The STATE of OKLAHOMA GEOGRAPHIC INFORMATION NG9-1-1 and ADDRESSING STANDARD

Oklahoma GI Council / Office of Geographic Information / Oklahoma 9-1-1 Authority

Oklahoma Geographic Information Council Adopted: September 5, 2014

Draft Submitted for Public Review: May 2, 2014 – September 4, 2014

(Version 1.0)

Oklahoma Geographic Information Council Adopted: April 6, 2018

Draft Submitted for Public Review: November 3, 2017 – January 5, 2018

Oklahoma 9-1-1 Management Authority Adopted: May 3, 2018

Draft Submitted for Public Review: November 3, 2017 – January 5, 2018

Version 2.0

Oklahoma Address Standards

Article I. Introduction

This document shall serve as the primary reference document for Next Generation 9-1-1 (NG9-1-1) Geographic Information System (GIS) Components and Address Standards in the State of Oklahoma regarding GIS based addressing. The standard set forth is to be maintained, utilized, and distributed under the authority of the Oklahoma 9-1-1 Management Authority, the Oklahoma Geographic Information Council and the Oklahoma Office of Geographic Information. This standard is mandatory for NG9-1-1 purposes in the State of Oklahoma. The following guidelines should be incorporated into all addressing applications, both geospatial and tabular, to ensure interdisciplinary compatibility.

Article II. Background

Section 2.01 History

The Oklahoma Geographic Information Council (further known as GI Council) has continually adapted to the technological advancements within the GIS profession to provide the State of Oklahoma the best possible collective GIS resource since its inception in 1994. The current GI Council of 19 members, and the Office of Geographic Information (OGI) represent a professionally diverse cross section of the existing GIS community in Oklahoma, and operate under the following legislative authority.

The Oklahoma 9-1-1 Management Authority (further known as the 9-1-1 Authority) was created on November 1st, 2016 and developed a technical subcommittee that would oversee the deployment of NG9-1-1 in the State. A partnership was formed between the 9-1-1 Authority and the GI Council, with the goal of developing a Statewide GIS standard that will meet, or exceed the National Emergency Number Association (NENA) requirement for NG9-1-1 (NENA i3 standard).

Below are the legislative initiatives that support the overall goal of the GI Council and the 9-1-1 Authority partnership:

- 1994 **SB 722** Created the State GIS Council of eleven members under the Conservation Commission serving as the Chair
- 1995 **HB 1964** Added three members to the State GIS Council
- 2001 Amendment adding one member to the State GIS Council
- 2003 **Interim Study H2003-105** considered a State-wide Coordinator, adding more members to the State GIS Council, and the Authority to set policies / standards.
- 2004 **HB 2457** Changed the name of the State GIS Council to the State GI Council, added four

new members, created the Office of Geographic Information (OGI), and corresponding positions in the OGI; along with specifying duties for the OGI and the GI Council.

NG9-1-1 Standard Update - Oklahoma 9-1-1- Management Authority History

- 2016 *HB 3126 Created the Oklahoma 9-1-1- Management Authority and the position of the State 9-1-1 Coordinator, passed the Wireless 9-1-1 Bill to change funding, and require all 9-1-1 centers to follow the NENA Location Service's Standard.

Section 2.02 Legislative Duties

The 2004 Regular Session of the Oklahoma State Legislature set forth **§82-1501-205.1** and **§82-1501-205.3**, **HB 2457** includes the following duties for the GI Council and the Office of Geographic Information. The GI Council developed this address standard under the following legislation.

Below are the specific excerpts from existing State Statute.

- **§82-1501-205.1**
  A. The duties of the Council shall include overseeing the Office of Geographic Information concerning the following:
     1. Development, adoption, and recommendation of standards and procedures that may be applied to geographic information and Geographic Information Systems to promote consistency of data elements;

- **§82-1501-205.3**
  A. There is hereby established an Office of Geographic Information in the Oklahoma Conservation Commission.

  D. The Office shall:
     6. Develop, maintain, update, and interpret Geographic Information System standards under the direction of the Council, and working with state and local agencies;

NG9-1-1 Standard Update: Oklahoma 9-1-1 Management Authority Legislative Duties

- ***§63-2864**
  3. The powers and duties of the Oklahoma 9-1-1 Management Authority created in Section 3 of this act shall be to:

     4. Direct the Oklahoma Tax Commission to escrow all, or any portion of funds collected pursuant to the Oklahoma 9-1-1 Management Authority Act attributable to a public agency, if the public agency fails to:

        b. Meet standards of the National Emergency Number Association (**NENA**) limited to call-taking and caller-location technology or comply with an improvement plan to meet such standards as directed by the Authority,

Section 2.03 Need for a Standard

Addresses today are the primary reference commonly accepted as the indexing system used to represent specific geospatial locations in an easily searchable tabular format. The increasing integration

of geospatial information into every aspect of daily operations has led to the need for a statewide address standard. Throughout Oklahoma there are many authorities that assign addresses within their respective jurisdiction. The development of addressing systems throughout the state without an existing single point reference document has led to a diversity of datasets. In accomplishing the required tasks of the assigning agencies multiple methods have been employed to accommodate the unique functionality or overcome existing limitations. While many of the limitations that once constrained the development of addresses are no longer applicable today, there are several that are still very much a consideration for the assigning agency. The development of Oklahoma's address standard ensures the fundamental minimum requirements needed to accurately depict an address are met within any current accepted system today while preparing for future development. The development and integration of NG9-1-1 relies primarily on GIS data to accurately determine the location of the caller, in order to route the call to the proper Public Safety Answering Point (PSAP). All GIS data that is utilized in NG9-1-1 applications must adhere to the requirements as set forth in this standard.

Section 2.04 Workgroup Formation

(a) **Initial Workgroup -** In response to the increasing need for address standardization, the GI Council formed the Address Standard Workgroup on **April 1, 2011** to research, develop, and submit an address standard for adoption by the GI Council. The primary focus of this group was to research what address standards were being utilized in Oklahoma currently, and develop a simple custom set of fundamental address standards that adhered to current industry standards. A fundamental provision from the start of the workgroup was to consider existing formats that currently are operational. While an address assigning jurisdiction may add certain elements to their data the focus of this workgroup was to isolate on the commonalities across the jurisdictions that are required for addressing. After this assessment a fundamental schema and associated documentation was to be built that could either be utilized to create a new address dataset, incorporate an existing, or enhance an older dataset with added functionality.

(b) **NG9-1-1 Standard Workgroup –** The additional requirement beyond the scope of the initial State of Oklahoma Geographic Information Address Standards constituted a need to form another workgroup between the GIS and 9-1-1 professionals. In an effort to meet the overall goal and enhance the end product, the 9-1-1 Authority and the GI Council worked together through a joint GIS Technical Workgroup. This workgroup updated the existing State of Oklahoma Geographic Information Address Standards (Version 1.0 - September 5, 2014) to meet and exceed the required NENA standard for NG9-1-1.

Section 2.05 Address Data Formats

Addresses generally exist in one of three formats

(a) A single address field or possibly set of fields in a tabular database

(b) A specific address associated with a point feature

(c) An address range associated with a linear feature such as a street or railroad centerline. *(This format generalizes the address along the length of the linear*

feature. It is generally more forgiving but not as precise due to numerous theoretical addresses that may not exist)

Section 2.06 Essential Address Elements - USPS Publication 28

An address is comprised of several different attribute components, all of which are required to accurately define a specific address. When an address is matched against a Master Address File (MAF) it must be parsed (divided) into the individual components separated by a single space between the components. The minimum components required to accurately define the geospatial portion of an address with relation to this address standard are:

USPS Publication 28 Data Element	OK Address Standard Field Name	Example Value
Street Number	Address	101
Predirectional	PreDir	N
Street Name	Street	Main
Street Suffix	StreetType	ST
Postdirectional	SufDir	NE
Secondary Unit Indicator	BldgUnit	APT
Secondary Number	BldgName	3
City	City	Guthrie
State	State	OK
Zipcode	Zipcode	73044

****Mailing Standards of the United States Postal Service Publication 28 - Postal Addressing Standards***

While not all of the elements are required to be filled out for an address to be valid all of the placeholders need to be present in the attribute table to accurately represent the accepted United States Postal Service Standards. The Postal Service uses the following parsing logic to enter address information into their appropriate fields. When parsing an address into the individual components, start from the right-most element of the address and work toward the left. Then it places 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. In accordance with USPS Publication 28 all punctuation, with exception of Zipcode4, should be omitted unless absolutely essential throughout all elements of an address. *(i.e. 101 1**/**2 Main St, 101**.**5 Main St)*

Section 2.07 Enhanced 9-1-1 (E9-1-1) vs Next Generation 9-1-1 (NG9-1-1) NENA Mapping Requirements

(a) **Enhanced 9-1-1 (E9-1-1)** - E9-1-1 utilizes landlines, wireless lines, and Voice over Internet Protocol (VoIP) through a combination of the MSAG and the ANI/ALI to pass locational data into the PSAP. The tabular data is then displayed on the mapping platform in the PSAP via positional information from coordinates or by point or street centerline geocoding functions on premises. The following layers are required for E9-1-1 to functionally map an emergency service request.

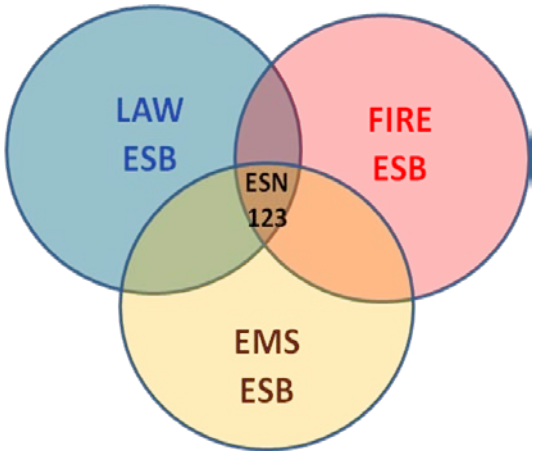
- Address Points
- Street Centerlines
- ESN / ESZ Polygons

(b) **Next Generation 9-1-1 (NG9-1-1)** – NG9-1-1 is an Internet Protocol (IP)-based system that allows digital information (e.g., voice, photos, videos, text messages) to flow seamlessly from the public, through the 9-1-1 network to emergency responders. This process does not rely on the ANI/ALI – MSAG to pass tabular data to the PSAP. NG9-1-1 utilizes various functions within a server environment to determine the caller location based on GIS attributes and polygons. The following layers are required for NG9-1-1 to deliver the 9-1-1 call to the proper PSAP, provide a dispatchable address, and display the caller location on a map.

- PSAP Polygon
- ESB Fire Polygon
- ESB Law Polygon
- ESB EMS Polygon

(c) **ESN -ESZ/ESB Relationship**

- **ESN** – (Emergency Service Number) The three to five digit **Number** assigned to the unique combination of ESB that represent an ESZ polygon. *Required at a minimum as a legacy lookup table for the **MSAG**.*
- **ESZ** – (Emergency Service Zone) The **Polygon** that defines the unique geographic area of the combination of ESB (Fire, Law, and EMS Combined)
- **ESB** – (Emergency Service Boundary) The **Polygon** that defines the geographic area of a single emergency response service. (Fire or Law or EMS separately) *Required to be separate service layers for **NG9-1-1**.*



Section 2.08 Definition of the Standard

The following address standard defines the intended applications and usages associated with NG9-1-1 and the address standard along with the detailed components required for accurately representing caller location technology and addresses in a GIS. NG9-1-1 data as defined by this standard must meet or exceed the minimum standards outlined within this standard to be considered compliant with regards to Oklahoma NG9-1-1.

Section 2.09 Applicability and Intended Uses of the Standard

The intended use of this document is to provide emergency services with a mandatory standard for the

implementation and maintenance of a NG9-1-1 system. The standard also provides a simple basic address schema for anyone working with addresses in the State of Oklahoma. The associated documentation standardizes the basic structure of the tabular and attribute data required for geocoding using points, lines, and polygons. It is intended to be used by both the public and private sector**.**

Section 2.10 Spatial Components

For the purpose of this standard the spatial feature types referenced are points, lines, and polygons.

(a) **Points** may be used to represent the center of building footprints, access locations such as driveway, building entrances, or parcel centroids. The address point identifies a single address or at the very least the primary address of a location. (ie.. an apartment complexes main address) The individual point may not completely reflect the address of a parcel or structure considering some buildings or parcels have more than one address. In such a case it is generally advisable to place a single point per valid address to ensure a one to one match in geocoding.

(b) **Lines** are generally used for street centerlines in this standard but can represent any linear feature where addressing is based on a distance along the line. This address format requires address ranges along the linear feature providing an even / odd address parity instead of individual numbers. It is critical that topology and line directionality are strictly adhered to regarding lines to ensure a functional geocoding.

(c) **Polygons** represent areas and will be used to delineate areas of a PSAP, Emergency Service Zone (ESZ), Emergency Service Boundary (ESB), and Authoritative Boundary. NG9-1-1 will rely on these layers to determine the caller location and services for a particular area as well as maintain an accurate data stewardship to report errors and corrections.

Section 2.11 Attributes

Attributes are the tabular datasets represented by rows and columns of information associated with a geographic spatial feature. The following list represents the types of information that can be stored in attribute tables.

(a) Required attributes are the essential fields of data that are, at a minimum, required for correct geocoding and accurate address placement.

(b) Associated attributes pertain to the tabular and related data tied to an address. Examples of this could include a business name, incident number, structure type, etc. Many times associated data is stored in alias tables.

(c) Alias tables may also be associated with any type of attribute data to provide extra information or increase the accuracy of geocoding operations.

Section 2.12 Data Field Requirements and Types

It is completely acceptable for local datasets to contain extra data fields beyond the required attributes as defined by this standard. The data may be locally stored in whatever format the Data Steward requires. Regardless of how the data is being maintained locally, data *SHALL* be provided in accordance with this standard when exported. Data Domains have been provided and must be utilized to ensure information is not lost when merging local data to a statewide dataset.

(a) Data Field Requirement attributes are tagged as **M**andatory (**M**), **C**onditional (**C**), **O**ptional (**O**) or **T**ransportation (**T**). Transportation fields have been included for use in other public safety applications.

- **Mandatory** implies the data field must be populated
  *(i.e. The field "County" will **ALWAYS** have a value such as "**GARVIN**")*
- **Conditional** implies that **IF** an attribute value exists for a given feature, it **MUST** be populated. If no value exists for a given feature, the data field is left blank unless other guidance is given.
  *(i.e. The Street Prefix Type "PreType" **MAY** have a value such as "N" in 100 **N** MAIN)*
- **Optional** implies the data field must be present but may or may not be populated
- **Transportation** denotes fields that are only essential to Transportation and Routing functionality, the data fields must be present but may or may not be populated.
  *(i.e. The Street Speed Limit "SpeedLimit" **MAY** have a value such as "25" if so then 25 will be included in the data field. Default speed limit **WILL** be set at "21" unless the limit is known).*

(b) Data Field Types

- ALPHANUMERIC – Any combination of letters, numbers, and characters.
- DATETIME- Specifically a Date/Time format *(Since a shapefile only stores dates in a yyyy-mm-dd format a default time of 12am of the attributes stated date will be assigned to all Date/Time attributes not specified when necessary)*
- NUMERIC - Consisting of whole numbers only (no decimals)
- DECIMAL - Consisting of whole numbers including decimals

Section 2.13 Standard Addressing Practices

In order to provide for data consistency and interoperability this is the NG9-1-1 standard within the State of Oklahoma.

(a) **Unique Identification Code (Mandatory)** - A unique identifier is required for all databases, whether they are associated attributes or geospatial data sets. This unique identifier shall be used to link address attributes and indexes with other information. The unique identifier is defined in the NENA standard as the ESB NENA Globally unique ID (**NGUID**). Solely this unique ID will enable tracking the address data element back to the owner. The unique ID shall be configured in the following format:

(LayerName)_(Local 9-1-1 Unique ID)@(Source).(Steward).(ok.us)

Example: StreetName_45710948fk@edmond.acog.ok.us

(b) **Street Types** -Each street name should have a street type that is used consistently, or have a street type that is based on a logical pattern. The exception to this rule is where street type is needed to distinguish between two streets in the same area with the same name (e.g., Sunset Dr and Sunset Ct). The recommended standard for establishing the street type values is set forth in the *Mailing Standards of the United States Postal Service Publication 28 - Postal Addressing Standards -Appendix C1.*

(c) **Abbreviations** – Geographic directional and street types shall **ALWAYS** be abbreviated, but street names should **NEVER** be abbreviated. Unless there are strong reasons for doing otherwise, it is recommended that the *Mailing Standards of the United States Postal Service Publication 28 - Postal Addressing Standards -Appendix B & C1 be used.*

(d) **Street Naming** - A standard method of assigning numeric and character street names shall be developed and adopted for the whole jurisdiction. The primary objective is to establish a grid within each jurisdiction regardless of the detailed pattern of the individual grid.

(e) **Avoiding Obvious Conflicts** – For the sake of accuracy and clarity avoid obvious conflicting names and numbers.

Names with directions:	*(i.e. South Ridge)*
Names that include street types:	*(i.e. Sunset Place Drive)*
Names that sound alike:	*(i.e. Roe and Row)*
Easily misleading names:	*(i.e. Main Dr and Main St)*
Multiple word names without hyphens :	*(i.e. Hickory Wood View Manor)*

(f) **Non-Grid Street Names** - Street names that are not in the street name grid should always be unique to the overall jurisdiction.

(g) **Vanity Street Names** - Vanity street names and addresses that related to a particular business, developer or property owner and should never be used in place of the primary street address. They may, however, be used as a supplemental address in compliance with the *Mailing Standards of the United States Postal Service Publication 28 - Postal Addressing Standards*

(h) **Location of Street Name Break Points** - Street name breaks should occur at an intersection whenever possible, and preferably at an intersection with a major cross street. Where it is not possible to make the break at an intersection, the break should occur at a point on the curve where the street orientation changes from primarily north-south to east-west, or vice-versa. Street name signs should be used at every street name break to clarify the change.

(i) **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 centerline of the road by addresses at either end of a street centerline segment. Two values of the range represent the lowest addresses, and the other two represent the highest. The values are further distinguished as being on either the left or

the right side of the segment. In topological terms, the low values are associated with the FROM node of the segment, while the high values 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 is being developed. Implementation of the address parity (i.e., odd vs. even) is usually determined by the addressing software

(j) **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.

(k) **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 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.

(l) **Logical Address Consistency** – Addresses located across the street from each other shall be assigned so that they are nearly equal. Where there are more addresses on one side of the street, addresses assigned to the other side will be more widely spaced so that addressing consistency is maintained for addresses across from one another.

(m) **Alias Tables** – The usage of associated alias tables will greatly increase the accuracy of the automated geocoding. It allows the system to handle various spellings or misspellings (aliases). A series of alias tables create alternate spelling options for common discrepancies regarding addresses. Whenever an address is being processed by the system it needs to go through a process of standardization. A crucial part of this standardization is to look up each address component in the alias tables and replace alias values with the standard equivalents. Constructing such alias tables requires considerable judgment to avoid distortions and are typically built up over time as unmatchable addresses are reviewed. While some alias table information is fairly common many customizations are specific to a particular jurisdiction and cannot be universally adopted.

i.e. A single street with multiple legal names within a single jurisdiction:
14th Ave NE / State HWY 199 / Sam Noble Pkwy

(n) **Address Number Assignment** - Each jurisdiction shall adopt a standard method of assigning address numbers. A jurisdiction may elect to have address numbers

increase from north to south and from east to west. The jurisdiction may also choose to assign odd address numbers on the south and east sides of the street and even numbers on the north and west sides of the street. Regardless of the method selected, it must remain consistent throughout the jurisdiction and should be coordinated with as many contiguous jurisdictions as possible.

(o) **Address Sequential Direction -** Addresses shall always be assigned so that they are in numeric sequence and shall increase as you travel in the direction adopted by the jurisdiction.

Section 2.14 Geocoding

Geocoding is the process of finding associated geographic coordinates (often expressed as latitude and longitude) from other geographic data, such as street addresses, or ZIP codes (postal codes). This process can be accomplished through various methods. For the purpose of this standard the following three methods are preferred.

(a) **Point based geocoding** provides for the most accurate one to one geocoding option. It utilizes a preset number of essential fields to parse an address and accurately correlate the parsed address to the tabular data associated with a specific geographic point representing an address. While this method is highly accurate it is generally not very tolerant of address discrepancies or errors unless alias tables are utilized. It is generally the preferred first method of geocoding and provides real addresses with absolute accuracy.

(b) **Linear based geocoding** provides the most widely accepted and error tolerant geocoding option. It allows for any number of addresses within a preset range based on either a single high and low number or an even and odd high and low number parity along a linear feature. A geographic position is calculated along a line based on the measured distance and address interval. This method can be extremely accurate depending on the data ranges. While this method is very tolerant of address discrepancies and errors it can produce theoretical addresses where real addresses do not exist. It is generally preferred for complete coverage of a jurisdiction and provides relative accuracy of an address.

i.e. Linear Theoretical & Actual Address Ranges:
Theoretical Address Range: 701-799; 700-798
Actual address range: 701-725; 700-724

(c) **Composite Geocoding** is a dual stage geocoding option where generally a more accurate (generally point based) geocoding option is initially utilized to find a location. If a suitable match is not found the address is passed to the second (generally linear based) geocoding option for an attempted match based on more forgiving parameters. This dual pass geocoding provides very good absolute accuracy while retaining complete coverage of relative accuracy throughout a jurisdiction.

Section 2.15 Data Quality

Data quality is the relationship of the contents of the digital database to the reality that we are representing. NG9-1-1 requires an extremely high level of data accuracy, quality, and consistency in

order to operate correctly. Failure to maintain the necessary quality of NG9-1-1 data poses a serious risk of loss of life.

Section 2.16 Positional Accuracy Standards

The geospatial accuracy of an address location should be pursued to achieve the highest feasible positional accuracy possible. While the required accuracy of the data may vary greatly between agencies there must be a minimum accuracy standard to allow for correct demarcation of a single address. Considering many rural address point locations are derived from 1 meter resolution NAIP Orthophotography or various GPS collection devices the following minimum standards should be attainable in most addressing applications. The equipment and methodology used must be that of a grade capable of collecting data to within 10 feet RMSE as set forth in the *FGDC Geospatial Positioning Accuracy Standards Part 3, Appendix3-D (FDGC-STD-007.3-1998).*

- Class 1 Horizontal 1:12,000 (10 feet RMSE)

See also NENA GIS Data Collection and Maintenance Standards (NENA 02-014)

Section 2.17 Spatial Reference

Local GIS data may be stored in any projection desired as long as the data projection is a clearly defined and is a regionally recognized projection. For NG9-1-1 purposes the NG9-1-1 data must be in the following projection prior to loading into the Emergency Call Routing Function (ECRF) or Location Validation Function (LVF).

EPSG: 4326 WGS 84 / Latlong
Projection: Geographic, Plate Carrée, Equidistant Cylindrical, Equirectangular
Latitude of the origin: 0°
Longitude of the origin: 0°
Scaling factor: 1
False eastings: 0°
False northings: 0°
Ellipsoid: WGS84
Horizontal Datum: WGS84
Vertical Datum: WGS84 Geoid, which is equivalent to Local Mean Sea Level (MSL)
Units: decimal degrees
Global extent: -180, -90, 180, 90

Section 2.18 Content Accuracy

Content accuracy is measured based on the overall functional correctness of the data to accurately represent reality. This accuracy can be measured by the following aspects.

(a) The individual components of the data must be complete (filled in where appropriate) and contain the correct information.

(b) The data must be correct for the location in question. Routing to someplace is important but locating that someplace is critical.

(c) The data must be correct sequentially in terms of its relationship with the overall addressing schema.

(d) The data must be both current and valid with regard to content in order to function correctly.

Section 2.19 Data Stewardship

The agency that is responsible for the data within their respective jurisdiction is the ultimate authority regarding the data and maintains the final authority over the development and maintenance of the information. When a feature has more than one responsible agency, each agency shall work in conjunction with its neighbor to resolve any conflicts locally for their respective portion of data associated with the feature. While there may be several acceptable methods used to handle this situation locally, these methods must work toward providing seamless statewide interoperability. A clear reference must be maintained in the metadata and tabular data to the authoritative jurisdiction regarding the development and maintenance of any dataset. *(See Section 2.13.a of this standard)*

> *i.e. a specific method currently being utilized is two roads of identical geometry (vertices to vertices) that overlap the data of the two owners. The road name within one ownership with a boundary layer separating the road by PARITY (Odd, Even) could have a duplicate road with opposing parity which could be of a different name (Stacking). The direction or purpose of the STEWARD of the data, whether a multi-jurisdictional collection, COG or State GIS repository, will be to ensure the EDGE Matching of these single owners or stewards to allow for routing topology (intersection breaks, boundary breaks, etc.) between the individual owners.*

Section 2.20 Metadata

Metadata shall be maintained for all address data sets. The metadata shall meet the standards as set forth in the *FGDC Content Standards for Geospatial Metadata (FGDC-STD-001-1998)* and shall be made available through accepted publishing methods.

Article III. Required Point, Line, & Polygon Schema

Section 3.01 Address Point – Point

Addresses can be accessed as or through geospatial points. Address points can be used for a variety of purposes, ranging from precise geocoding to assigning addresses in a reliable manner. This schema has the potential to serve as both an address repository while referencing a master street name list, providing an invaluable resource to a broad community of users.

Reference **OK_ADDRESS_SCHEMAS.XLS** – ADDRESS_POINT

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_ADD	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
FullAddr	Full Address (ie.101 W Main St)	ALPHANUMERIC	100	C	
FullName	Full Name of the Primary Street	ALPHANUMERIC	50	C	
Label	Map Label of the Address	ALPHANUMERIC	50	C	
AddPre	Extension that Precedes an Address Number (ie "A" 100 N Main St)	ALPHANUMERIC	15	C	
Address	Address Number (ie "100" N Main St)	NUMERIC	6	C	
AddSuf	House Number Suffix (ie 100 A)	ALPHANUMERIC	15	C	
PreMod	Primary Street Modifier (ie "Old" Church Street)	ALPHANUMERIC	15	C	
PreDir	Primary Street Directional Prefix (ie "N" Main St)	ALPHANUMERIC	9	C	DIRECTION
PreType	Primary Street Prefix Type (ie "HWY" 70 E)	ALPHANUMERIC	25	C	STREETTYPE
PreTypeSep	Primary Street Name Pre Type Separator (ie Circle "in the" Woods)	ALPHANUMERIC	20	C	SEPARATOR
Street	Primary Street Name (ie N "Main" St)	ALPHANUMERIC	60	C	

StreetType	Primary Street Type (ie N Main "St")	ALPHANUMERIC	25	C	STREETTYPE
SufDir	Primary Street Directional Suffix (ie HWY 70 "E")	ALPHANUMERIC	9	C	DIRECTION
SufMod	Primary Street Name Suffix Modifier (ie N Main St "Extension")	ALPHANUMERIC	25	C	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
County	Name of the County the Address Resides In (Kay)	ALPHANUMERIC	40	M	COUNTY
City	Name of the Municipality the Address Resides In	ALPHANUMERIC	100	M	
UnincComm	Name of the Unincorporated Community the Address Resides In	ALPHANUMERIC	100	O	
NbrhdComm	Name of Neighborhood, Subdivision, Community	ALPHANUMERIC	100	O	
ESN	Emergency Service Number	ALPHANUMERIC	5	C	
PSAP	Responding Public Service Access Point	ALPHANUMERIC	25	M	
MSAG	Master Street Address Guide Community	ALPHANUMERIC	30	C	
PostComm	Postal Community	ALPHANUMERIC	40	C	
Zipcode	Zipcode	ALPHANUMERIC	7	C	
Zipcode4	Zip Code +4 Extension	ALPHANUMERIC	4	O	
EntityName	Business or Agency at the Address	ALPHANUMERIC	150	C	
AddtnlLoc	Additional Location Information (ie Loading Dock, Gate A1, West Wing)	ALPHANUMERIC	225	O	
BldgName	Building or Unit Name (Apartment Complex Name)	ALPHANUMERIC	75	O	
Floor	Floor of the Building	ALPHANUMERIC	75	O	
BldgUnit	Building Unit Type (i.e., APT, STE, BLDG)	ALPHANUMERIC	75	O	BLDGUNIT
UnitNum	Building Unit Number	ALPHANUMERIC	4	O	
Room	Room Number in the Building	ALPHANUMERIC	75	O	
Seat	Seat in the Room	ALPHANUMERIC	75	O	
GrpQuarter	Group Living Quarters	ALPHANUMERIC	5	O	YESNO
OccupTime	Times the Building is Occupied (8:00 a.m.- 5:00 p.m.)	ALPHANUMERIC	50	O	
StrmSheltr	Type of Storm Shelter	ALPHANUMERIC	25	O	STORMSHELTER
Basement	Existing Basement	ALPHANUMERIC	5	O	YESNO
PlaceType	Type of Feature Identified by an Address	ALPHANUMERIC	50	O	PLACETYPE
Placement	Methodology Used For Address Point Placement	ALPHANUMERIC	25	O	PLACEMENT
MilePost	Mile Post	ALPHANUMERIC	150	C	
Longitude	Longitude Coordinates of the Address Point in Decimal Degrees	NUMERIC	15	O	
Latitude	Latitude Coordinates of the Address Point in Decimal Degrees	NUMERIC	15	O	
Elevation	Elevation of the Address Point (Denote Foot/Meter)	NUMERIC	6	O	
AddDataURI	Uniform Resource Identifier (URI) for Additional Associate Data (Floorplans, Photos, URL)	ALPHANUMERIC	254	C	
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	
LgcyAdd	Legacy Address	ALPHANUMERIC	100	O	
LgcyPreDir	Legacy Street Name Pre Directional	ALPHANUMERIC	2	C	DIRECTION
LgcyStreet	Legacy Street Name	ALPHANUMERIC	75	C	
LgcyType	Legacy Street Name Type	ALPHANUMERIC	5	C	STREETTYPE
LgcySufDir	Legacy Street Name Post Directional	ALPHANUMERIC	2	C	DIRECTION

Section 3.02 Road Centerline - Line

The line in this instance is a linear geospatial feature that represents a street centerline. Other linear features that have incremental address ranges along their sides may also utilize this basic structure. Address ranges are typically established for individual centerline segments so address matching may be performed. Street names and address ranges shall conform to the actual addresses assigned to specific points as a practical rule.

Reference **OK_ADDRESS_SCHEMAS.XLS** - ROAD_CENTERLINE

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_RDCL	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
FullName	Full Name of the Primary Street	ALPHANUMERIC	50	M	
Label	Map Label of the Road Segment	ALPHANUMERIC	50	O	
Add_L_Pre	Extension that Precedes an Address Number on the Left Side of the Road (ie "A" 100 N Main St)	ALPHANUMERIC	15	C	
Add_R_Pre	Extension that Precedes an Address Number on the Right Side of the Road (ie "A" 100 N Main St)	ALPHANUMERIC	15	C	
Add_L_From	Left From (Low) Address	NUMERIC	6	M	
Add_L_To	Left To (High) Address	NUMERIC	6	M	
Add_R_From	Right From (Low) Address	NUMERIC	6	M	
Add_R_To	Right To (High) Address	NUMERIC	6	M	
Parity_L	The Even or Odd Property of the Address Number Range on the Left Side of the Road Segment	ALPHANUMERIC	1	M	PARITY
Parity_R	The Even or Odd Property of the Address Number Range on the Right Side of the Road Segment	ALPHANUMERIC	1	M	PARITY
PreMod	Primary Street Modifier (ie "Old" Church Street)	ALPHANUMERIC	15	C	
PreDir	Primary Street Directional Prefix (ie "N" Main St)	ALPHANUMERIC	9	C	DIRECTION
PreType	Primary Street Prefix Type (ie "HWY" 70 E)	ALPHANUMERIC	25	C	STREETTYPE
PreTypeSep	Primary Street Name Pre Type Separator (ie Circle "in the" Woods)	ALPHANUMERIC	20	C	SEPARATOR
Street	Primary Street Name (ie N "Main" St)	ALPHANUMERIC	60	C	
StreetType	Primary Street Type (ie N Main "St")	ALPHANUMERIC	25	C	STREETTYPE
SufDir	Primary Street Directional Suffix (ie HWY 70 "E")	ALPHANUMERIC	9	C	DIRECTION
SufMod	Primary Street Name Suffix Modifier (ie N Main St "Extension")	ALPHANUMERIC	25	C	
Country	Name of the Country the Road Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
Country_L	Name of Country on the Left Side of the Road (US)	ALPHANUMERIC	2	M	COUNTRY
Country_R	Name of Country on the Right Side of the Road (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Road Resides In (OK)	ALPHANUMERIC	2	M	STATE
State_L	Name of the State on the Left Side of the Road (OK)	ALPHANUMERIC	2	M	STATE
State_R	Name of the State on the Right Side of the Road (OK)	ALPHANUMERIC	2	M	STATE
County	Name of the County the Road Resides In (Kay)	ALPHANUMERIC	25	M	COUNTY
County_L	Name of the County on the Left Side of the Road (Kay)	ALPHANUMERIC	40	M	COUNTY
County_R	Name of the County on the Right Side of the Road (Kay)	ALPHANUMERIC	40	M	COUNTY
City	Name of the Primary Municipality the Road Resides In	ALPHANUMERIC	30	C	
City_L	Name of the Municipality on the Left Side of the Road	ALPHANUMERIC	100	M	
City_R	Name of the Municipality on the Right Side of the Road	ALPHANUMERIC	100	M	
UnincCommL	Name of the Unincorporated Community on the Left Side of the Road	ALPHANUMERIC	100	O	
UnincCommR	Name of the Unincorporated Community on the Right Side of the Road	ALPHANUMERIC	100	O	
NbrhdCommL	Name of Neighborhood, Subdivision, Community on the Left Side of the Road	ALPHANUMERIC	100	O	
NbrhdCommR	Name of Neighborhood, Subdivision, Community on the Right Side of the Road	ALPHANUMERIC	100	O	
Esn_L	Emergency Service Number on the Left Side of the Road	ALPHANUMERIC	5	C	
Esn_R	Emergency Service Number on the Right Side of the Road	ALPHANUMERIC	5	C	
PSAP	Responding Public Service Access Point	ALPHANUMERIC	25	M	
MSAG_L	MSAG Community on the Left Side of the Road	ALPHANUMERIC	30	C	
MSAG_R	MSAG Community on the Right Side of the Road	ALPHANUMERIC	30	C	
Zipcode	Zipcode	ALPHANUMERIC	5	C	
Zipcode_L	Zipcode on the Left Side of the Road	ALPHANUMERIC	7	C	
Zipcode_R	Zipcode on the Right Side of the Road	ALPHANUMERIC	7	C	
Zipcode4	Zipcode +4 Extension	ALPHANUMERIC	4	C	
Zipcode4_L	Zipcode +4 Extension on the Left Side of the Road	ALPHANUMERIC	5	O	
Zipcode4_R	Zipcode +4 Extension on the Right Side of the Road	ALPHANUMERIC	5	O	
PostComm	Postal Community	ALPHANUMERIC	30	C	
PostComm_L	Postal Community on the Left Side of the Road	ALPHANUMERIC	40	C	
PostComm_R	Postal Community on the Right Side of the Road	ALPHANUMERIC	40	C	
RoadClass	HPMS Functional Classification	ALPHANUMERIC	15	O	ROADCLASS
Oneway	Travel Direction of the Segment Related to Line Direction	ALPHANUMERIC	2	O	ONEWAY
SpeedLimit	Speed Limit of Street Centerline Segment	ALPHANUMERIC	3	O	SPEEDLIMIT
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	

InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	O	
AltStName1	1st Alternate Street Name	ALPHANUMERIC	50	O	
AltStName2	2nd Alternate Street Name	ALPHANUMERIC	50	O	
AltStName3	3rd Alternate Street Name	ALPHANUMERIC	50	O	
LgcyPreDir	Legacy Street Name Pre Directional	ALPHANUMERIC	2	C	DIRECTION
LgcyStreet	Legacy Street Name	ALPHANUMERIC	75	C	
LgcyType	Legacy Street Name Type	ALPHANUMERIC	5	C	STREETTYPE
LgcySufDir	Legacy Street Name Post Directional	ALPHANUMERIC	2	C	DIRECTION
FromLevel	Level from Overpass / Underpass	ALPHANUMERIC	10	T	LEVEL
ToLevel	Level to Overpass / Underpass	ALPHANUMERIC	10	T	LEVEL
BoundLane	Direction of the Lane of Traffic if Dedicated Direction	ALPHANUMERIC	15	T	DIRECTION
RoadLength	Length of Street Segment	ALPHANUMERIC	15	T	
DriveTime	Drivetime of the Street Segment	ALPHANUMERIC	15	T	
DeadEnd	Dead End Street Segment	ALPHANUMERIC	10	T	YESNO
Surface	Paving Surface of the Street	ALPHANUMERIC	10	T	
Lanes	Number of Lanes Represented by the Street Segment	ALPHANUMERIC	5	T	NUMBER
Toll	Requires Toll to Access	ALPHANUMERIC	10	T	YESNO
LtdAccess	Limited Access to the General Public	ALPHANUMERIC	10	T	YESNO

Section 3.03 Public Service Answer Point(PSAP) Boundary – Polygon

The PSAP boundary layer may contain one or many PSAP Boundaries. Each PSAP boundary defines the geographic area of a PSAP that has primary responsibilities for an emergency request. This layer is used by the ECRF to perform the geographic query to determine which PSAP receives the emergency service request. There can be no overlaps or gaps in this dataset.

Reference **OK_ADDRESS_SCHEMAS.XLS** – PSAP_BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_PSAP	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Section 3.04 Emergency Service Zone(ESZ) Boundary – Polygon

The Emergency Service Zone (ESZ) boundary is the geographical representation of the Emergency Service Number (ESN). The ESN is a 3 to 5 digit number representing a unique combination of emergency service agencies (Law, Fire, and EMS) designated to serve a specific range of addresses within a particular geographical area, or ESZ. The ESN facilitates selective routing and selective transfer, if required, to the appropriate PSAP and the dispatching of the proper service agencies through the MSAG. There can be no overlaps or gaps in this dataset.

Reference **OK_ADDRESS_SCHEMAS.XLS** – ESZ_BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_ESZ	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Section 3.05 Emergency Service Boundary – Polygons (Fire, Law, EMS)

The Emergency Service Boundaries (ESB) are the geographical representation of the primary responding fire, law and EMS agencies within the given area. This layer is used by the ECRF to perform the geographic query to determine which PSAP receives the emergency service request based on specific need or type of emergency. There can be no overlaps or gaps in the **THREE SEPARATE LAYERS**. *(There **MUST** be a separate ESB for each type of emergency responding service)*

Reference **OK_ADDRESS_SCHEMAS.XLS** – ESB_FIRE_BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_FIRE	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	

InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Reference **OK_ADDRESS_SCHEMAS.XLS** – ESB_LAW_BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_LAW	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Reference **OK_ADDRESS_SCHEMAS.XLS** – ESB_EMS_BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_EMS	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Section 3.06 Authoritative Boundary – Polygon

The authoritative boundary is the geographical representation of the data stewards who have the jurisdictional authority to maintain data within their boundary. There can be no overlaps in this dataset. *(See Section 2.19)*

Reference **OK_ADDRESS_SCHEMAS.XLS** – AUTHORITATIVE BOUNDARY

Field Name	Field Description	Field Type	Field Width	Priority	Domain Table
NGUID_ATH	NENA Globally Unique ID : (LayerName)_(Local9-1-1UniqueID)@(Source).(Steward).(ok.us)	ALPHANUMERIC	100	M	
Agency	Name of the Service Provider within the Authoritative Service area	ALPHANUMERIC	60	M	
AgencyID	The REGISTERED Domain Name System (DNS) of the Agency	ALPHANUMERIC	100	M	
Avcard_URI	The internet address of an XML data structure which contains contact information in the form of a vCard	ALPHANUMERIC	254	M	
Service URN	The ECRF is queried with a location and a service URN that returns the Service URI.	ALPHANUMERIC	50	M	
ServiceURI	URI for Call Routing contained in the ESB layer	ALPHANUMERIC	254	M	
ServiceNum	A dialable number or dial string on a 12-digit keypad to reach the emergency service appropriate for the location	ALPHANUMERIC	15	O	
Country	Name of Country the Address Resides In (US)	ALPHANUMERIC	2	M	COUNTRY
State	Name of the State the Address Resides In (OK)	ALPHANUMERIC	2	M	STATE
InitiSrce	Original source of the data	ALPHANUMERIC	30	M	
InitiDate	Initial Time-Stamp - (Creation Entry Date)	DATETIME	26	M	
RevEditor	Most recent editor of the data	ALPHANUMERIC	75	M	
RevDate	Modified Time-Stamp - (Modify Entry Date)	DATETIME	20	M	
EffectDate	Date & Time that the record is scheduled to take effect	DATETIME	20	O	
ExpireDate	Date & Time that the record is no longer valid	DATETIME	20	O	
Comment	Comments / Notes	ALPHANUMERIC	100	C	

Section 3.07 Other Recommended Layers Polygon

Additional GIS Data layers may be extremely helpful in ultimately meeting your local purposes. The following layers may aid in the functionality of the ECRF and LVF and are strongly recommended for call taking and dispatch operations:

ECRF & LVF Recommended Layers

- Street Name Alias Table
- Landmark Name Part Table
- Complete Landmark as Table
- States
- Counties
- Incorporated Municipal Boundaries
- Unincorporated Community Boundaries
- Neighborhood Community Boundaries
- Other ESB (Poison Control, Forest Service, Animal Control)

Other Recommended Layers

- Railroad Centerline
- Hydrology Line
- Hydrology Polygon
- Cell Site Location
- Mile Marker Location

Section 3.08 Reference Domains

Reference domain values provide a pick list of preset values for various attributes in order to standardize data values both within an organization as well as across multiple jurisdictions. The following domain values are either preset static values or professionally authoritative standard values in order to provide consistency among various datasets.

Associated Reference Document: **OK_ADDRESS_SCHEMAS.XLS**

(a) Reference **OK_ADDRESS_SCHEMAS.XLS** –YESNO

Code	Description	Data Source - None
Y	Yes	STATIC
N	No	

(b) Reference **OK_ADDRESS_SCHEMAS.XLS** –NUMBER

Code	Description	Data Source -None
1	1	STATIC
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	10	

(c) Reference **OK_ADDRESS_SCHEMAS.XLS** –SPEEDLIMIT

Code	Description	Data Source - None
10	10 MPH	STATIC
15	15 MPH	
20	20 MPH	
25	25 MPH	
30	30 MPH	
35	35 MPH	
40	40 MPH	
45	45 MPH	
50	50 MPH	
55	55 MPH	
60	60 MPH	
65	65 MPH	
70	70 MPH	
75	75 MPH	

(d) Reference **OK_ADDRESS_SCHEMAS.XLS** –LEVEL

Code	Description	Data Source - None
0	Overpass level 0	STATIC
1	Overpass level 1	
2	Overpass level 2	
3	Overpass level 3	
4	Overpass level 4	

(e) Reference **OK_ADDRESS_SCHEMAS.XLS** –STORMSHELTER

Code	Description	Data Source - None
Above Ground in Structure	Above Ground in Structure	STATIC

Above Ground Outside	Above Ground Outside
Below Ground in Structure	Below Ground in Structure
Below Ground Outside	Below Ground Outside

(f) Reference **OK_ADDRESS_SCHEMAS.XLS** –PLACEMENT

Code	Description	Data Source - None
Geocoding	Geocoding	STATIC
Parcel	Parcel	
Property Access	Property Access	
Structure	Structure	
Site	Site	
Unknown	Unknown	

(g) Reference **OK_ADDRESS_SCHEMAS.XLS** –PARITY

Code	Description	Data Source - None
O	Odd	STATIC
E	Even	
B	Both	
Z	Zero	

(h) Reference **OK_ADDRESS_SCHEMAS.XLS** –COUNTRY

Code	Description	Data Source - represented by 2 letter ISO 3166-1 Code - NENA-STA-004.1.1-2014_CLDXF - 3.2.2 - Page 26
US	United States of America	https://www.iso.org/obp/ui/#search

(i) Reference **OK_ADDRESS_SCHEMAS.XLS** –STATE

Code	Description	Data Source - USPS Publication 28 - Appendix B - Two–Letter State and Possession Abbreviations - Page 55
OK	Oklahoma	http://pe.usps.com/text/pub28/28apb.htm
TX	Texas	
CO	Colorado	
NM	New Mexico	
AR	Arkansas	
KS	Kansas	
MO	Missouri	

(j) Reference **OK_ADDRESS_SCHEMAS.XLS** –COUNTY

Code	Description	Data Source - STATIC
Adair	Adair	STATIC
Alfalfa	Alfalfa	
Atoka	Atoka	
Beaver	Beaver	
Beckham	Beckham	
Blaine	Blaine	
Bryan	Bryan	
Caddo	Caddo	
Canadian	Canadian	
Carter	Carter	
Cherokee	Cherokee	
Choctaw	Choctaw	
Cimarron	Cimarron	
Cleveland	Cleveland	

Coal	Coal
Comanche	Comanche
Cotton	Cotton
Craig	Craig
Creek	Creek
Custer	Custer
Delaware	Delaware
Dewey	Dewey
Ellis	Ellis
Garfield	Garfield
Garvin	Garvin
Grady	Grady
Grant	Grant
Greer	Greer
Harmon	Harmon
Harper	Harper
Haskell	Haskell
Hughes	Hughes
Jackson	Jackson
Jefferson	Jefferson
Johnston	Johnston
Kay	Kay
Kingfisher	Kingfisher
Kiowa	Kiowa
Latimer	Latimer
Le Flore	Le Flore
Lincoln	Lincoln
Logan	Logan
Love	Love
Major	Major
Marshall	Marshall
Mayes	Mayes
McClain	McClain
McCurtain	McCurtain
McIntosh	McIntosh
Murray	Murray
Muskogee	Muskogee
Noble	Noble
Nowata	Nowata
Okfuskee	Okfuskee
Oklahoma	Oklahoma
Okmulgee	Okmulgee
Osage	Osage
Ottawa	Ottawa
Pawnee	Pawnee
Payne	Payne
Pittsburg	Pittsburg
Pontotoc	Pontotoc
Pottawatomie	Pottawatomie
Pushmataha	Pushmataha
Roger Mills	Roger Mills
Rogers	Rogers
Seminole	Seminole
Sequoyah	Sequoyah
Stephens	Stephens
Texas	Texas

Tillman	Tillman
Tulsa	Tulsa
Wagoner	Wagoner
Washington	Washington
Washita	Washita
Woods	Woods
Woodward	Woodward

(k) Reference **OK_ADDRESS_SCHEMAS.XLS** –PLACETYPE

Code	Description	Data Source - NENA-STA-004.1.1-2014_CLDXF.pdf - Page 104
aircraft	aircraft	https://tools.ietf.org/html/rfc4589
airport	airport	
arena	arena	
automobile	automobile	
bank	bank	
bar	bar	
bicyle	bicyle	
bus	bus	
bus-station	bus-station	
cafe	cafe	
classroom	classroom	
club	club	
construction	construction	
convention-center	convention-center	
government	government	
hospital	hospital	
hotel	hotel	
industrial	industrial	
library	library	
motorcycle	motorcycle	
office	office	
other	other	
outdoors	outdoors	
parking	parking	
place-of-worship	place-of-worship	
prison	prison	
public	public	
public-transport	public-transport	
residence	residence	
restaurant	restaurant	
school	school	
shopping-area	shopping-area	
stadium	stadium	
store	store	
street	street	
theater	theater	
train	train	
train-station	train-station	

truck	truck
underway	underway
unknown	unknown
warehouse	warehouse
water	water
watercraft	watercraft

(l) Reference **OK_ADDRESS_SCHEMAS.XLS** –DIRECTION

Code	Description	Data Source - USPS Publication 28 - Appendix B - Two–Letter State and Possession Abbreviations - Page 56
N	North	http://pe.usps.com/text/pub28/28apb.htm
S	South	
E	East	
W	West	
NE	Northeast	
NW	Northwest	
SE	Southeast	
SW	Southwest	

(m) Reference **OK_ADDRESS_SCHEMAS.XLS** –STREETTYPE

Code	Description	Data Source - USPS Publication 28 - Appendix C1 - Street Suffix Abbreviations- Pages 59-71
ALY	ALLEY	http://pe.usps.com/text/pub28/28apc_002.htm
ANX	ANEX	
ARC	ARCADE	**NENA REFERENCE - NENA_71-501-v1_Synchronizing_GIS_Databases_with_MSAG_and_ALI.pdf - Page 9**
AVE	AVENUE	http://www.nena.org/resource/collection/F2E0D66A-4824-418C-8670-3238D262B84A/NENA_71-501-v1_Synchronizing_GIS_Databases_with_MSAG_and_ALI.pdf
BYU	BAYOU	
BCH	BEACH	
BND	BEND	
BLF	BLUFF	
BLFS	BLUFFS	
BTM	BOTTOM	
BLVD	BOULEVARD	
BR	BRANCH	
BRG	BRIDGE	
BRK	BROOK	
BRKS	BROOKS	
BG	BURG	
BGS	BURGS	
BYP	BYPASS	
CP	CAMP	
CYN	CANYON	
CPE	CAPE	
CSWY	CAUSEWAY	
CTR	CENTER	
CTRS	CENTERS	
CIR	CIRCLE	
CIRS	CIRCLES	
CLF	CLIFF	
CLFS	CLIFFS	

CLB	CLUB
CMN	COMMON
CMNS	COMMONS
COR	CORNER
CORS	CORNERS
CRSE	COURSE
CT	COURT
CTS	COURTS
CV	COVE
CVS	COVES
CRK	CREEK
CRES	CRESCENT
CRST	CREST
XING	CROSSING
XRD	CROSSROAD
XRDS	CROSSROADS
CURV	CURVE
DL	DALE
DM	DAM
DV	DIVIDE
DR	DRIVE
DRS	DRIVES
EST	ESTATE
ESTS	ESTATES
EXPY	EXPRESSWAY
EXT	EXTENSION
EXTS	EXTENSIONS
FALL	FALL
FLS	FALLS
FRY	FERRY
FLD	FIELD
FLDS	FIELDS
FLT	FLAT
FLTS	FLATS
FRD	FORD
FRDS	FORDS
FRST	FOREST
FRG	FORGE
FRGS	FORGES
FRK	FORK
FRKS	FORKS
FT	FORT
FWY	FREEWAY
GDN	GARDEN
GDNS	GARDENS
GTWY	GATEWAY
GLN	GLEN
GLNS	GLENS
GRN	GREEN
GRNS	GREENS
GRV	GROVE
GRVS	GROVES
HBR	HARBOR
HBRS	HARBORS
HVN	HAVEN
HTS	HEIGHTS

HWY	HIGHWAY
HL	HILL
HLS	HILLS
HOLW	HOLLOW
INLT	INLET
IS	ISLAND
ISS	ISLANDS
ISLE	ISLE
JCT	JUNCTION
JCTS	JUNCTIONS
KY	KEY
KYS	KEYS
KNL	KNOLL
KNLS	KNOLLS
LK	LAKE
LKS	LAKES
LAND	LAND
LNDG	LANDING
LN	LANE
LGT	LIGHT
LGTS	LIGHTS
LF	LOAF
LCK	LOCK
LCKS	LOCKS
LDG	LODGE
LOOP	LOOP
MALL	MALL
MNR	MANOR
MNRS	MANORS
MDW	MEADOW
MDWS	MEADOWS
MEWS	MEWS
ML	MILL
MLS	MILLS
MSN	MISSION
MTWY	MOTORWAY
MT	MOUNT
MTN	MOUNTAIN
MTNS	MOUNTAINS
NCK	NECK
ORCH	ORCHARD
OVAL	OVAL
OPAS	OVERPASS
PARK	PARK
PARK	PARKS
PKWY	PARKWAY
PKWY	PARKWAYS
PASS	PASS
PSGE	PASSAGE
PATH	PATH
PIKE	PIKE
PNE	PINE
PNES	PINES
PL	PLACE
PLN	PLAIN
PLNS	PLAINS

PLZ	PLAZA
PT	POINT
PTS	POINTS
PRT	PORT
PRTS	PORTS
PR	PRAIRIE
RADL	RADIAL
RAMP	RAMP
RNCH	RANCH
RPD	RAPID
RPDS	RAPIDS
RST	REST
RDG	RIDGE
RDGS	RIDGES
RIV	RIVER
RD	ROAD
RDS	ROADS
RTE	ROUTE
ROW	ROW
RUE	RUE
RUN	RUN
SHL	SHOAL
SHLS	SHOALS
SHR	SHORE
SHRS	SHORES
SKWY	SKYWAY
SPG	SPRING
SPGS	SPRINGS
SPUR	SPUR
SPUR	SPURS
SQ	SQUARE
SQS	SQUARES
STA	STATION
STRA	STRAVENUE
STRM	STREAM
ST	STREET
STS	STREETS
SMT	SUMMIT
TER	TERRACE
TRWY	THROUGHWAY
TRCE	TRACE
TRAK	TRACK
TRFY	TRAFFICWAY
TRL	TRAIL
TRLR	TRAILER
TUNL	TUNNEL
TPKE	TURNPIKE
UPAS	UNDERPASS
UN	UNION
UNS	UNIONS
VLY	VALLEY
VLYS	VALLEYS
VIA	VIADUCT
VW	VIEW
VWS	VIEWS
VLG	VILLAGE

VLGS	VILLAGES
VL	VILLE
VIS	VISTA
WALK	WALK
WALK	WALKS
WALL	WALL
WAY	WAY
WAYS	WAYS
WL	WELL
WLS	WELLS

(n) Reference **OK_ADDRESS_SCHEMAS.XLS** –SEPARATOR

Code	Description	Data Source - NENA-STA-004.1.1-2014_CLDXF.pdf - Page 83
of the	of the	http://technet.nena.org/nrs/registry/StreetNamePreTypeSeparators.xml
at	at	
de las	de las	
des	des	
in the	in the	
to the	to the	
of	of	
on the	on the	
to	to	

(o) Reference **OK_ADDRESS_SCHEMAS.XLS** –BLDGUNIT

Code	Description	Data Source - USPS Publication 28 - Appendix C2 - Secondary Unit Designators - Page 72
APT	Apartment	http://pe.usps.com/text/pub28/28apc_003.htm
BSMT	Basement	
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	

(p) Reference OK_ADDRESS_SCHEMAS.XLS –ONEWAY

Code	Description	Data Source - NENA_71-501-v1_Synchronizing_GIS_Databases_with_MSAG_and_ALI.pdf - Page 14
B	Both	http://www.nena.org/resource/collection/F2E0D66A-4824-418C-8670-3238D262B84A/NENA_71-501-

		v1_Synchronizing_GIS_Databases_with_MSAG_and_ALI.pdf
FT	From To	
TF	To From	
N	None	

(q) Reference OK_ADDRESS_SCHEMAS.XLS –ROADCLASS

Code	Description	Data Source -https://www.census.gov/
Primary	Primary	https://www.census.gov/rdo/pdf/AttD_MAF_TIGER_Feature_Classification_Codes.pdf
Secondary	Secondary	
Local	Local	
Ramp	Ramp	
Service Drive	Service Drive	
Vehicular Trail	Vehicular Trail	
Walkway	Walkway	
Stairway	Stairway	
Alley	Alley	
Private	Private	
Parking Lot	Parking Lot	
Trail	Trail	
Bridle Path	Bridle Path	
Other	Other	

Article IV. Citations of Existing Standards, Sources, and Reference Material

Section 4.01 Existing Neighbor State Standards

The Oklahoma Address Standard utilized, in part the research and knowledge acquired from the following states published standards and documentation.

(a) **Kansas** - Kansas Geospatial Data Addressing Standard Final Edition – October 29, 1999

(b) **Arkansas** – Proposed Arkansas Centerline File Standard – June 18, 2002

(c) **Missouri** – Missouri Addressing Standard – January 26, 2005

(d) **Texas** – ESRI Address Geodatabase Schema – September 15, 2005

(e) **Nebraska** – Nebraska Street Centerline Address Database Schema – Draft-September 23, 2013

NG9-1-1 Standard Update- Existing State Standards Reviewed

(f) **Kansas** – Kansas NG9-1-1 GIS Data Model (Version 1.1) - April 14, 2015

(g) **Iowa** – Iowa Next Generation 9-1-1 GIS Standards

(h) **Texas** – Commission on State Emergency Communications (CSEC NG9-1-1 GIS DATA Standard)

Section 4.02 Existing Professional Standards Documentation & Legislation

The Oklahoma Address Standard directly referenced various pertaining portions of the following documents to ensure industry standards are adhered to.

(a) **Federal Geographic Data Committee (FGDC)**

- FDGC Standards Page
- FGDC Content Standard for Geospatial Metadata –(FGDC-STD-001-1998)
- FGDC Standards Reference Model – (March 1996)
- Postal Addressing Profile of the Federal Geographic Data Committee United States Thoroughfare, Landmark, and Postal Address Standard (December 16, 2010 FGDC Standards WG meeting)
- FGDC Endorsed Address Standard – (FGDC-STD-016-2011)
- Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy (FGDC-STD-007.3-1998)

(b) **National Emergency Number Association (NENA)**

- NENA Standards Page
- NENA Standard Data Formats For 9-1-1 Data Exchange & GIS Mapping – (NENA-02-010)
- NENA Information Documentation for Synchronizing GIS Databases with MSAG & ALI – (NENA-71-501)
- GIS Data Collection and Maintenance – (NENA-02-014)
- NENA Next Generation 9-1-1 (NG9-1-1) United States Civic Location Data Exchange Format (CLDXF) Standard (NENA-STA-004)
- Recommended Standard For Street Thoroughfare Abbreviations - Arkansas reference – (NENA-02-002)

(c) **United States Postal Service (USPS)**

- Mailing Standards of the United States Postal Service Publication 28 - Postal Addressing Standards

(d) **American Society for Photogrammetry and Remote Sensing (ASPRS)**

- ASPRS Accuracy Standards for Digital Geospatial Data – (Draft March 2014)
- ASPRS Accuracy Standards for Large-Scale Maps(1990_jul_1068-1070)

(e) **State of Oklahoma Legislative Actions**

- Oklahoma Senate. 1994 Regular Session, S 722
- Oklahoma House of Representatives. 1995 Regular Session, HB 1964
- Oklahoma House of Representatives. Interim Study H2003-105
- Oklahoma House of Representatives. 2004 Regular Session, HB 2457
- Oklahoma House of Representatives. 2016 Regular Session, HB 3126

Section 4.03 Workgroup Acknowledgements

Oklahoma's GIS Community contributed directly to the development of the address standard. This standard was developed under the authority and guidance of the GI Council, the Oklahoma Office of Geographic Information, and the volunteered efforts of the following individuals who participated on the Address Standards Workgroup as listed below along with the input from the Oklahoma GIS Community.

- Mike Sharp OGI
- Shellie Willoughby OGI

- Troy Frazier — Oklahoma Tax Commission
- Kathy Hines — Center for Spatial Analysis
- Sohail Hasanjee — OneOK
- Craig Moody — ODOT
- John Sharp — ACOG
- Wade Patterson — Garfield County Assessor
- Brenda Fennel — Choctaw Nation
- Joel Foster — ACOG
- Charles Brady III — City of Ardmore

NG9-1-1 Standard Update – GIS Technical Workgroup

- Lance Terry — Oklahoma 9-1-1 Coordinator Management Authority
- Kristal Kuhn — Oklahoma 9-1-1 Coordinator Management Authority
- Stacey Root — Oklahoma 9-1-1 Coordinator Management Authority
- Mike Sharp — OGI
- Shellie Willoughby — OGI
- Jeremy Planteen — ODOT
- Jana Harris — SWODA
- Terry O'Malley — City of Tulsa
- Mike Davis — ACOG
- Kurt Bickle — INCOG
- Andrew Sears — INCOG
- Shelly Stahlbusch — Carter County E9-1-1
- James Allen — Carter County E9-1-1
- Russell Anderson — City of Norman
- Charles Brady III — City of Ardmore

Section 4.04 Maintenance of the Standard

This standard will be maintained through a partnership between the 9-1-1 Authority and the GI Council. The partnership will ensure that this address standard is relevant and applicable to the industry.

Section 4.05 Technical Glossary

(a) **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.

(b) **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.

(c) **Address matching** – See **Geocoding.**

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

(e) **ANI** – (Automatic Number Identification) The 10-digit Telephone Number associated with a device originating a 9-1-1 call.

(f) **Attribute** - the properties and characteristics of entities.

(g) **CAD** – (Computer Aided Dispatch) Information about features or elements contained in GIS data is usually stored in a related table.

(h) **CLDFX** - (Civic Location Data Exchange Format) A set of data elements that describe detailed street address information.

(i) **E9-1-1** – (Enhanced 9-1-1) A telephone system which includes network switching, database, and Public Safety Answering Point premise elements capable of providing Automatic Location Identification (ALI) data, selective routing, selective transfer, fixed transfer, and a call back number. The term also includes any enhanced 9-1-1 service so designated by the Federal Communications Commission in its Report and Order in WC Docket Nos. 04-36 and 05-196, or any successor proceeding.

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

(k) **EMS** -(Emergency Medical Service) Fire, hospital, poison control, etc., response centers.

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

(m) **ESB** – (Emergency Service Boundary) The Polygon that defines the geographic area of a single emergency response service. (Fire or Law or EMS separately) *Required to be separate service layers for NG9-1-1.*

(n) **ESInet** - (Emergency Services Internet protocol network) An ESInet is a managed IP network that is used for emergency services communications, and which can be shared by all public safety agencies. It provides the IP transport

infrastructure upon which independent application platforms and core functional processes can be deployed, including, but not restricted to, those necessary for providing NG9-1-1 services. ESInets may be constructed from a mix of dedicated and shared facilities. ESINet may be interconnected at local, regional, state, federal, national, and international levels to form an IP based inter-network (network of networks).

(o) **ESN** – (Emergency Service Number) The three to five digit Number assigned to the unique combination of ESB that represent a ESZ polygon. *Required at a minimum as a legacy lookup table for the MSAG.*

(p) **ESZ** – (Emergency Service Zone) The **Polygon** that defines the unique geographic area of the combination of ESB (Fire, Law, & EMS Combined)

(q) **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 resulting in a single geographic point for a specific address.

(r) **Geospatial feature** - A point, line or polygon stored within geospatial software.

(s) **Geospatial software** - Mapping software with analytical capabilities.

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

(u) **LVF** – (Location Validation Function) A functional element in a Next Generation 9-1-1 Core Services (NGCS) that is a Location-to-Service Translation (LoST) protocol server where civic location information is validated against the authoritative GIS database information. A civic address is considered valid if it can be located within the database uniquely, is suitable to provide an accurate route for an emergency call, and adequate and specific enough to direct responders to the right location.

(v) **MCS** – (MSAG Conversion Service) A web service providing conversion between PIDF-LO and MSAG data.

(w) **MSAG** – (Master Street Address Guide) A database of street names and house number ranges within their associated communities defining Emergency Service Zones (ESZs) and their associated Emergency Service Numbers (ESNs) to enable proper routing of 9-1-1 calls.

(x) **NENA** - The National Emergency Number Association is a not-for-profit corporation established in 1982 to further the goal of "One Nation-One Number." NENA is a networking source and promotes research, planning, and training. NENA strives to educate, set standards, and provide certification programs, legislative representation, and technical assistance for implementing and managing 9-1-1 systems.

(y) **NG9-1-1** - (Next Generation 9-1-1) NG9-1-1 is an Internet Protocol (IP) based system comprised of managed Emergency Services IP networks (ESINet), functional elements (applications), and databases that replicate traditional E9-1-

1 features and functions and provides additional capabilities. NG9-1-1 is designed to provide access to emergency services from all connected communications sources, and provide multimedia data capabilities for Public Safety Answering Points (PSAPs) and other emergency service organizations.

www.nena.org/resource/resmgr/ng9-1- 1_project/whatisng9-1-1.pdf

(z) **NGUID** -(NENA Globally Unique ID) NENA Globally Unique IDs must exist for each feature within the GIS data layer such that the ID is unique within a set of aggregated data for each layer.

(aa) **Parity** -A characteristic of a set of addresses or address ranges in which the numbers are either odd or even.

(bb) **PIDF-LO** - Provides a flexible and versatile means to represent location information in a Session Initiation Protocol (SIP) header using an XML schema.

(cc) **Point** - A geospatial feature that is stored as a single XY coordinate.

(dd) **PSAP** - (Public Safety Answering Point) An entity responsible for receiving 9-1-1 calls and processing those calls according to a specific operational policy.

(ee) **SI** – (Spatial Interface) A standardized interface between the GIS and the functional elements that consume GIS data, such as the ECRF and the LVF.

(ff) **Street Centerline** – A linear representation of a street that contains the associated attributes required for geocoding. A street centerline can represent a single lane or multiple lanes depending on the required functionality.

(gg) **URI** - (Uniform Resource Identifier) A predictable formatting of text used to identify a resource on a network (usually the Internet) *OR* A string of characters that must follow prescribed syntaxes such as URL, URN. Note: Version 1.1 of the XML namespaces recommendation uses IRIs (Internationalized Resource Identifiers) instead of URIs. However, because version 1.1 is not yet a full recommendation [February 2003] and because the IRI RFC is not yet complete, this document continues to refer to URIs instead of IRIs.

(hh) **URN** – (Uniform Resource Name) Uniform Resource Identifiers (URIs) that use the URN scheme, and are intended to serve as persistent, location independent resource names.

(ii) **VoIP** – (Voice over Internet Protocol) A technology that allows you to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line.