

NITC 3-206

Address Standards

Review Version 5.0
(Date 12.12.2014)

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.

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 its physical location is represented by other supplemental resources, the point can be placed according to the supplement resources and needs to be confirmed with field verification.

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

1.2.1.2 Property Access

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

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



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

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

1.2.1.3 Other Placement Options

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

a) Parcels

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

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

b) Site

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

c) Geocoding from Road Centerlines

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

1.2.2 Data Development

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

1.2.2.1 Digitizing

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

Capture Scale for digitizing: 1:2400

Projection: Nebraska State Plane Coordinate System

Datum: North American Datum of 1983 (NAD83)

Source: Using aerial imagery that meets verified horizontal accuracy requirements for spatial resolution (12 inch minimum), preferably leaf-off. In cases where tree cover or other obstructions are identified in imagery, it will be necessary to conduct field verification of that location with a mapping grade GPS unit. The NAIP imagery therefore does not meet these accuracy standards.

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

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

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).

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

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)

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.

Addressing authorities at the local level that maintain address data within 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.

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. 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.

1.3.3 Use of Characters

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

1.3.4 Data Schema and Descriptions

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

Field Name	Field Type	Field Length	Field Description	Domain Name	Required Level
NEAddressID	String	12	Unique ID of address point where first 4 characters are the first 4 letters of each County name. The remaining 8 characters of the number are provided by the local addressing authority.	N/A	R

NEStreetID	Integer	20	Unique ID of corresponding street centerline segment	N/A	R
State_PID	String	30	County FIPS code plus local government PID number (See Statewide Parcel Database ID requirements)	N/A	R
County_ID	String	3	County FIPS code of where address point resides	CountyFIPS	R
PrefixAddressNumber	String	10	An extension that precedes the address number	N/A	R
AddressNumber	Integer	6	The numeric identifier of a location along a thoroughfare (i.e., 100, 2345, 31)	N/A	R
SuffixAddressNumber	String	15	An extension that follows the address number (i.e., A through Z)	SuffixAddressNumber	R
PreModifier	String	15	A street name modifier that precedes the street name. (i.e., Alternate, bypass, loop, private, spur, etc.)	PreModifier	R
PreDirectional	String	2	A street direction that precedes the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PreType	String	4	A street type that precedes the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
SeparatorElement	String	10	An element that precedes the StreetName which separates the PreType and StreetName	SeparatorElement	R
StreetName	String	30	Legal authoritative street name component of segment name	N/A	R
PostType	String	4	A street type that follows the street name (i.e., AVE, RD, ST, CIR, PL, PKWY, LN, DR, BLVD, ALY)	StreetType	R
PostDirectional	String	2	A street direction that follows the street name (i.e., N, S, E, W, NE, NW, SE, SW)	Direction	R
PostModifier	String	12	A descriptor that follows the street name and is not a suffix or a direction (i.e., Access, Central, Crossover, Scenic, Terminal, Underpass)	PostModifier	R
Building	String	60	The name of one among a group of buildings that have the same address number and street name, that are multiple independently named structures at the same address	N/A	R
Floor	String	10	A floor, story, or level within a building	N/A	O
NumberFloors	String	4	Number of floors in building	N/A	O
Room	String	10	A room identification in a building	N/A	RC

NumberRooms	String	4	Number of rooms in building or structure.	N/A	O
Seat	String	5	The place where a person may be located within a room or building.	N/A	O
Unit	String	4	A group or suite of rooms within a building that are under common ownership or tenancy, typically having a common primary entrance. (ie, A, 4, etc.)	N/A	R
UnitType	String	4	The unit type abbreviation. (ie, APT, BLDG, DEPT, FL, STE, UNIT)	UnitType	C
Location	String	20	For sub-address, other than building, floor, unit, room or seat. For example, northeast corner of building.	N/A	O
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	R
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	PointType	R

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

Comments	String	255	Comments or notes	N/A	O
URIAddData	String	255	Route Uniform Resource Identifier for additional information about the location or building (eg, blueprints, contact information). This is usually in the form of http://{domain}.	N/A	O

** Not required in full NG9-1-1 implementation, used in legacy systems.

1.4 Data Format

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 free upon request 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

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 its 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 which 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 be 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.

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 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 Public Review), 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 Public Review).
- 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."
- 7.10 FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix 3-D (FGDC-STD-007.3-1998)
- 7.11 NITC 3-203 Elevation Acquisition using LiDAR Standards
- 7.12 NITC 3-204 Imagery 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
Bld	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
DI	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
HI	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
KnI	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
MI	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
OvIk	Overlook
Park	Park
Pass	Pass
Path	Path
Pike	Pike
Pkwy	Parkway
PI	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
VI	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
WI	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