INTRODUCTORY MATERIAL

Title, Title Page to be added

Working Title: Street Address Data Standard

Introduction

Street addresses are the location identifiers most widely-used by state and local government and the public. Street addresses are critical information for administrative, emergency response, research, marketing, mapping, GIS, routing and navigation, and many other purposes. Because they have evolved over many decades, under the control of thousands of local jurisdictions, in many different record and database formats, and to serve many purposes, different address formats and types pose a number of complex geoprocessing and modeling issues. As a consequence, government agencies struggle with these issues as they seek to integrate large, mission-critical files into master address repositories.

In sponsoring the creation of the Street Address Data Standard, the Federal Geographic Data Committee (FGDC) has sought to convene, under the auspices of its Subcommittee on Cultural and Demographic Data, interested parties from among the local, state, federal, and non-government sectors to create a forum wherein these issues can be resolved, thereby helping to make our spatial data infrastructure truly national.

Objective

The Street Address Data Standard provides, in separate parts, data content, classification, transfer, and quality standards for street, landmark, and postal addresses. The standard has been created to meet the following objectives:

1. Provide a method for documenting the content of address information.

2. Describe a way to express the content, applicability, data quality, and accuracy of an address dataset or data element.

3. Codify some commonly used discrete units of address information, referred to as descriptive elements, and thereby provide standardized terminology and definitions to alleviate inconsistencies in the use of descriptive elements and to simplify the documentation process.

4. By providing a method for documenting the content of address information, to facilitate street address data exchange, and to offer a migration path from legacy formats to standards compliant ones.

5. Provide a statement of best practices for street address data content and classification.

6. Recognize, as a practical matter, that different users may require different levels of standardization.

7. Define standards and tests and means of describing street address data quality.

Scope

This standard covers street addresses. A street address specifies a location by reference to a thoroughfare, or a landmark; or it specifies a point of postal delivery. There are thus three basic types of street address:

- Thoroughfare addresses specify a location by reference to a thoroughfare. A thoroughfare in this context is a linear feature used to travel from or to a specific location, which is designated

by a number and the thoroughfare name. A thoroughfare is typically but not always a road - it may be, for example, a walkway, a railroad, or a river.

- Landmark addresses specify a location by reference to a named landmark. A landmark is named point or area that is prominent enough in the local landscape as to be publicly known.

- Postal addresses specify points of postal delivery which have no definite relation to the location of the recipient, such as post office boxes, rural route boxes, etc.

This definition excludes addressees, occupants, persons, or businesses. An addressee may have multiple addresses, and an address may have many occupants. For data processing purposes, address and addressee should be treated as separate entities, and defined by separate standards.

The definition also excludes coordinate values. Coordinate values are an alternative way to specify location: coordinates specify locations by reference to a grid, spheroid, or geoid. Coordinates require different data items and data processing operations, and therefore different standards. Within the context of this standard, coordinates are treated as attributes of street addresses, and, in the case of certain postal addresses, as inapplicable.

The standard applies only to addresses within the United States.

Finally, the standard excludes electronic addresses, such as e-mail addresses.

Applicability

This standard is intended for use within and between federal, state, regional, local government agencies, nongovernmental sectors, and the general public.

Related Standards

- Related standards are listed in Appendix A (Informative).

Standards Development Procedure

This standard builds on USPS Publication 28, and on the Address Data Content Standard previously proposed by the FGDC (Public Review Draft, April 17, 2003).

The FGDC effort led the Urban and Regional Information Systems Association (URISA) to propose, with the support of the National Emergency Number Association (NENA) and the U.S. Bureau of the Census, the convening of a Street Address Standards Working Group to include representatives from a range of interested federal, state, regional, and local government agencies, the private-sector, and professional associations. The proposal was accepted by the FGDC Standards Working Group on April 13, 2005.

The following steps were undertaken to facilitate this effort:

- Establish a collaborative website to facilitate discussion and consensus of administrative needs, best practices, and technical details

- Teleconferences and in-person meetings

- Circulate the small-group consensus for comment to memberships of all participating organizations

- Submit final draft through the FGDC formal standards approval process

Maintenance Authority

The Census Bureau will maintain the standard under the auspices of its duties as theme lead for the FGDC Subcommittee on Cultural and Demographic Data (SCDD), ensuring that the standard is revisited on the 5-year schedule as stipulated, or updating and revising as necessary. Direct any questions to Chief, Geography Division, U.S. Bureau of the Census.

Part 1: Street Address Data Content

1 Introduction: Address Elements

Element Types. The address data content standard specifies the data elements which may appear in street addresses. There are simple elements, complex elements, and attribute elements:

1. Simple elements are address components that are defined independently of all other elements
2. Complex elements are formed from two or more simple or other complex elements
3. Attributes contain descriptive information about the address.

Notation for Constructing Complex Elements. The following notation is used to show how complex elements are constructed from simple elements:

{} enclose the name of a component element

* indicates that the component is required to create the complex element

+ indicates "and" (concatenation), with a space implied between each component

2 Simple Elements

2.1 Address Number Elements

2.1.1 Address Number Prefix

Element Name	Address Number Prefix
XML tag	`<AddressNumberPrefix>`
Other common names for this element	Street Number Prefix, Building Number Prefix, House Number Prefix, Site Number Prefix
Definition	The non-integer portion of the identifier for the house, building or other feature, as defined by the official address authority for the given jurisdiction which **precedes** the number itself. This element will not be applicable for the vast majority of addresses.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	
How Defined	
Example	**N6W2** 3001 Bluemound Road **A** 19 Calle 117
Notes/Comments	The use of township and range as a part of the address number is found in some areas. The address number prefix separates this part of the address number so that individual house numbering can be maintained as an integer field for sorting and quality control purposes.

2.1.2 Address Number

Element Name	Address Number
XML tag	`<AddressNumber>`
Other common names for this element	Street Number, Building Number, House Number, Site Number
Definition	The numeric identifier for the house, building or other feature, as defined by the official address authority for the given jurisdiction. Some addresses may contain fractions, hyphens, decimals and other non-integer content within the full "site number". Those non-integer elements should be placed in the Address Number Prefix if they appear before the site number, and in the Address Number Suffix element if following the number
Definition Source	New
Data Type	Integer
Length (if required)	N/A
Existing Standards for this Element	
Domain of Values for this Element	Based on local address ranges associated with individual streets
Source of Values	Local jurisdiction
Example	**1234** North Main Street
How Defined	
Notes/Comments	Element name changed to Address Number, to make the syntax more universal, especially where the number references a specific location within a Puerto Rican "urbanization" which does not have streets. This element is not referenced in USPS Publication 28.

2.1.3 Address Number Suffix

Element Name	Address Number Suffix
XML tag	`<AddressNumberSuffix>`
Other common names for this element	Street Number Suffix, Building Number Suffix, House Number Suffix, Fractional Street Number (USPS)
Definition	The non-integer portion of the identifier for the house, building, or other feature which **follows** the street number itself, as defined by the official address authority for the given jurisdiction. This element will not be applicable for the vast majority of addresses.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	
How Defined	
Example	123 **1/2** Main Street 456 **B** Wilson Street B317 **A** Calle 117
Notes/Comments	See discussion under Address Number.

2.2 Street Name Elements

2.2.1 Street Name Pre-Modifier

Element Name	Street Name Pre-Modifier
XML tag	`<StreetNamePreModifier>`
Other common names for this element	
Definition	A word preceding all other elements of the street name that modifies it, that is not a street pre-directional nor a street pre-type.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	No
Domain of Values for this Element	No
Source of Values	N/A
How Defined	N/A
Example	123 **Old** North First Street
Notes/Comments	

2.2.2 Street Pre-Directional

Element Name	Pre-Directional
XML tag	`<PreDirectional>`
Other common names for this element	Prefix Directional, Prefix Direction, Predir
Definition	A word preceding the street name that indicates the directional taken by the thoroughfare from an arbitrary starting point, or the sector where it is located.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	USPS Publication 28 Section 233
Domain of Values for this Element	East, West, South, North, Northeast, Southeast, Southwest, Northwest (Standard USPS abbreviations are E, W, S, N, NE, SE, SW, NW). Spanish equivalents are also recognized.
Source of Values	USPS Publication 28 Section 233 (unabbreviated)
How Defined	As provided by USPS Publication 28 Section 233
Example	1234 **North** Main Street
Notes/Comments	1. Clear domain guidance from USPS. 2. USPS Publication 28 recommends abbreviating pre-directionals. The Standards Working Group differs, and recommends storing pre-directionals fully spelled out to avoid confusion. They can be exported as standard abbreviations as needed for mailing and other purposes.

2.2.3 Street Prefix Type

Element Name	Street Prefix Type
XML tag	`<StreetPrefixType>`
Other common names for this element	Street Pre-type
Definition	The part of the address preceding the primary name that indicates the type of street. This is typically used for highways, county roads, etc. It is also common for Spanish and French language naming of streets.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Section 234 and Appendix C of USPS Publication 28
Domain of Values for this Element	Yes
Source of Values	USPS Publication 28 Appendix C, with provisions for local additions
How Defined	As provided by USPS Publication 28 Appendix C. Street type should be fully spelled out, and a look-up for USPS or other sources of abbreviations maintained for postal and other specific uses requiring abbreviated types.
Example	1234 **Avenue** A 1234 **Calle** Aurora 901 **Boulevard** of the Allies **Avenue** at Port Imperial
Notes/Comments	1. A street should have either a pre-type or a post-type, but should not have both 2. It is rare, but not unknown, to have no street type associated with a given street in some localities. 3. Names like "County Road 28," where the street type occurs in the middle of the name, will be treated as a street name without a pre-type or a post-type.

2.2.4 Street Name

Element Name	Street Name
XML tag	`<StreetName>`
Other common names for this element	Primary Street Name
Definition	Official name of a street as assigned by a local governing authority, or an alternate (alias) name that is used and recognized.
Definition Source	FGDC Draft Address Data Content Standard v. 3 (citing Census), adapted
Data Type	Text
Length (if required)	50
Existing Standards for this Element	Section 232 of USPS Publication 28
Domain of Values for this Element	Yes
Source of Values	Locally developed
How Defined	Official list of street names maintained by local authority
Example	1234 **Central** Street Southwest
Notes/Comments	1. Little guidance from USPS publication 28 specific to databases. This is a local domain of values. 2. Each jurisdiction should establish its own list of street names and use it as a domain of values to validate addresses. Alternate and Official names are distinguished by the address attribute "Alias Status Attribute" 3. Local addressing authorities are urged to follow consistent internal street naming practices, and to resolve internal street name inconsistencies, especially for numbered streets ("Twentieth Street" or "20th Street" ?), internal capitalization ("McIntyre" or "Mcintyre" ?), hyphens, and apostrophes.

2.2.5 Street Post Type

Element Name	Street Post-type
XML tag	`<StreetPostType>`
Other common names for this element	Street Type, Street Suffix, Street Suffix Type, Suffix (USPS)
Definition	The part of the street name following the primary name that indicates the type of street.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Section 234 and Appendix C of USPS Publication 28 with provision for local additions
Domain of Values for this Element	Local domains could be created. USPS Publication 28 Appendix C does not cover all values. All street types should be stored fully spelled out, and a lookup table created to abbreviate them according to the USPS Standard or other standard as needed.
Source of Values	USPS Publication 28 Appendix C with provisions for local additions. Street type should be fully spelled out, and a look-up for USPS or other sources of abbreviations maintained for postal and other specific uses requiring abbreviated types.
How Defined	By local addressing authority
Example	1234 Central **Street** Southwest
Notes/Comments	1. A street may have either a pre-type or a post-type, or neither, but not both. 2. Occasionally a street name may have neither a prefix type nor a suffix type, based on local determination. 3. Names like "County Road 28", where the street type occurs in the middle of the name, will be treated as a street name without a pre-type or a post-type.

2.2.6 Street Post-Directional

Element Name	Post-Directional
XML tag	`<PostDirectional>`
Other common names for this element	Post Directional, Suffix Directional, Post-direction, Suffix Direction, Postdir
Definition	A word following the street name that indicates the directional taken by the thoroughfare from an arbitrary starting point, or the sector where it is located.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	USPS Publication 28 Section 233
Domain of Values for this Element	East, West, South, North, Northeast, Southeast, Southwest, Northwest (Standard USPS abbreviations are E, W, S, N, NE, SE, SW, NW). Spanish equivalents are also recognized.
Source of Values	USPS Publication 28 Section 233 (unabbreviated)
How Defined	As provided by USPS Publication 28 Section 233
Example	1234 Cherry Street **North**
Notes/Comments	1. Clear domain guidance from USPS. 2. USPS Publication 28 recommends abbreviating pre-directionals. The Standards Working Group differs, and recommends storing pre-directionals fully spelled out to avoid confusion. They can be exported as standard abbreviations as needed for mailing and other purposes. USPS Publication 28 Notes (paraphrased to omit reference to abbreviations): ▪ "233.22 Postdirectional Field -- When parsing from right to left, if a directional word is located to the right of the street name and suffix, ... locate it in the postdirectional field. " ▪ "233.23 Two Directionals -- When two directional words appear consecutively as one or two words, before the street name or following the street name or suffix, then the two words become either the pre- or the postdirectionals. Exceptions are any combinations of NORTH-SOUTH or EAST-WEST as consecutive words. In these cases the second directional becomes part of the primary name and is spelled

	out completely in the street name element. ▪ "233.23 The other exception is when the local address information unit has determined that one of the directional letters (N, E, W, S) is used as an alphabet indicator and not as a directional." ▪ "233.3 Directional as Part of Street Name If the directional word appears between the street name and the street type, then it should be considered part of the primary name and spelled out in that element. Examples: 12334 **NORTH** AVENUE, 1234 WILD **WEST** STREET SOUTH ▪ "233.3 The exception is when the local AIS unit has determined that the letters (E, N, S, or W) are used as alphabet indicators and not as directionals [abbreviations]." Example: Avenue **E**

2.2.7 Street Name Post-Modifier

Element Name	Street Name Post-Modifier
XML tag	`<streetnamepostmodifier>`
Other common names for this element	
Definition	A word following all other elements of the street name that is not a street post-type or street post-directional.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	No
Domain of Values for this Element	No
Source of Values	N/A
How Defined	N/A
Example	Extended, Cutoff, Bypass, Frontage, Service 1230 East End Avenue **Extended**
Notes/Comments	

2.3   Building, Floor, and Unit Elements

2.3.1 Building Type

Element Name	Building Type
XML tag	`<BuildingType>`
Other common names for this element	condominium (especially in Puerto Rican addressing usage)
Definition	The type of structure (when several structures are found at the same address), e.g., Apartment, Tower, Block
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	
Domain of Values for this Element	Can be locally created from existing values
Source of Values	Locally determined
How Defined	
Example	**Building** 6 123 Main Street Northwest 123 Main Street **Block** 5
Notes/Comments	Used with Building Identifier to designate one of several structures at a given site. Fits within the general EPA definition of "secondary address identifier"

2.3.2 Building Identifier

Element Name	Building Identifier
XML tag	`<BuildingID>`
Other common names for this element	
Definition	The letter, number, or word used to distinguish one structure from another when several occur at the same address.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	
How Defined	
Example	Tower **B** Block **12**
Notes/Comments	Used with Building Type to designate one of several structures at a given site. Fits within the general EPA definition of "secondary address identifier"

2.3.3 Floor Type

Element Name	Floor Type
XML tag	`<BuildingFloorType>`
Other common names for this element	
Definition	The word describing level or story of a building where an address is located.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	
Domain of Values for this Element	Can be locally developed using existing data
Source of Values	Locally determined
How Defined	
Example	Mezzanine **Level** **Floor** 2
Notes/Comments	Used with Floor Identifier to designate which floor of a given structure contains the address. May precede or follow the floor identifier. Fits within the general EPA definition of "secondary address identifier"

2.3.4 Floor Identifier

Element Name	Floor Identifier
XML tag	`<FloorIdentifier>`
Other common names for this element	
Definition	The number, letter, or word or combination of numbers and letters distinguishing one floor from another within a structure.
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	
How Defined	
Example	Floor **2** **Mezzanine** Level
Notes/Comments	Used with Floor Type to designate which floor of a given structure contains the address. Fits within the general EPA definition of "secondary address identifier."

2.3.5 Unit Type

Element Name	Unit Type
XML tag	`<UnitType>`
Other common names for this element	Secondary Address Unit Designator (USPS term)
Definition	The name given to an individual occupancy within a building or structure.
Definition Source	Paraphrased from USPS Publication 28 Section 213
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Section 213 and Appendix C2 of USPS Publication 28
Domain of Values for this Element	Yes
Source of Values	USPS Publication 28 Appendix C2
How Defined	As provided by USPS Publication 28 Appendix C2 and amended by local jurisdiction
Example	**Apartment** 2B **Suite** 1040 **Apartamento** 1A
Notes/Comments	Good domain guidance from USPS.

2.3.6 Unit ID

Element Name	Unit ID
XML tag	`<UnitID>`
Other common names for this element	Unit Number, Secondary Address Unit Designator (USPS term)
Definition	The numbers, letters. words or combination thereof distinguishing one occupancy from another.
Definition Source	None
Data Type	Text
Length (if required)	10
Existing Standards for this Element	
Domain of Values for this Element	
Source of Values	
How Defined	
Examples	123 Main Street Apartment **17** 456 Oak Lane, Suite **2C**
Notes/Comments	

2.3.7 Private Mailbox (PMB)

Element Name	Private Mailbox (PMB)
XML tag	`<privatemailbox>`
Other common names for this element	
Definition	A mailbox rented from a private commercial mail receiving agency (CMRA)
Definition Source	Adapted from USPS Publication 28, Section 284
Data Type	Text
Length (if required)	10
Existing Standards for this Element	USPS Pub 28, Section 284
Domain of Values for this Element	No
Source of Values	N/A
How Defined	N/A
Example	Rural Route 1 Box 12 **PMB 596** 10 Main Street Suite 11 **PMB 234**
Notes/Comments	USPS Pub 28 Section 284: Normally PMB identifiers, like mailstop codes and other internal mail distribution codes, pertain to the recipient and are not part of the address. "Exception: When the CMRA mailing address contains a secondary address element (e.g. rural route box number, suite, # or other term), the CMRA customer must use PMB when utilizing a three line address format" (see examples above).

2.4 Intersection Address Element

2.4.1 Intersection Connector

Element Name	Intersection Connector
XML tag	`<IntersectionConnector>`
Other common names for this element	
Definition	The word or symbol placed between the names of intersecting streets.
Definition Source	New
Data Type	Text
Length (if required)	5
Existing Standards for this Element	None
Domain of Values for this Element	Typical values may include "and ", "& ", and " && " "+ "," - ", and "y" or "con" (Spanish) each having spaces before and after.
Source of Values	
How Defined	Locally, one value should be used consistently in a given dataset.
Example	Eighth Street **and** Pine Street Eighth Street **&&** Pine Street
Notes/Comments	

2.5   Landmark Name Element

2.5.1 Landmark Name

Element Name	Landmark Name
XML tag	`<LandmarkName>`
Other common names for this element	
Definition	The name by which a prominent feature is publicly known.
Definition Source	New
Data Type	Text
Length (if required)	50
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	
How Defined	
Examples	**Statue of Liberty** **White House** **Landmark Building** **Memorial Church** **Stanford University**
Notes/Comments	Landmarks usually have a street address. Generally the street address is preferable because it is easier to find.

2.6   Larger-Area Elements

2.6.1 Community Place Name (Urbanization) Place Name

Element Name	Community Place Name (Urbanization) Place Name
XML tag	`<CommunityName>`
Other common names for this element	Urbanization (Puerto Rico); neighborhood, Census designated placename
Definition	A named area, sector, or development that is not an incorporated municipality or other governmental unit, such as a neighborhood in a city, or a rural settlement in unincorporated area. Often called "urbanization" in Puerto Rican addressing usage.
Definition Source	FGDC Draft Address Data Content Standard v. 3 (defining "urbanization", citing USPS)
Data Type	Text
Length (if required)	50
Existing Standards for this Element	
Domain of Values for this Element	Locally determined
Source of Values	Local usage
How Defined	Locally
Example	**New Hope Community Place Name** **Capitol Hill** neighborhood **Urbanization Los Olmos** **Jardine Fagota**
Notes/Comments	1. Urbanization, commonly used in urban areas of Puerto Rico, is an important part of the address. Street names and address ranges are often repeated in a city, especially where a city has annexed older towns; they are distinguished by their urbanization or community name. 2. Certain other words can be used in place of "urbanization": extenciones, mansiones, reparto, villa, parque, jardine, altura, alturas, colinas, estancias, extension, quintas, sector, terraza, villa, villas. 3. For more information on Puerto Rican addressing conventions, see USPS Publication 28 Section 29, and USPS "Addressing Standards for Puerto Rico and the Virgin Islands".

2.6.2 Municipality Place Name

Element Name	Municipality Place Name
XML tag	`<LocationMunicipalityName>`
Other common names for this element	City, Actual City, Location City, Situs City, Municipality, Village, Township, Minor Civil Division (this is a very common census term)
Definition	The name of the municipality (city, township, or other non-county local government) in which the address is physically located. In many places this will be different than the city name used by the U.S. Postal Service.
Definition Source	none
Data Type	Text
Length (if required)	50
Existing Standards for this Element	
Domain of Values for this Element	Partial
Source of Values	State Government, and FIPS Publication 5 (National compendium)
How Defined	
Example	**Birmingham**, Alabama **Castle Rock Township**, Minnesota
Notes/Comments	Required by most local governments for tax and services determinations. This will null for address in unincorporated portions of counties.

2.6.3 USPS Place Name

Element Name	USPS Place Name
XML tag	`<USPSCityName>`
Other common names for this element	Mailing City, City, place name
Definition	The name given by the U.S. Postal Service to the post office from which mail is delivered to the address. In many places this will be different from the name of the municipality in which the address is physically located.
Definition Source	New
Data Type	Text
Length (if required)	50
Existing Standards for this Element	Sections 221 & 223 of USPS Publication 28
Domain of Values for this Element	Yes
Source of Values	USPS "City State File" as referenced in Section 221 of USPS Publication 28, FIPS City Codes
How Defined	As provided by Section 221 of USPS Publication 28 or FIPS City Code
Example	**Washington**, DC
Notes/Comments	

2.6.4 County

Element Name	County
XML tag	`<CountyName>`
Other common names for this element	Parish (Louisiana); Borough (Alaska)
Definition	The primary administrative subdivision of a state in the United States.
Definition Source	FGDC Draft Address Data Content Standard v. 3 (citing EPA)
Data Type	Text
Length (if required)	50
Existing Standards for this Element	
Domain of Values for this Element	Yes
Source of Values	State legislature
How Defined	By state, FIPS Publication 5 for County names and codes
Example	**Shelby County**, Alabama
Notes/Comments	

2.6.5 State

Element Name	State
XML tag	`<StateCode>`
Other common names for this element	Commonwealth
Definition	The primary legal subdivision of the United States, represented by its two letter USPS abbreviation.
Definition Source	FGDC Draft Address Data Content Standard
Data Type	
Length (if required)	2
Existing Standards for this Element	
Domain of Values for this Element	Yes
Source of Values	U.S. Congress
How Defined	FIPS Publication 5, for official names, and standard 2 letter abbreviations
Example	San Francisco, **CA** St. Louis, **MO**
Notes/Comments	

2.6.6 ZIP Code

Element Name	ZIP Code
XML tag	`<ZIPCode>`
Other common names for this element	
Definition	A five-digit code that identifies a specific geographic [postal] delivery area. ZIP Codes can represent an area within a state, an area that crosses state boundaries (unusual condition) or a single building or company that has a very high mail volume. "ZIP" is an acronym for Zone Improvement Plan.
Definition Source	FGDC Draft Address Data Content Standard v. 3 (citing USPS)
Data Type	Integer
Length (if required)	5
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS
How Defined	From USPS
Example	Birmingham, Alabama **35305** Webster Groves, Missouri **63119**
Notes/Comments	

2.6.7 ZIP+4 Code

Element Name	ZIP+4 Code
XML tag	`<Plus4>`
Other common names for this element	
Definition	A four-digit extension of the five-digit ZIP Code that identifies a portion of a carrier route for USPS mail delivery.
Definition Source	FGDC Draft Address Content Standard v. 3 (citing USPS)
Data Type	Integer
Length (if required)	4
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS
How Defined	From USPS
Example	Birmingham, Alabama 35242- **3426** Webster Groves, Missouri 63119- **3212**
Notes/Comments	

2.6.8 Nation

Element Name	Nation
XML tag	`<Nation>`
Other common names for this element	Country
Definition	The name of the nation in which the address is located.
Definition Source	New
Data Type	Text
Length (if required)	30
Existing Standards for this Element	
Domain of Values for this Element	Yes
Source of Values	
How Defined	
Example	**United States of America**
Notes/Comments	Although the scope of this standard is restricted US addresses, this item is included for two reasons: to facilitate reconciliation with address standards of other nations, and to accommodate files which mix addresses from the US and other nations.

2.7   USPS Postal Address Elements

2.7.1 USPS Box Type

Element Name	USPS Box Type
XML tag	`<USPSBoxType>`
Other common names for this element	PO Box; Box
Definition	A box used for receipt of USPS mail. The box may be located in the post office lobby (e.g. PO Box), on the customer's premises or other USPS authorized place (e.g. rural route box).
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	USPS Pub 28
Domain of Values for this Element	Yes
Source of Values	USPS Pub 28
How Defined	USPS Pub 28
Example	PO Box; Box
Notes/Comments	

2.7.2 USPS Box ID

Element Name	USPS Box ID
XML tag	`<PostBoxID>`
Other common names for this element	Box Number; PO Box Number
Definition	The numbers or letters distinguishing one box from another within a post office.
Definition Source	New
Data Type	Text
Length (if required)	10
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes, within each post office
Source of Values	Local post office
How Defined	Local post office
Example	PO Box **6943**; PO Box **G**; PO Box **00145**
Notes/Comments	

2.7.3 USPS Box Group Type

Element Name	USPS Box Group Type
XML tag	`<PostBoxGroupType>`
Other common names for this element	
Definition	A collection of postal boxes served from a single distribution point.
Definition Source	New
Data Type	Text
Length (if required)	5
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS Publication 28
How Defined	USPS Publication 28
Example	**RR** (Rural Route) **HC** (Highway Contract Route) **PSC** (Postal Service Center) (overseas military) **CMR** (Common Mail Room) (overseas military) **UNIT** (Overseas military)
Notes/Comments	

2.7.4 USPS Box Group ID

Element Name	USPS Box Group ID
XML tag	`<PostBoxGroupID>`
Other common names for this element	Rural route number; HC number; PSC/CMR/Unit Number
Definition	The numbers or letters distinguishing one group of boxes from another within a distribution point.
Definition Source	New
Data Type	Integer
Length (if required)	
Existing Standards for this Element	USPS Pub 28
Domain of Values for this Element	Yes
Source of Values	Local Post office
How Defined	Local Post office
Example	RR **1** HC **28** PSC **1650**, CMR **830**, or UNIT **908** (overseas military)
Notes/Comments	

2.7.5 Postal Delivery Office

Element Name	Postal Delivery Office
XML tag	`<PostalDeliveryOffice>`
Other common names for this element	
Definition	An office where mail may picked up by the addressee.
Definition Source	New
Data Type	Text
Length (if required)	25
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS
How Defined	USPS Publication 28
Example	**General Delivery,** Tampa, FL 33602
Notes/Comments	

2.8   Complex Elements

2.8.1 Complete Address Number

Element Name	Complete Address Number
XML tag	`<CompleteAddressNumber>`
Other common names for this element	complete street number, full street number
Definition	{Address Number Prefix} + {Address Number*} + {Address Number Suffix}
Definition Source	New
Data Type	Text
Length (if required)	20
Required Element	Refer to component elements
Existing Standards for this Element	Refer to component simple elements
Domain of Values for this Element	Refer to component simple elements
Source of Values	Refer to component simple elements
How Defined	Refer to component simple elements
Example	**123 A** Main Street **27N4W305-A** County Road 45
Notes/Comments	Address number is required to compose a complete address number; a prefix and/or suffix is optional.

2.8.2 Complete Street Name

Element Name	Complete Street Name
XML tag	`<CompleteStreetName>`
Other common names for this element	
Definition	{Street Pre-Modifier} + {Street Pre-directional} + {Street Pre-type} + {Street Name*} + {Street Post-type} + {Street Post-directional} + {Street Post Modifier}
Definition Source	New
Data Type	Text
Length (if required)	120
Existing Standards for this Element	Refer to Component Elements
Domain of Values for this Element	Refer to Component Elements
Source of Values	Refer to Component Elements
How Defined	Refer to Component Elements
Example	123 **North Main Street Extended** 123 **Old Avenue B North**
Notes/Comments	Street Name is required to compose a complete street name; the other elements are optional. Pre-type and post-type are not found in the same street name.

2.8.3 Building

Element Name	Building
XML tag	`<Building>`
Other common names for this element	
Definition	{Building Type} + {Building ID*}
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Refer to component simple elements
Domain of Values for this Element	Refer to component simple elements
Source of Values	Refer to component simple elements
How Defined	Refer to component simple elements
Example	123 A Main Street, **Building B**
Notes/Comments	Building ID is required if Building Type is present.

2.8.4 Floor

Element Name	Floor
XML tag	`<Floor>`
Other common names for this element	
Definition	{Floor Type*} + {Floor ID} or {Floor ID} + {Floor Type*}
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Refer to component simple elements
Domain of Values for this Element	Refer to component simple elements
Source of Values	Refer to component simple elements
How Defined	Refer to component simple elements
Example	123 A Main Street, **Floor 6** 123 A Main Street, **6th Floor** 123 A Main Street, **Mezzanine Level** 123 Main Street, **Penthouse** 123 Main Street, **Garage Level C**
Notes/Comments	1. Usage is inconsistent. Examples include "Mezzanine" (sometimes "Mezzanine Level"), "Garage," and "Penthouse." 2. Not all Floor ID values require a Floor Type. "Basement," for example, may be a floor type or a floor ID. If there is only one, the word stands alone. If there are several, they might be "Basement A," "Basement B" etc. If the address is ambiguous, fill the floor ID field first.

2.8.5 Unit

Element Name	Unit
XML tag	`<Unit>`
Other common names for this element	
Definition	{Unit Type} + {Unit ID*}
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Refer to component simple elements
Domain of Values for this Element	Refer to component simple elements
Source of Values	Refer to component simple elements
How Defined	Refer to component simple elements
Example	1. 123 A Main Street, **Apartment 27-B** 2. 1234 Avenida Ashford, **Apartamento 1A** 3. 123 Main Street, **Basement**
Notes/Comments	1. Some Unit ID's need not be preceded by a Unit Type. Examples (from USPS Publication 28 Appendix C2) include: basement, front, lobby, lower, office, penthouse, rear, side, and upper. 2. Some words can signify Unit Type or Unit ID. If there is only one penthouse, the word stands alone, and should be parsed as a Unit ID. If there are several ("Penthouse 1", "Penthouse 2"), the word should be parsed as a Unit Type.

2.8.6 Complete Occupancy Identifier

Element Name	Complete Occupancy Identifier
XML tag	`<OccupancyIdentifier>`
Other common names for this element	
Definition	{Building Identifier} + {Floor Identifier} + {Unit Identifier} + {PMB}
Definition Source	New
Data Type	Text
Length (if required)	60
Existing Standards for this Element	Refer to component elements
Domain of Values for this Element	Refer to component elements
Source of Values	Refer to component elements
How Defined	Refer to component elements
Example	1. Average Suburban Office Park, **Building 12, Mezzanine Level, Suite 200** 2. 800 West Mountain Road, **Building 5, Suite 450** 3. 450 Green Street, **Apartment 12** 4. 1324 Calle Amapolas, **Apartamento 103**
Notes/Comments	1. None of these elements are required. Any or all may be filled as needed. In a general list of thoroughfare addresses all elements will be null in many cases.

2.8.7 Address Range

Element Name	Address Range
XML tag	`<AddressRange>`
Other common names for this element	
Definition	{Complete Address Number (low)*} + {Complete Address Number (high)*} + {Complete Street Name*} A set of two consecutive address numbers representing the low and high numbers of an address range. By convention, the first number represents the low end of the range, and the second number represents the high end. An address range element should be accompanied by an Address Range Type Attribute that describes the type of range presented in this element. See the notes below.
Definition Source	New
Data Type	Text
Length (if required)	80
Existing Standards for this Element	Refer to component elements.
Domain of Values for this Element	Refer to component elements.
Source of Values	Refer to component elements.
How Defined	Refer to component elements.
Example	1. **1400-1420 Smith Street West** 2. **13-25 Elm Street**
Notes/Comments	There are several types of address ranges: 1. Site address ranges, where a range of numbers apply to a single structure or site. 2. Block face ranges, where the low and high numbers express the range of numbers along a single side of a street segment between two intersecting streets. 3. Block ranges, where the low and high numbers represent the range of numbers found along both sides of a street segment. 4. Street ranges, where the numbers express the low and high range of site numbers for an entire named street. These are found in Master Street Address Guides used in E-911 dispatching.

2.8.8 Place Name

Element Name	Place Name
XML tag	`<PlaceName>`
Other common names for this element	City
Definition	{Municipality Place Name*} or {CommunityPlaceName (urbanization) Place Name*} or {USPS Place Name*} or {County*}
Definition Source	New
Data Type	Text
Length (if required)	40
Existing Standards for this Element	Refer to component elements
Domain of Values for this Element	Refer to component elements
Source of Values	Refer to component elements
How Defined	Refer to component elements
Example	**Ajo**, AZ
Notes/Comments	This complex element was created to resolve, or at least recognize, the difficulties in assigning place names to thoroughfare and landmark addresses, and specifically to highlight the difficulties in using USPS-assigned place names for non-postal purposes such as navigation, public service delivery, and emergency response. The Content Standard recognizes four types of place names: 1. Municipality name (local unit of government within a county) 2. Community Place Name (urbanization) names, which do not denote municipal government jurisdictions, but refer to districts or areas within municipalities, or to places in unincorporated areas. 3. USPS-designated place name, which is assigned to the post office from which the USPS delivers mail to the address. 4. County name Only one of these can appear as the place name in an address. In many cases they are the same. Where they differ, the Working Group recommends that the place name be selected according to the following rules: 1. If the address is within a municipality, use that name as the place name. If a community name is also needed, place the community name in the appropriate element of a landmark, community, or

	landmark-site address.
	2. If the address is in an unincorporated area, use the name that most specifically identifies the place--typically the community name.
	3. For postal delivery, the USPS-designated place name is preferred, but any place name is acceptable if the ZIP code is correct.
	4. By default, if no other name is known, use the USPS place name for the ZIP Code, or the county name.

2.8.9 Complete Feature Address

Element Name	Complete Feature Address
XML tag	`<FeatureAddress>`
Other common names for this element	
Definition	All of any address, excluding the place name, state, ZIP, and ZIP+4
Definition Source	New
Data Type	Text
Length (if required)	255
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	N/A
How Defined	N/A
Example	**1 Main Street**, Ajo, AZ 85321
Notes/Comments	This element is defined solely for use with the General Address class, which is constructed to accommodate and mix addresses of all types (e.g., a general postal mailing list or contact list). Place name, state, ZIP, and ZIP+4, which appear in all address classes, are kept separate from the rest of the address.

2.8.10   Place State ZIP

Element Name	Place State ZIP
XML tag	`<PlaceStateZip>`
Other common names for this element	Last Line (USPS)
Definition	{Place Name*} + {State*} + {ZIP*} + {ZIP+4}
Definition Source	New
Data Type	Text
Length (if required)	80
Existing Standards for this Element	Refer to component elements
Domain of Values for this Element	Refer to component elements
Source of Values	Refer to component elements
How Defined	Refer to component elements
Example	1. **Atlanta, Georgia 30316** 2. **Pittsburgh, PA 15218-3456**
Notes/Comments	

3 Address Attribute Elements

3.1 Locational Attributes

3.1.1 Address X Coordinate

Element Name	Address X Coordinate
XML tag	`<AddressXCoordinate>`
Other common names for this element	
Definition	The X coordinate of address location.
Definition Source	New
Data Type	Double
Length (if required)	N/A
Existing Standards for this Element	Yes
Domain of Values for this Element	No
Source of Values	N/A
How Defined	Coordinates are defined in terms of a coordinate system. The coordinate system may be selected locally and defined within file-level metadata per FGDC's Content Standard for Geospatial Metadata. Common XY coordinate systems include state plane, latititude-longitude, and Universal Transverse Mercator (UTM).
Example	80 degrees west longitude
Notes/Comments	For linear and polygon features, the X and Y coordinates together typically locates a centroid point.

3.1.2 Address Y Coordinate

Element Name	Address Y Coordinate
XML tag	`<AddressYCoordinate>`
Other common names for this element	
Definition	The Y coordinate of the address location.
Definition Source	New
Data Type	Double
Length (if required)	N/A
Existing Standards for this Element	Yes
Domain of Values for this Element	No
Source of Values	N/A
How Defined	Coordinates are defined in terms of a coordinate system. The coordinate system may be selected locally and defined within file-level metadata per FGDC's Content Standard for Geospatial Metadata. Common XY coordinate systems include state plane, latititude-longitude, and Universal Transverse Mercator (UTM).
Example	40 degrees north latitude
Notes/Comments	For linear and polygon features, the X and Y coordinates together typically refer to a centroid point.

3.1.3 US National Grid Coordinate

Element Name	US National Grid Coordinate
XML tag	`<USNGCoordinate>`
Other common names for this element	USNG Coordinate
Definition	The USNG is an alphanumeric point reference system that overlays the Universal Transverse Mercator (UTM) numerical coordinate system. A USNG coordinate consists of **three parts**, the: 1. **Grid Zone Designation (GZD)** for worldwide unique geoaddresses (two digits plus one letter, developed from the UTM system). 2. **100,000-meter Square Identification** for regional areas (two letters). 3. **Grid Coordinates** for local areas (always an even number of digits between 2 and 10 depending upon precision).
Definition Source	Adapted from US National Grid, FDGC-STD-011-2001, Section 3.3 Quoted from: Tom Terry, "The United States National Grid." *Professional Surveyor Magazine.* Oct. 2004, p. 12.
Data Type	Text
Length (if required)	15
Required Element	No
Existing Standards for this Element	US National Grid, FGDC-STD-011-2001.
Domain of Values for this Element	No
Source of Values	
How Defined	As prescribed in FGDC-STD-011-2001.
Example	**18SUJ2348306479** or **18S UJ 23483 06479** **18S** – Identifies a **GZD** **18S UJ** – Identifies a specific **100,000-meter square** in the specified GZD **18S UJ** 2 0 - Locates a point with a precision of 10 km **18S UJ** 23 06 - Locates a point with a precision of 1 km **18S UJ** 234 064 - Locates a point with a precision of 100 meters

	18S UJ 2348 0647 - Locates a point with a precision of 10 meters **18S UJ** 23483 06479 - Locates a point with a precision of 1 meter
Notes/Comments	1. USNG basic coordinate values and numbering are identical to Universal Transverse Mercator (UTM) coordinate values over all areas of the United States including outlying territories and possessions. 2. USNG coordinates shall be identical to the Military Grid Reference System (MGRS) numbering scheme over all areas of the United States including outlying territories and possessions. 3. While their coordinates are the same, the key difference between MGRS and USNG is organization of their 100,000-m Square Identification schemes. MGRS uses two 100,000-m Square Identification lettering schemes, depending on which datum is used, while USNG uses only the single scheme associated with NAD 83/WGS 84. When USNG values are referenced to NAD 83/WGS 84, USNG and MGRS values are identical and MGRS can be used as a surrogate when software does not yet support USNG. 4. The USNG is not intended to replace the coordinate system that data is stored in a digital database. It provides a nationally consistent presentation format and grid for public safety, general public, and commercial activities that is user-friendly in both digital and hardcopy products. USNG values enable use of address data with low cost consumer grade GPS receivers and properly gridded maps. USNG values are intended to provide a highly accurate location description of the feature, i.e. within meters of a front door. Additional information can be located at http://www.fgdc.gov/usng/index.html **Complete definition from FGDC Standard:** 3.3 Referencing Scheme Numbering scheme shall be alphanumeric as follows: **3.3.1 Grid Zone Designation** First, the U.S. geographic area shall be divided into 6-degree longitudinal zones designated by a number and 8-degree latitudinal bands designated by a letter. Thus each area is given a unique alphanumeric Grid Zone Designator (GZD). The longitude zone numbers and latitude band letters for GZD over the United States shall be taken from the global scheme of MGRS. **3.3.2 100,000-meter Square Identification** Each GZD 6x8 degree area shall be covered by a specific scheme of 100,000-meter squares where a two-letter pair identifies each square. **3.3.3 Grid Coordinates** A point position within the 100,000-meter square shall be given by the UTM grid coordinates in terms of its Easting (E) and Northing (N). For specific requirements or applications, the number of digits will depend on the precision desired in position referencing. In this convention, the reading shall be from left with Easting first, then Northing. An equal number of digits shall always be used for E and N.

3.2   Non-locational Attributes

3.2.1 Address ID

Element Name	Address ID
XML tag	`<AddressID>`
Other common names for this element	
Definition	The identification number assigned to an address by the addressing authority
Definition Source	New
Data Type	Integer
Length (if required)	N/A
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	N/A
How Defined	Locally
Notes/Comments	The ID number must be unique for each address assigned by an addressing authority. This, combined with the FIPS number of the addressing authority, will provide a unique ID for every address in the US

3.2.2 Address Start Date

Element Name	Address Start Date
XML tag	`<AddrStartDate>`
Other common names for this element	
Definition	The date on which the address became valid, was assigned or discovered.
Definition Source	New
Data Type	date
Length (if required)	N/A
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	N/A
How Defined	Common date syntax
Example	August 1, 2005
Notes/Comments	Metadata

3.2.3 Address End Date

Element Name	Address End Date
XML tag	`<AddressEndDate>`
Other common names for this element	
Definition	The date on which the address was retired, removed from use or became invalid.
Definition Source	New
Data Type	date
Length (if required)	N/A
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	N/A
How Defined	Common date syntax
Example	July 31, 2005
Notes/Comments	Metadata

3.2.4 Address Classification Type

Element Name	Address Classification Type
XML tag	<ClassType>
Other common names for this element	
Definition	The type or classification of the address according to the classification standard
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	Under construction
Domain of Values for this Element	Yes (under construction)
Source of Values	Street address classification standard
How Defined	Proposed FGDC Address Classification Standard
Notes/Comments	

3.2.5 Feature Type

Element Name	Feature Type
XML tag	`<FeatureType>`
Other common names for this element	
Definition	The type of feature identified by the address
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	N/A
How Defined	From this standard
Example	Occupancy unit; building entrance; building; parcel
Notes/Comments	Initial list of feature types: Block, block face, intersection, parcel, building, entrance, unit. The list might be expanded indefinitely to include infrastructure and other features.

3.2.6 Address Language

Element Name	Address Language
XML tag	`<AddressLanguage>`
Other common names for this element	
Definition	The language (English, Spanish, French) from which the address syntax is derived
Definition Source	New
Data Type	Text
Length (if required)	
Existing Standards for this Element	No
Domain of Values for this Element	English, Spanish, French
Source of Values	New
How Defined	By this standard
Notes/Comments	If the syntaxes defined in classification standard work for all three languages, then this attribute will not be needed. If the syntax is language-dependent, then we would need to know what language the address derives from.

3.2.7 Address Lifecycle Status

Element Name	Address Lifecycle Status
XML tag	`<Address Lifecycle Status>`
Other common names for this element	
Definition	The life cycle status of the address.
Definition Source	New
Data Type	Text
Length (if required)	
Existing Standards for this Element	None
Domain of Values for this Element	Potential, proposed, active, posted, retired
Source of Values	New
How Defined	From this standard
Notes/Comments	**Potential** = Address falls within a theoretical range, but has never been used **Proposed** = Application pending for use of this address (e.g., address tentatively issued for subdivision plat that is not yet fully approved) **Active** = Address has been issued and is in use **Posted** = Address is posted, but not recognized by addressing authority (e.g. vanity address on a building) **Retired** = Address was issued, but is now obsolete (e.g. street name has been changed)

3.2.8 Official Status

Element Name	Official Status
XML tag	`<OfficialStatus>`
Other common names for this element	
Definition	Whether the address is as given by the official addressing authority (official), or an unofficial variant or equivalent of it (alias)
Definition Source	New
Data Type	Text
Length (if required)	20
Existing Standards for this Element	No
Domain of Values for this Element	
Source of Values	
How Defined	
Example	
Notes/Comments	**1. Alternate Names** In any of the address classes described in 2.2, the collective name element may have another acceptable form. Some alternate names may be conditional, on attempt, i.e. if the alias resolves the address no further alternate names should be considered. Other alternate names are always applied, such as official renamings. All alternate names carry a limit of applicability and a timeframe of applicability. The limit of applicability may be a limit to a single zip code, a naming authorities boundary, such as city or county limits, or a range of address numbers with such a boundary. **2. Alternate Names Established by a Renaming Action of the Naming Authority** Upon official renaming of an address, or renumbering of an address, or a series of addresses, the prior, older address will occur in address lists for a period of time and a conversion to current names or current addresses will need to be provided. Such an entity may match a single address or a range of addresses. **3. Alternate Names Established by a Naming Authority** The alternate name is established by a separate, or the same, naming authority. Such names may apply to any address class, including

landmarks. Such names would be established by naming authorities with a geographically larger area of responsibility, containing all or part of a naming authority with a smaller region, such as a state name overlaying a county name or a county name overlaying a city or town name. Examples would be a state highway designation (State Highway 7) overlaid upon locally named roads or a memorial highway overlaid on local road names or state highway names.

4.   Alternate Names Established by Colloquial Use in a Community Place Name

Local communities hold on to address names much longer than do regional agencies. A community may use a colloquial address name as much as 30 years after that name has either expired or is no longer salient. This entry provides a conversion to a current name.

5.   Unofficial Alternate Names Frequently Encountered

In data processing, entry errors occur. Such errors if frequently encountered may be corrected by a direct match of the error and a substitution to a current name.

6.   Unofficial Alternate Names In Use by an Agency or Entity

For data processing efficiency, entities often create alternate names for internal use. When such alternate names are exposed to other entities they need to be resolved to a current name.

3.2.9 Address Range Type

Element Name	Address Range Type
XML tag	`<AddressRangeType>`
Other common names for this element	
Definition	The type of address range represented by the data. Address ranges are ambiguous, in that a set of 2 site numbers and a street name can represent either a building, a block face range, a block range, or an entire street range.
Definition Source	New
Data Type	Text
Length (if required)	20
Required Element	Required with Address Range element
Existing Standards for this Element	None
Domain of Values for this Element	Not yet defined
Source of Values	N/A
How Defined	From this standard
Example	Site range, block face range, block range, street range. Any of these may be modified by the terms "actual" or "theoretical" indicating whether the stated range is based on existing (in-use) addresses or the potential address range (based on a grid or other numbering system) for the given range.
Notes/Comments	Further discussion of ranges is found under Address Range

3.2.10   Location Description

Element Name	Location Description
XML tag	`<LocationDescription>`
Other common names for this element	Additional Location Information
Definition	A text description providing more detail on how to identify or find the addressed feature.
Definition Source	New
Data Type	Text
Length (if required)	255
Existing Standards for this Element	Census Bureau practices? The NENA standard "Location" element seems similar. It is defined as "Additional address information (free formatted) describing the exact location of the Calling Number." However, the example content provided by NENA "(e.g. Apt 718)" would not be appropriate for the field we are describing here, since we have separate address elements for apartment numbers.
Domain of Values for this Element	No
Source of Values	
How Defined	Locally
Example	"White house at intersection.", "400 yards west of water tank."
Notes/Comments	Often useful in distinguishing locations where addresses are not yet established.

3.2.11　　　　Direct Source

Element Name	Address Direct Source
XML tag	`<AddressSource>`
Other common names for this element	
Definition	From whom the data provider obtained the address.
Definition Source	New
Data Type	Text
Length (if required)	
Existing Standards for this Element	
Domain of Values for this Element	No
Source of Values	N/A
How Defined	By data provider
Example	Tele Atlas, phone company, assessor, official addressing authority
Notes/Comments	Important if the data provider did not obtain the address directly from the local authority.

3.2.12   Address Authority

Element Name	Address Authority
XML tag	`<AddressAuthority>`
Other common names for this element	
Definition	The authority (e.g., municipality, county) that created or has jurisdiction over the creation of an address
Definition Source	New
Data Type	Text
Length (if required)	50
Existing Standards for this Element	FIPS Standards for Municipal and County Names, FIPS Publication 5.
Domain of Values for this Element	See FIPS Standards, as supplemented by local usage
Source of Values	FIPS Standards, plus local additions
How Defined	FIPS with local additions
Notes/Comments	The addressing authority may or may not be the same as the physical or postal jurisdiction noted for the address.

3.2.13   FIPS/GNIS Identifier for Addressing Authority

Element Name	FIPS/GNIS Identifier for Addressing Authority
XML tag	`<AddressAuthorityFIPSID>`
Other common names for this element	
Definition	The FIPS identifier for the governmental unit issuing the address
Definition Source	
Data Type	Integer
Length (if required)	N/A
Existing Standards for this Element	
Domain of Values for this Element	Yes
Source of Values	
How Defined	From FIPS/GNIS standard
Notes/Comments	This element, in conjunction with the address ID, could provide a unique ID for every address in the US. FIPS/GNIS codes have limitations: in some areas state or federal agencies, or the local postmaster, issue addresses.

Part 2: Street Address Data Classification

1 Introduction

1.1 Formatting Conventions

1. Data element names are placed in curly brackets separated by a plus sign. Required elements have an asterisk:

   Example: {Complete Address Number*} + {Complete Street Name*} + {Unit}

2. To avoid a multiplicity of insignificant permutations and combinations, complex elements are used to represent the various combinations of the simple elements that comprise them. Thus {Complete Address Number} includes four combinations:
   1. {Address Number*}
   2. {Address Number*} + {Address Number Suffix}
   3. {Address Number Prefix} + {Address Number*}
   4. {Address Number Prefix} + {Address Number} + (Address Number Suffix}

2   Address Classes

There are many valid ways to define and classify types of addresses. The most appropriate way depends on the purpose the classification is intended to serve. FGDC standards are data processing standards; thus this classification standard is created to serve data processing needs.

The address data classification standard classifies addresses according to their syntax, that is, their data elements and the order in which the elements are arranged. Syntax determines the table structure needed to hold and exchange the address, and often it is all we know about addresses in a given file.

The following pages give the name, syntax, examples, and notes on each address type.

2.1   A Note on Puerto Rico Addresses

None of the authors is knowledgeable about Puerto Rican address standards. We would welcome guidance from those who are.

Both USPS Publication 28 and the 2003 draft FGDC address standard recognize "Puerto Rico" address classes. This standard does not. Instead, it includes Puerto Rican addresses in the same general classes as addresses for the rest of the United States.

The examples given in USPS Publication 28, and in USPS "Addressing Standards for Puerto Rico and the U.S. Virgin Islands", suggest five factors that might seem to make Puerto Rican addresses a class unto themselves. This standard accommodates them as follows:

1. **Spanish vocabulary.** This can be accommodated by enlarging the relevant domains (street type, directional, and modifier; building, floor, and unit types) to include Spanish as well as English terms.
2. **Spanish syntax.** This is accommodated primarily by providing for a street pre-type for typical Spanish-language street names ("Avenida Ashford"). The pre-type is also needed for some English-language street names ("Avenue A").
3. **Alphnumeric site numbers.** Puerto Rican site numbers are sometimes alphanumeric, as are site numbers in the rest of the U.S. The standard provides site number prefixes and suffixes to accommodate site numbers like "B17A", "123 1/2", and "10N2W3001".
4. **Condominium addresses.** These fit in the landmark or landmark-site classes.
5. **Urbanization addresses.** These fit in the landmark-site or community (urbanization) classes.

Sources:

- USPS, "Addressing Standards for Puerto Rico and the U.S. Virgin Islands", as posted July 29, 2005 at: http://www.usps.com/ncsc/addressstds/addressstdsmenu.htm

- USPS Publication 28, as posted July 29, 2005 at: http://pe.usps.gov/text/pub28/welcome.htm

2.2 Thoroughfare Address Classes

Thoroughfare addresses specify a location by reference to a thoroughfare. A thoroughfare in this context is a linear feature used to travel from or to a specific location, which is designated by a number and the thoroughfare name. A thoroughfare is typically but not always a road - it may be, for example, a walkway, a railroad, or a river. The thoroughfare address classes are:

2.2.1 Site Address

Syntax: {Complete Address Number*} + {Complete Street Name*} + {Complete Occupancy Identifier} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- 123 Main Street Apt 3A Anytown MN 55811
- 123 West Main Street Anytown MN 55811
- 123 A Main Street West Anytown MN 55811
- 123 Avenue A Frypan AK 99401
- 123 Boulevard of the Allies Pittsburgh PA 15222

Notes:

2.2.2 Landmark-Site Address

Syntax:

Type 1: {Landmark Name*} + {Complete Occupancy Identifier} + {Complete Address Number*} + {Complete Street Name*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 2: {Landmark Name or Community Place Name (Urbanization) Name*} + {Complete Address Number*} + {Complete Street Name*} + {Complete Occupancy Identifier} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- The White House, 1600 Pennsylvania Avenue, Washington DC 20001

- Carnegie Mellon University, 3300 Forbes Avenue, Pittsburgh PA 15217

- Urbanization Las Gladiolas, 150 Calle A, San Juan PR 00926-3232

- **Type 1:** Standard Office Building, Suite 400, 909 Fifth Avenue, Spokane WA 99201

- **Type 2:** Standard Office Building, 909 Fifth Avenue, 10th Floor, Spokane WA 99201

Notes:

1. Strictly speaking, this could be decomposed into two addresses, a thoroughfare address and a landmark address, one an alias of the other. It is recognized as a separate class for two reasons:

- Many address lists, especially business address lists, include both, because the landmark name may be more prominently known but the thoroughfare address is useful for navigation to the site. There is value in linking the landmark name to the thoroughfare address.

- In some cases, notably some Puerto Rican urbanizations, the landmark component is necessary to distinguish repeated addresses in different locations. USPS "Addressing Standards for Puerto Rico and the Virgin Islands" states, "[Urbanization], commonly used in Puerto Rican urban areas, is an important part of the addressing format as it describes the location of a given street. In Puerto Rico, repeated street names and address number ranges can be found within the same ZIP Code (e.g., CALLE 1, CALLE 2, etc.). These streets can have the same house number ranges (e.g.,1-99). In these cases, the urbanization name is the only element that correctly identifies the location of a particular address." (See also USPS Publication 28, Section 29). Example:

  - Urbanization Royal Oak, 123 Calle 1, Bayamon PR 00961-0123
  - Urbanization Hermosillo, 123 Calle 1, Bayamon PR 00961-1212

2. See the notes under Community Place Name (Urbanization) class for more discussion of urbanization addresses.

2.2.3 Intersection Address

Syntax: {Complete Street Name*} + {Intersection Connector*} + {Complete Street Name*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- Fifth Street and Main Street, Newtown CT 06470

- West Fifth Street & Main Street, Newtown CT 06470

- P Street && 19th Street && Mill Road, Ellicott City MD 21043

- Avenida Rosa y Calle 19, Bayamon PR 00961

Notes:

- Intersection addresses are most useful for recording events occurring in the street, such as accidents, infrastructure locations, etc.

- When referring to a location at one corner of an intersection, the single-site address for that corner is always preferable to the intersection address

- Intersections of more than two streets can be represented as one sequence of street names, or as every pairwise combination of the names.

2.2.4 Site or Block Face or Block Address Range

Syntax: {Complete Address Number (low)*} + {Complete Address Number (high)*} + {Complete Street Name*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Example:

- 405-411 West Green Street, Flint MI 48502

Notes:

- Ranges may refer to one structure, several, an entire block face (one side of a thoroughfare between two intersections), or a block (both sides of the street between two intersections). The address range type attribute is included to specify what kind of range it is.

- USPS Pub 28 Appendix E contains instructive notes on the complexities of address ranges.

2.2.5 Block Address Range

Syntax: {Complete Address Number*(low/left low} + {Complete Address Number*(high/left high) + {Complete Address Number (low/right low} + {Complete Address Number (high/right high) + {Complete Street Name*}

Examples:

- TIGER file ranges (left low, left high, right low, right high, street name) are the most widely-used example of block ranges

Notes:

- Although they do not necessarily refer to one specific site, block addresses are important for municipal operations (such as snow plow dispatch) and emergency dispatch. A block address range may be expressed by four numbers, representing the low and high end of the numeric range for each side of a block. By convention, the first number represents the low end of the numeric range of addresses for the left side, the second number represents the high end of the numeric range of addresses for the left side, the third number represents the low end of the numeric range of addresses for the right side, and the fourth number represents the high end of the numeric range for the right side.

- A block face is defined as one side of a thoroughfare between two intersecting street segments. Generally, but not always, a block face has addresses of a single parity, that is, either odd or even numbers. However, mixed parities do occur in some places. In other cases, where the numeric ranges on opposite sides of the same block are not within the same general range, it is preferable to express the range in terms of the left low-high, right low-high, or to provide individual block face ranges.

- A block range may refer to either a theoretical range (the possible range of addresses along that street segment) or to an actual or used range of addresses. These types (actual or theoretical) are distinguished by the range type attribute.

2.3   Landmark Address Classes

Landmark addresses specify a location by reference to a named landmark. A landmark is a named point or area that is prominent enough in the local landscape as to be publicly known. The landmark address classes are:

2.3.1 Single-Site Landmark Address*

Syntax: {Landmark Name*} + {Complete Occupancy Identifier} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- Franklin D. Roosevelt Memorial, Washington DC 20004

- Statue of Liberty, New York NY 10004

- Langston Housing Complex, Building 7, Apartment 290, Kansas City KS 66101

- Condominium Garden Hills Plaza, Torre 2, Apartamento 905, Mayaguez PR 00680-1233

- Condominium Del Mar, Apartamento 905, Ponce PR 00731

- Residencial Las Margaritas, Edificio 1, Apartamento 104, San Juan PR 00924

Notes:

- This class includes the "condominium" addresses found in Puerto Rico, where a complex or building is known by name, without reference to a street.

2.3.2 Multi-Site Landmark Address

Syntax: {Landmark Name (enclosed)*} + {Complete Occupancy Identifier} + {Landmark Name (enclosing)*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- Dinkelspiel Auditorium, Stanford University, Stanford, CA 94305

- Statue of Liberty, Liberty Island, New York, NY 1004

- Truth Hall Room 306, Howard University, Washington DC 20059

Notes:

- In this type, two landmark names are given, one of which is enclosed by the other. Both names are needed in the address.

2.3.3 Community Place Name Address

Syntax: {Complete Address Number*} + {CommunityPlaceName Name (Urbanization)*} + {Complete Occupancy Identifier} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Examples:

- 1234 Urbanization Los Olmos, Ponce PR 00731

- A17 Jardine Fagota, Ponce PR 00731

- B133 Urbanization Golden Gate, San Juan PR 00920

Notes:

- This class includes Puerto Rican urbanization addresses where the urbanization name is preceded by a number, and no street name is included. In Puerto Rico, an urbanization denotes an area, sector, or residential development within a geographic area. In addition to being a descriptive word, it precedes the name of that area.

- If no number precedes the urbanization name, the address fits in the landmark class.

- If the address includes reference to a thoroughfare, it fits in the Landmark-site class.

- For more information on Puerto Rican addressing conventions, see USPS Publication 28 Section 29, and USPS "Addressing Standards for Puerto Rico and the Virgin Islands".

2.4   Postal Delivery Address Classes

Postal delivery addresses specify points of postal delivery which have no definite relation to the location of the recipient, such as post office boxes, rural route boxes, etc. There are three basic syntaxes, with one or more types for each. The USPS specifies each type in detail.

2.4.1 USPS Postal Delivery Box (per USPS Pub 28 Sec 281-283)

Syntax: {USPS Box Type*} + {USPS BOX ID*} + {PMB} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 1: PO Box: ("PO BOX"*} + {USPS BOX ID*} + {PMB} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Example:

- PO BOX 16943, New Orleans LA 70112

- PO BOX 1890, Kryton TN 38188-1890

- PO BOX G, Gabbs NV 89409

- PO BOX 159753 PMB 3571, Herndon VA 22071-2716

Notes:

- The USPS defines only one address type with this syntax. The phrase "PO Box" is mandatory as the USPS Box Type.

- USPS Pub 28 Sec. 282: "Post Office Box numbers that are preceded by significant leading zeroes are identified in the ZIP+4 File by a hyphen (-) preceding the box number. Convert the hyphen into a zero on the output mailpiece. "

- ZIP+4 File: PO BOX -0145

- Mailpiece: PO BOX 00145

- USPS Pub 28 Sec. 283: "PO Box addresses often appear with the word CALLER, FIRM CALLER, BIN, LOCKBOX, or DRAWER. Change these to PO BOX."

   o   Incorrect: DRAWER L

   o   Correct: PO BOX L

2.4.2 USPS Postal Delivery Route

Syntax: {USPS Box Group Type*} + {USPS Box Group ID*} + {USPS Box Type*} + {USPS Box ID*} + {PMB} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 1: Rural Route: {"RR"*} + {USPS Box Group ID*} + {"BOX"*} + (USPS Box ID*} + {PMB} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 2: Highway Contract Route: {"HC"*} + {USPS Box Group ID*} + {"BOX"*} + (USPS Box ID*} + {PMB} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 3: Overseas Military Delivery (PSC, CMR, or UNIT): {"PSC" or "CMR" or "UNIT"*} + {USPS Box Group ID*} + {"BOX"*} + (USPS Box ID*} + {"APO" or "FPO"*} + {"AE" or "AP" or "AA"*} + {ZIP*} + {ZIP+4}

Rural Route Address Notes and Examples (per USPS Pub 28 sec. 24):

- USPS Pub 28 Sec. 241: "Print rural route addresses on mailpieces as: RR N BOX NN. Do not use the words RURAL, NUMBER, NO., or the pound sign (#)."

    - RR 2 BOX 152
    - RR 9 BOX 23A

- USPS Pub 28 Sec. 242: "A leading zero before the rural route number is not necessary."

    - Acceptable: RR03 BOX 98D
    - Preferred: RR 3 BOX 98D

- USPS Pub 28 Sec. 243: "Print hyphens as part of the box number only when they are part of the address in the ZIP+4 File."

    - RR 4 BOX 19-1A

- USPS Pub 28 Sec. 244: "Change the designations RFD and RD (as a meaning for rural or rural free delivery) to RR."

    - Incorrect: RFD ROUTE 4 #87A
    - Correct: RR 4 BOX 87A

- USPS Pub 28 Sec. 245: "There should be no additional designations, such as town or street names, on the Delivery Address Line of rural route addresses. Because street names used together with route and box numbers can create potential matching difficulty, mailers are encouraged to use only one style of addressing. If secondary name information is used, however, place it above the Delivery Address Line."

    - Incorrect: RR 2 BOX 18 BRYAN DAIRY RD
    - Correct: RR 2 BOX 18

- USPS Pub 28 Sec. 246: "When applying a ZIP+4 code to a rural address, an exact match is preferred. If a box number is included in the address, the mailpiece must bear the appropriate ZIP+4 code representing the range for that box number. When box number information is not available, the Rural Route base record must be used."

Highway Contract Route Address Notes and Examples (per USPS Pub 28 sec. 25)

- USPS Pub 28 Sec. 251: "Print highway contract route addresses on a mailpiece as: HC N BOX NN. Do not use the words HIGHWAY CONTRACT, ROUTE, NUMBER, NO., STAR ROUTE, or the pound sign (#).

  - Incorrect: HIGHWAY CONTRACT ROUTE 68 BOX 23A
  - Correct: HC 68 BOX 23A"

- USPS Pub 28 Sec. 252: "A leading zero before the highway contract route number is not needed.

  - Acceptable: HC068 BOX 98D
  - Preferred: HC 68 BOX 98D"

- USPS Pub 28 Sec. 253: "Print hyphens as part of the box number only when they are part of the address in the ZIP+4 File.

  - HC 68 BOX 19-2B "

- USPS Pub 28 Sec. 254: "Change the designation STAR ROUTE, which usually refers to highway contract route, to HC.

  - Incorrect: STAR ROUTE 68 BOX # 45
  - Correct: HC 68 BOX 45"

- USPS Pub 28 Sec. 255: "There should be no additional designations, such as town or street names, on the Delivery Address Line of highway contract route addresses. Street names used together with route and box numbers can create potential matching difficulty. Mailers are encouraged to use only one style of addressing. If secondary name information is used, however, place it above the Delivery Address Line.

  - Incorrect: HC 72 BOX 18 BRYAN DAIRY RD
  - Correct: HC 72 BOX 18"

- USPS Pub 28 Sec. 256: "When applying a ZIP+4 code to a highway contract route address, an exact match is preferred. If a box number is included in the address, the mailpiece must bear the appropriate ZIP+4 code representing the range for that box number. When box number information is not available, the highway contract base record must be used."

Overseas Military PSC, CMR, or UNIT Address Notes and Examples {per USPS Pub 28 sec. 225.1 and 238.1}

- PSC stands for Postal Service Center. CMR stands for Common Mail Room.

- USPS Pub 28 Sec. 238.1: "The Delivery Address Line for all APO/FPO military mail must be standardized as follows:

  - PSC (CMR OR UNIT) NNNN
  - BOX NNNN
  - **Examples:**
  - CMR 830 BOX 51
  - PSC 1650 BOX 10
  - UNIT 908 BOX 111

- USPS Pub 28 Sec. 225.1 "Overseas military addresses must contain the APO or FPO designation along with a two-character "state" abbreviation of AE, AP, or AA and the ZIP Code or ZIP+4 code.

  - APO AE 09001-5275
  - FPO AP 96606-2783
  - APO AA 34035-4198

- AE is used for armed forces in Europe, the Middle East, Africa, and Canada;

- AP is for the Pacific; and

- AA is the Americas excluding Canada.

  - **Complete Address Examples:**
    - PSC 802 BOX 74 APO AE 09499-0074
    - UNIT 2050 BOX 4190 APO AP 96278-2050

2.4.3 USPS Postal Delivery Office

Syntax: {USPS Postal Delivery Office*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Type 1: General Delivery: {"GENERAL DELIVERY"*} + {Place Name*} + {State*} + {ZIP*} + {"9999"}

Type 2: Overseas Military Address (Ship's Name): {SHIP'S NAME*} + {"APO" or "FPO"*} + {"AE" or "AP" or "AA"*} + {ZIP*} + {ZIP+4}

General Delivery Addresses Note and Example {per USPS Pub 28 sec. 26}

- USPS Pub 28 Sec. 261: "Use the words GENERAL DELIVERY, uppercase preferred, spelled out (no abbreviation), as the Delivery Address Line on the mailpiece. Each record will carry the 9999 add-on code."

  Example:

  GENERAL DELIVERY

  TAMPA FL 33602-9999

Overseas Military Addresses Notes and Examples {per USPS Pub 28 sec. 225.1 and 238.1}

- USPS Pub 28 Sec. 238.1: "The Delivery Address Line for all APO/FPO military mail must be standardized as follows:

  o SHIP'S NAME
    Example:

    USS SEA DEVIL SSN-664

- USPS Pub 28 Sec. 225.1 "Overseas military addresses must contain the APO or FPO designation along with a two-character "state" abbreviation of AE, AP, or AA and the ZIP Code or ZIP+4 code.

  o APO AE 09001-5275
  o FPO AP 96606-2783
  o APO AA 34035-4198

- AE is used for armed forces in Europe, the Middle East, Africa, and Canada;

- AP is for the Pacific; and

- AA is the Americas excluding Canada.

  o **Complete Example:**
    - USCGC HAMILTON
    - FPO AP 96667-3931

2.4.4 A Note on Compound Postal Delivery Addresses

Compound postal delivery addresses combine postal delivery address elements with thoroughfare or landmark addresses. Examples:

- Landmark-Postal Address: Wagon Wheel Ranch, RR1 Box 100

- Street-Postal Address: 1834 Grant Street, PO Box 15

- Landmark-Street-Postal Address: Mega Office Tower, 1 Grand Avenue, PO Box 18343

These potential classes are not recognized in this standard because the USPS strongly discourages them. Within the standard they can be handled two ways:

1. Separate them into their component types, create database records for each, and link the records to show that they refer to the same location.
2. Place the entire address in a general address list

2.5   General Address Class

The general address handles all of the above classes, for files in which the various classes are mixed together. The feature address may have any syntax, but city, state, and ZIP are separated from the rest of the address. An example is the USPS Publication 28 standard.

2.5.1 General Address Types

Syntax: {Complete Feature Address*} + {Place Name*} + {State*} + {ZIP*} + {ZIP+4}

Example: A profile (limited subset) would be the USPS Pub 28 standard, in which the "complete feature address" is synonymous with the USPS "delivery line", and in which all the USPS rules and domain values apply.

Notes

- Address files often contain—and need to contain—street, landmark, and postal addresses mixed together, The general address handles all of these classes, for files in which the various classes are mixed together. Such a standard should meet two criteria:

    1. City, state, and ZIP are separated from the feature address
    2. The feature address (i.e. the street, landmark, or postal delivery part of the address, excluding city-state-zip) can be of any type or syntax.

Part 3: Street Address Data Quality [Outline Only]

1   Introduction

The purpose of this section is to provide a set of methods for applying spatial quality standards to addressing. Quality standards that apply to addressing consist of a series of standards that apply to spatial data generally, as well as a standard from the National Emergency Number Association (NENA). General data quality standards cannot speak to a specific type of database. The NENA standard describes address quality relative to an established Automatic Location Information (ALI) file, as is appropriate for emergency services. It gives an example of describing very specific tests to assess the fitness of a dataset for emergency services.

There remains a gap, however, in guidance for assessment of quality for addresses themselves. Local variations in address data sets is so great that very specific tests, such as those described in the NENA standard, are not possible or desirable. A series of more general methods is more appropriate, working within the framework described by more broadly stated spatial quality standards. In support of those standards this section reviews their application to addresses, and suggests a set of methods for assess the quality of address data sets.

1.1   Existing Standards and Documents Describing Spatial Data Quality

1.1.0 Objectives of Existing Standards
The existing quality standards fall into three categories:

- Spatially-oriented standards that include information about spatial data quality in a standard with a larger overall purpose: recording metadata or encoding data into a transfer format. These include the Content Standard for Digital Geospatial Metadata (CSDGM), OGC Topic 11 (ISO 19115) and SDTS.

- Spatially-oriented standards that address quality directly. Three other standards from the ISO 19000 series, 19113, 19114 and 19138 are in that category.

- The NENA standard, an example of creating tests to measure the utility of data for emergency service purposes.

Standard Name	Organization	Purpose (Quoted from document introduction)
Content Standard for Digital Geospatial Metadata (CSDGM)	Federal Geographic Data Committee	Provide a common set of terminology and definitions for the documentation of digital geospatial data (CSDGM, Introduction)
Geographic Information Principles (ISO 19113)	International Standards Organization	Provide principles for describing the quality for geographic data and concepts for handling quality information for geographic data (19113, Introduction)
Geographic information - Quality evaluation procedures	International Standards Organization	Provide guidelines for evaluation procedures of quantitative quality information for geographic data in accordance with the quality principles described in ISO 19113. It also offers guidance on reporting quality information.
OGC Topic 11: Geographic information - Metadata (ISO 19115)	Open Geospatial Consortium, International Standards Organization	Provide a structure for describing digital geographic data.
Geographic information - Data quality measures (ISO 19138)	International Standards Organization	Guide the producer in data quality reporting and the user in the evaluation of the usefulness of a dataset by standardizing the components and structures of data quality measures and by defining a register of commonly used data quality measures.
NENA Recommended Data Standards For Local Exchange Carriers, ALI Service Providers & 9-1-1 Jurisdictions (NENA 02-011)	National Emergency Number Association	This document defines the provisioning requirements for E9-1-1 data integrity, content, and call delivery regardless of dial tone provider. It is the goal of these standards to support current and future development consistent with the concept of "One Nation, One Number." It is assumed that Federal, State or Local legislation will supersede these standards.
Spatial Data Transfer Standard aka SDTS (ANSI NCITS 320-1998)	American National Standards Institute	Provides a solution to the problem of spatial (i.e., geographic and cartographic) data transfer from the conceptual level to the details of physical file encoding. Transfer of spatial data involves modeling spatial data concepts, data structures, and logical and physical file structures.

1.1.1 Elements of Address Quality

There is remarkable agreement among the documents on the elements of spatial data quality. Each of the standards that approach that question describe the same five core elements:

- Attribute (Thematic) Accuracy
- Logical Consistency
- Completeness
- Positional Accuracy
- Lineage

Even the names of the elements are essentially identical. CSDGM discusses "Attribute Accuracy", while the same content is described as "Thematic Accuracy" in ISO 19115. ISO 19113 includes temporal accuracy as one of the data quality elements, defined as "accuracy of the temporal attributes and temporal relationships of features" (ISO 19113:2002(E), 5.2.1), and this definition remains constant throughout the ISO series. Temporal attributes are not separated from other types of attributes in the CSDGM, although various types of time period entries are listed throughout the standard.

Quality Elements	Standards			
	CSDGM	ISO 19113	OGC Topic 11/ ISO 19115	SDTS
Dataset Purpose	†	•	•	•
Dataset Use	†	•	•	•
Attribute (Thematic) Accuracy	•	•	•	•
Logical Consistency	•	•	•	•
Temporal Accuracy	†	•	•	
Completeness	•	•	•	•
Positional Accuracy	•	•	•	•
Lineage	•	•	•	•

1.1.2 Uncertainty and Addresses

1.1.3 Domains of Values and Address Quality

1.1.4 Address Classification and Quality

1.1.5 Address Storage Models and Quality

1.2 Principles for Observing Address Quality

1.2.1 Dataset Identity
3.2.1.2 Purpose
3.2.1.3 Use

Part 4: Street Address Data Exchange

1 Introduction

The exchange of address information happens in two basic forms:

- Monolithic, or Complete

- Transactional, or Incremental

The address data exchange standard supports both types using slightly different structures.

1.1 Required Elements

In all exchange packages both of the following are required.

1.1.1 FGDC Metadata

Conforming to the FGDC-STD-001-1998 Content Standard for Digital Geospatial Metadata (version 2.0).

1.1.2 Address Data

Expressed as an XML document conforming to the AddrStd XML Schema.

1.2 Structure

The exchange of data is essentially a series of assertions that data elements are of a particular type with underlying generic types. The model therefore cannot be rigorous and must allow for generic type at all levels. Additionally the exchange mode MUST not force content producers to assert things beyond their knowledge.

The model of the exchange format is being expressed as a XML Schema definition (xsd). The effective model of the exchange has already been created by both the Content and the Classification sections. New relationships between content elements and new classes or sub-classes need to be clarified there first. The expression of the taxonomies in the Content and the Classification sections is being conducted in the following way. (The jargon of XML and the jargon used in Content and Classification cross in some confusing ways XML uses the keyword "element" to describe what is in the Classification section and simpleType and complexType to describe what is in the Elements section.)

- Each simple element is being expressed as a "simpleType" with annotation describing it and a pattern restricting it as best as possible.

- Each complex element is being expresses as a "complexType" of the several simple elements that comprise it.

- When reasonable predicates can be determined choices between the data types of attributes are established.

1.3 The "AddrStd.xsd" Schema

```xml
<?xml version="1.0" encoding="UTF-8" ?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://www.urisa.org/AddrStd"
xmlns:addr="http://www.urisa.org/AddrStd">
<!--
Draft Address Standard, being prepared and tested by URISA for submittal to FGDC,
member organizations include URISA, NENA, and the US Census Bureau.
Copyright 2005 URISA.org. All rights reserved.
   -->
<xsd:simpleType name="AddressNumberPrefix_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The fractional or alphabetic portion of an Address
Number that precedes the integer portion of the Address Number. In NYC this may be a
number with a tailing dash</xsd:documentation>
   </xsd:annotation>
<xsd:restriction base="xsd:string">
   <xsd:pattern value=".*" />
   </xsd:restriction>
   </xsd:simpleType>
<xsd:simpleType name="AddressNumber_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The integer numeric portion of an Address
Number</xsd:documentation>
   </xsd:annotation>
<xsd:restriction base="xsd:string">
   <xsd:pattern value=".*" />
   </xsd:restriction>
   </xsd:simpleType>
<xsd:simpleType name="AddressNumberSuffix_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The fractional or alphabetic portion of an Address
Number that follows the integer portion of the Address Number</xsd:documentation>
   </xsd:annotation>
<xsd:restriction base="xsd:string">
   <xsd:pattern value=".*" />
   </xsd:restriction>
   </xsd:simpleType>
<xsd:simpleType name="AddressParity_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The portion of the continuous addressess in a range
that an Address Range is supposed to apply to.</xsd:documentation>
   </xsd:annotation>
<xsd:restriction base="xsd:token">
   <xsd:enumeration value="EVEN" />
   <xsd:enumeration value="ODD" />
   <xsd:enumeration value="LEFT" />
   <xsd:enumeration value="RIGHT" />
   </xsd:restriction>
   </xsd:simpleType>
<!--
StreetName Content
   -->
<xsd:simpleType name="StreetNameDirectional_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The part of a Street Name that is an abbreviatable
Directional either before or after the main name components</xsd:documentation>
   </xsd:annotation>
<xsd:restriction base="xsd:token">
   <xsd:enumeration value="NORTH" />
```

```
  <xsd:enumeration value="SOUTH" />
  <xsd:enumeration value="EAST" />
  <xsd:enumeration value="WEST" />
  <xsd:enumeration value="NORTHEAST" />
  <xsd:enumeration value="NORTHWEST" />
  <xsd:enumeration value="SOUTHEAST" />
  <xsd:enumeration value="SOUTHWEST" />
  <xsd:enumeration value="NORTHNORTHEAST" />
  <xsd:enumeration value="NORTHNORTHWEST" />
  <xsd:enumeration value="SOUTHSOUTHEAST" />
  <xsd:enumeration value="SOUTHSOUTHWEST" />
  <xsd:enumeration value="EASTNORTHEAST" />
  <xsd:enumeration value="EASTSOUTHEAST" />
  <xsd:enumeration value="WESTNORTHWEST" />
  <xsd:enumeration value="WESTSOUTHWEST" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="StreetName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The main Street Name after all of the other
elements have been opportunistically taken off. The part MUST exist and may not be
empty. If opportunistically taking the last part from Street Name would leave this
empty, the other part may not be taken.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="StreetNameType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The part of a Street Name containing a road type as
defined by USPS pub 28</xsd:documentation>
  </xsd:annotation>
<!--
this should really be an enumeration of all of the valid USPS road types
  -->
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="StreetNameModifier_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The part of a Street Name that is a word preceeding
or following all other street name parts that is not a Directional or Type. examples
might be "OLD" or "NEW".</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Occupancy Types
  -->
<xsd:simpleType name="BuildingType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">This is a modifier to the Building Id[2] element and
this cannot exist without it. The structure (when several structures are found at the
same address), e.g., Apartment, Tower, Block Used with Building Identifier to
designate one of several structures at a given site. Fits within the general EPA
definition of "secondary address identifier".</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
```

```
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="BuildingId_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The letter, number, or word used to distinguish one
structure from another when several occur at the same address.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="FloorType_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">This is a modifier to the Floor Id² element and
this cannot exst without it. The word describing level or story of a building where an
address is located.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="FloorId_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The number, letter, or word or combination of
numbers and letters distinguishing one floor from another within a
structure.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="UnitType_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">This is a modifier to the Unit Id² element and this
cannot exst without it. The word describing level or story of a building where an
address is located.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="UnitId_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The number, letter, or word or combination of
numbers and letters distinguishing one floor from another within a
structure.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:complexType name="Unit_type">
<xsd:simpleContent>
<xsd:extension base="addr:UnitId_type">
    <xsd:attribute name="UnitType" type="addr:UnitType_type" />
    </xsd:extension>
    </xsd:simpleContent>
    </xsd:complexType>
<xsd:complexType name="Floor_type">
<xsd:simpleContent>
<xsd:extension base="addr:FloorId_type">
    <xsd:attribute name="FloorType" type="addr:FloorType_type" />
    </xsd:extension>
```

```xml
    </xsd:simpleContent>
    </xsd:complexType>
<xsd:complexType name="Building_type">
<xsd:simpleContent>
<xsd:extension base="addr:BuildingId_type">
  <xsd:attribute name="BuildingType" type="addr:BuildingType_type" />
  </xsd:extension>
  </xsd:simpleContent>
  </xsd:complexType>
<xsd:simpleType name="PrivateMailBox_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A mailbox rented from a private commercial mail
receiving agency (CMRA).</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="GeneralOccupancy_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A general class devoid of any assertions excepting
that it is a Occupany content element.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Intersection Connector
  -->
<xsd:simpleType name="IntersectionConnector_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The word or symbol placed between the names of
intersecting streets. This symbol must not occur in either thing intersecting. Typical
values may include " and ", " & ", and " && " " + "," - ", and "y" or "con" (Spanish)
each having spaces before and after.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Landmark Name Type
  -->
<xsd:simpleType name="LandmarkName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The name by which a prominent feature is publicly
known.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Area and Zone Elements
  -->
<xsd:simpleType name="CommunityPlaceName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A named area, sector, or development that is not an
incorporated municipality or other governmental unit, such as a neighborhood in a
city, or a rural settlement in unincorporated area. Often called "urbanization" in
Puerto Rican addressing usage.</xsd:documentation>
  </xsd:annotation>
```

```
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="MuncipalityPlaceName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The name of the municipality (city, township, or
other non-county local government) in which the address is physically located. In many
places this will be different than the city name used by the U.S. Postal
Service.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="USPSPlaceName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The name given by the U.S. Postal Service to the
post office from which mail is delivered to the address. In many places this will be
different from the name of the municipality in which the address is physically
located.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="CountyName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The primary administrative subdivision of a state
in the United States.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="StateName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The primary legal subdivision of the United States,
represented by its two letter USPS abbreviation.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="ZipCode_type">
<xsd:annotation>
  <xsd:documentation>A five-digit code that identifies a specific geographic [postal]
delivery area. ZIP Codes can represent an area within a state, an area that crosses
state boundaries (unusual condition) or a single building or company that has a very
high mail volume. ZIP is an acronym for Zone Improvement Plan.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="Zip4_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A four-digit extension of the five-digit ZIP Code
that identifies a portion of a carrier route for USPS mail
delivery.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
```

```
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="NationName_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The name of the nation in which the address is
located.</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<!--
USPS Postal Address Elements
    -->
<xsd:simpleType name="PostalName_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The Place Name as defined in the city_state_by_zip
table in the AIS USPS product</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="PostalState_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The State Abbreviation as defined in the
city_state_by_zip table in the AIS USPS product</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="PostalZip_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The Zipcode as defined in the city_state_by_zip
table in the AIS USPS product</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="PostalZip4_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The 4 digit Zip4 extension as defined in the Zip4
AIS UPSP product</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="PostalBoxType_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">A box used for receipt of USPS mail. The box may be
located in the post office lobby (e.g PO Box), on the customer's premises or other
USPS authorized place (e.g. rural route box).</xsd:documentation>
    </xsd:annotation>
<xsd:restriction base="xsd:string">
    <xsd:pattern value=".*" />
    </xsd:restriction>
    </xsd:simpleType>
<xsd:simpleType name="PostalBoxId_type">
<xsd:annotation>
    <xsd:documentation xml:lang="en">The numbers or letters distinguishing one box from
```

```xml
another within a post office.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="PostalBoxGroupType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A collection of postal boxes served from a single
distribution point.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="PostalBoxGroupId_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The numbers or letters distinguishing one group of
boxes from another within a distribution point.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="PostalDeliveryOffice_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">An office where mail may picked up by the
addressee.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="PostalDeliveryRoute_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">An Postal Delivry Route
Identifier.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="CityName_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A location or place name that is identifiable by a
boundary.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="FipsPlace_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A Concatenation of FIPS 5.2, 6-4, and 55-3, and a
local code that MUST be defined in the metadata. The general format is (expressed as
regular expressions) [0-9]{2}[0-9]{3}[0-9]{5}[0-9]{4}.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Locational type
```

```xml
    -->
<xsd:simpleType name="LocationX_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The X coordinate of address
location.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="LocationY_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The Y coordinate of address
location.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="LocationUSNG_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The USNG is an alphanumeric point reference system
that overlays the Universal Transverse Mercator (UTM) numerical coordinate system. A
USNG coordinate consists of three parts, the: 1. Grid Zone Designation (GZD) for
worldwide unique geoaddresses (two digits plus one letter, developed from the UTM
system). 2. 100,000-meter Square Identification for regional areas (two letters). 3.
Grid Coordinates for local areas (always an even number of digits between 2 and 10
depending upon precision necesary to uniquely identify the
location).</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Non Locational Elements
  -->
<xsd:simpleType name="AddressId_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A universally unique identification number assigned
to an address by the addressing authority.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressStartDate_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The date on which the indicated address status
became valid (ie the address was assigned or discovered).</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressEndDate_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The date on which the indicated address status
became no longer valid (ie the address was retired, removed or determined to by
invalid).</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
```

```
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The type or classification of the address according
to the classification standard.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressFeatureType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The type or classification of the thing the address
is attached to. A house, park, landmark, utility equipment, ...</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressLanguage_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The language (English, Spanish, French) from which
the address syntax is derived</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressStatus_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The validity of the numerical address ?? (proposed,
current, alias, retired, nevervalid) ???</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressAliasStatus_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">not sure how to use this</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressRangeType_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The type of address range represented by the data.
Address ranges are ambiguous, in that a set of 2 site numbers and a street name can
represent either a building, a block face range, a block range, or an entire street
range.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressNarrative_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A text description providing more detail on how to
identify or find the addressed feature.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
```

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  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressDirectSource_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">From whom the data provider obtained the
address.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressAuthority_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The authority (e.g., municipality, county) that
created or has jurisdiction over the creation of an address</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressAuthorityFIPS_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The FIPS identifier for the governmental unit
issuing the address.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:string">
  <xsd:pattern value=".*" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:simpleType name="AddressLifecycle_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The Lifecycle status of the
address.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:token">
  <xsd:enumeration value="PROPOSED" />
  <xsd:enumeration value="ACTIVE" />
  <xsd:enumeration value="RETIRED" />
  <xsd:enumeration value="TEMPORARY" />
  </xsd:restriction>
  </xsd:simpleType>
<!--
Complex Types
  -->
<xsd:simpleType name="Action_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">A record action command for incremental
updates.</xsd:documentation>
  </xsd:annotation>
<xsd:restriction base="xsd:token">
  <xsd:enumeration value="ADD" />
  <xsd:enumeration value="DELETE" />
  </xsd:restriction>
  </xsd:simpleType>
<xsd:complexType name="PostalPlace_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The accumulation of Postal City, State, and Zip
Code[2] elements.</xsd:documentation>
  </xsd:annotation>
<xsd:all>
  <xsd:element name="PostalName" type="addr:PostalName_type" />
  <xsd:element name="PostalState" type="addr:PostalState_type" />
```

```xml
  <xsd:element name="PostalZip" type="addr:PostalZip_type" minOccurs="1" maxOccurs="1"
/>
  <xsd:element name="PostalZip4" type="addr:PostalZip4_type" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="PostOfficeBox_type">
<xsd:simpleContent>
<xsd:annotation>
  <xsd:documentation xml:lang="en">The Post Office Box².</xsd:documentation>
  </xsd:annotation>
<xsd:extension base="addr:PostalBoxId_type">
  <xsd:attribute name="BoxType" type="addr:PostalBoxType_type" />
  </xsd:extension>
  </xsd:simpleContent>
  </xsd:complexType>
<xsd:complexType name="LocationXY_type">
<xsd:all>
  <xsd:element name="X" type="addr:LocationX_type" minOccurs="1" maxOccurs="1" />
  <xsd:element name="Y" type="addr:LocationY_type" minOccurs="1" maxOccurs="1" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="Location_type">
<xsd:all>
  <xsd:element name="USNG" type="addr:LocationUSNG_type" minOccurs="0" maxOccurs="1"
/>
  <xsd:element name="XY" type="addr:LocationXY_type" minOccurs="0" maxOccurs="1" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="CompleteStreetName_type">
<xsd:all>
  <xsd:element name="StreetNamePreModifier" type="addr:StreetNameModifier_type"
minOccurs="0" maxOccurs="1" />
  <xsd:element name="StreetNamePreDirectional" type="addr:StreetNameDirectional_type"
minOccurs="0" maxOccurs="1" />
  <xsd:element name="StreetNamePreType" type="addr:StreetNameType_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="StreetName" type="addr:StreetName_type" minOccurs="1"
maxOccurs="1" />
  <xsd:element name="StreetNamePostType" type="addr:StreetNameType_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="StreetNamePostDirectional" type="addr:StreetNameDirectional_type"
minOccurs="0" maxOccurs="1" />
  <xsd:element name="StreetNamePostModifier" type="addr:StreetNameModifier_type"
minOccurs="0" maxOccurs="1" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="CompleteAddressNumber_type">
<xsd:all>
  <xsd:element name="Prefix" type="addr:AddressNumberPrefix_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="Number" type="addr:AddressNumber_type" minOccurs="1"
maxOccurs="1" />
  <xsd:element name="Suffix" type="addr:AddressNumberSuffix_type" minOccurs="0"
maxOccurs="1" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="AddressNumberRange_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">Address ranges are ambiguous, in that a set of 2
site numbers and a street name can represent either a building, a block face range, a
block range, or an entire street range.</xsd:documentation>
  </xsd:annotation>
<xsd:sequence>
```

```xml
  <xsd:element name="CompleteAddressNumber" type="addr:CompleteAddressNumber_type"
minOccurs="2" maxOccurs="2" />
  </xsd:sequence>
  <xsd:attribute name="Parity" type="addr:AddressParity_type" />
  </xsd:complexType>
<xsd:complexType name="CompleteOccupancyIdentifier_type">
<xsd:all>
  <xsd:element name="Unit" type="addr:UnitId_type" minOccurs="0" maxOccurs="1" />
  <xsd:element name="Floor" type="addr:FloorId_type" minOccurs="0" maxOccurs="1" />
  <xsd:element name="Building" type="addr:BuildingId_type" minOccurs="0" maxOccurs="1"
/>
  <xsd:element name="PrivateMailbox" type="addr:PrivateMailBox_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="Occupancy" type="addr:GeneralOccupancy_type" minOccurs="0"
maxOccurs="1" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="PostalPlaceIdentifier_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The City, State zip, Zip4 elements from USPS
Publication 28.</xsd:documentation>
  </xsd:annotation>
<xsd:sequence>
  <xsd:element name="PostalCityName" type="addr:PostalName_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="State" type="addr:PostalState_type" minOccurs="0" maxOccurs="1"
/>
  <xsd:element name="Zipcode" type="addr:PostalZip_type" minOccurs="1" maxOccurs="1"
/>
  <xsd:element name="Zip4" type="addr:PostalZip4_type" minOccurs="0" maxOccurs="1" />
  </xsd:sequence>
  </xsd:complexType>
<xsd:complexType name="PlaceIdentifier_type">
<xsd:all>
  <xsd:element name="PostalPlace" type="addr:PostalPlaceIdentifier_type" minOccurs="0"
maxOccurs="1" />
  <xsd:element name="FipsPlace" type="addr:FipsPlace_type" minOccurs="0" maxOccurs="1"
/>
  <xsd:element name="Location" type="addr:Location_type" minOccurs="0" maxOccurs="1"
/>
  </xsd:all>
  </xsd:complexType>
<!--
Supporting Information
  -->
<xsd:complexType name="SupportInfo_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">Supporting info for the Address</xsd:documentation>
  </xsd:annotation>
<xsd:all>
  <xsd:element name="Location" type="addr:Location_type" />
  <xsd:element name="AddressId" type="addr:AddressId_type" />
  <xsd:element name="StartDate" type="addr:AddressStartDate_type" />
  <xsd:element name="EndDate" type="addr:AddressEndDate_type" />
<!--
not needed as the XML elements
<xsd:element name="Type" type="addr:AddressType_type" />
  -->
  <xsd:element name="FeatureType" type="addr:AddressFeatureType_type" />
  <xsd:element name="Language" type="addr:AddressLanguage_type" />
  <xsd:element name="Lifecycle" type="addr:AddressLifecycle_type" />
  <xsd:element name="Status" type="addr:AddressStatus_type" />
  <xsd:element name="Type" type="addr:AddressType_type" />
```

```xml
  <xsd:element name="Narrative" type="addr:AddressNarrative_type" />
  <xsd:element name="DirectSource" type="addr:AddressDirectSource_type" />
  <xsd:element name="Authority" type="addr:AddressAuthority_type" />
  <xsd:element name="AuthorityFIPS" type="addr:AddressAuthorityFIPS_type" />
  </xsd:all>
  </xsd:complexType>
<!--
Base Class Types
  -->
<xsd:complexType name="SiteAddress_type">
<xsd:annotation>
  <xsd:documentation xml:lang="en">The Address Class associated with singlar locations
referenced off of a linear feature, having numeric identifiers.</xsd:documentation>
  </xsd:annotation>
<xsd:all>
  <xsd:element name="CompleteAddressNumber" type="addr:CompleteAddressNumber_type" />
  <xsd:element name="CompleteStreetName" type="addr:CompleteStreetName_type" />
  <xsd:element name="CompleteOccupancyIdentifier"
type="addr:CompleteOccupancyIdentifier_type" />
  <xsd:element name="Support" type="addr:SupportInfo_type" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="SiteLandmarkAddress_type">
<xsd:all>
  <xsd:element name="LandmarkName" type="addr:LandmarkName_type" />
  <xsd:element name="CompleteAddressNumber" type="addr:CompleteAddressNumber_type" />
  <xsd:element name="CompleteStreetName" type="addr:CompleteStreetName_type" />
  <xsd:element name="CompleteOccupancyIdentifier"
type="addr:CompleteOccupancyIdentifier_type" />
  <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
  <xsd:element name="Support" type="addr:SupportInfo_type" />
  </xsd:all>
  </xsd:complexType>
<xsd:complexType name="IntersectionAddress_type">
<xsd:sequence>
  <xsd:element name="CompleteStreetName" type="addr:CompleteStreetName_type"
minOccurs="2" maxOccurs="2" />
  <xsd:element name="IntersectionConnector" type="addr:IntersectionConnector_type"
minOccurs="1" maxOccurs="1" />
  <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" minOccurs="1"
maxOccurs="1" />
  <xsd:element name="Support" type="addr:SupportInfo_type" />
  </xsd:sequence>
  </xsd:complexType>
<xsd:complexType name="SingleRangeAddress_type">
<xsd:all>
  <xsd:element name="NumberRange" type="addr:AddressNumberRange_type" minOccurs="1"
maxOccurs="1" />
  <xsd:element name="CompleteStreetName" type="addr:CompleteStreetName_type"
minOccurs="1" maxOccurs="1" />
  <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" minOccurs="1"
maxOccurs="1" />
  <xsd:element name="Support" type="addr:SupportInfo_type" />
  </xsd:all>
  <xsd:attribute name="RangeType" type="addr:AddressRangeType_type" />
  </xsd:complexType>
<xsd:complexType name="BlockRangeAddress_type">
<xsd:sequence>
  <xsd:element name="NumberRange" type="addr:AddressNumberRange_type" minOccurs="2"
maxOccurs="2" />
  <xsd:element name="CompleteStreetName" type="addr:CompleteStreetName_type"
minOccurs="1" maxOccurs="1" />
  <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" minOccurs="1"
```

```
maxOccurs="1" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:sequence>
   <xsd:attribute name="RangeType" type="addr:AddressRangeType_type" />
   </xsd:complexType>
<!--
Landmark Address Classes
   -->
<xsd:complexType name="LandmarkAddress_type">
<xsd:all>
   <xsd:element name="LandmarkName" type="addr:LandmarkName_type" />
   <xsd:element name="CompleteOccupancyIdentifier"
type="addr:CompleteOccupancyIdentifier_type" />
   <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:all>
   </xsd:complexType>
<xsd:complexType name="MultiLandmarkAddress_type">
<xsd:annotation>
   <xsd:documentation xml:lang="en">The Parent, Child must be expressed explicitly as
local landmark names may conflict with more global landmark names. Howard Hall, Wilson
Plaza vs. Wilson Plaza, Howard Hall.</xsd:documentation>
   </xsd:annotation>
<xsd:all>
   <xsd:element name="LandmarkName" type="addr:LandmarkName_type" />
   <xsd:element name="LandmarkName_parent" type="addr:LandmarkName_type" />
   <xsd:element name="CompleteOccupancyIdentifier"
type="addr:CompleteOccupancyIdentifier_type" />
   <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:all>
   </xsd:complexType>
<xsd:complexType name="CommunityAddress_type">
<xsd:all>
   <xsd:element name="CompleteAddressNumber" type="addr:CompleteAddressNumber_type" />
   <xsd:element name="CommunityName" type="addr:CommunityPlaceName_type" />
   <xsd:element name="CompleteOccupancyIdentifier"
type="addr:CompleteOccupancyIdentifier_type" />
   <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:all>
   </xsd:complexType>
<!--
Postal Delivery Address Classes
   -->
<xsd:complexType name="PostOfficeBoxAddress_type">
<xsd:all>
   <xsd:element name="PostOfficeBoxe" type="addr:PostOfficeBox_type" />
   <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
   <xsd:element name="PostalPlace" type="addr:PostalPlace_type" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:all>
   </xsd:complexType>
<xsd:complexType name="PostalDeliveryRouteAddress_type">
<xsd:all>
   <xsd:element name="PostalRoute" type="addr:PostalDeliveryRoute_type" />
   <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
   <xsd:element name="PostalPlace" type="addr:PostalPlace_type" />
   <xsd:element name="Support" type="addr:SupportInfo_type" />
   </xsd:all>
   </xsd:complexType>
<xsd:complexType name="PostalDeliveryOfficeAddress_type">
<xsd:all>
```

```xml
    <xsd:element name="PostalOfice" type="addr:PostalDeliveryOffice_type" />
    <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
    <xsd:element name="PostalPlace" type="addr:PostalPlace_type" />
    <xsd:element name="Support" type="addr:SupportInfo_type" />
    </xsd:all>
    </xsd:complexType>
<!--
General Delivery Classes
    -->
<xsd:complexType name="GeneralAddress_type">
<xsd:all>
    <xsd:element name="GeneralAddress" type="addr:GeneralAddress_type" />
    <xsd:element name="PlaceIdentifier" type="addr:PlaceIdentifier_type" />
    <xsd:element name="PostalPlace" type="addr:PostalPlace_type" />
    <xsd:element name="Support" type="addr:SupportInfo_type" />
    </xsd:all>
    </xsd:complexType>
<xsd:complexType name="AddressClass_type">
<xsd:annotation>
    <xsd:documentation>The Single Choice Union of all Address Types</xsd:documentation>
    </xsd:annotation>
<xsd:choice>
    <xsd:element name="SiteAddress" type="addr:SiteAddress_type" />
    <xsd:element name="SiteLandmarkAddress" type="addr:SiteLandmarkAddress_type" />
    <xsd:element name="IntersectionAddress" type="addr:IntersectionAddress_type" />
    <xsd:element name="SingleRangeAddress" type="addr:SingleRangeAddress_type" />
    <xsd:element name="BlockRangeAddress" type="addr:BlockRangeAddress_type" />
    <xsd:element name="LandmarkAddress" type="addr:LandmarkAddress_type" />
    <xsd:element name="MultiLandmarkAddress" type="addr:MultiLandmarkAddress_type" />
    <xsd:element name="CommunityAddress" type="addr:CommunityAddress_type" />
    <xsd:element name="PostOfficeBoxAddress" type="addr:PostOfficeBoxAddress_type" />
    <xsd:element name="PostalDeliveryRouteAddress"
type="addr:PostalDeliveryRouteAddress_type" />
    <xsd:element name="PostalDeliveryOfficeAddress"
type="addr:PostalDeliveryOfficeAddress_type" />
    <xsd:element name="GeneralAddress" type="addr:GeneralAddress_type" />
    </xsd:choice>
    </xsd:complexType>
<!--
Alternate Addresses
    -->
<xsd:complexType name="AlternateAddress_type">
<!--
the union of all types as base and as alternate
    -->
<xsd:all>
    <xsd:element name="BaseAddress" type="addr:AddressClass_type" minOccurs="1"
maxOccurs="1" />
    <xsd:element name="AlternateAddress" type="addr:AddressClass_type" minOccurs="1"
maxOccurs="1" />
    </xsd:all>
    <xsd:attribute name="action" type="addr:Action_type" />
    </xsd:complexType>
<!--
End Complex Types
    -->
<!--
Address Classes
    -->
<!--
Thoroughfare Address Classes
    -->
```

```xml
  <xsd:element name="SiteAddress" type="addr:SiteAddress_type" />
<xsd:element name="SiteLandmarkAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:SiteLandmarkAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<xsd:element name="IntersectionAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:IntersectionAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<xsd:element name="SingleRangeAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:SingleRangeAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<xsd:element name="BlockRangeAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:BlockRangeAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<!--
Landmark Address Classes
  -->
<xsd:element name="LandmarkAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:LandmarkAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<xsd:element name="MultiLandmarkAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:MultiLandmarkAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
  </xsd:extension>
  </xsd:complexContent>
  </xsd:complexType>
  </xsd:element>
<xsd:element name="CommunityAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:CommunityAddress_type">
  <xsd:attribute name="action" type="addr:Action_type" />
```

```xml
      </xsd:extension>
      </xsd:complexContent>
      </xsd:complexType>
      </xsd:element>
<!--
Postal Delivery Address Classes
      -->
<xsd:element name="PostOfficeBoxAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:PostOfficeBoxAddress_type">
      <xsd:attribute name="action" type="addr:Action_type" />
      </xsd:extension>
      </xsd:complexContent>
      </xsd:complexType>
      </xsd:element>
<xsd:element name="PostalDeliveryRouteAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:PostalDeliveryRouteAddress_type">
      <xsd:attribute name="action" type="addr:Action_type" />
      </xsd:extension>
      </xsd:complexContent>
      </xsd:complexType>
      </xsd:element>
<xsd:element name="PostalDeliveryOfficeAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:PostalDeliveryOfficeAddress_type">
      <xsd:attribute name="action" type="addr:Action_type" />
      </xsd:extension>
      </xsd:complexContent>
      </xsd:complexType>
      </xsd:element>
<!--
General Delivery Classes
      -->
<xsd:element name="GeneralAddress">
<xsd:complexType>
<xsd:complexContent>
<xsd:extension base="addr:GeneralAddress_type">
      <xsd:attribute name="action" type="addr:Action_type" />
      </xsd:extension>
      </xsd:complexContent>
      </xsd:complexType>
      </xsd:element>
<!--
Alternate Address (Alias)
      -->
      <xsd:element name="AlternateAddress" type="addr:AlternateAddress_type" />
      </xsd:schema>
```
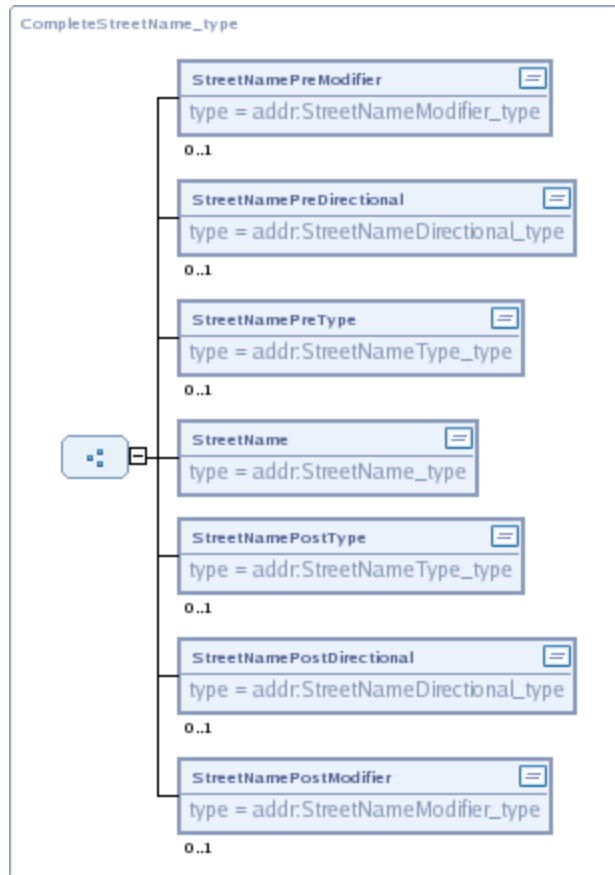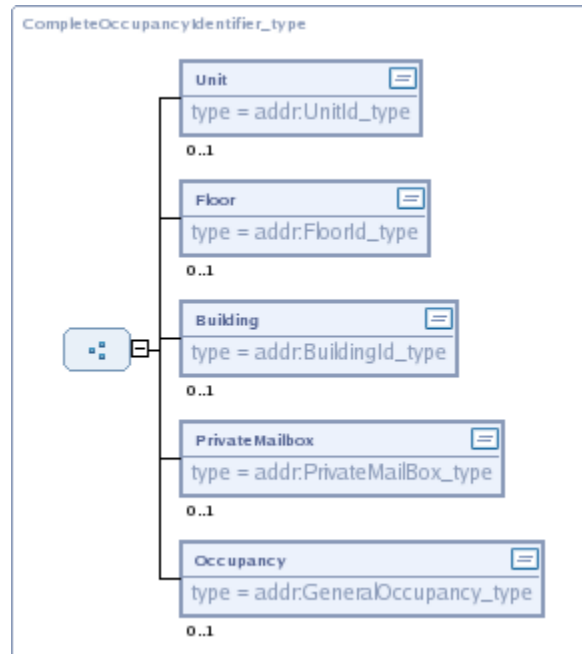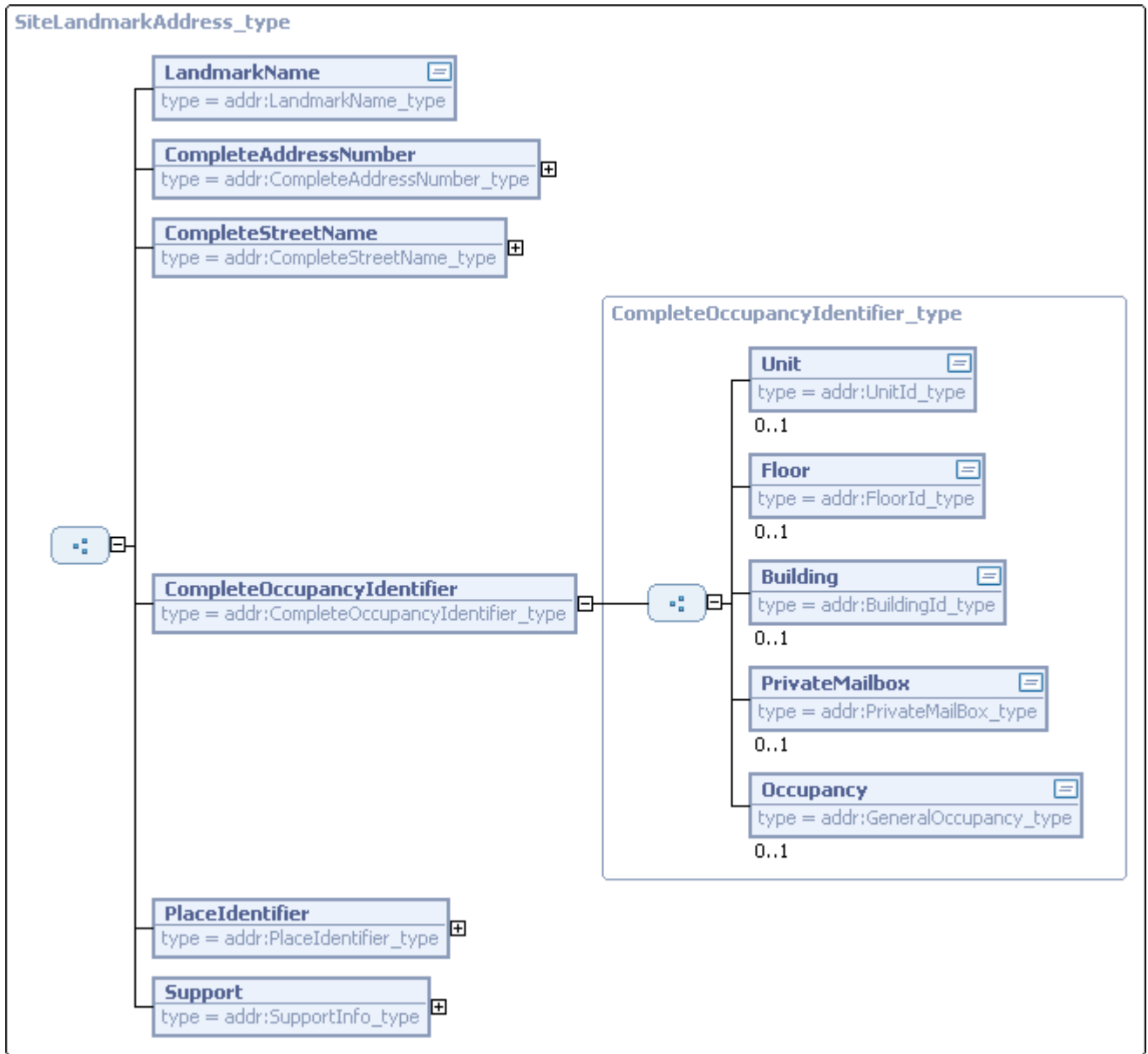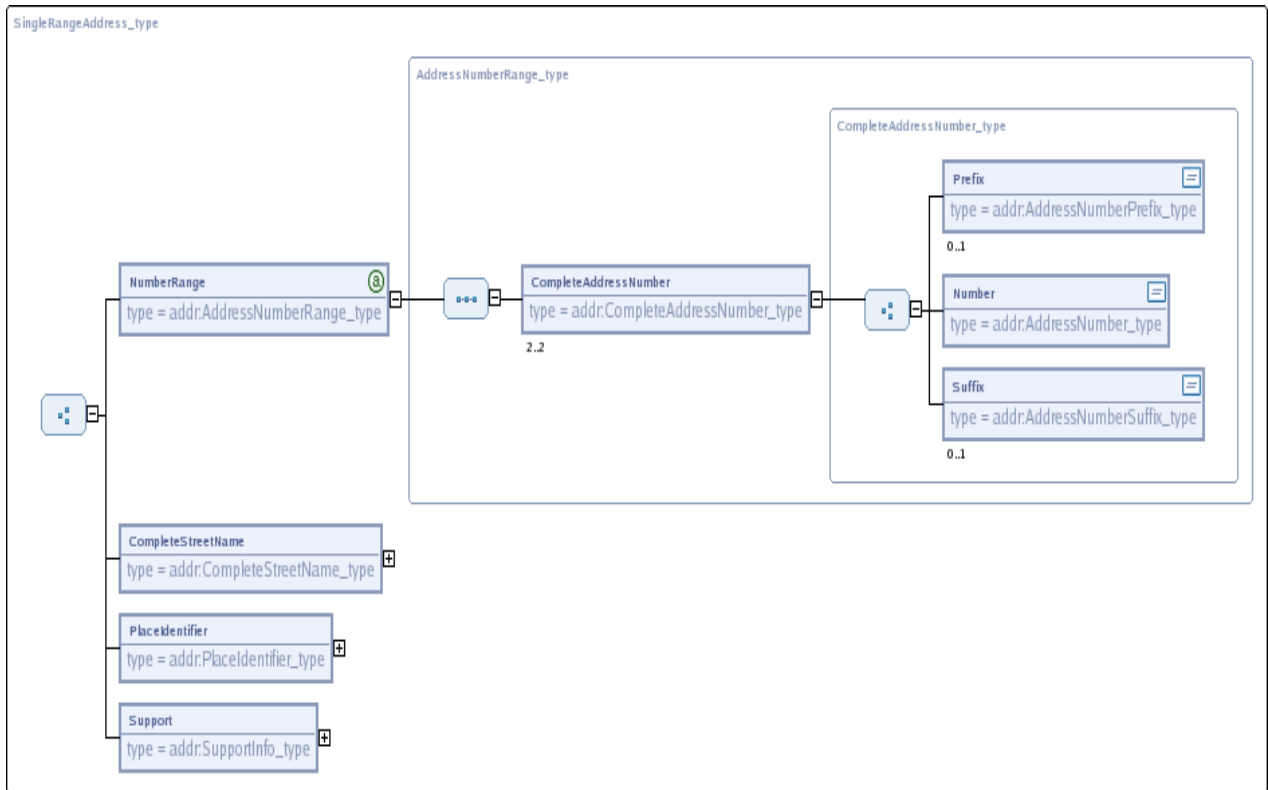
- Model Root:

- CompleteAddressNumber:
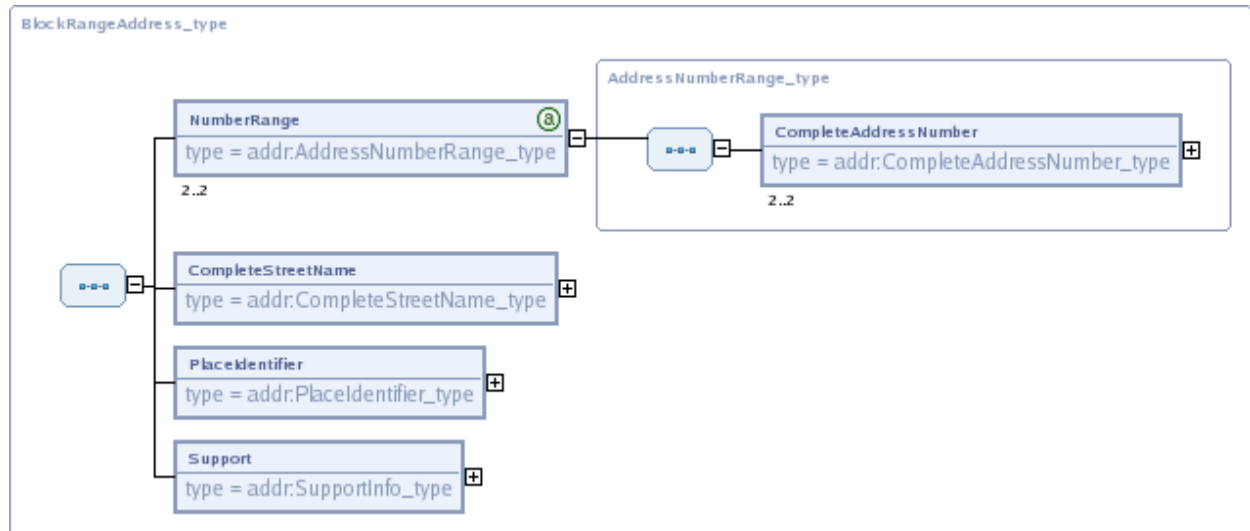
- CompleteStreetName:

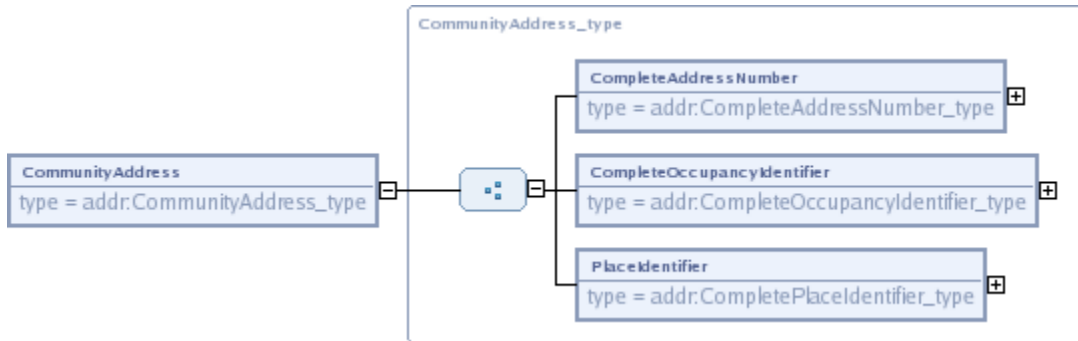- CompleteOccupancyIdentifier:
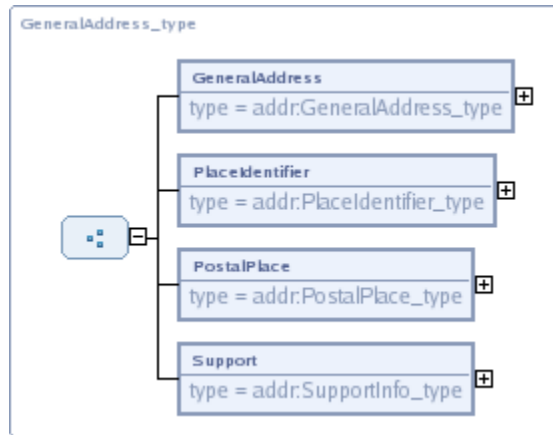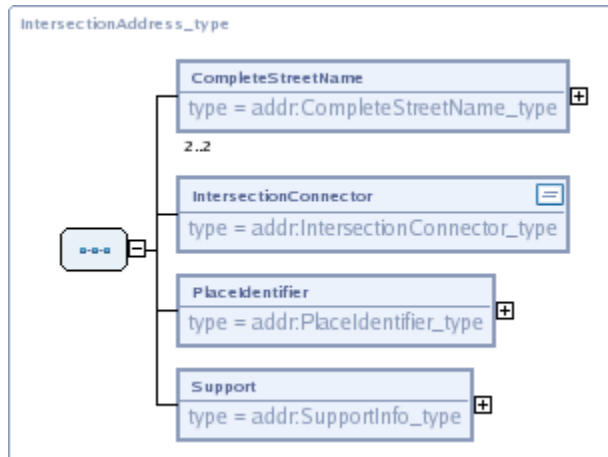
- SiteLandmarkAddress:

▪ SingleRangeAddress:
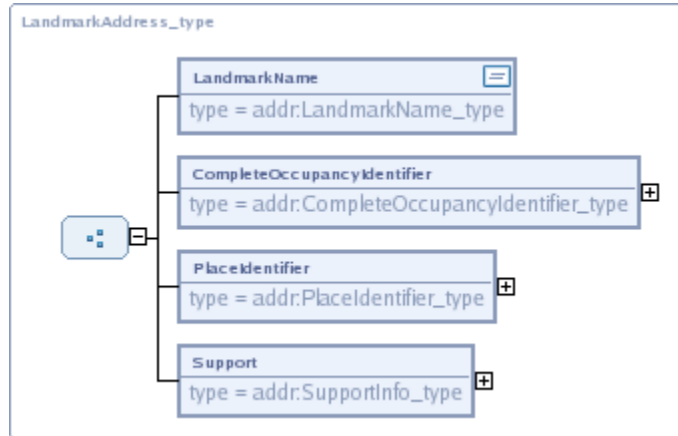

▪ BlockRangeAddress:

▪ CommunityAddress:

▪ GeneralAddress:

▪ IntersectionAddress:

- Landmark:

- MultiLandmarkAddress: