

2 Address Data Content

2.1 Introduction

2.1.1 Purpose

The content part defines address elements, address reference system elements, and their attributes.

2.1.2 Organization

The address elements are presented first, grouped according to the major components of an address, followed by the address reference system elements, and lastly the attributes, which are grouped by subject.

Address Elements

- Address Number Elements
- Street Name Elements
- Subaddress Elements
- Landmark Name Elements
- Place, State, and Country Name Elements
- USPS Postal Address Elements
- USPS Address Lines

Address Reference System Elements

Attributes

- 850 • Address ID
- 851 • Address Coordinates
- 852 • Address Parcel IDs
- 853 • Address Transportation Feature IDs
- 854 • Address Range Attributes
- 855 • Address Attributes
- 856 • Element Attributes
- 857 • Address Lineage Attributes

858 **2.1.3 Simple Elements, Complex Elements, and Attributes**

859 The content part defines simple elements, complex elements, and attributes.

- 860 • Simple elements are address components or address reference system components that
- 861 are defined independently of all other elements
- 862 • Complex elements are formed from two or more simple or other complex elements
- 863 • Attributes provide descriptive information, including geospatial information, about an
- 864 address, an address reference system, or a specific element thereof..

865 Part 7.3: Appendix C: Table of Element Relationships provides a list of all the elements, and

866 their relations to each other.

867 **2.1.4 Element and Attribute Definitions and Descriptions**

868 Each data element is defined and described by giving its:

- 869 • **Element name:** The name of the element.

- 870 • **Other common names for this element:** Common words or phrases having the same
871 or similar meaning as the element name. Note:
872 * "(USPS)" indicates terms used in USPS Publication 28.
873 * "(Census TIGER)" indicates terms found in Census TIGER\Line Shapefile
874 documentation.
875 * Part 6: References gives complete citations for both documents.
- 876 • **Definition:** The meaning of the element.
- 877 • **Syntax:** (For complex elements only) What component elements are required or
878 permitted to construct the element, and the order in which they must appear. (For
879 syntax notation, see below, "Notation for Constructing Complex Elements.")
- 880 • **Definition Source:** The source of the definition ("New" indicates that the definition is
881 original.)
- 882 • **Data Type:** Whether the element is a `characterString`, `date`, `dateTime`, `integer`, `real`, or
883 geometric (`point`, `MultiCurve`, or `MultiSurface`) (see "Element and Attribute Data
884 Types" below for definitions)
- 885 • **Existing Standards for this Element:** Other standards that govern this element (if
886 any).
- 887 • **Domain of Values for this Element:** The range or set of values (if any) to which the
888 element is restricted.
- 889 • **Source of Values:** The source (if any) for the domain of values.
- 890 • **How Defined:** How the domain of values is defined.
- 891 • **Example:** Illustrative examples of the element.
- 892 • **Notes/Comments:** Notes and comments giving further explanation about the element.

- 893 • **XML Tag:** The XML tag for the element.
- 894 • **XML Model:** XML model of the element.
- 895 • **XML Example:** The XML model applied to a specific example of the element.
- 896 • **XML Notes:** Explanatory notes about the XML model.
- 897 • **Quality Measures:** Quality tests applied to the class.
- 898 • **Quality Notes:** Explanatory notes about the quality measures applied to this element.

899 **2.1.5 Element and Attribute Data Types**

900 Elements and attributes are either non--geometric, geometric, or abstract. Non-geometric data
901 types include `characterString`, `date`, `dateTime`, `integer`, and `real`. Geometric data types include
902 `point`, `MultiCurve`, and `MultiSurface`. The abstract data type, as used in this standard,
903 aggregates multiple elements of different data types, geometric and non-geometric.

904 The non-geometric data types are defined in the FGDC's "Framework Data Content Standard
905 Part 0: Base Document" (section 7.8.2.2 (Table 4 - `CodeList` for `DataType`)) as follows:

- 906 1. **characterString:** "A `CharacterString` is an arbitrary-length sequence of characters
907 including accents and special characters from repertoire of one of the adopted
908 character sets"
- 909 2. **date:** "Values for year, month, and day"
- 910 3. **dateTime:** "A combination of year, month, and day and hour, minute, and second"
- 911 4. **integer:** "Any member of the set of positive whole numbers, negative whole numbers
912 and zero"

- 913 5. **real:** "Real numbers are all numbers that can be written as a possibly never repeating
914 decimal fraction"

915 The geometric data types are defined in the Open Geospatial Consortium's "OpenGIS(R)
916 Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete
917 citation):

- 918 • **Point:** "...a single coordinate tuple." (Sec. 10.3.1)
- 919 • **MultiCurve:** "...a list of curves. The order of the elements is significant and shall be
920 preserved..." (Sec. 11.3.3.1). (The MultiCurve replaced the MultiLinestring datatype
921 defined in GML version 3.0)
- 922 • **MultiSurface:** "...a list of surfaces. The order of the elements is significant and shall
923 be preserved..." (Sec 11.3.4.1). (The MultiSurface replaced the MultiPolygon datatype
924 defined in GML version 3.0)

925 The abstract data type is defined in the FGDC's "Framework Data Content Standard Part 0:
926 Base Document" (Annex B.2.2) as a "class, or other classifier, that cannot be directly
927 instantiated." The abstract data type (used in this standard for the complex element Address
928 Reference System) may aggregate multiple elements of different data types, geometric and
929 non-geometric.

930 **2.1.6 Notation for Constructing Complex Elements**

931 The following notation is used to show how complex elements are constructed from simple or
932 other complex elements:

933 {} enclose the name of an element.

934 * indicates that the element is **required** to create the complex element. Otherwise the element

935 may be omitted when desired.

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

937 otherwise.

938 2.1.7 XML and GML Standard

939 XML models and examples conform to the W3C XML Core Working Group's "Extensible

940 Markup Language (XML) 1.0" (see Part 6: References for a complete citation). Geometry

941 elements are defined and implemented following OGC's. "OpenGIS(R) Geography Markup

942 Language (GML)" (Version: 3.1.1).

943 2.2 Address Elements

944 2.2.1 Address Number Elements

945 2.2.1.1 [Address Number Prefix](#)

Element Name	Address Number Prefix
Other common names for this element	Street Number Prefix, Building Number Prefix, House Number Prefix, Site Number Prefix, Structure Number Prefix
Definition	The portion of the Complete Address Number which precedes the Address Number itself.
Definition	New

Source	
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Can be created locally from existing values
Source of Values	Local
How Defined	Locally
Example	<p>N6W2 3001 Bluemound Road A 19 Calle 117 194- 03 Fiftieth Avenue Milepost 1303 Alaska Highway</p>
Notes/Comments	<p>1. This element is not found in most Complete Address Numbers. When found, it should be separated from the Address Number so that the Address Number can be maintained as an integer for sorting and quality control tests.</p> <p>2. Informally an Address Number and Address Number Prefix may be written with or without a space between them. Within this standard, the default assumption is that an empty space separates elements unless stated otherwise. The Attached Element can be used to indicate where the assumed space between the Address Number and Address Number Prefix has been omitted within an address file (see Attached Element for additional notes).</p> <p>3. An Address Number Prefix is often separated from the Address Number by a hyphen. The hyphen may be included in the Address Number Prefix, or, alternatively, a Separator Element may be used to separate the Address Number from the Address Number Prefix in constructing the Complete Address Number (see Separator Element for additional notes).</p> <p>4. Milepost numbers are often used to specify locations on limited-access roads such as interstate highways, and along highways and country roads where addressable features are too sparse to assign address numbers. Where it is useful to treat these as addresses, treat "Milepost" (or "Kilometer", in Puerto Rico) as an Address Number Prefix, and the milepost number as the Address Number.</p>
XML Tag	<AddressNumberPrefix>
XML Model	<pre><xsd:complexType name="AddressNumberPrefix_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"></pre>

	<pre><xsd:attribute name="Separator" type="addr_type:Separator_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>
XML Example	<pre><CompleteAddressNumber> <AddressNumberPrefix Separator=" ">N6W2</AddressNumberPrefix> <AddressNumber>3001</AddressNumber> </CompleteAddressNumber> <CompleteAddressNumber> <AddressNumberPrefix Separator=" " ">A</AddressNumberPrefix> <AddressNumber>19</AddressNumber> </CompleteAddressNumber></pre>
Quality Measures	Tabular Domain Measure Range Domain Measure Spatial Domain Measure Address Number Fishbones Measure
Quality Notes	<p>Address number prefixes can include map-based information as grid coordinates, references to survey systems or references to sections of a subdivision or housing complex. Where a tabular domain of values are available the prefix can be tested against it. The measure chosen will depend on the type of domain involved. See the introduction to this section for a information on which measures to use.</p>

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947 **2.2.1.2 Address Number**

<u>Element Name</u>	<u>AddressNumber</u>
Other common names for this element	Street Number, Building Number, House Number, Site Number, Structure Number
Definition	The numeric identifier for a land parcel, house, building or other location along a thoroughfare or within a community.
Definition Source	New
Data Type	Integer
Existing Standards for this Element	None

Domain of Values for this Element	Can be created locally.
Source of Values	Local jurisdiction
Attributes Associated with this Element	Address Number Parity
How Defined	Based on local address ranges associated with individual streets and blocks.
Example	123 Main Street
Notes/Comments	<p>1. The Address Number is defined as an integer to support address sorting, parity (even/odd) definition, and in/out of address range tests.</p> <p>2. The Address Number must be converted to a <code>char</code> when it is combined with the prefix and suffix into a Complete Address Number.</p> <p>3. Some addresses may contain letters, fractions, hyphens, decimals and other non-integer content within the Complete Address Number. Those non-integer elements should be placed in the Address Number Prefix if they appear before the Address Number, or in the Address Number Suffix if they follow the Address Number. If necessary, the Separator Element can be used to separate the Address Number from the Address Number Prefix or Address Number Suffix elements in constructing the Complete Address Number. For example, if the New York City hyphenated address 194-03 ½ 50th Avenue, New York, NY 11365 were to be parsed rather than represented as a Complete Address Number:</p> <p>---the Address Number Prefix would be "194",</p> <p>---the Separator Element would be "-",</p> <p>---the Address Number would be 3 (converted to "03" (text) in constructing the Complete Address Number),</p> <p>---and the Address Number Suffix would be "1/2".</p> <p>4. Special care should be taken with records where the Address Number is 0 (zero). Occasionally zero is issued as a valid address number (e.g. Zero Prince Street, Alexandria, VA 22314) or it can be imputed (1/2 Fifth Avenue, New York, NY 10003 (for which the Address Number would be 0 and the Address Number Suffix would be "1/2")). More often, though, zero is shown because the Address Number is either missing or non-existent, and null value has been converted to zero.</p>
XML Tag	<AddressNumber>
XML Model	<pre><xsd:simpleType name="AddressNumber_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value="[0-9]+" /> </xsd:restriction> </xsd:simpleType></pre>

	</xsd:restriction> </xsd:simpleType>
XML Example	<CompleteAddressNumber> <AddressNumber>1234</AddressNumber> </CompleteAddressNumber>
Quality Measures	Data Type Measure
Quality Notes	The Address Number element is specified as an integer. Data Type Measure is helpful when testing data held in staging tables with variable character fields. Additional tests for the address number require association with a street name.

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949 **2.2.1.3 Address Number Suffix**

Element Name	AddressNumberSuffix
Other common names for this element	Street Number Suffix, Building Number Suffix, House Number Suffix, Fractional Street Number (USPS), Structure Number Suffix
Definition	The portion of the Complete Address Number which follows the Address Number itself.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Can be created locally from existing values
Source of Values	Local
How Defined	Locally
Example	123 1/2 Main Street 121 E E Street B317 A Calle 117 Milepost 34.4 (Address Number Suffix = decimal portion only)
Notes/Comments	1. This element is not found in most Complete Address Numbers . When found, it should be separated from the Address Number so that the Address Number can be maintained as an integer for sorting and quality control tests.

	<p>2. Informally an Address Number and Address Number Suffix may be written with or without a space between them. Within this standard, the default assumption is that an empty space separates elements unless stated otherwise. The Attached Element can be used to indicate where the assumed space between the Address Number and Address Number Suffix has been omitted within an address file (see Attached Element for additional notes).</p> <p>3. An Address Number Suffix is often separated from the Address Number by a hyphen. The hyphen may be included in the Address Number Suffix, or, alternatively, a Separator Element may be used to separate the Address Number from the Address Number Suffix in constructing the Complete Address Number (see Separator Element for additional notes).</p> <p>4. When milepost Complete Address Numbers include decimal fractions, the integer portion of the milepost number is treated as the Address Number, and the fraction (including the decimal point) is treated as an Address Number Suffix. (See Complete Address Number for additional notes on milepost address numbers).</p>
XML Tag	<AddressNumberSuffix>
XML Model	<pre><xsd:complexType name="AddressNumberSuffix_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>
XML Example	<pre><CompleteAddressNumber> <AddressNumber>123</AddressNumber> <AddressNumberSuffix separator=" ">1/2</AddressNumberSuffix> </CompleteAddressNumber> <CompleteAddressNumber> <AddressNumber>456</AddressNumber> <AddressNumberSuffix separator=" " ">B</AddressNumberSuffix> </CompleteAddressNumber> <CompleteAddressNumber> <AddressNumber>317</AddressNumber> <AddressNumberSuffix separator=" " ">A</AddressNumberSuffix> </CompleteAddressNumber></pre>
Quality Measures	Tabular Domain Measure

	Spatial Domain Measure Address Number Fishbones Measure
Quality Notes	<p>1. Address number suffixes can include references to sections of a subdivision or housing complex. Where a tabular domain of values are available the prefix can be tested against it.</p> <p>2. When geometry for both the address point and an areal Address Number Suffix are available the Spatial Domain Measure can be used to measure tests whether the addressed location is within a polygon describing a map-based Address Number Suffix.</p> <p>3. Use Address Number Fishbones Measure when geometry for both the address point and a linear spatial domain for Address Number Suffix are available. This measure tests whether the addressed location is along a line describing a map-based Address Number Suffix.</p>

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951 **2.2.1.4 Separator Element**

Element Name	Separator Element
Other common names for this element	
Definition	A symbol, word, or phrase used as a separator between components of a complex element or class. The separator is required for Intersection Addresses and for Two Number Address Ranges , and it may be used in constructing a Complete Street Name or a Complete Address Number .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	<p>Typical values may include:</p> <ol style="list-style-type: none"> 1. For Intersection Addresses: "and", "at", "@", "&", and "&&" "+", "-", and "y" or "con" (Spanish) each having a space before and after. 2. For Two Number Address Ranges: - (hyphen)(spaces optional before or after) 3. If a Complete Street Name includes a prepositional phrase between the between a Street Name Pre Type and a Street Name, the prepositional phrase is treated as a separator: "of the", "de la", "des", etc. 4. Complete Address Numbers: - (hyphen)(spaces optional before or after)

Source of Values	New
How Defined (e.g., locally, from standard, other)	Locally.
Example	<ol style="list-style-type: none"> 1. Intersection Address ("and"): Eighth Street and Pine Street. 2. Two Number Address Range (hyphen): 206-210 Fourth Street 3. Prepositional phrase between the Street Name Pre Type and the Street Name:("of the", "de las" and "des") Avenue of the Americas, Alameda de las Pulgas; Rue des Fleurs. 4. Complete Address Number (hyphen): 61-43 Springfield Boulevard
Notes/Comments	<ol style="list-style-type: none"> 1. The default separator, an empty space, is implicit and is not shown in the syntaxes of complex elements and classes. 2. An explicit separator is required for Two Number Address Ranges and Intersection Addresses. It is sometimes required in constructing Complete Street Names. 3. For Complete Address Numbers, the separator is rarely needed and its use should be minimized. As an alternative, the separator symbol usually can be included with the Address Number Prefix or Address Number Suffix. 4. The Separator Element is not needed in creating fractions (1/2, etc.) for Address Number Suffixes. 5. Within a given dataset, one value should be used consistently within a given complex element. 6. Some address parsing software permits the use of ampersands ("&" or "&&") to signify intersection addresses. Be wary, though--in many programming languages, ampersands are reserved for other uses, which could complicate data exchange.
XML Tag	Separator
XML Model:	<pre><xsd:simpleType name="Separator_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType></pre>
XML Example:	<pre><IntersectionAddress Separator="and" > <CompleteStreetName> <StreetName>EIGHTH</StreetName> <StreetNamePostType>STREET</StreetNamePostType> </CompleteStreetName> <CompleteStreetName> <StreetName>PINE</StreetName> <StreetNamePostType>STREET</StreetNamePostType> </CompleteStreetName></pre>

	<pre> <PlaceName PlaceNameType="USPSCommunity">ELLCOT CITY</PlaceName> <StateName>MD</StateName> <ZIPCode>21043</ZIPCode> </IntersectionAddress> <AddressNumberRange Separator=" - " > <CompleteAddressNumber> <AddressNumber>206</AddressNumber> </CompleteAddressNumber> <CompleteAddressNumber> <AddressNumber>210</AddressNumber> </CompleteAddressNumber> </AddressNumberRange> <CompleteStreetName> <StreetName>AVENUE</StreetName> <StreetNamePostType Separator="of the" >AMERICAS</StreetNamePostType> </CompleteStreetName> <CompleteStreetName> <StreetName>ALAMEDA</StreetName> <StreetNamePostType Separator="de las" >PULGAS</StreetNamePostType> </CompleteStreetName> <CompleteAddressNumber> <AddressNumber>61</AddressNumber> <AddressNumberSuffix Separator="-" >43</AddressNumberSuffix> </CompleteAddressNumber> </pre>
XML Notes:	This entity must be expressed as an empty string to indicate an empty string. Omitting the entity entirely indicates that a space is acceptable.
Quality Measures	Tabular Domain Measure
Quality Notes	If Separator Element entries are maintained within a database, rather than generated as part of a query, they may be tested with Tabular Domain Measure . Their use depends on other elements, and is tested at the classification level.

953 **2.2.1.5 Complex Element: Complete Address Number**

Element Name	Complete Address Number
Other common names for this element	Complete street number, full street number, Primary Address Number (USPS), Street Number (USPS), House Number (USPS, Census TIGER))
Definition	An Address Number , alone or with an Address Number Prefix and/or Address Number Suffix , that identifies a location along a thoroughfare or within a community.
Syntax	{ Address Number Prefix } + { Separator Element } + { Address Number *} + { Separator Element } + { Address Number Suffix }
Definition Source	New
Data Type	characterString
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 (e.g., locally, from standard, other)	Refer to component simple elements
Example	<p>123 Main Street 123 A Main Street 123 1/2 Main Street A 19 Calle 117 0 Prince Street 0 1/2 Fifth Avenue Milepost 240 Parks Highway Alaska Milepost 72.9 Interstate 84, Wasco County, OR Kilometer 0.5 Carretera 917, Urbanizacion April Gardens, Las Piedras PR 00771 Kilometer 2 Hectometer 7 Carretera 175, Barrio San Antonio, Caguas, Puerto Rico 00725 N89W16758 Appleton Avenue, Menomonee Falls, WI 53051 W63N645 Washington Avenue, Cedarburg, WI 53012 5-5415 Kuhio Highway, Hanalei, HI 96714 194-03 1/2 50th Avenue, New York, NY 11365</p>
Notes/Comments	1. The Address Number element is required to compose a Complete Address Number . The other elements are optional.

2. The [Address Number](#) must be converted from integer to `characterString` when constructing the [Complete Address Number](#).
3. The great majority of [Complete Address Numbers](#) are simple integers. Infrequently the integer is followed by an alphanumeric [Address Number Suffix](#), typically a letter or a fraction. Even more rarely the integer is preceded by an alphanumeric [Address Number Prefix](#). In addition to the typical numbering format, four special-case formats are found in the United States: Milepost addresses, grid-style address numbers, hyphenated address numbers, and other [Address Number Prefix](#) letters or symbols.
4. **Milepost [Complete Address Numbers](#).** Road mileposts are sometimes used to specify locations along highways and similar roads. Mileposts are often used to locate, for example, crash sites, emergency call boxes, bridge locations, inspection stations, roadside rest stops, railroad crossings, highway exits, park and campground entrances, RV parks, and truck stops. Milepost addresses should be parsed as follows:
- "Milepost" (or equivalent word or phrase, such as "kilometer" or "Mile Marker") is an [Address Number Prefix](#)
 - The milepost number (integer part only) is an [Address Number](#)
 - Tenths, if given, are an [Address Number Suffix](#), including the decimal point.
 - The road name or highway route number is a [Complete Street Name](#), and parsed accordingly
- Note that, in Puerto Rico, road measurements are given in kilometers (km), which are sometimes divided into hectometers (hm).
5. **Grid-style [Complete Address Numbers](#).** In certain communities in and around southern Wisconsin, [Complete Address Numbers](#) include a map grid cell reference preceding the [Address Number](#). In the examples above, "N89W16758" should be read as "North 89, West 167, [Address Number](#) 58". "W63N645" should be read as "West 63, North, [Address Number](#) 645." The north and west values specify a locally-defined map grid cell with which the address is located. Local knowledge is needed to know when the grid reference stops and the [Address Number](#) begins.
6. **Hyphenated [Complete Address Numbers](#).** In some areas (notably certain parts of New York City, southern California, and Hawaii), [Complete Address Numbers](#) often include hyphens. Hyphenated [Complete Address Numbers](#) should not be confused with [Two Number Address Ranges](#). The former is a single [Complete Address Number](#) while the latter includes two [Complete Address Numbers](#).
7. Hyphenated [Complete Address Numbers](#) can be parsed so that the number indicating the site or structure is the [Address Number](#), and the remainder (including the hyphen) is the [Address Number Prefix](#) or [Address Number Suffix](#). If necessary, the hyphen can be parsed as a [Separator Element](#), to separate it from both the [Address Number](#) and the

	<p>Address Number Prefix or Address Number Suffix. However, the Separator Element is rarely needed and its use should be minimized in constructing Complete Address Numbers.</p> <p>8. In New York City, hyphenated Complete Address Numbers (the recommended format for storing complete address numbers in New York City) follow a more complex set of rules. The number to the left of the hyphen indicates the "block" (conceptually--the number does not always change at street intersections and sometimes it changes within a single block face). The number to the right of the hyphen indicates the site or house number within the "block". If the Address Number is less than ten, it is written with a leading zero, as in 194-03 1/2 above. Additional leading zeros may be added to either number to provide for correct sorting if the entire Complete Address Number is treated as a <code>characterString</code> with the hyphen included. Within the address standard, these numbers can be constructed and parsed as follows:</p> <ol style="list-style-type: none"> The left-side number (194) is the Address Number Prefix element (text), with leading zeros shown as needed. The hyphen is a Separator Element with no spaces inserted before or after the hyphen when constructing the Complete Address Number. The right-side number (3) is the Address Number (integer), converted to a <code>characterString</code> with leading the zero(s) added (03) upon conversion to Complete Address Number. The suffix, if any (such as the "1/2" in 194-03 1/2), is an Address Number Suffix. <p>9. Other Address Number Prefix Letters or Symbols. In Puerto Rico, Address Numbers are commonly preceded by an Address Number Prefix letter (e.g. "A 19"). In Portland, OR, negative Address Numbers have been assigned in an area along the west bank of the Willamette River. The minus sign is represented as a leading zero ("0121" and "121" are two different Complete Address Numbers). In such cases the leading zero should be treated as an Address Number Prefix.</p> <p>10. Zero as a Complete Address Number. Special care should be taken with records where the Address Number is 0 (zero). Occasionally zero is issued as a valid address number (e.g. 0 Prince Street, Alexandria, VA 22314) or it can be imputed (1/2 Fifth Avenue, New York, NY 10003, for which the Address Number would be 0 and the Address Number Suffix would be "1/2"). More often, though, the Address Number is either missing or non-existent, and null value has been converted to zero.</p>
XML Tag	<CompleteAddressNumber>
XML Model	<pre> <xsd:complexType name="CompleteAddressNumber_type"> <xsd:sequence> <xsd:element name="AddressNumberPrefix" type="addr_type:AddressNumberPrefix_type" minOccurs="0" maxOccurs="1" /> </pre>

	<pre> <xsd:element name="AddressNumber" type="addr_type:AddressNumber_type" minOccurs="1" maxOccurs="1" /> <xsd:element name="AddressNumberSuffix" type="addr_type:AddressNumberSuffix_type" minOccurs="0" maxOccurs="1" /> </xsd:sequence> <xsd:attribute name="AddressNumberParity" type="addr_type:AddressNumberParity_type" /> <xsd:attribute name="AttachedElement" type="addr_type:AttachedElement_type" /> </xsd:complexType> </pre>
XML Example	<pre> <CompleteAddressNumber> <AddressNumber>55</AddressNumber> <AddressNumberSuffix Separator="">1/2</AddressNumberSuffix> </CompleteAddressNumber> <CompleteAddressNumber> <AddressNumberPrefix Separator="">MILEPOST</AddressNumberPrefix> <AddressNumber>72.9</AddressNumber> </CompleteAddressNumber> </pre>
Quality Measures	Pattern Sequence Measure
Quality Notes	

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955 **2.2.2 Street Name Elements**956 **2.2.2.1 Street Name Pre Modifier**

Element Name	Street Name Pre Modifier
Other common names for this element	Prefix Qualifier (Census TIGER)
Definition	A word or phrase that precedes the Street Name and is not a Street Name Pre Directional or a Street Name Pre Type .
Definition Source	New
Data Type	characterString

Existing Standards for this Element	No
Domain of Values for this Element	Can be created locally from existing values
Source of Values	Local
How Defined	Locally
Example	Old North First Street The Croft Lane
Notes/Comments	<p>1. Census Bureau TIGER Technical Documentation (Appendix D) provides the following list of Street Name Pre Modifiers: Alternate, Business, Bypass, Extended, Historic, Loop, Old, Private, Public, Spur</p> <p>2. Parsing rules allow some flexibility in deciding whether a Complete Street Name includes a Street Name Pre Modifier. In each of the examples above, for instance, the entire name could be treated as the Street Name element. If the Complete Street Name is parsed into components, the Street Name Pre Modifier provides a way to handle words that precede the Street Name and should be separated from it, or that are separated from the Street Name by a Street Name Pre Directional or a Street Name Pre Type. See Complete Street Name notes for a general discussion of Complete Street Name parsing principles.</p>
XML Tag	<StreetNamePreModifier>
XML Model	<pre><xsd:complexType name="StreetNameModifier_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type"/></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>
XML Example	<pre><CompleteStreetName> <StreetNamePreModifier>OLD</StreetNamePreModifier> <StreetName>FIRST</StreetName> <StreetNamePostType>STREET</StreetNamePostType> <StreetNamePostDirectional>SOUTHWEST</StreetNamePostDirectional> </CompleteStreetName></pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	1. Where a specific set of premodifiers are specified for use, they may be maintained as a domain and tested with Tabular Domain Measure .

2. Where a schema may designate a particular area with a [Street Name Pre Modifier](#) the entries may be tested with [Spatial Domain Measure](#).

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958 **2.2.2.2 Street Name Pre Directional**

Element Name	Street Name Pre Directional
Other common names for this element	Predirectional (USPS), Prefix Direction (Census TIGER), Prefix Directional, 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	characterString
Existing Standards for this Element	USPS Publication 28 Section 233 and 294
Domain of Values for this Element	English: East, West, South, North, Northeast, Southeast, Southwest, Northwest Spanish: Este, Oeste, Sur, Norte; Noreste, Sureste, Suroeste, Noroeste Equivalent words in other languages
Source of Values	USPS Publication 28 Sections 233 and 294 (unabbreviated)
How Defined	As provided by USPS Publication 28 Section 233 and 294
Example	123 North Main Street 123 West North Street North Avenue (directional word is the Street Name) South Carolina Avenue (directional word is part of the Street Name)
Notes/Comments	1. USPS Publication 28 recommends abbreviating pre-directionals. The Standard requires storing pre-directionals fully spelled out, exactly as given by the local naming authority, to avoid confusion. For example: "N W Jones St": Is it Northwest Jones Street? Ned Walter Jones Street? North Walter Jones Street? The abbreviations create ambiguity. If stored unabbreviated, directionals can be exported as standard abbreviations as needed for mailing and other purposes. 2. USPS standard abbreviations are recognized within the Postal Addressing Profile of this standard. USPS Publication 28 sections 233, 294, and Appendix B provide the USPS abbreviations for directionals in

	<p>English and Spanish.</p> <p>3. Directional words are often used as or in the Street Name (e.g. North Avenue, West Virginia Avenue). The proper parsing must be inferred from the syntax and context of the street name. (For example, does West Virginia Avenue at some point change names and become East Virginia Avenue? Then perhaps "Virginia" is the Street Name, and East and West are Street Name Pre Directionals.) See Complete Street Name for a general discussion of street name parsing principles.</p> <p>4. USPS Publication 28 (paraphrased to omit reference to abbreviations): "233.21 <i>Predirectional Field</i> -- When parsing the address from right to left, if a directional word is found as the first word in the street name and there is no other directional to the left of it, ...locate it in the predirectional field..."</p> <p>5. See Street Name Post Directional for additional USPS Publication 28 notes that also apply to this element.</p>
XML Tag	<StreetNamePreDirectional>
XML Model	<pre> <xsd:complexType name="StreetNameDirectional_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteStreetName> <StreetNamePreDirectional>NORTH</StreetNamePreDirectional> <StreetName>MAIN</StreetName> <StreetNamePostType>STREET</StreetNamePostType> </CompleteStreetName> </pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	<p>1. Tabular Domain Measure can test entries against a tabular domain.</p> <p>2. In cases where an address scheme designates particular areas as corresponding with a given Street Name Pre Directional and the geometry for both the streets and the address scheme's spatial domain, Tabular Domain Measure can test the entries.</p>

960 **2.2.2.3 Street Name Pre Type**

<u>Element Name</u>	<u>Street Name Pre Type</u>
Other common names for this element	Prefix type (Census TIGER), Street prefix type, Pre-type
Definition	The element of the complete street name preceding the street name element that indicates the type of street.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None (Appendix C1 of USPS Publication 28 provides a useful list of Street Suffixes, but does not recognize their use for Street Name Pre Types)
Domain of Values for this Element	Yes. Although not recognized as Street Name Pre Types , Appendix C1 of USPS Publication 28 contains a useful list of Street Suffixes. Development of a list of Street Name Pre Types can incorporate Street Suffixes from USPS Publication 28 Appendix C1 with local additions.
Source of Values	Although not recognized as Street Name Pre Types , Section 234 and Appendix C of USPS Publication 28 contains a useful list of Street Types. Development of a list of Street Name Pre Types can incorporate Street Types from USPS Publication 28 with local additions.
How Defined	By local addressing authority.
Example	<p>Avenue A Calle Aurora Avenue of the Americas Avenue at Port Imperial Alameda de las Pulgas Rue d' Armour Avenue C Loop</p>
Notes/Comments	<p>1. Street Name Pre Types are recognized in this standard but not in USPS Publication 28. Within USPS Publication 28, Street Name Pre Types are combined into the USPS Primary Street Name. This practice is not recommended by the Address Standard as it complicates quality assurance testing of street names. USPS Publication 28 provides the most complete list of Street Suffixes, but it is not exhaustive.</p> <p>2. USPS Publication 28 provides a standard list of street type abbreviations in Appendix C1 and Appendix H, and recommends their use. The Address Standard requires storing Street Name Pre Types and Street Name Post Types fully spelled out, exactly as given by the local naming authority, to avoid confusion. If stored unabbreviated, they can</p>

	<p>be exported as standard abbreviations as needed for mailing and other purposes. USPS Abbreviations are recognized within the Postal Addressing Profile of this standard.</p> <p>3. Street Name Pre Types are much less common than Street Name Post Types in English. Street Name Pre Types are much more common in Spanish-, French-, and Italian-language street names.</p> <p>4. If a prepositional phrase appears between the Street Name Pre Type and the Street Name, the prepositional phrase is considered a Separator Element: Avenue of the Americas, Alameda de las Pulgas. Such constructions are rare in English-language Complete Street Names, but they are common in Spanish, Italian and French.</p> <p>5. A Complete Street Name usually includes either a Street Name Pre Type or a Street Name Post Type. Occasional Complete Street Names have neither ("Broadway") or both ("Avenue C Loop"). Parsing rules should be consistently applied. For example, if a jurisdiction parses "Avenue C" as a Street Name Pre Type plus a Street Name, then "Avenue C Loop" should be parsed as a Street Name Pre Type, Street Name, and Street Name Post Type.</p> <p>6. See Complete Street Name notes for a general discussion of Complete Street Name parsing principles.</p>
XML Tag	<StreetNamePreType>
XML Model	<pre> <xsd:complexType name="StreetNameType_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteStreetName> <StreetNamePreType>AVENUE</StreetNamePreType> <StreetName>C</StreetName> <StreetNamePostType>LOOP</StreetNamePostType> </CompleteStreetName> </pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	<p>1. Tabular Domain Measure can test entries against a tabular domain.</p> <p>2. In cases where an Address Reference System designates particular areas as corresponding with a given Street Name Pre Type and the geometry for both the streets and the address scheme's spatial domain, Tabular Domain Measure can test the entries.</p> <p>3. In some cases a jurisdiction may have associated specific Street Name</p>

[Pre Type](#) entries with functional aspects of the road that require additional local quality measures. For example, a court may be required to be a dead end, or a boulevard limited to streets divided by a median. While these associations are beyond the scope of the standard they should be considered in planning a quality program for local addresses.

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962 **2.2.2.4 Street Name**

Element Name	Street Name
Other common names for this element	Primary Street Name, Base Name (Census TIGER)
Definition	Official name of a street as assigned by a local governing authority, or an alternate (alias) name that is used and recognized, excluding street types, directionals, and modifiers.
Definition Source	Adapted from FGDC Draft Address Data Content Standard v. 3 (citing Census)
Data Type	characterString
Existing Standards for this Element	Section 232 of USPS Publication 28
Domain of Values for this Element	Official list of street names maintained by local authority.
Source of Values	Local
How Defined	Defined by local ordinance
Example	Central Street Southwest MacIntyre Drive Boston-Providence Highway Third Avenue 3rd Avenue
Notes/Comments	<p>1. Domain of Values: 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 Official Status attribute.</p> <p>2. Use of Alternate or Alias Names: If alternate or abbreviated versions of street names are needed for a specialized purpose such as mailing or emergency dispatch, they can be created in views or export routines.</p>

3. Spelling Consistency: Internal Capitalization, Apostrophes, Hyphens, Spaces

Local addressing authorities are urged to follow consistent internal street naming practices, and to resolve internal street name inconsistencies, especially for internal capitalization ("McIntyre" or "Mcintyre" ?), hyphens, and apostrophes.

Example: MacIntyre, McIntyre, Mc Intyre, Mcintyre

Example: Smiths Lane, Smith's Lane

Example: Boston Providence Highway; Boston-Providence Highway;

Rule: Follow the spelling adopted by the local street naming authority.

Discussion: This standard cannot specify local naming conventions.

4. Numbered Streets

Examples: Third Street, 3rd Street, 3 Street

Rule: Use the name exactly as given by the local street naming authority.

Discussion: This standard cannot specify local naming conventions.

Different jurisdictions follow different practices for numbered street names. Pittsburgh spells out "First" through "Twelfth" and uses ordinal numbers ("13th", 14th, etc.) for higher numbers. Washington DC uses ordinal numbers only (1st, 2nd, etc.). Other jurisdictions have their own conventions. This is a matter for local authorities to decide.

5. Parsing Ambiguous [Complete Street Names](#): Some [Complete Street Names](#) can be parsed in more than one way. For example:

- **County Road 88** or County Road **88**
- **East River** Avenue or East **River** Avenue
- **The Croft** Lane or The **Croft** Lane
- **Boulevard of the Allies** or Boulevard of the **Allies**

This standard accommodates any of the above choices. As a matter of guidance local authorities may prefer to parse the [Complete Street Name](#) so that the [Street Name](#) element can be used to create a sorted alphanumeric list of names. By this principle the first set of parsings would give the following sorted list:

- **Boulevard of the Allies**
- **County Road 88**
- **East River** Avenue
- **The Croft** Lane

The second set of parsings would give a different list:

- **88**, County Road
- **Allies**, Boulevard of the
- **Croft** Lane, The

	-- River Avenue, East
	6. Additional Discussion of Street Name Parsing: See Complete Street Name for a general discussion of street name parsing principles.
XML Tag	<StreetName>
XML Model	<pre><xsd:simpleType name="StreetName_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><CompleteStreetName> <StreetName>CENTRAL</StreetName> <StreetNamePostType>STREET</StreetNamePostType> <StreetNamePostDirectional>SOUTHWEST</StreetNamePostDirectional> </CompleteStreetName></pre> <pre><CompleteStreetName> <StreetName>BOSTON-PROVIDENCE</StreetName> <StreetNamePostType>HIGHWAY</StreetNamePostType> </CompleteStreetName></pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	In some cases a jurisdiction may have associated a given area with a type of street name: alpha characters, trees, flowers, birds, etc. Where such a scheme exists, along with the geometry for both the streets and the spatial domain, Spatial Domain Measure can be used to test conformance.

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964 **2.2.2.5 Street Name Post Type**

Element Name	Street Name Post Type
Other common names for this element	Street Type, Street Suffix, Street Suffix Type, Suffix (USPS), Suffix Type (Census TIGER)
Definition	The element of the complete street name following the street name element that indicates the type of street.
Definition Source	New

Data Type	characterString
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	USPS Publication 28 Appendix C with provisions for local additions.
Source of Values	Section 234 and Appendix C of USPS Publication 28 with provision for local additions.
How Defined	Locally
Example	123 Central Street Southwest 123 MacIntyre Drive 123 Boston-Providence Highway 123 Third Avenue 123 3rd Avenue Avenue C Loop
Notes/Comments	<p>1. USPS Publication 28 provides the most complete list of Street Name Post Types, but it is not exhaustive. Where a Street Name Post Type is not included in USPS Publication 28, the USPS requires that it be incorporated into the Street Name. This standard does not recommend following this practice.</p> <p>2. USPS Publication 28 provides a standard list of street type abbreviations in Appendix C1 and Appendix H, and recommends their use. The Address Standard recommends storing Street Name Post Types fully spelled out, exactly as given by the local naming authority, to avoid confusion. If stored unabbreviated, they can be exported as standard abbreviations as needed for mailing and other purposes. USPS Abbreviations are recognized within the Postal Addressing Profile of this standard.</p> <p>3. A Complete Street Name usually includes either a Street Name Pre Type or a Street Name Post Type. Occasional Complete Street Names have neither ("Broadway") or both ("Avenue C Loop"). Parsing rules should be consistently applied. For example, if a jurisdiction parses "Avenue C" as a Street Name Pre Type plus a Street Name, then "Avenue C Loop" should be parsed as a Street Name Pre Type, Street Name, and Street Name Post Type.</p> <p>5. See Complete Street Name notes for a general discussion of Complete Street Name parsing principles.</p>
XML Tag	<StreetNamePostType>
XML Model	<pre><xsd:complexType name="StreetNameType_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator"</pre>

	<pre> type="addr_type:Separator_type"></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteStreetName> <StreetName>BOSTON-PROVIDENCE</StreetName> <StreetNamePostType>HIGHWAY</StreetNamePostType> </CompleteStreetName> <CompleteStreetName> <StreetNamePreType>AVENUE</StreetNamePreType> <StreetName>C</StreetName> <StreetNamePostType>LOOP</StreetNamePostType> </CompleteStreetName> </pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	<ol style="list-style-type: none"> 1. Tabular Domain Measure can test entries against a tabular domain. 2. In cases where an Address Reference System designates particular areas as corresponding with a given Street Name Post Type and the geometry for both the streets and the address scheme's spatial domain, Tabular Domain Measure can test the entries. 3. In some cases a jurisdiction may have associated specific Street Name Post Type entries with functional aspects of the road that require additional local quality measures. For example, a court may be required to be a dead end, or a boulevard limited to streets divided by a median. While these associations are beyond the scope of the standard they should be considered in planning a quality program for local addresses.

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966 2.2.2.6 Street Name Post Directional

Element Name	Street Name Post Directional
Other common names for this element	Postdirectional (USPS), Post Directional, Post-direction, Postdir, Suffix Directional, Suffix Direction (Census TIGER)
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	characterString
Existing Standards for this Element	USPS Publication 28 Sections 233, 294 and Appendix B
Domain of Values for this Element	English: East, West, South, North, Northeast, Southeast, Southwest, Northwest Spanish: Este, Oeste, Sur, Norte; Noreste, Sureste, Suroeste, Noroeste Equivalent words in other languages
Source of Values	USPS Publication 28 Sections 233, 294 and Appendix B (unabbreviated)
How Defined	As provided by USPS Publication 28 Sections 233, 294 and Appendix B
Examples	Cherry Street North North Avenue West
Notes/Comments	<p>1. USPS Publication 28 recommends abbreviating post-directionals. The Standard requires storing post-directionals fully spelled out, exactly as given by the local naming authority, to avoid confusion. For example: "N Avenue W"-- Is it "North Avenue W"? "N Avenue West"? "North Avenue West"? The abbreviations create ambiguity. If stored unabbreviated, directionals can be exported as standard abbreviations as needed for mailing and other purposes.</p> <p>2. USPS standard abbreviations are recognized within the Postal Addressing Profile of this standard. USPS Publication 28 sections 233, 294, and Appendix B provide the USPS abbreviations for directionals in English and Spanish.</p> <p>3. USPS Publication 28 Notes (paraphrased to omit reference to abbreviations):</p> <p>* "233.22 <i>Postdirectional Field</i> -- 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. "</p> <p>* "233.23 <i>Two Directionals</i> -- 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 post-directionals. 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.</p> <p>* "233.23 (<i>Other Exception</i>) 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."</p>

	<p>* <i>"233.3 Directional as Part of Street Name"</i> -- 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. --Example: 12334 NORTH AVENUE (street name is "North"), --Example: 1234 WILD WEST STREET SOUTH (Street Name is "Wild West", "South" is a post-directional.)</p> <p>* <i>"233.3 (Alphabetical Indicators)"</i> -- 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".</p> <p>4. In short, when parsing street names, types, directionals, and modifiers, the street name is required, and other elements are inferred from the context and syntax.</p>
XML Tag	<StreetNamePostDirectional>
XML Model	<pre> <xsd:complexType name="StreetNameDirectional_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteStreetName> <StreetName>CHERRY</StreetName> <StreetNamePostType>STREET</StreetNamePostType> <StreetNamePostDirectional>NORTH</StreetNamePostDirectional> </CompleteStreetName> <CompleteStreetName> <StreetName>NORTH</StreetName> <StreetNamePostType>AVENUE</StreetNamePostType> <StreetNamePostDirectional>WEST</StreetNamePostDirectional> </CompleteStreetName> </pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	<ol style="list-style-type: none"> 1. Tabular Domain Measure can test entries against a tabular domain. 2. In cases where an address scheme designates particular areas as corresponding with a given Street Name Post Directional and the geometrv for both the streets and the address scheme's spatial domain.

[Tabular Domain Measure](#) can test the entries.

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968 **2.2.2.7 Street Name Post Modifier**

Element Name	Street Name Post Modifier
Other common names for this element	Suffix Qualifier (Census TIGER)
Definition	A word or phrase that follows the Street Name but is not a Street Name Post Type or Street Name Post Directional .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	No
Domain of Values for this Element	No
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Example	East End Avenue Extended Grand Boulevard Cutoff Avenue A Bypass Concord Highway Extension
Notes/Comments	1. Census Bureau TIGER Technical Documentation (Appendix D) provides the following list of Street Name Post Modifiers : Access, Alternate, Business, Bypass, Connector, Extended, Extension, Loop, Private, Public, Scenic, Spur, Ramp, Underpass, Overpass. 2. Parsing rules allow some flexibility in deciding whether a Complete Street Name includes a Street Name Post Modifier . In each of the examples above, for instance, the entire name could be treated as the Street Name element. If the Complete Street Name is parsed into components, the Street Name Post Modifier provides a way to handle words that follow the Street Name and should be separated from it, or that are separated from the Street Name by a Street Name Post Directional or a Street Name Post Type . See Complete Street Name

	notes for a general discussion of Complete Street Name parsing principles.
XML Tag	<StreetNamePostModifier>
XML Model	<pre> <xsd:complexType name="StreetNameModifier_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteStreetName> <StreetName>GRAND</StreetName> <StreetNamePostType>BOULEVARD</StreetNamePostType> <StreetNamePostModifier>CUTOFF</StreetNamePostModifier> </CompleteStreetName> <CompleteStreetName> <StreetName>CONCORD</StreetName> <StreetNamePostType>HIGHWAY</StreetNamePostType> <StreetNamePostModifier>EXTENSION</StreetNamePostModifie r> </CompleteStreetName> </pre>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	<ol style="list-style-type: none"> 1. Where a specific set of postmodifiers are specified for use, they may be maintained as a domain and tested with Tabular Domain Measure. 2. Where a schema may designate a particular area with a Street Name Post Modifier the entries may be tested with Spatial Domain Measure.

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970 2.2.2.8 Complex Element: Complete Street Name

Element Name	Complete Street Name
Other common names for this element	Street name, Road name, Full name (Census TIGER)
Definition	Official name of a street as assigned by a local governing authority, or an alternate (alias) name that is used and recognized.

Syntax	{ Street Name Pre Modifier } + { Street Name Pre Directional } + { Street Name Pre Type } + { Separator Element } + { Street Name *} + { Street Name Post Type } + { Street Name Post Directional } + { Street Name Post Modifier }
Definition Source	New
Data Type	characterString
Existing Standards for this Element	Refer to Component Elements
Domain of Values for this Element	Local domain of values for Complete Street Name . Refer to component elements for domains governing individual elements.
Source of Values	Locally determined
How Defined (e.g., locally, from standard, other)	Locally determined
Example	<p>All of the following are complete street names:</p> <p>Main Street North Main Street North Main Street Extended Avenue B Old Avenue B North Broadway Kentucky State Highway 67 North Parkway Alameda de las Pulgas</p>
Notes/Comments	<p>1. Complete Street Name List. Each jurisdiction should establish a domain of values for each street name element, and compose from that a lookup table of valid Complete Street Names, for use in validating addresses and diagnosing street name errors. Alternate and Official names are distinguished by the Official Status attribute.</p> <p>2. Abbreviations. All street name elements should be spelled out in full. If abbreviated versions of street names are needed for a specialized purpose such as mailing or emergency dispatch, the variants can be created in views or export routines. USPS abbreviations for street types and directionals are recognized within the Postal Addressing Profile of this standard.</p> <p>3. General Parsing Rules and Guides. 1. The Street Name element is required to compose a Complete Street Name. The other elements are optional and in some cases must be inferred</p>

from the context and syntax.

2. Some [Complete Street Names](#) can be parsed in more than one way (see below for examples). In such cases, local authorities may prefer to parse the [Complete Street Name](#) so that the [Street Name](#) element can be used to create a sorted alphanumeric list of names.

3. It is permissible to parse the [Complete Street Name](#) in its entirety as a [Street Name](#).

4. Parsing Ambiguous [Complete Street Names](#):

Some [Complete Street Names](#) can be parsed in more than one way. For example:

- **County Road 88** or County Road **88**
- **East River** Avenue or East **River** Avenue
- **The Croft** Lane or The **Croft** Lane
- **Boulevard of the Allies** or Boulevard of the **Allies**

This standard accommodates any of the above choices. As a matter of guidance local authorities may prefer to parse the [Complete Street Name](#) so that the [Street Name](#) element can be used to create a sorted alphanumeric list of names. By this principle the first set of parsings would give the following sorted list:

- **Boulevard of the Allies**
- **County Road 88**
- **East River** Avenue
- **The Croft** Lane

The second set of parsings would give a different list:

- **88**, County Road
- **Allies**, Boulevard of the
- **Croft** Lane, The
- **River** Avenue, East

5. Special Case: Street Names Composed Entirely of Directional and Street Type Words

Examples: North Parkway; Avenue East; Court Place

Rule: Every [Complete Street Name](#) must include a [Street Name](#) element.

Discussion: In each [Complete Street Name](#), at least one word must fill the [Street Name](#) element. “North Parkway”, for example, could be handled four ways, one of which is invalid:

* VALID: [Street Name Pre Directional](#) = “North”; [Street Name](#) = “Parkway”

* VALID: [Street Name](#) = “North”; [Street Name Post Type](#) = “Parkway”

* VALID: [Street Name](#) = “North Parkway”

* INVALID: [Street Name Pre Directional](#) = “North”; [Street Name](#) = null;

	<p>Street Name Post Type = “Parkway”</p> <p>6. Special Case: Numbered Local Government, County, State, and U.S. Roads and Highways Examples: Township Road 20; County Road 88; Kentucky State Highway 67; US Route 40 (see USPS Publication 28 Appendix F for additional examples) Recommendation: Use whatever parsing method is most convenient, but use one method consistently. Discussion: Within the structure of the standard, these cases could be handled in several ways.</p> <ol style="list-style-type: none"> 1. Treat the entire name as a Street Name element: * Street Name = "Kentucky State Highway 67" 2. Parse the name into a Street Name Pre Type and a Street Name: * Street Name Pre Type = “Kentucky State Highway” * Street Name = “67” 3. Parse the name into a Street Name Pre Modifier and a Street Name: * Street Name Pre Modifier = “Kentucky State” * Street Name = “Highway 67” 4. Parse the name into a Street Name Pre Modifier, Street Name Pre Type, and Street Name: * Street Name Pre Modifier = “Kentucky State” * Street Name Pre Type = “Highway” * Street Name = “67” 7. The Separator Element may be used where a prepositional phrase such as "of the", "de", "de las", "d'" connects a Street Name Pre Type to a Street Name.
XML Tag	<CompleteStreetName>
XML Model	<pre> <xsd:complexType name="CompleteStreetName_type"> <xsd:sequence> <xsd:element name="StreetNamePreModifier" type="addr_type:StreetNameModifier_type" minOccurs="0" maxOccurs="1" /> <xsd:element name="StreetNamePreDirectional" type="addr_type:StreetNameDirectional_type" minOccurs="0" maxOccurs="1" /> <xsd:element name="StreetNamePreType" type="addr_type:StreetNameType_type" minOccurs="0" maxOccurs="1" /> <xsd:element name="StreetName" type="addr_type:StreetName_type" minOccurs="1" maxOccurs="1" /> <xsd:element name="StreetNamePostType" type="addr_type:StreetNameType_type" minOccurs="0" maxOccurs="1" </pre>

XML Example	<pre> /> <xsd:element name="StreetNamePostDirectional" type="addr_type:StreetNameDirectional_type" minOccurs="0" maxOccurs="1" /> <xsd:element name="StreetNamePostModifier" type="addr_type:StreetNameModifier_type" minOccurs="0" maxOccurs="1" /> </xsd:sequence> <xsd:attribute name="AttachedElement" type="addr_type:AttachedElement_type" /> </xsd:complexType> <CompleteStreetName> <StreetNamePreDirectional>NORTH</StreetNamePreDirectional> <StreetName>MAIN</StreetName> <StreetNamePostType>STREET</StreetNamePostType> <StreetNamePostModifier>EXTENDED</StreetNamePostModifier> </CompleteStreetName> <CompleteStreetName> <StreetNamePreModifier>OLD</StreetNamePreModifier> <StreetNamePreType>AVENUE</StreetNamePreType> <StreetName>B</StreetName> <StreetNamePostDirectional>NORTH</StreetNamePostDirectional> </CompleteStreetName> </pre>
Quality Measures	Complete Street Name Tabular Domain Measure Duplicate Street Name Measure Pattern Sequence Measure
Quality Notes	<p>Note that if tabular and/or domains are maintained for Complete Street Name elements at both levels, simple and complex, quality control checks should be run for simple element components before testing the complex element domain.</p>

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972 **2.2.3 Subaddress Elements**973 **2.2.3.1 Subaddress Type**

<u>Element Name</u>	<u>Subaddress Type</u>
Other common	Building: Tower, Block, Terminal, Hangar, Pier

names for this element	Multi-floor Part of a Building: Wing, Tower Floor: Level, Story Multi-unit Part of a Floor: Corridor Unit: Apartment, Suite, Room, Unit, Office, Trailer, Space, Lot, Slip, Berth Portion of a Unit: Cubicle, Seat PMB: Private Mail Box General: Secondary Address Designator (USPS), Secondary Address Unit Designator (USPS); Secondary Unit Designator (USPS); Secondary Address Identifier (EPA); Generic Occupancy Type
Definition	The type of subaddress to which the associated Subaddress Identifier applies. (In the examples, Building, Wing, Floor, etc. are types to which the Identifier refers.) See Complete Subaddress for a definition of "subaddress."
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Can be created locally from existing values
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Example	Building 4 Wing 7 Floor 6 Corridor Zero Apartment 2D PMB 596
Notes/Comments	1. The Subaddress Type is used with Subaddress Identifier to designate one of several structures, floors, corridors, units, etc. at a given site. It fits within the general USPS definition of a "secondary address designator" and EPA definition of a "secondary address identifier" 2. USPS Publication 28 Appendix C2 and Section 293 provide a list of common Subaddress Types with standard abbreviations. The FGDC Standard requires storing Subaddress Types fully spelled out, to avoid confusion. If stored unabbreviated, they can be exported as standard abbreviations as needed for mailing and other purposes. USPS Abbreviations are recognized within the Postal Addressing Profile of this standard.

	3. PMB (Private mail box) is a special Subaddress Type . See Subaddress Element notes.
XML Tag	<SubaddressType>
XML Model	<pre><xsd:simpleType name="SubaddressType_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><CompleteSubaddress> <SubaddressElement Element Sequence Number="1" Subaddress Component? Order="1" > <SubaddressType>Building</SubaddressType> <SubaddressIdentifier>A</SubaddressIdentifier> </SubaddressElement> <SubaddressElement Element Sequence Number="2" Subaddress Component? Order="2" > <SubaddressType>Room</SubaddressType> <SubaddressIdentifier>Empire</SubaddressIdentifier> </SubaddressElement> </CompleteSubaddress></pre>
Quality Measures	Tabular Domain Measure
Quality Notes	Subaddress types may follow defined schemes for particular buildings or complexes. While these associations are beyond the scope of the standard they should be considered in planning a quality program for local addresses. Note that Subaddress Type entries must be associated with an address to test any spatial associations with particular buildings or complexes, and are therefore tested at the classification level.

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975 **2.2.3.2 Subaddress Identifier**

Element Name	Subaddress Identifier
Other common names for this element	Building ID, Floor ID, Apartment Number, Suite Number; Secondary unit indicator (USPS), secondary number (USPS), secondary range (USPS)
Definition	<p>The letters, numbers, words or combination thereof used to distinguish different subaddresses of the same type when several occur within the same feature.</p> <p>See Complete Subaddress for a definition of "subaddress."</p>
Definition Source	New

Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Can be defined locally from existing values.
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Example	Building 4 Wing 7 Floor 6 Corridor Zero Apartment 2D PMB 596 Mezzanine Penthouse Basement
Notes/Comments	1. The Subaddress Identifier , in combination with the Subaddress Type , is used to designate one of several subaddresses within or between structures at a given site. 2. See Subaddress Element and Complete Subaddress for additional notes.
XML Tag	<SubaddressIdentifier>
XML Model	<xsd:simpleType name="SubaddressIdentifier_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType>
XML Example	<CompleteSubaddress> <SubaddressElement Element Sequence Number ="1" Subaddress Component Order ="1" > <SubaddressType>Building</SubaddressType> <SubaddressIdentifier>A</SubaddressIdentifier> </SubaddressElement> <SubaddressElement Element Sequence Number ="1" Subaddress Component Order ="2" > <SubaddressType>Room</SubaddressType> <SubaddressIdentifier>Empire</SubaddressIdentifier> </SubaddressElement> </CompleteSubaddress>
Quality Measures	Range Domain Measure

Quality Notes	Tabular Domain Measure
	Subaddress identifiers may follow defined schemes for particular buildings or complexes. While these associations are beyond the scope of the standard they should be considered in planning a quality program for local addresses. Note that Subaddress Identifier entries must be associated with an address to test any spatial associations with particular buildings or complexes, and are therefore tested at the classification level

976

977 **2.2.3.3 Complex Element: Subaddress Element**

Element Name	Subaddress Element
Other common names for this element	Secondary address identifier (USPS, EPA)
Definition	A single combination of Subaddress Type and Subaddress Identifier (or, in some cases, a Subaddress Identifier alone), which, alone or in combination with other Subaddress Elements , distinguishes one subaddress within or between structures from another when several occur within the same feature. See Complete Subaddress for a definition of "subaddress."
Syntax	{ Subaddress Type } + { Subaddress Identifier * }
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	N/A
How Defined (e.g., locally, from standard, other)	N/A
Attributes Associated with this Element	Subaddress Component Order
Example	Building 4

	Wing 7 North Tower Floor 6 Sixth Floor Corridor Zero Apartment 2D PMB 596 Empire Room Penthouse
Notes/Comments	<p>1. An Subaddress Element, alone or in combination with other Subaddress Elements, forms a Complete Subaddress.</p> <p>2. In English, if the Subaddress Identifier is a name or an ordinal number, the Subaddress Identifier usually but not always precedes the Subaddress Type ("North Tower," "Sixth Floor," "Empire Room,"). If the Subaddress Identifier is a cardinal number, letter designator, or alphanumeric, it typically follows the Subaddress Type ("Building 4," "Apartment 2D", "Hanger A"). Common usage is loose, and there are numerous exceptions to both rules, and patterns differ in other languages. The Subaddress Component Order can be used to indicate the order in which the Subaddress Type and Subaddress Identifier should be written.</p> <p>3. Some Subaddress Elements use only one word ("Mezzanine"). In such cases, by definition the word is considered an Subaddress Identifier, and the Subaddress Type is null. Other examples (all from USPS Publication 28 Appendix C2) are: Penthouse, Lobby, Basement, Front, Rear, Upper, Lower, Side.</p> <p>4. The Special case of PMB (Private Mail Box) Subaddresses. Normally a PMB (Private Mail Box), like a mailstop code and other internal mail distribution codes, pertains to the recipient and is not part of the address. However, USPS Publication 28 Section 284 states, "Exception: When the CMRA [commercial mail receiving agency] mailing address contains a secondary address element (e.g. rural route box number, suite, # or other term), the CMRA customer must use Private Mail Box (PMB) when utilizing a three line address format. Examples: --RR 1 Box 12 PMB 596 --10 Main Street Suite 11 PMB 234 " The abbreviation "PMB" is recognized within this standard, along with a few others defined by the USPS for designating postal delivery boxes. PMB is the only Subaddress Type that can appear in the USPS Postal Delivery Box or USPS Postal Delivery Route address classes.</p>
XML Tag	<SubaddressElement>
XML Model	<xsd:complexType name="SubaddressElement_type"> <xsd:sequence> <xsd:element name="SubaddressType"

	<pre> type="addr_type:SubaddressType_type" maxOccurs="1" minOccurs="0" /> <xsd:element name="SubaddressIdentifier" type="addr_type:SubaddressIdentifier_type" maxOccurs="1" minOccurs="1" /> </xsd:sequence> <xsd:attribute name="ElementSequenceNumber" type="addr_type:ElementSequenceNumber_type" /> <xsd:attribute name="SubaddressComponentOrder" type="addr_type:SubaddressComponentOrder_type" /> <xsd:attribute name="Separator" type="addr_type:Separator_type" /> </xsd:complexType> </pre>
XML Example	<pre> <CompleteSubaddress> <SubaddressElement Element Sequence Number="1" Subaddress Component Order="1" > <SubaddressType>Building</SubaddressType> <SubaddressIdentifier>A</SubaddressIdentifier> </SubaddressElement> <SubaddressElement Element Sequence Number="2" Subaddress Component Order="1" > <SubaddressType>Floor</SubaddressType> <SubaddressIdentifier>7</SubaddressIdentifier> </SubaddressElement> </CompleteSubaddress> </pre>
Quality Measures	Pattern Sequence Measure
Quality Notes	<p>Subaddress elements may follow defined schemes for particular buildings or complexes. While these associations are beyond the scope of the standard they should be considered in planning a quality program for local addresses. Note that Subaddress Element entries must be associated with an address to test any spatial associations with particular buildings or complexes, and are therefore tested at the classification level</p>

978

979 2.2.3.4 Complex Element: Complete Subaddress

Element Name	Complete Subaddress
Other common names for this element	See Subaddress Element
Definition	One or more Subaddress Elements that identify a subaddress within an

	<p>addressed feature. A subaddress is a separate, identifiable portion of a feature, the whole of which is identified by a:</p> <ul style="list-style-type: none"> --- Complete Address Number and Complete Street Name (in the case of a Numbered Thoroughfare Address) --- Two Complete Address Numbers, separated by a hyphen, and followed by a Complete Street Name (in the case of a Two Number Address Range) --- Complete Street Name (in the case of an Unnumbered Thoroughfare Address) --- Complete Landmark Name (in the case of a Landmark Address) --- Complete Address Number and Complete Landmark Name or Complete Place Name (in the case of a Community Address) --- USPS Box or USPS Address (in the case of a USPS Postal Delivery Box or USPS Postal Delivery Route address; for these classes, PMB (private mail box) is the only Subaddress Type permitted.)
Syntax	A series of one or more Subaddress Elements . If more than one are listed, the Element Sequence Number can be used to show the order in which they should be listed.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	None
Source of Values	N/A
How Defined (e.g., locally, from standard, other)	N/A
Attributes Associated with this Element	Element Sequence Number
Example	<ol style="list-style-type: none"> 1. 123 Main Street, Apartment 101 2. 1000 Aviation Road, Building 4, Wing 7, Floor 6, Corridor Zero, Office 2B 3. Metro Airport, Terminal A, Gate C27 4. Average Suburban Office Park, Building 12, Mezzanine, Suite 200 5. 800 West Mountain Road, Building 6, Suite 450 7. 740 Park Avenue, Apartment 15/16B 8. 1324-26 Calle Amapolas, Apartamento 103 9. Five-Star Hotel, East Tower, Penthouse 9. U.S. Dept. of Agriculture Building, Wing 7, Room 324 10. General Hospital, Cardiac Wing, Room 224

Notes/Comments	<p>11. U.S. Department of Commerce Building, Room 6056 (Floor 6, Corridor Zero, Room 56)</p> <p>12. Pentagon, Room 3D126 (Third floor, D ring, First corridor, Room 26)</p> <p>13. RR 1 Box 12 PMB 596</p> <p>14. 10 Main Street Suite 11 PMB 234</p> <p>1. Complete Subaddresses and their component elements pertain a wide variety of residential, and commercial buildings, from single basement apartments to multi-structure office parks, as well as countless specialized structures such as airports, piers, warehouses, manufacturing plants, and stadiums. Complete Subaddresses are typically designated by the property owner, and addressing authorities usually have no responsibility for compiling or verifying them. However, this is changing as address verification becomes more important for government purposes such as security, emergency response, and verification of eligibility for voting, school attendance, and public services.</p> <p>2. Usually Complete Subaddresses follow a pattern of Building-Floor-Room (or Doorway), but due to the wide variety of cases no general rule can be given. In composing the Complete Subaddress, the Subaddress Elements should be ordered from largest to smallest, or in the order one would encounter them in navigating from outside the site to the designated subaddress. If desired, use the Element Sequence Number to indicate the sequence in which the Subaddress Elements should be ordered.</p>
XML Tag	<CompleteSubaddress>
XML Model	<pre> <xsd:complexType name="CompleteSubaddress_type"> <xsd:sequence> <xsd:element name="SubaddressElement" type="addr_type:SubaddressElement_type" minOccurs="1" maxOccurs="unbounded" /> </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <CompleteSubaddress> <SubaddressElement Element Sequence Number="1" Subaddress Component Order="1" > <SubaddressType>Building</SubaddressType> <SubaddressIdentifier>A</SubaddressIdentifier> </SubaddressElement> <SubaddressElement Element Sequence Number="2" Subaddress Component Order="1" > <SubaddressType>Floor</SubaddressType> <SubaddressIdentifier>7</SubaddressIdentifier> </pre>

	</SubaddressElement> </CompleteSubaddress>
Quality Measures	Repeated Element Uniqueness Measure Complex Element Sequence Number Measure
Quality Notes	This test for the Complete Subaddress assumes that quality tests have been run for supporting elements: Subaddress Type , Subaddress Identifier and Subaddress Element .

980

981 **2.2.4 Landmark Name Elements**982 **2.2.4.1 Landmark Name**

Element Name	Landmark Name
Other common names for this element	Point of interest
Definition	The name of a relatively permanent feature of the manmade landscape that has recognizable identity within a particular cultural context.
Definition Source	Adapted from U.S. Board on Geographic Names, "Principles, Policies, Procedures," (Online Edition (revised), 2003, as posted May 17, 2006 at http://geonames.usgs.gov/docs/pro_pol_pro.pdf), p. 48, definition of "geographic name".
Data Type	characterString
Existing Standards for this Element	None, but see GNIS Feature ID
Domain of Values for this Element	Can be created locally from existing values.
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Attributes Associated with this Element	Element Sequence Number , GNIS Feature ID
Examples	U.S. Capitol Building

	Empire State Building Winona Park Elementary School Valley Mall Yosemite National Park
Notes/Comments	<p>1. A Landmark Name specifies a location by naming it. It does not relate the named feature to any thoroughfare system or coordinate reference system and therefore provides no information about where to find the feature. Many addresses include Landmark Names without any thoroughfare names, and as such Landmark Names form the basis for two address classes: Landmark Address and Community Address.</p> <p>2. Landmark names are given to both natural and manmade features. In general, natural landmark names are not used in addresses and are therefore excluded from the scope of this standard. Thus "Yosemite National Park" could be part of an address, and therefore is within the scope of the standard, whereas "Yosemite Falls" and "Yosemite Valley" (naming the natural features) would not.</p> <p>3. The difference between Landmark Name and a Place Name is not always clear and distinct. As a general principle, a landmark is under a single use or ownership or control, while places are not. Thus a landmark, even if it covers an extensive area, might be considered to be a single "master address" (often containing multiple subordinate addresses), while a place generally includes numerous separate addresses. These general principles apply to most cases and are useful as general distinctions, but exceptions and marginal cases are easily found.</p> <p>4. Local address authorities may wish to compile a list of locally-recognized Landmark Names used as addresses for their convenience. Whether to do so, and if so what names to include, are implementation matters to be decided locally.</p> <p>5. Most named landmarks that are used as addresses are also designated by one or more thoroughfare addresses. These should be cross-referenced to each other as Related Address I Ds, using the Address Relation Type attribute to record the relationship between them.</p> <p>6. Landmark Name, as used in this standard, does not imply any officially-designated historic landmark status, nor is it restricted to features having such status.</p> <p>7. The U.S. Board on Geographic Names has compiled and standardized names for many landmarks in the Geographic Names Information System (GNIS), each identified by a unique GNIS Feature ID. Local authorities are encouraged to review the GNIS Feature ID for more information on the use of the GNIS ID with Landmark Names.</p> <p>8. The U.S. Board on Geographic Names has defined 65 classes of features for use in classifying features listed in GNIS. These classes, while neither exhaustive nor necessarily definitive for addressing</p>

	<p>purposes, may provide useful guidance in distinguishing Place Names, manmade Landmark Names, and natural landmark names.</p> <p>---Manmade landmark classes (the names of these features are often used in addresses and therefore generally within the scope of this standard): airport, bridge, building, canal, cemetery, church, crossing, dam, harbor, hospital, levee, locale, military, mine, oilfield, park, post office, reserve, reservoir, school, tower, trail, tunnel, well.</p> <p>---PlaceName classes (the names of these features are generally Place Names within this standard): Census, civil, populated place.</p> <p>---Natural landmark classes (the names of these features are generally outside the scope of this standard): arch, area, arroyo, bar, basin, bay, beach, bench, bend, cape, cave, channel, cliff, crater, falls, flat, forest, gap, glacier, gut, island, isthmus, lake, lava, pillar, plain, range, rapids, ridge, sea, slope, spring, stream, summit, swamp, valley, woods.</p> <p>The complete feature class definitions can be found from the GNIS Domestic Names search page. See Part 6: References (U.S. Geological Survey) for a complete citation.</p>
XML Tag	<code><LandmarkName></code>
XML Model	<pre> <xsd:complexType name="LandmarkName_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="ElementSequenceNumber" type="addr_type:ElementSequenceNumber_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType> </pre>
XML Example	<pre> <CompleteLandmark> <LandmarkName>YOSEMITE NATIONAL PARK</LandmarkName> </CompleteLandmark> </pre>
Quality Measures	Uniqueness Measure Tabular Domain Measure Spatial Domain Measure
Quality Notes	Some landmarks will be nested within a larger one, the latter constituting a spatial domain. Similarly, a tabular domain may be associated with an outer landmark.

983 2.2.4.2

984

985 **2.2.4.3 Complex Element: Complete Landmark Name**

<u>Element Name</u>	<u>Complete Landmark Name</u>
Other common names for this element	
Definition	One or more <u>Landmark Names</u> which identify a relatively permanent feature of the manmade landscape that has recognizable identity within a particular cultural context.
Syntax	A series of one or more <u>Landmark Names</u> . If more than one are listed, the <u>Element Sequence Number</u> can be used to show the order in which they should be listed.
Definition Source	Adapted from U.S. Board on Geographic Names, "Principles, Policies, Procedures," (Online Edition (revised), 2003, as posted May 17, 2006 at http://geonames.usgs.gov/docs/pro_pol_pro.pdf), p. 48, definition of "geographic name".
Data Type	characterString
Existing Standards for this Element	None, but see <u>GNIS Feature ID</u>
Domain of Values for this Element	Can be created locally from existing values
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Examples	University of Washington, Seattle, WA Suzallo Library, University of Washington, Seattle, WA Statue of Liberty, New York, NY Statue of Liberty, Liberty Island, New York, NY Yosemite National Park, CA Camp Curry, Yosemite National Park, CA
Notes/Comments	<p>1. Landmark names often refer to extensive areas, which may contain smaller named landmarks. In these cases the landmark name may function as a single "master address" containing multiple subordinate addresses. The <u>Complete Landmark Name</u> provides for the inclusion of multiple <u>Landmark Names</u> in an address.</p> <p>2. Where multiple <u>Landmark Names</u> are given, they are typically ordered from smallest to largest. The <u>Element Sequence Number</u> can be used to indicate the sequence in which the <u>Landmark Names</u> should be</p>

	ordered. 4. The U.S. Board on Geographic Names has compiled and standardized names for many landmarks in the Geographic Names Information System (GNIS). Local authorities are encouraged to review the GNIS Feature ID for more information on the use of the GNIS ID and Landmark Names. Where a complete landmark name consists of more than one landmark name, the GNIS Code for the smallest unit of the complete landmark name should be used to provide the most specific reference.
XML Tag	<code><CompleteLandmarkName></code>
XML Model	<pre> <xsd:complexType name="CompleteLandmarkName_type"> <xsd:sequence> <xsd:element name="LandmarkName" type="addr_type:LandmarkName_type" minOccurs="1" maxOccurs="unbounded" /> </xsd:sequence> <xsd:attribute name="Separator" type="addr_type:Separator_type" /> </xsd:complexType> </pre>
XML Example	<pre> <CompleteLandmark Separator=","> <LandmarkName ElementSequenceNumber="1">CAMP CURRY</LandmarkName> <LandmarkName ElementSequenceNumber="2">YOSEMITE NATIONAL PARK</LandmarkName> </CompleteLandmark> </pre>
Quality Measures	Repeated Element Uniqueness Measure Complex Element Sequence Number Measure
Quality Notes	

986

987 2.2.5 Place, State, and Country Name Elements

988 2.2.5.1 Place Name

<u>Element Name</u>	<u>Place Name</u>
Other common names for this element	Unincorporated community or neighborhood: Urbanization, urbanizacion place name, or barrio (Puerto Rico); borough (in, for example, New York City), community, neighborhood, subdivision, Census designated place, populated place (GNIS), locale (GNIS)

Definition	<p>Incorporated local government: Municipality, city, borough, town, village, township, actual city, location city, situs city, municipal place name, minor civil division, corporation, consolidated government, metropolitan government, unified government, populated place (GNIS), locale (GNIS)</p> <p>USPS Post Office Name: Post office, mailing city, city (as in "City, State, ZIP"), city name; APO, FPO, DPO (for overseas US military and diplomatic mail delivery)</p> <p>County: Parish (Louisiana); Census Area, City and Borough, and Unorganized Borough (Alaska), Municipality (Alaska and the Commonwealth of the Northern Mariana Islands), Municipio (Puerto Rico), City (Maryland, Missouri, Nevada, and Virginia), District (American Samoa), Island (American Samoa and U.S. Virgin Islands)</p> <p>Region: Metropolitan area, metropolitan statistical area (Census), consolidated metropolitan statistical area (Census), primary metropolitan statistical area (Census)</p> <p>The name of an area, sector, or development (such as a neighborhood or subdivision in a city, or a rural settlement in unincorporated area); incorporated municipality or other general-purpose local governmental unit; county or county-equivalent; or region within which the address is physically located; or the name given by the U.S. Postal Service to the post office from which mail is delivered to the address.</p>
Definition Source	<p>New; partly adapted from:</p> <ol style="list-style-type: none"> 1. FGDC's "Framework Data Content Standard Part 5: Governmental unit and other geographic area boundaries"; and, 2. USPS Publication 28, Section 292, "Urbanization".
Data Type	characterString
Existing Standards for this Element	<p>No single controlling authority, but the Geographic Names Information System (GNIS) attempts to include and standardize the names of all populated places and incorporated local governments (see GNIS Feature ID).</p> <p>For USPS Post Office names, the controlling authority is the USPS "City State File" as referenced in Section 221 of USPS Publication 28</p>
Domain of Values for this Element	None (but see existing standards above). Can be created locally from existing values.
Source of Values	Locally determined (but see existing standards above)
How Defined (e.g., locally, from standard, other)	Locally.
Attributes Associated with this	Place Name Type , Element Sequence Number , GNIS Feature ID

Element	
Examples	<p>Ajo, AZ (unincorporated community in Pima County, AZ) Urbanizacion Los Pinos (Puerto Rico urbanization) Jardine Fagota (Puerto Rico urbanization) Portola Valley, CA (incorporated town) Birmingham, AL (city) Salt Lake City, UT (city) Queens (New York City borough) Orleans Parish, LA (county) APO AE (overseas military postal delivery) FPO AP (overseas military postal delivery) DPO AE (overseas US State Department postal delivery)</p>
Notes/Comments	<p>1. "Place name" can mean different things to different people in different contexts. It may name a community, an incorporated local government, a post office, a county, or a region. For many thoroughfare and landmark addresses, a different place name may be used by an emergency dispatcher directing an ambulance, a local government official assessing local taxes or eligibility for services, a postal clerk, or a business providing contact information on its website.</p> <p>2. This standard provides the Place Name Type attribute to allow the use of different place names with the same address for different purposes. Five types are defined: unincorporated community or neighborhood, incorporated local government, U.S. Post Office name, county, and region. Other types may be added. Additional explanation is given in the notes below and under Place Name Type.</p> <p>3. The U.S. Board of Geographic Names has assigned GNIS Codes to all place names that have been registered and accepted by the Board. This standard provides the GNIS Feature ID attribute to accommodate those codes. For more information on GNIS, see GNIS Feature ID or http://geonames.usgs.gov/domestic/index.html.</p> <p>Notes on Community Names:</p> <p>1. A community name refers to an area, sector, or development, such as a neighborhood or subdivision in a city, or a rural settlement in unincorporated area, that is not an incorporated general-purpose local government or county. The name may arise from official recognition or from popular usage.</p> <p>2. Numerous different terms are used to denote different kinds of communities and community names, but the distinctions are not particularly significant in constructing addresses. An extensive list of terms and definitions can be found in "Framework Data Content Standard Part 5: Governmental unit and other geographic area boundaries," Tables 11 and 15.</p> <p>3. "Urbanizacion" (community) names can be of particular importance in</p>

Puerto Rican addresses. Street names and address ranges are repeated in many cities, especially where a city has annexed older towns; these repeated addresses are distinguished by their urbanizacion name. (Certain other words can be used in place of “urbanizacion”: extensiones, mansiones, reparto, villa, parque, jardine, altura, alturas, colinas, estancias, extension, quintas, sector, terraza, villa, villas.) 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”.

Notes on Municipal and County Place Names:

1. County and municipal names indicate the county and the general-purpose local government area (if any) in which the address is physically located. Local government types and terminologies vary substantially from state to state, but the distinctions are not particularly significant in constructing addresses. An extensive list of terms and definitions can be found in "Framework Data Content Standard Part 5: Governmental unit and other geographic area boundaries," Table 13.
2. Exact municipal and county names are required by public administrators for correct assessing local taxes, assignment of voting precinct, school enrollment, and provision of local government services.
3. Addresses in unincorporated portions of counties have no municipal place name by definition.
4. Many governments have a legal name and a popular name ("Saint Paul" vs. "City of Saint Paul"). For addressing, the popular name is generally preferable if it is unique within the county and state.
5. "New York City" comprises five administrative "Boroughs" (Bronx, Brooklyn, Manhattan, Queens, and Staten Island). The Boroughs are legally distinct from the five Counties that are also subdivisions of New York City (Bronx, Kings, New York, Queens, and Richmond) even though the Boroughs and Counties have identical boundaries and two even share the same name.

Notes on USPS Place Names:

1. The USPS place name is assigned to the post office from which the USPS delivers mail to the address.
2. USPS place names are preferred for postal operations. However, they are often not the best-suited place names for non-postal purposes such as navigation, public service delivery, and emergency response.
3. For postal purposes, the USPS strongly discourages the use of multiple place names in an address. For example, the USPS on-line ZIP finder will find a ZIP code for an address in ""Wailuku, HI," but not for "Wailuku, Maui, HI."
4. For overseas US military postal addresses, "APO" (Army Post Office)

	<p>or "FPO" (Fleet Post Office) is used as the Place Name (see USPS Publication 28, Section 225.1 and 238.1). "DPO" (Diplomatic Post Office) is used as the Place Name for some overseas US State Department postal addresses (see USPS Pub 28 Sec. 239).</p> <p>Notes on Regional Place Names:</p> <p>1. A region name refers to the region where the address is physically located. Typically this is name of the central city within the region. For precise, systematic terms, U.S. Census Bureau terms and definitions may be applied, but popular usage is often imprecise and to some extent subjective. Businesses and residents near a regional center often use the central-city name in their address, even if the address is located some distance outside the limits of the city itself.</p>
XML Tag	<PlaceName>
XML Model	<pre><xsd:complexType name="PlaceName_type"> <xsd:simpleContent> <xsd:extension base="xsd:string"> <xsd:attribute name="PlaceNameType" type="addr_type:PlaceNameType_type" /> <xsd:attribute name="ElementSequenceNumber" type="addr_type:ElementSequenceNumber_type" /> <xsd:attribute name="GNISFeatureID" type="addr_type:GNISFeatureID_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>
XML Example	<PlaceName>ORLEANS PARISH</PlaceName>
Quality Measures	Uniqueness Measure Tabular Domain Measure Spatial Domain Measure
Quality Notes	Some place names will be nested within a larger one, the latter constituting a spatial domain. Similarly, a tabular domain may be associated with an outer place name.

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990 **2.2.5.2 Complex Element: Complete Place Name**

Element Name	Complete Place Name
Other common names	See Place Name

for this element	
Definition	One or more Place Names which identify an area, sector, or development (such as a neighborhood or subdivision in a city, or a rural settlement in unincorporated area); incorporated municipality or other general-purpose local governmental unit; county; or region within which the address is physically located; or the name given by the U.S. Postal Service to the post office from which mail is delivered to the address.
Syntax	A series of one or more Place Names . If more than one is listed, the Place Name Type can be used to specify the type for each Place Name (e.g., community, municipal, postal, county, region) and the Element Sequence Number can be used to show the order in which they should be listed.
Definition Source	See Place Name
Data Type	characterString
Existing Standards for this Element	No single controlling authority, but the Geographic Names Information System (GNIS) attempts to include and standardize the names of all populated places and incorporated local governments (see GNIS Feature ID). For USPS Post Office names, the controlling authority is the USPS "City State File" as referenced in Section 221 of USPS Publication 28
Domain of Values for this Element	None (but see existing standards above)
Source of Values	Local (but see existing standards above)
How Defined (e.g., locally, from standard, other)	Locally.
Examples	Ajo, Pima County, AZ (unincorporated community in Pima County, AZ) Jardines Los Almendros, Municipio Maunabo, PR (Puerto Rico urbanization) Portola Valley, CA (incorporated town) Birmingham, AL (city) Salt Lake City, UT (city) Queens, New York, NY (New York City borough) Orleans Parish, LA (county) FPO AA (overseas military postal delivery) New Hope Community, Shelby County, AL (unincorporated community Shelby County, AL) Capitol Hill, Washington, DC (neighborhood in Washington, DC) Wailuku, Maui, HI

	Edgewater Park, Bronx, New York, NY (neighborhood in New York City)
Notes/Comments	<p>1. "Place name" can mean different things to different people in different contexts. It may name a community, an incorporated local government, a post office, a county, or a region. For many thoroughfare and landmark addresses, a different place name may be used by an emergency dispatcher directing an ambulance, a local government official assessing local taxes or eligibility for services, a postal clerk, or a business providing contact information on its website.</p> <p>2. For some purposes an address may require more than one place name (e.g., "Wailuku, Maui", or "New Hope, Shelby County"). This is discouraged in postal addresses, but it may necessary in other contexts, (e.g., to provide both the municipality and county for an address). The Complete Place Name provides for inclusion of multiple Place Names in the address.</p> <p>3. Where multiple Place Names are given, they are typically ordered from smallest to largest. The Element Sequence Number can be used to indicate the sequence in which the Place Names should be ordered.</p> <p>4. This standard provides the Place Name Type attribute to allow the use of different place names with the same address for different purposes. Five types are defined: community, municipal, postal, county, and regional. Others may be added. Additional explanation is given under Place Name and Place Name Type.</p> <p>5. The difference between a place and a landmark is not always clear and distinct. As a general principle, a landmark is under a single use or ownership or control, while places are not. Thus a place generally includes numerous separate addresses, while a landmark, even if it covers an extensive area, might be considered to be a single "master address" (often containing multiple subordinate addresses). These general principles apply to most cases and are useful as general distinctions, but exceptions and marginal cases are easily found.</p> <p>6. The U.S. Board of Geographic Names has assigned GNIS Feature ID's to all place names that have been registered and accepted by the Board. Within the address standard, GNIS Feature ID's may be associated with Place Names to facilitate standardization and unambiguous communication. See GNIS Feature ID for more information.</p>
XML Tag	<CompletePlaceName>
XML Model	<pre><xsd:complexType name="CompletePlaceName_type"> <xsd:sequence> <xsd:element name="PlaceName" type="addr_type:PlaceName_type" minOccurs="1" maxOccurs="unbounded" /></pre>

	<pre> </xsd:sequence> <xsd:attribute name="Separator" type="addr_type:Separator_type" /> </xsd:complexType> </pre>
XML Example	<pre> <CompletePlaceName> <PlaceName Place Name Type="USPSPlaceName"> Ajo </PlaceName> </CompletePlaceName> <CompletePlaceName> <PlaceName Place Name Type="County" > Shelby </PlaceName> </CompletePlaceName> <CompletePlaceName> <PlaceName Place Name Type="USPS" > Washington </PlaceName> </CompletePlaceName> <CompletePlaceName> <PlaceName Place Name Type="Community" > Urbanizacion Los Olmos </PlaceName> </CompletePlaceName> <CompletePlaceName> <PlaceName Place Name Type="Community">Queens</PlaceName> <PlaceName Place Name Type="Municipal">New York</PlaceName> </CompletePlaceName> </pre>
Quality Measures	Repeated Element Uniqueness Measure Complex Element Sequence Number Measure
Quality Notes	

991

992 **2.2.5.3 State Name**

Element Name	State Name
Other common names for this element	State; Commonwealth (PA, MA, KY, VA, PR, MP); Territory (AS, GU, MP, PR, VI); District (DC); Minor Outlying Islands (UM); overseas military or diplomatic "state" (AA, AE, AP)
Definition	The names of the US states and state equivalents: the fifty US states, the District of Columbia, and all U.S. territories and outlying possessions. A state (or equivalent) is "a primary governmental

	division of the United States." The names may be spelled out in full or represented by their two-letter USPS or ANSI abbreviation.
Definition Source	Names and abbreviations: ANSI INCITS 38:200x, and USPS Publication 28 Appendix B Definition of 'state': Framework Data Content Standard Part 5: Governmental Unit and Other Geographic Area Boundaries," (Table 13).
Data Type	characterString
Existing Standards for this Element	ANSI INCITS 38:200x, and USPS Publication 28 Appendix B
Domain of Values for this Element	Yes
Source of Values	ANSI INCITS 38:200x, and USPS Publication 28 Appendix B
How Defined (e.g., locally, from standard, other)	ANSI INCITS 38:200x, and USPS Publication 28 Appendix B
Example	Chicago, Illinois Chicago IL Dover, Delaware Dover DE Hagatna, Guam Hagatna GU APO AE Wake Island UM
Notes/Comments	<p>1. The State Name element follows the ANSI INCITS 38:200x standard (formerly the FIPS 5-2 standard) and USPS Publication 28 by including within the definition of State Name the fifty US states, the District of Columbia (DC), and US territories and possessions (AS, GU, MP, PR, and VI). In addition, USPS Publication 28 recognizes three overseas military and diplomatic State Name equivalents (AA, AE, and AP), which the ANSI standard does not; and the ANSI standard recognizes "UM" for US minor outlying islands, which USPS Publication 28 does not.</p> <p>2. Within this standard State Names may be spelled out in full or they may be represented by their standard two-letter ANSI INCITS 38:200x or USPS abbreviations.</p> <p>3. For overseas military and diplomatic postal addresses, "AE" or "AP" or "AA" is used as the State Name. "AE" is used for armed forces and certain diplomatic posts in Europe, the Middle East, Africa, and Canada; "AP" for the Pacific; and "AA" for the Americas excluding Canada (see USPS Publication 28, Section 225.1 and</p>

	<p>Appendix B).</p> <p>4. The ANSI INCITS 38:200x standard abbreviations include the abbreviation UM for U.S. Minor Outlying Islands. These are nine small, remote islands or island groups that do not receive direct mail delivery: Midway Islands, Wake Island, Johnson Atoll, Kingman Reef, Palmyra Atoll, Jarvis Island, Howland Island, Baker Island, and Navassa Island.</p> <p>5. In rare cases, the postal state and the physical location state of the address are not the same. This occurs in some communities on the borders of two states. In these cases, the physical address should be treated as the primary or official address, including the physical state name, while the postal address with its state name should be listed as an alias.</p>
XML Tag	<StateName>
XML Model	<pre><xsd:simpleType name="StateName_type"> <xsd:restriction base="xsd:token"> <!-- "US State and The District of Columbia" Abbreviations --> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><StateName>VA</StateName> <StateName>VIRGINIA</StateName></pre>
Quality Measures	Tabular Domain Measure
Quality Notes	

993

994 **2.2.5.4 ZIP Code**

<u>Element Name</u>	<u>ZIP Code</u>
Other common names for this element	ZIP5, Zone Improvement Plan
Definition	A system of 5-digit codes that identifies the individual Post Office or metropolitan area delivery station associated with an address.
Definition Source	USPS, "Quick Service Guide 800: Glossary of Postal Terms and Abbreviations in the DMM."
Data Type	characterString

Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS
How Defined (e.g., locally, from standard, other)	USPS is the sole source of this information.
Example	Birmingham, AL 35305 Webster Groves, MO 63119
Notes/Comments	Strictly speaking a ZIPCode is not an area but a set of USPS delivery points served from the same post office. Delivery points with the same ZIP Code can encompass a single building that has a very high mail volume; a portion of a city; all or parts of several municipalities; or even portions of more than more county (and, in a few cases, more than one state).
XML Tag	<ZIPCode>
XML Model	<pre><xsd:simpleType name="ZIPCode_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value="[0-9]{5}" /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<ZIPCode>35305</Zipcode>
Quality Measures	Tabular Domain Measure Spatial Domain Measure
Quality Notes	

995

996 **2.2.5.5 ZIP +4**

Element Name	ZIP Plus 4
Other common names for this element	ZIP+4
Definition	A 4-digit extension of the 5-digit ZIP Code (preceded by a hyphen) that, in conjunction with the ZIP Code , identifies a specific range of USPS delivery addresses.

Definition Source	Adapted from USPS, "Quick Service Guide 800: Glossary of Postal Terms and Abbreviations in the DMM."
Data Type	characterString
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes
Source of Values	USPS is the sole source of this information.
How Defined (e.g., locally, from standard, other)	From USPS
Example	Birmingham, Alabama 35242 - 3426 Webster Groves, Missouri 63119 - 3212
Notes/Comments	<p>1. Strictly speaking, the ZIP Plus 4 consists of "the 5-digit ZIP Code and four additional digits that identify a specific range of USPS delivery addresses" (Quoted from USPS, "Quick Service Guide 800: Glossary of Postal Terms and Abbreviations in the DMM"). However this standard separates the two components to facilitate data processing.</p> <p>2. ZIP+4 is the USPS Registered Trademark for this element. However, the Element is termed ZIP Plus 4 in this standard.</p> <p>3. The ZIP Code and the ZIP Plus 4 are formatted with a hyphen between the two elements (see USPS Publication 28 Sections 343.1, 356 and Appendix A1). It is assumed in this standard that the hyphen is not stored with the ZIP Plus 4 value, but is added upon export for display.</p>
XML Tag	<ZIPPlus4>
XML Model	<pre><xsd:simpleType name="ZIPPlus4_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value="[0-9]{4}' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><ZIPCode>35242</ZIPCode> <ZIPPlus4>3426</ZIPPlus4></pre>
Quality Measures	Tabular Domain Measure
Quality Notes	

998 **2.2.5.6 Country Name**

<u>Element Name</u>	<u>Country Name</u>
Other common names for this element	Nation
Definition	The name of the country in which the address is located. A country is "an independent, self-governing, political entity."
Definition Source	<u>Country Name</u> : New Country: Framework Data Content Standard Part 5: Governmental Unit and Other Geographic Area Boundaries," (Table 13)
Data Type	characterString
Existing Standards for this Element	ISO 3166-1 Country Names (official short English version)
Domain of Values for this Element	Yes
Source of Values	ISO 3166-1 Country Names (official short English version)
How Defined (e.g., locally, from standard, other)	ISO 3166-1 Country Names (official short English version)
Example	<ol style="list-style-type: none"> 1. United States 2. Canada 3. Mexico
Notes/Comments	<p>1. Although the scope of this standard is restricted to US addresses, <u>Country Name</u> 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 countries.</p> <p>2. ISO 3166-1 official short English names are specified because they are familiar and concise, and because ISO 3166-1 is specified in the UPU address standard. ISO 3166-1 also specifies two-character abbreviations for each name, which are recognized within the postal profile of this standard.</p> <p>3. The names and their abbreviations can be found at: http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/list-en1.html</p>
XML Tag	<CountryName>
XML Model	<pre><xsd:simpleType name="CountryName_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>

XML Example	<CountryName>CANADA</CountryName>
Quality Measures	Tabular Domain Measure
Quality Notes	

999

1000 **2.2.6 USPS Postal Address Elements**1001 **2.2.6.1 USPS Box Type**

Element Name	USPS Box Type
Other common names for this element	PO Box; Box (Obsolete terms: Drawer, Lockbox, Bin, Caller, Firm Caller)
Definition	The name of the class of the container used for receipt of USPS mail. USPS Publication 28 requires the use of "PO Box" or "Box" for this element.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293 and 295.6 (Puerto Rico Addresses)
Domain of Values for this Element	PO Box (if used in a USPS Postal Delivery Box address). Box (if used in a USPS Postal Delivery Route address)
Source of Values	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293 and 295.6 (Puerto Rico Addresses)
How Defined (e.g., locally, from standard, other)	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293 and 295.6 (Puerto Rico Addresses)
Example	PO Box 6943 PO Box G PO Box 00145 RR 4 Box 19-1A HC 68 Box 45
Notes/Comments	1. In USPS Postal Delivery Box addresses, "PO Box" is required for this element. "Post Office Box addresses are output as "PO Box NN" on the mailpiece." (USPS Publication 28 section 281). 2. In USPS Postal Delivery Route addresses, "Box" is required for

	<p>this element.</p> <p>---"Print rural route addresses on mailpieces as "RR N Box NN". (USPS Publication 28 section 241)</p> <p>---"Print highway contract route addresses on mailpieces as "HC N Box NN". (USPS Publication 28 section 251)</p> <p>3. The USPS Postal Delivery Box and USPS Postal Delivery Route address classes are defined in the Classification Part of this standard.</p>
XML Tag	<USPSBoxType>
XML Model	<pre><xsd:simpleType name="USPSBoxType_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><USPSBox> <USPSBoxType>PO Box</USPSBoxType> <USPSBoxID>6943</USPSBoxId> </USPSBox></pre>
Quality Measures	Tabular Domain Measure Range Domain Measure
Quality Notes	

1002

1003 **2.2.6.2 USPS Box ID**

Element Name	USPS Box ID
Other common names for this element	PO Box Number; Box Number
Definition	The numbers or letters distinguishing one box from another within a post office or route.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293 and 295.6 (Puerto Rico Addresses)
Domain of Values for this Element	Yes, within each post office
Source of Values	Local post office

How Defined (e.g., locally, from standard, other)	Local post office
Example	PO Box 6943 PO Box G PO Box 00145 RR 4 Box 19-1A HC 68 Box 45
Notes/Comments	1. USPS Box ID 's may include numbers or letters, and may include a hyphen. 2. "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." Example: Convert "PO BOX -0145" to "PO BOX 00145" on output from the ZIP+4 file. (USPS publication 28 Section 282)
XML Tag	<USPSBoxID>
XML Model	<xsd:simpleType name="USPSBoxId_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType>
XML Example	<USPSBox> <USPSBoxType>PO Box</USPSBoxType> <USPSBoxID>6943</USPSBoxId> </USPSBox>
Quality Measures	Tabular Domain Measure Range Domain Measure
Quality Notes	

1004

1005 **2.2.6.3 Complex Element: USPS Box**

Element Name	USPS Box
Other common names for this element	PO Box, Box, Post Office Box (Obsolete terms: Lockbox, Drawer, Bin, Caller, Firm Caller)
Definition	A container for the receipt of USPS mail uniquely identified by the combination of a USPS Box Type and a USPS Box ID .

Syntax	{ USPS Box Type *} + { USPS Box ID * }
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293 and 295.6 (Puerto Rico Addresses)
Domain of Values for this Element	See component elements.
Source of Values	See component elements.
How Defined (e.g., locally, from standard, other)	See component elements.
Example	PO Box 246 Hillsdale, NJ 07642 PO Box 1137 Saipan MP 96950-1137 RR 4 Box 73 Grafton WV 26354 HC 4 Box 100 Blanco TX 78606
Notes/Comments	A USPS Box location has no definite geographic relation to the location of the recipient of the mail.
XML Tag	<USPSBox>
XML Model	<pre> <xsd:complexType name="USPSBox_type"> <xsd:sequence> <xsd:element name="USPSBoxType" type="addr_type:USPSBoxType_type" maxOccurs="1" minOccurs="1"/> <xsd:element name="USPSBoxId" type="addr_type:USPSBoxId_type" maxOccurs="1" minOccurs="1"/> </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <USPSAddress> <USPSRoute> <USPSBoxGroupType>PSC</USPSGroupType> <USPSBOXGroupId>4</USPSGroupId> </USPSRoute> <USPSBox> <USPSBoxType>BOX</USPSBoxType> <USPSBoxId>3</USPSBoxId> </USPSBox> </USPSAddress> </pre>
Quality Measure	Pattern Sequence Measure

Quality Notes	
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1006

1007 **2.2.6.4 USPS Box Group Type**

<u>Element Name</u>	<u>USPS Box Group Type</u>
Other common names for this element	See domain of values below.
Definition	A name for a type of postal delivery point or route containing a group of USPS Boxes .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
Domain of Values for this Element	RR (Rural Route)(Obsolete terms: RD, RFD, Rural Delivery, Rural Free Delivery) HC (Contract Delivery Service Route) (Obsolete terms: Highway Contract Route, Star Route) PSC (Postal Service Center)(Overseas military postal address) CMR (Common Mail Room)(Overseas military postal address) Unit (Overseas military postal address)
Source of Values	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
How Defined (e.g., locally, from standard, other)	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
Example	1. RR 4, Box 10 2. HC 2, Box 7 3. PSC 4, Box 3 4. CMR 4, Box 2 5. UNIT 475, Box 690
Notes/Comments	1. This group includes rural routes, contract service delivery routes, postal service centers, overseas military common mail rooms and military unit numbers. 2. Contract Delivery Service Routes were formerly called Highway

	Contract Routes, and are still abbreviated "HC".
XML Tag	<USPSBoxGroupType>
XML Model	<xsd:simpleType name="USPSBoxGroupType_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType>
XML Example	<USPSAddress> <USPSRoute> <USPSBoxGroupType>PSC</USPSGroupType> <USPSBOXGroupId>4</USPSGroupId> </USPSRoute> <USPSBox> <USPSBoxType>BOX</USPSBoxType> <USPSBoxId>3</USPSBoxId> </USPSBox> </USPSAddress>
Quality Measures	Tabular Domain Measure
Quality Notes	

1008

1009 **2.2.6.5 USPS Box Group ID**

Element Name	USPS Box Group ID
Other common names for this element	Rural route number; HC number; PSC/CMR/Unit Number
Definition	The numbers or letters distinguishing one route or distribution point from another route or distribution point of the same USPS Box Group Type .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
Domain of Values for this Element	Yes
Source of Values	Local Post office

How Defined (e.g., locally, from standard, other)	Local Post office
Example	1. RR 4 Box 10 2. HC 2 Box 7 3. PSC 4 Box 3 4. CMR 4 Box 2 5. UNIT 475 Box 690
Notes/Comments	
XML Tag	<USPSBoxGroupID>
XML Model	<pre> <xsd:simpleType name="USPSBoxGroupId_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<pre> <USPSAddress> <USPSRoute> <USPSBoxGroupType>PSC</USPSGroupType> <USPSBOXGroupId>4</USPSGroupId> </USPSRoute>* <USPSBox> <USPSBoxType>BOX</USPSBoxType> <USPSBoxId>3</USPSBoxId> </USPSBox> </USPSAddress> </pre>
Quality Measures	Tabular Domain Measure Range Domain Measure
Quality Notes	

1010

1011 **2.2.6.6 Complex Element: USPS Route**

Element Name	USPS Route
Other common names for this element	See component elements
Definition	A collection of boxes served from a single distribution point, and uniquely identified by a USPS Box Group Type and a USPS Box Group ID .

Syntax	{ USPS Box Group Type *} + { USPS Box Group ID *}
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
Domain of Values for this Element	See component elements
Source of Values	See component elements
How Defined (e.g., locally, from standard, other)	See component elements
Example	<ol style="list-style-type: none"> 1. RR 4 Box 10 2. HC 2 Box 7 3. PSC 4 Box 3 4. CMR 4 Box 2 5. Unit 475 Box 690
Notes/Comments	Unlike carrier routes and other USPS internal codes for mail sorting and delivery, the USPS Routes must be included in the address to provide sufficient information for delivery of mail.
XML Tag	<USPSRoute>
XML Model	<pre> <xsd:complexType name="USPSRoute_type"> <xsd:sequence> <xsd:element name="USPSBoxGroupType" type="addr_type:USPSBoxGroupType_type" maxOccurs="1" minOccurs="1"/> <xsd:element name="USPSBOXGroupId" type="addr_type:USPSBoxGroupId_type" maxOccurs="1" minOccurs="1"/> </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <USPSAddress> <USPSRoute> <USPSBoxGroupType>PSC</USPSGroupType> <USPSBOXGroupId>4</USPSGroupId> </USPSRoute> <USPSBox> <USPSBoxType>BOX</USPSBoxType> <USPSBoxId>3</USPSBoxId> </USPSBox> </pre>

	</USPSAddress>
Quality Measure	Pattern Sequence Measure
Quality Notes	USPS routes are locally determined. While these local routes are beyond the scope of the standard, they should be included in a local quality program.

1012

1013 **2.2.6.7 Complex Element: USPS Address**

Element Name	USPS Address
Other common names for this element	Postal Address
Definition	A USPS postal delivery point identified by a USPS Route and a USPS Box
Syntax	{ USPS Route *} + { USPS Box * }
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
Domain of Values for this Element	See Component Elements
Source of Values	USPS Publication 28 sections 24, 25, and 28; section 238.1 (Military Addresses); and sections 293, 295.6, and 295.7 (Puerto Rico Addresses)
How Defined (e.g., locally, from standard, other)	See component elements
Example	RR 2 Box 223G Dardanelle AR 72834 HC 3 Box 330 Flasher, ND 58535 PSC 802 Box 74 FPO AA 34058 CMR 416 Box 100 APO AE 09140-0015 Unit 2050 Box 4190 APO AP 96278-2050
Notes/Comments	
XML Tag	<UspsAddress>
XML Model	<xsd:complexType name="USPSAddress_type">

	<pre> <xsd:sequence> <xsd:element name="USPSRoute" type="addr_type:USPSRoute_type" maxOccurs="1" minOccurs="1"/> <xsd:element name="USPSBox" type="addr_type:USPSBox_type" maxOccurs="1" minOccurs="1"/> </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <USPSAddress> <USPSRoute> <USPSBoxGroupType>PSC</USPSGroupType> <USPSBOXGroupId>4</USPSGroupId> </USPSRoute> <USPSBox> <USPSBoxType>BOX</USPSBoxType> <USPSBoxId>3</USPSBoxId> </USPSBox> </USPSAddress> </pre>
Quality Measure	Pattern Sequence Measure
Quality Notes	

1014

1015 **2.2.6.8 USPS General Delivery Point**

Element Name	USPS General Delivery Point
Other common names for this element	
Definition	A central point where mail may be picked up by the addressee. Two values are permitted: "General Delivery" (for post offices), and ship's names (for overseas military addresses).
Definition Source	New
Data Type	characterString
Existing Standards for this Element	Yes
Domain of Values for this Element	Yes

Source of Values	USPS
How Defined (e.g., locally, from standard, other)	USPS Publication 28 Section 26 (General Delivery Addresses); and section 238.1 (overseas military addresses)
Example	General Delivery , Tampa, FL 33602 USCGC Hamilton , FPO AP 96667-3931
Notes/Comments	For general delivery addresses, USPS Publication 28 section 261 specifies, "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."
XML Tag	<USPSGeneralDeliveryPoint>
XML Model	<xsd:simpleType name="USPSGeneralDeliveryPoint_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType>
XML Example	<USPSGeneralDeliveryPoint>USCGC Hamilton</USPSGeneralDeliveryPoint>
Quality Measures	Tabular Domain Measure
Quality Notes	

1016

1017 **2.2.7 USPS Address Lines**1018 **2.2.7.1 Delivery Address**

Element Name	Delivery Address
Other common names for this element	Delivery Address Line (USPS Publication 28); Location Address Text (EPA); Mailing Address Text (EPA)
Definition	The entire address, unparsed, except for the Place Name , State Name , ZIP Code , ZIP Plus 4 , Country Name , and, optionally, Complete Subaddress elements.
Syntax	The Delivery Address syntax depends on the address class. Address class syntaxes are given in the Classification Part of this standard. The Delivery Address syntax is the same as the class syntax, except that the Delivery Address excludes the Place Name , State Name , ZIP Code ,

	ZIP Plus 4 , Country Name , and, optionally, Complete Subaddress elements.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	USPS Publication 28
Domain of Values for this Element	No
Source of Values	NA
How Defined (e.g., locally, from standard, other)	NA
Attributes Associated with this Element	Delivery Address Type
Example	<p>123 Dartmouth College Highway, Suite 100, Lyme, NH 03768 (Delivery Address Type = Subaddress Included)</p> <p>123 Dartmouth College Highway, Suite 100, Lyme, NH 03768 (Delivery Address Type = Subaddress Excluded)</p>
Notes/Comments	<p>1. The Delivery Address element corresponds to the Delivery Address Line defined in USPS Publication 28 (sec. 211, 231, 33, 341, and 343).</p> <p>2. This element excludes Place Name, State Name, ZIP Code, and ZIP Plus 4 and Country Name, which together form the Place State ZIP complex element.</p> <p>3. The Delivery Address typically includes the Complete Subaddress. However, there are sometimes reasons to omit or separate the Complete Subaddress from the Delivery Address. For example, the Complete Subaddress can hamper address geocoding, and contact lists often separate the Complete Subaddress from the rest of the feature address (see, e.g., the EPA Contact Information Data Standard).</p> <p>4. The Delivery Address Type shows whether the Delivery Address includes or excludes the Complete Subaddress.</p>
XML Tag	<DeliveryAddress>
XML Model	<pre><xsd:complexType name="DeliveryAddress_type"> <xsd:extension base="xsd:string"> <xsd:attribute name="DeliveryAddressType" type="addr_type:DeliveryAddressType_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>

XML Example	<p><DeliveryAddress Delivery Address Type="Subaddress Included">123 Dartmouth College Highway, Suite 100</DeliveryAddress></p> <p><DeliveryAddress Delivery Address Type="Subaddress Excluded">123 Dartmouth College Highway, Suite 100</DeliveryAddress></p> <p><DeliveryAddress>123 Dartmouth College Highway, Suite 100</DeliveryAddress></p>
Quality Measures	Pattern Sequence Measure
Quality Notes	

1019

1020 **2.2.7.2 Place State ZIP**

Element Name	Place State ZIP
Other common names for this element	Last Line (USPS)
Definition	The combination of Complete Place Name , State Name , ZIP Code , ZIP Plus 4 , and Country Name within an address. Complete Place Name and State Name are mandatory; the other elements are optional.
Syntax	{ Complete Place Name *} + { State Name *} + { ZIP Code } + { ZIP Plus 4 } + { Country Name }
Definition Source	New
Data Type	characterString
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	<ol style="list-style-type: none"> 1. Waterville ME 04901 2. Oxford MS 38655-4068 3. Florence, OR 4. Brattleboro, Windham County, VT

Notes/Comments	1. Place State ZIP corresponds to the Last Line (or City, State, ZIP+4 line) as defined for postal addressing purposes in USPS Publication 28 (sections 211, 33, and 341). 2. ZIP Code and ZIP Plus 4 are recommended but not mandatory in the Place State ZIP element.
XML Tag	<PlaceStateZIP>
XML Model	<xsd:simpleType name="PlaceStateZip_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType>
XML Example	<PlaceStateZIP>Brattleboro, Windham County, VT</PlaceStateZIP>
Quality Measures	Pattern Sequence Measure
Quality Notes	

1021

1022 **2.3 Address Reference Systems**

1023 **2.3.1 [Address Reference Systems Introduction](#)**

1024 An [Address Reference System](#) establishes the framework of rules, both spatial and non-
 1025 spatial, adopted by an [Address Authority](#) for assigning addresses within the area it
 1026 administers. The rules, in turn, provide the basis for address data quality tests that detect
 1027 address anomalies and errors.

1028 The [Address Reference System](#) includes, as needed, rules governing address numbering, street
 1029 naming, block definition, subaddresses (suites, offices, apartments, etc.), and place names. The
 1030 [Address Reference System](#) may also define address baselines, polylines, and breaklines to
 1031 guide address numbering throughout the area. Finally, for identification and reference, an
 1032 [Address Reference System](#) includes a name and identifier, the name of the [Address Reference](#)

1033 [System Authority](#) that administers it, the boundary of the area it administers, and reference to
1034 the official documents and maps where the rules are codified.

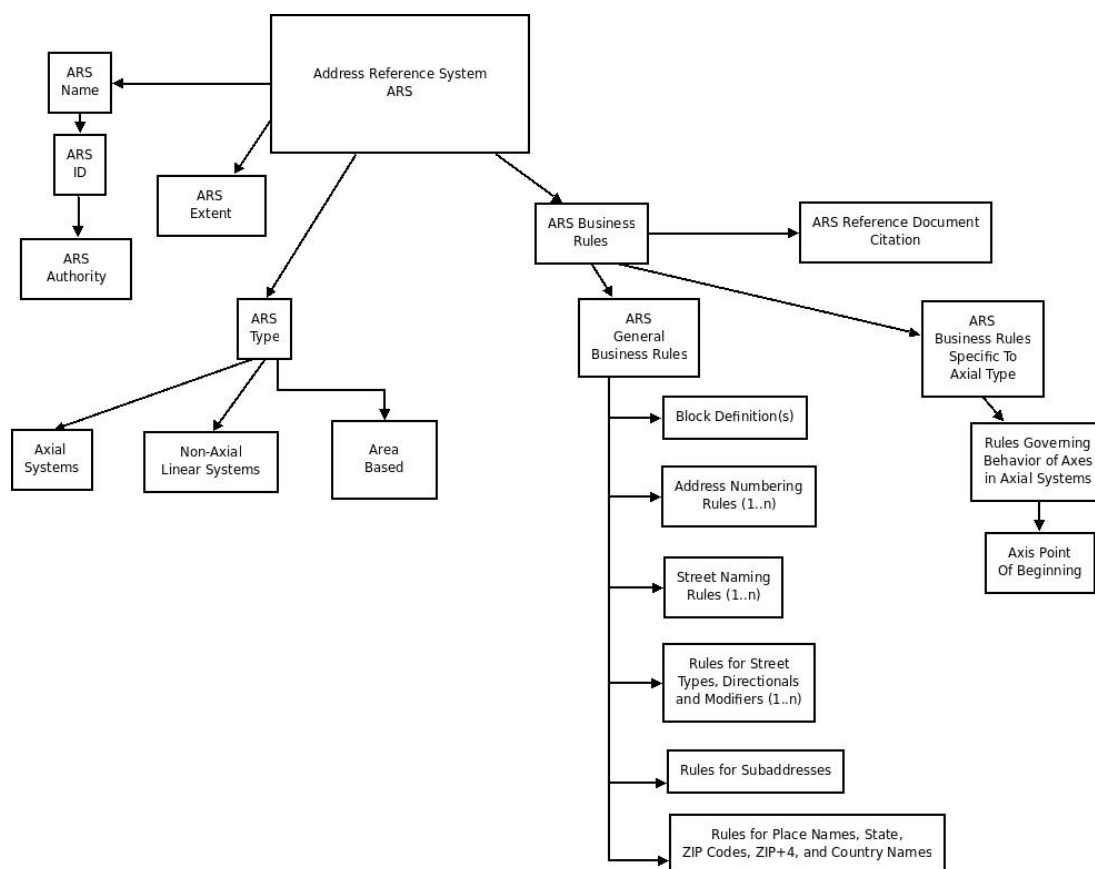
1035 **2.3.1.1 Working with Address Reference Systems**

1036 [Address Reference Systems](#) provide a framework for address assignment and for quality
1037 assurance of addresses. In order to use these within a Geographic Information System, the
1038 components of a system must be structured into a layer that includes the extent of the system
1039 ([Address Reference System Extent](#)), and the reference grids, lines or points that govern
1040 address numbering throughout the area. In many cases, such grids have been constructed as
1041 graphic features that are not structured in a way to make them useful for developing [Address](#)
1042 [Reference System Axis](#) lines [Address Reference System Axis Point Of Beginning](#) locations,
1043 [Address Reference System Reference Polylines](#), [Address Reference System Range](#)
1044 [Breakpoints](#), [Address Reference System Range Breaklines](#) and for use in evaluating whether a
1045 specific address point falls in the correct place relative to the [Address Reference System](#)
1046 [Rules](#). Thus it is important this the [Address Reference System](#) be created as intelligent
1047 geometry providing the tools needed to evaluate any address point found within the [Address](#)
1048 [Reference System](#). It should also, where appropriate, utilize existing centerlines or other
1049 existing features so that exact matching is possible.

1050 **2.3.1.2 Types of Address Reference Systems**

1051 [Address Reference Systems](#) differ in detail from locality to locality, but in the United States all
1052 [Address Reference Systems](#) fit into one of three broad categories: axial, linear non-axial, and
1053 area non-axial. The categories differ fundamentally in whether and how the street system

governs address numbering, and secondarily in the elements needed to compose them. Figure 1 diagrams the types and elements. Table 1 lists for each [Address Reference System](#) type, the elements required and permitted to compose it.



1057

1058

1059 2.3.1.2.1 Axial Address Reference Systems

1060 In axial [Address Reference Systems](#), address numbering is organized around axes. The axes
 1061 may be thoroughfares, rail lines, rivers, or imaginary lines (such as section lines in PLSS
 1062 areas, lines of latitude and/or longitude, or arbitrarily drawn lines). Address axes typically

1063 extend from a common point of origin (the local "zero" point for address numbers), and all
1064 numbers increase with distance from the point of origin.

1065 The axes, in turn, define the zero point for numbering along streets that cross the axes. Most
1066 commonly, axial system organize the streets and address numbering into a grid. In a simple
1067 case, if Main Street ran north-south from the town square, and State Street ran east-west, then:

- 1068 • Address numbering for Main Street and State Street would increase as one proceeded
1069 away from the town square.
- 1070 • Address numbering for other north-south streets would begin where they cross State
1071 Street and increase in parallel with Main Street.
- 1072 • Address numbering for other east-west streets would begin where the cross Main
1073 Street and increase in parallel with State Street.

1074 Often the geometric grid is interrupted or deformed by terrain, rivers, highways, rail lines,
1075 parks, or other major features. Occasionally there are more than four axes, or numbering
1076 does not begin at the same point for all axes.

1077 **2.3.1.2.2 Linear Non-Axial Address Reference Systems**

1078 In a linear non-axial [Address Reference System](#), each thoroughfare is addressed independently
1079 of the other thoroughfares. There are no axes and there is no grid. Each thoroughfare has its
1080 own point of beginning for address numbering, and numbers proceed according to an Address
1081 Reference System Numbering Rule from that point to the end of the thoroughfare or the
1082 boundary of the Address Reference System. Linear non-axial address reference systems are
1083 typically found in areas where the road network is sparse and intersections are few.

1084 **2.3.1.2.3 Area-Based Systems**

1085 In area-based [Address Reference Systems](#), [Complete Address Numbers](#) are not assigned along
 1086 a thoroughfare, but within an area denoted by a community name or a block number. Inside
 1087 the area, address numbers might be assigned according to a spatial pattern (around the block,
 1088 for example), or by parcel or lot numbers, or chronologically as the buildings are built.

1089 Area-based [Address Reference Systems](#) are rare in the United States, but they may be found in
 1090 gated communities, housing projects, Puerto Rican urbanizations, trailer courts, and similar
 1091 developments that are built around interior walkways or roadways.

1092 **Table 1: Required, Optional, and Inapplicable Elements for Each Type of Address**
 1093 **Reference System**

1094 Note: R - Required; O = Optional; NA = Not Applicable

<u>Element name</u>	<u>Axial</u>	<u>Linear</u> <u>Non-axial</u>	<u>Area Non-</u> <u>axial</u>
Address Reference System ID	R	R	R
Address Reference System Name	R	R	R
Address Reference System Authority	R	R	R
Address Reference System Extent	R	R	R
Address Reference System Type	R	R	R
Address Reference System Reference	R	R	R

Document Citation			
Address Reference System Rules	O	O	O
Address Reference System Numbering Rules	O	O	O
Address Reference System Block Rules	O	O	O
Address Reference System Street Naming Rules	O	O	O
Address Reference System Street Type Directional And Modifier Rules	O	O	O
Address Reference System Place Name State Country And ZIP Code Rules	O	O	O
Address Reference System Subaddress Rules	O	O	O
Address Reference System Axis	R	NA	NA
Address Reference System Axis Point Of Beginning	R	NA	NA
Address Reference System Reference Polyline	O	NA	NA
Address Reference System Range Breakpoint	O	NA	NA
Address Reference System Range Breakline	O	NA	NA
Address Reference System Range Polygon	O	NA	NA

1095 2.3.1.3 Elements of an Address Reference System

1096 2.3.1.3.1 Address Reference System Identification, Extent, and Authority

1097 The general elements identify an [Address Reference System](#) and establish the source and
1098 extent of its authority. These elements are required for every [Address Reference System](#). The
1099 general elements are: [Address Reference System ID](#), [Address Reference System Name](#),
1100 [Address Reference System Authority](#), and [Address Reference System Extent](#).

1101 • The [Address Reference System ID](#) provides a unique identifier (typically an integer)
1102 for each [Address Reference System](#) administered by an [Address Reference System](#)
1103 [Authority](#). This, plus the [Address Reference System Authority](#), should be unique
1104 throughout the United States. Any [Address Reference System Authority](#) may
1105 administer multiple [Address Reference Systems](#). For example, a county may have
1106 more than [Address Reference System](#) for unincorporated areas based on terrain
1107 changes, historical addressing patterns, or for other reasons. Cities may annex areas
1108 which have previously been addressed, and maintain the old [Address Reference](#)
1109 [System](#). Other [Address Reference Systems](#) may be established in the future as an area
1110 develops.

1111 • The [Address Reference System Name](#) identifies the [Address Reference System](#) in a
1112 way that is meaningful to users.

1113 • The [Address Reference System Authority](#) element identifies the agency and/or
1114 jurisdiction with administrative responsibility for the [Address Reference System](#).

1115 • The [Address Reference System Extent](#) defines the geographic boundaries of the area
1116 within which addressing is governed by the [Address Reference System](#). The [Address](#)

1117 [Reference System Extent](#) may or may not follow jurisdictional boundaries. There may
1118 also be areas within an [Address Reference System](#) that are excluded from that [Address](#)
1119 [Reference System](#) because they are addressed according to different rules.
1120 • The [Address Reference System Reference Document Citation](#) states where to find the
1121 authoritative documents that officially establish the [Address Reference System](#). The
1122 documents may include a map of the reference system showing the extent, address
1123 numbering system, axes, and other features; a statement of the addressing rules
1124 described below; an addressing procedures manual and forms; and an address
1125 ordinance.

1126 **2.3.1.3.2 Address Reference System Rules**

1127 The remaining elements describe the types of rules that might be adopted by an [Address](#)
1128 [Reference System Authority](#) to govern addressing processes. Due to the variety of local
1129 conditions and preferences, not all elements will be applicable to any given system, and all of
1130 these presented are optional elements. The rules are collected into the [Address Reference](#)
1131 [System Rules](#), which incorporates the:

- 1132 • [Address Reference System Numbering Rules](#),
- 1133 • [Address Reference System Block Rules](#),
- 1134 • [Address Reference System Street Naming Rules](#),
- 1135 • [Address Reference System Street Type Directional And Modifier Rules](#),
- 1136 • [Address Reference System Place Name State Country And ZIP Code Rules](#),
- 1137 • [Address Reference System Subaddress Rules](#).

1138 2.3.1.3.3 Address Numbering Rules

1139 Address numbering rules specify how numbers are assigned along thoroughfares, including
1140 what features are numbered. They govern when numbers increase, assign even and odd
1141 numbers to sides of streets, and specify the beginning points for numbering. They may also
1142 specify if and how address ranges relate to blocks.

1143 • What Features are Given Address Numbers?

1144 In addition to permanent primary structures, other features that can be numbered
1145 include vacant lots, secondary structures such as detached garages or farm
1146 outbuildings, temporary and seasonal structures, additional entrances of large
1147 buildings, non-structured uses such as open parking lots, infrastructure features such as
1148 cell towers, pump and metering stations, substations and transformers.

1149 • Increase and Interval Rules for Address Numbering

1150 In the United States, address numbers increase according to one of three rules:

- 1151 1. Distance rule - numbers are assigned according to distance along the thoroughfare
1152 (e.g., 1000 numbers per mile, 500 on either side, or 2 per 10.56 feet).
- 1153 2. "Hundred block" Rule - where streets are laid out in a regular city grid, each block
1154 may be given a range of 100 numbers (50 per side), e.g. the 1400 block of Cherry
1155 Street. Within each block, numbers may be allocated by distance, or
1156 proportionally to the length of the block. If blocks have a fixed length (e.g. ten per
1157 mile), then this rule can work just like a distance rule.

1158 3. Sequentially - properties or buildings are numbered sequentially, regardless of
1159 distance or blocks. The numbers may increase by twos, or they may increase by a
1160 larger interval (4, 6, 8, 14, etc.) to leave intermediate numbers for future divisions
1161 of land.

1162 • Parity Rules

1163 Parity rules assign even numbers to one side of the thoroughfare and odd numbers to
1164 the other side.

1165 • Point(s) of Beginning for Numbering

1166 In axial address reference systems, numbering begins where a thoroughfare intersects
1167 (or would intersect) its axis. In non-axial systems, the point of beginning is defined
1168 separately for each thoroughfare. Many non-axial systems follow the federal and state
1169 highway milepost practice of starting numbering at the southern or western end of the
1170 thoroughfare (or boundary of a jurisdiction), and increasing numbers to the north or
1171 east.

1172 • Block Rules and Address Range Rules

1173 These rules derive from the increase and interval rules described above. The [Address](#)
1174 [Reference System Block Rules](#) define how the system is organized into blocks for
1175 addressing purposes, and whether blocks break at intersections and begin with a new
1176 series of numbers, or whether numbering is sequentially ordered along a street without
1177 regard to intersecting streets. Such rules also define what constitutes a block break, as
1178 many systems do not recognize alleys, or three-way (T) intersections as block breaks.

1179

1180 Address ranges are created using the low and high numbers for each block or other
1181 unit defined by the system. Rules pertaining to address ranges are contained with the
1182 [Address Reference System Block Rules](#).

1183 **2.3.1.3.4 Street Naming Rules**

1184 Street naming rules define what [Street Names](#) may be allowed or prohibited, rules to prevent
1185 duplicate names, any language considerations, and whether [Street Names](#) must follow
1186 particular themes or orders (such as themes for names in subdivisions, or alphabetical or
1187 numerical orders).

1188 **2.3.1.3.5 Street Name Type, Directional, and Modifier Rules**

1189 The [Address Reference System Street Type Directional And Modifier Rules](#) govern the use of
1190 street types, directionals and quadrants, and modifiers in [Complete Street Names](#). Street type
1191 rules might specify a limited list of approved types (such as the list in USPS Publication 28
1192 Appendix C.2), whether the type must precede or follow the street name, and whether specific
1193 types are reserved for thoroughfares with specific functional characteristics. Directional rules
1194 include whether a quadrant or cardinal direction (or rarely both) is required, optional or
1195 prohibited in an address, and, if so, whether it must precede or follow the street name and type.
1196 Modifier rules may to allow or prohibit [Street Name Pre Modifiers](#) or [Street Name Post](#)
1197 [Modifiers](#), or specify which modifiers are permitted.

1198 2.3.1.3.6 Subaddress Rules

1199 These rules, if included, cover the naming and recording of any subaddresses within
1200 structures, such as apartments, office suites, campuses, mobile home parks, industrial plants,
1201 malls and retail centers with multiple tenants, etc.

1202 2.3.1.3.7 Place Name, State, Country and ZIP Code Rules

1203 These rules define the specific allowable combinations of a Place Name, State, and ZIP code
1204 in the Address Reference System, and provide input to checking these elements for quality.
1205 Unlike other elements of the address, which must be defined locally, [State Name](#)
1206 abbreviations and [ZIP Codes](#) are defined by the USPS, and [Country Names](#) are defined by
1207 international standard (ISO 3166-1).

1208 2.3.1.3.8 Address Axis Rules

1209 An [Address Reference System Axis](#) defines the points of beginning for address numbers for
1210 the streets that intersect it. The [Address Reference System Axis](#) pairs are often the "dividers"
1211 for quadrants, or directional designations. Finally, an [Address Reference System Axis](#) may
1212 also function as "rulers" to define block breaks and address ranges for thoroughfares with
1213 similar directionality (e.g. north-south, or east-west streets) within the [Address Reference](#)
1214 [System](#).

1215 In theory, every street within an axial [Address Reference System](#) can be linked to an axis,
1216 either by intersection, or a virtual extension of the street centerline to the axis, or by
1217 interpolation (for streets that are set at an angle to the axes, and cannot be projected to intersect

with only one of the axes). In practice, however, most jurisdictions with axial [Address Reference System](#) create a "grid" by using major through streets to create "blocks" of equal address ranges. For each [Address Reference System Axis](#) an [Address Reference System Axis Point Of Beginning](#) must be identified. These elements are used only within Axial systems.

2.3.1.3.9 Reference Polyline, Breakpoint, and Breakline and Polygon Elements

The Reference Polyline, Breakpoint, Breakline and Polygon elements are utilized primarily for quality assurance and address assignment purposes. These are optional elements used in Axial systems.

An address grid can be constructed by identifying the [Address Reference System Range Breakpoints](#) on a sufficient number of streets in the [Address Reference System](#), and then joining equivalent breakpoints with an [Address Reference System Range Breakline](#). By developing these breaklines, a set of areas are defined for each range of 100 (or some specified number of) numbers, and within them, shorter streets can be accurately addressed. If desired, the [Address Reference System Range Breaklines](#) can be used within a GIS environment to create polygons with equal address range values. These are then stored as [Address Reference System Range Polygon](#). Streets used for the development of the breakpoints and breaklines (including the [Address Reference System Axis](#) elements can be identified using the [Address Reference System Reference Polyline](#) element.

Together, [Address Reference System Axis](#), [Address Reference System Reference Polyline](#), [Address Reference System Range Breakpoint](#), [Address Reference System Range Breakline](#), [Address Reference System Range Polygon](#) form a geographic reference framework for the

1239 overall address numbering system within an axial [Address Reference System](#). The framework
 1240 guides assignment of new address numbers, and it provides the basis for important quality
 1241 assurance tests.

1242

1243 2.3.2 Address Reference System Elements

1244 2.3.2.1 Address Reference System ID

Element Name	Address Reference System ID
Other common names for this element	
Definition	A unique identifier of the Address Reference System for a specified area (Address Reference System Extent).
Definition Source	New
Data Type	Integer
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Examples	For examples, see the Complex Element: Address Reference System .
Notes/Comments	The Address Reference System ID provides a reliable attribute to link an individual address record or a group of address records to a specific Address Reference System . This attribute identifies the specific rules that should be used in evaluating the address record. The Address Reference System ID must be unique to the Address Authority.
XML Tag	<AddressReferenceSystemId>

XML Model	<xsd:simpleType name="AddressReferenceSystemId_type"> <xsd:restriction base="xsd:integer" /> </xsd:simpleType>
XML Example	<AddressReferenceSystemId>55</AddressReferenceSystemId>
Quality Measures	Tabular Domain Measure
Quality Notes	Where geometry for the address reference system is available, the boundaries should be checked as well to support spatial queries.

1245

1246 **2.3.2.2 Address Reference System Name**

Element Name	Address Reference System Name
Other common names for this element	
Definition	The name of the address system used in a specified area (Address Reference System Extent).
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Examples	For examples, see the Complex Element: Address Reference System .
Notes/Comments	In some cases, the Address Reference System Name may simply be the city or county name, such as "Town of Fairplay Address Reference System." In other cases, it may provide a name for the address reference system for a smaller area within a jurisdiction, such as "Boulder County Mountain Addressing System."
XML Tag	<AddressReferenceSystemName>
XML Model	<xsd:simpleType name="AddressReferenceSystemName_type">

	<xsd:restriction base="xsd:string" /> </xsd:simpleType>
XML Example	<AddressReferenceSystemName>Mountain Addressing Scheme</AddressReferenceSystemName> <AddressReferenceSystemName>pre-1990 System</AddressReferenceSystemName>
Quality Measures	Tabular Domain Measure
Quality Notes	Where geometry for the address reference system is available, the boundaries should be checked as well to support spatial queries.

1247

1248 **2.3.2.3 Address Reference System Authority**

<u>Element Name</u>	Address Reference System Authority
Other common names for this element	
Definition	The name of the authority or jurisdiction responsible for the creation and/or maintenance of an Address Reference System for a given area.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	None.
Source of Values	Local
How Defined	Defined locally
Example	City of Orono, ME; Commander, Bolling Air Force Base, Washington, DC
Notes/Comments	The agency responsible for creating or maintaining an Address Reference System may or may not be the same as the Address Authority responsible for assigning and maintaining the addresses in a given area.
XML Tag	<AddressReferenceSystemAuthority>

XML Model	<pre><xsd:simpleType name="AddressReferenceSystemAuthority_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemAuthority>Commander, Bolling Air Force Base</AddressReferenceSystemAuthority> <AddressReferenceSystemAuthority>City of Orono</AddressReferenceSystemAuthority></pre>
Quality Measure	Tabular Domain Measure
Quality Notes	

1249

1250 **2.3.2.4 Address Reference System Extent**

<u>Element Name</u>	Address Reference System Extent
Other common names for this element	
Definition	Boundary of the area(s) within which an Address Reference System is used.
Definition Source	New
Data Type	Geometry (MultiSurface), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	NA
Domain of Values for this Element	Coordinate values within the geometric areal extent of the Address Reference System
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	Locally defined.
Examples	Address Reference System Extent: <pre><gml:MultiSurface> <gml:surfaceMember> <gml:Polygon></pre>

	<pre> <gml:exterior> <gml:LinearRing> <gml:posList>1000 1000 1000 25000 20000 1000 20000 25000 1000 1000</gml:posList> </gml:LinearRing> </gml:exterior> </gml:Polygon> </gml:surfaceMember> </gml:MultiSurface> </pre>
Notes/Comments	<p>An Address Reference System may include the entire area of a city or county jurisdiction, or it may only include a portion thereof. Military bases, and some university campuses are addressed under Address Reference Systems that are maintained by the Base Commander for military bases, and by the State Department of Education (or the University system) for campuses. These often exist within the boundaries of a city, and are within county areas as well, but have their own schemes.</p> <p>Each Address Reference System is defined geographically, and should not (although many do so) overlap other Address Reference Systems that are in current use.</p> <p>Historical Address Reference System extents may be maintained, especially where an area under a county Address Reference System has been annexed into a city. The city may choose to maintain the county's numbering, and it will be useful, if additional development occurs, to have access to the previous Address Reference System to insure correct and consistent addressing with it.</p>
XML Tag	<AddressReferenceSystemExtent>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystemExtent_type"> <xsd:complexContent> <xsd:restriction base="gml:MultiSurfaceType"/ > </xsd:complexContent> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystemExtent> <gml:MultiSurface> <gml:surfaceMember> <gml:Polygon> <gml:exterior> <gml:LinearRing> <gml:posList>1000 1000 1000 25000 20000 1000 20000 25000 </pre>

	<pre> 1000 1000</gml:posList> </gml:LinearRing> </gml:exterior> </gml:Polygon> </gml:surfaceMember> </gml:MultiSurface> </AddressReferenceSystemExtent> </pre>
Quality Measures	None
Quality Notes	Check the boundary against the Address Reference System Description .

1251

1252 **2.3.2.5 Address Reference System Type**

<u>Element Name</u>	Address Reference System Type
Other common names for this element	
Definition	The category of address reference system in use. The type of reference system determines and guides the assignment of numbers within the Address Reference System Extent .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Yes: Axial, Linear Non-Axial, Area Based
Source of Values	FGDC Address Data Content Standard, Part One
How Defined	Local determination
Example	The Address Reference System for the District of Columbia is an axial (grid) system.
Notes/Comments	<p>1. An Address Reference System Type identifies the overall classification of the reference system.</p> <p>2. The types include:</p> <p>a) Axial systems based on setting forth a framework consisting of streets, or other geometric lines to identify address numbering rules. Axial type systems include:</p>

	<p>i) grids based on either the street pattern, a geographic set of lines such as those forming the Public Land Survey System Grid, longitude and latitude lines or similar lines.</p> <p>ii) Radial patterns organized around primary arterial streets originating at a central point.</p> <p>b) Linear Non-axial systems, often found in areas of complex terrain where streets do not tend to travel in straight lines for any distance.</p> <p>i) Distance based systems in which each road has a defined starting point, and</p> <p>ii) Other types of linear organizational constructs that create a logical framework in which addresses are assigned.</p> <p>c) Area-based systems where the address numbers in a specified area are assigned by a non-geometric method, including chronological (where a number is assigned in the order in which a building or property is created regardless of its location), or by lot numbers (where these are not arranged in the usual sequential patterns found in axial and linear non-axial systems), or other means.</p> <p>3. Some of these systems may have sub-types. In grid systems, some provide for 100 numbers per "block", others are numbered sequentially without regard for block breaks. In places with radial street patterns, axis streets or lines may originate at one or more places. In some cases a grid or radial pattern may extend beyond its original area, and be expanded in an outlying area using numbering that is continued from the original area.</p> <p>4. The basis for numbering within any of these systems is created as an attribute of the system. Numbering rules are documented in the Address Reference System Numbering Rules element. It is expected to be applied consistently throughout the extent of the reference system, although in practice this is often not true. Additional information on Address Reference Systems may be found in the Address Reference Systems Introduction.</p>
XML Tag	<AddressReferenceSystemType>
XML Model	<pre> <xsd:simpleType name="AddressReferenceSystemType_type"> <xsd:restriction base="xsd:string"> <xsd:enumeration value="Axial"></xsd:enumeration> <xsd:enumeration value="Grid"></xsd:enumeration> <xsd:enumeration value="Radial"></xsd:enumeration> <xsd:enumeration value="Linear Non- </pre>

	Axial"></xsd:enumeration> <xsd:enumeration value="Distance"></xsd:enumeration> <xsd:enumeration value="Area Based"></xsd:enumeration> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressReferenceSystemType>Grid</AddressReferenceSystemType>
Quality Measure	Tabular Domain Measure
Quality Notes	

1253

1254 2.3.2.6 Complex Element: Address Reference System Rules

Element Name	Address Reference System Rules
Other common names for this element	Addressing Rules
Definition	The rules by which address numbers, street names and other components of a thoroughfare address are determined.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined, see component elements
Source of Values	Local
How Defined	Defined locally, often by ordinance and encoded in terms of a spatial referencing system, described in the file-level metadata per FGDC's Content Standard for Digital Geospatial Metadata
Example	See component elements.
Notes/Comments	The rules are dependent upon the type of Address Reference System , and may also be explicitly provided in the component elements of Address Reference System Rules , or they may be referenced in the Address Reference System Reference Document Citation .
XML Tag	<AddressReferenceSystemRules>

XML Model	<pre> <xsd:complexType name="AddressReferenceSystemRules_type"> <xsd:sequence> <xsd:element name="AddressReferenceSystemBlockRules" type="addr_type:AddressReferenceSystemBlockRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> <xsd:element name="AddressReferenceSystemNumberingRules" type="addr_type:AddressReferenceSystemNumberingRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> <xsd:element name="AddressReferenceSystemStreetNamingRules" type="addr_type:AddressReferenceSystemStreetNamingRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> <xsd:element name="AddressReferenceSystemStreetTypeDirectionalAndModifierRules" type="addr_type:AddressReferenceSystemStreetTypeDirectionalAndModifierRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> <xsd:element name="AddressReferenceSystemPlaceNameStateCountyAndZipCodeRules" type="addr_type:AddressReferenceSystemPlaceNameStateCountyAndZipCodeRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> <xsd:element name="AddressReferenceSystemSubaddressRules" type="addr_type:AddressReferenceSystemSubaddressRules_type" minOccurs="0" maxOccurs="unbounded"></xsd:element> </xsd:sequence> </xsd:complexType> </pre>
XML Example	
Quality Measures	Address Reference System Rules Measure
Quality Notes	

1255

1256 2.3.2.6.1 Address Reference System Block Rules

<u>Element Name</u>	<u>Address Reference System Block Rules</u>
Other common names for this element	
Definition	This element defines a block in an Address Reference Svstem. and

	sets forth the rules for block ranges and block breaks.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally, often by ordinance and encoded in terms of a spatial referencing systems, described in the file-level metadata per FGDC's Content Standard for Digital Geospatial Metadata
Example	<p>1. "A block is defined as a street segment between its points of intersection with other street segments at either end."</p> <p>2. A block shall contain 100 address numbers, and shall begin with the 00 value on one side, and the 01 value on the other side."</p> <p>3. "A block shall be defined as one mile along a single street regardless of the intersection of the street with any other streets."</p>
Notes/Comments	Parity, meaning the definition of which side of a street shall be given the odd numbers and which side the even numbers in a range is defined in the Address Range Parity element.
XML Tag	<AddressReferenceSystemBlockRules>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemBlockRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<AddressReferenceSystemBlockRules>A block is defined as a street segment between its points of intersection with other street segments at either end.</AddressReferenceSystemBlockRules>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1258 2.3.2.6.2 Address Reference System Numbering Rules

Element Name	Address Reference System Numbering Rules
Other common names for this element	
Definition	The rules for numbering along a thoroughfare, including parity (odd/even side definition), and numbering increment distance and value.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined.
Source of Values	Local
How Defined	Defined locally
Example	Address Numbering Rules: Odd numbers are on the south and west, and even numbers on the north and east sides of all streets. There will be one address increment allocated every 5.28 feet, resulting in 1000 addresses possible in each mile of road. The addresses will increase by a value of one unit at each increment.
Notes/Comments	<ol style="list-style-type: none"> 1. In assigning addresses it is important to know which side of a street should be assigned odd numbers, and which even. 2. Additionally, the distance between numbers should be specified. In some cases, this is given as a number of feet or meters, while in others, it is given as a number of addresses per block or per mile. 3. The amount by which the address number is to be increased at each increment should be defined. In many cases the next sequential number is used, e.g. 1, 3, 5, etc., while in other cases, the increment may be 2 units, 4 units or any other number determined appropriate by the Address Reference System Authority. 4. If any specific numbers are to be prohibited for local reasons, these should be identified here as well. 5. The rules for how blocks are numbered and where breaks occur are listed in the Address Reference System Block Rules element.

XML Tag	<AddressReferenceSystemNumberingRules>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemNumberingRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemNumberingRules> 1. In assigning addresses it is important to know which side of a street should be assigned odd numbers, and which even. 2. Additionally, the distance between numbers should be specified. In some cases, this is given as a number of feet or meters, while in others, it is given as a number of addresses per block or per mile. 3. The amount by which the address number is to be increased at each increment should be defined. In many cases the next sequential number is used, e.g. 1, 3, 5, etc., while in other cases, the increment may be 2 units, 4 units or any other number determined appropriate by the Address Reference System Authority. </AddressReferenceSystemNumberingRules></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1259

1260 2.3.2.6.3 Address Reference System Street Naming Rules

Element Name	Address Reference System Street Naming Rules
Other common names for this element	
Definition	The rules for the selection and use of street names within an Address Reference System
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined

Source of Values	Local
How Defined	Defined locally, often by ordinance or regulation
Example	<p>1. Street names shall not be duplicated within the extent of the City of Anywhere Address Reference System.</p> <p>2. Streets running north-south shall be numbered, beginning at Main Street, and shall be called Avenues, while streets running east-west shall be given letter names (e.g. A, B, C) and shall be Streets.</p> <p>3. Street names that are vulgar, profane, obscene, or contain racial, ethnic, religious or sexual terms shall not be permitted.</p> <p>4. Streets within a subdivision shall have a theme, such as animals, birds, flowers, trees, etc. to unify the street naming and give the subdivision identify.</p>
Notes/Comments	Specific street naming rules are helpful in maintaining unique street names and preserving existing patterns of street names that were historically established.
XML Tag	<AddressReferenceSystemStreetNamingRules>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemStreetNamingRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemStreetNamingRules> 1. Street names shall not be duplicated within the extent of the City of Anywhere Address Reference System. 2. Streets running north-south shall be numbered, beginning at Main Street, and shall be called Avenues, while streets running east-west shall be given letter names (e.g. A, B, C) and shall be Streets. 3. Street names that are vulgar, profane, obscene, or contain racial, ethnic, religious or sexual terms shall not be permitted. 4. Streets within a subdivision shall have a theme, such as animals, birds, flowers, trees, etc. to unify the street naming and give the subdivision identify. </AddressReferenceSystemStreetNamingRules></pre>
Quality Measures	See Address Reference System Rules Measure .

Quality NotesSee [Address Reference System Rules Measure](#).

1261

1262 **2.3.2.6.4 Address Reference System Street Type Directional And Modifier Rules**

<u>Element Name</u>	Address Reference System Street Type Directional And Modifier Rules
Other common names for this element	
Definition	Rules pertaining to the use of street types (suffix and prefix), directionals (prefix and suffix), and modifiers (prefix and suffix) of street names.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally, often by ordinance or regulation
Example	<p>1. Only those street types included in the Anytown Address Reference System list of street types may be used in Anytown.</p> <p>2. Prefix types may be used.</p> <p>3. Only the words "Old" and "New" may be used as Pre-Modifiers. The words "Extended", "Bypass" and "Overpass" may be used as post-modifiers.</p>
Notes/Comments	<p>1. Many communities have specific rules about the street types that are permitted, and further rules about the functional classes of streets to which various types can be applied. For example, the type "Boulevard" may only be used with a primary arterial, while "Court" may only be used with a short (one block) cul-de-sac or dead-end road. Additionally, the use of prefix types (e.g. "Avenue B", or "Calle San Antonio") is regulated in some places.</p> <p>2. The use of directionals is often complex. In some Axial Address Reference Systems, quadrants are defined for specific areas</p>

	<p>bounded by the Axes. In others, the part of the area in which a street is located is described by "North" or "West". The Address Reference System provides that these rules and the areas described for the use of directionals can be documented.</p> <p>3. Modifiers are words that are separated from the name by either types or directionals. The use of these may be regulated by local rules which are documented in this element.</p> <p>4. The U.S. Postal Service, in Publication 28 provides a list of recognized street types, and directional values. The USPS does not recognize prefix types, and includes them with the Street Name (not recommended by this Standard), and also requires that any street type not included in Appendix C of Publication 28 be incorporated into the Street Name (also not recommended by this Standard). Modifiers are also not recognized separately by the USPS. For mailing purposes, the Complete Street Name element concatenates all of the parts of a Street Name, and is compatible with USPS standards.</p>
XML Tag	<AddressReferenceSystemStreetTypeDirectionalAndModifierRules>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemStreetTypeDirectionalAndModifierRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemStreetTypeDirectionalAndModifierRules> 1. Only those street types included in the Anytown Address Reference System list of street types may be used in Anytown. 2. Prefix types may be used. 3. Only the words "Old" and "New" may be used as Pre-Modifiers. The words "Extended", "Bypass" and "Overpass" may be used as post-modifiers. </AddressReferenceSystemStreetTypeDirectionalAndModifierRules></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1264

2.3.2.6.5 Address Reference System Place Name State Country And ZIP Code Rules

Element Name	Address Reference System Place Name State Country And ZIP Code Rules
Other common names for this element	
Definition	This element contains rules for the use of place names, state names, country names, and ZIP Codes within the jurisdiction of an Address Authority .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	Existing Rules for State Name abbreviations and Country Name abbreviations (see those elements for citations).
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally, often by ordinance and regulation
Example	<p>1. "All addresses within the Extent of this Address Reference System shall have the Municipal Place Name of "Anytown" and the State Name of "OHIO".</p> <p>2. "The following community Place Names may be used within this Address Reference System Extent: New Hope, Pine Level, Red Oak Village. The areas of these communities are shown on the map attached to the Address Ordinance for Any County."</p>
Notes/Comments	The combinations of place names with state names, and ZIP Codes are defined by the Address Authority for all areas within Address Reference System Extent . For all areas outside the Extent, which are found in the mailing addresses used by a local government, or other user, the USPS is usually the best source of the proper association of a place name (community, city or place) with a State Name , and ZIP Code. For Country Names , rules usually specify how a Country Name will be used (fully spelled out, abbreviated, etc.) may be documented here. Further information on the standards and rules that are applied to State Names and Country Names are found in the element descriptions.
XML Tag	<AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules>
XML Model	<xsd:simpleType

	<pre>name="AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules> 1. "All addresses within the Extent of this Address Reference System shall have the Municipal Place Name of "Anytown" and the State Name of "OHIO"." 2. "The following community Place Names may be used within this Address Reference System Extent: New Hope, Pine Level, Red Oak Village. The areas of these communities are shown on the map attached to the Address Ordinance for Any County." </AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1265

1266 2.3.2.6.6 Address Reference System Subaddress Rules

<u>Element Name</u>	<u>Address Reference System Subaddress Rules</u>
Other common names for this element	
Definition	The rules that are applied to the addressing of areas within structures as subaddresses (units, suites, apartments, spaces, etc.) within a given Address Reference System
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally, often by ordinance or procedures manual.
Example	1. Apartments are addressed using a four digit number where the

	<p>first number represents the building, the second number the floor on which the unit is located, and the third and fourth numbers the individual apartment unit.</p> <p>2. In a multi-story building, suites will be numbered in a clockwise manner from the elevator lobby, using even numbers on the right hand side, and odd numbers on the left hand side of the hallway. If the hallway is a single corridor, then the numbers will be assigned from one end of the structure to the other, in the same direction as the addresses on the street on which the building is addressed.</p>
Notes/Comments	The rules for subaddresses may include the methods by which subaddresses are applied in a given situation. The rules may also specify the words that are allowed to identify subaddress types, such as unit, suite, space, apartment, and to prohibit the use of others.
XML Tag	<AddressReferenceSystemSubaddressRules>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemSubaddressRules_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemSubaddressRules> 1. Apartments are addressed using a four digit number where the first number represents the building, the second number the floor on which the unit is located, and the third and fourth numbers the individual apartment unit. 2. In a multi-story building, suites will be numbered in a clockwise manner from the elevator lobby, using even numbers on the right hand side, and odd numbers on the left hand side of the hallway. If the hallway is a single corridor, then the numbers will be assigned from one end of the structure to the other, in the same direction as the addresses on the street on which the building is addressed. </AddressReferenceSystemSubaddressRules></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1267

1268 **2.3.2.7 Address Reference System Axis**

<u>Element Name</u>	<u>Address Reference System Axis</u>
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Other common names for this element	
Definition	The line that defines the points of origin for address numbering along thoroughfares that intersect it, or which are numbered in parallel to streets that intersect it. It may be a road, another geographic feature, or an imaginary line.
Definition Source	New
Data Type	Geometry (MultiCurve), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally, often by ordinance and encoded in terms of a spatial referencing systems, described in the file-level metadata per FGDC's Content Standard for Digital Geospatial Metadata
Example	<p>Address Reference System Axis:</p> <pre> <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </pre>
Notes/Comments	<p>1. An Address Reference System Axis creates the beginning point for assigning Complete Address Numbers to thoroughfares that cross it, and it may guide the assignment of Complete Address Numbers along parallel thoroughfares.</p> <p>2. An Address Reference System Axis is typically a road, but it may also be a line derived from a Public Land Survey System (PLSS) grid or a river (common in riverfront cities), a rail line, or an imaginary line (e.g. the east-west centerline of the national mall in Washington, DC).</p>

	<p>3. Axis lines may cross, radiate or branch.</p> <p>4. It may also provide a "measuring device" for the extension of numbers along parallel streets, especially where there is a gap in development within a scheme.</p> <p>5. Axis lines may also define quadrants or areas in which certain directionals may be required for street names and addresses.</p>
XML Tag	<code><AddressReferenceSystemAxis></code>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystemAxis_type"> <xsd:complexContent> <xsd:restriction base="gml:MultiCurveType"> </xsd:restriction> </xsd:complexContent> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystemAxis> <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </AddressReferenceSystemAxis> </pre>
Quality Measures	Address Reference System Axes Point Of Beginning Measure
Quality Notes	

1269

1270 2.3.2.7.1 Address Reference System Axis Point Of Beginning

Element Name	Address Reference System Axis Point Of Beginning
Other common names for this element	Axis Origin Point
Definition	Coordinate location of the beginning point of address numbering along an Address Reference System Axis .

Definition Source	New
Data Type	Geometry (Point) as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	N/A
Domain of Values for this Element	Coordinate location of the beginning point for address numbers along an address axis.
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	Point location defined locally, often by ordinance, and encoded in terms of a spatial referencing system, described in file-level metadata per FGDC's Content Standard for Geospatial Metadata.
Example	<p>Definition</p> <p>For Washington DC: The US Capitol Building (point of origin for North, South, and East Capitol Streets and the Capitol Mall, which divide DC into four quadrants, NW, NE, SE, and SW). Address numbers increase along those four axes as one travels away from the Capitol Building, and all other streets are addressed more or less in parallel with one of the axis streets, and every address must include a quadrant designation.</p> <p>Element</p> <p>:</p> <pre><gml:Point> <gml:pos>15000,15000</gml:pos> </gml:Point></pre> <p>For additional examples, please see the Complex Element: Address Reference System</p>
Notes/Comments	The origin point for an Address Reference System Axis may be the same or may differ from the origin point for other Address Reference System Axis lines in the same Address Reference System .
XML Tag	<AddressReferenceSystemAxisPointOfBeginning>
XML Model	<pre><xsd:complexType name="AddressReferenceSystemAxisPointOfBeginning_type"> <xsd:complexContent> <xsd:extension base="gml:PointType"></xsd:extension> </xsd:complexContent> </xsd:complexType></pre>
XML Example	<AddressReferenceSystemAxisPointOfBeginning>

	<pre> <gml:Point> <gml:pos>15000,15000</gml:pos> </gml:Point> </AddressReferenceSystemAxisPointOfBeginning> </pre>
Quality Measures	Address Reference System Axes Point Of Beginning Measure
Quality Notes	If the Address Reference System Description specifies that the Address Reference System Axis Point Of Beginning for one Address Reference System Axis is at the intersection of another Address Reference System Axis , then use Address Reference System Axes Point Of Beginning Measure .

1271

1272 2.3.2.7.2 Address Reference System Reference Polyline

Element Name	AddressReferenceSystemReferencePolyline
Other common names for this element	
Definition	A street, geometric line, or other line used to measure address number assignment intervals and ranges within an Address Reference System . The Address Reference System Reference Polyline may consist of a beginning point, one or more segments of a street centerline, geographically identified line, such as a line of latitude or longitude, a land-division based line, such as a township, range, or section line, or an imaginary line constructed for the purpose of allocating address ranges and address numbers.
Definition Source	New
Data Type	Geometry (MultiCurve), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	None
Domain of Values for this Element	Can be created locally.
Source of Values	Local jurisdiction
Attributes Associated with this Element	Address Range Side , Address Range Parity , Address Range Span , Address Range Type , Address Reference System Range Breakpoint , Address Reference System Range Breakline

How Defined	Locally
Example	<p>Address Reference System Reference Polyline:</p> <pre> <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </pre>
Notes/Comments	<p>Theoretically, every street or other access route to an address within an Address Reference System can be construed as an Address Reference System Reference Polyline. However, in practice, where a framework of axes exists, a selection of major through streets is often used to identify breaks in address ranges, and to assist in locating the correct Address Range for a given local street. Every Complete Address Number is related to an Address Reference System Reference Polyline.</p> <ol style="list-style-type: none"> 1. In an axial type Address Reference System, all Address Reference System Reference Polylines are, or could, by extension, be connected to one of the Address Reference System Axis lines. Each of the Address Reference System Reference Polylines has its Point of Beginning at the vertex of its intersection with the axis. 2. In a non-axial Address Reference System, a specific Point of Beginning is defined by the Address Reference System Authority for each Address Reference System Reference Polyline at the point where numbering for that polyline is commenced.
XML Tag	<AddressReferenceSystemReferencePolyline>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystemReferencePolyline_type"> <xsd:complexContent> <xsd:restriction base="gml:MultiCurveType"></xsd:restriction> </xsd:complexContent> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystemReferencePolyline> <gml:MultiCurve> <gml:curveMember> </pre>

	<pre> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </AddressReferenceSystemReferencePolyline> </pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1273

1274 2.3.2.7.3 Address Reference System Range Breakpoint

Element Name	AddressReferenceSystemRangeBreakpoint
Other common names for this element	
Definition	A point along a street or other thoroughfare within an Address Reference System where an address range beginning and/or endpoint is located.
Definition Source	New
Data Type	Geometry (Point), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	None
Domain of Values for this Element	Can be created locally.
Source of Values	Local jurisdiction
Attributes Associated with this Element	Address Range Span , Address Range Side , Address Range Parity , Address Reference System Range Breakline
How Defined	By Address Reference System rules
Example	Address Reference System Range Breakpoint : <pre> <gml:Point> <gml:pos>15000,15000</gml:pos> </pre>

	</gml:Point>
Notes/Comments	<p>1. Address Reference System Range Breakpoints may occur at intersections, or they may be defined by distances, or address number increments. They represent the point at which one address range is ended, and another begins. This is usually defined at the break from one series of 100 to the next, where ranges are defined as 100-199, 200-299, etc. In an axial type Address Reference System, where a grid of streets is formed, these breakpoint almost always occur at intersections. Where an axial system is based on other geometry, such as township/range/section lines, they may occur at the point where one unit ends and the next begins (e.g. a section line, or township or range line). In a non-axial system, ranges are normally based on distance (e.g. 1000 numbers per mile), and the breakpoints may be identified by their distance from the 0 point for the road.</p> <p>2. Address Reference System Range Breakpoints may be connected within the Address Reference System Extent to other points having the same value (connecting all the points that represent the breakpoint between the 100-199 Address Range and the 200-299 Address Range) to create an Address Reference System Range Breakline. Such Address Reference System Range Breaklines are useful in assignment of new addresses, and in quality review of existing references to determine whether or not they fall within the Address Range with which they are associated. For further information on Address Reference System Range Breaklines, refer to the element.</p>
XML Tag	<AddressReferenceSystemRangeBreakpoint>
XML Model	<pre><xsd:complexType name="AddressReferenceSystemRangeBreakpoint_type"> <xsd:complexContent> <xsd:extension base="gml:PointType"> </xsd:extension> </xsd:complexContent> </xsd:complexType></pre>
XML Example	<pre><AddressReferenceSystemRangeBreakpoint> <gml:Point> <gml:pos>15000,15000</gml:pos> </gml:Point> </AddressReferenceSystemRangeBreakpoint></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1276 2.3.2.7.4 Address Reference System Range Breakline

Element Name	AddressReferenceSystemRangeBreakline
Other common names for this element	
Definition	A line connecting the Address Reference System Range Breakpoints with the same value within an Address Reference System
Definition Source	New
Data Type	Geometry (MultiCurve), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	None
Domain of Values for this Element	Based on range values in Address Reference System .
Source of Values	Local jurisdiction
Attributes Associated with this Element	
How Defined	
Example	<p>Address Reference System Range Breakline:</p> <pre> <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </pre>
Notes/Comments	The Address Reference System Range Breakline provides address assignment and quality assurance personnel with a means of identifying which ranges apply within a given area of an Address Reference System . In axial (or grid) type systems, with roughly rectangular blocks, these lines should be relatively straight and parallel. However, in less regular topography, or where the street pattern is more irregular, these

	lines may converge or diverge. They should not cross. The lines are constructed in an axial system by connecting all of the Address Reference System Range Breakpoints that have identical values (for example those that represent the beginning of the "1200" block, and where the low values are 1200 and 1201 for left low and right low.)
XML Tag	<AddressReferenceSystemRangeBreakline>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystemRangeBreakline_type"> <xsd:complexContent> <xsd:restriction base="gml:MultiCurveType"> </xsd:restriction> </xsd:complexContent> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystemRangeBreakline> <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList> </gml:LineStringSegment> </gml:segments>/gml:Curve> </gml:curveMember> </gml:MultiCurve> </AddressReferenceSystemRangeBreakline> </pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1277

1278 2.3.2.7.5 Address Reference System Range Polygon

Element Name	AddressReferenceSystemRangePolygon
Other common names for this element	
Definition	A polygon created by connecting the Address Reference System Range Breaklines with the same value within an Address Reference System

Definition Source	New
Data Type	Geometry (MultiSurface), as defined in the Open Geospatial Consortium's "OpenGIS(R) Geography Markup Language (GML)" version 3.1.1 (see Part 6: References for a complete citation)
Existing Standards for this Element	None
Domain of Values for this Element	Based on range values in Address Reference System .
Source of Values	Local jurisdiction
Attributes Associated with this Element	Address Reference System Range Breakpoint , Address Reference System Range Breakline , Address Reference System Reference Polyline
How Defined	
Example	<p>Address Reference System Range Polygon:</p> <pre> <gml:MultiSurface> <gml:surfaceMember> <gml:Polygon> <gml:exterior> <gml:LinearRing> <gml:posList>1000 1000 1000 25000 20000 1000 20000 25000 1000 1000</gml:posList> </gml:LinearRing> </gml:exterior> </gml:Polygon> </gml:surfaceMember> </gml:MultiSurface> </pre>
Notes/Comments	<p>The Address Reference System Range Polygon provides address assignment and quality assurance personnel with a means of identifying which ranges apply within a given area of an Address Reference System. In axial (or grid) type systems, with roughly rectangular blocks, these polygons should create an area of a long band where all of the addresses are or should be within a given block range. However, in less regular topography, or where the street pattern is more irregular, these polygons may be less coherent. They must not overlap. The lines are constructed in an axial system by connecting all of the Address Reference System Range Breaklines that have identical values and extending the polygon to the Address Reference System Range Breakline with the next higher value (for example those that represent the beginning of the "1200"</p>

	block, and where the low values are 1200 and 1201 for left low and right low.)
XML Tag	<code><AddressReferenceSystemRangePolygon></code>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystemRangePolygon_type"> <xsd:complexContent> <xsd:restriction base="gml:MultiSurfaceType"> </xsd:restriction> </xsd:complexContent> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystemRangePolygon> <gml:MultiSurface> <gml:surfaceMember> <gml:Polygon> <gml:exterior> <gml:LinearRing> <gml:posList>1000 1000 1000 25000 20000 1000 20000 25000 1000 1000</gml:posList> </gml:LinearRing> </gml:exterior> </gml:Polygon> </gml:surfaceMember> </gml:MultiSurface> </AddressReferenceSystemRangePolygon> </pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1279

1280 **2.3.2.8 Address Reference System Reference Document Citation**

<u>Element Name</u>	Address Reference System Reference Document Citation
Other common names for this element	Address Ordinance, Address Manual
Definition	A bibliographic reference to an ordinance, map, manual, or other document in which the rules governing an Address Reference System are written.
Definition Source	New
Data Type	characterString

Existing Standards for this Element	None
Domain of Values for this Element	Locally defined
Source of Values	Local
How Defined	Defined locally
Example	"Rules for the Anytown Address Reference System are found in the Anytown Address Ordinance, Chapter 15, Sections 1-29, of the Anytown Municipal Code (www.ci.anytown.na.us)"
Notes/Comments	The citation should be used initially, until all of the rules are documented within the Address Reference System Rules elements. However, once all of the rules are documented, the citation must be maintained to provide valuable source information for users.
XML Tag	<AddressReferenceSystemReferenceDocumentCitation>
XML Model	<pre><xsd:simpleType name="AddressReferenceSystemReferenceDocumentCitation_ type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressReferenceSystemReferenceDocumentCitation> "Rules for the Anytown Address Reference System are found in the Anytown Address Ordinance, Chapter 15, Sections 1-29, of the Anytown Municipal Code (www.ci.anytown.na.us)" </AddressReferenceSystemReferenceDocumentCitation></pre>
Quality Measures	See Address Reference System Rules Measure .
Quality Notes	

1281

1282 **2.3.2.9 Complex Element: Address Reference System**

Element Name	Address Reference System
Other common names for this element	Addressing system, address numbering system, address numbering grid, house numbering system, street numbering system
Definition	An Address Reference System is a set of rules and geometries that define how addresses are assigned along thoroughfares

	<p>and/or within a given area (Address Reference System Extent). At minimum, an Address Reference System must specify where Complete Address Number sequences begin and how Complete Address Numbers are assigned along the length of thoroughfares governed by the Address Reference System within the Address Reference System Extent. Address Reference Systems typically provide rules governing left-right parity of Complete Address Numbers, assignment of Street Names and street types, use of directionals and quadrants, and other aspects of address assignment. An Address Reference System that is based on axis lines, an Address Reference System Axis defined for each axis used to define address assignment. Each Address Reference System Axis must have an identified Address Reference System Axis Point Of Beginning. An Address Reference System is known by its Address Reference System Name (required). Additional business rules for an Address Reference System are described in the Address Reference System Rules.</p>
Definition Source	New
Data Type	Abstract
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 (e.g., locally, from standard, other)	Refer to Component Elements
Example	<p>Address Reference System Name: Metro City Address Grid Address Reference System Axis Point Of Beginning: <gml:Point> <gml:pos>15000,15000</gml:pos> </gml:Point></p> <p>Address Reference System Axis: <gml:MultiCurve> <gml:curveMember> <gml:Curve> <gml:segments> <gml:LineStringSegment> <gml:posList>1000 15000 20000 15000 </gml:posList></p>

```

</gml:LineStringSegment>
</gml:segments>/gml:Curve>
</gml:curveMember>
</gml:MultiCurve>

```

[Address Reference System Axis Point Of Beginning:](#)

```

<gml:Point>
<gml:pos>15000,15000</gml:pos>
</gml:Point>

```

[Address Reference System Axis:](#)

```

<gml:MultiCurve>
<gml:curveMember>
<gml:Curve>
<gml:segments>
<gml:LineStringSegment>
<gml:posList>1000 15000 20000 15000
</gml:posList>
</gml:LineStringSegment>
</gml:segments>/gml:Curve>
</gml:curveMember>
</gml:MultiCurve>

```

[Address Reference System Extent:](#)

```

<gml:MultiSurface>
<gml:surfaceMember>
<gml:Polygon>
<gml:exterior>
<gml:LinearRing>
<gml:posList>1000 1000 1000 25000 20000 1000 20000
25000 1000 1000</gml:posList>
</gml:LinearRing>
</gml:exterior>
</gml:Polygon>
</gml:surfaceMember>
</gml:MultiSurface>

```

[Address Reference System Rules:](#) Written information about parity, street naming conventions, numbering intervals, grids, and other business rules. (Contains elements including [Address Reference System Block Rules](#), [Address Reference System Numbering Rules](#), [Address Reference System Street Naming Rules](#), [Address Reference System Street Type Directional And Modifier Rules](#), [Address Reference System Place Name State Country And ZIP Code Rules](#)

	<p>Address Reference System Authority: Name of agency (municipality, county, other) that has authority over the scheme's business rules, extent and other parameters.</p>
Notes/Comments	<p>1. Address Reference System Extents may overlap.</p> <p>2. There are three broad types of Address Reference Systems: Axial, linear non-axial and area based.</p> <p>* Axial The Address Reference System is based on streets or geometric lines which form the basis for address numbering. The axes are often oriented more or less at 90 degrees to each other to define quadrants or directions. The grid may be deformed by topography, rivers, rail lines or other features. This is by far the most common type in the United States; Chicago is but one of many clear examples.</p> <p>* Linear Non-axial. Each thoroughfare has its own beginning point for Complete Address Numbers, independent of the other thoroughfares in the Address Reference System. This is common, for example, in rural areas where the road network is sparse and street segments are long. This term may also apply to places where the address numbers are not based on thoroughfares at all.</p> <p>* Area-based. An Address Reference System may not be based on street geometry, but number assignment is done according to chronology (when a structure was addressed), or parcel or lot numbers.</p> <p>3. A jurisdiction may have more than one addressing scheme within its area, and its Address Reference System(s) may change over time. Occasionally addresses from different schemes are intermingled along the same block face, which complicates the assignment of an address range to that block face. This may be the result of annexation of developed properties with existing addresses from one jurisdiction to another.</p>
XML Tag	<AddressReferenceSystem>
XML Model	<pre> <xsd:complexType name="AddressReferenceSystem" > <xsd:sequence> <xsd:element name="AddressReferenceSystemId" type="addr_type:AddressReferenceSystemId_type" maxOccurs="1" minOccurs="1"/> <xsd:element name="AddressReferenceSystemName" type="addr_type:AddressReferenceSystemName_type" maxOccurs="1" minOccurs="1"/> <xsd:element name="AddressReferenceSystemAuthority" type="addr_type:AddressReferenceSystemAuthority_type" </pre>

	<pre> maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemExtent" type="addr_type:AddressReferenceSystemExtent_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemType" type="addr_type:AddressReferenceSystemType_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemRules" type="addr_type:AddressReferenceSystemRules_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemAxis" type="addr_type:AddressReferenceSystemAxis_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemAxisPointOfBeginning" type="addr_type:AddressReferenceSystemAxisPointOfBeginning_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemReferencePolyline" type="addr_type:AddressReferenceSystemReferencePolyline_type" maxOccurs="unbounded" minOccurs="0"/> <xsd:element name="AddressReferenceSystemRangeBreakpoint" type="addr_type:AddressReferenceSystemRangeBreakpoint_type" maxOccurs="1" minOccurs="0"/> <xsd:element name="AddressReferenceSystemRangeBreakline" type="addr_type:AddressReferenceSystemRangeBreakline_type" maxOccurs="unbounded" minOccurs="0"/> <xsd:element name="AddressReferenceSystemReferenceDocumentCitation" type="addr_type:AddressReferenceSystemReferenceDocumentCitation_type" maxOccurs="unbounded" minOccurs="0"/> </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <AddressReferenceSystem> <AddressReferenceSystemId>MCAG Unified</AddressReferenceSystemId> <AddressReferenceSystemName>Metro City Address Grid</AddressReferenceSystemName> <AddressReferenceSystemType>Grid</AddressReferenceSystemType> </AddressReferenceSystem> </pre>
Quality Measures	Address Reference System Rules Measure

Quality Notes

1283

1284 **2.4 Address Attributes**1285 **2.4.1 Address ID**1286 **2.4.1.1 Address ID**

<u>Element Name</u>	<u>Address ID</u>
Other common names for this element	
Definition	The unique identification number assigned to an address by the addressing authority
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	Primary key, issued locally
How Defined (e.g., locally, from standard, other)	Locally
Example:	Integer ID: 1243286 UUID: 550e8400-e29b-11d4-a716-446655440000
Notes/Comments	<p>1. The Address ID is a required element of an address data record. The ID must be unique for each address assigned by an Address Authority. The Address ID may be either a locally generated unique ID, or it may be a Universally Unique ID (UUID) which is machine-generated within the database environment.</p> <p>2. IDs are almost always integers, and integer ID's are much easier to manage. However, some ID schemes use hyphens, leading zeros, or other non-integer characters, so the standard also accommodates alphanumeric IDs.</p>

	Notes and Reference Information on UUID <ol style="list-style-type: none"> 1. A UUID is presented as a 16-byte (128-bit) number written in hexadecimal form computed according to a UUID algorithm. At least five algorithms have been developed. 2. UUIDs are documented in two standards, ITU-T X.667 and IETF RFC 4122 (see Part 6: References for complete references). The two standards are technically consistent. 3. The standard provides for a UUID as a means to identify an address while it is passed from the originating source through a chain of intermediaries to the end-user. The need arises because there exists within the United States no central coordinating body to identify and register addresses. There is not even a registry of the authorities empowered to create addresses, nor is one likely to be created. 4. "The intent of UUIDs is to enable distributed systems to uniquely identify information without significant central coordination. Thus, anyone can create a UUID and use it to identify something with reasonable confidence that the identifier will never be unintentionally used by anyone for anything else. Information labeled with UUIDs can therefore be later combined into a single database without need to resolve name conflicts." (quoted from Wikipedia, "Universally Unique Identifier", as posted 6 September 2009 at: http://en.wikipedia.org/wiki/Universally_Unique_Identifier)
XML Tag	<AddressID>
XML Model	<pre><xsd:simpleType name="AddressId_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<AddressID>550e8400-e29b-11d4-a716-446655440000</AddressID>
Quality Measures	Uniqueness Measure
Quality Notes	

1287

1288 **2.4.1.2 Address Authority**

Element Name	Address Authority
------------------------------	-----------------------------------

Other common names for this element	
Definition	The name of the authority (e.g., municipality, county) that created or has jurisdiction over the creation, alteration, or retirement of an address
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	None
Source of Values	None
How Defined (e.g., locally, from standard, other)	Locally
Example	<ol style="list-style-type: none"> 1. Florence County, SC 2. City of Boulder, CO 3. University of Georgia, Athens, GA (for addresses within the campus) 4. Hartsfield-Jackson International Airport, Clayton County, GA (for addresses within the airport) 5. Bolling Air Force Base, Washington, DC (for addresses within the base)
Notes/Comments	<ol style="list-style-type: none"> 1. The Address Authority is the agency responsible for assigning and administering addresses in a given area. 2. The Address Authority is also responsible for providing unique Address I Ds for the addresses it administers. Thus the Address Authority name plus the ID in combination are likely to be unique nationwide. 3. The Address Authority may or may not be the same as the municipal or postal jurisdiction noted for the address. In a given area, there may be multiple authorities, a single authority or no known authority with jurisdiction over address assignment. For example, a state agency may be the Address Authority for a university campus within the municipal boundaries of a city. 4. Contact information for Address Authority will be found in the dataset metadata.
XML Tag	<AddressAuthority>
XML Model	<pre><xsd:simpleType name="AddressAuthority_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /></pre>

	</xsd:restriction> </xsd:simpleType>
XML Example	<AddressAuthority>City of Boulder, CO</AddressAuthority> <AddressAuthority>University of Georgia, Athens, GA</AddressAuthority>
Quality Measures	Tabular Domain Measure
Quality Notes	

1289

1290 **2.4.1.3 Related Address ID**

Element Name	Related Address ID
Other common names for this element	
Definition	The identifier of an address that is related to the identifier of another address.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	None
Source of Values	None
How Defined (e.g., locally, from standard, other)	Locally
Examples:	See examples under Address Relation Type
Notes/Comments	<ol style="list-style-type: none"> 1. The Related Address ID is used to relate one address identifier to another address identifier. 2. In database terms, the Related Address ID is linked to the Address ID in a linking table or relationship table. Logically, a Related Address ID cannot exist unless it is associated with an Address ID. 3. In some cases, the Related Address ID designates an alternate address at the same location, for example, a Landmark Address associated with a Numbered Thoroughfare Address, or an official

	<p>address with its alias, or a retired address in the same location as an active address.</p> <p>4. In other cases, the Related Address ID designates an address at a different location, for example, the address of a property owner (if the owner does not live on the property), or a property's tax billing address (if it is sent to the mortgage holder).</p> <p>5. The Address Relation Type attribute can be used to record how the address identified by the Related Address ID is related to the address identified by the Address ID. (See Address Relation Type example and notes for additional discussion of Related Address ID.)</p>
XML Tag	<RelatedAddressID>
XML Model	<pre><xsd:complexType name="RelatedAddressID_type"> <xsd:simpleContent> <xsd:extension base="addr_type:AddressID_type"> <xsd:attribute name="AddressRelationType" type="addr_type:AddressRelationType_type" /> </xsd:extension> </xsd:simpleContent> </xsd:complexType></pre>
XML Example	<RelatedAddressID Address Relation Type ="Historical Predecessor" >250</RelatedAddressID>
Quality Measures	Repeated Element Uniqueness Measure Related Not Null Measure Tabular Domain Measure
Quality Notes	

1291

1292 **2.4.1.4 Address Relation Type**

<u>Element Name</u>	Address Relation Type
Other common names for this element	
Definition	The manner in which an address identified by a Related Address ID is related to an address identified by an Address ID .
Definition Source	New
Data Type	characterString

Required Element	None.
Existing Standards for this Element	None
Domain of Values for this Element	May be created locally to standardize terms used to describe relationships.
How Defined (e.g., locally, from standard, other)	New
Example	<p>1. 123 Main St (Address ID = 1000) is also known as the "Grand Old Office Building" (a landmark name, Address ID = 5000). Then for: Related Address ID = 5000, Address ID = 1000, Address Relation Type = Landmark Name Alias Related Address ID = 1000, Address ID = 5000, Address Relation Type = Official Street Address</p> <p>2. Tax bills for 123 Main St (Address ID = 1000) should be sent to PO Box 150080, Omaha, NE 68153 (Address ID = 8000). Correspondence for the owner should be sent to 108 East Burnside Street, Portland, OR 97214. (Address ID = 10267). Then for: Related Address ID = 8000, Address ID = 1000, Address Relation Type = Tax Billing Related Address ID = 10267, Address ID = 1000, Address Relation Type = Owner Mailing</p> <p>3. 123 Main Street was created years ago when 101 Main Street (Address ID = 250) was subdivided into several properties. Then for: Related Address ID = 250, Address ID = 1000, Address Relation Type = Historical Predecessor</p> <p>4. This particular part of Main Street is part of State Route 88. 123 Main Street (Address ID = 1000) is the official address, but 123 State Route 88 (Address ID = 8943) is also recognized. Then for: Related Address ID = 8943, Address ID = 1000, Address Relation Type = Official Alias Address Related Address ID = 1000, Address ID = 8943, Address Relation Type = Official Address</p> <p>5. A large building occupies an entire square block in a downtown area. It has a main entrance to its public lobby at 123 Main Street. However, its loading dock, mail and goods receiving entry, and</p>

	<p>trash pickup location are on the "back" of the building, which faces Elm Street, and is given the address of 222 Elm Street. In this instance, the main entrance at 123 Main Street has Address ID = 456, while the service entrance at 222 Elm Street has Address ID = 789. The Relationship would be:</p> <p>Address ID = 456, Related Address ID = 789, Address Relation Type = Service Entrance, and conversely Address ID = 789, Related Address ID = 456, Address Relation Type = Official Street Address.</p>
Notes/Comments	<ol style="list-style-type: none"> 1. This element describes how two addresses, identified by their Related Address ID and Address ID respectively, are related. Relationships may be defined and described in any way, according to the needs of the user. To maximize efficiency and clarity, users should establish a limited, standard set of descriptors that meet local needs. 2. To minimize ambiguity, the descriptors should state how the Related Address ID is related to the Address ID, not the other way around. 3. To minimize clutter, short connector words such as "is", "are", "for", "of", etc. may be omitted from the descriptors if the meaning is otherwise clear. 4. Examples 1, 3, and 4 above show how Related Address ID can be used to link an address to its alias addresses or to its historical predecessor address. 5. Example 1 above shows that two addresses must have reciprocal relations, each being designated by the Address ID in one case and the Related Address ID in the other. 6. Example 5 shows how one feature (such as a large building) may have more than one address, each with a different purpose (official street address vs. service entrance). 7. Example 2 above shows that Related Address ID may designate an address that is outside the control of, and perhaps distant from, the Address Authority that created the address it is related to. It is common, for example, for owners to live in different states from properties they own, or for tax bills to be sent to out-of-state mortgage service addresses.
XML Tag	AddressRelationType
XML Model	<pre><xsd:simpleType name="AddressRelationType_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<RelatedAddressID AddressRelationType="Historical

	Predecessor" >250</RelatedAddressID>
Quality Measures	Tabular Domain Measure
Quality Notes	

1293

1294 **2.4.2 Address Coordinates**1295 **2.4.2.1 Address X Coordinate**

Element Name	Address X Coordinate
Other common names for this element	
Definition	The X coordinate of the address location.
Definition Source	New
Data Type	Real
Existing Standards for this Element	Yes
Domain of Values for this Element	Spatial extent of the jurisdiction(s).
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	By reference to a coordinate reference system (see note below).
Example	750908.0469
Notes/Comments	Address X Coordinate values can be interpreted only if their coordinate system, datum, units of measure, and any other coordinate reference system parameters are provided. The parameters can be documented in the dataset metadata, per FGDC's Content Standard for Digital Geospatial Metadata, or by inclusion of the Address Coordinate Reference System Authority and Address Coordinate Reference System ID in each address record. See Address Coordinate Reference System Authority and Address Coordinate Reference System ID for more information.
XML Tag	<AddressXCoordinate>
XML Model	<xsd:simpleType name="AddressXCoordinate_type">

	<pre><xsd:restriction base="xsd:double"> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><AddressXCoordinate>750908.0469</AddressXCoordinate></pre>
Quality Measures	XY Coordinate Completeness Measure XY Coordinate Spatial Measure
Quality Notes	

1296

1297 **2.4.2.2 Address Y Coordinate**

<u>Element Name</u>	<u>Address Y Coordinate</u>
Other common names for this element	
Definition	The Y coordinate of the address location.
Definition Source	New
Data Type	Real
Existing Standards for this Element	Yes
Domain of Values for this Element	Spatial extent of the jurisdiction(s).
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	By reference to a coordinate reference system.
Example	3740623.0628
Notes/Comments	<p>Address Y Coordinate values can be interpreted only if their coordinate system, datum, units of measure, and any other coordinate reference system parameters are provided. The parameters can be documented in the dataset metadata, per FGDC's Content Standard for Digital Geospatial Metadata, or by inclusion of the Address Coordinate Reference System Authority and Address Coordinate Reference System ID in each address record. See Address Coordinate Reference System Authority and Address Coordinate Reference System ID for more information.</p>
XML Tag	<pre><AddressYCoordinate></pre>

XML Model	<xsd:simpleType name="AddressYCoordinate_type"> <xsd:restriction base="xsd:double"> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressYCoordinate>3740623.0628 </AddressYCoordinate>
Quality Measures	XY Coordinate Completeness Measure XY Coordinate Spatial Measure
Quality Notes	

1298

1299 **2.4.2.3 Address Longitude**

Element Name	Address Longitude
Other common names for this element	
Definition	The longitude of the address location, in decimal degrees.
Definition Source	New
Data Type	Real
Existing Standards for this Element	Adapted from FGDC, "Content Standard for Digital Geospatial Metadata (CSDGM)", which refers to the following standard: ANSI INCITS 61-1986 (R2002), "Representation of Geographic Point Locations for Information Interchange".
Domain of Values for this Element	Spatial extent of the jurisdiction(s).
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	By reference to a coordinate reference system.
Example	-84.29049105
Notes/Comments	Address Longitude values can be interpreted only if their coordinate system, datum, units of measure, and any other coordinate reference system parameters are provided. The parameters can be documented in the dataset metadata, per FGDC's Content Standard for Digital Geospatial Metadata, or by inclusion of the Address Coordinate Reference System Authority and Address Coordinate Reference System ID in each address record. See Address Coordinate Reference System Authority and

	Address Coordinate Reference System ID for more information.
XML Tag	<AddressLongitude>
XML Model	<pre><xsd:simpleType name="AddressLongitude_type"> <xsd:restriction base="xsd:double"> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<AddressLongitude>-84.29049105</AddressLongitude>
Quality Measures	XY Coordinate Completeness Measure XY Coordinate Spatial Measure
Quality Notes	

1300

1301 **2.4.2.4 Address Latitude**

<u>Element Name</u>	Address Latitude
Other common names for this element	
Definition	The latitude of the address location, in decimal degrees.
Definition Source	New
Data Type	Real
Existing Standards for this Element	Adapted from FGDC, "Content Standard for Digital Geospatial Metadata (CSDGM)", which refers to the following standard: ANSI INCITS 61-1986 (R2002), "Representation of Geographic Point Locations for Information Interchange".
Domain of Values for this Element	Spatial extent of the jurisdiction(s).
Source of Values	Source of spatial data collection.
How Defined (e.g., locally, from standard, other)	By reference to a coordinate reference system.
Example	33.77603207
Notes/Comments	Address Latitude values can be interpreted only if their coordinate system, datum, units of measure, and any other coordinate reference system parameters are provided. The parameters can be documented in the dataset metadata, per FGDC's Content Standard for Digital Geospatial Metadata, or by

	inclusion of the Address Coordinate Reference System Authority and Address Coordinate Reference System ID in each address record. See Address Coordinate Reference System Authority and Address Coordinate Reference System ID for more information.
XML Tag	<AddressLatitude>
XML Model	<pre><xsd:simpleType name="AddressLatitude_type"> <xsd:restriction base="xsd:double"> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<AddressLatitude>33.77603207</AddressLatitude>
Quality Measures	XY Coordinate Completeness Measure XY Coordinate Spatial Measure
Quality Notes	

1302

1303 2.4.2.5 US National Grid Coordinate

Element Name	US National Grid Coordinate
Other common names for this element	USNG Coordinate
Definition	<p>The USNG is an alphanumeric point reference system that overlays the Universal Transverse Mercator (UTM) numerical coordinate system.</p> <p>A USNG coordinate consists of three parts, the:</p> <ol style="list-style-type: none"> 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	<p>Adapted from US National Grid, FDGC-STD-011-2001, Section 3.3</p> <p>Quoted from: Tom Terry, "The United States National Grid." <i>Professional Surveyor Magazine</i>. Oct. 2004, p. 12.</p>
Data Type	characterString
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 (from standard, other)	As prescribed in FGDC-STD-011-2001.
Example	<p>18SUJ2348306479 or 18S UJ 23483 06479</p> <p>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</p>
Notes/Comments	<p>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. The USNG is based on universally defined coordinate and grid systems and can, therefore, be easily extended for use world-wide as a universal grid reference system.</p> <p>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.</p> <p>3. While their coordinates are the same, the key difference between MGRS and USNG is in the 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.</p> <p>4. The USNG is not intended for surveying, nor is it intended to replace the coordinate reference system used for digital mapping by local authorities (typically, local or state plane coordinate systems). USNG 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 geocoded address point data with low cost consumer grade GPS receivers and properly gridded maps.</p>

	5. USNG provides a flexible numbering scheme to accommodate variable precision from tens of kilometers to one meter or higher.
XML Tag	<USNationalGridCoordinate>
XML Model	<pre><xsd:simpleType name="LocationUSNG_type"> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><USNationalGridCoordinate>18SUJ2348306479</USNationalGridCoordinate></pre> <pre><USNationalGridCoordinate>18S UJ 2348306479</USNationalGridCoordinate></pre>
Quality Measures	USNG Coordinate Spatial Measure
Quality Notes	<p>There are a variety of ways to check USNG coordinate values. Due to the complexity of the USNG standard entire working functions are offered as examples, rather than pseudocode: coord2usng, converting Universal Transverse Mercator (UTM) coordinates to USNG, and usng2coord, converting USNG to UTM.</p> <ol style="list-style-type: none"> 1. The coord2usng function requires both UTM and longitude latitude coordinates, and calculates the UTM zone on the fly. This method was chosen due to common confusion about zone numbers. There are a variety of other ways to structure the conversion. 2. Usng2coord requires only USNG, and is fairly straightforward.

1304

1305 2.4.2.6 Address Elevation

<u>Element Name</u>	<u>Address Elevation</u>
Other common names for this element	Altitude, height, Z-coordinate
Definition	Distance of the address in specified units above or below a vertical datum, as defined by a specified coordinate reference system.
Definition Source	New
Data Type	Real
Existing Standards for this	Yes

Element	
Domain of Values for this Element	None
Source of Values	Locally defined.
How Defined (e.g., locally, from standard, other)	By reference to a coordinate reference system.
Examples	1023.0 (elevation in specified units above a specified vertical datum)
Notes/Comments	Address Elevation values can be interpreted only if their units of measure, vertical datum, and any other coordinate reference system parameters are provided. The parameters can be documented in the dataset metadata, per FGDC's Content Standard for Digital Geospatial Metadata, or by inclusion of the Address Coordinate Reference System Authority and Address Coordinate Reference System ID in each address record. See Address Coordinate Reference System Authority and Address Coordinate Reference System ID for more information.
XML Tag	<AddressElevation>
XML Model	<pre><xsd:simpleType name="AddressElevation_type"> <xsd:restriction base="xsd:double"> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<AddressElevation>1023.0</AddressElevation>
Quality Measures	Address Elevation Measure
Quality Notes	

1306

1307 **2.4.2.7 Address Coordinate Reference System ID**

g	Address Coordinate Reference System ID
Other common names for this element	Spatial Reference ID (SRID)
Definition	A name or number which, along with the Address Coordinate Reference System Authority , identifies the coordinate reference system to which Address X Coordinate and Address Y Coordinate , Address Latitude and Address Longitude , US National Grid

	Coordinate , or Address Elevation values are referenced.
Definition Source	New
Data Type	Integer
Existing Standards for this Element	Yes
Domain of Values for this Element	May be defined by the Address Coordinate Reference System Authority .
Source of Values	Address Coordinate Reference System Authority .
How Defined (e.g., locally, from standard, other)	Address Coordinate Reference System Authority .
Example	EPSG 2893 Wisconsin State Cartographer's Office, " Dane County Coordinate System "
Notes/Comments	<p>1. A coordinate location cannot be determined without knowledge of the coordinate reference system (CRS) by which the specific coordinate values are defined. The CRS itself is defined by a set of geodetic parameters. The parameters vary according to the type of CRS, but may include, for example, datum, unit of measure, or projection. When the CRS and its geodetic parameters are known, the address location can be determined unambiguously from its coordinates.</p> <p>2. The Address Coordinate Reference System ID, combined with the Address Coordinate Reference System Authority in the complex element Address Coordinate Reference System, identifies the CRS to which the Address X Coordinate and Address Y Coordinate, Address Latitude, Address Longitude, US National Grid Coordinate, or Address Elevation values are referenced. The Address Coordinate Reference System Authority and the Address Coordinate Reference System ID should refer interested persons to an authoritative source where the geodetic parameters can be found, or else complete reference information should be provided in the file-level metadata.</p> <p>3. See Address Coordinate Reference System Authority for additional pertinent notes.</p>
XML Model	<pre><xsd:simpleType name="AddressCoordinateReferenceSystemID_type"> <xsd:restriction base="xsd:integer" /> </xsd:simpleType></pre>
XML Example	<pre><AddressCoordinateReferenceSystem> <AddressCoordinateReferenceSystemAuthority>EPSG Geodetic</pre>

	Parameter Dataset </AddressCoordinateReferenceSystemAuthority> <AddressCoordinateReferenceSystemID>2893</AddressCoordinateReferenceSystemID> </AddressCoordinateReferenceSystem>
Quality Measures	Tabular Domain Measure
Quality Notes	

1308

1309 **2.4.2.8 Address Coordinate Reference System Authority**

Element Name	Address Coordinate Reference System Authority
Other common names for this element	Spatial Reference System Authority
Definition	The Authority that assigns the unique Address Coordinate Reference System ID (number or name) to the Address Coordinate Reference System to which the Address X Coordinate and Address Y Coordinate , Address Latitude and Address Longitude , US National Grid Coordinate , or Address Elevation are referenced.
Definition Source	New.
Data Type	characterString
Existing Standards for this Element	No
Domain of Values for this Element	None
Source of Values	New
How Defined (e.g., locally, from standard, other)	Authority name defined by creator of base map
Examples	1. EPSG Geodetic Parameter Dataset 2. Wisconsin State Cartographer's Office
Notes/Comments	1. Coordinate values specify a location by reference to a grid, spheroid, or geoid. A coordinate location cannot be determined without knowledge of the coordinate reference system (CRS) by which the specific coordinate values are defined. The CRS itself is defined by a set of geodetic parameters. The parameters vary according to the type of CRS, but may include, for example, datum, unit of measure, or projection. When the CRS and its geodetic

parameters are known, the address location can be determined unambiguously from its coordinates.

2. The [Address Coordinate Reference System Authority](#), combined with the [Address Coordinate Reference System ID](#) in the complex element [Address Coordinate Reference System](#), identifies the CRS to which the [Address X Coordinate](#) and [Address Y Coordinate](#), [Address Latitude](#), [Address Longitude](#), [US National Grid Coordinate](#), or [Address Elevation](#) values are referenced. The [Address Coordinate Reference System Authority](#) and the [Address Coordinate Reference System ID](#) should refer interested persons to an authoritative source where the geodetic parameters can be found, or else complete reference information should be provided in the file-level metadata.

3. The EPSG Geodetic Parameter Dataset, maintained and published by the Geodesy Subcommittee of the International Association of Oil and Gas Producers (OGP), is an extensive, authoritative, and public compilation of CRS, the geodetic parameters that define them, and conversion and transformation operations that allow coordinates to be changed from one CRS to another. Within the EPSG dataset, each CRS is identified by a COORD_REF_SYS_CODE. Although it is extensive, the EPSG dataset is not exhaustive. The OGC states, "The geographic coverage of the data is worldwide, but it is stressed that the dataset does not and cannot record all possible geodetic parameters in use around the world."

4. For examples of CRS not included in the EPSG dataset, see the Wisconsin State Cartographers Office's "Wisconsin Coordinate Systems." This publication gives the projection parameters and associated information for the Wisconsin Coordinate Reference Systems used by each of Wisconsin's 72 counties, identified by county name. The EPSG Dataset includes parameters for various versions of the Wisconsin State Plane Coordinate System, but not for each county CRS.

5. If all coordinate values in a dataset are referenced to the same CRS, the CRS should be described in the dataset-level metadata per FGDC's Content Standard for Digital Geospatial Metadata. The [Address Coordinate Reference System Authority](#) and [Address Coordinate Reference System ID](#) may then be omitted from the individual address records.

6. If the address data set includes [Address X Coordinate](#) and [Address Y Coordinate](#), [Address Latitude](#), [Address Longitude](#), or [Address Elevation](#) values based on more than one CRS, each address record should include the [Address Coordinate Reference System Authority](#) and [Address Coordinate Reference System ID](#) to show which system applies to each value.

	<p>7. EPSG Guidance Note 7-1 ("Using the EPSG Geodetic Parameter Dataset") provides a clear, concise explanation of the concepts underlying coordinate reference systems, and of the EPSG dataset and its use. EPSG Guidance Note 7-1 can be found at www.epsg.org under "Guidance notes" or "Geodetic dataset".</p> <p>8. The Wisconsin State Cartographers Office publication also includes a concise, clear explanation of the concepts underlying CRS.</p>
XML Tag	<AddressCoordinateReferenceSystemAuthority>
XML Model	<pre><xsd:simpleType name="AddressCoordinateReferenceSystemAuthority_type"> <xsd:restriction base="xsd:string" /> </xsd:simpleType></pre>
XML Example	<pre><AddressCoordinateReferenceSystem> <AddressCoordinateReferenceSystemAuthority>EPSG Geodetic parameter Dataset </AddressCoordinateReferenceSystemAuthority> <AddressCoordinateReferenceSystemID>2893</AddressCoordinate ReferenceSystemID> </AddressCoordinateReferenceSystem></pre>
Quality Measure	Tabular Domain Measure
Quality Notes	

1310

1311 2.4.2.9 Complex Element: Address Coordinate Reference System

Element Name	Address Coordinate Reference System
Other common names for this element	
Definition	{ Address Coordinate Reference System Authority * } + { Address Coordinate Reference System ID * }
Data Type	characterString
Existing Standards for this Element	No
Domain of Values for this Element	No
Source of Values	

How Defined (e.g., locally, from standard, other)	From base mapping
Example	EPSG:12349
Notes/Comments	The Address Coordinate Reference System combines the Address Coordinate Reference System Authority and the Address Coordinate Reference System ID . Together they form a unique identifier for any coordinate reference system that might define the coordinate values associated with an address, whether an Address X Coordinate , Address Y Coordinate , Address Latitude , Address Longitude , or Address Elevation
XML Tag	<AddressCoordinateReferenceSystem>
XML Model	<pre> <xsd:complexType name="AddressCoordinateReferenceSystem_type"> <xsd:sequence> <xsd:element name="AddressCoordinateReferenceSystemAuthority" type="AddressCoordinateReferenceSystemAuthority_type" /> <xsd:element name="AddressCoordinateReferenceSystemID" type="AddressCoordinateReferenceSystemID_type"></xsd:element > </xsd:sequence> </xsd:complexType> </pre>
XML Example	<pre> <AddressCoordinateReferenceSystem> <AddressCoordinateReferenceSystemAuthority>EPSG Geodetic Parameter Dataset </AddressCoordinateReferenceSystemAuthority> <AddressCoordinateReferenceSystemID>2893</AddressCoordinate ReferenceSystemID> </AddressCoordinateReferenceSystem> </pre>
Quality Measures	Pattern Sequence Measure
Quality Notes	

1312

1313 2.4.3 Address Parcel IDs

1314 2.4.3.1 Address Parcel Identifier Source

Element Name	Address Parcel Identifier Source
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Other common names for this element	
Definition	The permanent identifier for the agency, organization, or jurisdiction that assigns and maintains the Address Parcel Identifier . Definition source: FGDC, May 2008. "Geographic Information Framework Data Content Standard Part 1: Cadastral." Section 4.7.
Data Type	characterString
Existing Standards for this Element	None.
Domain of Values for this Element	None.
Source of Values	None.
How Defined (e.g., locally, from standard, other)	By local government (typically county government) law or administrative procedure, as governed by state law.
Example	Chester County (PA) Tax Assessment Department Bureau of Land Records Wake County (NC) Revenue Department Delaware County (OH) Auditor's Office
Notes/Comments	1. The Address Parcel Identifier Source designates the agency, organization or jurisdiction that assigns and maintains the Address Parcel Identifier . 2. If known, give the full name of the agency (department, office, etc.) rather than just the jurisdiction name. 3. In giving a jurisdiction name, if possible follow known naming standards, such as the ANSI (formerly FIPS) names or codes for states and counties, or GNIS names or codes for minor civil divisions, populated places, and other features.
XML Tag	<AddressParcelIdentifierSource>
XML Model	<xsd:simpleType name="AddressParcelIdentifierSource_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressParcelIdentifierSource>Wake County (NC) Revenue Department </AddressParcelIdentifierSource>
Quality Measures	Tabular Domain Measure
Quality Notes	

1316 **2.4.3.2 Address Parcel Identifier**

<u>Element Name</u>	<u>Address Parcel Identifier</u>
Other common names for this element	Parcel Identifier Number, PIN number
Definition	<p>The primary permanent identifier, as defined by the Address Parcel Identifier Source, for a parcel that includes the land or feature identified by an address. A parcel is "a single cadastral unit, which is the spatial extent of the past, present, and future rights and interests in real property."</p> <p>Definition source for "parcel identifier": Adapted from FGDC, May 2008. "Geographic Information Framework Data Content Standard Part 1: Cadastral." Section 4.2.</p> <p>Definition source for "parcel": FGDC, May 2008. "Cadastral Data Content Standard for the National Spatial Data Infrastructure." Version 1.4 – Fourth Revision. p. 45. (Part 3.2 "Parcel")</p>
Data Type	characterString
Existing Standards for this Element	Determined by local ordinance or procedure, or in some cases by state law.
Domain of Values for this Element	Determined by local procedure.
Source of Values	Address Parcel Identifier Source
How Defined (e.g., locally, from standard, other)	By local procedure, as it may be governed by local ordinance or state law.
Example	<p>5142301020000 (= the address identifies the land or a feature within parcel 5142301020000)</p> <p>07660254993-000 (= the address identifies the land or a feature within parcel 07660254993-000)</p> <p>176-N-075 (= the address identifies the land or a feature within parcel 176-N-075)</p>
Notes/Comments	<p>1. Parcels and addresses are created independently of each other. Some addresses locate features on one parcel only, and some addresses locate features that encompass multiple parcels. There are addresses that locate features that are not on tax parcels, but that are on ownership parcels such as federally-managed lands or public rights of way. Conversely there are parcels that have no address at all, parcels that have one address, and parcels that have many addresses (e.g. large parcels that front on or encompass more than one thoroughfare).</p>

	<p>2. Thus no specific address-parcel relationship can be assumed. Addresses and parcels should be treated as independent of each other, and the relationship between should be treated, in relational database terms, as a many-to-many relationship. By providing an Address Parcel Identifier and an Address Parcel Identifier Source, the address standard provides a means to link an address with any number of parcels, and to link a parcel with any number of addresses.</p> <p>3. The Address Parcel Identifier corresponds to the Parcel ID element in the Cadastral Standard. The Parcel ID is the primary key that identifies each record or occurrence in the Parcel entity. That, plus the Address Parcel Identifier Source, are the only parcel elements included or needed within the address standard. All other parcel elements are defined within the Cadastral Standard and need not be repeated here.</p>
XML Tag	<code><AddressParcelIdentifier></code>
XML Model	<pre> <xsd:simpleType name="AddressParcelIdentifier_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<code><AddressParcelIdentifier>07660254993-000</AddressParcelIdentifier></code>
Quality Measures	Uniqueness Measure Pattern Sequence Measure
Quality Notes	

1317

1318 2.4.4 Address Transportation Feature IDs

1319 2.4.4.1 Address Transportation System Name

Element Name	Address Transportation System Name
Other common names for this element	Street centerline file, road network file, street network file, centerline network file
Definition	The name of the transportation base model to which the address

	is related.
Data Type	characterString
Existing Standards for this Element	<ol style="list-style-type: none"> 1. There are no standards specifically for naming specific transportation base models. 2. The content requirements for transportation base models are set forth in: U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base." 3. The Transportation base part is extended by the "Framework Data Content Standard Part 7c: Roads," which sets forth the requirements for road system models. 4. The Framework Data Content Standard Part 7: Transportation is incorporated into this standard by reference.
Domain of Values for this Element	None.
Source of Values	None.
How Defined (e.g., locally, from standard, other)	By Address Transportation System Authority
Example	DC Street Spatial Data Base TIGER/MAF File
Notes/Comments	<ol style="list-style-type: none"> 1. The Transportation Standard base part "defines the data model for describing transportation systems components of transportation systems for the modes [Roads, rail, inland waterways, and transit] that compose the Transportation theme of the NSDI." ("Framework Data Content Standard Part 7: Transportation base", Section 1, "Scope."). 2. All thoroughfare addresses, by definition, are located by reference to a thoroughfare--that is, by reference to a component of the transportation system. In addition, many landmark addresses and some postal addresses may also be so located, by virtue of alias addresses, road frontages, etc. 3. To make explicit the relationship between addresses and transportation networks, to provide a foundation for Address Reference Systems, and to strengthen address data quality testing, the "Framework Data Content Standard Part 7: Transportation" is incorporated by reference into this standard. 4. A thoroughfare is defined in Part 2: Street Address Data Classification as follows: "...a road or other access route by which the addressed feature can be reached... A thoroughfare is typically but not always a road — it may be, for example, a walkway, a railroad, or a river. Most Address Reference Systems pertain only to road systems--addresses are rarely assigned along

	<p>rail lines or waterways.</p> <p>5. Where only roads are of concern, reference should also be made to the "Framework Data Content Standard Part 7c: Roads," which extends the Transportation Standard base part.</p>
XML Tag	<code><AddressTransportationSystemName></code>
XL Model	<pre> <xsd:simpleType name="AddressTransportationSystemName_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<pre> <AddressTransportationSystemName>TIGER/MAF File</AddressTransportationSystemName> </pre>
Quality Measures	Tabular Domain Measure
Quality Notes	

1320

1321 2.4.4.2 Address Transportation System Authority

Element Name	Address Transportation System Authority
Other common names for this element	Department of Transportation, Public Works Department, Roads Department, etc.
Definition	The authority that maintains the transportation base model specified by the Address Transportation System Name , and assigns Address Transportation Feature I Ds to the features it represents.
Data Type	characterString
Existing Standards for this Element	None.
Domain of Values for this Element	None.
Source of Values	None.
How Defined (e.g., locally, from standard, other)	NA
Example	District of Columbia Department of Transportation (Street Spatial Data Base)

	U.S. Census Bureau (TIGER/MAF file)
Notes/Comments	The authority is typically the office or agency responsible for opening, maintaining, and closing the transportation features represented in the transportation base model. In some cases, the data model may be maintained by a federal agency or a private-sector firm.
XML Tag	<code><AddressTransportationSystemAuthority></code>
XML Model	<pre> <xsd:simpleType name="AddressTransportationSystemAuthority_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<pre> <AddressTransportationSystemAuthority>District of Columbia Department of Transportation</AddressTransportationSystemauthority> </pre>
Quality Measures	Tabular Domain Measure
Quality Notes	

1322

1323 2.4.4.3 Address Transportation Feature Type

<u>Element Name</u>	<u>Address Transportation Feature Type</u>
Other common names for this element	Point, centroid; node, intersection; line, arc, segment, edge; path, route
Definition	The type of transportation feature (TranFeature) used to represent an address.
Data Type	characterString
Existing Standards for this Element	<p>For transportation features generally: U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base."</p> <p>For roads features only: U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base," as extended by "Framework Data Content Standard Part 7c: Roads."</p>
Domain of Values for this Element	For transportation features generally: Point event, linear event, transportation point (TranPoint), transportation segment

	(TranSeg), or transportation path (TranPath) For road features only: RoadPointFeatureEvent, RoadLinearFeatureEvent, RoadPoint, RoadSeg, or RoadPath
Source of Values	U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base." See especially Sections 5 (Terms and Definitions), and Section 7 (Requirements).
How Defined (e.g., locally, from standard, other)	For all transportation features: U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base." For road features: "Framework Data Content Standard Part 7c: Roads."
Examples	<p>Point event: parcel centroid, building centroid, etc., located along a thoroughfare.</p> <p>Linear event: parcel frontage, building frontage, etc. located along a thoroughfare</p> <p>Transportation point: Any Intersection Address</p> <p>Transportation segment: A length of road between two intersecting roads (First Street between A Street and B Street)</p> <p>Transportation path: A length of including multiple segments (First Street from beginning to end)</p>
Notes/Comments	<p>1. This element is meaningful only in the context of a transportation base model as defined in the FGDC's "Framework Data Content Standard Part 7." Transportation features are defined therein.</p> <p>2. The type of transportation feature used to represent an address depends on:</p> <p>--a. the class of the address, and</p> <p>--b. (in some cases) how the address is mapped (i.e. as a point, line, or polygon).</p> <p>These relationships are explained more fully in Part 7.4: Appendix D (Section 3) of this standard.</p>
XML Tag	<AddressTransportationFeatureType>
XML Model	<pre><xsd:simpleType name="AddressTransportationFeatureType_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<AddressTransportationFeatureType>RoadPoint</AddressTransportationFeatureType>

Quality Measures	Address Completeness Measure Intersection Validity Measure Segment Directionality Consistency Measure XY Coordinate Completeness Measure XY Coordinate Spatial Measure
Quality Notes	

1324

1325 **2.4.4.4 Address Transportation Feature ID**

Element Name	Address Transportation Feature ID
Other common names for this element	
Definition	The unique identifier assigned to the particular feature that represents an address within a transportation base model.
Data Type	characterString
Existing Standards for this Element	U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base." "Framework Data Content Standard Part 7c: Roads,"
Domain of Values for this Element	Constrained by reference transportation base model.
Source of Values	Reference transportation base model.
How Defined (e.g., locally, from standard, other)	Within reference transportation base model.
Example	9087456
Notes/Comments	<p>1. The reference transportation base model might identify addresses by their Address ID, or it might assign a different identifier within the transportation base model.</p> <p>2. If a different identifier is assigned within the transportation base model, then the Address Transportation Feature ID will serve, within the scope of the address record, as a foreign key to the transportation base model.</p>
XML Tag	<AddressTransportationFeatureID>
XML Model	<pre><xsd:simpleType name="AddressTransportationFeatureId_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /></pre>

	</xsd:restriction> </xsd:simpleType>
XML Example	<AddressTransportationFeatureID>9087456</AddressTransportationFeatureID>
Quality Measures	Pattern Sequence Measure Uniqueness Measure
Quality Notes	

1326

1327 **2.4.4.5 Related Transportation Feature ID**

<u>Element Name</u>	<u>Related Transportation Feature ID</u>
Other common names for this element	
Definition	The unique identifier assigned (within the reference transportation base model) to a transportation feature to which an address is related.
Data Type	characterString
Existing Standards for this Element	U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base." "Framework Data Content Standard Part 7c: Roads."
Domain of Values for this Element	Constrained by reference transportation base model.
Source of Values	Reference transportation base model.
How Defined (e.g., locally, from standard, other)	Within the reference transportation base model.
Example	786542
Notes/Comments	<p>1. Thoroughfare addresses (other than Intersection Addresses) are represented within a transportation base model as point events or linear events, each with a unique Address Transportation Feature ID. These point events and linear events may, turn, be related to one or more transportation segments within the transportation base model. The transportation segment must have a Complete Street Name and an address range that includes the Complete Street Name and Complete Address Number of the address.</p> <p>2. The Related Transportation Feature ID provides the ID, as</p>

	assigned within the transportation base model, of the related segment. 4. Intersection Addresses are related to one or more transportation points within the transportation data model. For Intersection Addresses , the TranPoint ID would be placed within the Related Transportation Feature ID element.
XML Tag	<RelatedTransportationFeatureID>
XML Model	<pre><xsd:simpleType name="RelatedTransportationFeatureId_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<RelatedTransportationFeatureID>786542</RelatedTransportationFeatureID>
Quality Measures	Related Element Uniqueness Measure
Quality Notes	

1328

1329 2.4.5 Address Range Attributes

1330 2.4.5.1 Address Range Type

Element Name	Address Range Type
Other common names for this element	
Definition	<p>This attribute states whether an address range (either a Two Number Address Range or a Four Number Address Range) is actual or potential.</p> <p>Actual range: the low and high Complete Address Numbers are numbers that have been assigned and are in use along the addressed feature.</p> <p>Potential range: the low and high Complete Address Numbers are numbers that would be assigned if all possible numbers were in use along the addressed feature, and there were no gaps between the range and its preceding and following ranges.</p>
Definition Source	New

Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Actual, Potential, Unknown
Source of Values	New
How Defined (e.g., locally, from standard, other)	New
Example	Actual range
Notes/Comments	<p>1. Ranges may be actual or potential.</p> <p>2. Actual ranges give the lowest and highest Complete Address Numbers that have been assigned and are in use along the addressed feature, excluding any addresses that are anomalies, especially with regard to parity or sequence.</p> <p>3. Potential (or theoretical) ranges include all the numbers that could be assigned along the addressed feature based on the Address Reference System Numbering Rules. Potential ranges permit no numbering gaps between the range and its preceding and following ranges. Potential ranges are equal to or broader than actual ranges.</p> <p>4. The Census Bureau uses theoretical ranges in its TIGER files, to ensure continuity from census to census. Potential ranges are also used in Google maps, MapQuest and other online road map and routing services, because they get their data originally from Census TIGER files.</p> <p>5. Theoretical ranges are useful for software, such as some computer aided emergency dispatching applications, that requires continuous ranges along the length of a street.</p> <p>6. Ranges are often used for geocoding, but point matches are preferable.</p> <p>7. When constructing actual ranges, the lowest assigned Address Number and the highest assigned Address Number in use along a given segment are used. However, no Address Number which is an anomaly (as to range parity or side, or for any other reason) is to be used in constructing the actual address range.</p>
XML Tag	<AddressRangeType>
XML Model	<pre><xsd:simpleType name="AddressRangeType_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> This attribute states whether an address range (either a Two</pre>

	<p>Number Address Range or a Four Number Address Range) is actual or potential.</p> <pre> </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:enumeration value="Actual" > <xsd:annotation> <xsd:documentation>the low and high Complete Address Numbers are numbers that have been assigned and are in use along the addressed feature. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Potential" > <xsd:annotation> <xsd:documentation>The low and high Complete Address Numbers are numbers that would be assigned if all possible numbers were in use along the addressed feature, and there were no gaps between the range and its preceding and following ranges. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Unknown" > <xsd:annotation> <xsd:documentation>The relationship between the low and high Complete Address Numbers and the addressed feature is unknown. </xsd:documentation> </xsd:annotation> </xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<AddressRangeType>Actual</AddressRangeType>
Quality Measures	Tabular Domain Measure
Quality Notes	Address Range Type validation is completely dependent on Address Reference System in a given area, and will have to be formulated locally.

1332 **2.4.5.2 Address Range Parity**

<u>Element Name</u>	<u>Address Range Parity</u>
Other common names for this element	
Definition	The set of Address Number Parity values specified in the Address Reference System Numbering Rules for the Address Numbers in an address range.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Even, Odd, Both, None, Unknown
Source of Values	New
How Defined (e.g., locally, from standard, other)	<p>Odd - All Address Numbers in the range have an Address Number Parity of "odd"</p> <p>Even - All Address Numbers in the range have an Address Number Parity of "even"</p> <p>Both - Both even and odd Address Numbers are found in the range</p> <p>None - No Address Number is found within the range</p> <p>Unknown - The parity of the Address Numbers in the range is not known.</p>
Examples	<p>Odd - 101 - 199 Main Street</p> <p>Even - 100 - 198 Main Street</p> <p>Both - 100 - 199 Main Street</p> <p>None - (null) - (null) Main Street (no address numbers assigned to that specific segment)</p>
Notes/Comments	<p>1. Odd and even Address Numbers are usually associated with opposite sides of a thoroughfare. For example, a jurisdiction may have rules within its Address Reference System Rules to consistently assign odd numbers to the "left" side of its thoroughfares and even numbers to the "right" side. (See Address Range Side for how "left" and "right" are defined).</p> <p>2. The Address Range Parity is determined using the Address Reference System Numbering Rules. For theoretical type ranges, the low and high numbers are the lowest and highest numbers of the identified parity found within the identified block within the Address Reference System. For actual ranges, the lowest and</p>

	<p>highest Address Number in use for the selected block are identified and used. Anomalous addresses (e.g., those Address Numbers that have a parity that is not the same as the Address Range Parity are not used in creating the actual Address Range? or in determining the Address Range Parity.</p> <p>3. The expected values for Address Range Parity depend on rules found in the Address Reference System Rules, and are associated with the Address Range Side. If the address range includes addresses from only one side of the thoroughfare, the Address Range Parity is typically but not always "odd" or "even". If the range covers both sides of the thoroughfare, then the Address Range Parity is typically "both"</p> <p>4. If no addresses occur within a range, then the Address Range Parity is "none."</p>
XML Tag	<AddressRangeParity>
XML Model	<pre><xsd:simpleType name="AddressRangeParity_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> The set of Address Number Parity values specified in the Address Reference System Numbering Rules for the Address Numbers in an address range. </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> <xsd:enumeration value="even" > <xsd:annotation> <xsd:documentation> All Address Numbers in the range have an Address Number Parity of "even". </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="odd" > <xsd:annotation> <xsd:documentation> All Address Numbers in the range have an Address Number Parity of "odd". </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="both" > <xsd:annotation> <xsd:documentation></pre>

	<p>Both even and odd Address Numbers are found in the range.</p> <p></xsd:documentation></p> <p></xsd:annotation></p> <p></xsd:enumeration></p> <p><xsd:enumeration value="none" ></p> <p><xsd:annotation></p> <p><xsd:documentation></p> <p>No Address Number is found within the range.</p> <p></xsd:documentation></p> <p></xsd:annotation></xsd:enumeration></p> <p><xsd:enumeration value="unknown" ></p> <p><xsd:annotation></p> <p><xsd:documentation>The parity of the Address Numbers in the range is not known.</p> <p></xsd:documentation></xsd:annotation></xsd:enumeration></p> <p></xsd:restriction></p> <p></xsd:simpleType></p>
XML Example	<AddressRangeParity>odd</AddressRangeParity>
Quality Measures	Address Number Range Parity Consistency Measure
Quality Notes	

1333

1334 **2.4.5.3 Address Range Side**

<u>Element Name</u>	<u>Address Range Side</u>
Other common names for this element	
Definition	The side of a transportation segment (TranSeg) on which the address range is found (right, left or both).
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	right, left, both, unknown
Source of Values	New
How Defined (e.g., locally).	New

from standard, other)	
Example	<p>Elm Street runs south-to-north. For each block, the from-node is at the south end, and the to-node is at the north end. "Right" and "left" are defined by standing at the south (from) end, and facing the north (to) end. The "right" side is in this case the east side, and the "left" side is the west side. (If the from- and to- nodes were reversed, "left" and "right" would also be reversed.)</p>
Notes/Comments	<ol style="list-style-type: none"> 1. Address Range Side has nothing to do with traffic flow or compass direction. 2. Address Range Side states whether the range includes Complete Address Numbers on right side, left side, or both sides of the thoroughfare. 3. "Right" and "left" must be defined by reference to a specific transportation segment (or set of segments) in a particular transportation network model. By definition, every transportation segment has a from-node at one end and a to-node at the other end. The directionality, right side, and left side of the segment are determined by standing at the from-node and facing the to-node. Address Left Right Measure and Address Range Directionality Measure provide tools for determining "left", "right" and directionality. 4. Address Range Directionality can be defined only for a Two Number Address Range or a Four Number Address Range that has been related to a specific transportation segment (or set of segments) in a particular transportation network model. 5. Use the Address Transportation System Name, Address Transportation System Authority, Address Transportation Feature Type, Address Transportation Feature ID, and Related Transportation Feature ID attributes to relate a particular address range to a specific transportation segment (or set of segments) in a specific transportation network model. Transportation segments, and transportation network models generally, are defined and described in the FGDC's "Geographic Information Framework Data Content Standard Part 7: Transportation Base."
XML Tag	<AddressRangeSide>
XML Model	<pre><xsd:simpleType name="AddressRangeSide_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> The side of the transportation segment (right , left, both, none, unknown) on which the address range applies. </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"></pre>

	<pre> <xsd:pattern value='.*' /> <xsd:enumeration value="right" > <xsd:annotation> <xsd:documentation> The address is related to the right side of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="left" > <xsd:annotation> <xsd:documentation> The address is related to the left side of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="both"> <xsd:annotation> <xsd:documentation> The address pertains to both sides of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="none" > <xsd:annotation> <xsd:documentation>The address is not on either or both sides of the street or the concept of side of street does not apply to the address. For instance an intersection address would have a Address Side Of Street of none. </xsd:documentation> </xsd:annotation></xsd:enumeration> <xsd:enumeration value="unknown" ></xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<AddressRangeSide>left</AddressRangeSide>
Quality Measures	Left Right Odd Even Parity Measure Address Left Right Measure
Quality Notes	Note that this measure checks the agreement of an Address Range Side attribute with geometry, while Left Right Odd Even Parity Measure checks the agreement of an Address Number against an established local rule for associating address parity with the right or left side of the street when traveling away from the governing Address Reference System Axis Point Of

[Beginning.](#)

1335

1336 **2.4.5.4 Address Range Directionality**

Element Name	Address Range Directionality
Other common names for this element	
Definition	Whether the low Complete Address Number of an address range is closer to the from-node or the to-node of the transportation segment(s) that the range is related to.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	<p>With - The low address is nearer the from node; numbers ascend toward the to node.</p> <p>Against - The low address is nearer the to node; numbers descend toward the to node.</p> <p>With-Against - The numbers run in opposite directions on either side of the street. The low number on the left side is nearer the from node. The low number on the right side is nearer the to node.</p> <p>Against-With - The numbers run in opposite directions on either side of the street. The low number on the left side is nearer the to node. The low number on the right side is nearer the from node.</p> <p>Null - The address range has null values for the high and low Complete Address Numbers.</p> <p>NA - Does not apply (transportation segment directionality is inconsistent within the range).</p> <p>Unknown - The address range directionality is not known.</p>
Source of Values	New
How Defined (e.g., locally, from standard, other)	New
Example	Smalltown has a digital street centerline network model. Each street is mapped as a series of segments that run from one intersection to another.

1. **With:** Segment 1 represents Main Street from First Street to Second Street. It runs from Node 1 to Node 2. (That is, From-node = Node 1; To-node = Node 2). Node 1 = Main and First; Node 2 = Main and Second. The [Four Number Address Range](#) along this segment is 100 - 198; 101 - 199 Main Street. 100 Main and 101 Main are both near Node 1 (First and Main); the high numbers are near Main and Second. The [Address Range Directionality](#) for this [Four Number Address Range](#) is **With** the segment directionality.



2. **Against:** Segment 25 represents Elm Street from Oak Street to Pine Street. Segment 25 From-node = Node 92; To-node = Node 77. Node 92 = Elm and Oak; Node 77 = Elm and Pine. The [Four Number Address Range](#) along this segment is 110 - 180; 111 - 187 Elm Street. 110 Elm and 111 Elm are both near Node 77 (Elm and Pine); the high numbers are near Elm and Oak. The [Address Range Directionality](#) for this [Four Number Address Range](#) is **Against** the segment directionality.

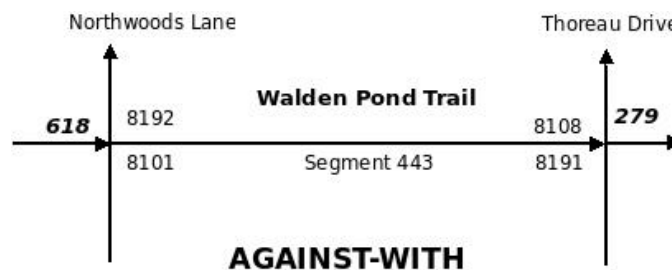


3. **Special Case: With - Against:** Segment 157 is unusual--the address numbers run in different directions on each side of the street. Segment 157 represents Old Border Road from Farm Road to Park Street. Segment 157 From-node = Node 308; To-node = Node 566. Node 308 = Old Border and Farm; Node 566 = Old Border and Park. The [Four Number Address Range](#) along this

segment is 4102 - 4188; 4111 - 4181 Old Border Road. 4102 Old Border and 4181 Old Border are both near Node 308 (Old Border and Farm). 4188 Old Border and 4111 Old Border are both near Node 566 (Old Border and Park). The [Address Range Directionality](#) for this [Four Number Address Range](#) is **With - Against** the segment directionality.



4. Special Case: Against - With: This is the reverse of the previous case. Segment 443 also has address numbers that run in different directions on each side of the street. Segment 443 represents Walden Pond Trail from Northwoods Lane to Thoreau Drive. Segment 443 From-node = Node 618; To Node = 279. Node 618 = Walden Pond Trail and Northwoods Lane, and Node 279 = Walden Pond Trail and Thoreau Drive. The [Four Number Address Range](#) along this segment is 8108 - 8192; 8101 - 8191. 8192 Walden Pond Trail and 8101 Walden Pond Trail are near Node 618 (Walden Pond Trail and Northwoods Lane) while 8108 Walden Pond Trail and 8191 Walden Pond Trail are near Node 279 (Walden Pond Trail and Thoreau Drive). The [Address Range Directionality](#) for this [Four Number Address Range](#) is **Against - With** the segment directionality.



Notes/Comments

1. [Address Range Directionality](#) has nothing to do with traffic flow or compass direction.
2. [Address Range Directionality](#) states whether the [Complete Address Numbers](#) ascend or descend as one proceeds from the from-node to the to-node of the transportation segments

	<p>(TranSeg(s)) to which the range is related.</p> <p>3. Address Range Directionality can be defined only for a Two Number Address Range or a Four Number Address Range that has been related to a specific TranSeg (or set of TranSegs) in a particular transportation network model.</p> <p>4. By definition, TranSegs have a from-node and a to-node, which determine the TranSeg's directionality, right side, and left side.</p> <p>5. If the low Complete Address Number of a range is closer to the from-node, and the high Complete Address Number is closer to the to-node, then the Complete Address Numbers ascend With the TranSeg directionality.</p> <p>6. If the low Complete Address Number of a range is closer to the to-node, and the high Complete Address Number is closer to the from-node, then the Complete Address Numbers ascend Against the TranSeg directionality.</p> <p>7. If the low and high Complete Address Numbers of a range are equal, or equidistant from the from-node and to-node, or if the from-node and the to-node are the same (a loop), then by definition the Complete Address Numbers are considered to ascend With the TranSeg directionality.</p> <p>8. If the two ranges of a Four Number Address Range have different Address Range Directionality, then give the left range directionality first, followed by the right range directionality: "With - Against" or "Against - With"</p> <p>9. Special values apply in the following cases:</p> <p>---Null - the address range contains null values.</p> <p>---Unknown - the range directionality (or the relative locations of the low and high Complete Address Numbers) is unknown.</p> <p>---NA (not applicable) - the range covers multiple TranSegs, and the TranSegs have inconsistent segment directionality.</p> <p>10. Use the Address Transportation System Name, Address Transportation System Authority, Address Transportation Feature Type, Address Transportation Feature ID, and Related Transportation Feature ID attributes to relate a particular address range to a specific transportation segment (or set of segments) in a specific transportation network model. TranSegs, and transportation network models generally, are defined and described in the FGDC's "Geographic Information Framework Data Content Standard Part 7: Transportation Base."</p>
XML Tag	<AddressRangeDirectionality>
XML Model	<pre><xsd:simpleType name="AddressRangeDirectionality_type"> <xsd:annotation> <xsd:documentation xml:lang="en"></pre>

Whether the low Complete Address Number of an address range is closer to the from-node or the to-node of the transportation segment(s) that the range is related to.

</xsd:documentation>

</xsd:annotation>

<xsd:restriction base="xsd:string">

<xsd:enumeration value="With">

<xsd:annotation>

<xsd:documentation>The low address is nearer the from node; numbers ascend toward the to node.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Against">

<xsd:annotation>

<xsd:documentation>The low address is nearer the to node; numbers descend toward the to node.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="With-Against">

<xsd:annotation>

<xsd:documentation>The numbers run in opposite directions on either side of the street. The low number on the left side is nearer the from node. The low number on the right side is nearer the to node.</xsd:documentation></xsd:annotation></xsd:enumeration>

>

<xsd:enumeration value="Against-With">

<xsd:annotation>

<xsd:documentation>The numbers run in opposite directions on either side of the street. The low number on the left side is nearer the to node. The low number on the right side is nearer the from node.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Null">

<xsd:annotation>

<xsd:documentation>The address range has null values for the high and low Complete Address Numbers.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="NA">

	<pre> <xsd:annotation> <xsd:documentation>Does not apply (transportation segment directionality is inconsistent within the range). </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Unknown"> <xsd:annotation> <xsd:documentation>The address range directionality is not known. </xsd:documentation> </xsd:annotation> </xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<AddressRangeDirectionality>With- Against</AddressRangeDirectionality>
Quality Measures	Address Range Directionality Measure
Quality Notes	

1337

1338 **2.4.5.5 [Address Range Span](#)**

<u>Element Name</u>	<u>Address Range Span</u>
Other common names for this element	
Definition	Whether an address range covers part of a transportation segment, one segment, multiple segments, or the entire thoroughfare within the Address Reference System Extent .
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Partial Segment, Single Segment, Multi Segments, Entire Street (within a given Address Reference System Extent), Unknown. Other values may be defined locally.

How Defined (e.g., locally, from standard, other)	New
Example	<p>Oak Street is four blocks long. Each block is represented as a single transportation segment. Each block has a different hundred range: 1-99, 100-199, 200-299, 300-399. On the first block, a small strip shopping center with a single entrance has storefronts with Complete Address Numbers 2-42. Address Range Spans for following address ranges would be:</p> <ol style="list-style-type: none"> 1. 2 -42 Oak Street Address Range Span = Partial block 2. 200- 299 Oak Street Address Range Span = Single block 3. 100- 299 Oak Street Address Range Span = Multi-block 4. 1 - 399 Oak Street Address Range Span = Entire street
Notes/Comments	<ol style="list-style-type: none"> 1. Address Range Span states whether an address range covers part of a transportation segment, one segment, multiple segments, or the entire thoroughfare within the Address Reference System Extent. 2. Address Range Span indicates the nature and extent of the geometric features that the range is associated with. It might cover a single building, a portion of a street segment, a full street segment (the most common way in which a range is used), a group of segments, or entire street within a jurisdiction. The latter two categories are often used in E-911 applications where the entire range of addresses found in a single Emergency Service Zone is used. 3. Address Range Span can be defined only for a Two Number Address Range or a Four Number Address Range that has been related to a specific transportation segment (or set of segments) in a particular transportation network model. 4. Use the Address Transportation System Name, Address Transportation System Authority, Address Transportation Feature Type, Address Transportation Feature ID, and Related Transportation Feature ID attributes to relate a particular address range to a specific transportation segment (or set of segments) in a specific transportation network model. Transportation segments, and transportation network models generally, are defined and described in the FGDC's "Geographic Information Framework Data Content Standard Part 7: Transportation Base."
XML Tag	<AddressRangeSpan>
XML Model	<pre><xsd:simpleType name="AddressRangeSpan_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> Whether an address range covers part of a transportation</pre>

	<p>segment, one segment, multiple segments, or the entire thoroughfare within the Address Reference System Extent.</p> <pre> </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:enumeration value="Partial Segment" ></xsd:enumeration> <xsd:enumeration value="Single Segment" ></xsd:enumeration> <xsd:enumeration value="Multi Segment" ></xsd:enumeration> <xsd:enumeration value="Entire Street" ></xsd:enumeration> <xsd:enumeration value="Unknown" ;</xsd:enumeration> <xsd:pattern value=".+"></xsd:pattern> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<code><AddressRangeSpan>Entire Street</AddressRangeSpan></code>
Quality Measures	Tabular Domain Measure
Quality Notes	Address Range Type validation is completely dependent on Address Reference System in a given area, and will have to be formulated locally.

1339

1340 **2.4.6 Address Attributes**1341 **2.4.6.1 Address Classification**

Element Name	Address Classification
Other common names for this element	Address Type, Address Class
Definition	The class of the address as defined in the Classification Part of this standard.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	The Classification Part of this standard.

Domain of Values for this Element	Class names given in the Classification Part of this standard.
Source of Values	The Classification Part of this standard.
How Defined (e.g., locally, from standard, other)	In the Classification Part of this standard.
Examples	Numbered Thoroughfare Address Intersection Address Two Number Address Range Four Number Address Range Unnumbered Thoroughfare Address Landmark Address Community Address USPS Postal Delivery Box USPS Postal Delivery Route USPS General Delivery Office General Address Class
Notes/Comments	Address classes are defined and described in the Classification part of this standard.
XML Tag	<AddressClassification>
XML Model	<pre> <xsd:simpleType name="AddressClassification_type"> <xsd:restriction base="xsd:string"> <xsd:enumeration value="NumberedThoroughfareAddress"></xsd:enumeration> <xsd:enumeration value="IntersectionAddress"></xsd:enumeration> <xsd:enumeration value="TwoNumberAddressRange"></xsd:enumeration> <xsd:enumeration value="FourNumberAddressRange"></xsd:enumeration> <xsd:enumeration value="UnnumberedThoroughfareAddress"></xsd:enumeration> <xsd:enumeration value="LandmarkAddress"></xsd:enumeration> <xsd:enumeration value="CommunityAddress"></xsd:enumeration> <xsd:enumeration value="USPSPostalDeliveryBox"></xsd:enumeration> <xsd:enumeration value="USPSPostal Delivery Route?"></xsd:enumeration> <xsd:enumeration value="USPSGeneral DeliveryOffice?"></xsd:enumeration> <xsd:enumeration </pre>

	value="GeneralAddressClass"></xsd:enumeration> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressClassification>IntersectionAddress<AddressClassification>
Quality Measures	Tabular Domain Measure Pattern Sequence Measure
Quality Notes	The Tabular Domain Measure checks on whether a classification entry actually exists. The Pattern Sequence Measure can be used to check whether the entry associated with the classification matches its description.

1342

1343 **2.4.6.2 Address Feature Type**

<u>Element Name</u>	<u>Address Feature Type</u>
Other common names for this element	
Definition	A category of real world phenomena with common properties whose location is specified by an address.
Definition Source	Adapted from FGDC Framework Data Content Standard, Part 0: Base Document, Section 5.22
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	May be created locally
Source of Values	Local
How Defined (e.g., locally, from standard, other)	Locally
Example	Parcel, building, building entrance, service entrance, subaddress, power pole, cell tower
Notes/Comments	Initial list of feature types: Block, block face, intersection, parcel, building, entrance, subaddress. The list might be expanded indefinitely to include infrastructure and other features. An address may designate multiple Address Feature Types .

XML Tag	<pre><AddressFeatureType></pre>
XML Model	<pre> <xsd:simpleType name="AddressFeatureType_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> The type of feature identified by the address Initial list of feature types: Building Utility Cabinet, Telephone Pole, Building, Street block, street block face, intersection, parcel, building, entrance, unit. The list might be expanded indefinitely to include infrastructure and other features. </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:pattern value="'.+*' /> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<pre><AddressFeatureType>Cell Tower</AddressFeatureType></pre>
Quality Measures	Tabular Domain Measure Address Reference System Description Address Completeness Measure
Quality Notes	Address Feature Type elements may be defined in the Address Reference System Description , and should be checked there. Address Completeness Measure checks whether all the addressable objects have assigned addresses.

1344

1345 **2.4.6.3 Address Lifecycle Status**

Element Name	Address Lifecycle Status
Other common names for this element	
Definition	The lifecycle status of the address.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	None

Domain of Values for this Element	<p>Potential = Address falls within a theoretical range (See Address Range Type), but has never been used;</p> <p>Proposed = Application pending for use of this address (e.g., address tentatively issued for subdivision plat that is not yet fully approved);</p> <p>Active = Address has been issued and is in use;</p> <p>Retired = Address was issued, but is now obsolete (e.g. street name has been changed, building was demolished, etc.)</p>
Source of Values	<p>New</p>
How Defined (e.g., locally, from standard, other)	<p>From this standard</p>
Notes/Comments	<p>1. An address should be assigned as early as possible in the development process, generally upon subdivision or issuance of the initial building permit. Long before occupancy, a site may require construction deliveries, emergency services, or mention in official records, all of which are facilitated if the address is assigned and known.</p> <p>2. An address, once issued, should not be deleted from the records, even if it falls out of use. If an address becomes obsolete, its status should be changed from "active" to "retired".</p>
XML Tag	<p><AddressLifecycleStatus></p>
XML Model	<pre> <xsd:simpleType name="AddressLifecycleStatus_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> The life cycle status of the address. </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:token"> <xsd:enumeration value="Potential" > <xsd:annotation> <xsd:documentation> Address falls within a theoretical range, but has never been used. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Proposed" > <xsd:annotation> <xsd:documentation> Application pending for use of this address (e.g., address tentatively issued for subdivision plat that is not yet fully approved). </xsd:documentation> </xsd:annotation> </xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>

	</xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Active" > <xsd:annotation> <xsd:documentation> Address has been issued and is in use. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Retired" > <xsd:annotation> <xsd:documentation> Address was issued, but is now obsolete (e.g. street name has been changed), building was demolished, etc. </xsd:documentation> </xsd:annotation> </xsd:enumeration> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressLifecycleStatus>Proposed</AddressLifecycleStatus>
Quality Measures	Tabular Domain Measure Address Lifecycle Status Date Consistency Measure
Quality Notes	Each locality will have records describing conditions associated with a given lifecycle status. While the nature of these records and methods for checking correspondence with Address Lifecycle Status entries are beyond the scope of the standard, they may be considered in a local quality program.

1346

1347 **2.4.6.4 Official Status**

Element Name	Official Status
Other common names for this element	Official address, legal address, alias address, alternate address, variant address
Definition	Whether the address, street name, landmark name, or place name is as given by the official addressing authority (official), or an alternate or alias (official or unofficial), or a verified error.
Definition Source	New
Data Type	characterString

Existing Standards for this Element	No
Domain of Values for this Element	<ol style="list-style-type: none"> 1. Official 2. Alternate or Alias <ol style="list-style-type: none"> ---2.1 Official Alternate or Alias <ol style="list-style-type: none"> -----2.1.1 Alternate Established by an Official Renaming Action of the Address Authority -----2.1.2 Alternates Established by an Address Authority ---2.2 Unofficial Alternate or Alias <ol style="list-style-type: none"> -----2.2.1 Alternate Established by Colloquial Use -----2.2.2. Unofficial Alternate in Frequent Use -----2.2.3. Unofficial Alternate in Use by Agency or Entity -----2.2.4. Posted or Vanity Address 3. Verified Invalid
Source of Values	New
How Defined (e.g., locally, from standard, other)	New
Example	See notes below.
Notes/Comments	<p>1. Official The address or name as designated by the Address Authority.</p> <p>2. Alternate or Alias An alternate or alias to the official address or name that is also in official or popular use. The Related Address ID can be used to link an alternate or alias to the Address ID of the official address. There are two types of alternate or alias names, official and unofficial, each of which has subtypes.</p> <p>2.1 Official Alternate or Alias: These are alternate names designated by an official Address Authority. Subtypes include, but are not limited to:</p> <p>* <i>Official Renaming Action of the Address Authority</i> An Address Authority may replace one address or name with another, e.g. by renaming or renumbering. The prior, older address should be retained as an alias, to provide for conversion to the new address. .</p> <p>* <i>Alternates Established by an Address Authority</i> An Address Authority may establish a name or number to be used in addition to the official address or name. For example, a state highway designation (State Highway 7) may be given to a locally-named road, or a memorial name may be applied to an existing street by posting an additional sign, while the local or original name and addresses continue to be recognized as official.</p> <p>2.2 Unofficial Alternate or Alias: These are addresses or names</p>

	<p>that are used by the public or by an individual, but are not recognized as official by the Address Authority: Some examples include, but are not limited to:</p> <ul style="list-style-type: none"> * <i>Alternates Established by Colloquial Use in a Community</i> An address or name that is in popular use but is not the official name or an official alternate or alias. * <i>Unofficial Alternates Frequently Encountered</i> In data processing, entry errors occur. Such errors if frequently encountered may be corrected by a direct match of the error and a substitution of a correct name. * <i>Unofficial Alternates In Use by an Agency or Entity</i> For data processing efficiency, entities often create alternate names or abbreviations for internal use. These must be changed to the official form for public use and transmittal to external users. * <i>Posted or Vanity Address</i> An address that is posted, but is not recognized by the Address Authority (e.g. a vanity address on a building); <p>3. Verified Invalid An address that has been verified as being invalid, but which keeps appearing in address lists. Different from Unofficial Alternate Names in that these addresses are known not to exist.</p>
XML Tag	<OfficialStatus>
XML Model	<pre> <xsd:simpleType name="OfficialStatus_type"> <xsd:annotation> <xsd:documentation xml:lang="en"> Whether the address, street name, landmark name, or place name is as given by the official addressing authority (official), or an alternate or alias (official or unofficial), or a verified error. </xsd:documentation> </xsd:annotation> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> <xsd:enumeration value="Official" > <xsd:annotation> <xsd:documentation> The address or name as designated by the Address Authority. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Alternate or Alias" > <xsd:annotation> <xsd:documentation> An alternate or alias to the official address or name that is also in </pre>

official or popular use.

The Related Address ID can be used to link an alternate or alias to the Address ID of the

official address. There are two types of alternate or alias names, official and

unofficial, each of which has subtypes.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Official Alternate or Alias" >

<xsd:annotation>

<xsd:documentation>

These are alternate names designated by an official Address Authority.

</xsd:documentation>

</xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Official Renaming Action of the Address Authority" >

<xsd:annotation>

<xsd:documentation>An Address Authority may replace one address or name with another, e.g. by renaming or renumbering. The prior, older address should be retained as an alias, to provide for conversion to the new

address.</xsd:documentation></xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Alternates Established by an Address Authority" >

<xsd:annotation>

<xsd:documentation>An Address Authority may establish a name or number to be used in addition to the official address or name.

For example, a state highway designation (State Highway 7) may be given to a locally-named road, or a memorial name may be applied to an existing street by posting an additional sign, while the local or original name and addresses continue to be recognized as official.</xsd:documentation></xsd:annotation>

</xsd:enumeration>

<xsd:enumeration value="Unofficial Alternate or Alias" >

<xsd:annotation>

<xsd:documentation>

These are addresses or names that are used by the public or by an individual, but are not recognized as official by the Address Authority.

</xsd:documentation>

```
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Alternate Names Established by
Colloquial Use in a Community" >
<xsd:annotation>
<xsd:documentation>An address or name that is in popular use
but is not the official name or an official alternate or alias.
</xsd:documentation></xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unofficial Alternate Names
Frequently Encountered" >
<xsd:annotation>
<xsd:documentation>In data processing, entry errors occur. Such
errors if frequently encountered may be corrected by a direct
match of the error and a substitution of a correct name.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unofficial Alternate Names In Use
by an Agency or Entity" >
<xsd:annotation>
<xsd:documentation>For data processing efficiency, entities
often create alternate names or abbreviations for internal use.
These must be changed to the official form for public use and
transmittal to external users.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Posted or Vanity Address" >
<xsd:annotation>
<xsd:documentation>An address that is posted, but is not
recognized by the Address Authority (e.g. a vanity address on a
building);</xsd:documentation>
</xsd:annotation></xsd:enumeration>
<xsd:enumeration value="Verified Invalid" >
<xsd:annotation>
<xsd:documentation>
An address that has been verified as being invalid, but which
keeps appearing in address
lists. Different from Unofficial Alternate Names in that these
addresses are known not to exist.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
```

	</xsd:restriction> </xsd:simpleType>
XML Example	<OfficialStatus>Official Renaming Action of the Address Authority</OfficialStatus>
Quality Measures	Tabular Domain Measure Official Status Address Authority Consistency Measure
Quality Notes	Each locality will have records describing conditions associated with a given Official Status . While the nature of these records and methods for checking correspondence between entries are beyond the scope of the standard, they may be considered in a local quality program.

1348

1349 **2.4.6.5 Address Anomaly Status**

<u>Element Name</u>	Address Anomaly Status
Other common names for this element	
Definition	A status flag, or an explanatory note, for an address that is not correct according to the Address Reference System that governs it, but is nonetheless a valid address.
Definition Source	New
Data Type	characterString
Existing Standards for this Element	No
Domain of Values?	May be "yes" or "no", or may be an enumerated domain of anomaly types
How Defined (e.g., locally, from standard, other)	Locally
Example	An address that has an even Address Number Parity but is located on the odd-numbered side of the street.
Notes/Comments	This field may be used to identify the type of anomaly (e.g. wrong parity, out of sequence, out of range, etc.) rather than simply whether or not it is anomalous. Local jurisdictions may create specific categories for anomalies.
XML Tag	<AddressAnomalyStatus>

XML Model	<xsd:simpleType name="AddressAnomalyStatus_type"> <xsd:restriction base="xsd:string"></xsd:restriction> </xsd:simpleType>
XML Example	<AddressAnomalyStatus>yes</AddressAnomalyStatus>
Quality Measures	Tabular Domain Measure
Quality Notes	Validation tests for conditions described Address Anomaly Status values are entirely dependent on local conditions, and are beyond the scope of this standard. Some of the measures described in the standards may provide complete or partial solutions.

1350

1351 2.4.6.6 Address Side Of Street

Element Name	Address Side Of Street
Other common names for this element	
Definition	The side of the transportation segment (right , left, both, none, unknown) on which the address is located.
Data Type	characterString
Existing Standards for this Element	U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base," sections 7.3.2 and B.3.6
Domain of Values for this Element	right, left, both, none, unknown
Source of Values	
How Defined (e.g., locally, from standard, other)	U.S. Federal Geographic Data Committee, "Framework Data Content Standard Part 7: Transportation base," Annex B.
Example	See domain of values above.
Notes/Comments	<p>1. "Left" and "right" are defined by reference to the direction of the transportation segment to which the address is related. "The direction of a TranSeg is determined by its "from" and "to" TranPoints" (Transportation base standard, section 7.3.2). "Left" and "right" are defined by facing the "to" TranPoint.</p> <p>2. Most addresses are located to the left or right of the segment. The value of "none" can be used only for Intersection Addresses, which by definition occur at the point of intersection of two or more street segments. An Intersection Address begins or ends a</p>

	<p>segment and so is not on either side of it.</p> <p>3. If an addressed feature straddles the thoroughfare to which it is addressed (a rare occurrence but it does happen), it should be given the Address Side Of Street value that corresponds to the correct side for the number that was assigned to the feature.</p> <p>4. Address Side Of Street does not apply to address ranges. Use the Address Range Side attribute to give the side of a Two Number Address Range or a Four Number Address Range.</p>
XML Tag	<AddressSideOfStreet>
XML Model	<pre> <xsd:simpleType name="AddressSideOfStreet_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> <xsd:enumeration value="right" > <xsd:annotation> <xsd:documentation> The address is related to the right side of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="left" > <xsd:annotation> <xsd:documentation> The address is related to the left side of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="both" > <xsd:annotation> <xsd:documentation> The address pertains to both sides of the street. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="none" > <xsd:annotation> <xsd:documentation>The address is not on either or both sides of the street or the concept of side of street does not apply to the address. For instance an intersection address would have a Address Side Of Street of none. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="unknown" ></xsd:enumeration> </xsd:restriction> </pre>

	</xsd:simpleType>
XML Example	<AddressSideOfStreet>both</AddressSideOfStreet>

1352

1353 2.4.6.7 Address Z Level

<u>Element Name</u>	<u>Address Z Level</u>
Other common names for this element	Floor, building level, story
Definition	Floor or level of the structure
Definition Source	New
Data Type	Integer
Existing Standards for this Element	N/A
Domain of Values for this Element	Positive integers
Source of Values	Field observations, building plans, or other source of spatial data collection.
How Defined (e.g., locally, from standard, other)	The lowest level of a building is 1, and ascending numbers are assigned in order to each higher level.
Examples	1 (=lowest floor), 3 (the ground floor, if the structure has two below-ground floors)
Notes/Comments	<p>1. This attribute is intended for use with multi-story buildings, where the Subaddress Element does not indicate the building level on which the subaddress is found. Common examples include hotel lobbies and mezzanines, named meeting rooms in conference centers, and multi-unit residential buildings whose unit identifiers do not indicate the building level ("Penthouse", "Basement").</p> <p>2. "Ground level" is often ambiguous (especially when the building itself is built on sloping ground), and floor designations often omit parking and basement levels at the base of the building. To avoid confusion in assigning Address Z Level values, 1 should be assigned to the lowest level of the building, and ascending numbers assigned in order to each higher level, regardless of how that level is named within the building floor plan. Use the Subaddress Element to record how a subaddress is</p>

	named in the building floor plan.
XML Tag	<AddressZLevel>
XML Model	<xsd:simpleType name="AddressZLevel_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value='.*' /> </xsd:restriction> </xsd:simpleType>
XML Example	<AddressZLevel>13</AddressZLevel>
Quality Measures	Subaddress Element Z Level Measure Range Domain Measure
Quality Notes	

1354

1355 2.4.6.8 Location Description

<u>Element Name</u>	<u>Location Description</u>
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	characterString
Existing Standards for this Element	None
Domain of Values for this Element	No
Source of Values	None
How Defined (e.g., locally, from standard, other)	Locally
Example	"White house at intersection.", "400 yards west of water tank."
Notes/Comments	
XML Tag	<LocationDescription>
XML Model	<xsd:simpleType name="LocationDescription_type"> <xsd:restriction base="xsd:string"></xsd:restriction>

	</xsd:simpleType>
XML Example	<LocationDescription>White house at intersection</LocationDescription>
Quality Measures	Location Description Field Check Measure
Quality Notes	

1356

1357 **2.4.6.9 Mailable Address**

<u>Element Name</u>	<u>Mailable Address</u>
Other common names for this element	
Definition	Identifies whether an addresses receives USPS mail delivery (that is, the address is occupiable, and the USPS provides on-premises USPS mail delivery to it).
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Yes, No, Unknown
Source of Values	New
How Defined (e.g., locally, from standard, other)	New definition
Example	<p>1391 North Oak Street (apartment building): Mailable Address = Yes</p> <p>645 Maine Avenue (vacant lot): Mailable Address = No</p> <p>701 Lee Street (business): Mailable Address = Yes</p> <p>703 Lee Street (vacant storefront): Mailable Address = Yes</p> <p>1440 Golden Gate Avenue (recreational field, no structures): Mailable Address = No</p> <p>6813 Homestead Road (residence, in USPS home delivery area): Mailable Address = Yes</p> <p>49984 Aspen Road (residence, outside USPS home delivery area): Mailable Address = No</p>
Notes/Comments	1. The Mailable Address attribute indicates whether USPS mail will or will not be delivered to the address. This attribute is useful in determining where not to send notices or correspondence via

	<p>USPS mail.</p> <p>2. Postal Delivery Address Class addresses (e.g., PO Box, RD Route, and General Delivery addresses) all have a Mailable Address value = Yes, except in unusual circumstances such as the temporary closure of a Post Office.</p> <p>3. There are many addressed, occupied features, including residences, businesses, and other features which have been addressed to facilitate the provision of E-911 and non-emergency services, and for other types of premises-based delivery services, but which are not served by premises-based USPS delivery. It is important that these location (situs) addresses not be confused with mailable addresses. The thoroughfare addresses assigned to these features, while appearing to be mailable, would be Mailable Address = No.</p> <p>4. In verifying which addresses are not mailable, it should further be noted that the USPS ZIP+4 address validation service only validates street name and address range to a ZIP Code. Thus a vacant, addressed parcel would potentially validate as mailable if it fell within an address range on a street that was verified within the ZIP Code.</p> <p>5. There are many addressed features where USPS mail cannot be delivered: vacant lots, pumping stations, parking lots, structures under construction or destroyed by disaster, and undeveloped parklands, for example. These addresses would have a Mailable Address = No.</p> <p>6. In addition, many addresses are in areas where the USPS delivers mail to a PO Box, Rural Route Box, or General Delivery address, not to the premises address. These premise addresses also would have a Mailable Address = No.</p> <p>7. The Mailable Address attribute can also be used to identify addresses where mail delivery has been temporarily suspended due to a large-scale natural disaster or other event.</p> <p>8. The Mailable Address attribute is not intended for tracking normal vacancies due tenant turnover or change in ownership. It should be set to "No" only if mail cannot be delivered because of USPS delivery rules or long-term physical conditions at the address.</p>
XML Tag	<MailableAddress>
XML Model	<pre> <xsd:simpleType name="MailableAddress_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*" /> <xsd:enumeration value="Yes" > <xsd:annotation> <xsd:documentation>The USPS delivers mail to this </pre>

	<pre> address.</xsd:documentation> </xsd:annotation></xsd:enumeration> <xsd:enumeration value="No" > <xsd:annotation> <xsd:documentation>The USPS does not deliver mail to this address.</xsd:documentation> </xsd:annotation></xsd:enumeration> <xsd:enumeration value="Unknown" > <xsd:annotation> <xsd:documentation>It is unknown whether the USPS delivers mail to this address.</xsd:documentation> </xsd:annotation></xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<code><MailableAddress>Yes</MailableAddress></code>

1358

1359 **2.4.7 Element Attributes**1360 **2.4.7.1 Address Number Parity**

<u>Element Name</u>	<u>Address Number Parity</u>
Other common names for this element	
Definition	The property of an Address Number with respect to being odd or even.
Definition Source	Adapted from Merriam Webster's Dictionary
Data Type	characterString
Existing Standards for this Element	NA
Domain of Values for this Element	"odd", "even"
Source of Values	NA
How Defined (e.g., locally, from standard, other)	Defined in integer mathematics.
Notes/Comments	1. Address Number Parity applies to individual Address Numbers

	<p>only. Address Range Parity shows the Address Number Parity values for the Address Numbers within a range.</p> <p>2. Odd and even addresses are usually associated with opposite sides of a street. For example, a jurisdiction may consistently assign odd numbers to the "left" side of its streets and even numbers to the "right" side. ("Left" and "right" would be defined with reference to the address schema.)</p> <p>3. A Complete Address Number with an Address Number Suffix has the same parity as the Address Number alone. For example, 610 and 610A are both even; 611 and 611 1/2 are both odd.</p>
XML Tag	AddressNumberParity
XML Model	<pre><xsd:simpleType name="AddressNumberParity_type"> <xsd:restriction base="xsd:token"> <xsd:enumeration value="Even" /> <xsd:enumeration value="Odd" /> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<pre><CompleteAddressNumber AddressNumberParity="even" > <AddressNumber>456</AddressNumber> <AddressNumberSuffix separator=" ">B</AddressNumberSuffix> </CompleteAddressNumber></pre>
Quality Measure	Address Number Parity Measure
Quality Notes	

1361

1362 **2.4.7.2 Attached Element**

Element Name	Attached Element
Other common names for this element	
Definition	This attribute identifies when two or more Complete Address Number elements or two or more Complete Street Name elements have been combined without a space separating them.
Definition Source	New
Data Type	characterString
Required Element	No

Existing Standards for this Element	None
Domain of Values for this Element	Attached, Not Attached, Unknown
Source of Values	New
How Defined (e.g., locally, from standard, other)	New
Example	<p>121E E Street (Attached) 121 E E Street (Not Attached) Banhoffstrasse (Attached) Banhoff Street (Not Attached)</p>
Notes/Comments	<p>1. The Attached Element attribute can be used to indicate that two or more Complete Address Number elements or two or more Complete Street Name elements have been combined with no space between them, so that the parsing and construction of the elements can be managed correctly.</p> <p>2. Complete Address Numbers are often written with no space between the Address Number and the Address Number Prefix or Address Number Suffix (e.g., 121E E Street). The Attached Element can be used to indicate where the space is omitted as a standard practice.</p> <p>3. German-language street names words are often written as a single word, combining the Street Name and Street Name Post Type (e.g., Banhoffstrasse). The Attached Element can be used to indicate such names. Attached Elements are rare in the United States street names, and normally this attribute will not be needed. In such cases the entire single word can be placed in the Street Name field, and the street type field can be left blank. This is typically done with the Street Name Street Name Post Type combination "Broadway".</p>
XML Tag	AttachedElement
XML Model	<pre> <xsd:simpleType name="AttachedElement_type"> <xsd:restriction base="xsd:string"> <xsd:enumeration value="Attached"> <xsd:annotation> <xsd:documentation>The elements inside the Complete Address Number or Complete Street Name are attached and need special parsing rules.</xsd:documentation> </xsd:annotation></xsd:enumeration> <xsd:enumeration value="Not Attached"></xsd:enumeration> </xsd:restriction> </pre>

XML Example	</xsd:simpleType> <CompleteAddressNumber Address Number Parity ="even" AttachedElement="Attached" > <AddressNumber>456</AddressNumber> <AddressNumberSuffix separator=" ">B</AddressNumberSuffix> </CompleteAddressNumber>
Quality Measures	Check Attached Pairs Measure Complete Street Name Tabular Domain Measure
Quality Notes	Check Attached Pairs Measure checks for adjacent pairs of attached attributes. The value of the street name as a whole, including the attached components are checked in the Complete Street Name Tabular Domain Measure .

1363

1364 **2.4.7.3 Subaddress Component Order**

Element Name	Subaddress Component Order
Other common names for this element	None
Definition	The order in which Subaddress Type and Subaddress Identifier appear within an Subaddress Element
Definition Source	New
Data Type	Integer
Existing Standards for this Element	None
Domain of Values for this Element	1 = Subaddress Type first, then Subaddress Identifier (or: Subaddress Element does not include an Subaddress Type). 2 = Subaddress Identifier first, then Subaddress Type . 3 = Not stated.
Source of Values	New
How Defined (e.g., locally, from standard, other)	Within this standard
Example	1. Room 212 (Subaddress Component Order = 1 = "Room" (the type) precedes "212" (the identifier)) 2. Empire Room (Subaddress Component Order = 2 = "Room" (the type) follows "Empire" (the identifier))

	<p>3. Mezzanine (Subaddress Component Order = 1 = "Mezzanine" (the identifier) only; no type is given.)</p> <p>4. Floor 5 (Subaddress Component Order = 1 = "Floor" (the type) precedes "5" (the identifier))</p> <p>5. Fifth Floor (Subaddress Component Order = 2 = "Floor" (the type) follows "Fifth" (the identifier))</p> <p>6. Terrace Ballroom (Subaddress Component Order = 2 --this would refer to a ballroom, the "Terrace" ballroom)</p> <p>7. Ballroom Terrace (Subaddress Component Order = 2 --this would refer to a terrace, the "Ballroom" terrace)</p>
Notes/Comments	<p>1. This attribute tells data users how to construct an Subaddress Element from its component Subaddress Type and Subaddress Identifier. There are three possibilities, described below. The order is usually obvious for any given record, but if there are a large number of records it may not be feasible to examine each record individually. This attribute supports automated procedures for composing Subaddress Elements.</p> <p>2. Usually a Subaddress Element is composed of a Subaddress Type followed by a Subaddress Identifier (e.g. "Room 212", "Floor 5")</p> <p>3. However, if the Subaddress Identifier is a name or an ordinal number, it typically precedes the Subaddress Type (e.g. "Empire Room", "Fifth Floor")</p> <p>4. Occasionally a Subaddress Element includes only a Subaddress Identifier (e.g. "Mezzanine", "Penthouse", "Rear"). These cases are grouped under Type 1.</p> <p>5. Usually the component order is obvious upon examination, but ambiguous cases occur, such as "Terrace Ballroom" and "Ballroom Terrace" above. In these cases the order can be determined only by field examination or reference to authoritative records.</p>
XML Tag	SubaddressComponentOrder
XML Model	<pre><xsd:simpleType name="SubaddressComponentOrder_type"> <xsd:restriction base="xsd:integer"> <xsd:enumeration value="1"> <xsd:annotation> <xsd:documentation>SubaddressType first, then Subaddress Identifier (or: Subaddress Element does not include an Subaddress Type). Example: "Floor 7"</xsd:documentation> </xsd:annotation></xsd:enumeration> <xsd:enumeration value="2"> <xsd:annotation></pre>

XML Example	<p><xsd:documentation>SubaddressIdentifier first, then Subaddress Type.</p> <p>Example: "Empire Room"</xsd:documentation></p> <p></xsd:annotation></xsd:enumeration></p> <p><xsd:enumeration value="3"></p> <p><xsd:annotation></p> <p><xsd:documentation>Order is not known or unstated.</xsd:documentation></p> <p></xsd:annotation></xsd:enumeration></p> <p></xsd:restriction></p> <p></xsd:simpleType></p>
	<p><CompleteSubaddress></p> <p><SubaddressElement Element Sequence Number="1" SubaddressComponentOrder="1" ></p> <p><SubaddressType>Building</SubaddressType></p> <p><SubaddressIdentifier>A</SubaddressIdentifier></p> <p></SubaddressElement></p> <p><SubaddressElement Element Sequence Number="1" SubaddressComponentOrder="2" ></p> <p><SubaddressType>Room</SubaddressType></p> <p><SubaddressIdentifier>Empire</SubaddressIdentifier></p> <p></SubaddressElement></p> <p></CompleteSubaddress></p>
Quality Measures	<p>Tabular Domain Measure</p> <p>Subaddress Component Order Measure</p>
Quality Notes	

1365

1366 **2.4.7.4 Element Sequence Number**

Element Name	Element Sequence Number
Other common names for this element	
Definition	<p>The order in which the Subaddress Elements should be written within a Complete Subaddress; the order in which the Landmark Names should be written within a Complete Landmark Name; or the order in which the Place Names should be written within a Complete Place Name.</p>
Definition Source	New

Data Type	Integer
Existing Standards for this Element	None
Domain of Values for this Element	Positive integers
Source of Values	Locally determined
How Defined (e.g., locally, from standard, other)	Locally
Example	For the Complete Place Name "Sun Valley, San Rafael, Marin County," the Place Name elements would have the following Element Sequence Numbers : Sun Valley: Element Sequence Number = 1 San Rafael: Element Sequence Number = 2 Marin County: Element Sequence Number = 3
Notes/Comments	1. Complete Subaddresses , Complete Landmark Names , or Complete Place Names can include more than one element. When that occurs, the Element Sequence Number shows the order in which the components should be assembled. 2. If the Element Sequence Number is omitted, is the sequence presumed to be unknown or irrelevant.
XML Tag	ElementSequenceNumber
XML Model	<xsd:simpleType name="ElementSequenceNumber_type"> <xsd:restriction base="xsd:integer" /> </xsd:simpleType>
XML Example	<CompleteLandmark Separator=","> <LandmarkName ElementSequenceNumber="1" >CAMP CURRY</LandmarkName> <LandmarkName ElementSequenceNumber="2" >YOSEMITE NATIONAL PARK</LandmarkName> </CompleteLandmark>
Quality Measures	Related Element Uniqueness Measure Uniqueness Measure Element Sequence Number Measure
Quality Notes	

1368 **2.4.7.5 Place Name Type**

Element Name	Place Name Type
Other common names for this element	Type of Place Name
Definition	The type of Place Name used in an Address
Definition Source	The element definition is new. The definitions of the specific examples given below (community, municipal, etc.) are new and partly adapted from: 1. FGDC's "Framework Data Content Standard Part 5: Governmental unit and other geographic area boundaries"; and, 2. USPS Publication 28, Section 292, "Urbanization".
Data Type	characterString
Existing Standards for this Element	None
Domain of Values for this Element	Community, Municipal, USPS, County, Region, Unknown. Additional values may be created as needed.
Source of Values	Locally determined
How Defined (e.g., locally, from standard, other)	<p>Community: The name of an area, sector, or development, such as a neighborhood or subdivision in a city, or a rural settlement in an unincorporated area, that is not an incorporated general-purpose local government or county. The name may arise from official recognition or from popular usage.</p> <p>Municipal: The name of the general-purpose local government (if any) where the address is physically located.</p> <p>USPS: The name assigned to the post office from which the USPS delivers mail to the address.</p> <p>County: the county or county equivalent where the address is physically located.</p> <p>Region: The name of the region where the address is physically located. Typically this is name of the central city within the region. For precise, systematic terms, Census terms and definitions may be applied, but popular usage is often imprecise and to some extent subjective.</p> <p>Unknown: The Place Name Type is not known.</p>
Example	<p>A part of the Regent Square neighborhood is within Swissvale Borough, just outside the city limits of Pittsburgh, PA. It is served by the Wilksburg post office. The following place names might be used for this part of the neighborhood:</p> <p>Community: Regent Square</p>

	Municipal: Swissvale USPS: Wilkinsburg MSAG: Swissvale County: Allegheny Region: Pittsburgh
Notes/Comments	1. Place Name Type is an attribute of the Place Name element. It is used to show what kind of place name is given for the address.
XML Tag	PlaceNameType
XML Model	<pre><xsd:simpleType name="PlaceNameType_type"> <xsd:restriction base="xsd:string"> <xsd:enumeration value="Community" > <xsd:annotation> <xsd:documentation xml:lang="en"> The name of an area, sector, or development, such as a neighborhood or subdivision in a city, or a rural settlement in an unincorporated area, that is not an incorporated general-purpose local government or county. The name may arise from official recognition or from popular usage. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="USPS" > <xsd:annotation> <xsd:documentation xml:lang="en"> The name assigned to the post office from which the USPS delivers mail to the address. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Municipal" > <xsd:annotation> <xsd:documentation xml:lang="en"> The name of the general-purpose local government (if any) where the address is physically located. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="County" > <xsd:annotation> <xsd:documentation xml:lang="en"> the county or county equivalent where the address is physically located. </xsd:documentation> </xsd:annotation> </xsd:enumeration> </xsd:restriction> </xsd:simpleType></pre>

	</xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Region" > <xsd:annotation> <xsd:documentation xml:lang="en"> The name of the region where the address is physically located. Typically this is name of the central city within the region. For precise, systematic terms, Census terms and definitions may be applied, but popular usage is often imprecise and to some extent subjective. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:enumeration value="Unknown" > <xsd:annotation> <xsd:documentation xml:lang="en"> The PlaceNameType is not known. </xsd:documentation> </xsd:annotation> </xsd:enumeration> <xsd:pattern value=".+"></xsd:pattern> </xsd:restriction> </xsd:simpleType>
XML Example	<PlaceName PlaceNameType="County" >Shelby</PlaceName> <PlaceName PlaceNameType="USPS" >Washington</PlaceName> <PlaceName PlaceNameType="Community" >Urbanizacion Los Olmos</PlaceName>
Quality Measures	To be written locally
Quality Measures	Place Name Type classifications are locally determined. Validation routines should be written to test against local rules.

1369

1370 **2.4.7.6 GNIS Feature ID**

<u>Element Name</u>	<u>GNIS Feature ID</u>
Other common names for	(Obsolete) FIPS Codes for populated places (FIPS 5-5). counties

this element	(FIPS 6-4), and states (FIPS 5-2) (all subsumed and superseded by GNIS Feature ID)
Definition	"A permanent, unique number assigned to a geographic feature for the sole purpose of uniquely identifying that feature as a record in any information system database, dataset, file, or document and for distinguishing it from all other feature records so identified. The number is assigned sequentially (highest existing number plus one) to new records as they are created in the Geographic Names Information System."
Definition Source	Geographic Names Project, USGS, 523 National Center, Reston, VA 20192-0523, as posted August 25, 2009 at: http://geonames.usgs.gov/domestic/metadata.htm "Feature Identifier"
Data Type	Integer
Existing Standards for this Element	U.S. Geological Survey, 19810501, U.S. Geographic Names Information System (GNIS): U.S. Geological Survey, Reston, VA.
Domain of Values for this Element	Integers from 1 to 9,999,999,999 inclusive.
Source of Values	U.S. Geological Survey, 19810501, U.S. Geographic Names Information System (GNIS): U.S. Geological Survey, Reston, VA. Accessible at: http://geonames.usgs.gov/domestic/index.html
How Defined (e.g., locally, from standard, other)	Assigned within U.S. Geographic Names Information System (GNIS)
Example	<p>531676 - United States Department of the Interior Building, Washington DC</p> <p>1658360 - Curry Village, Yosemite National Park, CA (Old FIPS55 Place Code: 17638)</p> <p>1248001 - Florence County, SC (Old FIPS55 Place Code: 99041)</p>
Notes/Comments	<p>1. "The Geographic Names Information System (GNIS) is the Federal and national standard for geographic nomenclature. The U.S. Geological Survey developed the GNIS in support of the U.S. Board on Geographic Names as the official repository of domestic geographic names data, the official vehicle for geographic names use by all departments of the Federal Government, and the source for applying geographic names to Federal electronic and printed products.</p> <p>"The GNIS contains information about physical and cultural geographic features of all types in the United States, associated</p>

areas, and Antarctica, current and historical, but not including roads and highways. The database holds the Federally recognized name of each feature and defines the feature location by state, county, USGS topographic map, and geographic coordinates. Other attributes include names or spellings other than the official name, feature designations, feature classification, historical and descriptive information, and for some categories the geometric boundaries.

“... The GNIS collects data from a broad program of partnerships with Federal, State, and local government agencies and other authorized contributors, and provides data to all levels of government, to the public, and to numerous applications through a web query site, web map and feature services, file download services, and customized files upon request.” (Quoted August 25, 2009 from

<http://geonames.usgs.gov/domestic/index.html>)

2. "The [GNIS Feature Identifier] number, by design, carries no information or association to the content of the feature record and therefore is not subject to change as attribute values change. Once assigned to a feature, the number is never changed or withdrawn, and never reassigned. The Feature ID can be applied in conjunction with system-unique record identifiers in any database or system, thus providing a national standard common reference identifier across multiple datasets. The Feature ID is stored in the GNIS database as an integer with a maximum of ten digits. (Source: Geographic Names Project, USGS, 523 National Center, Reston, VA 20192-0523.)" (Quoted August 25, 2009 from: <http://geonames.usgs.gov/domestic/metadata.htm> "Feature Identifier")

3. The Board of Geographic Names has set forth its principles, policies, and procedures for recognizing and standardizing domestic geographic names in its "Principles, Policies, and Procedures," posted at:

<http://geonames.usgs.gov/domestic/policies.htm>

4. In the context of the address standard, [GNIS Feature ID](#) is applicable primarily to [Landmark Names](#), [Place Names](#) and [State Names](#). GNIS also includes the names of natural features, which are generally outside the scope of the address standard.

5. The Board of Geographic Names seeks to include in GNIS all feature names of public interest. Local authorities are encouraged to submit local feature names that are not already included in GNIS.

6. GNIS offers useful guidance to address authorities in selecting one name as a standard where several variants exist. [GNIS](#)

	<p>Feature ID's, if assigned to Landmark Names or Place Names, can help reconcile minor name variations that can frustrate computer matches (e.g., DeKalb, Dekalb, De Kalb). GNIS Feature ID's also provide a way to link a preferred local variant name to a nationally-recognized standard.</p> <p>7. GNIS provides a primary location point (x, y coordinate) for each feature. The GNIS primary point will in many cases differ from address coordinates assigned to the same feature by the addressing authority, due to differences in procedure and precision. GNIS procedures are described at: http://geonames.usgs.gov/domestic/metadata.htm "Primary Point".</p>
XML Tag	GNISFeatureID
XML Model	<pre><xsd:simpleType name="GNISFeatureID_type"> <xsd:restriction base="xsd:integer" /> </xsd:simpleType></pre>
XML Example	<pre><CompleteLandmark Separator=","> <LandmarkName ElementSequenceNumber="0" GNISFeatureID="1658360" >CURRY VILLAGE</LandmarkName> <LandmarkName Element Sequence Number="1">YOSEMITE NATIONAL PARK</LandmarkName> </CompleteLandmark></pre>
Quality Measures	Related Not Null Measure
Quality Notes	

1371

1372 **2.4.7.7 Delivery Address Type**

Element Name	Delivery Address Type
Other common names for this element	
Definition	Whether the Delivery Address includes or excludes the Complete Subaddress .
Definition Source	New
Data Type	characterString
Existing Standards for this	None

Element	
Domain of Values for this Element	<p>Subaddress Included - The Delivery Address includes the Complete Subaddress (if any)</p> <p>Subaddress Excluded - The Delivery Address excludes the Complete Subaddress (if any)</p> <p>Unstated - Not stated/no information (default value)</p>
Source of Values	New
How Defined (e.g., locally, from standard, other)	Defined herein.
Example	<p>Delivery Address = 123 Main Street, Apt. 1 (Delivery Address Type = Subaddress Included)</p> <p>Delivery Address = 123 Main Street Complete Subaddress = Apt. 1 (Delivery Address Type = Subaddress Excluded)</p> <p>Delivery Address = Ames High School, Room 12 (Delivery Address Type = Subaddress Included)</p> <p>Delivery Address = Ames High School Complete Subaddress = Room 12 (Delivery Address Type = Subaddress Excluded)</p>
Notes/Comments	<p>1. The Delivery Address typically includes the Complete Subaddress. However, there are sometimes reasons to omit or separate the Complete Subaddress from the Delivery Address. For example, the Complete Subaddress can hamper address geocoding, and contact lists often separate the Complete Subaddress from the rest of the feature address (see, for example, the EPA Contact Information Data Standard).</p> <p>2. The Delivery Address Type shows whether the Delivery Address includes or excludes the Complete Subaddress.</p> <p>3. If all the records in a file have the same Delivery Address Type, this information can be included in the file-level metadata. If records of different types are likely to be mixed together, the Delivery Address Type should be included in each record.</p>
XML Tag	DeliveryAddressType
XML Model	<pre> <xsd:simpleType name="DeliveryAddressType_type"> <xsd:restriction base="xsd:token"> <xsd:enumeration value='SubAddress Included' > <xsd:annotation> <xsd:documentation>The Delivery Address includes the Complete Subaddress (if any) </xsd:documentation></xsd:annotation></xsd:enumeration> <xsd:enumeration value='SubAddress Excluded' > <xsd:annotation> </pre>

	<pre> <xsd:documentation>The Delivery Address includes the Complete Subaddress (if any) </xsd:documentation></xsd:annotation></xsd:enumeration> <xsd:enumeration value='Unstated' > <xsd:annotation> <xsd:documentation>Not stated/no information (default value) </xsd:documentation> </xsd:annotation></xsd:enumeration> </xsd:restriction> </xsd:simpleType> </pre>
XML Example	<pre> <DeliveryAddress DeliveryAddressType="Subaddress Included" >123 Dartmouth College Highway, Suite 100</DeliveryAddress> <DeliveryAddress DeliveryAddressType="Subaddress Excluded" >123 Dartmouth College Highway, Suite 100</DeliveryAddress> </pre>
Quality Measures	Tabular Domain Measure Delivery Address Type Subaddress Measure
Quality Notes	

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1374 2.4.8 Address Lineage Attributes

1375 2.4.8.1 Address Start Date

<u>Element Name</u>	<u>Address Start Date</u>
Other common names for this element	
Definition	The earliest date on which the address is known to exist.
Definition Source	New
Data Type	Date
Existing Standards for this Element	For representation of dates: YYYYMMDD (Year-month-date)(ISO 8601:2004 and FGDC CSDGM:1998).
Domain of Values for this Element	May be created locally

Source of Values	Local records
How Defined (e.g., locally, from standard, other)	Locally
Example	20050415
Notes/Comments	<p>1, The Address Start Date is record-level metadata that should be stored for each address.</p> <p>2. Changes to the Complete Address Number values or to the Complete Street Name values warrant retirement and a "new" address.</p> <p>3. Changes to the values contained in Complete Subaddress, Place Name, and ZIP Code do not necessarily warrant a "new" address.</p> <p>4, Therefore, the Complete Address Number and the Complete Street Name, and the Place Name, and ZIP Code elements should each have their own start dates and end dates, separate from the address start/end dates, and the dataset start/end dates. The simple elements that make up the Complete Address Number and Complete Street Name do not need to have individual start/end dates.</p> <p>5. An address start date is not assigned until the Address Lifecycle Status is "proposed" or "active". The start date is generally the date on which the address authority assigns or reserves the address for use. As a rule this should be done as early as possible in the development process, generally upon subdivision or issuance of the initial building permit.</p> <p>6. By definition, an address with a Address Lifecycle Status of "potential" has no Address Start Date.</p> <p>7. Dates are stored in many different ways by various software programs, typically as an integer showing the number of days since some arbitrary beginning date, and converted upon display to a format that people can read. This standard does not prescribe how software should create or handle dates internally. However, for display and exchange of dates, this standard prescribes the YYYYMMDD format specified in ISO 8601:2004 and in the FGDC Content Standard for Digital Geospatial Metadata (v2, 1998). The standard is unambiguous and easily-understood, it is recognized nationally and internationally, and it can be extended if needed to include hours, minutes and seconds.</p>
XML Tag	<AddressStartDate>
XML Model	<pre><xsd:simpleType name="AddressStartdDate_type"> <xsd:restriction base="xsd:date" /> </xsd:simpleType></pre>

XML Example	<AddressStartDate>19950517</AddressStartDate>
Quality Measures	Start End Date Order Measure Future Date Measure
Quality Notes	

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1377 2.4.8.2 Address End Date

Element Name	Address End Date
Other common names for this element	
Definition	The date on which the address is known to no longer be valid.
Definition Source	New
Data Type	Date
Existing Standards for this Element	For representation of dates: YYYYMMDD (Year-month-date)(ISO 8601:2004 and FGDC CSDGM:1998).
Domain of Values for this Element	May be created locally
Source of Values	Local records
How Defined (e.g., locally, from standard, other)	Locally
Example	20080726
Notes/Comments	<ol style="list-style-type: none"> 1. The Address End Date is record-level metadata that should be stored for each address. 2. Changes to the Complete Address Number value or to the Complete Street Name value warrant retirement and a "new" address. 3. Changes to the values contained in Complete Subaddress, Place Name, and ZIP Code do not necessarily warrant a "new" address. 4. Therefore, the Complete Address Number and the Complete Street Name, and the Place Name, and ZIP Code elements should have start dates and end dates for the element itself, separate from the dataset start/end dates. The simple elements that make up the Complete Address Number and Complete Street Name do not need to have individual start/end dates. 5. An address is given an end date when the Address Authority

	retires it. 6. If the Address Lifecycle Status is potential, proposed or active, then the Address End Date must be null. If the Address Lifecycle Status is retired, then the address or name must have an Address End Date . 7. Dates are stored in many different ways by various software programs, typically as an integer showing the number of days since some arbitrary beginning date, and converted upon display to a format that people can read. This standard does not prescribe how software should create or handle dates internally. However, for display and exchange of dates, this standard prescribes the YYYYMMDD format specified in ISO 8601:2004 and in the FGDC Content Standard for Digital Geospatial Metadata (v2, 1998). The standard format is unambiguous and easily-understood, it is recognized nationally and internationally, and it can be extended if needed to include hours, minutes and seconds.
XML Tag	<AddressEndDate>
XML Model	<xsd:simpleType name="AddressEndDate_type"> <xsd:restriction base="xsd:date" /> </xsd:simpleType>
XML Example	<AddressEndDate>19950517</AddressEndDate>
Quality Measures	Start End Date Order Measure Future Date Measure
Quality Notes	

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1379 2.4.8.3 Data Set ID

Element Name	Data Set ID
Other common names for this element	
Definition	An identifier in each record of a transmitted dataset, assigned by the sender or the receiver of the dataset, to link each record of the dataset to the file-level metadata that accompanies the dataset.
Definition Source	New
Data Type	characterString
Existing Standards for this	None

Element	
Domain of Values for this Element	Yes
Source of Values	Assigned by the sender or the receiver of a data set.
How Defined (e.g., locally, from standard, other)	Assigned by the sender or the receiver of a data set.
Example	Dataset ID 1475
Notes/Comments	<p>1. The content of the file-level metadata is specified in the FGDC's Content Standard for Digital Geospatial Metadata.</p> <p>2. The ID may be assigned by the sender upon transmittal of the dataset or the recipient upon receipt.</p> <p>3. Normally the identifier will be numeric, but the standard does not preclude alphanumeric identifiers.</p>
XML Tag	<DataSetID>
XML Model	<pre><xsd:simpleType name="DataSetID_type"> <xsd:restriction base="xsd:string"> <xsd:pattern value=".*"></xsd:pattern> </xsd:restriction> </xsd:simpleType></pre>
XML Example	<DataSetID>1457</DataSetID>
Quality Measures	Related Not Null Measure
Quality Notes	

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3 Address Data Classification

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3.1 Introduction

1383

3.1.1 Basis for Classification

1384 The classification part of this standard classifies addresses according to their syntax, that is,

1385 their address elements and the order in which the elements are arranged. Syntax determines