the current VTR system or to implement a new one. Some of the most important may be:

1. Service to public and other stakeholders – the DMV and county treasurers use the VTR system to provide frontline interactions with individuals and businesses. Additionally, numerous other agencies and organizations use the VTR system to accomplish their needs.
2. Revenue capture – A significant amount of money flows through the VTR system. These funds support schools, counties, cities, Nebraska agencies,

and also flow to other states. VTR system should efficiently and equitably collect taxes and fees.

3. Availability – because of the significant receipting that occurs through VTR system and the many users of VTR system data, the system should be available when users need it.
4. Satisfy business requirements – the VTR system should be able to meet its users' workflow and informational needs and be adaptable for inevitable changes in needs.
5. Comprehensive analytics – VTR system-related data should be easily accessible to undertake business analytics, such as identifying trends and making projections.
6. Costs – the VTR system represents an investment by the State of Nebraska; therefore the costs of maintaining the current system should be balanced against the investment in a new system.

Comparison of Alternatives Based on Criteria

The criteria described above are used to compare the two alternatives: maintaining the current system and implementing a new system (Table 7). The current VTR system falls short on all of the criteria except cost. Maintaining the current system, barring a catastrophic failure, will likely require some investment; however, a new system, based on the experience of other states, may cost between $13 and $50+ million (AAMVA, 2011 & 2012).

Table 7. Comparison of VTR System Alternatives

Criteria	Maintain Current System	Implement New System
1. Service to public and other stakeholders	Vehicle-centric model with limited ability to take advantage of new technologies.	Customer-centric with new technologies as a given in the system structure.
2. Revenue capture	Continued difficulty in capturing revenues if resident wants to avoid payment.	Improved abilities to capture revenues.
3. Availability	Continuing risk that changes to program may	A new system should be highly available.

	create catastrophic failure.	However, there is a risk that a new system, during or after implementation, will have downtimes as data is migrated, and the system goes live and is being tuned.
4. Satisfy business requirements (flexibility, scalability, extensibility)	Status quo. Legislative and other highest priority mandates will continue to occupy most resources available for improvements. Continued difficulty in fully-executing desired improvements.	Satisfaction of business requirements would be an expectation of new system. Some changes to the application may still require time-intensive intervention.
5. Comprehensive analytics	Continued difficulty projecting and implementing changes in revenue policies. Continued difficulty in efficiently providing some information to other data users.	Agility in forecasting and implementing changes in revenue policies. Improved ability to efficiently provide useful and timely information to other data users.
6. Costs	Outside consultation with IT COBOL experts may provide additional insights that could redress some system limitations and buttress possible points of failure. Costs may range from $1 – 5 million.	Unknown, but estimates of other states systems range from $13-50+ million. During the implementation, may have project development and management costs (in addition to existing staff time that will be devoted

	to project implementation). After operational, may be additional costs for hardware at county treasurers' offices. If electronic notifications are implemented, there will be cost savings (e.g., printing, postage) to state.

VTR System Next Steps

Maintain Current System

If it is determined that the current system will be maintained, the stakeholders must acknowledge the limitations and understand that future growth is limited. The DMV should engage information technology consultants to make recommendations about how to reduce the likelihood of system failures.

Implement New System

If it is determined that a new VTR system will be implemented, three immediate actions should be taken:

1. Identify financing mechanism
2. Identify financing options
3. Create an overall implementation timeframe and objectives

Identify Financing Mechanism

Currently there is no account set aside to accumulate funds for a new VTR system. A *VTR Replacement/Maintenance Fund* should be established and would be the source used to pay for costs associated with the new VTR system acquisition, implementation, maintenance/support, upgrades, and eventual replacement. The fund would be financed through one of the options described below. It may be beneficial to implement the funding mechanism prior to implementation of a new VTR system to accumulate additional funds to aid in the purchase and implementation of the system.

Identify Financing Options

At this time, it is impossible to accurately estimate the cost of a replacement system. According to recent AAMVA surveys (2011 & 2012) and communications with other states, states have spent between $13 – $50 + million.[21]

There are a number of options Nebraska could consider in meeting the costs of a new VTR system. Options might include:

1. Increased fees
2. New transaction surcharge
3. Reallocation of existing revenues
4. Cash reserves
5. Legislative appropriation
6. Master Lease Purchase Program
7. Grant funding
8. Combination approach

1. Increased fees

Nebraska statute establishes the fees (and recipients of those fees) for issuance of certificates of title, notations of liens, and the annual registration of vehicles (Table 8). Fees range from $5.50 to $14.00. One or more of these fees could be increased.

Table 8. VTR System Fees and Recipients

Recipient	Vehicle Registrations	Notation of Liens	Title Fees	Duplicate Title Fees
Issuing County	$ 1.50	$ 2.00	$ 3.25	$ 10.00
DMV	$ 2.00	$ 4.00	$ 4.00	$ 4.00
State General Fund		$ 1.00	$ 2.00	
Motor Vehicle Fraud-AG			$ 0.20	
State Patrol Cash Fund			$ 0.45	
MV Industry Licensing			$ 0.10	

[21] Rhode Island has budgeted $13 million. Iowa recently spent $20 million to replace its vehicle system. Montana is building a system for vehicles and driver licenses with a cost of $28.5 million. South Carolina spent $40 million. Missouri has announced a $50 million overhaul of its vehicle and driver systems. California spent $208 million.

Nebraska EMS Fund	$ 0.50			
Recreation Road Fun	$ 1.50			
Total Fee	**$ 5.50**	**$ 7.00**	**$ 10.00**	**$ 14.00**

Several states have used fee increases to support new VTR systems. For example, Idaho enacted a 30-50% increase to driver's license, titling, and registration fees. Kansas enacted a $4.00 increased fee on all vehicle registrations during 2009-2012.

Two illustrative examples are registration fees and titles and liens fees (Table 9). A $0.25 increase in registration fees (from a current fee of $5.50 to a proposed fee of $5.75) would result in additional annual revenue of $580,000, using the conservative number of 2012 transactions.

Table 9. Potential Revenue Generated Through Increasing Existing Fees

Fee Type	2012 Transactions	Additional Fee	Additional Revenue
Registration Fees	2,320,000		
		$0.25	$580,000
		$0.50	$1,160,000
		$0.75	$1,740,000
		$1.00	$2,320,000
Titles and Liens	975,000		
		$0.50	$487,500
		$1.25	$1,218,750

Advantages

- A small increase in several fees could accumulate significant funds since there are a large number of VTR system-related transactions.
- Relatively easy to implement and program.
- Fee increase would not be tied to the new VTR system. Could be implemented prior to purchase and implementation of the new system.

Disadvantages

- Fee is borne directly by the public.
- May be difficult to project total amount increase will generate. The number of titles and liens issued fluctuates more than registrations (perhaps due to economic conditions).

2. New transaction surcharge

A surcharge could be added to transactions. The *VTR Transaction Surcharge* would be a flat fee added to each registration, title, and lien transaction. The authority to collect a surcharge could be written similar to DMV's authority to collect identity security surcharges.[22] This mechanism would allow the DMV to adjust the fee based on project needs, meaning that the DMV would avoid having to request authorizing legislation to make needed surcharge adjustments. The use of these funds could be earmarked for only VTR system related uses. Table 10 illustrates the revenue generated through transaction surcharges ranging from $0.35 to $1.50.

Table 10. Potential Annual Revenue Generated Through VTR System Surcharge

2012 Transactions	Additional Fee	Additional Revenue
3,294,220	$0.35	$1,152,977
	$0.70	$ 2,305,954
	$1.00	$3,294,220
	$1.50	$4,941,330

Several states are using this approach. For example, Louisiana implemented a $2.50 transaction fee, applicable only to certain types of transactions. Rhode Island implemented a $1.50 transaction fee that will span from July 1, 2007 and not continue past July 1, 2017.

[22] According to §60-4,115(5), Nebraska Revised Statue, "The department (DMV) and its agents may collect an identity security surcharge to cover the cost of security and technology practices used to protect the identity of applicants for and holders of operators' licenses and state identification cards and to reduce identity theft, fraud, and forgery and counterfeiting of such licenses and cards to the maximum extent possible. The surcharge shall be in addition to all other required fees for operators' licenses and state identification cards. The amount of the surcharge shall be determined by the department. The surcharge shall not exceed eight dollars. The surcharge shall be remitted to the State Treasurer for credit to the Department of Motor Vehicles Cash Fund."

Advantages

- Easy to implement and program.
- Can be implemented immediately to begin accumulating funds.
- Provides the DMV with flexibility in dealing with future VTR system financing needs.
- A proven financing method for large DMV projects.

Disadvantages

- Fee is borne directly by the public.

3. Reallocation of existing revenues

A reallocation of existing fees, *VTR Collection Fee*, could be applied to all funds currently receiving revenues through VTR system-related fees. The fee could be calculated as a small percentage of each dollar collected. The reallocation would require the state legislature to authorize the assessment of the fee for each of the beneficiaries of motor vehicle taxes and fees.

Table 11 shows the impact of three levels of reallocations. A fee of 0.2% of each dollar collected would generate approximately $1.2 million dollars annually; increasing the fee to 1% would generate $5.8 million dollars annually.

Table 11. Potential Annual Revenue Generation Through Reallocation

		Percentage Reallocation Alternatives			
	Collected (2012)	**0.20%**	**0.40%**	**0.50%**	**1.0%**
State of Nebraska General Fund	$199,042,131	$398,084	$796,169	$995,211	$1,990,421
City and County Funds	$180,145,531	$360,291	$720,582	$900,728	$1,801,455
School Districts	$125,026,522	$250,053	$500,106	$625,133	$1,250,265
Highway Trust Fund	$54,113,100	$108,226	$216,452	$270,565	$541,131
DMV Cash Fund	$8,991,807	$17,984	$35,967	$44,959	$89,918
Department of Roads	$3,456,555	$6,913	$13,826	$17,283	$34,566

Emergency Management Svcs Fund (HHS)	$1,146,129	$2,292	$4,585	$5,731	$11,461
Game & Parks (Boats)	$1,124,599	$2,249	$4,498	$5,623	$11,246
Spirit Plate Funds	$1,055,495	$2,111	$4,222	$5,277	$10,555
Tire Tax (DEQ)	$458,459	$917	$1,834	$2,292	$4,585
State Patrol	$264,678	$529	$1,059	$1,323	$2,647
Motor Carrier Services Cash Fund	$256,701	$513	$1,027	$1,284	$2,567
Consumer Protection (AG)	$117,342	$235	$469	$587	$1,173
Dealer Board	$58,014	$116	$232	$290	$580
Veteran's Cemetery	$15,830	$32	$63	$79	$158
Total Reallocation	**$575,272,893**	**$1,150,546**	**$2,301,092**	**$2,876,364**	**$5,752,729**

Advantages

- All funds receiving a distribution from the VTR system would pay a small percentage fee.
- No increased fees to the public.
- Simpler to project the revenue stream.

Disadvantages

- Impacts many different funds and entities, potentially creating more opposition to the plan.
- Could require altering many different state statutes.
- More complex and difficult to program. It may not be viable to implement prior to a new VTR system.

4. Cash reserves

The DMV could draw from DMV Cash Reserves Fund for full payment or partial payment of a new system depending upon the total cash outlay requirements. It is believed that the cash fund will accumulate revenues during the next few years. The amount of cash reserves that would be available for the VTR system project would depend upon continued revenue growth, containment of expenditures, and other DMV priorities.

Advantages

- May eliminate or reduce the need for a new cash revenue source to fund the new system.
- Eliminate computer programming for fee changes if fully funded through cash reserves.

Disadvantages

- May impact future DMV projects by reducing the cash reserve.

5. Legislative appropriation

The Legislature could choose to fund all, or part, of the project from State General Funds. Several states have, apparently, relied solely on funding appropriations from their state legislatures. For example, Alaska, Florida, Iowa, and South Carolina, all report relying solely on state funding. Over the past 20 years, $16.9 million from the DMV Cash Fund has been transferred to the State General Fund.[23]

Advantages

- Could eliminate the need to seek additional cash fund revenues for the purchase and maintenance of the new system.
- No fee increase to the public.

Disadvantages

- No dedicated funding source.
- Need to find funding source for on-going maintenance.

[23] In addition to the $16.9 million transferred to the State General Fund over the past 20 years, approximately $600,000 from the DMV Cash Fund has been transferred to other funds.

6. Master Lease Purchase Program

The State Master Lease Purchase Program (MLPP) is a financing mechanism available to state agencies needing to purchase fixed assets (e.g., data processing, telecommunications, laboratory, motor vehicle and other essential equipment), for which the full amount of funding is not available in a single fiscal year.[24] Typically, the minimum value for fixed assets financed under MLPP is $50,000. The amount of equipment necessary for a new VTR system is unknown, but likely to be less than $50,000. Rather, it is expected that the bulk of costs will be for software and services.

Advantages

- Would allow the DMV to spread the acquisition cost of fixed assets over multiple fiscal years.

Disadvantages

- Fixed asset costs are likely to be less than $50,000, rendering this option of negligible value.

7. Grant funding

The DMV could apply for grant funds to support all or part of the new VTR system. Other states have reported using grant funding through a variety of programs, including those from federal agencies such as the Department of Homeland Security, Department of Justice, and Department of Transportation. It should be noted that this type of funding accessed by other states may no longer be available, or may have been used in Nebraska for other purposes. Some funding programs may also have other requirements that would restrict use for the VTR system.

Advantages

- May reduce commitment of funding from state and residents.

Disadvantages

- May be time-consuming to identify and apply for funding.
- Cannot be guaranteed until notification of award, so difficult to incorporate into a financing model.
- May be difficult to align project timelines within grant periods.

[24] http://das.nebraska.gov/accounting/nis/MLPP_Details_Web.pdf

8. Combination approach

A combination of two or more of the above options could be used. This would reduce the reliance on a single source to bear the entire cost of a new system. Some illustrative examples are provided that would produce approximately $8 million dollars annually (Table 12).

Table 12. Examples of Funding a New VTR System Through a Combination of Financing Options

	Annual Revenue
Option 1	
Fee Increase	
Registration Fees ($1.00)	$2,320,000
Titles and Liens ($1.25)	$1,218,750
Reallocation (.5%)	$2,876,364
General Fund Appropriation	$2,000,000
Option 1 Total	***$8,415,114***
Option 2	
Transaction Fee ($1.50)	$4,941,330
DMV Cash Reserves	$400,000
General Fund Appropriation	$3,000,000
Option 2 Total	***$8,341,330***
Option 3	
Reallocation (1%)	$5,752,729
DMV Cash Reserves	$1,000,000
General Fund Appropriation	$1,500,000
Option 3 Total	***$8,252,729***

Advantages

- Mitigates reliance on only one funding source.

Disadvantages

- May be more complicated to implement.

Create an Overall Implementation Timeframe and Related Objectives

The implementation timeframe and objectives in the VTR system replacement project should be developed. Although these will inevitably change as the project progresses, they are useful to guide initial steps. Many states are finding timeframes of between 4 – 10 years are needed from initial plan to full implementation. Although it is impossible to provide precise estimates at this time, a reasonable target would be that, upon approval, the new VTR system would be implemented in four (4) years.

1. Determine a funding model. Select and implement a means for financially supporting the new VTR implementation.
    a. Work with representatives of key stakeholder organizations to create a mutually-supported Funding Model.
    b. Promote the Funding Model.
    c. Obtain support for and implement the Funding Model.

2. Establish a project structure. Within DMV create the structures necessary to ensure needed organizational support, resources, and expertise.
    a. Recruit project manager and other project team members.
    b. Create a decision making structure.
    c. Develop vision and charter.
    d. Create a stakeholder workgroup.
    e. Create a technical support workgroup.

3. Conduct a current business process analysis. Direct, as well as related, processes should be evaluated to document current practices and assess opportunities for improved processes.
    a. Document existing processes and uses of the VTR system and its data. DMV should undertake the documentation with an expansive horizon (i.e., beyond current VTR system functions). The DMV should broadly evaluate how data flows, or does not flow, between VTR system and other systems (e.g., driver license, handicapped permits, Motor Carrier Services, Motor Vehicle Industry Licensing Board, specialty plates).
    b. Determine stakeholder and user needs.

4. Develop project scope. Determine the boundaries of the project.
    a. Conduct an environmental scan (e.g., codes, rules and ordinances; economy; federal and state legislation; human resources; budget and capital resources; organizational structure; policies and procedures; politics; public opinion; stakeholders; technology and standards).
        i. Determine the factors that will influence the project.
        ii. Determine the degree of influence of each factor.
    b. Create preliminary project scope.
    c. Set preliminary objectives.
    d. Establish preliminary timelines and budget.

5. Undertake a Request for Information (RFI) process. An RFI will give the DMV an understanding of current options in the marketplace.
    a. Issue RFI.
    b. Review RFI responses.
    c. Contact many, and ideally visit at least two (2), other states that have recently implemented new systems.

6. Develop preliminary operations and system requirements for new system. This step begins to identify the gaps and steps needed to resolve the gaps between current processes and desired future processes.
    a. Develop current as-is and future state business processes and architecture.
    b. Evaluate new system congruence with related systems.
    c. Evaluate organizational change needed to accomplish future state business processes.
    d. Identify legislative and administrative changes needed to accomplish future state business processes.
    e. Investigate possibility of legislative moratorium for changes during development and implementation.[25]

7. Determine approach. The DMV will determine what range of approaches is acceptable, prior to moving forward. Approaches may include: contract customized development, perform "in house" customized development, purchase a modified off the shelf product, purchase a commercial off the shelf product, or some other approach.

[25] The State of Utah established an informal moratorium on legislative changes that might impact its VTR.

a. Scan the marketplace.
b. Determine data that will be migrated to a new system.
c. Create data validation/cleaning plan and implement.
d. Compile the requirements (software, hardware, interface/integration, data migration).
e. Evaluate build/customization needs and capabilities.
f. Evaluate system testing needs and capabilities.
g. Evaluate contract monitoring needs and capabilities.
h. Evaluate training, maintenance, and support needs and capabilities.
i. Formally evaluate possible approaches and make a determination.

8. Enter the marketplace. If the DMV determines that an acceptable approach includes entering into the marketplace, it should issue a Request for Proposals (RFP).
    a. Write and issue an RFP.
    b. Evaluate RFP responses.
    c. Select solution.
    d. Issue Intent to Award the RFP.
    e. Enter into contract.

9. Create project plan.
    a. Set scope and timelines.
    b. Create communications plan (for internal and external stakeholders).
    c. Develop organizational change plan.
    d. Create a desired training plan.
    e. Create an implementation plan, including roll-out approach (e.g., pilot, phased, all at once).
    f. Determine testing and quality control processes.
    g. Determine documentation needs and processes.
    h. Task project manager and other staff resources needed for the development and implementation process.[26]
    i. Identify external resources/consultation needed for the development and implementation process.
    j. Estimate costs and develop final budget.

10. Implement the training and technology.

[26] At a 2013 AAMVA conference, numerous states indicated that they underestimated the staffing needed to appropriately plan for and implement a new VTR.

Recommendations

The aging VTR system no longer meets the needs of users and stakeholders. Its limitations prevent the DMV from capitalizing on promising business practice improvements that would result in increased efficiencies and improved services to the DMV's clients. Although replacing the VTR system will require an investment, that amount is annually dwarfed by the revenues collected through the VTR system. Many other programs are dependent on these VTR-collected revenues.

Modest application of any one of the financing options, alone, would be unlikely to cover the entire cost of a new VTR system. A combined approach should be selected that could be expected to accrue adequate funding for a system replacement. As the planning process moves forward, if lesser funds are needed, the options could be scaled back.

The DMV should move immediately to collaboratively develop a funding model that is supported by key stakeholders. Upon approval, the DMV should create a project structure, conduct a business process analysis, and further refine the analysis with a concept of operations and system requirements. With that information, the DMV and its stakeholders will be positioned to evaluate how it will approach VTR system replacement (i.e., contracted customized development, in house customized development, modified off the shelf product purchase, commercial off the shelf product purchase, or some combination). Upon determination of a direction, a project plan will be further developed and the contracting/tasking of VTR system development and implementation will be undertaken.

Appendices

Appendix A - VTR Fees and Taxes

Titling

Titles are issued at the county level in the county where the vehicle has tax situs or, in the case of apportioned vehicles, are issued by the DMV. A Certificate of Title must be issued within 30 days of the date of purchase. To obtain a Certificate of Title you must submit a completed Application for Certificate of Title. A fee of $10.00, payable to the designated county official, and proper evidence of ownership must accompany the application for title. Duplicate titles carry a fee of $14.00.

Notation of Liens

Individuals that have Notations of Liens on their title are charged $7.00.

Sales Tax

Sales tax, based on the purchase price, must be paid within 30 days of purchase of vehicle and must be paid before the initial registration will be issued.[27]

> **Motor Vehicle Tax** is assessed on a vehicle at the time of initial registration and annually thereafter until the vehicle reaches 14 years of age or more. It is based upon the MSRP (Manufacturer's Suggested Retail Price) of the vehicle. The MSRP on a vehicle is set by the manufacturer and can never be changed. Once the MSRP of the vehicle is established, a Base Tax set in Nebraska motor vehicle statutes is assigned to that specific MSRP range and motor vehicle tax is then assessed. It is the Base Tax figure that is adjusted as the vehicle ages.
>
> **Motor Vehicle Fee** is based upon the manufacturer's suggested retail price (adjusted for vehicle age), and the weight and use of the vehicle.

Vehicle Registration

Vehicle Registration Fees are collected annually and range from $1 to $1,140 based on the type and use of the vehicle. For instance, registration fees for

[27] There are differing requirements for mobile homes and cabin trailers.

commercial and farm plated trucks are based upon the gross vehicle weight of the vehicle.

Additional fees collected (and their distribution) for every motor vehicle registration issued are:

- $0.50 - Emergency Medical System Operation Fund
- $1.50 - Department of Motor Vehicles Cash Fund
- $1.50 - State Recreation Road Fund
- $2.00 - County General Fund
- $3.30 - Plate Fee per plate assessed whenever new, duplicate or replacement plates are issued
- Some localities collect additional local fees and taxes.

Appendix B - Major Nebraska Statutes Governing VTR System-Related Roles and Responsibilities

- §60-144 (Certificate of title; issuance; filing; application; form.)
- §60-372 (Vehicle titling and registration computer system; agent of county treasurer; appointment.)
- §37-1279 (Motorboat certificate of title; issuance; form; county treasurer; duties; filing.)
- §60-1515 (Department of Motor Vehicles Cash Fund; use; legislative intent.)

Specific to apportioned vehicles:

- §60-3,198 (Apportioned registration.)
- §60-3,203 (Apportioned plates.)

Specific to motorboats:

- §37-1211 (Motorboat; numbering required; operation of unnumbered motorboat prohibited; exceptions.)
- §37-1214 (Motorboat; registration; period valid; application; fee.)

§60-144. Certificate of title; issuance; filing; application; form.

(1)(a) Except as provided in subdivisions (b), (c), and (d) of this subsection, the county treasurer shall be responsible for issuing and filing certificates of title for vehicles, and each county shall issue and file such certificates of title using the vehicle titling and registration computer system prescribed by the department. Application for a certificate of title shall be made upon a form prescribed by the department. All applications shall be accompanied by the appropriate fee or fees.

(b) The department shall issue and file certificates of title for Nebraska-based fleet vehicles. Application for a certificate of title shall be made upon a form prescribed by the department. All applications shall be accompanied by the appropriate fee or fees.

(c) The department shall issue and file certificates of title for state-owned vehicles. Application for a certificate of title shall be made upon a form prescribed by the department. All applications shall be accompanied by the appropriate fee or fees.

(d) The department shall issue certificates of title pursuant to section 60-142.06. Application for a certificate of title shall be made upon a form prescribed by the department. All applications shall be accompanied by the appropriate fee or fees.

(2) If the owner of an all-terrain vehicle, a utility-type vehicle, or a minibike resides in Nebraska, the application shall be filed with the county treasurer of the county in which the owner resides.

(3)(a) Except as otherwise provided in subdivision (b) of this subsection, if a vehicle, other than an all-terrain vehicle, a utility-type vehicle, or a minibike, has situs in Nebraska, the application shall be filed with the county treasurer of the county in which the vehicle has situs.

(b) If a motor vehicle dealer licensed under the Motor Vehicle Industry Regulation Act, applies for a certificate of title for a vehicle, the application may be filed with the county treasurer of any county.

(4) If the owner of a vehicle is a nonresident, the application shall be filed in the county in which the transaction is consummated.

(5) The application shall be filed within thirty days after the delivery of the vehicle.

(6) All applicants registering a vehicle pursuant to section 60-3,198 shall file the application for a certificate of title with the Division of Motor Carrier Services of the department. The division shall deliver the certificate to the applicant if there are no liens on the vehicle. If there are one or more liens on the vehicle, the certificate of title shall be handled as provided in section 60-164. All certificates of title issued by the division shall be issued in the manner prescribed for the county treasurer in section 60-152.

§60-372. Vehicle titling and registration computer system; agent of county treasurer; appointment.

(1) Each county shall issue and file registration certificates using the vehicle titling and registration computer system prescribed by the department.

(2) The county treasurer may appoint an agent to issue registration certificates and to accept the payment of taxes and fees as provided in the Motor Vehicle Registration Act, upon approval of the county board. The agent shall furnish a bond in such amount and upon such conditions as determined by the county board.

§37-1279. Certificate of title; issuance; form; county treasurer; duties; filing.

(1) The county treasurer shall issue the certificate of title. The county treasurer shall sign and affix his or her seal to the original certificate of title and deliver the certificate to the applicant if there are no liens on the motorboat. If there are one or more liens on the motorboat, the certificate of title shall be handled as provided in section 37-1282. The county treasurer shall keep on hand a sufficient supply of blank forms which shall be furnished and distributed without charge to manufacturers, dealers, or other persons residing within the county, except that certificates of title shall only be issued by the county treasurer or the Department of Motor Vehicles. Each county shall issue and file certificates of title using the vehicle titling and registration computer system.

(2) Each county treasurer of the various counties shall provide his or her seal without charge to the applicant on any certificate of title, application for certificate of title, duplicate copy, assignment or reassignment, power of attorney, statement, or affidavit pertaining to the issuance of a certificate of title. The department shall prescribe a uniform method of numbering certificates of title.

(3) The county treasurer shall (a) file all certificates of title according to rules and regulations of the department, (b) maintain in the office indices for such certificates of title, (c) be authorized to destroy all previous records five years after a subsequent transfer has been made on a motorboat, and (d) be authorized to destroy all certificates of title and all supporting records and documents which have been on file for a period of five years or more from the date of filing the certificate or a notation of lien, whichever occurs later.

§60-1515. Department of Motor Vehicles Cash Fund; use; legislative intent.

(1) The Legislature hereby finds and declares that a statewide system for the collection, storage, and transfer of data on vehicle titles and registration and the cooperation of state and local government in implementing such a system is essential to the efficient operation of state and local government in vehicle titling and registration. The Legislature hereby finds and declares that the electronic issuance of operators' licenses and state identification cards using a digital system as described in section 60-484.01 and the cooperation of state and local government in implementing such a system is essential to the efficient operation of state and local government in issuing operators' licenses and state identification cards.

(2) It is therefore the intent of the Legislature that the Department of Motor Vehicles shall use a portion of the fees appropriated by the Legislature to the Department of Motor Vehicles Cash Fund as follows:

(a) To pay for the cost of issuing motor vehicle titles and registrations on a system designated by the department. The costs shall include, but not be limited to, software and software maintenance, programming, processing charges, and equipment including such terminals, printers, or other devices as deemed necessary by the department after consultation with the county to support the issuance of motor vehicle titles and registrations. The costs shall not include the cost of county personnel or physical facilities provided by the counties;

(b) To fund the centralization of renewal notices for motor vehicle registration and to furnish to the counties the certificate of registration forms specified in section 60-390. The certificate of registration form shall be prescribed by the department;

(c) To pay for the costs of an operator's license system as specified in sections 60-484.01 and 60-4,119 and designated by the department. The costs shall be limited to such terminals, printers, software, programming, and other equipment or devices as deemed necessary by the department to support the issuance of such licenses and state identification cards in the counties and by the department; and

(d) To pay for the motor vehicle insurance data base created under section 60-3,136.

§60-3,198. Fleet of vehicles in interjurisdiction commerce; registration; exception; application; fees; temporary authority; evidence of registration; proportional registration; removal from fleet; effect; unladen-weight registration; trip permit; fee.

(1) Any owner engaged in operating a fleet of apportionable vehicles in this state in interjurisdiction commerce may, in lieu of registration of such apportionable vehicles under the general provisions of the Motor Vehicle Registration Act, register and license such fleet for operation in this state by filing a statement and the application required by section 60-3,203 with the Division of Motor Carrier Services of the department. The statement shall be in such form and contain such information as the division requires, declaring the total mileage operated by such vehicles in all jurisdictions and in this state during the preceding year and describing and identifying each such apportionable vehicle to be operated in this state during the ensuing license year. Upon receipt of such statement and application, the division shall determine the total fee payment, which shall be equal to the amount of fees due pursuant to section 60-3,203 and the amount obtained by applying the formula provided in section 60-3,204 to a fee of thirty-two dollars per ton based upon gross vehicle weight of the empty weights of a truck or truck-tractor and the empty weights of any trailer or combination thereof with which it is to be operated in combination at any one time plus the weight of the maximum load to be carried thereon at any one time, and shall notify the applicant of the amount of payment required to be made. Mileage operated in noncontracting reciprocity jurisdictions by apportionable vehicles based in Nebraska shall be applied to the portion of the formula for determining the Nebraska injurisdiction fleet distance.

Temporary authority which permits the operation of a fleet or an addition to a fleet in this state while the application is being processed may be issued upon application to the division if necessary to complete processing of the application.

Upon completion of such processing and receipt of the appropriate fees, the division shall issue to the applicant a sufficient number of distinctive registration certificates which provide a list of the jurisdictions in which the apportionable vehicle has been apportioned, the weight for which registered, and such other evidence of registration for display on the apportionable vehicle as the division determines appropriate for each of the apportionable vehicles of his or her fleet, identifying it as a part of an interjurisdiction fleet proportionately registered. All

fees received as provided in this section shall be remitted to the State Treasurer for credit to the Motor Carrier Services Division Distributive Fund.

The apportionable vehicles so registered shall be exempt from all further registration and license fees under the Motor Vehicle Registration Act for movement or operation in the State of Nebraska except as provided in section 60-3,203. The proportional registration and licensing provision of this section shall apply to apportionable vehicles added to such fleets and operated in this state during the license year except with regard to permanent license plates issued under section 60-3,203.

The right of applicants to proportional registration under this section shall be subject to the terms and conditions of any reciprocity agreement, contract, or consent made by the division.

When a nonresident fleet owner has registered his or her apportionable vehicles, his or her apportionable vehicles shall be considered as fully registered for both interjurisdiction and intrajurisdiction commerce when the jurisdiction of base registration for such fleet accords the same consideration for fleets with a base registration in Nebraska. Each apportionable vehicle of a fleet registered by a resident of Nebraska shall be considered as fully registered for both interjurisdiction and intrajurisdiction commerce.

(2) Mileage proportions for interjurisdiction fleets not operated in this state during the preceding year shall be determined by the division upon the application of the applicant on forms to be supplied by the division which shall show the operations of the preceding year in other jurisdictions and estimated operations in Nebraska or, if no operations were conducted the previous year, a full statement of the proposed method of operation.

(3) Any owner complying with and being granted proportional registration shall preserve the records on which the application is made for a period of three years following the current registration year. Upon request of the division, the owner shall make such records available to the division at its office for audit as to accuracy of computation and payments or pay the costs of an audit at the home office of the owner by a duly appointed representative of the division if the office where the records are maintained is not within the State of Nebraska. The division may enter into agreements with agencies of other jurisdictions administering motor vehicle registration laws for joint audits of any such owner.

All payments received to cover the costs of an audit shall be remitted by the division to the State Treasurer for credit to the Motor Carrier Division Cash Fund. No deficiency shall be assessed and no claim for credit shall be allowed for any license registration year for which records on which the application was made are no longer required to be maintained.

(4) If the division claims that a greater amount of fee is due under this section than was paid, the division shall notify the owner of the additional amount claimed to be due. The owner may accept such claim and pay the amount due, or he or she may dispute the claim and submit to the division any information which he or she may have in support of his or her position. If the dispute cannot otherwise be resolved within the division, the owner may petition for an appeal of the matter. The director shall appoint a hearing officer who shall hear the dispute and issue a written decision. Any appeal shall be in accordance with the Administrative Procedure Act. Upon expiration of the time for perfecting an appeal if no appeal is taken or upon final judicial determination if an appeal is taken, the division shall deny the owner the right to further registration for a fleet license until the amount finally determined to be due, together with any costs assessed against the owner, has been paid.

(5) Every applicant who licenses any apportionable vehicles under this section and section 60-3,203 shall have his or her registration certificates issued only after all fees under such sections are paid and, if applicable, proof has been furnished of payment, in the form prescribed by the director as directed by the United States Secretary of the Treasury, of the federal heavy vehicle use tax imposed by 26 U.S.C. 4481 of the Internal Revenue Code as defined in section 49-801.01.

(6)(a) In the event of the transfer of ownership of any registered apportionable vehicle, (b) in the case of loss of possession because of fire, theft, or wrecking, junking, or dismantling of any registered apportionable vehicle, (c) when a salvage branded certificate of title is issued for any registered apportionable vehicle, (d) whenever a type or class of registered apportioned vehicle is subsequently declared by legislative act or court decision to be illegal or ineligible to be operated or towed on the public roads and no longer subject to registration fees and taxes, (e) upon trade-in or surrender of a registered apportionable vehicle under a lease, or (f) in case of a change in the situs of a registered apportionable vehicle to a location outside of this state, its registration shall expire, except that if the registered owner or lessee applies to the division

after such transfer or loss of possession and accompanies the application with a fee of one dollar and fifty cents, he or she may have any remaining credit of vehicle fees and taxes from the previously registered apportionable vehicle applied toward payment of any vehicle fees and taxes due and owing on another registered apportionable vehicle. If such registered apportionable vehicle has a greater gross vehicle weight than that of the previously registered apportionable vehicle, the registered owner or lessee of the registered apportionable vehicle shall additionally pay only the registration fee for the increased gross vehicle weight for the remaining months of the registration year based on the factors determined by the division in the original fleet application.

(7) Whenever a Nebraska-based fleet owner files an application with the division to delete a registered apportionable vehicle from a fleet of registered apportionable vehicles (a) because of a transfer of ownership of the registered apportionable vehicle, (b) because of loss of possession due to fire, theft, or wrecking, junking, or dismantling of the registered apportionable vehicle, (c) because a salvage branded certificate of title is issued for the registered apportionable vehicle, (d) because a type or class of registered apportioned vehicle is subsequently declared by legislative act or court decision to be illegal or ineligible to be operated or towed on the public roads and no longer subject to registration fees and taxes, (e) because of a trade-in or surrender of the registered apportionable vehicle under a lease, or (f) because of a change in the situs of the registered apportionable vehicle to a location outside of this state, the registered owner may, by returning the registration certificate or certificates and such other evidence of registration used by the division or, if such certificate or certificates or such other evidence of registration is unavailable, then by making an affidavit to the division of such transfer or loss, receive a refund of that portion of the unused registration fee based upon the number of unexpired months remaining in the registration year from the date of transfer or loss. No refund shall be allowed for any fees paid under section 60-3,203. When such apportionable vehicle is transferred or lost within the same month as acquired, no refund shall be allowed for such month. Such refund may be in the form of a credit against any registration fees that have been incurred or are, at the time of the refund, being incurred by the registered apportionable vehicle owner. The Nebraska-based fleet owner shall make a claim for a refund under this subsection within the registration period or shall be deemed to have forfeited his or her right to the refund.

(8) Whenever a Nebraska-based fleet owner files an application with the division to delete a registered apportionable vehicle from a fleet of registered apportionable vehicles because the apportionable vehicle is disabled and has been removed from service, the registered owner may, by returning the registration certificate or certificates and such other evidence of registration used by the division or, in the case of the unavailability of such certificate or certificates or such other evidence of registration, then by making an affidavit to the division of such disablement and removal from service, receive a credit for that portion of the unused registration fee deposited in the Highway Trust Fund based upon the number of unexpired months remaining in the registration year. No credit shall be allowed for any fees paid under section 60-3,203. When such apportionable vehicle is removed from service within the same month in which it was registered, no credit shall be allowed for such month. Such credit may be applied against registration fees for new or replacement vehicles incurred within one year after cancellation of registration of the apportionable vehicle for which the credit was allowed. When any such apportionable vehicle is reregistered within the same registration year in which its registration has been canceled, the fee shall be that portion of the registration fee provided to be deposited in the Highway Trust Fund for the remainder of the registration year. The Nebraska-based fleet owner shall make a claim for a credit under this subsection within the registration period or shall be deemed to have forfeited his or her right to the credit.

(9) In case of addition to the registered fleet during the registration year, the owner engaged in operating the fleet shall pay the proportionate registration fee from the date the vehicle was placed into service or, if the vehicle was previously registered, the date the prior registration expired or the date Nebraska became the base jurisdiction for the fleet, whichever is first, for the remaining balance of the registration year. The fee for any permanent license plate issued for such addition pursuant to section 60-3,203 shall be the full fee required by such section, regardless of the number of months remaining in the license year.

(10) In lieu of registration under subsections (1) through (9) of this section, the title holder of record may apply to the division for special registration, to be known as an unladen-weight registration, for any commercial motor vehicle or combination of vehicles. Such registration shall be valid only for a period of thirty days and shall give no authority to operate the vehicle except when empty. The fee for such registration shall be twenty dollars for each vehicle, which fee

shall be remitted to the State Treasurer for credit to the Highway Trust Fund. The issuance of such permits shall be governed by section 60-3,179.

(11)(a) This subdivision applies until the implementation date designated by the director pursuant to subdivision (b) of this subsection. Any person may, in lieu of registration under subsections (1) through (9) of this section or for other jurisdictions as approved by the director, purchase a trip permit for any nonresident truck, truck-tractor, bus, or truck or truck-tractor combination. Such permit shall be valid for a period of seventy-two hours. The fee for such permit shall be twenty-five dollars for each truck, truck-tractor, bus, or truck or truck-tractor combination. Such permit shall be available at weighing stations operated by the carrier enforcement division and at various vendor stations as determined appropriate by the carrier enforcement division. The carrier enforcement division shall act as an agent for the Division of Motor Carrier Services in collecting such fees and shall remit all such fees collected to the State Treasurer for credit to the Highway Cash Fund. Trip permits shall be obtained at the first available location whether that is a weighing station or a vendor station. The vendor stations shall be entitled to collect and retain an additional fee of ten percent of the fee collected pursuant to this subsection as reimbursement for the clerical work of issuing the permits.

(b) This subdivision applies beginning on an implementation date designated by the director. The director shall designate an implementation date which is on or before January 1, 2015. Any person may, in lieu of registration under subsections (1) through (9) of this section or for other jurisdictions as approved by the director, purchase a trip permit for any nonresident truck, truck-tractor, bus, or truck or truck-tractor combination. A trip permit shall be issued before any person required to obtain a trip permit enters this state with such vehicle. The trip permit shall be issued by the director through Internet sales from the department's web site. The trip permit shall be valid for a period of seventy-two hours. The fee for the trip permit shall be twenty-five dollars for each truck, truck-tractor, bus, or truck or truck-tractor combination. The fee collected by the director shall be remitted to the State Treasurer for credit to the Highway Cash Fund.

§60-3,203. Permanent license plate; application; fee; renewal fee; replacement permanent plate; registration certificate replacement; deletion from fleet registration; fee.

(1) Upon application and payment of the fees required pursuant to this section and section 60-3,198, the Division of Motor Carrier Services of the department shall issue to the owner of any fleet of apportionable commercial vehicles with a base registration in Nebraska a permanent license plate for each truck, truck-tractor, and trailer in the fleet. The application shall be accompanied by a fee of three dollars for each truck or truck-tractor and six dollars per trailer. The application shall be on a form developed by the division.

(2) Fleets of apportionable vehicles license plates shall display a distinctive license plate provided by the department pursuant to this section.

(3) Any license plate issued pursuant to this section shall remain affixed to the front of the truck or truck-tractor or to the rear of the trailer or semitrailer as long as the apportionable vehicle is registered pursuant to section 60-3,198 by the owner making the original application pursuant to subsection (1) of this section. Upon transfer of ownership of the truck, truck-tractor, or trailer or transfer of ownership of the fleet or at any time the truck, truck-tractor, or trailer is no longer registered pursuant to section 60-3,198, the license plate shall cease to be active and shall be processed according to the rules and regulations of the department.

(4) The renewal fee for each permanent plate shall be two dollars and shall be assessed and collected in each license year after the year in which the permanent license plates are initially issued at the time all other renewal fees are collected pursuant to section 60-3,198 unless a truck, truck-tractor, or trailer has been deleted from the fleet registration.

(5)(a) If a permanent license plate is lost or destroyed, the owner shall submit an affidavit to that effect to the division prior to any deletion of the truck, truck-tractor, or trailer from the fleet registration. If the truck, truck-tractor, or trailer is not deleted from the fleet registration, a replacement permanent license plate may be issued upon application and payment of a fee of three dollars for each truck or truck-tractor and six dollars per trailer. The application for a replacement permanent plate shall be on a form developed by the division.

(b) If the registration certificate for any fleet vehicle is lost or stolen, the division shall collect a fee of one dollar for replacement of such certificate.

(6) If a truck, truck-tractor, or trailer for which a permanent license plate has been issued pursuant to this section is deleted from the fleet registration due to loss of possession by the registrant, the plate shall be returned to the division.

(7) The registrant shall be liable for the full amount of the registration fee due for any truck, truck-tractor, or trailer not deleted from the fleet registration renewal.

(8) All fees collected pursuant to this section shall be remitted to the State Treasurer for credit to the Highway Cash Fund.

§37-1211. Motorboat; numbering required; operation of unnumbered motorboat prohibited; exceptions.

(1) Except as provided in subsections (2) and (3) of this section and sections 37-1249 and 37-1250, every motorboat on the waters of this state shall be numbered and no person shall operate or give permission for the operation of any vessel on such waters unless the vessel is numbered in accordance with the State Boat Act or in accordance with the laws of another state if the commission has by regulation approved the numbering system of such state and unless the certificate of number awarded to such vessel is in full force and effect and the identifying number set forth in the certificate of number is displayed and legible on each side of the forward half of the vessel.

(2) The owner of each motorboat may operate or give permission for the operation of such vessel for thirty days from the date the vessel was acquired in anticipation of the vessel being numbered. A duly executed bill of sale, certificate of title, or other satisfactory evidence of the right of possession of the vessel as prescribed by the Department of Motor Vehicles must be available for inspection at all times from the operator of the vessel.

(3) The owner or his or her invitee who operates a personal watercraft on any body of water (a) which is entirely upon privately owned land owned by only one person or one family and, if leased, leased by only one person or one family, (b) which does not connect by any permanent or intermittent inflow or outflow with other water outside such land, and (c) which is not operated on a commercial basis for profit may operate any personal watercraft on such body of water without complying with subsection (1) of this section.

§37-1214. Motorboat; registration; period valid; application; fee.

Except as otherwise provided in section 37-1211, the owner of each motorboat shall register such vessel or renew the registration every three years as provided in section 37-1226. The owner of such vessel shall file an initial application for a certificate of number pursuant to section 37-1216 with a county treasurer on forms approved and provided by the commission. The application shall be signed by the owner of the vessel, shall contain the year manufactured, and shall be accompanied by a fee for the three-year period of not less than twenty dollars and not more than twenty-three dollars for Class 1 boats, not less than forty dollars and not more than forty-six dollars for Class 2 boats, not less than sixty dollars and not more than sixty-seven dollars and fifty cents for Class 3 boats, and not less than one hundred dollars and not more than one hundred fifteen dollars for Class 4 boats, as established by the commission pursuant to section 37-327.

Appendix C – Significant Changes to the VTR System

Changes are listed, by year of implementation, in order of relative complexity (from the most complex to least complex).

Significant Changes to the VTR System
1995
Title fee deferment
Log system for title related correspondence
System generated title number
Shortcut codes - bank, dealer, and city
Remarks capability
Cash balance report
Postcard process updated to provide for use during normal VTR functions
Extract files developed for interface with county general ledger systems
1996
One-stop title/registration processing
Address/Tax district lookup feature
Business date edit
Salvage title confirmation window
Damaged document tracking
Daily/monthly title report updates
1997
Boat title
Spirit Plate/additional distribution fund
Bonded title
1998
Ad valorem tax process replaced with motor vehicle tax
Motor vehicle fee
Plate Management System Creation and Interface
Dealer personal use plate
1999
Handicap motorcycle plates
2000
Undercover Registration
Spirit message plates

2001
Boat registration
Grain hauling permits
Carnival permits
EMS fee and distribution fund
2002
Alpha-numeric plates
Specialty Plate System Creation and Interface
HVUT verification
7-day limit on title voids
2003
Insurance database fee added
Notation of lien in any county
Duplicate title in any county
Salvage legislation, additional brands, notation on registration documents
ATV/mini bike title
Digital license plate interface with PMS
Message, spirit plate fee proration
2004
Insurance database interface
Owner retained salvage vehicle
2005
Re-application for handicap plates
6-year plate reissuance
2006
Insurance database fee sunset
Manufactured home title cancellation
2007
Motor vehicle tax changes
2008
Online Registration Renewal
Online Specialty Plate application
2009
Thin Client Installation and One Stop Mandate
Registration cancellation - bad check
2010

Electronic Lien and Title
Gold Star Family plate/additional distribution funds
Message plate fee increase/additional distribution fund
Military plate fee change
2011
Organizational plate/additional distribution funds
Mini-truck title and registration
Transfer on death addition to titles
Deployed laser printers
2012
Low Speed Vehicle title and registration
$75 alternative fuel fee
Print Form 6, sales tax data transfer to NDR
Print title applications
2013
Special Interest plate/additional distribution fund
Corrected a Motor Vehicle fee issue discovered during audit
DMV print and mail renewal notices

The University of Nebraska Public Policy Center provides assistance to policymakers in all three branches of government on a wide range of public policy issues. The mission of the PPC is to actively inform public policy by facilitating, developing, and making available objective research and analyses of public policy issues.

VISION: Quality, accessible, secure services are available for all Nebraska DMV customers.

MISSION: Exceptional employees deliver accurate, secure, and innovative services.

GOAL 3: DMV business processes promote customer-focused services.

OBJECTIVE 3.2: Technology systems are efficient, understandable, secure and have integrity.

Topic: NSUM-VTR (Nebraska Systems Update & Modification-VTR) **Date:** August 5, 2014

Activity	Who is Responsible	Division	Resources Needed		Existing	Additional	Projected Start Date	Projected & Completion Date	Desired Outcome
			Item	Cost					
FY 15 Begins (2014-2015)							07/01/14		
Legislative proposals - Determine NSUM related needs for 2015 session	Director's Office, Legal, Project Mgr.	Adm & Leg					07/01/14	08/08/14	Advise Legal and Budget of chosen proposals
Budget Request Prep - 2 Year	Acctg. & Finance Mgr.	Adm					07/01/14	09/15/14	Submit to Budget Office
Complete DRAFT PDQ - Program Development Coordinator (PDC)	Deputy Director	Adm					07/07/14	7/15/2014 7/16/14	Have Director Review
DMV DRAFT Consultant RFP	Director's Office	Adm					07/07/14	08/07/14	Have Stakeholders Review
Program Development Coordinator PDQ Approved by Director	Director	Adm					07/15/14	7/31/2014 7/30/14	Submit to HR
Program Development Coordinator PDQ to HR	Deputy Director	Adm					07/30/14	8/1/2014 7/30/14	Submit to HR
Program Development Coordinator PDQ to DAS Personnel	Personnel Manager	Adm					08/01/14	8/5/2014 7/31/14	Submit to Garrett-DAS Personnel
Complete DRAFT PDQ - Support Staff Position	Project Manager	DVR					08/01/14	08/15/14	Have Director Review
Consultant RFP to Material	Director's Ofc & Acctg. & Fin. Mgr.	Adm					08/01/14	08/11/14	RFP to Material
NITC Report ref NSUM - VTR. Submit w/ Annual DMV IT Plan	IT Lead	IT					08/01/14	09/15/14	Submit to NITC
Legislative proposals - Completed for NSUM related bills for 2015 session	Legal & Acctg. & Fin. Mgr.	Adm & Leg					08/08/14	09/08/14	Submit to PRO
Support Staff Position PDQ Approved by Director	Director	Adm					08/15/14	08/22/14	Submit to HR

Activity	Who is Responsible	Division	Resources Needed		Existing	Additional	Projected Start Date	Projected & Completion Date	Desired Outcome
			Item	Cost					
Support Staff Position PDQ to DAS Personnel	Personnel Manager	Adm					08/22/14	08/26/14	Submit to Garrett - DAS Personnel
Support Staff Position Approved by DAS Personnel	DAS - Personnel & Personnel Mgr.	Adm					08/26/14	10/15/14	Approval for Position
Release Consultant RFP	DAS - Material	Adm					09/15/14	12/15/14	Attract bidders
Hire Program Development Coordinator	Deputy Director	Adm	Annual Salary & Benefits	$77,225	X		10/01/14	10/15/14	PDC on board
NITC Approves NSUM-VTR Program	IT Lead	IT					10/10/14	10/10/14	Receive NITC Approval
Support Staff Position - Post, Interview and Hire	Personnel Mgr. & Project Manager	Adm & VTR	Annual Salary & Benefits	$49,725	X		10/15/14	11/15/14	Support Staff Position on board
Q&A for Consultant RFP	Director's Office	Adm					11/01/14	12/15/14	Answer ?'s from potential bidders
Open Consultant bids	Director's Office	Adm					12/15/14	12/15/14	
Evaluate Consultant bids	Director's Office	Adm					12/15/14	12/31/14	Select winning bid
Notice of Intent to Award Consultant RFP	Director's Office	Adm					12/31/14	02/01/15	Select consultant
Appeals from Notice of Intent to Award - Consultant	Director's Office	Adm					12/31/14	02/01/15	Handle appeals from unsuccessful bidders
Sign contract for Consultant	Director	Adm					02/01/15	03/01/15	Get contract signed
Consultant Begins Work	Director's Office	Adm	Fees	$510,500	X	X	03/01/15		Consultant on board
Assessment by Consultant of current DMV Systems **AND** Assessment of new System Business Processes, System Capability Needs, Environment Options, etc. Includes Stakeholder Meetings and will be ongoing.	Consultant & DMV Staff		Annual Stakeholder Meeting Costs	$6,475	X	X	03/01/15	09/01/15	Assess DMV and Stakeholder needs
Vendor RFI Drafting	Consultant						03/01/15	06/01/15	Drafting document
Vendor RFI Released. To include cost estimates	Acctg. & Fin. Mgr. & DAS-Material	Adm					06/01/15	09/01/15	RFI out to bidders
FY 16 Begins (2015-2016)							07/01/15		

Activity	Who is Responsible	Division	Resources Needed		Existing	Additional	Projected Start Date	Projected & Completion Date	Desired Outcome
			Item	Cost					
Legislative Report per LB905 (2014 Session)							07/01/15	07/31/15	Meet statutory requirement of LB905
Legislative proposals - Determine NSUM related needs for 2016 session	Director's Office, Legal & Project Mgr.	Adm					07/01/15	08/07/15	Advise Legal and Budget of chosen proposals
Budget Request Prep - 1 Year	Acctg. & Fin. Mgr.	Adm					07/01/15	09/15/15	Submit to Budget Office
Legislative proposals - Completed for NSUM related bills for 2016 session	Legal & Acctg. & Fin. Mgr.	Adm & Leg					08/08/15	09/08/15	Submit to PRO
Open Vendor RFI's	Acctg. & Fin. Mgr. & DAS-Material						09/01/15	09/01/15	
Evaluate Vendor RFI's -- Determine funding needs	Governing Team						09/01/15	10/01/15	
Recommendation from Consultant as to NEW solution type	Consultant & DMV Staff						09/15/15	10/15/15	Receive Consultants recommendation for new solution type
Site Visits - Potential Vendors current clients			Travel Costs	$19,605	X	X	10/15/15	12/31/15	Evaluate vendors products
DRAFT Vendor RFP	Consultant	Adm					01/01/16	03/01/16	Drafting document
Vendor RFP Released	Acctg. & Fin. Mgr. & DAS-Material	Adm					05/01/16	08/01/16	RFP out to bidders
Q&A for Vendor RFP - Round 1	Director's Office	Adm					05/01/16	06/15/16	Answer ?'s from potential bidders
Q&A for Vendor RFP - Round 2	Director's Office						06/16/16	08/01/16	Answer ?'s from potential bidders
FY 17 Begins (2016-2017)							07/01/16		
Legislative proposals - Determine NSUM related needs for 2017 session	Director's Office, Legal & Project Mgr.	Adm					07/01/16	08/05/16	Advise Legal and Budget of chosen proposals
Budget Request Prep - 2 Year	Acctg. & Fin. Mgr.	Adm					07/01/16	09/15/16	Submit to Budget Office
Open Vendor RFP's	Acctg. & Fin. Mgr. & DAS-Material						08/01/16	08/01/16	

Activity	Who is Responsible	Division	Resources Needed		Existing	Additional	Projected Start Date	Projected & Completion Date	Desired Outcome
			Item	Cost					
Evaluate Vendor RFP's. Includes Vendor Demos. Determine funding needs	Governing Team						08/01/16	09/01/16	
Legislative proposals - Completed for NSUM related bills for 2017 session	Legal & Acctg. & Fin. Mgr.	Adm & Leg					08/06/16	09/09/16	Submit to PRO
Notice of Intent to Award Vendor RFP							09/01/16		
Appeals from Notice of Intent to Award - Vendor							09/01/16	10/15/16	Handle appeals from unsuccessful bidders
Sign Vendor Contract	Director		Fees	????		X	10/15/16	08/15/16	Get contract signed
Design (detailed) NSUM-VTR to include identification of business processes	DMV and Vendor Development Teams						10/15/16	01/15/17	Initial detailed design
Develop NSUM-VTR: Hire 1 IT Developer; Convert data; and Testing - Phase I (Internal)	DMV and Vendor Development Teams; IT(Hiring)		Annual Salary & Benefits for 1 IT Developer	Existing FTE		X	01/16/17	05/15/18	
FY 18 Begins (2017-2018)							07/01/17		
Develop NSUM-VTR: Hire 1 IT Developer; Convert data; and Testing - Phase I (Internal)	DMV and Vendor Development Teams; IT(Hiring)		Annual Salary & Benefits for 1 IT Developer	$ TBD and requested in FY 18-19		X	01/16/17	05/15/18	
Legislative proposals - Determine NSUM related needs for 2018 session	Director's Office, Legal & Project Mgr.	Adm					07/01/17	08/11/17	Advise Legal and Budget of chosen proposals
Budget Request Prep - 1 Year	Acctg. & Finance Mgr.	Adm					07/01/17	09/15/17	Submit to Budget Office
Legislative proposals - Completed for NSUM related bills for 2018 session	Legal & Acctg. & Fin. Mgr.	Adm					08/12/17	09/12/17	Submit to PRO
Testing - Phase II (User Acceptance Environment)	DMV and Vendor Development Teams						05/16/18	08/15/18	
FY19 Begins (2018-2019)							07/01/18		

Activity	Who is Responsible	Division	Resources Needed		Existing	Additional	Projected Start Date	Projected & Completion Date	Desired Outcome
			Item	Cost					
Testing - Phase III (Production Pilot)	DMV and Vendor Development Teams						08/16/18	11/15/18	
Installation and Training	DMV and Vendor Development Teams						11/16/18	10/15/19	
FY20 Begins (2019-2020)							07/01/19		
NSUM-VTR Fully Operational							01/01/20	01/01/20	

Nebraska Information Technology Commission
Project Proposal Form
Section 8: Financial Analysis and Budget

(Revise dates as necessary for your request.)

	Estimated Prior Expended	Request for FY2016 (Year 1)	Request for FY2017 (Year 2)	Request for FY2018 (Year 3)	Request for FY2019 (Year 4)	Future	Total
1. Personnel Costs	$ 132,418.00	$ 180,530.00	$ 184,592.00	$ 188,746.00	$ 188,746.00	TBD	$ 875,032.00
2. Contractual Services							
2.1 Design						TBD	$ -
2.2 Programming						TBD	$ -
2.3 Project Management	$ 127,500.00	$ 383,000.00	$ 385,848.00	$ 390,729.00	$ 390,729.00	TBD	$ 1,677,806.00
2.4 Other	$ 2,500.00	$ 3,500.00	$ 2,500.00			TBD	$ 8,500.00
3. Supplies and Materials						TBD	$ -
4. Telecommunications						TBD	$ -
5. Training						TBD	$ -
6. Travel	$ 8,710.00	$ 16,745.00	$ 10,835.00	$ 4,300.00	$ 4,300.00	TBD	$ 44,890.00
7. Other Operating Costs						TBD	$ -
8. Capital Expenditures							
8.1 Hardware						TBD	$ -
8.2 Software						TBD	$ -
8.3 Network						TBD	$ -
8.4 Other						TBD	$ -
TOTAL COSTS	$ 271,128.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	$ -	$ 2,606,228.00
General Funds						TBD	$ -
Cash Funds	$ 271,128.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	TBD	$ 2,606,228.00
Federal Funds						TBD	$ -
Revolving Funds						TBD	$ -
Other Funds						TBD	$ -
TOTAL FUNDS	$ 271,128.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	$ 583,775.00	$ -	$ 2,606,228.00

IT Project Proposal Report - Detail
Agency: 040 - MOTOR VEHICLE INDUSTRY LICENSING
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Replacement Software Program

General Section

Contact Name :	William S. Jackson	**E-mail :**	bill.jackson@nebraska.gov	**Agency Priority :**	
Address :	301 Centennial Mall South, P O Box	**Telephone :**	402-471-2148	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68509		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	0	0	0	0	0	0
Project Management	0	0	0	0	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	0	0	0	0	0	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 040 - MOTOR VEHICLE INDUSTRY LICENSING
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	0	0	0	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	0	0	0	0	0	0
TOTAL PROJECT COST	0	0	0	0	0	0

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	0	0	0	0	0	0
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**0**	**0**	**0**	**0**	**0**	**0**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 040 - MOTOR VEHICLE INDUSTRY LICENSING
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Replacement Software Program

EXECUTIVE SUMMARY:

Effective January, 2015, the software program "FOXPRO", that Agency 40 uses to license all of our members, will no longer be supported.

This agency, along with other agencies, are in the planning stage of how to go about replacing FOXPRO with a new software program.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

New computer software program. This program needs to work as good or better than the current software program used. Needed for the whole auto industry and all car buyers in the State of Nebraska. Needs to be user friendly.

Be able to store all files and data and to streamline renewals of all licenses. This is the agency's IT plan.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

The project benefits will be to serve the licensees and the car buying public in a timely manner.

There is no other option but to replace this software, as it is going to be unsupported in January of 2015.

TECHNICAL IMPACT (20 PTS):

The software program has not been made yet, so answers are not available.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

N/A

RISK ASSESSMENT (10 PTS):

N/A

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

IT Project Proposal Report - Detail
Agency: 041 - REAL ESTATE COMMISSION
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : Licensee Database

General Section

Contact Name :	Monica Rut	**E-mail :**	monica.rut@nebraska.gov	**Agency Priority :**	
Address :	1200 N St, Ste 402	**Telephone :**	402-471-2004	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68343		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	43,000	0	13,000	15,000	15,000	0
Project Management	0	0	0	0	0	0
Data Conversion	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	43,000	0	13,000	15,000	15,000	0
Telecommunications						
Data	31,500	0	10,500	10,500	10,500	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	31,500	0	10,500	10,500	10,500	0
Training						
Technical Staff	0	0	0	0	0	0
End-user Staff	0	0	0	0	0	0
Subtotal Training	0	0	0	0	0	0

IT Project Proposal Report - Detail
Agency: 041 - REAL ESTATE COMMISSION
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	157,055	0	43,527	56,764	56,764	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	157,055	0	43,527	56,764	56,764	0
Capital Expenditures						
Hardware	14,020	0	7,000	3,510	3,510	0
Software	550,500	0	500	550,000	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	564,520	0	7,500	553,510	3,510	0
TOTAL PROJECT COST	796,075	0	74,527	635,774	85,774	0

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	796,075	0	74,527	635,774	85,774	0
Federal Fund	0	0	0	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**796,075**	**0**	**74,527**	**635,774**	**85,774**	**0**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 041 - REAL ESTATE COMMISSION
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: Licensee Database

EXECUTIVE SUMMARY:

The Nebraska Real Estate Commission is seeking funding for the replacement of the current real estate license database, which was acquired in 1998. The licensee database keeps general contact information on licensees, tracks the relationship between designated brokers (licensees with authority to operate independently) and affiliated licensees (licensees with authority to act as a licensee only under the supervision of the designated broker. In addition, the database tracks and records payments for license applications, renewals and transfers. The database also generates reports and licensee lists, as well as recording and tracking disciplinary matters and generating form letters with the appropriate licensee information inserted (late renewal notices, etc.).

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

The replacement of the current Nebraska Real Estate Commission Licensee Database has a number of desired goals and outcomes:

1. Written in a contemproary, well supported database language with widely avaialbe support resources
2. Can be updated due to law and policy changes by the agency or by the vendor at minimal cost
3. Flexible system to generate reports and data as needed, as opposed to a fixed set of reporting parameters
4. Interfaces with web based filing, applicaition, and payment systems, as well as user based, self-serve change of information (i.e. e-mail, phone number) type functions
5. Flexible security options to give different employees different levels of access to information and edit authorization

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

The Nebraska Real Estate Commission's Licensee Database was developed in the late 90's and was acquired and has been in use since 1998. The vendor who created the database is no longer in business, and the Commission has relied on the Office of the Chief Information Officer (OCIO) for support and updates of the system for a number of years. The OCIO has let us know that they no longer have the ability to support Sybase, and has suggested we look elsewhere for support or migrate to a different system. Sybase itself has been acquired and is now supported by SAP, and, according to their website Sybase specific support packages are being phased out and will be integrated with SAP, with older versions of the software and patches being removed from the site for download by customers.

IT Project Proposal Report - Detail
Agency: 041 - REAL ESTATE COMMISSION
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

In 2013, the Nebraska Real Estate Commission issued a request for information regarding the potential replacement of the existing licensee database. Three responses were received, two of which identified potential costs of replacement of approximately $550,000. The Commission is aware that a number of options may be available for the purchase and replacement of the current database, and feels that amount requested keeps those various options open, allowing us the flexibility to make the choice which will result in the highest level of service and lowest long term cost to licensees and the public.

The current database, while still functional, has a number of drawbacks, a number of functions can only be accomplished via manual process, i.e. going in and changing database records one by one, some functions are accomplished by using an external Access mirrored database, and, because of the lack of knowledge of the underlying orphan system, any changes or fixes are accomplished by first determining where and how the function in question occurs, which can take an indeterminate amount of time and resources, and then implementing the change or fix. Lastly, the limited and inflexible reporting features of the current database make it difficult or impossible to respond to many of the industry's or public's requests for specific data or reports.

Below are excerpts from the SAP website regarding support of their acquired product, Sybase, current as of 8/7/2014:

'To All Sybase Customers:
As integration with our parent company SAP moves ever closer to its conclusion, we strongly encourage you to start visiting the SAP.com Web site to find up-to-date information on Sybase products. Please find below links to visit for any product documentation and technical notes you might need on Sybase products.
As further integration takes place, this page will be updated to redirect you to the appropriate target destinations in the SAP digital properties....."

"Please note with the transition to SAP support plans and infrastructure you will lose access to older End of Lifed product versions and patches. Should you wish to retain copies of this software for future use we strongly encourage you to download copies from the Sybase Products Download Center and the EBFs and Maintenance Download Area **BEFORE** you are migrated to SAP support plans and infrastructure. The Sybase Products Download Center and the EBFs and Maintenance Download Area will be decommissioned at the end of June 2014 after which time no further access will be possible."

TECHNICAL IMPACT (20 PTS):

The impact of this request is two-fold; first the Commission runs the risk of operating a database which is crucial to Commission operation for which the support resources are getting phased out and more difficult to procure. The second impact is the increase in the level of service we can provide to our licensees and the public with the envisioned replacement database. As an example, the disciplinary reports that appear online are generated from the database, when a new violation or type of discipline (i.e. fining authority) is implemented the information is not generated so the disciplinary history available to the public is not complete. Additional benefits or shortcomings of the current database which the new database should address will be: ad hoc queries and reporting features, editable letters, online integration, records management options, and examination details which cannot currently be tracked in the system. The OCIO's Office has indicated that they no longer want to dovote the resources needed to maintiain the system written in an antiquited language with little use or support available at this time. The new system would adhere to current state standards (nicluding an audtt finding faulting the current system for having only one level of login/security) and fit in better with the current state IT support structure.

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

IT Project Proposal Report - Detail
Agency: 041 - REAL ESTATE COMMISSION
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

If funding is approved the licensee database for the budget request period the Commission will immediately begin work on drafting an Request For Proposal document per state purchasing guidelines for the new database. The goal would be to release the RFP in August 2015, a mid-October response deadline, award the contract in November, and have work begin in approximately January of 2016. Completion and operation would be somewhat dependent on the schedule provided in the RFP response by the Vendor, but we would anticipate having a fully operational system by mid to late summer of 2016. Drafting of the RFP would be handled by internal IT staff and the Director.

RISK ASSESSMENT (10 PTS):

As with any major project there will be risks associated with the development and implementation of a new licensee dataase. The Nebraska Real Estate Commission will do a thourough assessment not only of the proposal, but also of the experience and stability of the company chosen to fulfill project requirements, the Commission will also follow OCIO policies and guidelines for data storage, security and disaster recovery where applicable. The Commission will determine appropriate levels of security for access to the system and only allow access to the system based upon that assessment.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

There has been an upward trend of higher than projected number of licensees applying for and recieving real estate licenses the last two fiscal years, resulting in higher than projected revenue in the Commission Cash Fund, however, projections for the fund still indicate that a database purchase could not be supported without a fee increase. The Commission has the statutory authority to set its own fees within a range, it is projected that the renewal and license fee for brokers and salespersons will need to be increased by $15 each year starting in the fall of this 2014 in order to have an adequate cash balance at the time of the database purchase. This increase will be requested in the budget request if approved by the Commission

IT Project Proposal Report - Detail
Agency: 081 - COMM FOR BLIND & VISUALLY IMPAIRED
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project : AWARE Client Data Tracking System Procurement

General Section

Contact Name :	Wes Majerus	**E-mail :**	wes.majerus@nebraska.gov	**Agency Priority :**	1
Address :	4600 Valley Road, STE 100	**Telephone :**	402-471-8113	**NITC Priority :**	
City :	Lincoln			**NITC Score :**	
State :	Nebraska	**Zip :**	68510		

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Contractual Services						
Design	0	0	0	0	0	0
Programming	100,000	0	100,000	0	0	0
Project Management	103,000	0	103,000	0	0	0
Data Conversion	50,000	0	50,000	0	0	0
Other	0	0	0	0	0	0
Subtotal Contractual Services	253,000	0	253,000	0	0	0
Telecommunications						
Data	0	0	0	0	0	0
Video	0	0	0	0	0	0
Voice	0	0	0	0	0	0
Wireless	0	0	0	0	0	0
Subtotal Telecommunications	0	0	0	0	0	0
Training						
Technical Staff	6,871	0	6,871	0	0	0
End-user Staff	11,353	0	11,353	0	0	0
Subtotal Training	18,224	0	18,224	0	0	0

IT Project Proposal Report - Detail
Agency: 081 - COMM FOR BLIND & VISUALLY IMPAIRED
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

Expenditures

IT Project Costs	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
Other Operating Costs						
Personnnel Cost	0	0	0	0	0	0
Supplies & Materials	0	0	0	0	0	0
Travel	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Other Operating Costs	0	0	0	0	0	0
Capital Expenditures						
Hardware	0	0	0	0	0	0
Software	100,276	0	100,276	0	0	0
Network	0	0	0	0	0	0
Other	0	0	0	0	0	0
Subtotal Capital Expenditures	100,276	0	100,276	0	0	0
TOTAL PROJECT COST	371,500	0	371,500	0	0	0

Funding

Fund Type	Total	Prior Exp	FY14 Appr/Reappr	FY16 Request	FY17 Request	Future Add
General Fund	0	0	0	0	0	0
Cash Fund	0	0	0	0	0	0
Federal Fund	371,500	0	371,500	0	0	0
Revolving Fund	0	0	0	0	0	0
Other Fund	0	0	0	0	0	0
TOTAL FUNDING	**371,500**	**0**	**371,500**	**0**	**0**	**0**
VARIANCE	**0**	**0**	**0**	**0**	**0**	**0**

IT Project Proposal Report - Detail
Agency: 081 - COMM FOR BLIND & VISUALLY IMPAIRED
Budget Cycle: 2015-2017 Biennium Version: AF - AGENCY FINAL REQUEST

IT Project: AWARE Client Data Tracking System Procurement

EXECUTIVE SUMMARY:

AWARE (Accessible Web Activity Reporting Environment), produced by Alliance Enterprises, is used by over 31 State Rehab Agencies to manage grants from U.S. Department of Education's Rehabilitation Services Administration.

Strengths: Financial component can be linked to the Edge system to track obligations and payments for case services

Required changes to federal reporting requirements are added through semiannual software upgrades
Continuity of Operations can be assured as developments and modifications are developed by the vendor
Nonvisual accessibility is maintained through close partnerships between vendor and software manufacturers
Current case management system is heavily customized and updates are costly and time-consuming; it is not feasible to add financial component.

AWARE is a product of Alliance Enterprises of Lacey, WA. It is designed to specifically meet the reporting needs of Vocational Rehabilitation agencies that report to the Rehabilitation Services Administration (RSA), which is part of the Department of Education. The system is used by 31 states and other agencies to manage grants awarded to them by the RSA. The AWARE system has a financial component that creates obligations for products and services procured for clients as a part of their case services. It is our goal to utilize this component in conjunction with data exchange with the Edge system to track obligations and payments for case services.

To meet our current case management needs, we are utilizing a system that was given to us by the state of Iowa, which we have heavily customized. Although the system currently performs effectively, a change to the AWARE (Accessible Web Activity Reporting Environment) would benefit us in the future from a continuity of operations standpoint, as well as ensuring that modifications to the system necessitated by changes in federal reporting requirements are not as costly or time-consuming to implement. In addition, upgrades to the system can be insured to be accessible to our blind staff as Alliance Enterprises works closely with manufacturers of screen access technology, operating systems, and backend database and related software.

GOALS, OBJECTIVES, AND OUTCOMES (15 PTS):

Goals of the project:

Keep abreast of changing federal reporting guidelines
Utilize a system that is easy to maintain and upgrade
Utilize a system that is accessible to our blind staff through screen access technology
Implement financial piece to manage obligations and payments.

Project Beneficiaries:
Blind Nebraskans, due to streamlined services

Staff, who will use an efficient system that is kept up to date
Program and administrative staff, who can better manage financial obligations on case services
Federal grantors.

Outcomes:
Accurate data and reporting
Improved link between obligations and payments

Updates made with nonvisual access in mind.

PROJECT JUSTIFICATION / BUSINESS CASE (25 PTS):

AWARE is specifically developed for rehabilitation agencies to manage their awarded grants and to track progress, obligations, and case-related indicators on the clients they serve. Because the majority of these functions will be used by NCBVI, the agency will not have to expend as much time or money in developing system enhancements to stay current with federal reporting requirements. As part of the agency's licensing plan, Alliance Enterprises provides seats on a user's group, which will allow our staff to suggest enhancements that would improve their productivity, or express any concerns they might have to the vendor. Any costs for modifications made based on these suggestions would be shared amongst all system users and covered through licensing fees. Our organization can also dialog with other agencies using the system to jointly solve problems or find solutions to complications we are facing.

One area that we have been unable to master with our current system is financial reporting and tracking. AWARE contains a financial module that currently allows creation of financial obligations on a client's case. We will leverage this module by linking it with the Payroll and Financial Center so that obligations produced in AWARE are sent to the PFC and changed into vouchers for payment. Information on payments will then be returned to AWARE for tracking purposes.AWARE can be used to report on the data it collects. One upshot of this reporting capability is providing data to interested parties such as other state officials. This would provide statistics such as numbers of clients served, aggregate demographic information, program effectiveness, or other indicators.

5. Describe other solutions that were evaluated, including their strengths and weaknesses, and why they were rejected. Explain the implications of doing nothing and why this option is not acceptable.

One other case management system was explored. Through discussions with fellow state agencies, we determined that the system had a limited customer base and that its functionality would not meet our needs. We also evaluated continuing to upgrade and maintain the current system. This is not a feasible plan as there are only two people who are familiar with internal aspects of the system. Also, it is difficult to solve accessibility issues with new enhancements in a timely fashion. Continuing on our current course would not allow us to keep up with changing federal reporting requirements. This would also compromise continuity of operations in the event that the programmer or data analyst were unable to continue work on the system. As we enhance the current system, there are possibilities that defects related to accessing the system with screen reading software will occur. From past experience, it can take a significant amount of time and resources to track down the causes and solutions for the defects. Resolution can take a large amount of time as resources for testing, support, and remedying defects must be located and scheduled.

6. If the project is the result of a state or federal mandate, please specify the mandate being addressed.

34 CFR 361.47 Record of Services - requirements for what is to be recorded in the Case record.

34 CFR 361.88 Reporting Requirements - outlines what needs to be reported to federal US. Dept of Education/Rehab Services Administration.

TECHNICAL IMPACT (20 PTS):

The AWARE system is web-based and uses SQL databases. It is developed using Visual Studio .NET and collects the same information as our current system. The current system is based on SQL Server and .NET. We will need to remap our data definitions and undergo a data conversion process before the project can go live. This may present some challenges to the project time-line and to implementation of AWARE.
The AWARE system is available under two models. The system can be purchased and hosted on machines local to the purchasing entity or it can be purchased as part of a Managed Services contract where the software and data is hosted in a secured data center. We are working with the Office of the Chief Information Officer and Alliance Enterprises to determine pros and cons of each solution and to decide which model to pursue. The system is set up to utilize a web server to generate and handle the user interface for the system. This web server works with an SQL database server that holds client data. When the project is implemented as a Managed Services system, the database server is sized based on licenses. Each agency's data and web traffic run on an exclusive batch of hardware that is separate from other agencies using the Managed Services Model.
We have begun discussions with the staff of State Accounting to determine the feasibility of collaborating with the Edge system for the financial component of AWARE. We can meet our goal of taking authorizations from the AWARE system when products and services are purchased through a case, and then translate them into vouchers from inside Edge for payment. Edge can send data back to AWARE to show which vouchers have been paid. Facilitating this data exchange will require some communication between the two systems either by manual upload or through an interface with mainframe. We are evaluating the pros and cons of these alternatives. This financial piece is not currently available to us. We had planned to develop something that would fill this need with our current system, but found that doing so was very complicated and cost and time prohibitive. Both the financial piece and the reporting change inclusions are large strengths of the system from our standpoint. One of the major weaknesses of the system is that although it captures the same types of information about the clients we serve, the flow for entering that information and manipulating it is much less straightforward than the current system that our staff members are accustomed to. Also, as part of the accessibility of the system, customizations will need to be performed on each staff member's computer at the time of system implementation. These customizations should only need to be done once. The customizations improve the way that screen access software works with AWARE's screens and improve the way PDF documents read.
Strengths:

1. Contains federal reporting changes.
2. Regularly Updated, twice a year.
3. Accessible using screen access technology
4. Large nationwide user network that can assist in advocating for change or solving problems
5. Functionality in mobile browsers for completing many client service tasks in the field

Weaknesses:

1. Different from current system, will require staff training and modification of some business processes
2. Data from current system will need to undergo conversion to be used in new system.
3. Some customization may need to be undertaken, especially in the financial module

8. Address the following issues with respect to the proposed technology:

- Describe the reliability, security and scalability (future needs for growth or adaptation) of the technology.
- Address conformity with applicable NITC technical standards and guidelines (available at http://nitc.ne.gov/standards/) and generally accepted industry standards.
- Address the compatibility with existing institutional and/or statewide infrastructure.

Discussions have already occurred regarding security and preliminary management services with OCIO.
Many of the systems used by the State are web-based, and AWARE is no exception. The system will be usable on a variety of platforms including Windows 7 with Internet Explorer and Safari on the iPhone and iPad. All of our field counselors utilize iPhones when away from the office, and this new system will be more usable on the iPhone and iPad than our current system. The data formats, Comma Separated Value files, used to exchange data between systems are compatible with AWARE and Edge. When AWARE was first developed, it was an acronym whose meaning was "Accessible Web Activity Reporting Environment". Documentation has been provided to us showing that AWARE is accessible and that it works with a number of screen access technologies and browsers. The system is updated twice a year to include customer-suggested improvements, changes to reporting outputs mandated by the RSA, and fixes to help the system work with screen access software and browsers. We will include the NITC Technology Access Clause in our contract.
Applicable Standards:
7-102, DNS Forwarding Standard
7-103, SMTP Routing Standard
8-301, Password Standard

PRELIMINARY PLAN FOR IMPLEMENTATION (10 PTS):

Project Team:

- Dr. Pearl Van Zandt: Agency Executive Director - Project Oversight with respect to budget and system implementation.
- Bill Brown: Business Manager - Develop budget and timelines for system purchase and conversion.
- Wes Majerus: Technology Program Manager - Works with technical staff of OCIO and Alliance. Ensure that system is accessible to screen access technology and other software used by the Commission. Provide support as system comes into use. Act as a liaison between vendor, OCIO, and Agency to address system functionality concerns.
- Dottie Wilmott: Data Quality Analyst and client tracking system administrator - ensure that system and data work properly once system comes online. Assist in data conversion strategies and concerns. Ensure data quality and accuracy as system comes into use. Provide support to users of the system once operational.
- Rich Burns: Office of the CIO, programmer working on our current system. Assist with data conversion and evaluation of system, assist with concerns in transitioning between systems.

10. List the major milestones and/or deliverables and provide a timeline for completing each.

- Present-October, 2014: Analysis phase continues
- November, 2014: Finalize system proposals with respect to Alliance statement of work for system and data conversion, decision about project hosting made.
- December, 2014 sign contract for purchase of system
- January-March, 2015: Data conversion and remapping from old system
- April, 2015: Customize and adapt the system to meet agency processes
- May-July, 2015 - Test completed system functionality and data integrity.
- August-September, 2015: Complete up to six trainings across the state to prepare for go-live
- October, 2015: System Go-Live
- October, 2015-December 2015: Remedy issues detected as of go-live

11. Describe the training and staff development requirements.
The system has a different workflow process. It will require extensive training for all staff at the time of implementation. Alliance Enterprises will provide three types of training

sessions related to staff function within the system, as denoted in their Statement of Work. These trainings will include An Introduction to AWARE, Using AWARE with Assistive Technology, and AWARE Administrator Training. Training on additional system enhancements may be needed if those enhancements create a drastic functional change in the use of the system throughout its lifecycle. We are planning to have the Introduction to AWARE and Using AWARE with Assistive Technology trainings held such that they are provided to each of our six offices individually, not to exceed 6 trainings.

12. Describe the ongoing support requirements.

The AWARE system would be supported by NCBVI staff, the vendor, and the OCIO. Support would be required during the periods when upgrades were deployed and tested. A test environment would be available whether we hosted the system in Nebraska or used the Managed Services contract. Inquiries such as password resets, staff assistance with using the system, and screen access software customizations would be performed by the Technology Program Manager or by anyone who has the administrator role as needed with guidance from Alliance Enterprises. Some administrative functions would be handled by those who have the administrative role in the system.

RISK ASSESSMENT (10 PTS):

13. Describe possible barriers and risks related to the project and the relative importance of each.

Some staff may need additional training beyond what is provided.

- Data Conversion is on the project's critical path; delays and difficulties in that process could delay implementation.
- Difficulties could be encountered in data transfer between Edge and AWARE
- The core AWARE system may need unplanned customization to comply with agency or Nebraska technology standards.

14. Identify strategies which have been developed to minimize risks.

- Ensure that introductory and Access Technology trainings are provided in a small group setting to each of our six offices one at a time to allow as much hands-on introductory work in the system as possible.
- Discuss with stakeholders such as other VR agencies before choice of new system.
- Seek advice regarding pointers and pitfalls encountered by agencies in their implementation plan.
- Discuss, at a minimum, which data will need to be converted
- Clearly delineate the current data format and determine what format will be needed for new data.
- Consult with OCIO and Alliance on plans for data conversion.
- Plan to leave the old system intact for a number of years for historical data access.
- Work closely with State Accounting to determine how financial module and linkage to the Edge system can be best achieved.

FINANCIAL ANALYSIS AND BUDGET (20 PTS):

This project will enhance and make much more robust NCBVI’s ability to track client information, Report to our Federal partners, and manage the financial aspect of the Vocational Rehabilitation Federal grants it is charged to administer. Monies to pay onetime startup costs for this system are generally from reallotment of the VR grant and from Program income generated by successful closures to Social Security recipients.

Discussions have already occurred regarding security and preliminary management services with OCIO.

We are researching compliance with all NITC Standards.

Refer to Financial Tab for cost allocations and detailed breakdown.

IT Project Proposal Report - Detail

Agency: 081 - COMM FOR BLIND & VISUALLY IMPAIRED

Budget Cycle: 2015-2017 Biennium **Version: AF - AGENCY FINAL REQUEST**