Profile Reconciling the FGDC *United States Thoroughfare, Landmark, and Postal Address Data Standard* and the NENA *Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard* (Provisional Draft)

Provisional Draft: Under review by NENA (version 3/17/2010)

0. Title Page, Table of Contents

0.2 Table of Contents

1. Summary

A profile provides, for a particular application of a base standard, either a restricted subset of the standard, or a limited extension of a standard that does not contradict the base standard, or both (ISO 19106).

This profile reconciles two address data standards:

1. The U.S. Federal Geographic Data Committee (FGDC) *United States Thoroughfare, Landmark, and Postal Address Data Standard*, and
2. The National Emergency Number Association (NENA) *Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard*.

Because they were drafted for different purposes, the standards differ in certain details. This profile is intended to facilitate and standardize the conversion of address records from FGDC conformance to CLDXF conformance and vice versa. Specifically the profile:

1. States the equivalencies between FGDC and CLDXF elements, and notes any discrepancies in definition or construction (Section 7)
2. States which FGDC parts, classes, elements, attributes and values are excluded from the CLDXF (Section 8).
3. Provides detailed instructions for converting FGDC address elements to their CLDXF equivalents, and vice versa (Section 9).
4. Briefly describes two tests for conformance to the profile (Section 10).

2. Background, Purpose, Authorship, and Provisional Status of this Profile

FGDC Standard. The U.S. Federal Geographic Data Committee (FGDC) *United States Thoroughfare, Landmark, and Postal Address Data Standard* has been created to provide one standard that meets the diverse address data management requirements for local address administration, postal and package delivery, emergency response (and navigation generally), administrative recordkeeping, and address data aggregation.

NENA Standard. The National Emergency Number Association (NENA) *Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard* supports the exchange of United States civic location address information about 9-1-1 calls.

Need to Reconcile the Standards. Because they were drafted for different purposes, the standards differ in certain details. Address administrators and 9-1-1 administrators often have reason to exchange address records. This profile is intended to facilitate and standardize the conversion of address records from FGDC conformance to CLDXF conformance and vice versa. Specifically the profile:

1. States the equivalencies between FGDC and CLDXF elements, and notes any discrepancies in definition or construction (Section 7)
2. States which FGDC parts, classes, elements, attributes and values are excluded from the CLDXF (Section 8).
3. Provides detailed instructions for converting FGDC address elements to their CLDXF equivalents, and vice versa (Section 9).
4. Briefly describes two tests for conformance to the profile (Section 10).

Address data records that conform to either base standard shall, when altered according to the procedures described in Section 9.1 or 9.2 of this profile, yield address data records that conform to the other base standard.

Authorship. This profile was drafted jointly by the working groups that created the two base standards.

Provisional Status. Because neither base standard has yet been formally adopted, this profile is presented provisionally. Upon adoption of both base standards, the profile (revised to incorporate any pertinent changes made during the review and adoption process) will be formally recognized as a normative profile of the two base standards.

3. Normative Reference to Base Standards

This profile reconciles two base standards:

1. U.S. Federal Geographic Data Committee. "United States Street, Landmark, and Postal Address Data Standard." Final draft, January 23, 2010 (prepared by the Address Standard Working Group under the sponsorship of the United States Federal Geographic Data Committee). The FGDC will post the draft for public review in late March 2010.
2. National Emergency Number Association. "NENA Next Generation 9-1-1 (NG9-1-1) Civic Location Data Exchange Format (CLDXF) Standard." NENA Joint Data Technical/ PSAP Operations & Next Generation Integration Committees, Next Generation Data Development Working Group (NGDD). Draft, as approved by the Working Group on March 17, 2010.

The NENA standard is the United States profile of the IETF Presence Information Data Format Location Object (PIDF-LO), which is defined by:

- Internet Engineering Task Force, Network Working Group. "Revised Civic Location Format for Presence Information Data Format Location Object (PIDF-LO)." Request for Comment 5139. Thomson, M. and J. Winterbottom, February 2008. (Posted at: http://www.ietf.org/rfc/rfc5139.txt).
- Internet Engineering Task Force, Network Working Group. "Location Types Registry." Request for Comment 4589. H. Schulzrinne and H. Tschofenig, July 2006. (Posted at: http://www.ietf.org/rfc/rfc4589.txt).
- Internet Engineering Task Force, Network Working Group. "A Presence-based GEOPRIV Location Object Format." Request for Comment 4119. J. Peterson, December 2005. (Posted at: http://www.ietf.org/rfc/rfc4119.txt).

4. Maintenance Authority for the Profile

The Census Bureau will maintain this profile under the auspices of its duties as theme lead for the FGDC Subcommittee on Cultural and Demographic Data (SCDD), ensuring that the profile is revisited on the 5-year schedule as stipulated, or updating and revising as necessary.

The Census Bureau will seek assistance as needed from the NENA Joint Data Technical/PSAP Operations & Next Generation Integration Committees, Next Generation Data Development Working Group (NGDD) to ensure that the profile is changed as needed to reflect the two base standards.

Direct any questions to:

1. Census: Chief, Geography Division, U.S. Bureau of the Census.
2. NENA: (Email): CommLeadership@nena.org or, (Phone:) 800-332-3911 or, (Mail:) National Emergency Number Association, 4350 North Fairfax Drive, Suite 750, Arlington, VA 22203-1695

5. Applicable Context of the Profile

This profile sets forth the relationship between the two base standards, and describes how to alter address records that conform to one base standard so that they conform to the other.

6. Community of Interest for the Profile

This profile will be of interest to address administrators, 9-1-1 administrators, and others interested in the relation between the base standards or in altering address records that conform to one base standard so that they conform to the other.

7. Discrepancies, Reconciliation, and Comparability of Data Elements in the FGDC Address Standard and the NENA NG9-1-1 CLDXF Standard

7.0 Introduction

Section 7 lists each FGDC address data element name, followed by the name of the equivalent NENA NG 9-1-1 CLDXF element name. For each pair, it gives:

- Discrepancies, if any.
- Examples of the element in FGDC and CLDXF form.
- How the discrepancies can be reconciled
- How the two elements differ, if at all, in definition and construction.

Section 9 describes procedures for converting FGDC elements to their CLDXF equivalents, and vice versa.

7.1 Country, State, Place Name, and Postal Code Elements

7.1.1 Country Name / Country

- **FGDC/NENA Discrepancy:** FGDC recognizes ISO 3166-1 short English names only. NENA recognizes ISO 3166-1 two-letter country abbreviations only.
- **Example: FGDC:** Canada; **CLDXF:** CA
- **Reconciliation:** Follow ISO 3166-1 mapping of names to abbreviations.
- **FGDC-NENA Comparability:** Identical, if abbreviations are mapped to short English names.

7.1.2 State Name / State

- **FGDC-NENA Discrepancy:** FGDC recognizes state names spelled out in full, as well as the two-letter state abbreviations. NENA permits the state abbreviations only.
- **Example: FGDC:** VA or Virginia; **CLDXF:** VA

- **Reconciliation:** Map names to abbreviations as given USPS Publication 28, Appendix B.
- **FGDC-NENA Comparability:** Identical, if abbreviations are mapped to names.

7.1.3 Place Name / County

- **Discrepancy:** The FGDC Place Name element includes county, municipality, unincorporated community, and postal community names. The NENA standard separates them into different elements. FGDC Place Names may be differentiated by the Place Name Type attribute. A county name would have a Place Name Type = "County".
- **Example: FGDC:** Winston (= Place Name); **CLDXF:** Winston
- **Reconciliation:** Within the FGDC standard, use the Place Name Type attribute to identify county names.
- **FGDC-NENA Comparability:** Identical, if FGDC Place Names have a Place Name Type of "County".

7.1.4 Place Name / Municipality

- **Discrepancy:** The FGDC Place Name element includes county, municipality, unincorporated community, and postal community names. The NENA standard separates them into different elements. FGDC Place Names may be differentiated by the Place Name Type attribute. A municipality name would have a Place Name Type = "Municipal".
- **Example:** FGDC: Haleyville (= Place Name); CLDXF: Haleyville
- **Reconciliation:** Within the FGDC standard, use the Place Name Type attribute to identify municipality names.
- **FGDC-NENA Comparability:** Identical, if FGDC Place Names have a Place Name Type of "Municipal".

7.1.5 Place Name / Unincorporated Community

- **Discrepancy:** The FGDC Place Name element includes county, municipality, unincorporated community, and postal community names. The NENA standard separates them into different elements. FGDC Place Names may be differentiated by the Place Name Type attribute. An unincorporated community name would have a Place Name Type = "Community".
- **Example: FGDC:** Manhattan (= Place Name); **CLDXF:** Manhattan
- **Reconciliation:** Within the FGDC standard, use the Place Name Type attribute to identify unincorporated community names.
- **FGDC-NENA Comparability:** Identical, if FGDC Place Names have a Place Name Type of "Community".

7.1.6 Place Name / Postal Community Name

- **Discrepancy:** The FGDC Place Name element includes county, municipality, unincorporated community, and postal community names. The NENA standard separates them into different elements. FGDC Place Names may be differentiated by the Place Name Type attribute. An postal community name would have a Place Name Type = "USPS".
- **Example: FGDC:** Stanton (= Place Name); **CLDXF:** Stanton
- **Reconciliation:** Within the FGDC standard, use the Place Name Type attribute to identify postal community names.
- **FGDC-NENA Comparability:** Identical, if FGDC Place Names have a Place Name Type of "USPS".

7.1.7 Zip Code, Zip Plus 4 / Postal Code

- **Discrepancy:** None.
- **Example: FGDC:** 99901; **CLDXF:** 99901
- **FGDC-NENA Comparability:** Identical.

7.2 Street Name Elements

7.2.1 Street Name Pre Modifier / Street pre-modifier

- **Discrepancy:** None.
- **Example: FGDC:** "Old" in Old North First Street; **CLDXF:** "Old" in Old North First Street
- **FGDC-NENA Comparability:** Identical.

7.2.2 Street Name Pre Directional / Leading street direction

- **Discrepancy:** NENA NG9-1-1 requires abbreviations as given USPS Publication 28 Appendix B; FGDC requires words spelled in full.
- **Example: FGDC:** "North" in North Fairfax Drive ; **CLDXF:** "N" in N Fairfax Drive
- **Reconciliation:** Map USPS abbreviations to words.
- **FGDC-NENA Comparability:** Identical, if abbreviations are mapped to words.

7.2.3 Street Name Pre Type / Street Pretype (proposed)

- **Discrepancies:**
  1. The NENA standard recognizes the Street Suffix abbreviations given in USPS Publication 28 Appendix C1 for Street Pretypes, in addition to the words spelled out in full. The FGDC standard requires words spelled in full.
  2. In the FGDC standard, prepositional phrases that separate the Street Name Pre

Type from the street name (Boulevard of the Allies; Alameda de las Pulgas) are classed as a Separator Element. In the NENA standard they are included in the pretype field, and separated from the pretype word by a pipe ("|") symbol: Avenue | of the.

- **Examples:**
  1. **FGDC:** "Avenue" in Avenue A; **CLDXF:** "Ave" in Ave A; or "Avenue" in Avenue A
  2. **FGDC:** "Boulevard" in Boulevard of the Allies; **CLDXF:** "Boulevard | of the" in Boulevard of the Allies
- **Reconciliation:**
  1. Map words to USPS abbreviations.
  2. In moving street names from the FGDC to the NENA standard, include any Separator Element in the pretype field, with a pipe symbol between the pretype word and the prepositional phrase. In moving street names from the NENA standard compliance to FGDC standard compliance, discard any pipe symbol found in the pretype field, and move all text to the right of the pipe into a Separator Element.
- **FGDC-NENA Comparability:** Identical, if:
  1. IETF adopts Street Name Pre Type as proposed by NENA, and
  2. USPS Street Pretype abbreviations are mapped to words, and
  3. Prepositional phrases are converted as stated above.

7.2.4 Street Name / Street Name

- **Discrepancy:** None.
- **Example: FGDC:** "Fairfax" in North Fairfax Avenue; **CLDXF:** "Fairfax" in N Fairfax Ave
- **FGDC-NENA Comparability:** Identical.

7.2.5 Street Name Post Type / Street suffix

- **Discrepancy:** None, except that NENA recognizes the abbreviations given in USPS Publication 28 Appendix C1 in addition to the words spelled out in full.
- **Example: FGDC:** "Avenue" in North Fairfax Avenue; **CLDXF:** "Ave" in N Fairfax Ave; or "Avenue" in N Fairfax Avenue
- **Reconciliation:** Map words to USPS abbreviations.
- **FGDC-NENA Comparability:** Identical, if abbreviations are mapped to words.

7.2.6 Street Name Post Directional / Trailing street direction

- **Discrepancy:** NENA requires abbreviations as given USPS Publication 28 Appendix B; FGDC requires words spelled in full.
- **Example: FGDC:** "East" in Seventh St East; **CLDXF:** "E" in Seventh St E;
- **Reconciliation:** Map words to USPS abbreviations.
- **FGDC-NENA Comparability:** Identical, if abbreviations are mapped to words.

7.2.7 Street Name Post Modifier / Street post-modifier

- **Discrepancy:** None.
- **Example: FGDC:** "Extended" in East End Avenue Extended; **CLDXF:** "Extended" in East End Avenue Extended
- **FGDC-NENA Comparability:** Identical.

7.3 Address Number Elements

7.3.1 Address Number Prefix / Address Number Prefix (proposed)

- **Discrepancy:** None (provided that IETF adopts the element as proposed), except that FGDC Address Number Prefix includes CLDXF Milepost element (see 7.3.4 below)
- **Example: FGDC:** "N6W2" in N6W2 3001 Bluemound Road; **CLDXF:** "N6W2" in N6W2 3001 Bluemound Road
- **Reconciliation:** Identical, if Milepost elements are treated separately per 7.3.4 below.

7.3.2 Address Number / Address Number

- **Discrepancy:** None.
- **Example: FGDC:** "123" in 123 Main Street; **CLDXF:** "123" in 123 Main Street
- **FGDC-NENA Comparability:** Identical.

7.3.3 Address Number Suffix / Address Number Suffix

- **Discrepancy:** None.
- **Example: FGDC:** "1/2" in 119 1/2 Elm Street; **CLDXF:** "1/2" in 119 1/2 Elm Street
- **FGDC-NENA Comparability:** Identical.

7.3.4 [CompleteAddressNumber] / Milepost (proposed)

- **Discrepancy:**
  1. CLDXF defines mileposts as elements that are not parsed. FGDC treats them as Complete Address Numbers, and parses them as follows: "Milepost" (or equivalent term, such as Mile Marker, Kilometer, or Km) = Address Number Prefix; Milepost number (integer portion) = Address Number; Milepost number (decimal portion, if any, including the decimal point) = Address Number Suffix.
  2. A milepost number may be included in a CLDXF civic address record if the street name is the same for both (for example: "Milepost 12, 12005 County Road 88"). Under the FGDC standard, these would be treated as two separate address records. The two could be linked using the Related Address ID attribute and the Address Relation Type attribute.
- **Examples:**
  - **CLDXF:** "Milepost 1303.5" = Milepost, no parsing permitted; **FGDC:** "Milepost

1303.5" = Complete Address Number, which can be parsed as follows: Address Number Prefix = "Milepost"; Address Number = 1303; Address Number Suffix = ".5" .

- **CLDXF:** "Milepost 12, 12005 County Road 88" (one record, indicating that 12005 County Road 88 is at Milepost 12); **FGDC:** FGDC standard would treat this as two separate addresses" "Milepost 12, County Road 88" and "12005 County Road 88"

- **Reconciliation:**
  1. Within FGDC format, compose milepost numbers into Complete Address Numbers.
  2. If a milepost and an address number are given in the same NENA record, separate them into two different FGDC address records. If desired, the two records may be linked using the Related Address ID attribute and the Address Relation Type attribute.

- **FGDC-NENA Comparability:** Identical, if FGDC milepost numbers are composed into Complete Address Numbers; and, where NENA records provide both a milepost and an address number, they are separated into two FGDC address records.

7.4 Landmark Name Element

7.4.1 Landmark Name / Landmark Name

- **Discrepancy:** None.
- **Example: FGDC:** Empire State Building; **CLDXF:** Empire State Building
- **FGDC-NENA Comparability:** Identical.

7.5 Subaddress Elements

7.5.0 Subaddress Identifier, Subaddress Type, Subaddress Component Order / Interior (proposed)

- **Discrepancy:** None. The FGDC Subaddress Identifier is synonymous with the proposed Interior element, and the FGDC Subaddress Type is synonymous with the N attribute of the proposed Interior element. The FGDC Subaddress Component Order is synonymous with the Interior R attribute. The Subaddress Component Order values "1","2", and "3" are equivalent to the Interior R values of "B", "A", and null, respectively.
- **FGDC-NENA Comparability:** Identical.

7.5.1 Subaddress Element / Building

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** "Building 1" in Langston Terrace Housing Complex, Building 1

(=SubadressElement); **CLDXF:** "Building 1" in Langston Terrace Housing Complex, Building 1

- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.
- **FGDC-NENA Comparability:** The NENA Building element is a subset of the FGDC Subaddress Element.

7.5.2 Subaddress Element / Additional location information

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** Pediatric Wing; **CLDXF:** Pediatric Wing
- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.
- **FGDC-NENA Comparability:** The NENA Additional location information element is a subset of the FGDC Subaddress Element.

7.5.3 Subaddress Element / Floor

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** 5th Floor (=SubadressElement); **CLDXF:** 5th Floor
- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.
- **FGDC-NENA Comparability:** The NENA Floor element is a subset of the FGDC Subaddress Element.

7.5.4 Subaddress Element / Unit

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** Penthouse (=SubadressElement); **CLDXF:** Penthouse
- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or

seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.

- **FGDC-NENA Comparability:** The NENA Unit element is a subset of the FGDC Subaddress Element.

7.5.5 Subaddress Element / Room

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** Room 450F (=SubadressElement); **CLDXF:** Room 450F
- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.
- **FGDC-NENA Comparability:** The NENA Room element is a subset of the FGDC Subaddress Element.

7.5.6 Subaddress Element / Seat

- **Discrepancy:** The FGDC standard defines a general-purpose Subaddress Element. It does not provide any way to classify Subaddress Elements into the NENA building, additional location information, floor, unit, room, and seat elements.
- **Example: FGDC:** Cubicle 23 (=SubadressElement); **CLDXF:** Cubicle 23
- **Reconciliation:** To bring an FGDC Subaddress Element into a NENA-compliant record, determine if the Subaddress Element identifies a building, floor, unit, room, or seat, and place it in the appropriate NENA element. If it does not fit in any of those NENA elements, then by default it is additional location information.
- **FGDC-NENA Comparability:** The NENA Seat element is a subset of the FGDC Subaddress Element.

7.6 Address Descriptor

7.6.1. Address Feature Type / Place-type

- **Discrepancy:** PLC is restricted to values listed in IETF RFC 4589. FGDC Address Feature Type has no restrictions--any values may be defined and used.
- **Example: FGDC:** Airport, arena, bank, etc.; **CLDXF:** Airport, arena, bank, etc.
- **Reconciliation:** Within this profile, restrict the FGDC domain to values listed in RFC 4589. If other values are found in FGDC files, either add those values to the IETF registry, or declare equivalent values within the registry, or omit the values (or decline to enforce the registry).
- **FGDC-NENA Comparability:** Identical, if FGDC values are in the IETF registry.

8. Profile Restrictions and Extensions of the FGDC address standard and the NENA NG 9-1-1 CLDXF

The FGDC standard accommodates all NENA NG9-1-1 CLDXF data elements. The NENA standard can be reconciled to the FGDC standard with no restrictions or extensions beyond the reconciliation procedures given in Section 7 of this profile.

The NENA standard excludes certain parts, classes, elements, and domains of values included in the FGDC standard. Therefore this profile restricts the FGDC standard as described below.

8.1 Relation of FGDC Standard Parts to NG911 CLDXF Standard

8.1.1 FGDC Content Part - This profile restricts the FGDC Content Part to those FGDC elements and attributes listed in Section 7 of this profile.

8.1.2 FGDC Classification Part - This profile excludes the FGDC Classification Part; the NENA NG9-1-1 CLDXF Standard does not classify addresses. Section 8.2 lists the FGDC address classes accommodated within the NENA NG9-1-1 CLDXF.

8.1.3 FGDC Data Quality Part - This profile excludes the FGDC Data Quality Part; the NG911 CLDXF Standard does not specify data quality tests.

8.1.4 FGDC Exchange Part - This profile restricts the FGDC Address Data Exchange XSD to those FGDC elements having counterparts in the NENA NG911 CLDXF Standard.

8.2 Relation of FGDC Address Classes to the NENA NG9-1-1 CLDXF Standard

The NENA standard does not recognize all of the address classes defined in the FGDC standard. Within this profile, FGDC address classes are included or excluded as follows:

- **INCLUDED** - Numbered Thoroughfare Address
- **EXCLUDED** - Intersection Address (NENA standard does not permit two street names in one address)
- **EXCLUDED** - Two Number Address Range (NENA standard does not permit two address numbers in one address)
- **EXCLUDED** - Four Number Address Range (NENA standard does not permit multiple address numbers in one address)
- **INCLUDED** - Unnumbered Thoroughfare Address
- **INCLUDED** - Landmark Address
- **INCLUDED** - Community Address
- **EXCLUDED** - USPS Postal Delivery Box (NENA standard does not permit PO Box identifiers in an address)
- **EXCLUDED** - USPS Postal Delivery Route (NENA standard does not permit RD, HCR, and other postal route identifiers in an address)
- **EXCLUDED** - USPS General Delivery Office (NENA standard does not permit "General Delivery" in any field of an address)
- **EXCLUDED** - General Address Class (NENA standard does classify addresses, and it

does not accommodate all addresses permitted in the General Address Class)

8.3 Profile Restrictions on FGDC Address Data Elements and Attributes

This profile restricts the FGDC address data elements and attributes to those listed in Section 7 of this profile.

8.4 Profile Restrictions on FGDC Domains of Values

The NENA standard restricts two attributes, Place Name Type and Address Feature Type, to smaller domains of values than permitted in the FGDC standard.

- **8.4.1 Place Name Type:** Within this profile, the FGDC Place Name Type domain is restricted to four values only: County, Municipality, Community, and USPS.
- **8.4.2 Address Feature Type:** Within this profile, the FGDC Address Feature Type is restricted to values found in the IETF Place-type registry (See IETF RFC4589).

8.5 Unique Address ID: Required in the FGDC Standard; Excluded from the NENA Standard and This Profile

The FGDC data content part requires that every address record have a unique Address ID. This requirement cannot be imposed in the context of this profile, because the NENA standard is a data exchange standard, not a data content standard. Addresses are not required to be unique in the context of the NG9-1-1 standard, because the NG9-1-1 standard is intended to support exchange of data about 9-1-1 calls, not addresses. The ID of an address associated with a given 9-1-1 call is often unknown and sometimes nonexistent. Therefore, within this profile, the FGDC standard is restricted to exclude the data content requirement for a unique Address ID.

9. Converting Address Data Between FGDC Conformance And NENA NG9-1-1 CLDXF Conformance

This section describes the procedures by which address data records that conform to one base standard can be brought into conformance with the other.

9.1 Procedure for Converting FGDC-compliant Address Files into NENA NG9-1-1 CLDXF-Compliant Files

Classes Excluded. Delete from the file all addresses that are not in the following classes: Numbered Thoroughfare Address, Unnumbered Thoroughfare Address, Landmark Address, Community Address.

Elements and Attributes Excluded. From those addresses that remain, delete all elements and attributes except the following: Address Number Prefix, Address Number, Address Number Suffix; Street Name Pre Modifier, Street Name Pre Directional, Street Name Pre Type, Separator Element (only if found in a Complete Street Name), Street Name, Street Name Post Type, Street Name Post Directional, Street Name Post Modifier; Landmark Name;

Subaddress Element(s), Subaddress Component Order; Place Name(s), Place Name Type; State Name, Zip Code; Zip Plus 4; Country Name; Address Feature Type.

Place Names Excluded. Delete all Place Names with Place Name Types other than: County, Municipality, USPS, or Community.

For Each Remaining Element and Attribute in Each Address Record:

1. Country Name - Replace Country Name with its ISO 3166-1 two-letter abbreviation. Copy to the CLDXF Country element.
2. State Name - If any State Names are spelled out in full, replace them with their equivalent two-letter USPS or ANSI abbreviations. Copy to the CLDXF State element.
3. County Place Names - Select all Place Names whose Place Name Type is "County". Copy to the CLDXF County element.
4. Municipality Place Names - Select all Place Names whose Place Name Type is "Municipality". Copy to the CLDXF Municipality element.
5. Community Place Names - Select all Place Names whose Place Name Type is "Community". Copy to the CLDXF Unincorporated Community element.
6. USPS Place Names - Select all Place Names whose Place Name Type is "USPS". Copy to the CLDXF Postal Community Name element.
7. Zip Code and Zip Plus 4 - (If Zip Plus 4 is given, concatenate it with the Zip Code value.) Copy to the CLDXF Postal Code element.
8. Street Name Pre Modifier - Copy to the CLDXF Street pre-modifier element.
9. Street Name Pre Directional - Convert the directional word to its abbreviation as given in USPS Publication 28 Appendix B. Copy to the CLDXF Leading street direction element.
10. Street Name Pre Type - If any Complete Street Name includes a Separator Element (i.e., a prepositional phrase following a Street Name Pre Type), concatenate the Street Name Pre Type with the Separator Element, placing pipe symbol ('|") between them. If desired, pretype words may be converted to their abbreviations (if any) given in USPS Publication 28 Appendix C.1. Copy to the CLDXF Street pretype element.
11. Street Name - Copy to the CLDXF Street name element.
12. Street Name Post Type - If desired, convert posttype words to their abbreviations (if any) given in USPS Publication 28 Appendix C.1. Copy to the CLDXF element.
13. Street Name Post Directional - Convert the directional word to its abbreviation as given in USPS Publication 28 Appendix B. Copy to the CLDXF Trailing street direction element.
14. Street Name Post Modifier - Copy to the CLDXF Street Post-modifier element.
15. Address Number Prefix - Exclude any values that are "Milepost" or an equivalent term, and their associated Address Numbers and Address Number Suffixes. Copy all others to the CLDXF Address number prefix element.
16. Address Number - Copy to the CLDXF Address number element.
17. Address Number Suffix - Copy to the CLDXF Address number suffix element.
18. Milepost Number - Determine if any of the Address Number Prefixes are "Milepost" or equivalent terms. Concatenate with the corresponding Address Number and (if present) Address Number Suffix. Copy to CLDXF Milepost element.
19. Landmark Name - Copy to the CLDXF Landmark name element.
20. Subaddress Element - Determine whether the Subaddress Element corresponds to a

CLDXF Building, Additional location information, Floor, Unit, Room, or Seat element. Copy to the appropriate CLDXF element. [Note: If the Interior element is adopted, then the Subaddress Identifier will be copied to the Interior element, the Subaddress Type will be copied to the Interior N attribute, and the Subaddress Component Order will be copied to the INT R attribute.]

21. Address Feature Type - Exclude all values not found the IETF Place-type registry defined in IETF RFC 4589. Copy to the CLDXF Place-type element.

9.2 Procedure for Converting NENA NG9-1-1 CLDXF-compliant Address Files into FGDC-Compliant Files

Address I Ds and Address Authority. Note that, upon import to an FGDC-compliant file, each address record MUST have a unique Address ID. An Address Authority is also strongly recommended. These elements will not be found in the NENA NG9-1-1 CLDXF address record.

For Each Element and Attribute in Each Address Record:

1. **Country** - Replace the ISO 3166-1 two-letter country name abbreviation with the ISO 3166-1 short English version of the country name. Copy to the FGDC Country Name element.
2. **State** - Copy to the FGDC State Name element.
3. **County** - Copy to the FGDC Place Name element, and, if desired, assign a Place Name Type = "County".
4. **Municipality** - Copy to the FGDC Place Name element, and, if desired, assign a Place Name Type = "Municipality".
5. **Unincorporated Community** - Copy to the FGDC Place Name element, and, if desired, assign a Place Name Type = "Community".
6. **Postal Community Name** - Copy to the FGDC Place Name element, and, if desired, assign a Place Name Type = "USPS".
7. **Postal Code** - Determine if the record includes a five-digit or a nine-digit ZIPCode. Copy the first five digits to the FGDC Zip Code, and the sixth through the ninth digits (if present) to the FGDC Zip Plus 4 element
8. **Street premodifier** - Copy to the FGDC Street Name Pre Modifier element.
9. **Leading street direction** - Convert the abbreviation to the complete directional word as given in as given in USPS Publication 28 Appendix B. Copy to the FGDC Street Name Pre Directional element.
10. **Street pretype** - Determine if any street pretype values include pipe symbols. If so, copy all text to the right of the pipe symbol ('|") into the FGDC Separator Element. Then, for all street pretype values (including text the left of any pipe symbols), determine if any of them are abbreviations given in USPS Publication 28 Appendix C.1.. Convert any abbreviations to the complete word as given in USPS Publication 28 Appendix C.1. Copy to the FGDC Street Name Pre Type element.
11. **Street name** - Copy to the FGDC Street Name element.
12. **Street suffix** - Determine if any values are abbreviations given in USPS Publication 28 Appendix C.1.. Convert any abbreviations to the complete word as given in USPS Publication 28 Appendix C.1. Copy to the FGDC Street Name Post Type element.
13. **Trailing street direction** - Convert the abbreviation to the complete directional word

as given in USPS Publication 28 Appendix B. Copy to the FGDC Street Name Post Directional element.

14. **Street postmodifier** - Copy to the FGDC Street Name Post Modifier element.
15. **Address number prefix** - Copy to the FGDC Address Number Prefix element.
16. **Address number** - Copy to the FGDC Address Number element.
17. **Address number suffix** - Copy to the FGDC Address Number Suffix element.
18. **Milepost** - Parse into Address Number Prefix, Address Number, and (if found) Address Number Suffix. Copy the values to their respective FGDC elements. If the NENA record includes both a milepost and and an address number, place them in two records, each with the same street name elements, place names, state, and ZIP Code. If desired, link them using the FGDC Related Address ID attribute and Address Relation Type attribute.
19. **Landmark name** - Copy to the FGDC Landmark Name element.
20. **Interior (if adopted)** - Copy the Interior element to the FGDC Subaddress Identifier. Copy the Interior "N" attribute to the FGDC Subaddress Type element. Copy the Interior "R" attribute to the FGDC Subaddress Component Order element.
21. **Building** - Copy to the FGDC Subaddress Component Order attribute.
22. **Additional location information** - Copy to the FGDC Subaddress Element.
23. **Floor** - Copy to the FGDC Subaddress Element.
24. **Unit** - Copy to the FGDC Subaddress Element.
25. **Room** - Copy to the FGDC Subaddress Element.
26. **Seat** - Copy to the FGDC Subaddress Element.
27. **Place-type** - Copy to the FGDC Address Feature Type attribute.

10. Conformance Requirements for This Profile

Conformance is presumed for any set of address data records that conforms to either base standard. Conformance can be confirmed by either of two tests:

1. Address data records that conform to the FGDC standard shall, when altered according to the procedures defined in Section 9.1 of this profile, yield address data records that conform to the NENA NG9-1-1 CLDXF standard.
2. Address data records that conform to the NENA NG9-1-1 CLDXF standard shall, when altered according to the procedures defined in Section 9.2 of this profile, yield address data records that conform to the FGDC standard.