⚙️ **Meeting Agenda**

Technical Panel
Tuesday, December 9, 2014 at 9:00am
NET Boardroom
Nebraska Educational Telecommunications
1800 N. 33rd St.
Lincoln, NE

Meeting Documents
Meeting Documents - Including Full Text of Projects

9:00am	1.	Roll Call, Meeting Notice & Open Meetings Act Information	Chair
	2.	Public Comment	
	3.	Approval of Minutes* - October 14, 2014	

9:05am	4.	Project Proposals - 2015-2017 Biennial Budget - Supplemental Reviews*	R. Becker
		a. Approval of New Reviewer*	
		b. Project summary sheets	
		c. Full text of the projects (173 pages)	

9:25am	5.	Enterprise Projects	A. Weekly
		a. Project Status Dashboard	
		b. Project Update	
		1. DHHS - Medicaid Eligibility & Enrollment System (Eric Henrichsen)	

9:45am	6.	Standards and Guidelines	R. Becker

    a. Recommendations to the NITC
        1. NITC 3-205: Street Centerline Standards (New)*
           - Two Comments
           - GIS Council Comments
        2. NITC 3-206: Address Standards (New)*
           - One Comment
           - GIS Council Comments
    b. Requests for Waiver
        1. Department of Economic Development - Request for Waiver from the requirements of NITC 7-104*
        2. Nebraska Wheat Board - Request for Waiver from the requirements of NITC 7-104*

10:05am	7.	Election - Technical Panel Chair for 2015*	Chair

10:10am	8.	Work Group Updates and Other Business	Chair
10:15am	9.	Adjourn (Next Meeting - February 10, 2015)	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 November 7, 2014. The agenda was posted to the NITC website on December 7, 2014. Nebraska Open Meetings Act

TECHNICAL PANEL
Tuesday, October 14, 2014 at 9:00 a.m.
Varner Hall - Board Room
3835 Holdrege Street
Lincoln, NE
MINUTES

MEMBERS PRESENT:
Brenda Decker, CIO, State of Nebraska
Christy Horn, University of Nebraska
Kirk Langer, Lincoln Public Schools
Don Mihulka, University of Nebraska
Mike Winkle, Nebraska Educational Telecommunications

MEMBERS ABSENT: None

ROLL CALL, MEETING NOTICE & OPEN MEETINGS ACT INFORMATION

Mr. Winkle called the meeting to order at 9:05 a.m. A quorum was present to conduct official business. 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. A copy of the Nebraska Open Meetings Act was posted on the south wall.

PUBLIC COMMENT

There was no public comment.

APPROVAL OF MINUTES*

Mr. Langer moved to approve the September 9, 2014 minutes as presented. Mr. Mihulka seconded. Roll call vote: Langer-Yes, Mihulka-Yes, and Winkle-Yes. Results: Yes-3, No-0, Abstained-0. Motion carried.

Ms. Decker arrived and presided over the rest of the meeting.

STANDARDS AND GUIDELINES

Requests for Waiver

Game and Parks Commission - Request for Waiver from the requirements of NITC 7-104*
Toni Knust, IT Manager and Christy Rasmussen, Communications Coordinator

The agency is requesting a waiver due to the advertising displayed on the agency website. The commissioner uses OutdoorNebraska.gov as the official agency URL. The advertising supports the agencies partnerships with retail organizations, non-governmental agencies and conservation groups to promote outdoor recreation activities and tourism in Nebraska.

Mr. Winkle moved to approve the Nebraska Game and Parks Commission's request for waiver from the requirements of NITC 7-104 Web Domain Name standard. Mr. Langer seconded. Roll call vote: Decker-Yes, Langer-Yes, Mihulka-Yes, and Winkle-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

Department of Health and Human Services – Three (3) Requests for Waivers
Eric Heinrichsen, Department of Health and Human Services, was available for questions.

Waiver from NITC 8-302 for DHHS Vital Records System. The Vital Records System that tracks birth, death, marriage and divorce events for DHHS is currently available in Citrix to approximately 3000 internal/external users. The users are authenticated via the DHHS Active Directory. Vital Records System will be migrating to a new web-based version of software by July 2015. Testing on the application will begin in October/November 2014. The new web-based application will be using the DHHS Active Directory for authentication. All 3000 internal/external users are currently defined in the DHHS Active Directory. Initial setup/movement of users in the Nebraska Directory Services would be very time consuming and may potentially cause the user ids to change. Chris Hobbs, State Information Security Officer, recommended approval of the waiver.

Mr. Langer moved to approve the request for waiver from NITC 8-302. Mr. Winkle seconded. Roll call vote: Winkle-Yes, Mihulka-Yes, Langer-Yes, and Decker-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

Waiver from NITC 8-302 for MIP (Medicaid Incentive Payments). DHHS is using a vendor to provide a solution for the administration of MIP. The vendor is performing services and hosting the solution externally in a corporate data center. It is targeted to go live October 6.

After discussion, it was agreed that no waiver was needed. This is a hosted application which is outside the scope of the standard.

Waiver from NITC 8-302 and NITC 8-301 for the Edifecs System. DHHS has procured a new system, Edifecs, to act as a real time HTTP/S compatible translator working with the existing Sybase HIPAA Translator system. DHHS is requesting waivers to both standards for this system. Mr. Hobbs, State Information Security Officer, recommended approval of the waiver for the password standard.

After discussion, it was agreed that no waiver was needed for NITC 8-302. This is outside the scope of that standard.

Mr. Winkle moved to approve the request for waiver from NITC 8-301 Password standard until July 1, 2016. Mr. Langer seconded. Roll call vote: Langer-Yes, Mihulka-Yes, Winkle-Yes, and Decker-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

ENTERPRISE PROJECTS
Andy Weekly, Office of the CIO, Project Manager

Project Status Dashboard. Mr. Weekly reviewed the dashboard report.

Administrative Services - LINK - Procurement. This project has been suspended.

Mr. Winkle moved to suspend the project reporting requirements for the LINK-Procurement project until the agency resumes activity on the project. Mr. Langer seconded. Roll call vote: Winkle-Yes, Mihulka-Yes, Langer-Yes, and Decker-Yes: Yes-4, No-0, Abstained-0. Motion carried.

Project Closures

Office of the CIO - Nebraska Statewide Radio System

Mr. Winkle moved to recommend closure of the Nebraska Statewide Radio System project. Mr. Langer seconded. Roll call vote: Decker-Yes, Langer-Yes, Winkle-Yes, and Mihulka-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

University of Nebraska and State College System - NeSIS ADA Compliance (Voluntary Review)*. The project has submitted a final report. The project acknowledged that accessibility issues need to be addressed on an ongoing basis.

Mr. Winkle moved to close the NeSIS ADA Compliance project as a voluntary review project. Mr. Langer seconded. Roll call vote: Mihulka-Yes, Winkle-Yes, Decker-Yes, and Langer-Yes. Results: Yes-4, No-0, Abstained-0. Motion carried.

Christy Horn arrived to the meeting.

<u>**Project Designation**</u>

DHHS - Medicaid Eligibility & Enrollment System
Eric Henrichsen, Department of Health and Human Services

In November 2012, Nebraska elected to use the Federal Insurance Exchange model. DHHS planned implementation phases as follows:
- Phase 1 – Use N-FOCUS and current technologies to get minimal functionality available for 10/2013. Separation of CFS/MLTC within N-FOCUS. Reduce work queue backlog.
- Phase 2 – RFP for Long-Term solution meeting CMS 7 Standards and Conditions.

The RFP has been developed and released with the following scope and timelines.
Scope
- Software and system integrations for EES functionality
- Platform for Service Oriented Architecture
- Rules Engine, Work Flow, Enterprise Service Bus
- Software available for other programs within DHHS
- Integrate with existing Onbase (ECM), IVR, Workforce Management/Optimization
- Provide initial hosting, State option to move to another vendor or bring into OCIO data center in the future
Timeline
- RFP Posted 10/31/2013
- Bids opened 1/21/2014 - Infosys, Engagepoint, Unisys, Accenture, Wipro, MariChris
- Orals 2/20/2014 – 2/28/2014 – Unisys, Accenture, Wipro
- Intent to Award 3/19/2014 – Wipro (IBM/Curam sub-contractor for software/hardware)
- Contract Finalized 7/23/2014

Questions and discussion followed.

Mr. Winkle moved to recommend that the Medicaid Eligibility and Enrollment System project be designated as an Enterprise Project. Mr. Langer seconded. Roll call vote: Decker-Yes, Horn-Yes, Langer-Yes, Mihulka-Yes, and Winkle-Yes. Results: Yes-5, No-0, Abstained-0. Motion carried.

STANDARDS AND GUIDELINES - RECOMMENDATIONS TO THE NITC

These standards document were posted for the 30-day comment period.

No comments were received for NITC 3-201, NITC 3-203 and NITC 3-204.

Ms. Horn moved to recommend approval of NITC 3-201: Geospatial Metadata Standard (Amendment), NITC 3-203: Elevation Acquisition using LiDAR Standards (New), and NITC 3-204: Imagery Standards (New). Mr. Winkle seconded. Roll call vote: Horn-Yes, Langer-Yes, Mihulka-Yes, Winkle-Yes, and Decker-Yes. Results: Yes-5, No-0, Abstained-0. Motion carried.

The GIS Council is reviewing the public comments submitted for NITC 3-205 and NITC 3-206. Staff recommends tabling these documents until the next Technical Panel meeting.

Mr. Winkle moved to table NITC 3-205: Street Centerline Standards (New) and NITC 3-206: Address Standards (New) until the next meeting. Mr. Langer seconded. Roll call vote: Mihulka-Yes,

Langer-Yes, Horn-Yes, Decker-Yes, and Winkle-Yes. Results: Yes-5, No-0, Abstained-0. Motion carried.

No comments were received for NITC 7-104.

Ms. Horn moved to recommend approval of NITC 7-104: Web Domain Name Standard (Amendment). Mr. Winkle seconded. Roll call vote: Horn-Yes, Langer-Yes, Mihulka-Yes, Winkle-Yes, and Decker-Yes. Results: Yes-5, No-0, Abstained-0. Motion carried.

PROJECT PROPOSALS - 2015-2017 BIENNIAL BUDGET - RECOMMENDATIONS TO THE NITC*
(**Project summary sheets** and **Full text of the projects)**

The members reviewed each of the projects. The following individuals were available to discuss their agency's projects: Colleen Byelick and Chad Sump, Secretary of State; Dale Fangmeier, Department of Agriculture; and Pearl Van Zandt and other staff, Commission for the Blind and Visually Impaired.

Through discussion and by consensus, the panel made the following comments on the projects:

Project	Q1	Q2	Q3	Comment
09-01	✓	UNK	UNK	Unknown until the RFP process is completed.
09-02	✓	✓	✓	
18-01	✓	✓	✓	
24-01	✓	UNK	UNK	Unknown until the RFP process is completed.
40-01	UNK	UNK	UNK	Insufficient information in the proposal to evaluate the technical elements.
41-01	✓	UNK	UNK	Unknown until the RFP process is completed.
81-01	✓	UNK	UNK	Unknown technical elements, specifically related to connections to other agencies.

Q1: Is the project technically feasible?
Q2: Is the proposed technology appropriate for the project?
Q3: Can the technical elements be accomplished within the proposed timeframe and budget?
✓=Yes; ✗=No; UNK=Unknown

Mr. Winkle moved to forward the Technical Panel's review and comments on the project proposals to the NITC. Mr. Langer seconded. Roll call vote: Decker-Yes, Horn-Yes, Langer-Yes, Milhulka-Yes, and Winkle-Yes. Results: Yes-5, No-0, Abstained-0. Motion carried.

WORK GROUP UPDATES AND OTHER BUSINESS

There were no work group reports.

ADJOURNMENT AND NEXT MEETING

The next meeting of the NITC Technical Panel will be held on Tuesday, December 9, 2014 at 9 a.m.

Mr. Langer moved to adjourn. Mr. Winkle seconded. All were in favor. Motion carried.

The meeting was adjourned at 10:35 a.m.

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

Technical Panel
of the
Nebraska Information Technology Commission

Project Reviewer Information Sheet

Purpose: By statute, the Technical Panel of the Nebraska Information Technology Commission is responsible for performing technical reviews of certain budget requests and grant applications. As part of the review process established in NITC policies (NITC 1-202), the Technical Panel may request qualified individuals to review, score, and comment on project proposals as part of the technical review process. This document requests background information from potential reviewers allowing the Technical Panel to document a reviewer's qualifications. Please send the completed form to: ocio.nitc@nebraska.gov

Name	Tod Wyrick
Agency/Employer	OCIO
Title	IT Supervisor
Email Address	Tod.Wyrick@Nebraska.gov
Phone	402-471-8069

1. Employment History (IT Related Only)
   State of Nebraska – OCIO – June 1997 to Present

2. Education
   University of Kansas, BA Psychology 1992
   Southeast Community College, Associate's Degree Computer
   Programming Technology 1997

3. Professional Training and Certifications
   Java Jumpstart – IBM
   Project Management Methodologies

4. Information Technology Areas of Expertise (Optional. List areas of expertise.)
   Web Development
   Project Management
   Team Building

Technical Panel Review

Date	
Action	

Project #	Agency	Project Title
13-01	Department of Education	Nebraska eLearning 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]

The Nebraska eLearning Project would center on the creation and procurement of high quality electronic learning objects for distribution to PreK-12 public schools at no cost to schools, in support of the statewide BlendEd Initiative, the NITC committee's digital education goals and as an enhancement to the Data Dashboard currently being developed by NDE, while providing an in-depth, hands-on professional development process for Nebraska teachers, pre-service teachers and content specific undergraduate students.

FUNDING SUMMARY

	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		$ 88,000.00	$ 90,000.00	$ 92,000.00	$ 94,000.00		$ 364,000.00
2. Contractual Services							
2.1 Design							$ -
2.2 Programming							$ -
2.3 Project Management							$ -
2.4 Other							$ -
3. Supplies and Materials							$ -
4. Telecommunications							$ -
5. Training							$ -
6. Travel							$ -
7. Other Operating Costs		$ 2,500,000.00	$ 2,500,000.00	$ 2,500,000.00	$ 2,500,000.00		$ 10,000,000.00
8. Capital Expenditures							
8.1 Hardware							$ -
8.2 Software							$ -
8.3 Network							$ -
8.4 Other							$ -
TOTAL COSTS	$ -	$ 2,588,000.00	$ 2,590,000.00	$ 2,592,000.00	$ 2,594,000.00	$ -	$ 10,364,000.00
General Funds		$ 2,607,000.00	$ 2,607,000.00	$ 2,607,000.00	$ 2,607,000.00		$ 10,428,000.00
Cash Funds							$ -
Federal Funds							$ -
Revolving Funds							$ -
Other Funds							$ -
TOTAL FUNDS	$ -	$ 2,607,000.00	$ 2,607,000.00	$ 2,607,000.00	$ 2,607,000.00	$ -	$ 10,428,000.00

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	Mean	Maximum Possible
Goals, Objectives, and Projected Outcomes	9	12	7	9	15
Project Justification / Business Case	15	17	18	17	25
Technical Impact	5	14	2	7	20
Preliminary Plan for Implementation	5	7	6	6	10
Risk Assessment	5	7	6	6	10
Financial Analysis and Budget	10	14	13	12	20
			TOTAL	57	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The project overview provides some specific and, ultimately, measurable goals in the form of project deliverables. The project outcomes are desirable within the larger context of what is needed to assist K12 schools moving forward with a digital conversion. - Vision: State-wide LOR System with Open Content with content that supports NE Ed needs. - Goals are laudable, but I question the need for	- The evaluation plan is sketchy beyond the specific deliverables and some mention of working with Brightbytes. Goals, partners and measures of success are loosely correlated without necessary specifics to tie them together. - Cost Savings not specified. Can IRR/ROI be determined? - Metrics are provided, but vague. What does successful mean? Better metrics might be LOR

Section	Strengths	Weaknesses
	yet another LOR just to have one special for Nebraska. Many LORs are already started, could we not work with someone who has begun this work already?	has X number of learning objects available for faculty use in year 1, Y number in year 2, etc.
Project Justification / Business Case	- Components of the project are consistent with desired outcomes and stated project goals. Components of the project do provide an indication of the process for development, implementation/adoption, and technical integration. - Content creation teams config for K-6 projects and Fellowship program - Adoption of OER, training for faculty in OER acquisition and development and contributing back to the OER community is a wonderful set of goals.	- The specifics associated with each component do not provide insight into the scalability, feasibility or sustainability of the project. There are clearly tangible benefits, however, there is much less clarity as to whether those benefits can be achieved. - Plan is lacking sufficient detail. Administrative and LOR system support? Size and configuration of physical space.. multi-media production and editing resources (equipment and support) for content teams? Development of Fellows? Consider a competitive pool for advanced content creation to address K7-12 needs. - No evidence was provided that existing LOR efforts in other states (or for that matter, in higher ed) could be partnered with to facilitate a broader content pool and lower cost. Why must we build our own?
Technical Impact	- High quality digital learning content that is highly accessible, standardized and packaged in a modular format conducive to inclusion and presentation via learning management platforms is desirable. - Vision of centralized LOR.	- Beyond mention of the support for a number of current projects, the balance of this section was cast in the context of cost savings/cost avoidance. The assertion that a LOR with high quality content will reduce the need for districts to purchase student devices is utterly groundless and nearly senseless. It will, in all likelihood, have just the opposite effect. As a device becomes a necessary condition for the delivery of instructional content the assertion that a device is to digital content what a backpack is to books, demonstrates reckless disregard for the technical realities of delivering digital content to 100s of thousands of learners across the state. - BYOD has its own set of challenges and cost implications that need to be addressed. Age and quality of devices and components. Technical support (operating systems, drivers, software versions...) compliance, security implications. Is the infrastructure ready for additional devices? Content standards and tools should be included to ensure a uniform experience for users. - No technical implementation details were provided. While claims are made that this will reduce costs, no data is provided to indicate what current costs are.
Preliminary Plan for Implementation	- A timeline is provided with some indication of scope and sequence. - While the details of the implementation plan are weak, the overall timeline appears to be reasonable.	- There is very little in the way of specific outcomes and the impact they might have on student achievement and teacher effectiveness. - There is a ton of work being done in this area already nationally, but little evidence in implementation of a market survey or other means of determining best practice/potential partnerships, other than a tacit mention of "establishing needed partnerships". Demarcation of roles is not clearly spelled out.
Risk Assessment	- The author outlines the foreseeable risks including solution fragmentation resulting from an inability to achieve stakeholder consensus, and the potential of budget overrun based on improperly scoping the project or having to over promise in an attempt to achieve sufficient adoption velocity to keep the project moving forward.	- No specific mitigation strategy beyond the hope that a dedicated eLearning Project director can sprinkle sufficient magic dust to build and maintain a partnership coalition. - What happens to project funding if State-wide LOR cannot be agreed upon? Can LOR selection and agreement be contingent upon and completed prior to project start? What is the risk

Section	Strengths	Weaknesses
		for low quantity, low quality or relevant content? How will this be mitigated? - One significant risk not identified is reluctance of faculty to move to OER from commercial sources.
Financial Analysis and Budget	- Project proposal, in total, does provide a breakdown of anticipated costs.	- The costs, as indicated in the attached summary document, show that less than 7% will be spent on content, whereas, nearly 20% will be spent on creation/curation. Moreover, the single largest expenditure constituting nearly 35% of the total is for data dashboard integration leading the reviewer to conclude this is miscast as a content/LOR project when, in actuality, it is much more about the data dashboard. - Can cost savings projections for state-wide LOR be provided? Can an IRR/ROI be established for the project?

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
13-02	Department of Education	Education Data Systems Capacity Building

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 recent Nebraska Education Data Systems study, in response to Legislative Resolution 264, found that Nebraska spends an estimated $100 million annually for technology systems, software systems, and accountability data submissions by the public school districts and the Nebraska Department of Education (NDE). The systems and applications are largely focused on satisfying Federal and State accountability reporting requirements and do not directly contribute to supporting teaching and learning. The districts submit annual collections of data to support accountability to the state using a combination of automated and manual methods. An estimated 655,200 hours are spent by districts preparing the required collections for each year's accountability data submission.

Each district has selected its own set of administrative, teaching and learning, and back office applications and there is a large disparity in the number of applications available in small districts versus larger districts due to budget, staff, and capacity. Outside of Nebraska's largest districts, the digital tools are poorly integrated, there is little support for data-driven decision-making, and modern tools are not available to support instructional improvement necessary for the state's education initiatives of blended learning, teacher and principal evaluation, career readiness, and continuous school improvement.

Nebraska's network of Educational Service Units (ESUs), the ESU Coordinating Council (ESUCC), and Network Nebraska are all contributing to improving the capabilities and the efficiencies of the data systems for the districts. However, the coordination, support, and access for systems can be dramatically improved and serves as the basis for this multi-faceted approach to develop a statewide data system that builds long-term capacity, efficacy, and efficiency for the system of education. The study established 10 recommendations that included five work streams; leverage work conducted using the federal $4.3 million SLDS grant scheduled to end June 2015.

The proposed implementation roadmap for the Nebraska Education Data System estimates a three-year investment of $41,960,110, roughly evenly split across the three years. The rollout plan targets a phase in process over three years that could include 50 districts the first year, 150 the second year, and 245 during the third year resulting in cost savings and efficiencies that will also provide a financial return from substantially-reduced accountability costs and from reduced technology costs to districts. The projected cumulative net return for the investment over five years is $44.8 million. However, the primary benefits from the recommended investments will come from a greatly improved instructional system that improves student performance leading to greater student success.

FUNDING SUMMARY

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Nebraska Department of Education Infrastructure Activities

			Biennium Budget Request		
			Year 1 FY 2016 SY 2015-2016 50 Districts	Year 2 FY 2017 SY 2016-2017 150 Districts	Year 3 FY 2018 SY 2017-2018 245 Districts
	Year 0 FY 2015 SY 2014-2015 9 Districts				
1 Nebraska Education Infrastructure		**Activities and Objectives**			
	Pilot initial SiS vendor Ed-Fi interfaces	Identify and collectively procure state-sponsored SiS(s)			
	Pilot assessment vendor interfaces	Support SiS Vendor Ed-Fi interfaces	$ 166,667	$ 166,667	$ 166,667
NDE will leverage the Ed-Fi infrastructure to connect source systems and drive down costs.		Support assessment vendor Ed-Fi interfaces	166,667	166,667	166,667
		Other source system interfaces to Ed-Fi (HR, SRS, applications)	250,000	250,000	250,000
		Support transfer to state supported systems in years 2 and 3	166,667	166,667	166,667
		Develop identity management solution for statewide single-sign-on	100,000	100,000	100,000
		ESUCC Infrastructure	500,000	500,000	500,000
		Infrastructure scaling and security audit activities	250,000	250,000	250,000
		Total Contractual Expenditures	1,600,000	1,600,000	1,600,000
		New Positions			
		Chief of Staff	60,523	60,523	60,523
		Chief Technology Officer	68,502	68,502	68,502
		Lead	60,523	60,523	60,523
		Senior	55,047	55,047	55,047
		Analyst	50,099	50,099	50,099
		Analyst	50,099	50,099	50,099
		Total Salary Expenditures	344,793	344,793	344,793
		Benefits Expenditures	165,264	165,264	165,264
		Operating Expenditures	23,805	23,805	23,805
		Travel Expenditures	10,395	10,395	10,395
		Equipment Expenditures	60,360	-	-
		Nebraska Education Infrastructure Total	$ 2,204,617	$ 2,144,257	$ 2,144,257
2 NDE Data Collection System		**Objectives**			
	Accountability Pilot - integrate CDC, Staff, NSSRS d	Statewide rollout with dual submissions (rollout plan based on SiS vendor)	$ 500,000	$ 500,000	$ 500,000
NDE will reduce the burden of accountability data submissions on districts through automated process leveraging the Ed-Fi infrastructure.		Develop and validate state accountability reports	500,000	500,000	500,000
		Develop business rules and validation for automatic accountability submissions	250,000	250,000	250,000
		Develop and validate federal accountability report submissions	500,000	500,000	500,000
		Develop district review and approval infrastructure	250,000	250,000	250,000
		Total Contractual Expenditures	2,000,000	2,000,000	2,000,000
		New Positions			
		Director, Accountability Data Systems	68,502	68,502	68,502
		Program Specialist III	55,047	55,047	55,047
		Database Analyst Lead	60,523	60,523	60,523
		Database Analyst Senior	55,047	55,047	55,047
		Database Analyst	50,099	50,099	50,099
		Database Analyst	50,099	50,099	50,099
		Total Salary Expenditures	339,317	339,317	339,317
		Benefits Expenditures	164,380	164,380	164,380
		Operating Expenditures	23,805	23,805	23,805
		Travel Expenditures	14,070	14,070	14,070
		Equipment Expenditures	37,680	-	-
		NDE Accountability Data System Total	$ 2,579,252	$ 2,541,572	$ 2,541,572
3 NDE Education Intelligence System		**Objectives**			
	Pilot SLDS Student-Level Dashboard	Dashboard statewide rollout	$ 200,000	$ 200,000	$ 200,000
		Dashboard updates and extensions	500,000	500,000	500,000
		District data warehouses and reporting layer	333,333	333,333	333,333
		District data warehouse security layer (with and without de-identification)	250,000	250,000	250,000
		NDE data warehouse cubes and BI layer	166,667	166,667	166,667
		Total Contractual Expenditures	1,450,000	1,450,000	1,450,000
NDE will create education intelligence - access to actionable insight - through a warehouse, business intelligence tools, and increased internal capacity.		New Positions			
		Chief Privacy Officer	79,873	79,873	79,873
		Director, Data Research and Evaluation	68,502	68,502	68,502
		Database Analyst Lead	60,523	60,523	60,523
		Database Analyst Senior	55,047	55,047	55,047
		Database Analyst	50,099	50,099	50,099
		Database Analyst	50,099	50,099	50,099
		Total Salary Expenditures	364,143	364,143	364,143
		Benefits Expenditures	168,387	168,387	168,387
		Operating Expenditures	24,510	35,510	35,510
		Travel Expenditures	17,680	17,680	17,680
		Equipment Expenditures	60,360	-	-
		NDE Education Intelligence System Total	$ 2,085,080	$ 2,035,720	$ 2,035,720
4 Help Desk & Support					
	Virtual Help Desk Pilot - Dashboards	Expand help-desk support to include Year 1,2 & 3 systems	$ 50,000	$ 50,000	$ 50,000
NDE, along with the ESUCC and ESU's, will provide technical support for Nebraska education data systems through a virtual help desk and coordinated knowledge transfer.	PD Curriculum	Develop professional development curriculum on Year 1,2 & 3 systems	50,000	50,000	50,000
		Integrate statewide ticketing system for "virtual help desk"	166,667	166,667	166,667
		Level 4 Support and Contracts	500,000	500,000	500,000
		Total Contractual Expenditures	766,667	766,667	766,667
		New Positions			
		Director, Project Management Office	68,502	68,502	68,502
		IT Help Desk Specialist Senior	50,099	50,099	50,099
		IT Help Desk Specialist	41,706	41,706	41,706
		IT Help Desk Specialist	41,706	41,706	41,706
		Project Manager	50,099	50,099	50,099
		Project Manager	50,099	50,099	50,099
		Total Salary Expenditures	302,211	302,211	302,211
		Benefits Expenditures	158,393	158,394	158,395
		Operating Expenditures	23,805	26,555	26,555
		Travel Expenditures	10,395	10,396	10,397
		Equipment Expenditures	43,350	-	-
		Help Desk & Support Total	$ 1,304,821	$ 1,264,223	$ 1,264,225
		Total NDE DRE Capacity Building	$ 8,173,770	$ 7,985,772	$ 7,985,774
IIS NE Instructional Improvement System		**Objectives**			
	Identify key systems:	Identify and collectively procure state-sponsored systems			
NDE will build the capacity of Nebraska educators to continuously improve the quality of instruction for students through integrated, efficient systems. This will serve as an application store.	- learning management	Support vendors in integrating with SSO and state data system	$ 166,667	$ 166,667	$ 166,667
	- blended learning	Provide PD for districts	83,333	83,333	83,333
	- teacher/principal evaluation	System licenses paid by state	5,000,000	5,000,000	5,000,000
	- school climate	App Store			
	- career readiness	Survey Resources and Tools			
		Total Contractual Expenditures	5,250,000	5,250,000	5,250,000
		New Positions			
		Director, Instructional Improvement System	68,502	68,502	68,502
		Education Specialist IV	68,502	68,502	68,502
		Program Specialist III	60,523	60,523	60,523
		Applications Developer Lead	60,523	60,523	60,523
		Applications Developer Senior	55,047	55,047	55,047
		Applications Developer	50,099	50,099	50,099
		Applications Developer	50,099	50,099	50,099
		Total Salary Expenditures	413,295	413,295	413,295
		Benefits Expenditures	194,588	194,588	194,588
		Operating Expenditures	28,360	39,360	39,360
		Travel Expenditures	22,475	22,475	22,475
		Equipment Expenditures	66,640	-	-
		NE Instructional Improvement System Total	$ 5,975,358	$ 5,919,718	$ 5,919,718
		Total NDE DRE Budget Issue Requests	$ 14,149,128	$ 13,905,490	$ 13,905,492

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	15	12	11	13	15
Project Justification / Business Case	20	18	24	21	25
Technical Impact	18	15	18	17	20
Preliminary Plan for Implementation	8	7	6	7	10
Risk Assessment	8	6	6	7	10
Financial Analysis and Budget	18	14	15	16	20
			TOTAL	**80**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- Detailed plan that accounts for systemic change by increasing human, technical and fiscal resources. The proposal has clear goals, technically feasible deliverables and a rich set of milestones to gauge project progress. - Vision: State-wide access to timely, consistent and actionable business intelligence. Improved economies of scale by centralizing resources and standardizing systems and processes. - Goals are well defined	- The scope of the project is considerable requiring a great deal of communication and stakeholder involvement. - Did we consider vendor SAAS particularly as it relates to state sponsored SIS? Did we consider outsourcing Helpdesk Services to take advantage of the economies of scale? - Metrics for several of the goals (cost savings for example) are missing or poorly defined.
Project Justification / Business Case	- The proposal delineates three credible benefits including reduced accountability costs through standardization of data exchange, reduced technology costs through an enterprise approach to data warehousing/business intelligence and improved decision support through the equitable provision of data analytics to all school districts. - A grand idea with good architectural decisions. Open data standards to allow multiple vendors to play in the space, giving flexibility for schools to select solutions based on software scope or value add. Using collaborative purchase power to drive down costs.	- The project deliverables are highly dependent upon a level of data standardization never achieved across the 100s of K12 school districts in Nebraska. - It would be helpful to have more insight into how the investment return is calculated and where these funds are redirected too. If the resources remain in the districts working on other initiatives it should not be reported as a savings.
Technical Impact	- The proposal constitutes a systemic consideration of data gathering, warehousing, analysis and reporting. - Other states have implemented a similar model. - Strong use of open data standards and the resulting implementation flexibility are major strengths of this project.	- The greatest concern of the reviewer is achieving the operational success necessary to a leverage the functional capacity. - Availability of experienced and quality staff to perform the key functions.
Preliminary Plan for Implementation	- The author provides a clear operational/functional roadmap while identifying key stakeholder partners.	- The specific roles of stakeholder partners is vague and does not, in all cases, match their current capacities. - Recruiting, developing and retaining key talent at established salary levels. - There are a significant number of moving parts in this project and many of the critical milestones have external dependencies beyond the control of the project team. The project plan as proposed does make nominal attempts to plan around these risks, but the critical date issues could easily compound and place the project budget at significant risk by extending the implementation by a significant margin.
Risk Assessment	- Risks have been identified and key dependencies recognized.	- Dependencies associated with the work of stakeholder agencies cannot be fully mitigated

Section	Strengths	Weaknesses
	- Risks are well identified.	within the context of the proposed project. This is less a failing of the proposed and more a recognition of the difficulties associated with interagency projects. - Hiring and Retaining Key talent. - The mitigation strategies for external risks (vendor responsiveness to implementation timelines) seem to be optimistic enough to put the project at significant risk.
Financial Analysis and Budget	- Costs and overall budget is clearly defined. - If all goes well, the budget seems very reasonable.	- Proposed salaries for key personnel look very low and will make attracting qualified applicants difficult. - Detailed Justification of Staffing levels and source for Compensation benchmarks. - If the project Is significantly delayed by external risks, additional funding could be required to extend the project timeline.

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
13-03	Department of Education	Instructional Improvement Systems

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 recent Nebraska Education Data Systems study, in response to Legislative Resolution 264, found that Nebraska spends an estimated $100 million annually for technology systems, software systems, and accountability data submissions by the public school districts and the Nebraska Department of Education (NDE). The systems and applications are largely focused on satisfying Federal and State accountability reporting requirements and do not directly contribute to supporting teaching and learning. The districts submit annual collections of data to support accountability to the state using a combination of automated and manual methods. An estimated 655,200 hours are spent by districts preparing the required collections for each year's accountability data submission.

Each district has selected its own set of administrative, teaching and learning, and back office applications and there is a large disparity in the number of applications available in small districts versus larger districts due to budget, staff, and capacity. Outside of Nebraska's largest districts, the digital tools are poorly integrated, there is little support for data-driven decision-making, and modern tools are not available to support instructional improvement necessary for the state's education initiatives of blended learning, teacher and principal evaluation, career readiness, and continuous school improvement.

Nebraska's network of Educational Service Units (ESUs), the ESU Coordinating Council (ESUCC), and Network Nebraska are all contributing to improving the capabilities and the efficiencies of the data systems for the districts. However, the coordination, support, and access for systems can be dramatically improved and serves as the basis for this multi-faceted approach to develop a statewide data system that builds long-term capacity, efficacy, and efficiency for the system of education. The study established 10 recommendations that included five work streams; leverage work conducted using the federal $4.3 million SLDS grant scheduled to end June 2015.

The proposed implementation roadmap for the Nebraska Education Data System estimates a three-year investment of $41,960,110, roughly evenly split across the three years. The rollout plan targets a phase in process over three years that could include 50 districts the first year, 150 the second year, and 245 during the third year resulting in cost savings and efficiencies that will also provide a financial return from substantially-reduced accountability costs and from reduced technology costs to districts. The projected cumulative net return for the investment over five years is $44.8 million. However, the primary benefits from the recommended investments will come from a greatly improved instructional system that improves student performance leading to greater student success.

FUNDING SUMMARY

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Nebraska Department of Education Infrastructure Activities

			Year 0 FY 2015 SY 2014-2015 9 Districts	Biennium Budget Request Year 1 FY 2016 SY 2015-2016 50 Districts	Year 2 FY 2017 SY 2016-2017 150 Districts	Year 3 FY 2018 SY 2017-2018 245 Districts
1	**Nebraska Education Infrastructure**	**Activities and Objectives**				
		Pilot initial SIS vendor Ed-Fi interfaces	Identify and collectively procure state-sponsored SIS(s)			
		Pilot assessment vendor interfaces	Support SIS Vendor Ed-Fi interfaces	$ 166,667	$ 166,667	$ 166,667
	NDE will leverage the Ed-Fi infrastructure to connect source systems and drive down costs.		Support assessment vendor Ed-Fi interfaces	166,667	166,667	166,667
			Other source system interfaces to Ed-Fi (HR, SRS, applications)	250,000	250,000	250,000
			Support transfer to state supported systems in years 2 and 3	166,667	166,667	166,667
			Develop identity management solution for statewide single sign-on	100,000	100,000	100,000
			ESUCC infrastructure	500,000	500,000	500,000
			Infrastructure scaling and security audit activities	250,000	250,000	250,000
			Total Contractual Expenditures	1,600,000	1,600,000	1,600,000
			New Positions			
			Chief of Staff	60,523	60,523	60,523
			Chief Technology Officer	68,502	68,502	68,502
			Lead	60,523	60,523	60,523
			Senior	55,047	55,047	55,047
			Analyst	50,099	50,099	50,099
			Analyst	50,099	50,099	50,099
			Total Salary Expenditures	344,793	344,793	344,793
			Benefits Expenditures	165,264	165,264	165,264
			Operating Expenditures	23,805	23,805	23,805
			Travel Expenditures	10,395	10,395	10,395
			Equipment Expenditures	60,360	-	-
			Nebraska Education Infrastructure Total	$ 2,204,617	$ 2,144,257	$ 2,144,257
2	**NDE Data Collection System**	**Objectives**				
		Accountability Pilot - Integrate CDC, Staff, NSSRS	Statewide rollout with dual submissions (rollout plan based on SIS vendor)	$ 500,000	$ 500,000	$ 500,000
	NDE will reduce the burden of accountability data submissions on districts through automated process leveraging the Ed-Fi infrastructure.		Develop and validate state accountability reports	500,000	500,000	500,000
			Develop business rules and validation for automatic accountability submissions	250,000	250,000	250,000
			Develop and validate federal accountability report submissions	500,000	500,000	500,000
			Develop district review and approval infrastructure	250,000	250,000	250,000
			Total Contractual Expenditures	2,000,000	2,000,000	2,000,000
			New Positions			
			Director, Accountability Data Systems	68,502	68,502	68,502
			Program Specialist III	55,047	55,047	55,047
			Database Analyst Lead	60,523	60,523	60,523
			Database Analyst Senior	55,047	55,047	55,047
			Database Analyst	50,099	50,099	50,099
			Database Analyst	50,099	50,099	50,099
			Total Salary Expenditures	339,317	339,317	339,317
			Benefits Expenditures	164,380	164,380	164,380
			Operating Expenditures	23,805	23,805	23,805
			Travel Expenditures	14,070	14,070	14,070
			Equipment Expenditures	37,680	-	-
			NDE Accountability Data System Total	$ 2,579,252	$ 2,541,572	$ 2,541,572
3	**NDE Education Intelligence System**	**Objectives**				
		Pilot SLDS Student-Level Dashboard	Dashboard statewide rollout	$ 200,000	$ 200,000	$ 200,000
			Dashboard updates and extensions	500,000	500,000	500,000
			District data warehouses and reporting layer	333,333	333,333	333,333
			District data warehouse security layer (with and without de-identification)	250,000	250,000	250,000
	NDE will create education intelligence - access to actionable insight - through a warehouse, business intelligence tools, and increased internal capacity.		NDE data warehouse cubes and BI layer	166,667	166,667	166,667
			Total Contractual Expenditures	1,450,000	1,450,000	1,450,000
			New Positions			
			Chief Privacy Officer	79,873	79,873	79,873
			Director, Data Research and Evaluation	68,502	68,502	68,502
			Database Analyst Lead	60,523	60,523	60,523
			Database Analyst Senior	55,047	55,047	55,047
			Database Analyst	50,099	50,099	50,099
			Database Analyst	50,099	50,099	50,099
			Total Salary Expenditures	364,143	364,143	364,143
			Benefits Expenditures	168,387	168,387	168,387
			Operating Expenditures	24,510	35,510	35,510
			Travel Expenditures	17,680	17,680	17,680
			Equipment Expenditures	60,360	-	-
			NDE Education Intelligence System Total	$ 2,085,080	$ 2,035,720	$ 2,035,720
4	**Help Desk & Support**					
		Virtual Help Desk Pilot - Dashboards	Expand help-desk support to include Year 1,2 & 3 systems	$ 50,000	$ 50,000	$ 50,000
	NDE, along with the ESUCC and ESU's, will provide technical support for Nebraska education data systems through a virtual help desk and coordinated knowledge transfer.	PD Curriculum	Develop professional development curriculum on Year 1,2 & 3 systems	50,000	50,000	50,000
			Integrate statewide ticketing system for "virtual help desk"	166,667	166,667	166,667
			Level 4 Support and Contracts	500,000	500,000	500,000
			Total Contractual Expenditures	766,667	766,667	766,667
			New Positions			
			Director, Project Management Office	68,502	68,502	68,502
			IT Help Desk Specialist Senior	50,099	50,099	50,099
			IT Help Desk Specialist	41,706	41,706	41,706
			IT Help Desk Specialist	41,706	41,706	41,706
			Project Manager	50,099	50,099	50,099
			Project Manager	50,099	50,099	50,099
			Total Salary Expenditures	302,211	302,211	302,211
			Benefits Expenditures	158,393	158,394	158,395
			Operating Expenditures	23,805	26,555	26,555
			Travel Expenditures	10,395	10,396	10,397
			Equipment Expenditures	43,350	-	-
			Help Desk & Support Total	$ 1,304,821	$ 1,364,223	$ 1,364,225
			Total NDE DRE Capacity Building	$ 8,173,770	$ 7,985,772	$ 7,985,774
IIS	**NE Instructional Improvement System**	**Objectives**				
		Identify key systems:	Identify and collectively procure state-sponsored systems			
	NDE will build the capacity of Nebraska educators to continuously improve the quality of instruction for students through integrated, efficient systems. This will serve as an application store.	- learning management	Support vendors in integrating with SSO and state data system	$ 166,667	$ 166,667	$ 166,667
		- blended learning	Provide PD for districts	83,333	83,333	83,333
		- teacher/principal evaluation	System licenses paid by state	5,000,000	5,000,000	5,000,000
		- school climate	App Store			
		- career readiness	Survey Resources and Tools			
			Total Contractual Expenditures	5,250,000	5,250,000	5,250,000
			New Positions			
			Director, Instructional Improvement System	68,502	68,502	68,502
			Education Specialist IV	68,502	68,502	68,502
			Program Specialist III	60,523	60,523	60,523
			Applications Developer Lead	60,523	60,523	60,523
			Applications Developer Senior	55,047	55,047	55,047
			Applications Developer	50,099	50,099	50,099
			Applications Developer	50,099	50,099	50,099
			Total Salary Expenditures	413,295	413,295	413,295
			Benefits Expenditures	194,588	194,588	194,588
			Operating Expenditures	28,360	39,360	39,360
			Travel Expenditures	22,475	22,475	22,475
			Equipment Expenditures	66,640	-	-
			NE Instructional Improvement System Total	$ 5,975,358	$ 5,919,718	$ 5,919,718
			Total NDE DRE Budget Issue Requests	$ 14,149,128	$ 13,905,490	$ 13,905,492

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	Mean	Maximum Possible
Goals, Objectives, and Projected Outcomes	15	7	11	11	15
Project Justification / Business Case	20	15	24	20	25
Technical Impact	18	10	18	15	20
Preliminary Plan for Implementation	8	6	6	7	10
Risk Assessment	8	6	6	7	10
Financial Analysis and Budget	18	0	15	11	20
			TOTAL	70	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- Detailed plan that accounts for systemic change by increasing human, technical and fiscal resources. The proposal has clear goals, technically feasible deliverables and a rich set of milestones to gauge project progress.	- The scope of the project is considerable requiring a great deal of communication and stakeholder involvement that has not been historically in evidence. - Essentially a replica of Educational Capacity proposal
Project Justification / Business Case	- The proposal delineates three credible benefits including reduced accountability costs through standardization of data exchange, reduced technology costs through an enterprise approach to data warehousing/business intelligence and improved decision support through the equitable provision of data analytics to all school districts.	- The project deliverables are highly dependent upon a level of cooperation and agreement upon instructional methods not previously in evidence across the 100s of K12 school districts in Nebraska. - Same justification as Educational Capacity proposal
Technical Impact	- The proposal constitutes a systemic approach to engaging learners and instructors in a digital environment that honors teacher effectiveness as the key to gains in student achievement. The model calls for the foundation of guaranteed and viable curriculum supported by solid instructional design and evaluated through assessment for learning and of growth.	- The greatest concern of the reviewer is achieving the operational success necessary to a leverage the functional capacity. Moreover, this constitutes a fundamental shift in instructional delivery that represents 2nd order change for nearly all K12 teachers. It won't come easily, it won't come quickly, it won't come without leadership and it won't come without professional casualties. - Essentially a replica of Educational Capacity proposal
Preliminary Plan for Implementation	- The author provides a clear operational/functional roadmap while identifying key stakeholder partners.	- The specific roles of stakeholder partners is vague and does not, in all cases, match their current capacities. This is especially true in the area of professional development. - Essentially the same as Educational capacity proposal
Risk Assessment	- Risks have been identified and key dependencies recognized.	- Dependencies associated with the work of stakeholder agencies cannot be fully mitigated within the context of the proposed project. This is less a failing of the proposed and more a recognition of the difficulties associated with interagency projects - Essentially the same as Educational capacity proposal
Financial Analysis and Budget	- Costs and overall budget is clearly defined.	- Proposed salaries for key personnel look very low and will make attracting qualified applicants difficult. - Essentially the same as Educational capacity proposal

[Note: Reviewer 3 gave the same scores for both projects 13-02 and 13-03, with no comments on 13-03. The reviewer noted the similarities between the proposals and commented that they appear to be two facets of the same proposal.]

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
27-01	Department of Roads	Mainframe Migration

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 mainframe has been a valuable tool for the NDOR over the last 40 years. But as with all technologies, things change over time and organizations should evaluate the state of their applications; are we providing our users the functionality they need, are we doing it in a cost-effective manner and are we able to support these needs not just over the next few years but in the next 10 years or possibly longer.

That is what the NDOR is doing. We talked with our users about their current systems and their future needs and then looked at our current workforce and the ability to support this environment in the future as we face retirements and the ability to find the skills necessary to support the environment. We determined that the best course of action for the NDOR is to migrate our applications off of the mainframe to a platform we believe provides the functionality our users are looking for and also something that we are able to support in the future. Our plan is to create an RFP to hire an outside source either re-host or convert our mainframe applications to a technology centered on Microsoft and hosted by the Office of the CIO. An RFI has been completed that received two responses, which helped us in determining what we should budget for this project.

FUNDING SUMMARY

	Prior Expended	FY2015 Appr/Reappr	FY2016 Request	FY2017 Request	Future	Total
1. Personnel Costs						$ -
2. Contractual Services						
2.1 Design			$ 300,000.00	$ 300,000.00		$ 600,000.00
2.2 Programming			$ 700,000.00	$ 700,000.00		$ 1,400,000.00
2.3 Project Management			$ 200,000.00	$ 200,000.00		$ 400,000.00
2.4 Other						$ -
3. Supplies and Materials						$ -
4. Telecommunications						$ -
5. Training						$ -
6. Travel						$ -
7. Other Operating Costs						$ -
8. Capital Expenditures						
8.1 Hardware			$ 25,000.00	$ 25,000.00		$ 50,000.00
8.2 Software			$ 25,000.00	$ 25,000.00		$ 50,000.00
8.3 Network						$ -
8.4 Other						$ -
TOTAL COSTS	$ -	$ -	$ 1,250,000.00	$ 1,250,000.00	$ -	$ 2,500,000.00
General Funds						$ -
Cash Funds			$ 1,250,000.00	$ 1,250,000.00		$ 2,500,000.00
Federal Funds						$ -
Revolving Funds						$ -
Other Funds						$ -
TOTAL FUNDS	$ -	$ -	$ 1,250,000.00	$ 1,250,000.00	$ -	$ 2,500,000.00

PROJECT SCORE

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

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- The goal of consolidating application platforms and languages does help with staffing by limiting skills required by staff. - Clearly states goal and the objectives of the project.	- The expectation that this can be done with an existing COTS tool is not reasonable. The more likely outcome is the rewrite or replacement of the business system. - Measurement and assessment methods could use some fleshing out.
Project Justification / Business Case	- Based on the age of their applications, it is appropriate for NDOR to be exploring this to ensure they are where they need to be as an Agency in regards to their applications. - The plan recognizes the need to replace or update aging business systems. - Clearly defined tangible benefit of a significant cost savings.	- This might be a difficult project to determine tangible benefits due to the size of it and not knowing if NDOR has already mapped out interdependencies between applications to see when and how all applications are tied together. - The return on investment will be 4 years using the $1.4M estimate, 7 years if the costs are $2.5M. I do not think the all of the cost to convert these applications has been identified and the ROI will be much longer. - Still evaluating other solutions - no mention of any solutions being rejected.
Technical Impact	- NDOR understands the implications of staying where they are unless something is done in the way of training and teaching students to ensure these applications can be supported in the language they are currently written in. This project could potentially have a huge technical impact on the users within NDOR as there might be a need for extensive training for their staff. - When completed technology will be consolidated for DOR applications. - Clearly describes replacement of technology / platform that is growing increasingly difficult to support due to limited available resources.	- Unless applications are rewritten, you are just trading one dependency for another. - Complete reliance upon a single-vendor proprietary technology / platform. Does not address security related to the project objectives.
Preliminary Plan for Implementation	- NDOR has spent a considerable amount of time preparing for this possible change by issuing the RFI and researching as much as possible. - RFP has not been completed, but clearly describes intended plans, teams, resources, etc.	- Understand no timeline yet but NDOR needs to make sure they recognize all of the potential interdependencies with a project of this size and have strong project management. Still so early in the project it is difficult to tell if the plan for implementation is solid. - Many of the resources required for this implementation are the same ones mentioned in other plans. Are there adequate staffing to implement this solution in a timely manner.
Risk Assessment	- Reasonable examination of the risks. - Good description of possible barriers and mitigation strategy.	- Pretty generic risk assessment statements. Do not know how much time NDOR has spent on uncovering specific risks to any of their Division's as a result of this change. - There are multiple variables that could impact this project and many of them are outside of the control of the agency.
Financial Analysis and Budget	- RFI has been issued, some details have been identified. - Very clear, easy to understand, and quite reasonable to see the anticipated cost savings.	- Because it is so early in the project, it is difficult to say for sure what the financial benefits will be or the costs may be once interdependencies are determined. - All costs have not been identified and details on what technical solution (convert or translate) will be implemented are not clear.

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
27-02	Department of Roads	Stock Supply 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 existing supply system application is mainframe based and has been in production for over 15 years. This has been a useful tool for the Procurement section of the Operations Division and it has made it easier for all Divisions and District to order supplies necessary for them to do their day to day operations.

As with all software applications and with hands on day-to-day operations, there comes a time when users determine new needs, see opportunities to make improvements and take advantage of newer technologies. Moving applications off of the mainframe is but one of the Business Technology Support Division's (BTSD) goals. NDOR is a Microsoft based shop utilizing newer technologies such as C#/.NET and SQL Server 2012 while our software development methodology follows the Agile practice.

The goal of this project is finding or developing a system to provide for a warehouse management system (WMS) of supplies that will replace the legacy Supply Inventory System (SUP). The goal is to have a system that will allow for inventory control/monitoring of stock, ordering, receiving, picking, replenishments, shipping and returns while utilizing Radio Frequency Identification (RF) devices or other similar electronic scanning functionality. The WMS should also provide substantial reporting features that will help with overall WMS management. I have attached a Business Process Modeling report produced in-house which outlines the current Stock Supply system and describes what NDOR had envisioned to be a suitable replacement for the current system.

FUNDING SUMMARY

	Prior Expended	FY2015 Appr/Reappr	FY2016 Request	FY2017 Request	Future	Total
1. Personnel Costs						$ -
2. Contractual Services						
2.1 Design			$ 75,000.00	$ 75,000.00		$ 150,000.00
2.2 Programming			$ 75,000.00	$ 75,000.00		$ 150,000.00
2.3 Project Management			$ 30,000.00	$ 30,000.00		$ 60,000.00
2.4 Other						$ -
3. Supplies and Materials						$ -
4. Telecommunications						$ -
5. Training						$ -
6. Travel						$ -
7. Other Operating Costs						$ -
8. Capital Expenditures						
8.1 Hardware			$ 20,000.00	$ 20,000.00		$ 40,000.00
8.2 Software			$ 100,000.00	$ 100,000.00		$ 200,000.00
8.3 Network						$ -
8.4 Other						$ -
TOTAL COSTS	$ -	$ -	$ 300,000.00	$ 300,000.00	$ -	$ 600,000.00
General Funds						$ -
Cash Funds			$ 300,000.00	$ 300,000.00		$ 600,000.00
Federal Funds						$ -
Revolving Funds						$ -
Other Funds						$ -
TOTAL FUNDS	$ -	$ -	$ 300,000.00	$ 300,000.00	$ -	$ 600,000.00

[Note: After the project proposal was submitted, NDOR received responses to their Request for Information (RFI) relating to this project. Costs estimates from the responses ranged from $200,000 to $1,400,000 for the project.]

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	Mean	Maximum Possible
Goals, Objectives, and Projected Outcomes	14	12	15	14	15
Project Justification / Business Case	21	25	25	24	25
Technical Impact	17	15	18	17	20
Preliminary Plan for Implementation	9	7	8	8	10
Risk Assessment	9	7	10	9	10
Financial Analysis and Budget	15	15	19	16	20
			TOTAL	87	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- It would appear a significant amount of time has been spent on documenting and determining what is needed internally by NDOR. - Project team has identified requirements and business users were involved. - Clearly defined goals, objectives, and expected outcomes. Measurement and assessment methods are in line with real world system functions, and seem reasonable.	- Large systems with many users.
Project Justification / Business Case	- The justification is appropriate that if NDOR is able to successfully procure the right solution, the benefits they have listed are what should be realized. Department of Correctional Services is using a module in E1/JD Edwards for the same purpose so it might be beneficial to talk with them. - Time for mainframe solution to be replaced to enhance functionality. - Tangible (cost savings) and intangible benefits (better interface) seem reasonable and clearly defined.	- At this point, it does not appear that NDOR is able to determine an economic return on investment with this project. - Requirements definition may be more challenging than described, limited internal resources to complete the project
Technical Impact	- It is appropriate for NDOR to be considering updating this based on the age of what they currently have and its apparent inability to meet their internal needs. Would encourage them to work with OCIO for the placement of any hardware into the State Data Center as well as using the wireless access points that the State has standardized on. - Team has spent time collecting business flow and some requirements.	- Need to minimize the number of interfaces into the State ERP system so would encourage NDOR to utilize E1 if possible. - Technical interfaces with multiple financial systems will be complicated and require ongoing coordination and maintenance - Solution has not been selected, so technical descriptions are somewhat vague. Does not address security.
Preliminary Plan for Implementation	- The team that has been assembled to work on this project is diverse and represents NDOR business needs - Project team has worked with business clients to identify some requirements. - Teams and sponsors clearly defined.	- Although the RFP has not been completed, there should be a reasonable timeframe that can be established to get this implemented. - Finding vendor with solution to meet needs without modification will be difficult. - No RFP issued yet, so details somewhat lacking in terms of plan, etc.
Risk Assessment	- Project team has worked with business clients to identify some requirements - Possible barriers, and mitigation strategies are clearly defined.	- Solution is complex and requires interfaces to multiple systems.
Financial Analysis and Budget	- Financial information seems sufficient and reasonable.	- Pretty generic estimates. - Cost estimate is seems low for application of this size.

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
27-03	Department of Roads	ARMS Enhancements

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]

ARMS stands for Automated Right-of-Way Management System. In the late 90s, the head of our Right-of-Way (ROW) Division had this idea of a workflow solution to handle the ROW process from the time preliminary plans came to the Division until the purchasing of ROW had been completed and the project was to be archived. They worked with developers at NDOR to design a system that used Lotus Notes as the base, since at that time it was the e-mail system that was used by most State Agencies. In 2008, the Office of the CIO (OCIO) began to implement a statewide e-mail system based on Microsoft Outlook. Agencies were to eliminate other mail systems, which meant NDOR had to get rid of Lotus Notes. That being the case, we began work on developing an RFP to find a vendor who could provide a Commercial off the Shelf (COTS) system to replace ARMS. All of this, including the award of the RFP, was completed prior to the decision to implement OnBase as the Enterprise Content Management System (ECMS) for the State.

As with a number of software implementations, as the work was being done a number of enhancements arose once the ROW Division began testing the software. We also discovered a number of items that we overlooked in the RFP that should have been included. Also, change in leadership along with other key members in the Division has led to changes in their processes which need to be taken into account in the system. The implementation has been going on for over two years and final sign-off for the RFP is planned in June, 2015. Once that is done, we will be in maintenance mode and any enhancements or additional work must be done as separate statements of work. That is the reason for this project.

FUNDING SUMMARY

	Prior Expended	FY2015 Appr/Reappr	FY2016 Request	FY2017 Request	Future	Total
1. Personnel Costs						$ -
2. Contractual Services						
2.1 Design			$ 75,000.00	$ 75,000.00		$ 150,000.00
2.2 Programming			$ 100,000.00	$ 100,000.00		$ 200,000.00
2.3 Project Management			$ 75,000.00	$ 75,000.00		$ 150,000.00
2.4 Other						$ -
3. Supplies and Materials						$ -
4. Telecommunications						$ -
5. Training						$ -
6. Travel						$ -
7. Other Operating Costs						$ -
8. Capital Expenditures						
8.1 Hardware			$ -	$ -		$ -
8.2 Software			$ -	$ -		$ -
8.3 Network						$ -
8.4 Other						$ -
TOTAL COSTS	$ -	$ -	$ 250,000.00	$ 250,000.00	$ -	$ 500,000.00
General Funds						$ -
Cash Funds			$ 250,000.00	$ 250,000.00		$ 500,000.00
Federal Funds						$ -
Revolving Funds						$ -
Other Funds						$ -
TOTAL FUNDS	$ -	$ -	$ 250,000.00	$ 250,000.00	$ -	$ 500,000.00

PROJECT SCORE

Section	Reviewer 1	Reviewer 2	Reviewer 3	**Mean**	Maximum Possible
Goals, Objectives, and Projected Outcomes	12	10	15	12	15
Project Justification / Business Case	20	19	22	20	25
Technical Impact	15	16	15	15	20
Preliminary Plan for Implementation	6	6	7	6	10
Risk Assessment	7	6	10	8	10
Financial Analysis and Budget	15	13	18	15	20
			TOTAL	**77**	100

REVIEWER COMMENTS

Section	Strengths	Weaknesses
Goals, Objectives, and Projected Outcomes	- New systems moves away from Lotus notes and uses enterprise content management solution. - Clearly defined goals, objectives, outcomes, etc.	- It is not clear on the division of work to be done in the ROW application or ECM.
Project Justification / Business Case	- The justification is appropriate. - Project makes use of enterprise solutions. - Automation and improved records management are reasonable justifications for a project such as this.	- It would appear that this project is a result of missing items in the original RFP that was issued for the replacement of their automated ROW system. NDOR needs to ensure that this second attempt they are making will be all inclusive of their needs. - Scope of work is not clear - No indication of other solutions evaluated.
Technical Impact	- DOR has experience with solutions to be implemented.	- NDOR needs to ensure they have a clearly defined scope to their "definition of change" comment otherwise this could become quite costly for them. - Scope of work to be implemented in ROW and ECM not clear. - Overall technical impact is vague. Does not address security.
Preliminary Plan for Implementation	- Teams and sponsors clearly identified.	- Because the initial project is not completed, it is hard to evaluate the implementation for the phase 2 part of this project. It would appear, based on the comments in the executive summary, that strong project management needs to be put into place to ensure the deliverables are well defined and delivered in a timely manner. - Current project not completed scope of work not well defined. - No identification of plans.
Risk Assessment	- It looks like NDOR has a contingency plan to ensure that they are able to complete this project. - Reasonable description of possible barriers and good mitigation strategies identified.	- ROW projected not implemented and ECM work not defined.
Financial Analysis and Budget		- Not too much detail - these are pretty generic categories. - Without scope of work defined, cost cannot be estimated. Information provided is a ball park number? - Difficult to judge the financial aspect when technical impact is vague, but seems likely reasonable with the provided information.

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:	**LINK – Procurement**			Contact:		**Bo Botelho**
Start Date	01/14/2013	Orig. Completion Date	10/31/2013	Revised Completion Date		~~01/06/2014~~ Pending
	December	October	September	July	May	March
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

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.

Project:	**Network Nebraska Education**			Contact:		**Tom Rolfes**
Start Date	05/01/2006	Orig. Completion Date	06/30/2012	Revised Completion Date		08/01/2015
	December	October	September	July	May	March
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): $717,781 ($387,510 has been expended)

Comments

December update:
Looking ahead to the fall 2014 procurement, Omaha commodity Internet will be rebid.. 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 become 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.

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.

Additional Comments/Concerns:
The Network Nebraska-Education Participation Fee fund account has been updated with the 2014-15 estimated costs and the 1st quarter UNCSN invoice submitted on 11/12/2014. However, some expenditures from UNCSN may have been mislabeled in the wrong budget line categories and will be corrected in the next monthly report.

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.

Project:	**Nebraska State Accountability (NeSA)**		Contact:		**John Moon**	
	(formerly Statewide Online Assessment)					
Start Date	07/01/2010	Orig. Completion Date	06/30/2011	Revised Completion Date		6/30/2015
	December	October	September	May	March	February
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 ($1,117,250.25 has been expended)

Comments

December update:

The student data will be uploaded to DRC for NeSA-Writing (NeSA-W) Operational Tests on December 5, 2014. The NeSA- W window is scheduled for January 19 through February 6, 2015 while districts have been conducting practice tests for NeSA-W since August 29, 2014. NDE has encouraged districts to participate in the NeSA-W practice tests with over 7,379 tests completed so far. Students have completed 1072 NeSA-W field test since the window opened on November 10, 2014. There have been minimal reports of any technology issues. The testing engine is the same for field testing and for secure operational testing.

NeSA-W test administration training for test administrators and N-TACS have been scheduled for January 5th, 6th, and 7th and invitations posted on the NDE Assessment website, http://www.education.ne.gov/Assessment/Index.html .

DRC and NDE has responded to district concerns about chromium browser "bug" that randomly turns on the "overwrite" mode and the connection requirement for dictionary/thesaurus/spell check tools to work. More technical explanation was posted on the eDIRECT site for districts to access.

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.

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.

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
	December	October	September	July	May	March
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: $10,820,003 ($8,915,330.26 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.

December update:
All issues on the process have been alleviated and the quote, invoicing and billing process has been addressed and refined. Weather conditions should not be a big factor over the next couple of months as the majority of the work to be completed will be inside buildings and/or shelters.

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.

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 December, 2014

Project:	**MMIS**			Contact:		
Start Date	N/A	Orig. Completion Date	N/A	Revised Completion Date		N/A
	December	October	September	July	May	March
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 December, 2014

Project:	**District Dashboards**			Contact:	**Dean Folkers**	

Start Date	07/01/2013	Orig. Completion Date	06/30/2015	Revised Completion Date		
	December	October	September	July	April	March
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

December update:
The project is running behind the original baseline schedule by about five - six months. The primary cause for extended project duration are changes in the pilot SIS vendor implementation schedules. All three pilot SIS vendors, Pearson, Tyler Technologies and Infinite Campus, are experiencing delays in planned start of development and readiness for data staging with pilot districts. The project and sponsor have agreed to adjust the dashboard schedule to align with vendor schedules. The revised plan is to start staging activities in early 2015, dependent upon vendor progress, and reschedule the dashboard pilot testing for spring 2015. Delays in vendor implementation and data staging will have an impact on the planned start of data warehouse validation with production data. However, the project is still on schedule for data warehouse and accountability data mart pilot testing in the spring of 2015. Additionally, there have been delays in Nebraska SSO integration, development of the Nebraska SSO portal, on premise implementation for Ed-Fi v.Next and completion of dashboard co-development required for the initial pilot. These delays impact the overall timeline and budget but are not a significant factor in readiness for data staging with the pilot districts.

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.

Additional Comments/Concerns:
None

Project:	**EnterpriseOne System Upgrade**			Contact:	**Lacey Pentland**	
Start Date	10/01/2013	Orig. Completion Date	10/03/2014	Revised Completion Date		TBD
	December	October	September	July	May	March
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 ($1,096,750.20 has been expended)

Comments

December update:

The EnterpriseOne 9.1 system is stable and the modification disposition phase was completed on 11/10/2014. Functional testing started 10/20/2014 with a target date for completion on 12/11/2014. UAT is in the planning stages, a Mock Go-Live conversion is scheduled to start on 12/12/2014 in preparation for the UAT phase.

Current work completed:
- Retrofit Modification was completed (including BI Publisher) on 11/10/2014.
- Completed pending CNC items found in further analysis. This included syncing BI Publisher objects across environments and installed dcLINK ASU in PD910.
- Additional Wipro resource for FA/CAMS was not on boarded.
- Continued Functional Testing since last update on 10/8/2014.
- Completed the analysis of objects not in projects and got them promoted to PY910 for functional testing
- (Approximately 1000+).

Next Steps:
- Functional Testing scheduled to be completed by 12/11/2014.
- Complete pending CNC items: This includes JDE.INI, Data Dictionary, UDC (User Defined Codes) changes,
- BI Publisher server configuration and complete the dcLINK upgrade for UAT Phase.
- UAT Phase: Creation of PD910 and Functional team in planning stages.
- Mock Go-Live Conversion scheduled to begin on 12/12/2014.

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.

Project:	**Medicaid Eligibility & Enrollment System**		Contact:		**Eric Henrichsen**	

Start Date	10/28/2014	Orig. Completion Date	06/30/2016	Revised Completion Date		N/A
	December	**October**	**September**	**July**	**May**	**March**
Overall Status	🔴	🟡	⚪	⚪	⚪	⚪
Schedule	🟡	🟡	⚪	⚪	⚪	⚪
Budget	🟢	🟢	⚪	⚪	⚪	⚪
Scope	🟡	🟢	⚪	⚪	⚪	⚪

Project Description

The Affordable Care Act (ACA) included numerous provisions with significant information systems impacts. One of the requirements was to change how Medicaid Eligibility was determined and implement the changes effective 10/1/2014. As a result of the lack of time available to implement a long-term solution, the Department of Health and Human Services implemented a short-term solution in the current environment to meet initial due dates and requirements. This solution did not meet all Federal technical requirements for enhanced Federal funding but was approved on the assumption that a long-term solution would be procured. An RFP was developed and procurement has been completed with Wipro selected as the Systems Integrator for an IBM/Curam software solution.

Project Estimate: $57,741,564 ($9,110,499 has been expended)

Comments

December update:

The project continues to have a slow start and the vendor is having difficulties developing an acceptable integrated project plan and project approach. "Business Process Reengineering" (review of Curam functionality and attempt to understand where state requirements vary from what exists) sessions have nearly completed but next steps are not very clear and completely agreed upon. The project and vendor are making improvements in many areas, but there is still cause for general concern and action plans needed. The vendor has delivered a "Go To Green" plan with improvement actions and due dates listed.

October update:

The official kick-off for the project occurred on 8/28/2014. A four month contracting period impacted Wipro's ability to keep Key Personnel on the project. 4 of 6 Key Personnel have been replaced due to the start gap generated by the contracting process. Once the project started the project was hindered by the lack of a fully developed Integrated Project Plan, as well as a documented approach (beyond what was stated in the RFP) for how the project would be organized and the scope of the working groups. The project manager from Wipro has been changed and corrective actions are under way to finalize the Project Plan and Approach.

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.**

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

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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.

<u>Capture Scale for digitizing:</u> 1:2400
<u>Projection:</u> Nebraska State Plane Coordinate System
<u>Datum:</u> North American Datum of 1983 (NAD83)
<u>Source:</u> 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 "1ST" 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

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
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

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
			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

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

GeoComm

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

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 GIS Council Street Centerline and Address Working Group
Public Comment Review and Recommendations for
NITC 3-205 Street Centerline and NITC 3-206 Address
12.01.2014

The following are comments and recommendations to recent public comments received by the NITC Technical Panel for the NITC 3-205 Street Centerline and NITC 3-206 Address standards. The GIS Council has also added additional attribute fields for both Street Centerline and Address standard and follow each section. This review is conducted by various NITC GIS Council members and NITC GIS Council Street Centerline and Address Working Group members who were involved in development of the standards.

NITC 3-205: Street Centerline

GeoComm Comments (10/9/2014)

1.2 Spatial Representation
1.2.2.1 Digitizing

Reviewer Question/Comment: *Who is reviewing the data quality?*

GIS Council Comments: There are many components involved in the process to assure what data is meeting appropriate standards. This involves several entities having responsibilities and authorities. These are currently already outlined in Sections 1.5, 5 and 6. Additional specifics are also dealt with in other documents such as business plans, data models and specifications depending on the project.

Recommendation: No changes to standards at this time.

1.2.4.1 Lines (Polylines)

Reviewer Question/Comment: *"Actual address ranges" should be further defined. In rural settings, theoretical address ranges (following the address 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.*

GIS Council Comments: We recommend suggesting adding more information about actual versus theoretical address ranges for this section. Definition for theoretical is also referenced as the word 'potential' in other references.

Recommendation:

Modify the following information to section 1.2.4.1 to read,

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 <u>can be</u> represent<u>ed as theoretical (potential) or</u> actual address ranges for the line segment and stored in the feature attribute table of the data set.

It is recommended whenever possible to develop actual address ranges. Theoretical address ranges typically start with zero and end with 99 for each street centerline segment. This includes every address between zero and 99 that is contained within each segment. Actual address ranges are defined as the actual ranges that exist along a street. The ranges can start with either a zero or one and end with a number that best represents that range for each street centerline segment. This method is desirable, as it produces greater range accuracies compared to theoretical address ranges. This results in better representation of geocoded addresses in relation to a street centerline. However, this approach is more costly to derive as it requires additional verification at the field to determine the exact range. If potential ranges are used, it is recommended to keep the range to a level appropriate for the segment. For example, consider going from a segment starting at 100 to 150 compared to 100 to 198.

1.3.4 Street Name

Reviewer Question/Comment: 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.

GIS Council Comments: This section indicates the requirements for street naming as outlined by NENA and FGDC. Because data will be consolidated into a statewide model, NENA is suggesting that all jurisdictions define their data layers and attributes the same as they are specified in the upcoming release of the NENA NG9-1-1 GIS Data Model standard. So this would mean it would be in best interest that the MSAGs, Automatic Location Information (ALI), and local addressing standards are encouraged to update their databases according to this standard.

Recommendation:

Add the following information at the end of section 1.3.4 to read,

For public safety jurisdictions who maintain a Master Street Address Guides (MSAG), Automatic Location Information (ALI), and other local addressing standards are encouraged to update their databases to these standards. The NG9-1-1 requirements, as defined by NENA, define data layers and attributes to be the same throughout each of these databases since they will need to be standardized anyway in a statewide model.

GIS Workshop Comments (10/9/2014)

1.2.2.1 Digitizing

Reviewer Question/Comment: *Are we to assume that the document is referring to NMAS 1:2400 mapping accuracy requirements per the NSSDA? If so, we recommend this to be explicitly stated AND the actual statistical test for this accuracy be stated somewhere in the document and referenced in the document.*

GIS Council Comments: Reference is to be made using NSSDA statistical and testing methodology as pointed out in FGDC Geospatial Positioning Accuracy Standards. "The NSSDA implements a statistical and testing methodology for estimating the positional accuracy of points on maps and in digital geospatial data, with respect to georeferenced ground positions of higher

accuracy." (Source: FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

Reference to conformance levels or accuracy thresholds can be referenced as National Map Accuracy Standards (NMAS) or Accuracy Standards for Large-Scale Maps through ASPRS. However, ASPRS formed the basis for update of the NMAS to address map scales smaller than 1:20,000.

Also to be clear, this section describes the <u>originating</u> data source requirements. We are referencing the use of orthoimagery as the source. With this being said, NENA GIS Data Collection and Maintenance Standards (NENA 02-014) references the necessary orthoimagery specifications for these types of applications. It is explicit in that "aerial photography shall be obtained at a maximum scale of 1:2400, 1 foot pixel resolution which produces a NSSDA Horizontal RMSE (Root Mean Squared Error) Accuracy of 5 feet or better."

Many other states are meeting or exceeding this standard for better control. The state of Kansas's E911 initiated a project last year to complete aerial acquisition having the same requirements we are suggesting. North Dakota provides recommendations even at a greater level of capture scale from imagery at 1:1200 in order to conduct a centerline and address point data creation.

Recommendation:
In Section 1.2.3 Spatial Accuracy section, add:

The minimum positional accuracy standards need to meet the following standard as set forth in the FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

In Section 7.0 Related Documents, add: FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

Reviewer Question/Comment: *In regards to the remark, "(well intentioned), but unnecessarily high accuracy requirements."*

GIS Council Comments: These requirements are well in the threshold needed for this data, particularly if it is already cited federally through NENA and FGDC standards. In addition, other states are benchmarking at the same requirements or even greater accuracy requirements. That is another reason why we are developing these standards as to reinforce and educate data developers on these standards on what is acceptable.

Recommendation: None

Reviewer Question/Comment: *In regards to remark, "If NITC adopts these standards…will cost NE tax payers…isn't worth the expense. 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."*

GIS Council Comments: The state has many intended uses for higher quality imagery including 'leaf-off' applications that go beyond what NAIP provides. Even though NAIP is free, it was intended only to be used for specific purposes. The NITC GIS Council is positioning a better

framework of geospatial data requirements statewide to allow other data sets to be derived from data such as ortho imagery.

There is a risk associated to using NAIP imagery at it's current resolution particularly when used to derive other data that have other data accuracy requirements. This risk can also be associated to costs and will eventually be more costly as it does not provide the adequate level of base imagery needed for the state for a multitude of applications it does not currently serve. So, eventually it will cost the tax payers even more if we continue using less accurate data sets for specific data requirements and applications. NAIP imagery has a resolution of 1 meter. This represents a horizontal accuracy of within +/- 3 meters relative to referenced USGS digital ortho quarter quadrangles. The current 'free' NAIP does not meet NENA or this standard.

Obviously, there will be a transition period from current data to new or enhanced data using current and higher accuracy imagery. Data acquisition for imagery continues to improve in both affordability and accuracy. These requirements outlined here are well within reason and justifiable in the cost particularly as it reduces risk from data derived from old and less accurate data sets.

The NITC 3-204 Imagery standards that are currently in place indicate the necessary requirements for resolution and accuracy for future imagery collection. These requirements are also tied to other data requirements and standards such as LiDAR as indicated in NITC 3-203 Elevation Acquisition using LiDAR as well as street centerline and address standards that are proposed here.

Recommendation:

In Section 1.2.2.1 Digitizing at the end, add:

For information regarding standards for imagery and LiDAR requirements for Nebraska, refer to the Elevation Acquisition using LiDAR Standards (NITC 3-203) and Imagery Standards (NITC 3-204).

In Section 7.0 Related Documents, add:
NITC 3-203 Elevation Acquisition using LiDAR Standards
NITC 3-204 Imagery Standards

1.3.6 Odd/Even Numbering (Address Parity)

Reviewer Question/Comment: *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.*

GIS Council Comments: The NITC GIS Council is well informed and familiar with this issue. We have placed these standards first so that we have a benchmark of what needs to be met. Several steps need to take place prior to operations to meet these standards, particularly governance. Therefore, it is not a question for these standards but merely for a governance plan and then operations to meet standards. These items are already in discussion and being recommended to appropriate entities involved in the matter.

Recommendation: This is not a standard issue but dealt with in governance and operational plans.

1.4 Data Format

Reviewer Question/Comment: *We recommend that NITC consider additional suitable data formats so as to not favor one particular vendor.*

GIS Council Comments: The importance of these recommendations are to assure that technical aspects are met for meeting the topological requirements of these standards. With this being said, this can limit the choices of software and the data file storage format requirements. If we included other formats this can limit the ability to create and test topology. For example, topology rules are not able to be applied to Shapefiles and would need to be converted to another format. Having a standardized process will also reduce additional costs by reducing additional steps through complex changes to formatting and conversion of data sets. We also want to be clear that we also need to provide the data back in similar fashion so we will recommend a statement to that effect.

Recommendation:

Modify 1.4 Data Format through the following modification:

The data format provided will need to be in a format that can be interpreted by commercial GIS software, preferably as an Esri geodatabase. A geodatabase schema including domains can be provided by contacting the State of Nebraska, Office of the CIO GIS Shared Services. Street centerline data stored on NebraskaMAP will be in an Esri geodatabase format but provided through various formats for other users to consume.

Other supporting tabular data will need to be provided in MS ACCESS, DBF, or MS SQL formats.

General Comments

The following questions were submitted as general comments and are best addressed through governance and operational plans. These standards become effective as soon as NITC approves them. However, the NITC GIS Council realizes a transition will need to occur and plans are currently being outlined to provide this guidance.

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 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.

GIS Council Comments

The National Emergency Numbering Association (NENA) have made some additional requirements that will require us to update our attribute tables.

Modify the section 1.3.4 Data Schema and Descriptions section.

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
Street_Status_CD	String	1	Status code indicating operational condition of street (1=open, 2=retired, 3=temporarily closed, 4=under construction)	StreetStatus	~~O~~ R
FullStreet	String	150	Unique ID of corresponding street centerline segment	N/A	R
OneWay	String	2	Signifies if the segment is oneway in direction	OneWay	O
Travel	String	20	Direction of travel for divided roadways	N/A	O
RoadClass	String	15	This is the classification for the road segment as adopted from the MAF/TIGER Feature Classification Codes (MTFCC) Attachment D	RClass	O
SurfType	String	10	This is the surface type of the segment	SType	O
ZCoordS	String	Number	Elevation at the start of the segment node	N/A	R
ZCoordE	String	Number	Elevation at the end of the segment node	N/A	R
ESNCenter	String	5	Responsible ESN responder at centerline	N/A	O
UpdateBy	String	50	Person who made the last update to the record	N/A	M
ActiveDT	Date	26	Date when the segment is activated or becomes available for use.	N/A	M
UActiveDate	Date	26	Date when the segment becomes unactive or not available for use.	N/A	RC

OneWay

Domain	Description
FT	One way travel from FROM or Start Node to TO or End Node
TF	One way travel from TO or END node to FROM or Start Node
B	Travel in both directions allowed

RClass

Domain	Description
1	Primary
2	Secondary
3	Local
4	Ramp
5	Service
6	Vehicular Trail
7	Walkway
8	Alley
9	Private
10	Parking Lot
11	Trail
12	Other

SType

Domain	Description
1	Paved
2	Gravel
3	Soil
4	Proposed
5	Minimum

Delete Domain Table UnitType as it is not needed

NITC 3-206 Address

1.2.2.1 Digitizing

Reviewer Question/Comment: *Are we to assume that the document is referring to NMAS 1:2400 mapping accuracy requirements per the NSSDA? If so, we recommend this to be explicitly stated AND the actual statistical test for this accuracy be stated somewhere in the document and referenced in the document.*

GIS Council Comments: Reference is to be made using NSSDA statistical and testing methodology as pointed out in FGDC Geospatial Positioning Accuracy Standards. "The NSSDA implements a statistical and testing methodology for estimating the positional accuracy of points on maps and in digital geospatial data, with respect to georeferenced ground positions of higher accuracy." (Source: FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

Reference to conformance levels or accuracy thresholds can be referenced as National Map Accuracy Standards (NMAS) or Accuracy Standards for Large-Scale Maps through ASPRS. However, ASPRS formed the basis for update of the NMAS to address map scales smaller than 1:20,000.

Also to be clear, this section describes the <u>originating</u> data source requirements. We are referencing the use of orthoimagery as the source. With this being said, NENA GIS Data Collection and Maintenance Standards (NENA 02-014) references the necessary orthoimagery specifications for these types of applications. It is explicit in that "aerial photography shall be obtained at a maximum scale of 1:2400, 1 foot pixel resolution which produces a NSSDA Horizontal RMSE (Root Mean Squared Error) Accuracy of 5 feet or better."

Many other states are meeting or exceeding this standard for better control. The state of Kansas's E911 initiated a project last year to complete aerial acquisition having the same requirements we are suggesting. North Dakota provides recommendations even at a greater level of capture scale from imagery at 1:1200 in order to conduct a centerline and address point data creation.

Recommendation:
In Section 1.2.3 Spatial Accuracy section, add:

The minimum positional accuracy standards need to meet the following standard as set forth in the FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

In Section 7.0 Related Documents, add: FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)

Reviewer Question/Comment: *In regards to the remark, "(well intentioned), but unnecessarily high accuracy requirements."*

GIS Council Comments: These requirements are well in the threshold needed for this data, particularly if it is already cited federally through NENA and FGDC standards. In addition, other

states are benchmarking at the same requirements or even greater accuracy requirements. That is another reason why we are developing these standards as to reinforce and educate data developers on these standards on what is acceptable.

Recommendation: None

Reviewer Question/Comment: *In regards to remark, "If NITC adopts these standards…will cost NE tax payers…isn't worth the expense. 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."*

GIS Council Comments: The state has many intended uses for higher quality imagery including 'leaf-off' applications that go beyond what NAIP provides. Even though NAIP is free, it was intended only to be used for specific purposes. The NITC GIS Council is positioning a better framework of geospatial data requirements statewide to allow other data sets to be derived from data such as ortho imagery.

There is a risk associated to using NAIP imagery at it's current resolution particularly when used to derive other data that have other data accuracy requirements. This risk can also be associated to costs and will eventually be more costly as it does not provide the adequate level of base imagery needed for the state for a multitude of applications it does not currently serve. So, eventually it will cost the tax payers even more if we continue using less accurate data sets for specific data requirements and applications. NAIP imagery has a resolution of 1 meter. This represents a horizontal accuracy of within +/- 3 meters relative to referenced USGS digital ortho quarter quadrangles. The current 'free' NAIP does not meet NENA or this standard.

Obviously, there will be a transition period from current data to new or enhanced data using current and higher accuracy imagery. Data acquisition for imagery continues to improve in both affordability and accuracy. These requirements outlined here are well within reason and justifiable in the cost particularly as it reduces risk from data derived from old and less accurate data sets.

The NITC 3-204 Imagery standards that are currently in place indicate the necessary requirements for resolution and accuracy for future imagery collection. These requirements are also tied to other data requirements and standards such as LiDAR as indicated in NITC 3-203 Elevation Acquisition using LiDAR as well as street centerline and address standards that are proposed here.

Recommendation:

In Section 1.2.2.1 Digitizing at the end, add:

For information regarding standards for imagery and LiDAR requirements for Nebraska, refer to the Elevation Acquisition using LiDAR Standards (NITC 3-203) and Imagery Standards (NITC 3-204).

In Section 7.0 Related Documents, add:
NITC 3-203 Elevation Acquisition using LiDAR Standards
NITC 3-204 Imagery Standards

1.3.1 General Address Components

Reviewer Question/Comment: *Pertaining to, "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?*

GIS Council Comments: Many of these comments are handled within other governance and operational plans and need no recommendations in these standards.

Because data will be consolidated into a statewide model, NENA is suggesting that all jurisdictions define their data layers and attributes the same as they are specified in the upcoming release of the NENA NG9-1-1 GIS Data Model standard. So this would mean it would be in best interest that the MSAGs and local authoritative addressing databases are encouraged to update their databases according to this standard. They need to be able to translate to a statewide address database. The required attributes for the database are clear and outlined with NENA and FGDC as to avoid duplication. Particularly, since each address is unique to the city and zip code it is being derived.

There are several entities having responsibilities and authorities. These are currently already outlined in Sections 1.5, 5 and 6. The format for a localized copy of addressing authorities need to coincide.

Recommendation:
In Section 1.3.1 General Address Components, modify:

Addressing authorities at the local level that maintain address data within their ~~Each~~ jurisdiction shall develop a master address database that can be referenced to the NAD 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.

Note: The reviewer did not make this comment in the Street Centerline standards. As to maintain consistency between the standards the following modifications will be made in the Street Centerline standards in Section 1.3.1 General Address Components.

Addressing authorities at the local level that maintain address data within their ~~Each~~ jurisdiction shall develop a master address database that can be referenced to the NSCD 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

Reviewer Question/Comment: *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?*

GIS Council Comments: This really depends on the situation and the ID needs to be considered in an agile approach. The UniqueID relates two objects – the digital point itself as stored in a table and characteristics about that point. As long as the Unique identifier maintains the tie to the characteristics of the data and is able to be coincident from a local database to the statewide database it would be accepted to reuse UniqueIDs. Addresses do not cease to exist but attribution about that point can change. There are cases where we may need to reroute services to a preexisting location. The only situation we have discussed to change or retire addresses is if a series of addresses where to be removed or renumbered due to changes in buildings destroyed and rebuilt (ie, several houses to tall buildings or complex of apartments). However, even in the case where the address may be similar but then you have multiple buildings, you still would need to track sub-address information in order to properly route callers to a location within that address.

It is much easier to maintain the original Unique ID to the same address and not reassign to a different address. There are other purposes for the NAD beyond public safety and we will need to maintain continuity of the statewide database with other databases that we have relationships to using the same UniqueID. Local jurisdictions can keep maintaining their defined ID as long as it is still has conformity to the NAD UniqueID. However, the standard also applies to a specific unique ID for the statewide database.

Recommendation:

Modify 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 the number associated from the local addressing authority. In certain cases, the unique identifier may change at the local level. This is acceptable and will also need to be reflected as the change to the statewide address point database.

1.4 Data Format

Reviewer Question/Comment: *We recommend that NITC consider additional suitable data formats so as to not favor one particular vendor.*

GIS Council Comments: The importance of these recommendations are to assure that technical aspects are met for meeting the topological requirements of these standards. With this being said, this can limit the choices of software and the data file storage format requirements. If we included other formats this can limit the ability to create and test topology. For example, topology rules are not able to be applied to Shapefiles and would need to be converted to another format. Having a standardized process will also reduce additional costs by reducing additional steps through complex changes to formatting and conversion of data sets. We also want to be clear that we also need to provide the data back in similar fashion so we will recommend a statement to that effect.

Recommendation:

Modify 1.4 Data Format through the following modification:

The data format provided will need to be in a format that can be interpreted by commercial GIS software, preferably as an Esri geodatabase. A geodatabase schema including domains can be provided by contacting the State of Nebraska, Office of the CIO GIS Shared Services. Address data stored on NebraskaMAP will be in an Esri geodatabase format but provided through various formats for other users to consume.

Other supporting tabular data will need to be provided in MS ACCESS, DBF, or MS SQL formats.

1.5 Maintenance

Reviewer Question/Comment: *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?*

Reviewer Question/Comment: *What would the NITC consider a "timely manner" for providing updates to the central database by the jurisdiction?*

GIS Council Comments: These questions are best addressed elsewhere in other governance and operational plans and need no recommendations in these standards.

Recommendation: None

1.6.2 Physical Location

Reviewer Question/Comment: *NSSDA over reaching. See comments and responses from earlier as found in 1.2.2.1 Digitizing.*

GIS Council Comments: The requirements by NSSDA are clear. You are making assumptions in your determination on whether you can digitize accurately using NAIP. Also, with "leaf-on" imagery many primary living structures will have trees cover part or all of the structure? How can you digitize from accurately from this data? There are also techniques to get necessary results that do not entail climbing on roofs with GPS.

Recommendation: None, NSSDA outlines the procedure as per our reference.

General Comments

The following questions were submitted as general comments and are best addressed through governance and operational plans. These standards become effective as soon as NITC approves them. However, the NITC GIS Council realizes a transition will need to occur and plans are currently being outlined to provide this guidance.

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 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.

Reviewer Question/Comment: The name "NAD" to easily confused as North American Datum and not accurate description of the database.

GIS Council Comments: The general users are not familiar with North American Datum. This is not an issue. It also does not make any sense to add Point as it is already inclusive of an address would be considered at a location.

Recommendation: No recommendation to change the name.

GIS Council Comments

Modify the section 1.3.4 Data Schema and Descriptions section.

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
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~~ R
MilePost	String	150	Mile marker or measurement at location	N/A	RC
NatGrid	String	15	This is the US National Grid address up to 10 digits at 1 meter	N/A	O
UpdateBy	String	50	Person who made the last update to the record	N/A	M
ActiveDT	Date	26	Date when the segment is activated or becomes available for use.	N/A	M
UActiveDate	Date	26	Date when the segment becomes unactive or not available for use.	N/A	RC

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

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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.

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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

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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.

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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)	SuffixAddres sNumber	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
Chrs	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

GIS Workshop

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.

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

Request for Waiver

Agency Name
Nebraska Department of Economic Development
301 Centennial Mall South
Lincoln, NE 68509

Contact Person
Kate Ellingson
Director of Marketing and Public Relations
kate.ellingson@nebraska.gov
402-471-3749

Title of NITC Standard and Guidelines
NITC 7-104: Web Domain Name Standard

Description of the problem or issue
We request waivers for the custom URLs associated with our Department's websites.

Description of agency's preferred solution, including additional information and justification showing good cause for the requested waiver.

- **Established programs and existing marketing materials**. We have invested substantial time and money in marketing the state of Nebraska and all of our programs. Materials feature existing custom URL websites. We've been using these custom URLs for many years. Many of our partner organizations, including overseas businesses would be adversely impacted by this change. We also have numerous marketing materials in other languages that would all be affected.

- **Helps with image recognition**. Our custom URLs help our clients remember the different web addresses easier.

- **Helps make our programs more visible in search results**. It's easier and more convenient for clients to find us when they can type the program name into a search engine and the website is similar to the program name. This also significantly improves our position in search rankings which is critical for economic development marketing efforts.

- **Better for Search Engine Optimization (SEO)**. It's crucial for SEO because any of our Google rankings and the links to our site are all tied to our domain. If we switch domain names, we may encounter SEO implications and experience potential damage to our search engine rankings. Switching domain names may cause international issues, example firewall issues in China.

- **International access would be impaired by a ".gov" URL.** The Department maintains offices in Japan and China. Our International Trade and Investment work requires a robust web presence. Specifically ".gov" URLs are difficult to access (often blocked) for individuals seeking to access our site and materials from these and other foreign locations.

We appreciate you taking the time to consider and understand why we have custom URLs.

Thank you.

Mr. Becker

At the request of Royce Schaneman, the Nebraska Wheat Board's executive director, I am forwarding to you a request from NWB for a waiver of compliance for an NITC Standard regarding websites. Responses to the waiver request questions are listed below in red. If you have any questions, or would need anything further from NWB in order to place this request under consideration, please feel free to contact our office. Thank you.

- Agency name
  The Nebraska Wheat Development, Utilization and Marketing Board, commonly referred to as the Nebraska Wheat Board or NWB
- Name, title, and contact information for the agency contact person regarding the request
  Royce Schaneman, Executive Director
  (402) 471-2358
  royce.schaneman@nebraska.gov
- Title of the NITC Standards and Guidelines document at issue
  NITC 7-104: Web Domain Name Standard
- Description of the problem or issue
1. Regarding section 1.4: NWB shares a website with the Nebraska Wheat Growers Association (NWGA), a non-profit, membership based organization as the two organizations share similar missions of promoting the wheat industry and aiding wheat farmers. In addition, sharing the site aids NWGA with a limited budget, to maintain a digital presence. The two organizations have always shared a website. NWGA originally purchased the domain name, while NWB renewed the rights when the original purchase term was up. Should the domain switch to Nebraska.gov, NWGA would not be able to place the new site on any promotional materials, as it is not a government entity. It's options would be to not advertise a website (not a good option in a digital age) or to create its own separate website (A difficult option for a limited-budget organization, which would also result in increased confusion as the association's stakeholders are used to the shared site format. In addition multiple materials or information like crop reports and educational materials provided on the website are targeted to the audiences for both NWGA and NWB). A third option, that would be preferred is detailed in the corresponding request below.
2. Regarding section 1.4 and 1.5: The December 31, 2014 deadline falls in the middle of the fiscal year. A limited budget has been set aside for promotional materials. All promotional and educational materials currently in the office have the website listed as www.nebraskawheat.com. NWB does not have the budget to redo all these materials within this fiscal year. Knowing the change will be needed, NWB could create room in the budget for FY 15-16.
3. Regarding section 1.5: NWB works with a contracted, private vendor to develop and update parts of the website content, including managing the various domains currently owned by NWB and NWGA. NWB requires time to allow them to adopt changes, and account for any other domains that are owned.
- Description of the agency's preferred solution, including a listing of the specific requirement(s) for which a waiver is requested
    1. The site maintained by both NWB and NWGA to this time has been www.nebraskawheat.com. For the purposes of promoting *on NWGA materials only* (NWB would use the Nebraska.gov) we would like to maintain use of the domain

nebraskawheat.com, in the format of routing those who would type in into their browsers to the Nebraska.gov version, where the content would be hosted.

2. Waiver to extend compliance deadline for NWB to January 1, 2016. NWB would purchase/secure the Nebraska.gov domain by December 31, 2014, but would like to extend the deadline to publicly promote until January 1, 2016. This would give NWB the time to budget for updated promotional and educational materials 15-16, as well as develop the new materials, order them, and have the materials produced and shipped to the office for distribution.

3. NWB would secure rights to the required .gov domains, e.g. nebraskawheat.ne.gov and/or nebraskawheat.nebraska.gov by the December 31, 2014 deadline. However, to ensure everything rolls over correctly, and to prevent confusion of having them release the new site domain when it matches none of the marketing materials, NWB requests a waiver of compliance on full utilization of the domain name until January 1, 2016.

- Any additional information and justification showing good cause for the requested waiver

NWB is a non-code state agency. We operate solely with checkoff dollars and R&D fees. This means we are held accountable by the farmers who pay the checkoff. It would be extremely difficult to justify to them, the throwing away of promotional materials in stock (and thus funds already spent) simply because the materials carry the www.nebraskawheat.com website. Extending the compliance deadline through January 1, 2016 would allow NWB to make use of the materials on hand, rather than wasting them.

Also, NWB and NWGA have put out significant quantities of both promotional materials and items, and educational materials over the last several years. All materials passed out contain the www.nebraskawheat.com. Allowing the use of the old site, only as a router to the new domain, would ensure the stakeholders who have those materials, are still able to access our website and the desired content.

Caroline Brauer

Ag Promotion Coordinator - Nebraska Wheat Board