7 APPENDICES

7.1 Appendix A (Normative): Normative XSD

The Address Standard XML Schema Definition is broken into 2 parts. The first part contains element definitions and corresponds to Part One of the Standard. The second part contains the Address Class definitions and corresponds to Part Two of the Standard.

7.1.1 addr_type.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema targetNamespace="addr_type"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:addr_type="addr_type"
 xmlns:gml="http://www.opengis.net/gml">
 <!--
 Draft Address Standard, version 0.4 being prepared and tested by a
 Working Group coordinated by URISA and NENA and the Census Bureau for
 submittal to the FGDC.
 -->
 <!--
 During the initial draft period the rddl can be found at
 http://wfs.co.fulton.ga.us/urisa/addr_std/addr.xsd
 -->
 <xsd:include schemaLocation=""></xsd:include>
 <xsd:include schemaLocation=""></xsd:include>
 <xsd:include schemaLocation=""></xsd:include>
 <xsd:import namespace="http://www.opengis.net/gml"
 schemaLocation="base/gml.xsd">
 <xsd:annotation>
  <xsd:documentation>
  GML 3.1.1 from Open Geospatial Consortium
  </xsd:documentation>
 </xsd:annotation>
 </xsd:import>
 <xsd:simpleType name="version_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  The ID for this version
  of the Address Standard.
  </xsd:documentation>
 </xsd:annotation>
```

```
<xsd:restriction base="xsd:token">
 <xsd:enumeration value='0.4' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="Separator_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A symbol or word
 required as a separator between
 components of a complex element or
 class. The separator
 is required for address number ranges and for
 intersection addresses, and it is occasionally needed in
 constructing complete street numbers.
 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
 address ranges and
 intersection addresses.
 3. Within a given dataset,
 one
 value should be used consistently within
 a given complex
 element.
 4. For complete street 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 suffix.
 5.
 The separator is not needed in creating fractions (1/2,
 etc.) for
 address number suffixes.
 6. Some address parsing software permits the
 use of ampersands to
 signify intersection addresses. Be wary, though
 --in many
 programming languages, ampersands are reserved for other
 uses, which
 could complicate data exchange.
 </xsd:documentation>
```

```
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ElementSequenceNumber_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The order in which the
 elements of a Complete Subaddress,
 Complete Landmark Name, or
 Complete Place Name should be written.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:integer" />
</xsd:simpleType>
<xsd:simpleType name="GNISFeatureID_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 "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"
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:integer" />
</xsd:simpleType>
<xsd:complexType name="AddressNumberPrefix_type">
<xsd:annotation>
```

```
<xsd:documentation xml:lang="en"> The portion of the
Complete Address Number which precedes the Address Number itself.
</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="xsd:string">
<xsd:attribute name="Separator" type="addr_type:Separator_type" />
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="AddressNumber_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The numeric identifier
for a land parcel, house,
building or other feature, as defined by
the official
address authority for the given jurisdiction.
1. The
address number is defined as an integer to
support address sorting,
parity (even/odd) definition,
and in/out of address range tests.
2.
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 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.
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 site number, or in
```

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the Address Number
Suffix if they follow the number.
4. The address
number must be converted to text when it
is combined with the prefix
and suffix into a complete
address number.
5. If necessary, the
Separator can be used to separate
the address number from the prefix
or suffix elements in
constructing the complete address number.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='[0-9]+' />
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="AddressNumberSuffix_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The non-integer portion
of the identifier for the house,
building or other feature which
follows the address
number itself, as defined by the official address
authority for the given jurisdiction.
1. This element will not be
applicable for most
addresses. When township-range or other
non-numeric
geographic index references follow an address number,
they are placed in this field. The address number can
then be
maintained as an integer for sorting and quality
control tests.
2. If
necessary, the Separator can be used to separate
the address number
from the prefix or suffix elements in
constructing the complete
address number.
</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
```

```
<xsd:extension base="xsd:string">
<xsd:attribute name="Separator" type="addr_type:Separator_type" />
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<!-- StreetName Content -->
<xsd:complexType name="StreetNameModifier_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
A word or phrase that
precedes or follows all other
elements of the street name and
modifies it, but is
separated from the street name by a street name
pre-directional and/or pre-type.
The street name pre-modifier is
rarely needed and its
use should be minimized. The modifier can be
included in
the Street Name element unless it is separated from the
street name by a pre-type or a pre-directional.
</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="xsd:string">
<xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="StreetNameDirectional_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
A word preceding or
following the street name that
indicates the directional taken by the
thoroughfare from
an arbitrary starting point, or the sector where it
is
located.
1. Standard USPS English abbreviations are E, W, S, N,
NE,
SE, SW, NW
2. Standard USPS Spanish abbreviations are E, O, S, N,
NE,
SE, SO, NO 3. USPS Publication 28 recommends
```

```
abbreviating
post-directionals. The Address Standards
Working Group differs, and
recommends storing
post-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.
</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="xsd:string">
<xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="StreetNameType_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The element of the
complete street name preceding or
following the street name element
that indicates the
type of street.
1. A street may have either a
pre-type or a post-type,
or neither, but not both. 2. USPS
Publication 28
provides the best list of pre-types and post-types,
but
it is not exhaustive.
2. USPS Publication 28 provides a standard
list of
street type abbreviations, and recommends their use. The
Address Standards Working Group differs, and recommends
storing
pre-types and post-types fully spelled out,
```

exactly as given by the
local naming authority, to avoid
confusion. If stored unabbreviated,
directionals can be
exported as standard abbreviations as needed for
mailing
and other purposes.
3. Pre-types are much less common than
post-types in
English. They are typically used for numbered highway
routes and roads. They are much more common in Spanish
and French
language street names.
4. Occasionally a street name may have neither
a prefix
type or a suffix type (e.g., "Broadway.")
5. Names like
"County Road 28", where the street type
occurs in the middle of the
name, should be treated as a
street name with no pre-type or
post-type.
</xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
<xsd:extension base="xsd:string">
<xsd:attribute name="Separator" type="addr_type:Separator_type"></xsd:attribute>
</xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="StreetName_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
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.
1. Each jurisdiction should establish
its own list of
street names and use it as a domain of values to
validate addresses. Alternate and Official names are
distinguished by
the address attribute "Alias Status

```
Attribute"
2. Local addressing
authorities are urged to follow
consistent internal street naming
practices, and to
resolve internal street name inconsistencies,
especially
for numbered streets ("Twentieth" or "20th" ?), internal
capitalization ("McIntyre" or "Mcintyre" ?), hyphens,
and
apostrophes.
3. 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.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<!-- Occupancy Types -->
<xsd:simpleType name="SubaddressComponentOrder_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The order in which
SubaddressType and
SubaddressIdentifier appear within an
SubaddressElement when expressed as text. "Apartment 7"
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:integer">
<xsd:enumeration value="1">
<xsd:annotation>
<xsd:documentation>SubaddressType first, then SubaddressIdentifier
(or: SubaddressElement does not include an SubaddressType).
Example: "Floor 7"</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="2">
<xsd:annotation>
<xsd:documentation>SubaddressIdentifier first, then SubaddressType.
Example: "Empire Room"</xsd:documentation>
</xsd:annotation>
```

```
 </xsd:enumeration>
 <xsd:enumeration value="3">
 <xsd:annotation>
  <xsd:documentation>Order is not known or unstated.
  </xsd:documentation>
 </xsd:annotation>
 </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="SubaddressType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 This is a modifier to
 the SubaddressIdentifier element and this
 cannot exist without it.
 The type of structure (when
 several structures are found at the same
 address), e.g.,
 Apartment, Tower, Block. Used with Building
 Identifier
 to designate one of several structures at a given site.
 Fits within the general USPS definition of a "secondary
 address
 designator" and EPA definitions of "secondary
 address identifier"
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType name="SubaddressIdentifier_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The letters, numbers,
 words or combination thereof used
 to distinguish one structure from
 another when several
 occur at the same address.
 Used with
 SubaddressType to designate one of several
 structures at a given
 site. Fits within the USPS
 definition of a "secondary address
 designator" and the
 general EPA definition of "secondary address
 identifier"
```

```
 </xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="xsd:string" />
 </xsd:simpleType>
 <xsd:complexType name="SubaddressElement_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  A single combination of
  SubaddressType and
  SubaddressIdentifier (or, in some cases, a
  SubaddressIdentifier alone), which, alone or in
  combination with
  other SubaddressElements, distinguishes
  one subaddress within or
  between structures from another
  when several occur within the same
  feature. See
  CompleteSubaddress for a definition of "subaddress."
  </xsd:documentation>
 </xsd:annotation>
 <xsd:sequence>
  <xsd:element name="SubaddressType" 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:attribute name="GNISFeatureID"
type="addr_type:GNISFeatureID_type"></xsd:attribute>
 </xsd:complexType>
 <!-- Landmark Name Type -->
 <xsd:complexType name="LandmarkName_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  The name by which a
  prominent feature is publicly known.
  Landmarks usually have a street
  address. A landmark name
  does not imply official historic landmark
  status, but
```

```
4081      simply a commonly used name that substitutes for an
4082      address number and street name in identifying the
4083      location of a
4084      specific building or feature. Generally
4085      the use of a landmark's
4086      street address is preferable
4087      because it is unambiguous. All landmark
4088      names should be
4089      cross-referenced to a street address or other
4090      coordinate
4091      location.
4092      </xsd:documentation>
4093     </xsd:annotation>
4094     <xsd:simpleContent>
4095      <xsd:extension base="xsd:string">
4096      <xsd:attribute name="ElementSequenceNumber"
4097       type="addr_type:ElementSequenceNumber_type" />
4098      <xsd:attribute name="GNISFeatureID" type="addr_type:GNISFeatureID_type" />
4099      </xsd:extension>
4100     </xsd:simpleContent>
4101     </xsd:complexType>
4102     <!-- Area and Zone Elements -->
4103     <xsd:simpleType name="CommunityPlaceName_type">
4104     <xsd:annotation>
4105      <xsd:documentation xml:lang="en">
4106      A named area, sector,
4107      or development that is not an
4108      incorporated municipality or other
4109      governmental unit,
4110      such as a neighborhood in a city, or a rural
4111      settlement
4112      in unincorporated area. Often called "urbanization" in
4113      Puerto Rican addressing usage.
4114      1. "Urbanizacion", commonly used in
4115      urban areas of
4116      Puerto Rico, is an important part of the address.
4117      Street
4118      names and address ranges are often repeated in a city,
4119      especially where a city has annexed older towns; they
4120      are
4121      distinguished by their urbanizacion or community
4122      name.
4123      2. Certain
4124      other words can be used in place of
4125      "urbanizacion": extenciones,
```

```
4126    mansiones, reparto, villa,
4127    parque, jardine, altura, alturas, colinas,
4128    estancias,
4129    extension, quintas, sector, terraza, villa, villas.
4130    3. For
4131    more information on Puerto Rican addressing
4132    conventions, see USPS
4133    Publication 28 Section 29, and
4134    USPS "Addressing Standards for Puerto
4135    Rico and the
4136    Virgin Islands".
4137    </xsd:documentation>
4138   </xsd:annotation>
4139   <xsd:restriction base="xsd:string">
4140    <xsd:pattern value='.+' />
4141   </xsd:restriction>
4142   </xsd:simpleType>
4143   <xsd:simpleType name="PlaceNameType_type">
4144   <xsd:restriction base="xsd:string">
4145    <xsd:enumeration value="USPSCommunity">
4146    <xsd:annotation>
4147     <xsd:documentation xml:lang="en">
4148     The name given by the
4149     U.S. Postal Service to the
4150     post office from which mail is delivered
4151     to the
4152     address. In many places this will be different
4153     from the name
4154     of the municipality in which the
4155     address is physically located.
4156     The
4157     name given by the U.S. Postal Service to the
4158     post office from which
4159     mail is delivered to the
4160     address. In many places this will be
4161     different
4162     from the name of the incorporated municipality
4163     in which
4164     the address is physically located.
4165     </xsd:documentation>
4166    </xsd:annotation>
4167    </xsd:enumeration>
4168    <xsd:enumeration value="MunicipalJurisdiction">
4169    <xsd:annotation>
4170     <xsd:documentation xml:lang="en">
```

```
4171      The name of the
4172      municipality (city, township, or
4173      other non-county local government)
4174      in which the
4175      address is physically located. In many places
4176      this will
4177      be different than the city name used
4178      by the U.S. Postal Service.
4179      Required by most local governments for tax and
4180      services
4181      determinations. This will be null for
4182      addresses in unincorporated
4183      portions of
4184      counties.
4185      </xsd:documentation>
4186     </xsd:annotation>
4187     </xsd:enumeration>
4188     <xsd:enumeration value="County">
4189     <xsd:annotation>
4190      <xsd:documentation xml:lang="en">
4191      The primary
4192      administrative subdivision of a
4193      state in the United States.
4194      </xsd:documentation>
4195     </xsd:annotation>
4196     </xsd:enumeration>
4197     <xsd:pattern value=".+"></xsd:pattern>
4198    </xsd:restriction>
4199    </xsd:simpleType>
4200    <xsd:simpleType name="StateName_type">
4201    <xsd:annotation>
4202     <xsd:documentation xml:lang="en">
4203     The primary legal
4204     subdivision of the United States,
4205     represented by its two letter USPS
4206     abbreviation.
4207     This is the only element stored in abbreviated form.
4208     </xsd:documentation>
4209    </xsd:annotation>
4210    <xsd:restriction base="xsd:token">
4211     <!-- "US State and The District of Columbia" Abbreviations -->
4212     <xsd:pattern value='.*' />
4213    </xsd:restriction>
4214    </xsd:simpleType>
4215    <xsd:simpleType name="ZipCode_type">
```

```
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A five-digit code that
 identifies a specific pseudo
 geographic delivery area. ZIP Codes can
 represent an
 area within a state, an area that crosses state
 boundaries (unusual condition) or a single building or
 company that
 has a very high mail volume. "ZIP" is an
 acronym for Zone Improvement
 Plan. Zero pad from the
 left to fill the range as in 01776.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='[0-9]{5}' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ZipPlus4_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A four-digit extension
 of the five-digit Zip Code that
 identifies a portion of a carrier
 route for USPS mail
 delivery. Zero pad from the left to fill the
 range as in
 0030.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='[0-9]{4}' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="CountryName_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The name of the country
 in which the address is located.
 1.Although the scope of this
 standard is restricted to
 US addresses, this item is included for two
 reasons: to
 facilitate reconciliation with address standards of
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other
nations, and to accommodate files which mix
addresses from the US and
other countries. 2. ISO 3166-1
official short English names are
specified because they
a familiar and concise, and because ISO 3166-1
is
specified in the UPU address standard. 3. The names can
be found
at:
http://www.iso.org/iso/en/prods-services/iso3166ma/02iso-3166-code-lists/list-en1.html
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType name="USPSBoxType_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
A box used for receipt
of USPS mail. The box may be
located in the post office lobby (e.g. PO
Box), on the
customer's premises or other USPS authorized place (e.g.
rural route box).
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="USPSBoxId_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The numbers or letters
distinguishing one box from
another within a post office. May include
slash, hyphen
or period.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
```

```
<xsd:complexType name="USPSBox_type">
<xsd:annotation>
 <xsd:documentation>A container for the receipt of USPS mail uniquely
 identified by the combination of a USPS Box Type and a USPS Box ID.
 </xsd:documentation>
</xsd:annotation>
<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>
<xsd:simpleType name="USPSBoxGroupType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A collection of postal
 boxes served from a single
 distribution point.
 This group includes
 rural routes, highway contract
 routes, postal service centers,
 overseas military common
 mail rooms and military unit numbers.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="USPSBoxGroupId_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The numbers or letters
 distinguishing one group of boxes
 from another within a distribution
 point. May include
 hyphen, slash or period.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<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>
 <xsd:complexType name="USPSAddress_type">
 <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>
 <xsd:simpleType name="USPSGeneralDeliveryPoint_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  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).
  </xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="xsd:string">
  <xsd:pattern value='.*' />
 </xsd:restriction>
 </xsd:simpleType>
 <xsd:simpleType name="AddressAuthorityIdentifiertype_old">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  A Concatenation of
  codes found in FIPS 5-2, 6-4, and
  55-3 data guides, with a locally
  defined code that MUST
  be defined in the metadata. The general format
  is
  (expressed as regular expressions)
  [0-9]{2}[0-9]{3}[0-9]{5}[0-9]{4}.
  </xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="xsd:string">
```

```
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<!-- Locational type -->
<xsd:simpleType name="AddressXCoordinate_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The X coordinate of the
 address location.</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:double" />
</xsd:simpleType>
<xsd:simpleType name="AddressYCoordinate_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The Y coordinate of the
 address location.</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:double" />
</xsd:simpleType>
<xsd:simpleType name="AddressLongitude_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The longitude
 coordinate of the address location, noted
 in decimal degrees. For
 point and polygon features,
 coordinate pairs typically locate the
 point of
 assignment: a centroid point, a point locating the entry
 to a
 property, etc.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:double" />
</xsd:simpleType>
<xsd:simpleType name="AddressLatitude_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The latitude coordinate
 of the address location, noted
 in decimal degrees. For point and
 polygon features,
 coordinate pairs typically locate the point of
 assignment: a centroid point, a point locating the entry
 to a
 property, etc.
```

```
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:double" />
</xsd:simpleType>
<xsd:simpleType name="USNationalGridCoordinate_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The USNG or US National
 Grid is an alphanumeric
 reference system that overlays the Universal
 Transverse
 Mercator (UTM) numerical coordinate system. A USNG
 coordinate consists of three parts, the:
 1. Grid Zone Designation
 (GZD) for worldwide unique
 geoaddresses (two digits plus one letter,
 developed from
 the UTM system).
 2. 100,000-meter Square Identification
 for regional
 areas (two letters).
 3. Grid Coordinates for local areas
 (always an even
 number of digits between 2 and 10 depending upon
 precision necessary to uniquely identify the location).
 Look to
 www.fgdc.gov/standards/status/usng.html for a
 normative definition.
 Adapted from US National Grid, FDGC-STD-011-2001, Section 3.3
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressElevation_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">Distance of the address
 in specified units above or below a vertical datum, as defined by a
 specified coordinate reference system. </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:double" />
</xsd:simpleType>
<xsd:simpleType name="AddressZLevel_type">
<xsd:annotation>
```

```
<xsd:documentation xml:lang="en">
Floor or level of the
structure. The lowest level of a building is 1, and ascending
numbers are assigned in order to each higher level.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressCoordinateReferenceSystemID_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">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. </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:integer" />
</xsd:simpleType>
<xsd:simpleType name="AddressCoordinateReferenceSystemAuthority_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">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. </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:complexType name="AddressCoordinateReferenceSystem_type">
<xsd:sequence>
<xsd:element name="AddressCoordinateReferenceSystemAuthority"
type="addr_type:AddressCoordinateReferenceSystemAuthority_type" />
<xsd:element name="AddressCoordinateReferenceSystemID"
type="addr_type:AddressCoordinateReferenceSystemID_type"></xsd:element>
</xsd:sequence>
</xsd:complexType>
<!-- Non Locational Elements -->
<xsd:simpleType name="AddressID_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">The unique
identification number assigned to an address by the addressing
```

```
 authority. The ID number must be unique for each address assigned by
 an addressing authority.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="DataSetID_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="AddressReferenceSystemId_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">A unique identifier of
 the Address Reference System for a specified area (Address Reference
 System Extent). </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:integer" />
</xsd:simpleType>
<xsd:simpleType name="AddressReferenceSystemName_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The name of the address
 system used in a specified area (Address Reference System Extent).
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType name="AddressReferenceSystemAuthority_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:complexType name="AddressReferenceSystemExtent_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">Boundary of the area(s)
within which an Address Reference System is used.
</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
<xsd:restriction base="gml:MultiSurfaceType" />
</xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="AddressReferenceSystemType_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
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.
</xsd:documentation>
</xsd:annotation>
<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-Axial"></xsd:enumeration>
<xsd:enumeration value="Distance"></xsd:enumeration>
<xsd:enumeration value="Area Based"></xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="AddressReferenceSystemRules_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The rules by which
address numbers, street names and
other components of a thoroughfare
```

```
4621    address are
4622    determined.
4623    </xsd:documentation>
4624   </xsd:annotation>
4625   <xsd:sequence>
4626    <xsd:element name="AddressReferenceSystemBlockRules"
4627    type="addr_type:AddressReferenceSystemBlockRules_type" minOccurs="0"
4628    maxOccurs="unbounded"></xsd:element>
4629    <xsd:element name="AddressReferenceSystemNumberingRules"
4630    type="addr_type:AddressReferenceSystemNumberingRules_type"
4631    minOccurs="0" maxOccurs="unbounded"></xsd:element>
4632    <xsd:element name="AddressReferenceSystemStreetNamingRules"
4633    type="addr_type:AddressReferenceSystemStreetNamingRules_type"
4634    minOccurs="0" maxOccurs="unbounded"></xsd:element>
4635    <xsd:element
4636    name="AddressReferenceSystemStreetTypeDirectionalAndModfierRules"
4637
4638  type="addr_type:AddressReferenceSystemStreetTypeDirectionalAndModifierRules_type
4639  "
4640    minOccurs="0" maxOccurs="unbounded"></xsd:element>
4641    <xsd:element
4642    name="AddressReferenceSystemPlaceNameStateCountyAndZipCodeRules"
4643
4644  type="addr_type:AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules_ty
4645  pe"
4646    minOccurs="0" maxOccurs="unbounded"></xsd:element>
4647    <xsd:element name="AddressReferenceSystemSubaddressRules"
4648    type="addr_type:AddressReferenceSystemSubaddressRules_type"
4649    minOccurs="0" maxOccurs="unbounded"></xsd:element>
4650   </xsd:sequence>
4651   </xsd:complexType>
4652   <xsd:simpleType name="AddressReferenceSystemBlockRules_type">
4653   <xsd:annotation>
4654    <xsd:documentation xml:lang="en">This element defines a
4655    block in an Address Reference System, and sets forth the rules for
4656    block ranges and block breaks. </xsd:documentation>
4657   </xsd:annotation>
4658   <xsd:restriction base="xsd:string" />
4659   </xsd:simpleType>
4660   <xsd:simpleType name="AddressReferenceSystemNumberingRules_type">
4661   <xsd:annotation>
4662    <xsd:documentation xml:lang="en">The rules for numbering
4663    along a thoroughfare, including parity (odd/even side definition),
4664    and numbering increment distance and value.</xsd:documentation>
4665   </xsd:annotation>
```

```
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType name="AddressReferenceSystemStreetNamingRules_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The rules for the
 selection and use of street names within an Address Reference System
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType
name="AddressReferenceSystemStreetTypeDirectionalAndModifierRules_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">Rules pertaining to the
 use of street types (suffix and prefix), directionals (prefix and
 suffix), and modifiers (prefix and suffix) of street names.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType
name="AddressReferenceSystemPlaceNameStateCountryAndZipCodeRules_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">This element contains
 rules for the use of place names, state names, country names, and
 ZIP Codes within the jurisdiction of an Address Authority.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:simpleType name="AddressReferenceSystemSubaddressRules_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:complexType name="AddressReferenceSystemAxis_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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.</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:restriction base="gml:MultiCurveType">
 </xsd:restriction>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="AddressReferenceSystemAxisPointOfBeginning_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">Coordinate location of
 the beginning point of address numbering along an Address Reference
 System Axis. </xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:extension base="gml:PointType"></xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="AddressReferenceSystemReferencePolyline_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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.</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:restriction base="gml:MultiCurveType"></xsd:restriction>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="AddressReferenceSystemRangeBreakpoint_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">A point along a street
 or other thoroughfare within an Address Reference System where an
 address range beginning and/or endpoint is located.
 </xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:extension base="gml:PointType">
 </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
```

```
<xsd:complexType name="AddressReferenceSystemRangeBreakline_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">A line connecting the
 Address Reference System Range Breakpoints with the same value
 within an Address Reference System</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:restriction base="gml:MultiCurveType">
 </xsd:restriction>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="AddressReferenceSystemRangePolygon_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">A line connecting the
 Address Reference System Range Breakpoints with the same value
 within an Address Reference System</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
 <xsd:restriction base="gml:MultiSurfaceType">
 </xsd:restriction>
</xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="AddressReferenceSystemReferenceDocumentCitation_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">A bibliographic
 reference to an ordinance, map, manual, or other document in which
 the rules governing an Address Reference System are written.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string" />
</xsd:simpleType>
<xsd:complexType name="AddressReferenceSystem_type">
<xsd:annotation>
 <xsd:documentation>An Address Reference System is a set of rules and
 geometries that define how addresses are
 assigned along thoroughfares
 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.
</xsd:documentation>
</xsd:annotation>
<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" 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>
<xsd:complexType name="RelatedAddressID_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The identifier of an
 address that is related to the
 identifier of another address.
 </xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
 <xsd:extension base="addr_type:AddressID_type">
 <xsd:attribute name="AddressRelationType"
  type="addr_type:AddressRelationType_type" />
 </xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="AddressRelationType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The manner in which an
 address identified by a RelatedAddressID is related to an address
 identified by an AddressID.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="RelatedTransportationFeatureID_type">
```

```
<xsd:annotation>
 <xsd:documentation xml:lang="en">The unique identifier
 assigned (within the reference transportation base model) to a
 transportation feature to which an address is related. see U.S.
 Federal Geographic Data Committee, "Framework Data Content Standard
 Part 7: Transportation base."
 "Framework Data Content Standard Part
 7c: Roads."
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressTransportationFeatureID_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The unique identifier
 assigned to the particular feature that represents an address within
 a transportation base model. see U.S. Federal Geographic Data
 Committee, "Framework Data Content Standard Part 7: Transportation
 base."
 "Framework Data Content Standard Part 7c: Roads."
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressTransportationFeatureType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">The type of
 transportation feature (TranFeature) used to represent an address.
 For transportation features generally: U.S. Federal Geographic Data
 Committee, "Framework Data Content Standard Part 7: Transportation
 base."
 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."
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
```

```
 </xsd:restriction>
 </xsd:simpleType>
 <xsd:simpleType name="AddressTransportationSystemAuthority_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">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.
</xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="xsd:string">
  <xsd:pattern value='.*' />
 </xsd:restriction>
 </xsd:simpleType>
 <xsd:simpleType name="AddressTransportationSystemName_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">The name of the
  transportation base model to which the address is related.
  </xsd:documentation>
 </xsd:annotation>
 <xsd:restriction base="xsd:string">
  <xsd:pattern value='.*' />
 </xsd:restriction>
 </xsd:simpleType>
 <xsd:simpleType name="AddressParcelIdentifier_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">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."
  Definition source for "parcel identifier":
  Adapted from FGDC, May
  2008. "Geographic Information Framework
  Data Content Standard
  Part 1: Cadastral." Section 4.2.
  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)
  </xsd:documentation>
 </xsd:annotation>
```

```
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressParcelIdentifierSource_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">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.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressUUId_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The unique
 identification number assigned to an address
 by the addressing
 authority. The ID number must be
 unique for each address assigned by
 an addressing
 authority. This, combined with the FIPS number of the
 addressing authority, can provide a unique ID for every
 address in
 the US.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AssociatedAddressId_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The unique
 identification number of and address related to this one.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
```

```
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="MailableAddress_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 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).
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
 <xsd:enumeration value="Yes">
 <xsd:annotation>
  <xsd:documentation>The USPS delivers mail to this 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>
<xsd:simpleType name="AddressSideOfStreet_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The side of the
 transportation segment (right , left,
 both, none, unknown) on which
 the address is located.
 U.S. Federal Geographic Data Committee,
```

```
"Framework Data
Content Standard Part 7: Transportation base,"
sections
7.3.2 and B.3.6
</xsd:documentation>
</xsd:annotation>
<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
AddressSideOfStreet
of none.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="unknown"></xsd:enumeration>
</xsd:restriction>
```

```
</xsd:simpleType>
<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">
 <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
  AddressSideOfStreet
  of none.
  </xsd:documentation>
```

```
 </xsd:annotation>
 </xsd:enumeration>
 <xsd:enumeration value="unknown"></xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<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>
  Both even and odd Address Numbers are found in
  the range.
  </xsd:documentation>
 </xsd:annotation>
 </xsd:enumeration>
 <xsd:enumeration value="none">
 <xsd:annotation>
  <xsd:documentation>
  No Address Number is found within the range.
  </xsd:documentation>
 </xsd:annotation>
```

```
 </xsd:enumeration>
 <xsd:enumeration value="unknown">
 <xsd:annotation>
  <xsd:documentation>The parity of the Address Numbers in the range
  in not known. </xsd:documentation>
 </xsd:annotation>
 </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<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 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>
<xsd:simpleType name="AddressStartDate_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The earliest date on
 which the address is known to
 exist.
```

```
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:date" />
</xsd:simpleType>
<xsd:simpleType name="AddressEndDate_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The earliest date on
 which the address is known to no
 longer be valid.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:date" />
</xsd:simpleType>
<xsd:simpleType name="AddressClassification_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The type or
 classification of the address according to
 the classification
 standard.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd: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 DeliveryRoute"></xsd:enumeration>
 <xsd:enumeration value="USPSGeneral DeliveryOffice"></xsd:enumeration>
 <xsd:enumeration value="GeneralAddressClass"></xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<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>
<xsd:simpleType name="AddressLifecycle_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
The Lifecycle status of
the address.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
<xsd:enumeration value='PROPOSED' />
<xsd:enumeration value='ACTIVE' />
<xsd:enumeration value='RETIRED' />
<xsd:enumeration value='TEMPORARY' />
</xsd:restriction>
</xsd:simpleType>
<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: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>
<xsd:simpleType name="AddressOfficialStatus_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
Whether the address is
as given by the official
addressing authority (official), or an
unofficial
variant or equivalent of it (alias).
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
<xsd:enumeration value="Official">
<xsd:annotation>
<xsd:documentation>
The address or name as designated by the
addressing authority.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Alternate Name">
```

```
<xsd:annotation>
 <xsd:documentation>
 In any of the address classes described in 2.2,
 the collective name element may have another
 acceptable form. Some
 alternate names may be
 conditional, on attempt, i.e. if the alias
 resolves the address no further alternate names
 should be
 considered. Other alternate names are
 always applied, such as
 official renamings. All
 alternate names carry a limit of
 applicability
 and a timeframe of applicability. The limit of
 applicability may be a limit to a single ZIP code,
 a naming
 authorities boundary, such as city or
 county limits, or a range of
 address numbers
 with such a boundary.
 </xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Alternate Renamed">
<xsd:annotation>
 <xsd:documentation>
 Upon official renaming of an address, or
 renumbering of an address, or a series of
 addresses, the prior,
 older address will occur
 in address lists for a period of time and
 a
 conversion to current names or current addresses
 will need to be
 provided. Such an entity may
 match a single address or a range of
 addresses.
 </xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Alternate Authority Name">
<xsd:annotation>
 <xsd:documentation>
 The alternate name is established by a separate,
```

```
or the same, naming authority. Such names may
apply to any address
class, including landmarks.
Such names would be established by
naming
authorities with a geographically larger area of
responsibility, containing all or part of a
naming authority with a
smaller region, such as
a state name overlaying a county name or a
county name overlaying a city or town name.
Examples would be a
state highway designation
(State Highway 7) overlaid upon locally
named
roads or a memorial highway overlaid on local
road names or
state highway names.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Alternate Colloquial Name">
<xsd:annotation>
<xsd:documentation>
Local communities hold on to address names much
longer than do regional agencies. A community
may use a colloquial
address name as much as 30
years after that name has either expired
or is
no longer salient. This entry provides a
conversion to a
current name.
</xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unofficial Alternate Name">
<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 to a current name.
</xsd:documentation>
```

```
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unofficial Agency Name">
<xsd:annotation>
 <xsd:documentation>
 For data processing efficiency, entities often
 create alternate names for internal use. When
 such alternate names
 are exposed to other
 entities they need to be resolved to a current
 name.
 </xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Posted Address">
<xsd:annotation>
 <xsd:documentation>
 Address is posted, but not recognized by
 addressing authority (e.g. vanity address on a
 building).
 </xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Verified Invalid">
<xsd:annotation>
 <xsd:documentation>
 Address is verified as being invalid, but keeps
 appearing in address lists. Different from
 Unofficial Alternate
 Names in that these are
 known not to exist; Address has been issued
 and
 is in use.
 </xsd:documentation>
</xsd:annotation>
</xsd:enumeration>
<xsd:pattern value=".+"></xsd:pattern>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressAnomalyStatus_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A status flag, or an
 explanatory note, for an address
 that is not correct according to the
```

```
5611    address schema in
5612    which it is located, but is nonetheless a valid
5613    address.
5614    This field may be used to identify the type of anomaly
5615    (e.g.
5616    wrong parity, out of sequence, out of range, etc.)
5617    rather than simply
5618    whether or not it is anomalous. Local
5619    jurisdictions may create
5620    specific categories for
5621    anomalies.
5622    </xsd:documentation>
5623   </xsd:annotation>
5624   <xsd:restriction base="xsd:string"></xsd:restriction>
5625   </xsd:simpleType>
5626   <xsd:simpleType name="AddressRangeSpan_type">
5627   <xsd:annotation>
5628    <xsd:documentation xml:lang="en">
5629    Whether an address
5630    range covers part of a transportation
5631    segment, one segment, multiple
5632    segments, or the entire
5633    thoroughfare within the Address Reference
5634    System Extent.
5635    </xsd:documentation>
5636   </xsd:annotation>
5637   <xsd:restriction base="xsd:string">
5638    <xsd:enumeration value="Partial Segment"></xsd:enumeration>
5639    <xsd:enumeration value="Single Segment"></xsd:enumeration>
5640    <xsd:enumeration value="Multi Segment"></xsd:enumeration>
5641    <xsd:enumeration value="Entire Street"></xsd:enumeration>
5642    <xsd:enumeration value="Unknown"></xsd:enumeration>
5643    <xsd:pattern value=".+"></xsd:pattern>
5644   </xsd:restriction>
5645   </xsd:simpleType>
5646   <xsd:simpleType name="AddressRangeDirectionality_type">
5647   <xsd:annotation>
5648    <xsd:documentation xml:lang="en">
5649    Whether the low
5650    Complete Address Number of an address range is closer to the
5651    from-node or the to-node of the transportation segment(s) that the
5652    range is related to.
5653    </xsd:documentation>
5654   </xsd:annotation>
5655   <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">
<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>
<xsd:simpleType name="AddressRangeType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">This attribute states
 whether an address range (either a Two Number Address Range or a
 Four Number Address Range) is actual or potential.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:enumeration value="Actual">
 <xsd:annotation>
  <xsd:documentation>
  The low and high CompleteAddressNumbers 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 CompleteAddressNumbers 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
  CompleteAddressNumbers and the addressed feature
  is unknown.
  </xsd:documentation>
```

```
 </xsd:annotation>
 </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="LocationDescription_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 A text description
 providing more detail on how to
 identify or find the addressed
 feature.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string"></xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressNumberParity_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en"> The property of an
 Address Number with respect to being odd or even.
 "A relation between
 a pair of integers: if both integers
 are odd or
 both are even they
 have the same parity; if
 one is odd and the other
 is even they have
 different
 parity."
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
 <xsd:enumeration value="Even" />
 <xsd:enumeration value="Odd" />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AttachedElement_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 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.
```

```
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:enumeration value="Attached">
 <xsd:annotation>
  <xsd:documentation>
  The elements inside the CompleteAddressNumber or
  CompleteStreetName are attached and need special
  parsing rules.
  </xsd:documentation>
 </xsd:annotation>
 </xsd:enumeration>
 <xsd:enumeration value="Not Attached"></xsd:enumeration>
 <xsd:enumeration value="Unknown"></xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressNumberSide_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 "The Concept of Left
 and Right sides of a feature that a Number Range Applies to.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
 <xsd:enumeration value="Left" />
 <xsd:enumeration value="Right" />
 <xsd:enumeration value="Unknown" />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressNumberBounds_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 "The Concept of Low or
 High of numbers participating in a Number Range Applies to.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
 <xsd:enumeration value="Low" />
 <xsd:enumeration value="High" />
 <xsd:enumeration value="Unknown" />
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="StreetNameGroup">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
```

```
A geographic area where
the street names conform to a
theme. For example, some neighborhoods
feature streets
named for birds, US presidents or trees. A subset of
the
complete street name domain applies to this area.
</xsd:documentation>
</xsd:annotation>
<xsd:complexContent>
<xsd:extension base="gml:MultiSurfaceType">
<xsd:attribute name="name" type="xsd:string"></xsd:attribute>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="AddressSchemeName_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
Name of the address
scheme that operates over a
specified area, i.e.: mountain addresses,
plains
addresses.
</xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
<xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="AddressSchemeDescription_type">
<xsd:annotation>
<xsd:documentation xml:lang="en">
A description of an
Address Scheme that includes
business rules about parity, naming
conventions, and
other matters concerning the assignment and
maintenance
of an addressing scheme.
This element may refer to an
address ordinance, Standard
Operating Procedures manual or other
external document
wherein the rules for addresses in a given scheme
are
```

```
5881  written.
5882  </xsd:documentation>
5883 </xsd:annotation>
5884 <xsd:restriction base="xsd:string">
5885  <xsd:pattern value='.*' />
5886 </xsd:restriction>
5887 </xsd:simpleType>
5888 <!-- add axes name as an attribute -->
5889 <!-- change data type to GML::Point -->
5890 <xsd:complexType name="AddressSchemeOrigin_type ">
5891 <xsd:annotation>
5892  <xsd:documentation xml:lang="en">
5893  Location where the
5894  address axes meet.
5895  </xsd:documentation>
5896 </xsd:annotation>
5897 <xsd:complexContent>
5898  <xsd:extension base="gml:PointType">
5899  <xsd:attribute name="OriginValue" type="xsd:int"></xsd:attribute>
5900  <xsd:attribute name="AxisId" type="xsd:string"></xsd:attribute>
5901  </xsd:extension>
5902 </xsd:complexContent>
5903 </xsd:complexType>
5904 <xsd:complexType name="AddressSchemeAxes_type">
5905 <xsd:annotation>
5906  <xsd:documentation xml:lang="en">
5907  Address axes define the
5908  boundaries between adjoining
5909  zones in address schema. Those zones may
5910  be quadrants
5911  (northwest, northeast, southeast, southwest) or other
5912  geographic divisions. Lowest address numbers occur
5913  nearest an axis.
5914  </xsd:documentation>
5915 </xsd:annotation>
5916 <xsd:complexContent>
5917  <xsd:extension base="gml:MultiCurveType">
5918  <xsd:attribute name="AxisId" type="xsd:string"></xsd:attribute>
5919  </xsd:extension>
5920 </xsd:complexContent>
5921 </xsd:complexType>
5922 <xsd:complexType name="AddressSchemeExtent_type">
5923 <xsd:annotation>
5924  <xsd:documentation xml:lang="en">
5925  Boundary of the area
```

```
5926  over which an address schema
5927  is used when assigning addresses.
5928  </xsd:documentation>
5929 </xsd:annotation>
5930 <xsd:complexContent>
5931  <xsd:extension base="gml:MultiSurfaceType" />
5932 </xsd:complexContent>
5933 </xsd:complexType>
5934 <xsd:simpleType name="AddressDirectSource_type">
5935 <xsd:annotation>
5936  <xsd:documentation xml:lang="en">
5937  Source from whom the
5938  data provider obtained the address,
5939  or with whom the data provider
5940  validated the address.
5941  Important if the data provider did not obtain
5942  the
5943  address directly from the local authority.
5944  </xsd:documentation>
5945 </xsd:annotation>
5946 <xsd:restriction base="xsd:string">
5947  <xsd:pattern value='.*' />
5948 </xsd:restriction>
5949 </xsd:simpleType>
5950 <xsd:simpleType name="AddressAuthority_type">
5951 <xsd:annotation>
5952  <xsd:documentation xml:lang="en">
5953  The authority (e.g.,
5954  municipality, county) that created
5955  or has jurisdiction over the
5956  creation of an address.
5957  The addressing authority may or may not be
5958  the same as
5959  the physical or postal jurisdiction noted for the
5960  address.
5961  </xsd:documentation>
5962 </xsd:annotation>
5963 <xsd:restriction base="xsd:string">
5964  <xsd:pattern value='.*' />
5965 </xsd:restriction>
5966 </xsd:simpleType>
5967 <xsd:simpleType name="AddressAuthorityIdentifier_type">
5968 <xsd:annotation>
5969  <xsd:documentation xml:lang="en">
5970  The FIPS or GNIs code
```

```
 for the authority (e.g.,
 municipality, county) that created or has
 jurisdiction
 over the creation of an address.
 The addressing authority
 may or may not be the same as
 the physical or postal jurisdiction
 noted for the
 address.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<!-- Complex Types -->
<xsd:simpleType name="Action_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 An action command for
 incremental datasets. Add
 indicates that the information is new.
 DELETE indicates
 that the information is to be removed.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:token">
 <xsd:enumeration value='ADD' />
 <xsd:enumeration value='DELETE' />
</xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="DeliveryAddressType_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 Whether the Delivery
 Address includes or excludes the Complete Subaddress.
 </xsd:documentation>
</xsd:annotation>
<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>
 <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>
<!-- Complex Elements -->
<xsd:complexType name="DeliveryAddress_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The entire address,
 unparsed, except for the Place Name, State Name,
 Zip Code, Zip Plus
 4, Country Name, and, optionally,
 Complete Subaddress elements.
 </xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
 <xsd:extension base="xsd:string">
 <xsd:attribute name="DeliveryAddressType"
  type="addr_type:DeliveryAddressType_type" />
 </xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="PlaceStateZip_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 The unparsed
 accumulation of Postal City, State, and
 ZIPCode elements.
 </xsd:documentation>
</xsd:annotation>
<xsd:restriction base="xsd:string">
 <xsd:pattern value='.*' />
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="FeatureOccupancy_type">
```

```
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 This element is defined
 solely for use with the General
 Address class, which is constructed
 to accommodate and
 mix addresses of all types (e.g., a general postal
 mailing list or contact list). Place Name, State Name,
 Zip Code, and
 Zip Plus 4, which appear in all address
 classes, are kept separate
 from the rest of the address.
 No longer a parsed datatype. Content
 still represents it
 as such.
 </xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
 <xsd:extension base="xsd:string"></xsd:extension>
</xsd:simpleContent>
</xsd:complexType>
<xsd:complexType name="GeneralAddress_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 This element is defined
 solely for use with the General
 Address class, which is constructed
 to accommodate and
 mix addresses of all types (e.g., a general postal
 mailing list or contact list). Place Name, State Name,
 Zip Code, and
 Zip Plus 4, which appear in all address
 classes, are kept separate
 from the rest of the address.
 No longer a parsed datatype. Content
 still represents it
 as such.
 </xsd:documentation>
</xsd:annotation>
<xsd:simpleContent>
 <xsd:extension base="xsd:string" />
</xsd:simpleContent>
</xsd:complexType>
<!--  -->
<xsd:complexType name="LocationXY_type">
```

```
 <xsd:sequence>
  <xsd:element name="X" type="addr_type:AddressXCoordinate_type"
  minOccurs="1" maxOccurs="1" />
  <xsd:element name="Y" type="addr_type:AddressYCoordinate_type"
  minOccurs="1" maxOccurs="1" />
 </xsd:sequence>
 </xsd:complexType>
 <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" />
  <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>
 <xsd:group name="CompleteStreetName_group">
 <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" />
```

```
<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:group>
<xsd:group name="CompleteAddressNumber_group">
<xsd:sequence>
 <xsd:element name="AddressNumberPrefix"
type="addr_type:AddressNumberPrefix_type"
 minOccurs="0" maxOccurs="1" />
 <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:group>
<xsd:complexType name="CompleteAddressNumber_type">
<xsd:sequence>
 <xsd:element name="AddressNumberPrefix"
type="addr_type:AddressNumberPrefix_type"
 minOccurs="0" maxOccurs="1" />
 <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>
<xsd:complexType name="AddressNumberRange_type">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 { Complete Address
 Number (low)*} + { Separator Element
 *} + { Complete Address Number
 (high)*} A set of two
 address numbers, separated by a "Separator",
 representing the low and high numbers of an address
 range. An address
```

```
6195    number range element should be
6196    accompanied by an Address Range Type
6197    Attribute that
6198    describes the type of range presented in this element.
6199    </xsd:documentation>
6200   </xsd:annotation>
6201   <xsd:sequence>
6202    <xsd:element name="CompleteAddressNumber"
6203  type="addr_type:CompleteAddressNumber_type"
6204    minOccurs="2" maxOccurs="2" />
6205   </xsd:sequence>
6206   <xsd:attribute name="Separator" type="addr_type:Separator_type" />
6207   <xsd:attribute name="Parity" type="addr_type:AddressNumberParity_type" />
6208   <xsd:attribute name="Side" type="addr_type:AddressNumberSide_type" />
6209   </xsd:complexType>
6210   <xsd:complexType name="PlaceName_type">
6211   <xsd:simpleContent>
6212    <xsd:extension base="xsd:string">
6213    <xsd:attribute name="PlaceNameType" type="addr_type:PlaceNameType_type" />
6214    <xsd:attribute name="ElementSequenceNumber"
6215     type="addr_type:ElementSequenceNumber_type" />
6216    <xsd:attribute name="GNISFeatureID" type="addr_type:GNISFeatureID_type" />
6217    </xsd:extension>
6218   </xsd:simpleContent>
6219   </xsd:complexType>
6220   <xsd:complexType name="CompleteSubaddress_type">
6221   <xsd:sequence>
6222    <xsd:element name="SubaddressElement" type="addr_type:SubaddressElement_type"
6223    minOccurs="1" maxOccurs="unbounded" />
6224   </xsd:sequence>
6225   </xsd:complexType>
6226   <xsd:complexType name="CompleteLandmarkName_type">
6227   <xsd:sequence>
6228    <xsd:element name="LandmarkName" type="addr_type:LandmarkName_type"
6229    minOccurs="1" maxOccurs="unbounded" />
6230   </xsd:sequence>
6231   <xsd:attribute name="Separator" type="addr_type:Separator_type" />
6232   </xsd:complexType>
6233   <xsd:complexType name="CompletePlaceName_type">
6234   <xsd:sequence>
6235    <xsd:element name="PlaceName" type="addr_type:PlaceName_type"
6236    minOccurs="1" maxOccurs="unbounded" />
6237   </xsd:sequence>
6238   <xsd:attribute name="Separator" type="addr_type:Separator_type" />
6239   </xsd:complexType>
```

```
<!-- Supporting Information -->
<xsd:group name="AddressAttributes_group">
<xsd:annotation>
 <xsd:documentation xml:lang="en">
 Support information and
 record level metadata for each Address
 </xsd:documentation>
</xsd:annotation>
<xsd:sequence>
 <xsd:element name="AddressId" type="addr_type:AddressID_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressAuthority" type="addr_type:AddressAuthority_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="RelatedAddressId" type="addr_type:RelatedAddressID_type"
 minOccurs="0" maxOccurs="unbounded" />
 <xsd:element name="AddressXCoordinate"
type="addr_type:AddressXCoordinate_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressYCoordinate"
type="addr_type:AddressYCoordinate_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressLongitude" type="addr_type:AddressLongitude_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressLatitude" type="addr_type:AddressLatitude_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="USNationalGridCoordinate"
 type="addr_type:USNationalGridCoordinate_type" minOccurs="0"
 maxOccurs="1" />
 <xsd:element name="AddressElevation" type="addr_type:AddressElevation_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressCoordinateReferenceSystem"
 type="addr_type:AddressCoordinateReferenceSystem_type" minOccurs="0"
 maxOccurs="1" />
 <xsd:element name="AddressParcelIdentifierSource"
 type="addr_type:AddressParcelIdentifierSource_type" minOccurs="0"
 maxOccurs="unbounded" />
 <xsd:element name="AddressParcelIdentifier"
 type="addr_type:AddressParcelIdentifier_type" minOccurs="0"
 maxOccurs="unbounded" />
 <xsd:element name="AddressTransportationSystemName"
 type="addr_type:AddressTransportationSystemName_type" minOccurs="0"
 maxOccurs="1" />
 <xsd:element name="AddressTransportationSystemAuthority"
 type="addr_type:AddressTransportationSystemAuthority_type"
 minOccurs="0" maxOccurs="1" />
```

```
<xsd:element name="AddressTransportationFeatureType"
type="addr_type:AddressTransportationFeatureType_type" minOccurs="0"
maxOccurs="1" />
<xsd:element name="AddressTransportationFeatureID"
type="addr_type:AddressTransportationFeatureID_type" minOccurs="0"
maxOccurs="1" />
<xsd:element name="RelatedTransportationFeatureID"
type="addr_type:RelatedTransportationFeatureID_type" minOccurs="0"
maxOccurs="unbounded" />
<xsd:element name="AddressRangeType" type="addr_type:AddressRangeType_type"
minOccurs="0" maxOccurs="2" />
<xsd:element name="AddressRangeParity" type="addr_type:AddressRangeParity_type"
minOccurs="0" maxOccurs="2" />
<xsd:element name="AddressRangeDirectionality"
type="addr_type:AddressRangeDirectionality_type" minOccurs="0"
maxOccurs="2" />
<xsd:element name="AddressRangeSpan" type="addr_type:AddressRangeSpan_type"
minOccurs="0" maxOccurs="unbounded" />
<xsd:element name="AddressClassification"
type="addr_type:AddressClassification_type"
maxOccurs="1" minOccurs="0" />
<xsd:element name="AddressFeatureType"
type="addr_type:AddressFeatureType_type"
minOccurs="0" maxOccurs="unbounded" />
<xsd:element name="AddressLifecycleStatus"
type="addr_type:AddressLifecycleStatus_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="OfficialStatus" type="addr_type:OfficialStatus_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="AddressAnomalyStatus"
type="addr_type:AddressAnomalyStatus_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="AddressSideOfStreet"
type="addr_type:AddressSideOfStreet_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="AddressZLevel" type="addr_type:AddressZLevel_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="LocationDescription" type="addr_type:LocationDescription_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="MailableAddress" type="addr_type:MailableAddress_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="AddressStartDate" type="addr_type:AddressStartDate_type"
minOccurs="0" maxOccurs="1" />
<xsd:element name="AddressEndDate" type="addr_type:AddressEndDate_type"
minOccurs="0" maxOccurs="1" />
```

```
 <xsd:element name="DataSetID" type="addr_type:DataSetID_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:element name="AddressReferenceSystemId"
 type="addr_type:AddressReferenceSystemId_type" minOccurs="0"
 maxOccurs="1" />
 <xsd:element name="AddressReferenceSystemAuthority"
 type="addr_type:AddressReferenceSystemAuthority_type" minOccurs="0"
 maxOccurs="1" />
</xsd:sequence>
</xsd:group>
<!-- End Content Types -->
<!-- Begin Utility Groups -->
<xsd:group name="ZipCode_group">
<xsd:sequence>
 <xsd:element name="ZipCode" type="addr_type:ZipCode_type"
 minOccurs="1" maxOccurs="1" />
 <xsd:element name="ZipPlus4" type="addr_type:ZipPlus4_type"
 minOccurs="0" maxOccurs="1" />
</xsd:sequence>
</xsd:group>
<xsd:group name="PlaceStateZip_group">
<xsd:choice>
 <xsd:sequence>
 <xsd:element name="CompletePlaceName"
type="addr_type:CompletePlaceName_type"
  minOccurs="1" maxOccurs="1" />
 <xsd:element name="StateName" type="addr_type:StateName_type"
  minOccurs="1" maxOccurs="1" />
 <xsd:group ref="addr_type:ZipCode_group" minOccurs="0"
  maxOccurs="1" />
 <xsd:element name="CountryName" type="addr_type:CountryName_type"
  maxOccurs="1" minOccurs="0" />
 </xsd:sequence>
 <xsd:element name="PlaceStateZip" type="addr_type:PlaceStateZip_type"
 maxOccurs="unbounded" minOccurs="1" />
</xsd:choice>
</xsd:group>
<!-- End Utility Groups -->
</xsd:schema>
```

7.1.2 addr.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema targetNamespace="addr"
 xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:addr="addr"
 xmlns:addr_type="addr_type" xmlns:gml="http://opengeospatial.net/gml">
 <!--
 Draft Address Standard, version 0.4 being prepared and tested by a
 Working Group coordinated by URISA and NENA and the Census Bureau for
 submittal to the FGDC.
 -->
 <!--
 During the initial draft period the rddl can be found at
 http://wfs.co.fulton.ga.us/urisa/addr_std/addr.xsd
 -->
 <xsd:import namespace="addr_type" schemaLocation="addr_type.xsd">
 <xsd:annotation>
  <xsd:documentation>
  Base types form the AddressStandard
  </xsd:documentation>
 </xsd:annotation>
 </xsd:import>
 <!-- Begin Base Class Types -->
 <!-- Thoroughfare Addresses -->
 <xsd:complexType name="NumberedThoroughfareAddress_type">
 <xsd:annotation>
  <xsd:documentation xml:lang="en">
  The Address Class
  associated with singular locations
  referenced off of a linear feature,
  having numeric
  identifiers.
  </xsd:documentation>
 </xsd:annotation>
 <xsd:sequence>
  <xsd:element name="CompleteAddressNumber"
type="addr_type:CompleteAddressNumber_type"
  minOccurs="1" maxOccurs="1" />
  <xsd:element name="CompleteStreetName"
type="addr_type:CompleteStreetName_type"
  minOccurs="1" maxOccurs="1" />
  <xsd:element name="CompleteSubaddress"
  type="addr_type:CompleteSubaddress_type" minOccurs="0"
  maxOccurs="1" />
  <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="0"
```

```
6414      maxOccurs="unbounded" />
6415      <xsd:group ref="addr_type:AddressAttributes_group"
6416      minOccurs="0" maxOccurs="1" />
6417     </xsd:sequence>
6418     <xsd:attribute name="action" type="addr_type:Action_type"
6419      use="optional" />
6420     </xsd:complexType>
6421     <xsd:group name="IntersectionAddress_StreetName_group" >
6422      <xsd:sequence>
6423      <xsd:element name="SeparatorElement" type="addr_type:Separator_type"
6424    maxOccurs="1" minOccurs="1"/>
6425      <xsd:element name="CompleteStreetName"
6426    type="addr_type:CompleteStreetName_type" maxOccurs="1" minOccurs="1"/>
6427      </xsd:sequence>
6428     </xsd:group>
6429
6430     <xsd:complexType name="IntersectionAddress_type">
6431     <xsd:sequence>
6432      <xsd:element name="CompleteStreetName"
6433      type="addr_type:CompleteStreetName_type" minOccurs="1"
6434      maxOccurs="1" />
6435      <xsd:group ref="addr:IntersectionAddress_StreetName_group" minOccurs="1"
6436    maxOccurs="unbounded"/>
6437      <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
6438      maxOccurs="1" />
6439      <xsd:group ref="addr_type:AddressAttributes_group"
6440      minOccurs="0" maxOccurs="1" />
6441     </xsd:sequence>
6442     <xsd:attribute name="action" type="addr_type:Action_type"
6443      use="optional" />
6444     </xsd:complexType>
6445     <xsd:complexType name="TwoNumberAddressRange_type">
6446     <xsd:sequence>
6447      <xsd:element name="CompleteAddressNumber"
6448    type="addr_type:CompleteAddressNumber_type"
6449      minOccurs="1" maxOccurs="1" />
6450       <xsd:element name="SeparatorElement" type="addr_type:Separator_type"
6451    maxOccurs="1" minOccurs="1"/>
6452      <xsd:element name="CompleteAddressNumber"
6453    type="addr_type:CompleteAddressNumber_type"
6454      minOccurs="1" maxOccurs="1" />
6455      <xsd:element name="CompleteStreetName"
6456    type="addr_type:CompleteStreetName_type"
6457      minOccurs="1" maxOccurs="1" />
6458      <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
```

```
6459      maxOccurs="unbounded" />
6460      <xsd:group ref="addr_type:AddressAttributes_group"
6461      minOccurs="0" maxOccurs="1" />
6462     </xsd:sequence>
6463     <xsd:attribute name="action" type="addr_type:Action_type"
6464      use="optional" />
6465     </xsd:complexType>
6466     <xsd:complexType name="FourNumberAddressRange_type">
6467     <xsd:annotation>
6468      <xsd:documentation> TIGER file ranges (left low, left high, right
6469      low, right high, street name) are the most widely-used example of
6470      block ranges Notes: Although they do not necessarily refer to one
6471      specific site, block addresses are important for municipal
6472      operations (such as snow plow dispatch), emergency dispatch, and
6473      geocoding. A block address range may be expressed by four numbers,
6474      representing the low and high end of the numeric range for each side
6475      of a block. By convention, the first number represents the low end
6476      of the range of addresses for the left side, the second number
6477      represents the high end of the range of addresses for the left side,
6478      the third number represents the low end of the range of addresses
6479      for the right side, and the fourth number represents the high end of
6480      the range for the right side. A block face is defined as one side of
6481      a thoroughfare between two intersecting street segments. Generally,
6482      but not always, a block face has addresses of a single parity, that
6483      is, either odd or even numbers. However, mixed parities do occur in
6484      some places. In other cases, where the numeric ranges on opposite
6485      sides of the same block are not within the same general range, it is
6486      preferable to express the range in terms of the left low-high, right
6487      low-high, or to provide individual block face ranges. A block range
6488      may refer to either a theoretical range (the possible range of
6489      addresses along that street segment) or to an actual or used range
6490      of addresses. These types (actual or theoretical) are distinguished
6491      by the range type attribute.
6492        </xsd:documentation>
6493     </xsd:annotation>
6494     <xsd:sequence>
6495      <xsd:element name="CompleteAddressNumber"
6496    type="addr_type:CompleteAddressNumber_type"
6497      minOccurs="1" maxOccurs="1" />
6498       <xsd:element name="SeparatorElement" type="addr_type:Separator_type"
6499    maxOccurs="1" minOccurs="1"/>
6500      <xsd:element name="CompleteAddressNumber"
6501    type="addr_type:CompleteAddressNumber_type"
6502      minOccurs="1" maxOccurs="1" />
```

```
6503    <xsd:element name="CompleteAddressNumber"
6504  type="addr_type:CompleteAddressNumber_type"
6505    minOccurs="1" maxOccurs="1" />
6506     <xsd:element name="SeparatorElement" type="addr_type:Separator_type"
6507  maxOccurs="1" minOccurs="1"/>
6508    <xsd:element name="CompleteAddressNumber"
6509  type="addr_type:CompleteAddressNumber_type"
6510    minOccurs="1" maxOccurs="1" />
6511    <xsd:element name="CompleteStreetName"
6512  type="addr_type:CompleteStreetName_type"
6513    minOccurs="1" maxOccurs="1" />
6514    <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
6515    maxOccurs="1" />
6516    <xsd:group ref="addr_type:AddressAttributes_group"
6517    minOccurs="0" maxOccurs="1" />
6518   </xsd:sequence>
6519   <xsd:attribute name="action" type="addr_type:Action_type"
6520    use="optional" />
6521   </xsd:complexType>
6522   <xsd:complexType name="UnnumberedThoroughfareAddress_type">
6523   <xsd:annotation>
6524    <xsd:documentation xml:lang="en">
6525    The Address Class
6526    associated with singular locations
6527    referenced off of a linear feature,
6528    lacking numeric
6529    identifiers.
6530    </xsd:documentation>
6531   </xsd:annotation>
6532   <xsd:sequence>
6533    <xsd:element name="CompleteStreetName"
6534  type="addr_type:CompleteStreetName_type"
6535    minOccurs="1" maxOccurs="1" />
6536    <xsd:element name="CompleteSubaddress"
6537  type="addr_type:CompleteSubaddress_type"
6538    minOccurs="0" maxOccurs="1" />
6539    <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
6540    maxOccurs="1" />
6541    <xsd:group ref="addr_type:AddressAttributes_group"
6542    minOccurs="0" maxOccurs="1" />
6543   </xsd:sequence>
6544   <xsd:attribute name="action" type="addr_type:Action_type"
6545    use="optional" />
6546   </xsd:complexType>
6547   <!-- Landmark Address Classes -->
```

```
<xsd:complexType name="LandmarkAddress_type">
<xsd:sequence>
<xsd:element name="CompleteLandmarkName"
type="addr_type:CompleteLandmarkName_type"
minOccurs="1" maxOccurs="1" />
<xsd:element name="CompleteSubaddress"
type="addr_type:CompleteSubaddress_type"
minOccurs="0" maxOccurs="1" />
<xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
maxOccurs="1" />
<xsd:group ref="addr_type:AddressAttributes_group"
minOccurs="0" maxOccurs="1" />
</xsd:sequence>
<xsd:attribute name="action" type="addr_type:Action_type"
use="optional" />
</xsd:complexType>
<xsd:complexType name="CommunityAddress_type">
<xsd:annotation>
<xsd:documentation> 1. Community Addresses are commonly used for
housing projects, Puerto Rican urbanizations, trailer courts, and
similar developments that are built around unnamed interior walkways
or roadways. Their Complete Address Numbers refer to the community
name, not to a thoroughfare. 2. A Community Address includes a
Complete Address Number, a community name, and a Place Name. The
address does not include a Complete Street Name. The community name
might be a treated as a Landmark Name or Place Name--the distinction
is often arbitrary or unclear for community names. 3. If there is no
Complete Address Number preceding the urbanization name, the address
fits into the Landmark Address class. 4. If the address includes
both a Complete Street Name and a community name, it fits in the
Landmark Site Address class. 5. This class includes Puerto Rican
urbanization addresses where the urbanization name is preceded by a
number, and no street name is included. In Puerto Rico, an
urbanization denotes an area, sector, or residential development
within a geographic area. 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”.
</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
<xsd:element name="CompleteAddressNumber"
type="addr_type:CompleteAddressNumber_type"
minOccurs="1" maxOccurs="1" />
<xsd:choice>
```

```
<xsd:element name="CompleteLandmarkName"
type="addr_type:CompleteLandmarkName_type"
 minOccurs="1" maxOccurs="1" />
<xsd:element name="CompletePlaceName"
type="addr_type:CompletePlaceName_type"
 minOccurs="1" maxOccurs="1" />
</xsd:choice>
<xsd:element name="CompleteSubaddress"
type="addr_type:CompleteSubaddress_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
 maxOccurs="1" />
 <xsd:group ref="addr_type:AddressAttributes_group"
 minOccurs="0" maxOccurs="1" />
</xsd:sequence>
<xsd:attribute name="action" type="addr_type:Action_type"
 use="optional" />
</xsd:complexType>
<!-- Postal Delivery Address Classes -->
<xsd:complexType name="USPSPostalDeliveryBox_type">
<xsd:sequence>
 <xsd:element name="USPSBox" type="addr_type:USPSBox_type"
 minOccurs="1" maxOccurs="1" />
 <xsd:element name="CompleteSubaddress"
type="addr_type:CompleteSubaddress_type"
 minOccurs="0" maxOccurs="1" />
 <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
 maxOccurs="1" />
 <xsd:group ref="addr_type:AddressAttributes_group"
 minOccurs="0" maxOccurs="1" />
</xsd:sequence>
<xsd:attribute name="action" type="addr_type:Action_type"
 use="optional" />
</xsd:complexType>
<xsd:complexType name="USPSPostalDeliveryRoute_type">
<xsd:sequence>
 <xsd:element name="USPSAddress" type="addr_type:USPSAddress_type"
 minOccurs="1" maxOccurs="1" />
 <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
 maxOccurs="1" />
 <xsd:group ref="addr_type:AddressAttributes_group"
 minOccurs="0" maxOccurs="1" />
</xsd:sequence>
<xsd:attribute name="action" type="addr_type:Action_type"
 use="optional" />
```

```
 </xsd:complexType>
 <xsd:complexType name="USPSGeneralDeliveryOffice_type">
 <xsd:sequence>
  <xsd:element name="USPSGeneralDeliveryPoint"
  type="addr_type:USPSGeneralDeliveryPoint_type" />
  <xsd:group ref="addr_type:PlaceStateZip_group" minOccurs="1"
  maxOccurs="1" />
  <xsd:group ref="addr_type:AddressAttributes_group"
  minOccurs="0" maxOccurs="1" />
 </xsd:sequence>
 <xsd:attribute name="action" type="addr_type:Action_type"
  use="optional" />
 </xsd:complexType>

 <xsd:complexType name="GeneralAddressClass_type">
 <xsd:choice>
  <xsd:element name="GeneralAddress"
  type="addr_type:GeneralAddress_type" />
  <xsd:sequence>
  <xsd:element name="USPSGeneralDeliveryPoint"
   type="addr_type:USPSGeneralDeliveryPoint_type" />
  <xsd:group ref="addr_type:PlaceStateZip_group"
   minOccurs="1" maxOccurs="1" />
  <xsd:group ref="addr_type:AddressAttributes_group"
   minOccurs="0" maxOccurs="1" />
  </xsd:sequence>
 </xsd:choice>
 <xsd:attribute name="action" type="addr_type:Action_type" />
 </xsd:complexType>
 <xsd:group name="AddressCollection_group">
 <xsd:annotation>
  <xsd:documentation>
  The Single Choice Union of all Address Types
  </xsd:documentation>
 </xsd:annotation>
 <xsd:choice>
  <xsd:element name="NumberedThoroughfareAddress"
type="addr:NumberedThoroughfareAddress_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="IntersectionAddress" type="addr:IntersectionAddress_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="TwoNumberAddressRange"
type="addr:TwoNumberAddressRange_type"
  minOccurs="0" maxOccurs="unbounded" />
```

```
  <xsd:element name="FourNumberAddressRange"
type="addr:FourNumberAddressRange_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="UnnumberedThoroughfareAddress"
type="addr:UnnumberedThoroughfareAddress_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="LandmarkAddress" type="addr:LandmarkAddress_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="CommunityAddress" type="addr:CommunityAddress_type"
  minOccurs="0" maxOccurs="unbounded" />

  <xsd:element name="USPSPostalDeliveryBox"
type="addr:USPSPostalDeliveryBox_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="USPSPostalDeliveryRoute"
type="addr:USPSPostalDeliveryRoute_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="USPSGeneralDeliveryOffice"
type="addr:USPSGeneralDeliveryOffice_type"
  minOccurs="0" maxOccurs="unbounded" />

  <xsd:element name="GeneralAddressClass" type="addr:GeneralAddressClass_type"
  minOccurs="0" maxOccurs="unbounded" />
  <xsd:element name="AddressReferenceSystem"
type="addr_type:AddressReferenceSystem_type"
  minOccurs="0" maxOccurs="unbounded" />
 </xsd:choice>
 </xsd:group>
 <!-- End Complex Types -->
 <!-- Wrapper collecting a set of addresses -->
 <xsd:element name="AddressCollection">
 <xsd:complexType mixed="false">
  <xsd:choice minOccurs="1" maxOccurs="unbounded">
  <xsd:group ref="addr:AddressCollection_group" />
  </xsd:choice>
  <xsd:attribute name="version" type="addr_type:version_type"
  use="required" />
 </xsd:complexType>
 </xsd:element>
</xsd:schema>
```

7.2 Appendix B: Address XML Examples (Informative)

Address exchange packages can be simple, complex and anywhere in between. For clarity each of the Address Classes are shown here in a complete exchange packaged for reference and review.

7.2.1 Thoroughfare Address Classes

7.2.1.1 Numbered Thoroughfare Address

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <NumberedThoroughfareAddress>
 <CompleteAddressNumber>
  <AddressNumber>123</AddressNumber>
 </CompleteAddressNumber>
 <CompleteStreetName>
  <StreetName>Main</StreetName>
  <StreetNamePostType>Street</StreetNamePostType>
 </CompleteStreetName>
 <CompletePlaceName>
  <PlaceName>Buffalo Lake</PlaceName>
 </CompletePlaceName>
 <StateName>MN</StateName>
 <ZipCode>55314</ZipCode>
 </NumberedThoroughfareAddress>
</addr:AddressCollection>
```

7.2.1.2 Intersection Address

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <IntersectionAddress>
 <CompleteStreetName>
  <StreetName>Boardwalk</StreetName>
 </CompleteStreetName>
 <SeparatorElement>and</SeparatorElement>
 <CompleteStreetName>
  <StreetName>Park</StreetName>
  <StreetNamePostType>Place</StreetNamePostType>
 </CompleteStreetName>
 <CompletePlaceName>
  <PlaceName>Atlantic City</PlaceName>
 </CompletePlaceName>
 <StateName>NJ</StateName>
 </IntersectionAddress>
</addr:AddressCollection>
```

7.2.1.3 Two Number Address Range

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <TwoNumberAddressRange>
 <CompleteAddressNumber>
  <AddressNumber>401</AddressNumber>
 </CompleteAddressNumber>
 <SeparatorElement>-</SeparatorElement>
 <CompleteAddressNumber>
  <AddressNumber>418</AddressNumber>
```

```
 </CompleteAddressNumber>
 <CompleteStreetName>
  <StreetName>Green</StreetName>
  <StreetNamePostType>Street</StreetNamePostType>
 </CompleteStreetName>
 <CompletePlaceName>
  <PlaceName>Flint</PlaceName>
 </CompletePlaceName>
 <StateName>MI</StateName>
 <ZipCode>48503</ZipCode>
 </TwoNumberAddressRange>
</addr:AddressCollection>
```

7.2.1.4 Four Number Address Range

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <FourNumberAddressRange>
 <CompleteAddressNumber>
  <AddressNumber>1900</AddressNumber>
 </CompleteAddressNumber>
 <SeparatorElement>-</SeparatorElement>
 <CompleteAddressNumber>
  <AddressNumber>1908</AddressNumber>
 </CompleteAddressNumber>
 <CompleteAddressNumber>
  <AddressNumber>1901</AddressNumber>
 </CompleteAddressNumber>
 <SeparatorElement>-</SeparatorElement>
 <CompleteAddressNumber>
  <AddressNumber>1909</AddressNumber>
 </CompleteAddressNumber>
 <CompleteStreetName>
  <StreetName>Bear</StreetName>
  <StreetNamePostType>court</StreetNamePostType>
```

```
 </CompleteStreetName>
 <CompletePlaceName>
  <PlaceName>Fort Collins</PlaceName>
 </CompletePlaceName>
 <StateName>CO</StateName>
 <ZipCode>80525</ZipCode>
 </FourNumberAddressRange>
</addr:AddressCollection>
```

7.2.1.5 Unnumbered Thoroughfare Address

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <UnnumberedThoroughfareAddress>
 <CompleteStreetName>
  <StreetName>Fagaima</StreetName>
  <StreetNamePostType>Road</StreetNamePostType>
 </CompleteStreetName>
 <CompletePlaceName>
  <PlaceName>Nu'uli</PlaceName>
 </CompletePlaceName>
 <StateName>AS</StateName>
 <ZipCode>96799</ZipCode>
 </UnnumberedThoroughfareAddress>
</addr:AddressCollection>
```

7.2.2 Landmark Address Classes

7.2.2.1 Landmark Address

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
```

```
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <LandmarkAddress>
 <CompleteLandmarkName>
  <LandmarkName>Condominium Garden Hills Plaza</LandmarkName>
 </CompleteLandmarkName>
 <CompleteSubaddress>
  <SubaddressElement SubaddressComponentOrder="1">
  <SubaddressType>Torre</SubaddressType>
  <SubaddressIdentifier>2</SubaddressIdentifier>
  </SubaddressElement>
  <SubaddressElement>
  <SubaddressType>Apartamento</SubaddressType>
  <SubaddressIdentifier>905</SubaddressIdentifier>
  </SubaddressElement>
 </CompleteSubaddress>
 <CompletePlaceName>
  <PlaceName>Mayaguez</PlaceName>
 </CompletePlaceName>
 <StateName>PR</StateName>
 <ZipCode>00608</ZipCode>
 <ZipPlus4>1233</ZipPlus4>
 </LandmarkAddress>
</addr:AddressCollection>
```

7.2.2.2 Community Address

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <CommunityAddress>
 <CompleteAddressNumber>
```

```
 <AddressNumberPrefix>A</AddressNumberPrefix>
 <AddressNumber>17</AddressNumber>
</CompleteAddressNumber>
<CompleteLandmarkName>
 <LandmarkName>Jardine Fagota</LandmarkName>
</CompleteLandmarkName>
<CompletePlaceName>
 <PlaceName>Ponce</PlaceName>
</CompletePlaceName>
<StateName>PR</StateName>
<ZipCode>00731</ZipCode>
</CommunityAddress>
</addr:AddressCollection>
```

7.2.3 Postal Delivery Address Classes

7.2.3.1 USPS Postal Delivery Box

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <USPSPostalDeliveryBox>
 <USPSBox>
  <USPSBoxType>PO BOX</USPSBoxType>
  <USPSBoxId>159753</USPSBoxId>
 </USPSBox>
 <CompleteSubaddress>
  <SubaddressElement>
  <SubaddressType>PMB</SubaddressType>
  <SubaddressIdentifier>3571</SubaddressIdentifier>
  </SubaddressElement>
 </CompleteSubaddress>
 <CompletePlaceName>
  <PlaceName>Herndon</PlaceName>
```

```
 </CompletePlaceName>
 <StateName>VA</StateName>
 <ZipCode>22071</ZipCode>
 </USPSPostalDeliveryBox>
</addr:AddressCollection>
```

7.2.3.2 USPS Postal Delivery Route

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <USPSPostalDeliveryRoute>
 <USPSAddress>
  <USPSRoute>
  <USPSBoxGroupType>RR</USPSBoxGroupType>
  <USPSBoxGroupId>2</USPSBoxGroupId>
  </USPSRoute>
  <USPSBox>
  <USPSBoxType>Box</USPSBoxType>
  <USPSBoxId>18</USPSBoxId>
  </USPSBox>
 </USPSAddress>
 <CompletePlaceName>
  <PlaceName>Largo</PlaceName>
 </CompletePlaceName>
 <StateName>FL</StateName>
 <ZipCode>33777</ZipCode>
 </USPSPostalDeliveryRoute>
</addr:AddressCollection>
```

7.2.3.3 USPS General Delivery Office

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <USPSGeneralDeliveryOffice>
 <USPSGeneralDeliveryPoint>General Delivery</USPSGeneralDeliveryPoint>
 <CompletePlaceName>
  <PlaceName>Tampa</PlaceName>
 </CompletePlaceName>
 <StateName>FL</StateName>
 <ZipCode>33602</ZipCode>
 <ZipPlus4>9999</ZipPlus4>
 </USPSGeneralDeliveryOffice>
</addr:AddressCollection>
```

7.2.4 General Address Class

7.2.4.1 General Address Type 1

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <GeneralAddressClass>123 Main Street, Apt 1, Ames, IA
50010</GeneralAddressClass>
</addr:AddressCollection>
```

7.2.4.2 General Address Type 2

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <GeneralAddressClass>
  <DeliveryAddress>123 Main Street, Apt 1</DeliveryAddress>
 </GeneralAddressClass>
</addr:AddressCollection>
```

7.2.4.3 General Address Type 3

```
<?xml version="1.0" encoding="UTF-8"?>
<addr:AddressCollection version="0.4" xmlns:addr="addr"
xmlns:addr_type="addr_type" xmlns:gml="http://www.opengis.net/gml"
xmlns:smil20="http://www.w3.org/2001/SMIL20/"
xmlns:smil20lang="http://www.w3.org/2001/SMIL20/Language"
xmlns:xlink="http://www.w3.org/1999/xlink"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="addr
addr.xsd ">
 <GeneralAddressClass>
  <DeliveryAddress>123 Main Street, Apt 1</DeliveryAddress>
   <CompletePlaceName>
 <PlaceName>Ames</PlaceName>
 </CompletePlaceName>
 <StateName>IA</StateName>
 <ZipCode>50010</ZipCode>
 </GeneralAddressClass>
</addr:AddressCollection>
```

7.3 Appendix C (Informative): Table of Element Relationships

Note: The elements listed as part of or contained in other elements may be either mandatory, conditional, or optional. Please see the individual element definitions to determine the parameters for each element.

Element Name	Element Type	Complex Elements This Element is Part Of	Element Contains These Simple Elements
Address Number Prefix	Simple	Complete Address Number	
Address Number	Simple	Complete Address Numbers	
Address Number Suffix	Simple	Complete Address Number	
Separator Element	Simple	Complete Address Number	
Complete Address Number	Complex	Delivery Address	Address Number Prefix Address Number Address Number Suffix Separator Element
Street Name Pre Modifier	Simple	Complete Street Name Delivery Address	
Street Name Pre Directional	Simple	Complete Street Name Delivery Address	
Street Name Pre Type	Simple	Complete Street Name Delivery Address	
Street Name	Simple	Complete Street Name Delivery Address	
Street Name Post Type	Simple	Complete Street Name Delivery Address	
Street Name Post Directional	Simple	Complete Street Name Delivery Address	
Street Name Post Modifier	Simple	Complete Street Name Delivery Address	
Complete Street Name	Complex	Delivery Address	Street Name Pre Modifier Street Name Pre Directional

			Street Name Pre Type Street Name Street Name Post Type Street Name Post Directional Street Name Post Modifier
Subaddress Type	Simple	Subaddress Element	
Subaddress Identifier	Simple	Subaddress Element	
Subaddress Element	Complex	Complete Subaddress	Subaddress Type SubaddressIdentifier
Complete Subaddress	Complex	Delivery Address	Subaddress Element Subaddress Type Subaddress Identifier
Place Name	Simple	Place State ZIP	
State Name	Simple	Place State ZIP	
Zip Code	Simple	Place State ZIP	
Zip Plus 4	Simple	Place State ZIP	
Country Name	Simple		
USPS Box Type	Simple	Delivery Address	
USPS Box ID	Simple	Delivery Address	
USPS Box Group Type	Simple	Delivery Address	
USPS Box Group ID	Simple	Delivery Address	
Delivery Address	Complex		Complete Address Number Complete Street Name Complete Subaddress
Place State ZIP	Complex		Place Name State Name ZIP Code ZIP Plus 4

7.4 Appendix D (Informative): Relationship of Addresses to Transportation Features and Linear Reference Locations

7.4.1 Introduction

Part 7.4: Appendix D presents the relationship between the Address Standard and the transportation part of the Framework Standard in three sections:

- Section 2 sets forth the relation between the addresses and transportation networks, and differentiates the scopes of the address standard and the transportation standard.
- Section 3 lists key transportation features defined in the framework standard transportation base part, and states how address classes are related to transportation features.
- Section 4 summarizes (from Annex B of the Framework Standard Transportation Base Part) the definition of linear reference systems and their components, and shows how addresses can be expressed as linear reference locations.

7.4.2 Address Systems and Transportation Networks

Addresses are a means by which people specify the location of travel origins and destinations and relate them to the transportation network. Most addresses specify locations for structures, land parcels, incidents, infrastructure components such as poles or hydrants, None of these features are transportation segments or nodes. By relating non-transportation features to the transportation network, thoroughfare addresses enable people to locate the address using the transportation network and travel to it along network paths. The Address Standard provides

the data elements and structures—most of them non-geometric—needed to relate people's specific travel origins and destinations to the transportation network. The address standard also defines certain elements needed within the transportation standard to describe transportation features, most notably address numbers, address ranges, and street names.

The Transportation Part of the framework standard defines the geometric elements and structures needed to construct transportation networks, and the non-geometric attributes needed to describe them. Transportation networks show the paths of travel from origin to destination.

Transportation networks model the thoroughfares that thoroughfare addresses refer to, the particular thoroughfare segments by which individual addresses may be grouped into address ranges, the nodes that define intersections, and the left/right side by which odd/even parities are located. Numbered Thoroughfare Addresses and some ranges are typically modeled as point events (or occasionally linear events) located along the thoroughfare segments. Intersection Addresses and most ranges correspond to nodes and segments respectively. Thus the Framework Standard Transportation Part provides the geometric elements and structures needed to relate addresses to their corresponding transportation system segments and nodes.

The Address Standard and the Transportation Part are so closely related as to be interdependent. The following principles differentiate their scopes so as to be complementary and mutually exclusive:

1. The Address Standard defines the address classes, elements and attributes, none of which are network elements and almost all of which are non-geometric, and the

Transportation Part incorporates them by reference.

2. The Address Standard provides for the description of Address Reference Systems, containing the rules for address assignment, and forming a basis for validation and quality testing of addresses. The elements of an Address Reference system include geometric components including Address Reference System Extent, Address Reference System Axis, Address Reference System Axis Point Of Beginning, Address Reference System Reference Polyline, Address Reference System Range Breakpoint, Address Reference System Range Breakline. and Address Reference System Range Polygon. These geometric elements can be related to the transportation elements as nodes, segments, point events, and linear events.
3. The Transportation Part defines the geometric structures and elements needed to comprise thoroughfare networks, and the address standard incorporates them by reference. They include transportation networks, nodes, and segments; point events and linear events.

7.4.3 Addresses And Transportation Features

7.4.3.1 Key Transportation Feature Definitions

The Transportation Part is Part 7 of the Framework Data Content Standard. It is comprised of five sub-parts: the Transportation Base part (Part 7), and five specialized subparts: Rail, Roads, Transit, and Inland Waterways (Parts 7b through 7e). (Part 7a, Transportation - Air, was drafted but not endorsed.)

The Base part (Part 7, section 5) defines several terms needed to articulate the relationship between addresses and transportation features:

- transportation system - *"set of components that allow movement of goods and people between locations"* (sec. 5.25)
- event - *"mechanism for locating an attribute value or feature along a transportation feature."* (sec. 5.4)
- Point event - *"event that occurs at a single position along a linear feature."* (sec. 5.12)
- Linear event - *"event that occurs for an interval along the length of a feature."* (sec. 5.8)
- transportation point (TranPoint) - *"topological connection between transportation segments."* (sec. 5.22)
- transportation segment (TranSeg) - *"linear section of the physical transportation network."* (sec. 5.23)
- transportation path (TranPath) - *"ordered list of whole or partial...transportation segments."* (sec. 5.21)
- transportation segmentation model - *"set of transportation features (TranPath, TranPoint, and TranSeg) and their topological relationships which together define all possible movements through the transportation system"* (sec. 5.24)
- transportation feature (TranFeature) - *"representation of transportation entities that include transportation segmentation model features, as well as other features relevant to transportation"* (sec. 5.20)

7.4.3.2 Representing Addresses As Transportation Features

An address can be represented within a transportation network (e.g. a road centerline model) in various ways, depending on the class of the address and how it is mapped. This subsection gives the transportation feature types that can be used to represent each address class. The feature types are defined and explained in the FGDC's "Framework Data Content Standard Part 7: Transportation." See in particular "Transportation Base," Sections 5 (Terms and Definitions) and 7 (Requirements), and "Part 7c: Roads."

7.4.3.2.1 Representation of a Numbered Thoroughfare Address as a Transportation Feature

- (If the address is mapped as a point): Point event, related to one or more transportation segments.
- (If the address is mapped as a line or polygon): Linear event, related to one or more transportation segments.

7.4.3.2.2 Representation of an Intersection Address as a Transportation Feature

- One or more transportation points (TranPoints).
- Note that for complex intersections, or where roads are represented as two or more centerlines, one Intersection Address may be represented by multiple TranPoints.

7.4.3.2.3 Representation of a Two Number Address Range as a Transportation Feature

- (If the range covers part of one transportation segment): Linear event, related to a

transportation segment (TranSeg).

- (If the range covers one complete transportation segment): Transportation segment (TranSeg).
- (If the range covers more than one complete transportation segment): Transportation path (TranPath).

7.4.3.2.4 Representation of a Four Number Address Range as a Transportation Feature

- (If the range covers part of one transportation segment): Linear event, related to a transportation segment (TranSeg).
- (If the range covers one complete transportation segment): Transportation segment (TranSeg).
- (If the range covers more than one complete transportation segment): Transportation path (TranPath).

7.4.3.2.5 Representation of an Unnumbered Thoroughfare Address as a Transportation Feature

- (If the thoroughfare has only one segment): Transportation segment (TranSeg)
- (If the thoroughfare has more than one segment): Transportation path (TranPath)

7.4.3.2.6 Representation of a Landmark Address as a Transportation Feature

Cannot be specified within this standard. Addresses of this class have no defined relation to a transportation data model. A Landmark Address might be mapped as a point or a line or a

polygon, and if represented as a polygon it might relate to zero or one or many transportation points or segments or paths.

7.4.3.2.7 Representation of a Community Address as a Transportation Feature

Cannot be specified within this standard. Addresses of this class have no defined relation to a transportation data model. A Community Address might be mapped as a point or a line or a polygon, and it might relate to zero or one or many transportation points or segments or paths.

7.4.3.2.8 Representation of a USPS Postal Delivery Box as a Transportation Feature

7.4.3.2.9 Representation of a USPS Postal Delivery Route as a Transportation Feature

USPS Postal Delivery Route addresses have no definite relation to any transportation feature. Within the US, if the location of the delivery points are known, then Rural route and HC route addresses could be mapped as points, treated as point events, and related to a transportation segment. Overseas military addresses have no relation to any transportation feature.

7.4.3.2.10 Representation of a USPS General Delivery Office as a Transportation Feature

- A USPS General Delivery Office could be mapped to a post office, or it could be said to have no relation to any transportation feature.
- Overseas military addresses have no relation to any transportation feature.

7.4.4 Expressing Address Locations as Linear Reference Positions

7.4.4.1 Linear Reference Systems and Addresses.

Linear reference systems specify locations by reference to distance travelled along a route within a transportation network. Linear reference systems differ fundamentally from address reference systems and coordinate reference systems, and thus offer a third way to specify address locations. Linear reference systems are used primarily in surveying and engineering, but they are also useful in address administration. Linear referencing explicitly ties an address to a specific position along its corresponding street segment. Linear reference systems are useful in visualizing address lists and building address zone information when side of street matters. Linear referencing can therefore be useful in detecting mislocated thoroughfare addresses (out of sequence or wrong parity) and erroneous ranges.

Transportation Base Part (Annex B) provides normative classes and types needed to define linear reference systems and specify positions along curvilinear transportation features. Annex B, Section 5, defines several terms of interest:

- Position expression - "expression used to describe a position using linear referencing and comprised of a measured value (distance expression), the curvilinear element being measured, (linear element), the method of measurement (LRM), and an optional lateral offset (offset expression)."
- Distance expression - "linear distance measured along a linear element (a component of a position expression)."
- Linear element - "underlying curvilinear element along which a linearly referenced

measure is taken."

- Offset - "Optional part of a linearly referenced position expression which specifies the lateral distance left or right of the linear element being measured."

7.4.4.2 Linear Referencing Locations and the Address Standard.

Linear reference locations must be specified by reference to a transportation network as defined in the Transportation Part of the Framework Standard. The Transportation Part defines all the elements needed to construct the network and represent addresses within it (typically as point events). The Transportation Part also defines all the elements needed to establish and document linear reference locations, such as route, point of beginning, units of measure, method of measuring along the route, etc. Because linear reference locations can be constructed entirely within the domain of the Transportation Part of the framework standard, no linear reference attributes are provided or needed within the Address Standard.

7.5 Appendix E (Informative): Element Measure Index

Element Name	Component or Subject	Simple or Complex	Measure
Address Number	Address Number	Simple	Data Type Measure
Address Number	Address Number	Simple	Spatial Domain Measure +
Address Number	Address Number	Simple	Tabular Domain Measure
Address Number	Address Number	Simple	Address Number Fishbones Measure +
Address Number Prefix	Address Number	Simple	Range Domain Measure
Address Number Prefix	Address Number	Simple	Spatial Domain Measure +
Address Number Prefix	Address Number	Simple	Tabular Domain Measure
Address Number Prefix	Address Number	Simple	Address Number Fishbones Measure +
Address Number Suffix	Address Number	Simple	Spatial Domain Measure +
Address Number Suffix	Address Number	Simple	Tabular Domain Measure
Address Reference System Id	Address Reference System Elements	Simple	Tabular Domain Measure
Address Reference System Name	Address Reference System Elements	Simple	Tabular Domain Measure
Address Reference System Extent	Address Reference System Elements	Simple	Address Reference System Description
Address Reference System Type	Address Reference System Elements	Simple	Tabular Domain Measure
Address Reference System Rules	Address Reference System Elements	Complex	Address Reference System Rules Measure +
Address Reference System Block Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Numbering Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Street Naming Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Street Type Directional And Modifier Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.

Address Reference System Place Name State Country And Zip Code Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Subaddress Rules	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Axis	Address Reference System Elements	Simple	Address Reference System Axes Point Of Beginning Measure +
Address Reference System Reference Polyline	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Range Breakpoint	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Range Breakline	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Range Polygon	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System Reference Document Citation	Address Reference System Elements	Simple	See Address Reference System Rules Measure.
Address Reference System	Address Reference System Elements	Complex	Address Reference System Rules Measure +
Complete Address Number	Address Number	Complex	Pattern Sequence Measure
Complete Landmark Name	Landmark Name Elements	Complex	Complex Element Sequence Number Measure
Complete Landmark Name	Landmark Name Elements	Complex	Repeated Element Uniqueness Measure
Complete Place Name	Larger-Area Elements	Complex	Complex Element Sequence Number Measure
Complete Place Name	Larger-Area Elements	Complex	Repeated Element Uniqueness Measure
Complete Street Name	Street Name	Complex	Complete Street Name Tabular Domain Measure
Complete Street Name	Street Name	Complex	Pattern Sequence Measure
Complete Street Name	Street Name	Complex	Duplicate Street Name Measure +
Complete Subaddress	Subaddress Elements	Complex	Complex Element Sequence Number Measure
Complete Subaddress	Subaddress Elements	Complex	Repeated Element

			Uniqueness Measure
Country Name	Larger-Area Elements	Simple	Spatial Domain Measure +
Country Name	Larger-Area Elements	Simple	Tabular Domain Measure
Delivery Address	USPS Address Lines	Simple	Pattern Sequence Measure
Landmark Name	Landmark Name Elements	Simple	Uniqueness Measure
Place Name	Larger-Area Elements	Simple	Spatial Domain Measure +
Place Name	Larger-Area Elements	Simple	Tabular Domain Measure
Place State ZIP	USPS Address Lines	Complex	Pattern Sequence Measure
Private Mail Box	Subaddress Elements	Simple	None
Separator Element	Element	Simple	Tabular Domain Measure
State Name	Larger-Area Elements	Simple	Spatial Domain Measure +
State Name	Larger-Area Elements	Simple	Tabular Domain Measure
Street Name	Street Name	Simple	Spatial Domain Measure +
Street Name	Street Name	Simple	Tabular Domain Measure
Street Name Post Directional	Street Name	Simple	Spatial Domain Measure +
Street Name Post Directional	Street Name	Simple	Tabular Domain Measure
Street Name Post Modifier	Street Name	Simple	Spatial Domain Measure +
Street Name Post Modifier	Street Name	Simple	Tabular Domain Measure
Street Name Post Type	Street Name	Simple	Spatial Domain Measure +
Street Name Post Type	Street Name	Simple	Tabular Domain Measure
Street Name Pre Directional	Street Name	Simple	Spatial Domain Measure +
Street Name Pre Directional	Street Name	Simple	Tabular Domain Measure
Street Name Pre Modifier	Street Name	Simple	Spatial Domain Measure +
Street Name Pre Modifier	Street Name	Simple	Tabular Domain Measure
Street Name Pre Type	Street Name	Simple	Spatial Domain Measure +
Street Name Pre Type	Street Name	Simple	Tabular Domain Measure

Subaddress Element	Subaddress Elements	Complex	Pattern Sequence Measure
Subaddress Element	Subaddress Elements	Complex	Spatial Domain Measure +
Subaddress Identifier	Subaddress Elements	Simple	None
Subaddress Type	Subaddress Elements	Simple	Tabular Domain Measure
USPS Box Group ID	USPS Postal Address Elements	Simple	Tabular Domain Measure
USPS Box Group Type	USPS Postal Address Elements	Simple	Tabular Domain Measure
USPS Box ID	USPS Postal Address Elements	Simple	Tabular Domain Measure
USPS Box Type	USPS Postal Address Elements	Simple	Tabular Domain Measure
USPS General Delivery Point	USPS Postal Address Elements	Simple	Tabular Domain Measure
USPS Address	USPS Postal Address Elements	Complex	Pattern Sequence Measure
USPS Box	USPS Postal Address Elements	Complex	Tabular Domain Measure
USPS Route	USPS Postal Address Elements	Simple	Tabular Domain Measure
Zip Code	Larger-Area Elements	Simple	Spatial Domain Measure +
Zip Code	Larger-Area Elements	Simple	Tabular Domain Measure
Zip Plus 4	Larger-Area Elements	Simple	Spatial Domain Measure + (linear?)
Zip Plus 4	Larger-Area Elements	Simple	Tabular Domain Measure

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7.6 Appendix F (Informative): Attribute Measure Index

Attribute Name	Component or Subject	Measure
Address Anomaly Status	Descriptive Attributes	None
Address Authority	Address Lineage Attributes	Tabular Domain Measure
Address Classification	Descriptive Attributes	Pattern Sequence Measure
Address Classification	Descriptive Attributes	Tabular Domain Measure
Address Coordinate Reference System	Address Coordinates	Tabular Domain Measure
Address Coordinate Reference System Authority	Address Coordinates	Tabular Domain Measure
Address Coordinate Reference System ID	Address Coordinates	Tabular Domain Measure
Address Elevation	Address Coordinates	Address Elevation Measure
Address End Date	Address Lineage Attributes	Future Date Measure
Address End Date	Address Lineage Attributes	Start End Date Order Measure
Address Feature Type	Descriptive Attributes	Address Reference System Description
Address Feature Type	Descriptive Attributes	Tabular Domain Measure
Address ID	Address ID	Uniqueness Measure
Address Latitude	Address Coordinates	XY Coordinate Completeness Measure
Address Latitude	Address Coordinates	XY Coordinate Spatial Measure
Address Lifecycle Status	Descriptive Attributes	Address Lifecycle Status Date Consistency Measure
Address Lifecycle Status	Descriptive Attributes	Tabular Domain Measure
Address Longitude	Address Coordinates	XY Coordinate Completeness Measure
Address Longitude	Address Coordinates	XY Coordinate Spatial Measure
Address Number Parity	Attributes Describing Specific Address Elements	Address Number Parity Measure
Address Range Parity	Attributes Describing Specific Address Elements	Address Number Range Parity Consistency Measure

Address Range Side	Attributes Describing Specific Address Elements	Address Left Right Measure
Address Range Side	Attributes Describing Specific Address Elements	Left Right Odd Even Parity Measure
Address Range Type	Attributes Describing Specific Address Elements	None
Address Reference System	Address Reference System Attributes	Refer to component elements
Address Reference System Axis Point Of Beginning	Address Reference System Attributes	Address Reference System Axes Point Of Beginning Measure -
Address Reference System Description	Address Reference System Attributes	None
Address Reference System Extent	Address Reference System Attributes	Compare with the Address Reference System Description
Address Reference System Name	Address Reference System Attributes	Tabular Domain Measure
Address Relation Type	Descriptive Attributes	Tabular Domain Measure
Address Scheme X Axis	Address Reference System Attributes	Address Reference System Axes Point Of Beginning Measure
Address Scheme Y Axis	Address Reference System Attributes	Address Reference System Axes Point Of Beginning Measure
Address Scheme Y Axis Origin	Address Reference System Attributes	Address Reference System Axes Point Of Beginning Measure -
Address Start Date	Address Lineage Attributes	Future Date Measure
Address Start Date	Address Lineage Attributes	Start End Date Order Measure
Address UUID	Address ID	Refer to validation specific to the software used to create the UUID
Address X Coordinate	Address Coordinates	XY Coordinate Completeness Measure
Address X Coordinate	Address Coordinates	XY Coordinate Spatial Measure
Address Y Coordinate	Address Coordinates	XY Coordinate Completeness Measure
Address Y Coordinate	Address Coordinates	XY Coordinate Spatial Measure
Address Z Level	Descriptive Attributes	Subaddress Element Z Level Measure
Attached Element	Attributes Describing Specific Address Elements	Check Attached Pairs Measure

Attached Element	Attributes Describing Specific Address Elements	Complete Street Name Tabular Domain Measure
Data Set ID	Address Lineage Attributes	Related Not Null Measure
Delivery Address Type	Attributes Describing Specific Address Elements	Delivery Address Type Subaddress Measure
Delivery Address Type	Attributes Describing Specific Address Elements	Tabular Domain Measure
Element Sequence Number	Attributes Describing Specific Address Elements	Element Sequence Number Measure
Element Sequence Number	Attributes Describing Specific Address Elements	Uniqueness Measure
GNIS Feature ID	Attributes Describing Specific Address Elements	Related Not Null Measure
Location Description	Descriptive Attributes	None
Official Status	Descriptive Attributes	Official Status Address Authority Consistency Measure
Official Status	Descriptive Attributes	Tabular Domain Measure
Place Name Type	Attributes Describing Specific Address Elements	None
Related Address ID	Descriptive Attributes	Related Element Uniqueness Measure
Related Address ID	Descriptive Attributes	Related Not Null Measure
Related Address ID	Descriptive Attributes	Tabular Domain Measure
Subaddress Component Order	Attributes Describing Specific Address Elements	Subaddress Component Order Measure
Subaddress Component Order	Attributes Describing Specific Address Elements	Tabular Domain Measure
US National Grid Coordinate	Address Coordinates	Usng Coordinate Spatial Measure

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7238 7.7 Appendix G (Informative): Classification Measure Index

Classification Name	Subject	Measure
Community Address	Landmark Address Classes	Pattern Sequence Measure
Four Number Address Range	Thoroughfare Address Classes	Address Number Range Completeness Measure
Four Number Address Range	Thoroughfare Address Classes	Address Number Range Parity Consistency Measure
Four Number Address Range	Thoroughfare Address Classes	Address Number Range Sequence Measure
Four Number Address Range	Thoroughfare Address Classes	Left Right Odd Even Parity Measure
Four Number Address Range	Thoroughfare Address Classes	Low High Address Sequence Measure
Four Number Address Range	Thoroughfare Address Classes	Overlapping Ranges Measure
Four Number Address Range	Thoroughfare Address Classes	Pattern Sequence Measure +
Four Number Address Range	Thoroughfare Address Classes	Range Domain Measure
General Address Class	General Address Class	Pattern Sequence Measure
Intersection Address	Thoroughfare Address Classes	Intersection Validity Measure
Intersection Address	Thoroughfare Address Classes	Pattern Sequence Measure
Landmark Address	Landmark Address Classes	Pattern Sequence Measure
Landmark Site Address	Thoroughfare Address Classes	Address Number Fishbones Measure
Landmark Site Address	Thoroughfare Address Classes	Address Number Range Completeness Measure
Landmark Site Address	Thoroughfare Address Classes	Left Right Odd Even Parity Measure
Landmark Site Address	Thoroughfare Address Classes	Pattern Sequence Measure +
Numbered Thoroughfare	Thoroughfare Address	Address Completeness Measure

Address	Classes	
Numbered Thoroughfare Address	Thoroughfare Address Classes	Address Number Fishbones Measure
Numbered Thoroughfare Address	Thoroughfare Address Classes	Left Right Odd Even Parity Measure
Numbered Thoroughfare Address	Thoroughfare Address Classes	Pattern Sequence Measure +
Two Number Address Range	Thoroughfare Address Classes	Address Number Range Completeness Measure
Two Number Address Range	Thoroughfare Address Classes	Address Number Range Parity Consistency Measure
Two Number Address Range	Thoroughfare Address Classes	Address Number Range Sequence Measure
Two Number Address Range	Thoroughfare Address Classes	Low High Address Sequence Measure
Two Number Address Range	Thoroughfare Address Classes	Low High Address Sequence Measure
Two Number Address Range	Thoroughfare Address Classes	Overlapping Ranges Measure
Two Number Address Range	Thoroughfare Address Classes	Pattern Sequence Measure +
Two Number Address Range	Thoroughfare Address Classes	Range Domain Measure
USPS General Delivery Office	Landmark Address Classes	Pattern Sequence Measure
USPS Postal Delivery Box	Postal Delivery Address Classes	Pattern Sequence Measure
Unnumbered Thoroughfare Address	Thoroughfare Address Classes	Pattern Sequence Measure

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7.8 Appendix H (Informative): Quality Measures By Data Quality Report

Measure	Attribute (Thematic) Accuracy	Completeness	Lineage	Logical Consistency	Positional Accuracy	Temporal Accuracy
Address Completeness Measure		•				
Address Left Right Measure	•					
Address Lifecycle Status Date Consistency Measure				•		•
Address Number Fishbones Measure				•		
Address Number Parity Measure				•		
Address Number Range Completeness Measure				•		
Address Number Range Parity Consistency Measure				•		
Address Number Range Sequence Measure				•		
Address Range Directionality				•		

Measure						
Address Reference System Axes Point Of Beginning Measure				•		
Address Reference System Rules Measure				•		
Check Attached Pairs Measure				•		
Complete Street Name Tabular Domain Measure	•					
Complex Element Sequence Number Measure	•					
Data Type Measure				•		
Delivery Address Type Subaddress Measure				•		
Duplicate Street Name Measure				•		
Element Sequence Number Measure	•					
Future Date Measure						•
Intersection Validity Measure				•		

Left Right Odd Even Parity Measure				•		
Location Description Field Check Measure			•		•	
Low High Address Sequence Measure				•		
Official Status Address Authority Consistency Measure				•		
Overlapping Ranges Measure				•		
Pattern Sequence Measure				•		
Range Domain Measure	•					
Related Element Uniqueness Measure	•					
Related Not Null Measure				•		
Repeated Element Uniqueness Measure	•					
Segment Directionality Consistency Measure				•		
Spatial Domain Measure					•	
Start End Date						•

Order Measure						
Subaddress Component Order Measure	•					
Subaddress Element Z Level Measure	•					
Tabular Domain Measure	•					
Uniqueness Measure	•					
Usng Coordinate Spatial Measure					•	
XY Coordinate Completeness Measure				•		
XY Coordinate Spatial Measure					•	

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7.9 Appendix I (Informative): Compatibility of the Address Standard with the FGDC Geographic Information Framework Data Content Standard for the NDSI

7.9.1 Introduction

7.9.1.1 Purpose and Structure.

This appendix assesses the compatibility of the address standard with the FGDC's *Geographic Information Framework Data Content Standard* (hereinafter called the "framework standard"). This appendix is presented in three sections:

- Section 1 states why and how the assessment was done, and summarizes the results.
- Section 2 provides a brief statement of the scope of each part of the framework standard, whether the address standard is consistent with that part, and how the evaluation should be independently confirmed.
- Section 3 shows in detail whether and to what extent the address standard meets the conformance tests set forth in Part Zero (Base Part) of the framework standard.

7.9.1.2 The Framework Standard and the Address Standard.

The framework standard "*provides interrelated thematic standards in seven data areas: cadastral, digital orthoimagery, elevation, geodetic control, governmental unit boundaries and other geographic area boundaries, hydrography, and transportation.*" The seven core themes "*are considered framework data of critical importance to the spatial data infrastructure of the Nation... The standard is divided into eight parts, one for each of the seven data themes and a base document containing information common to two or more themes.*" (Framework standard Base Part, Introduction and Sec. 1.1)

Address data are used in conjunction with several of the framework themes, most notably cadastral data and transportation data. Addresses and transportation features (especially road networks) are so closely related that their standards are interdependent. Addresses are used by the public to identify cadastral parcels and specify their locations. Street names form an

integral part of thoroughfare addresses, and street segments and their network geometry form the basis for Address Reference Systems and their components. In addition, addressed features have elevations; and place names within addresses are often determined by governmental boundaries.

7.9.1.3 Assessing the Compatibility of the Address Standard with the Framework Standard.

Because address data are closely tied to several framework data themes, the address standard should be compatible with the framework standard. Compatibility assessment requires two types of tests:

- **Consistency tests,** to find whether the address standard is consistent with the standards for the seven data themes, and
- **Conformity tests,** to determine whether the address standard conforms to the requirements set forth in the Base Part of the framework standard, which govern the seven thematic parts of the framework standard.

7.9.1.4 Consistency Tests and Results.

The consistency tests evaluate, for each thematic part, whether the part shares any classes, elements, or defined terms with the address standard, and if so, whether the shared classes, elements, or terms are defined and used consistently. Three outcomes are possible:

- **Unrelated** - The framework part shares no classes, elements, or defined terms with the address standard.
- **Consistent** - The framework part shares classes, elements, or defined terms with the address standard; and they are defined and used consistently; and the two standards are complementary and mutually exclusive in scope.
- **Inconsistent** - The framework part shares classes, elements, or defined terms with the address standard, but they are not defined and used consistently, and/or the two standards overlap in scope.

The address standard relates to the data theme parts as follows:

- **Unrelated** - Digital Orthoimagery, Geodetic Control, and Hydrography.
- **Consistent** - Cadastral, Elevation, and Governmental Unit Boundaries and Other Geographic Area Boundaries.
- **Inconsistent** - Transportation (see 2.8.2 below).

7.9.1.5 Conformity Tests and Results

Section 3 sets forth, section by section, all the conformance requirements given in the framework standard Base Part and analyzes whether and how the address standard conforms to the requirements. The address standard satisfies all of the requirements. Section 3 below details the specific requirements and shows how the address standard conforms to them.

7.9.1.6 Relating the Address Standard to the Framework Standard Cadastral and Transportation Parts

The close relation of address data with cadastral data and with transportation data raises the question of how the address standard should be related to the cadastral and transportation parts of the framework standard. If, for example, an address record is to be related to a land parcel record, the address standard should not have to reinvent or repeat the entire cadastral part in order to make use of the data found in a cadastral dataset. This address standard incorporates a framework approach:

- To best serve geographic data users, the address standard should provide explicitly for relationships with other standards.
- This is best done by defining a minimum set of attributes needed to relate features across different themes (e.g. an address to a parcel, or an address to a transportation feature), that is, to provide for the foreign key needed to relate address records to cadastral features or transportation features; and
- Those key attributes should be defined by reference to the other standard.

The Content Part of the address standard includes two elements, Address Parcel Identifier Source and Address Parcel Identifier, that were created to relate addresses with parcels.

The Content Part address standard includes five attributes by which an address feature can be related to a transportation event and a transportation segment or path: Address Transportation System Name, Address Transportation System Authority, Address Transportation Feature Type, Address Transportation Feature ID, and Related Transportation Feature ID. In addition, the Content Part includes five address range attributes, so that address ranges can be properly related to the transportation segments or paths they describe: Address Range Type, Address Range Parity, Address Range Side, Address Range Directionality, and Address Range Span.

7.9.1.7 Format Note

Within this appendix, quotations from the framework standard are italicized and set in quotation marks.

7.9.1.8 Sources

This appendix refers to the May 2008 versions of the *Geographic Information Framework Data Content Standard* as posted on the FDGC website at: *http://www.fgdc.gov/standards/standards_publications/* . Complete citations are given in Part 6: References.

7.9.2 Relationship of the Address Standard to Each of the Eight Parts of the Geographic Information Framework Data Content Standard

7.9.2.1 Part 0: Base

7.9.2.1.1 Scope of Part 0: Base.

The Base Part provides *"A high-level view of the seven framework data themes[,] [a]n overall integrating Unified Modeling Language (UML) model that is supplemented by detail in the part for each data theme, [and] [t]erminology and other information common to two or more themes"* (Part 0, Sec 1.2).

The Base Part defines the abstract model that underlies and unifies the seven data themes. It sets forth, for the data themes, specific conformance requirements as to definitions of terms and abbreviations, UML model notation, data dictionary content and formatting, element and attribute naming, incorporation of metadata and record identifiers, and conformance to ISO reference standards and the abstract framework data model.

7.9.2.1.2 Relation of Part 0 to Address Standard.

To be compatible with the framework standard, the address standard must meet the conformance requirements given in the Base Part, or at least not contradict them. As shown in the detailed analysis in Section 3, the address standard conforms to all of the requirements.

7.9.2.1.3 Conclusion

The address standard conforms to the Base Part.

7.9.2.2 Part 1: Cadastral

7.9.2.2.1 Scope of Part 1: Cadastral.

Part 1 *"provides the information necessary to identify the existence of parcel-level cadastral information and the source of that information."* (Part 1, Sec. 1).

Part 1 is a profile of the FGDC's *Cadastral Data Content Standard* (FGDC-STD-003). The *Cadastral Data Content Standard "contains the standardization of the definition of entities and objects related to cadastral information including survey measurements, transactions related to interests in land, general property descriptions, and boundary and corner evidence data."* (Part 1, Introduction).

7.9.2.2.2 Relation of Part 1 and the Cadastral Data Content Standard to the Address Standard.

The address standard is consistent with both the Cadastral Part of Framework Standard and the Cadastral Data Content Standard. The address standard includes two address attributes, Address Parcel Identifier and Address Parcel Identifier Source, both defined by reference to the *Cadastral Data Content Standard*. They correspond to the Parcel ID and Source Identifier (or Parcel ID Assigner) elements, respectively, in the Cadastral Part and the Cadastral Data Content Standard.

Because addresses and parcels are created and altered independently of each other, no specific address-parcel relationship can be assumed. They should be treated as independent entities, and the relationship between them should be considered, in relational database terms, as a many-to-many relationship--that is, an address can relate to any number of parcels, and a parcel can relate to any number of addresses.

The Address Parcel Identifier and the Address Parcel Identifier Source are both defined by reference to the Cadastral Standard, and they are the only parcel elements included or needed within the address standard. Except for those two attributes, the address and cadastral standards do not share any defined terms, data elements, or data classes. All other parcel elements are defined within the Cadastral Standard and need not be repeated in the address standard. All address elements and classes are defined in the address standard and need not be repeated in the Cadastral Standard. Thus the two standards are consistent in their shared elements, and mutually exclusive and complementary in their scopes.

7.9.2.2.3 Conclusion

The Address Standard is consistent with the Framework Standard Part 1: Cadastral.

7.9.2.3 Part 2: Digital Orthoimagery

7.9.2.3.1 Scope of Part 2: Digital Orthoimagery.

Part 2 *"specifies data content and logical structure for the description and interchange of framework digital orthoimagery. To a certain extent, it also provides guidelines for the acquisition and processing of imagery (leading toward the generation of digital orthoimagery), and specifies the documentation of those acquisition and processing steps."* (Part 2, Sec 1.1)

7.9.2.3.2 Relation of Part 2 to Address Standard.

The address standard does not refer to digital orthoimagery, and it does not share any defined terms, data elements, or data classes with Part 2.

7.9.2.3.3 Conclusion

The address standard is unrelated to the Digital Orthoimagery Part.

7.9.2.4 Part 3: Elevation

7.9.2.4.1 Scope of Part 3: Elevation.

Part 3 *"defines the geospatial data model entities and attributes that permit the exchange of digital elevation data consistent with the National Spatial Data Infrastructure's (NSDI) framework for elevation data."* (Part 3, Sec. 1)

7.9.2.4.2 Relation of Part 3 to Address Standard.

The address standard includes address attributes that define horizontal and vertical coordinates for address points, and the coordinate reference system to which the coordinates are referenced. The attributes are:

Horizontal: Address X Coordinate, Address Y Coordinate, Address Longitude, Address Latitude, US National Grid Coordinate

Vertical: Address Elevation

Coordinate Reference System: Address Coordinate Reference System ID, Address Coordinate Reference System Authority; Complex Element: Address Coordinate Reference System

The address attributes listed above are consistent with Part 3, and otherwise the two standards are independent and unrelated.

7.9.2.4.3 Conclusion

The address standard is consistent with the Elevation Part.

7.9.2.5 Part 4: Geodetic Control

7.9.2.5.1 Scope of Part 4: Geodetic Control.

Part 4 *"provides a common methodology for creating datasets of horizontal coordinate values and vertical coordinate values for geodetic control points represented by survey monuments, such as brass disks and rod marks. It provides a single data structure for relating coordinate values obtained by one geodetic survey method (for example, a classical line-of-sight traverse) with coordinate values obtained by another geodetic survey method (for example, a Global Positioning System geodetic control survey)."* (Part 4, Sec .1.2)

7.9.2.5.2 Relation of Part 4 to Address Standard.

The address standard does not refer to control points, and it does not share any defined terms, data elements, or data classes with Part 4.

7.9.2.5.3 Conclusion

The address standard is unrelated to the Geodetic Control Part.

7.9.2.6 Part 5: Governmental Units and Other Geographic Area Boundaries

7.9.2.6.1 Scope of Part 5: Governmental Units and Other Geographic Area Boundaries.

"The purpose of ...Part 5...is to establish the content requirements for the collection and interchange of governmental units and other geographic area boundary data and to facilitate the maintenance and use of that information." (Part 5, Sec 1).

The part recognizes four types of areas (definitions are quoted from Part 5, Sec.5.5):

- governmental unit - *"geographic area with legally defined boundaries established under Federal, Tribal, State, or local law, and with the authority to elect or appoint officials and raise revenues through taxes"* (Sec. 5.5.12)
- administrative unit - *"area established by rule, treaty, or regulation of a legislative, executive, or judicial governmental authority, a non-profit organization, or private industry for the execution of some function"* (Sec. 5.5.1)
- statistical unit - *"geographic area defined for the collection, tabulation, and/or publication of demographic, and/or other statistical data"* (sec. 5.5.20)
- other unit - *"geographic area that is not a governmental unit, administrative unit, or statistical unit, as defined herein, and that is not an area defined or described in other framework parts"* (Sec. 5.5.17)

7.9.2.6.2 Relation of Part 5 to Address Standard.

The address standard is related to the Governmental Units and other Geographic Area Boundaries Part in two ways:

- Government unit names and other geographic area names often also serve as address Place Names, State Names, or Country Names.
- Part 5 defines boundaries and spatial relationships. The Data Quality Part of the address standard uses spatial relationships to test whether the address is within the polygon that represents the address Place Name(s), State Name, or Country Name.

To provide for consistency of terminology:

- The address standard definition of Place Name is based in part on the Framework Standard Part 5.
- Tables 11, 13, and 15 of Part 5, which provide an extensive list of terms and definitions for various types of communities and local governments, are cited in the address standard Place Name notes.
- Relevant terms from tables 11, 13, and 15 are listed in the address standard under Place Name as “Other Common Names for the Element.”
- The address standard notes for State Name cite the definition of “state” given in framework standard part 5, Table 13.
- The address standard definition of Country Name incorporates the definition of “country” given in framework standard part 5, Table 13.
    - The data quality tests use boundary polygons and spatial relationships in a manner consistent with the definitions of Part 5.

7.9.2.6.3 Conclusion

The address standard is consistent with the Governmental Units and other Geographic Area Boundaries Part.

7.9.2.7 Part 6: Hydrography

7.9.2.7.1 Scope of Part 6: Hydrography.

"The purpose of ... Part 6 ... is to establish the content requirements for the collection and interchange of hydrography features and to facilitate the maintenance and use of that information by all users of geographic information. The Hydrography part identifies and defines terminology, encoding schema, and the data components required for describing hydrographic features, along with the metadata needed for the hydrography data exchange.... The scope of this part is limited to the information regarding surface water features and hydrographic networks for the purpose of cartography and network analysis." (Part 6, Sec. 1.1)

7.9.2.7.2 Relation of Part 6 to Address Standard.

The address standard does not refer to hydrography or hydrographic features, and it does not share any defined terms, data elements, or data classes with Part 6.

7.9.2.7.3 Conclusion

The address standard is unrelated to the Hydrography Part.

7.9.2.8 Part 7: Transportation

7.9.2.8.1 Scope of Part 7: Transportation.

Part 7 *"defines the data model for describing transportation systems components of transportation systems for five [sic] modes that compose the Transportation theme of the NSDI."* (Part 7, Sec. 1).

Part 7 is comprised of five sub-parts: the Transportation Base Part (Part 7), and Rail, Roads, Transit, and Inland Waterways (Parts 7b through 7e). (Part 7a, Transportation - Air, was drafted but not endorsed.) The Base, Roads, and Transit subparts are especially germane to the address standard.

7.9.2.8.2 Relation of Part 7 to Address Standard.

Addresses and transportation networks--and the standards that define them--are so closely related as to be interdependent. In particular, the thoroughfare address classes locate addresses by reference to a thoroughfare; thoroughfare networks are defined and described in the Transportation Part of the Framework Standard. Part 7.4: Appendix D (informative) describes the interdependence and complementarity of the two standards in detail.

The address standard includes five elements by which an address feature can be related to a transportation event and a transportation segment or path: Address Transportation System Name, Address Transportation System Authority, Address Transportation Feature Type, Address Transportation Feature ID, and Related Transportation Feature ID.

The address standard includes five address range attributes, so that address ranges can be properly related to the transportation segments they describe: Address Range Type, Address Range Parity, Address Range Side, Address Range Directionality, and Address Range Span.

These elements are defined to incorporate by reference the transportation model defined in the Transportation Part, without overlapping it.

Because the Transportation Part was completed before the address standard was started, it overlaps with the address standard in certain respects. Within the Transit subpart, Annex D (Informative) describes an address extension to the transit model. The model is inconsistent with the address standard. In addition, the following classes, attributes, and code list values overlap and in some respects are inconsistent with elements in the address standard:

- Transit, Table 1 (Data Dictionary for TransitStop) attributes: address, street side
- Transit, Table 10(Data Dictionary for Landmark) class and attributes: Landmark, landmarkName, landmarkType, address
- Transit, Table 11 (Data Dictionary for Facility) attributes: address
- Roads, Table 3 (Code List for RoadLinearEventType) code list values: directionalPrefix, directionalSuffix, addressInformation, alternateNameBody, alternateNameText, alternateStreetName, alternateStreetNameBody, alternateStreetNameText, firstHouseNumber, houseNumberRange, houseNumberStructure, intermediateHouseNumber, lastHouseNumber, postalCode

7.9.2.8.3 Conclusion

The address standard and the Transportation Part are inconsistent. They can be made consistent by replacing or redefining Annex D and the class, attributes and values listed above with reference to the address standard.

7.9.3 Conformance Of The Address Standard To Framework Standard Part Zero Base Part

The framework standard Base Part defines the abstract model that underlies and unifies the framework seven data themes. It sets forth, for the data themes, specific conformance requirements as to definitions of terms and abbreviations, UML model notation, data dictionary content and formatting, element and attribute naming, incorporation of metadata and record identifiers, and conformance to ISO reference standards and the abstract framework data model.

Section 3 sets forth the conformance requirements given in the framework standard Base Part, section by section, and analyzes whether and how the address standard conforms to the requirements. As shown below, the address standard conforms to all of the requirements.

7.9.3.1 Conformance to Base Part Section 1: Scope

Framework Base Part Section 1 states the scope of the Framework Standard, the Base Part and the seven data theme parts. It is descriptive; it imposes no conformance requirements that would apply to the address standard.

7.9.3.2 Conformance to Base Part Section 2: Conformance

Framework Base Part Section 2 states in full: *"2. Conformance. Each thematic part of the Framework Data Content Standard includes a data dictionary based on the conceptual schema presented in that part. To conform to the standard, a thematic dataset shall satisfy the requirements of the data dictionary for that theme. It shall include a value for each mandatory element, and a value for each conditional element for which the condition is true. It may contain values for any optional element. The data type of each value shall be that specified for the element in the data dictionary and the value shall lie within the domain specified for the element."*

Address Standard Conformance to Section 2: The address standard includes a data dictionary (the Content Part) and a conceptual schema (the XSD in the Exchange Part). The Content Part provides data types and (if applicable) domains for each elements and attribute. The Classification Part shows which elements are mandatory for each class. The address standard thus includes all information needed to determine whether a given dataset conforms to the standard.

7.9.3.3 Conformance to Base Part Section 3: Normative References

Framework Base Part Section 3 refers to Annex A, which lists normative references to standards that affect two or more parts of the Framework Data Content Standard. This section imposes no conformance requirements that would apply to the address standard.

7.9.3.4 Conformance to Base Part Section 4: Maintenance Authority

Framework Base Part Section 4 states that the FGDC is the maintenance authority for the Base Part, and it provides a contact point for questions. This section imposes no conformance requirements that would apply to the address standard.

7.9.3.5 Conformance to Base Part Section 5: Terms and Definitions

Framework Base Part Section 5 defines terms used in the Base Part or common to two or more parts of the standard. Two of the terms are pertinent to the address standard:

"5.12 data content standard – standard that specifies what information is contained within a geospatial dataset and provides an application schema"

Address Standard Conformance to 5.12: The address standard specifies what information is contained within an address dataset and provides an address schema. Thus the address standard fits the definition of a data content standard.

"5.22 feature type – category of real world phenomena with common properties [ISO 19126]"

Address Standard Conformance to 5.22: Addresses are real world phenomena with common properties. The Classification Part of the address standard specifies the common properties of the various classes of addresses. Addresses therefore meet the definition of "feature type."

7.9.3.6 Conformance to Base Part Section 6: Symbols, Abbreviated Terms, and Notations

Framework Base Part Section 6 lists abbreviations used in the Base Part or common to two or more parts of the Framework Standard. Abbreviations used in the address standard are consistent with the abbreviations listed in the Base Part.

7.9.3.7 Conformance to Base Part Section 7: Requirements

7.9.3.7.1 Conformance to Base Part Subsection 7.1: Unified Modeling Language (UML) model

Framework Base Part Section 7.1 reads in full: *"7.1 Unified Modeling Language (UML) model. A data model expressed in UML is provided in each theme part in one of the following ways:*

- *Incorporated in the body text in each section that needs it*
- *Incorporated in the body text in a UML model-only section*
- *Incorporated in a normative annex and referenced in the body text*
- *Incorporated in the body text, but only at a high level or in a general way with detailed data components of the model presented in a normative annex*

"The use of UML class diagrams in the Framework Data Content Standard is an application-neutral approach to depict the inherent description of and relationships among data entities. These diagrams should neither be interpreted as requiring object-oriented implementation – methods or interfaces are not typically shown on these data classes – nor should they be interpreted as representing tables in relational databases. Instead, the UML classes should be used as the basis for translation to and from internal organization data stores and applications. UML modeling environments typically support conversion of logical UML models into implementations in various programming environments through rule-based transforms."

Address Standard Conformance to Base Part 7.1: The Data Exchange Part provides a UML model of the standard, and a complete XSD.

7.9.3.7.2 Conformance to Base Part Subsection 7.2: Dependence on ISO 19100 series of geographic information standards

Framework Base Part Section 7.2 reads in full: *"7.2 Dependence on ISO 19100 series of geographic information standards. The Framework Data Content Standard is dependent on structures and concepts from several standards in the ISO 19100 series of geographic information standards, as shown in Figure 1. Full titles for these standards are found in Annex A. The digital orthoimagery and elevation data parts also are dependent on ISO 19123. Data standards for certain transportation modes are dependent on ISO 19133. All parts have dependencies on ISO 19107, ISO 19108, ISO 19109, ISO 19111, and ISO 19115."*

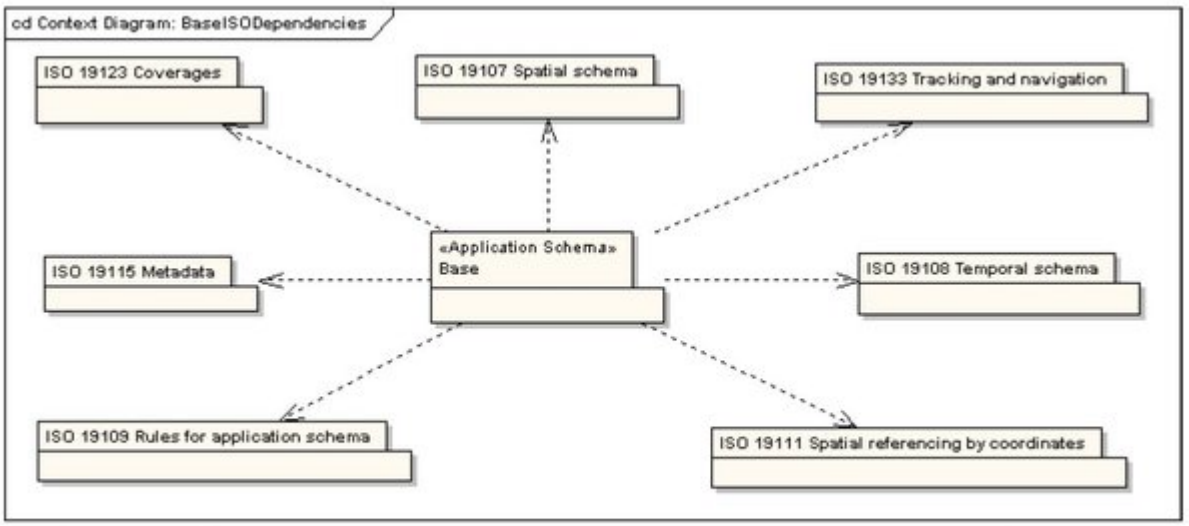

Figure 1 – Framework base dependencies on ISO series of geographic information standards

Address Standard Conformance to Base Part 7.2. The address standard is not directly dependent on any of the ISO 19100 series of geographic information standards, because there is no ISO 19100 standard for addresses. To the extent that the address standard is indirectly dependent on other ISO standards that govern the framework standard, conformance to this section (7.2) is shown by the conformance of the address standard to the Base Part of the Framework Standard.

7.9.3.7.3 Conformance to Base Part Subsection 7.3: Application schema

Framework Base Part Section 7.3 reads in full: *"7.3 Application schema. Each of the thematic Framework Data Content Standard parts includes an integrated application schema expressed in the Unified Modeling Language (UML) according to ISO 19109, Geographic information – Rules for application schema, and its normative references. The application schema specifies, as appropriate, the feature types, attribute types, attribute domain, feature relationships, spatial representation, data organization, and metadata that define the information content of a dataset.*

"The UML models included in the parts of the standard describe the common content and structures that can be exchanged between members of the geospatial community. The use of UML and abstract modeling concepts allows the standard to be technology independent but permits current and future implementation cases to be derived from the UML model.

"Whenever possible, the standard references abstract UML object types from the ISO 19100 series of standards and OGC specifications. Specialization of these classes of objects allows each theme to inherit properties and behaviors and ensure their propagation when transformed into an encoding such as XML.

"UML concepts and notation are described in Annex B." (Base Part subsection 7.3, quoted in full)

Address Standard Conformance to Base Part 7.3. The UML model and XSD provided in the Data Exchange Part express an integrated application schema that define the information content of the standard.

7.9.3.7.4 Conformance to Base Part Subsection 7.4: Data dictionary

7.9.3.7.4.1 Conformance to Base Part Subsection 7.4.1: General requirements

Framework Base Part Section 7.4.1 reads in full: *"7.4.1 General requirements. Each of the thematic Framework Data Content Standard parts contains, as appropriate, documentation of all features, attributes, and relationships and their definitions. A data dictionary table describes the characteristics of the UML model diagrams.*

"The data dictionary (see Table 1) is structured as follows:

- *Each UML model class equates to a data dictionary entity*
- *Each UML model class attribute equates to a data dictionary element*
- *Each UML model role name equates to a data dictionary element*
- *The shaded rows define entities*
- *The entities and elements within the data dictionary are defined by six attributes based on those specified in ISO/IEC 11179-3 for the description of data element concepts, that is, data elements without representation."*

Table 1 – Data dictionary table format

Line	Name/Role Name	Definition	Obligation/Condition	Maximum Occurrence	Data Type	Domain
1						
2						
3						

Address Standard Conformance to Base Part 7.4.1. The address standard Content Part provides a data dictionary of all the elements and attributes specified in the address standard . The dictionary provides the required information about each element and attribute, and extends the base standard by including additional items.

In the address standard each address data element is described by giving its:

1. Element name: The name of the element.
2. Other common names for this element: Common words or phrases having the same or

similar meaning as the element name.
3. Definition: The meaning of the element.
4. Definition Source: The source of the definition. ("New" indicates that the definition is original.)
5. Data Type: Whether the element is a characterString, integer, datetime, etc.
6. Existing Standards for this Element: Other standards that govern this element (if any).
7. Domain of Values for this Element: The range or set of values (if any) to which the element is restricted.
8. Source of Values: The source (if any) for the domain of values.
9. How Defined: How the domain of values is defined.
10. Example: Illustrative examples of the element.
11. Notes/Comments: Notes and comments giving further explanation about the element.
12. XML Tag: The XML tag for the element.
13. XML Model: XML model of the element.
14. XML Example: The XML model applied to a specific example of the element.
15. XML Notes: Explanatory notes about the XML model.
16. Quality Measures: Quality tests applied to the class.
17. Quality Notes: Explanatory notes about the quality measures applied to this element.

The list above includes all the information required by the Base Part 7.4.1. Specifically:

1. Name/Role Name is provided under “Element Name”
2. Definition is provided under “Definition”
3. Obligation/Condition is provided in the XML model
4. Maximum Occurrence is provided in the XML model
5. Data Type is provided under “Data Type”
6. Domain is provided under “Domain of Values for this Element”

The address standard data dictionary includes additional information to encourage widespread and consistent use of the standard by providing clear and complete explanatory information, notes, and examples about each element and attribute. The documentation for address data elements in the Address Standard meets the requirements used by the Framework Data Standard, and provides for additional attributes.

7.9.3.7.4.2 Conformance to Base Part Subsection 7.4.2: Name/Role name

Framework Base Part Section 7.4.2 reads in full: *“7.4.2: Name/Role name. The name/role name is a label assigned to a data dictionary entity or to a data dictionary element.*

The class name begins with an upper case letter. Spaces do not appear in an entity name: instead, multiple words are concatenated, with each word starting with a capital letter (example: XnnnYmmm). Entity names are unique within a data theme.

Element names start with a lower case letter. Spaces do not appear in an element name: instead, multiple words are concatenated, with subsequent words starting with a capital letter

(example: xnnnYmmm). Element names are unique within an entity. Combinations of the entity and element names (example: Dataset.name) are therefore unique within a data theme.

Role names are used to identify the roles of the classes at the ends of a model association and are preceded by the term "Role name" followed by a colon to distinguish them from other types of data dictionary elements."

Address Standard Conformance to Base Part 7.4.2. The address standard conforms to this section in substance, but not in form:

- The address standard (specifically the content and class parts) provides unique names for every element, attribute, and class.
- Consistent naming conventions are used for class, element, and attribute names and XML tags.
- The address standard does not define any roles nor specify any role names.

7.9.3.7.4.3 Conformance to Base Part Subsection 7.4.3: Definition

Framework Base Part Section 7.4.3 reads in full: *"7.4.3: Definition. The definition is the entity or element description."*

Address Standard Conformance to Base Part 7.4.3. The address standard (specifically the content and class parts) includes a formal definition for every element, attribute, and class in the standard.

7.9.3.7.4.4 Conformance to Base Part Subsection 7.4.4: Obligation/Condition

Framework Base Part Section 7.4.4 reads in full:

"7.4.4.1 General

"Used only in rows that contain elements, Obligation/Condition is a descriptor indicating whether the element shall always be populated (that is, contain a value or values) or sometimes will be populated for every instance of its owning entity. If the element is a role name, then the obligation/condition shall apply to the element indicated by the Data Type. This descriptor may have the following values: M (mandatory), C (conditional), or O (optional).

"7.4.4.2 Mandatory (M)

"Mandatory (M) indicates that the entity or element shall be populated.

"7.4.4.3 Conditional (C) "Conditional (C) specifies an electronically manageable condition under which at least one entity or element is mandatory. "Conditional" is used for one of the three following possibilities:

- *Expressing a choice between two or more options. At least one option is mandatory and must be populated*
- *Populating an entity or element if another element has been populated*
- *Populating an element if a specific value for another element has been populated.*

"To facilitate reading by humans, the specific value is used in plain text (for example, "C/not defined by encoding?"). However, the code shall be used to verify the condition in electronic user interface,

"If the answer to the condition is positive, then the entity or the element shall be populated.

"7.4.4.4 Optional (O)

"The entity or the element may be populated. Optional (O) entities and optional elements have been defined to provide a guide to those looking to fully document their data. (Use of this common set of defined elements will help promote interoperability among framework data users and producers.) Optional entities may have mandatory elements. If the optional entity is used, the mandatory elements shall be used. If an optional entity is not used, the elements contained within that entity (including mandatory elements) will also not be used. "

Address Standard Conformance to Base Part 7.4.4. Obligation/conditionality is indicated in the XML model of each element and attribute, and in syntax descriptions and XML model of each address class.

7.9.3.7.4.5 Conformance to Base Part Subsection 7.4.5: Maximum occurrence

Framework Base Part Section 7.4.5 reads in full: *"7.4.5: Maximum occurrence Used only in rows that contain elements, maximum occurrence specifies the maximum number of instances the element may have. Single occurrences are shown by "1"; unconstrained number of instances are represented by an asterisk "*". Fixed number occurrences, other than one, are allowed and will be represented by the corresponding number (that is, "2", "3" …and so on). If the element is a role name, then the maximum occurrence shall apply to the element indicated by the Data Type."*

Address Standard Conformance to Base Part 7.4.5. The XML model for each class and complex element shows the maximum occurrence for each of the elements and attributes that may comprise it.

7.9.3.7.4.6 Conformance to Base Part Subsection 7.4.6: Data type

Framework Base Part Section 7.4.6 reads in full: *"7.4.6: Data type. Specifies a set of distinct values for representing the elements (example: integer, real, CharacterString, DateTime, and Boolean). The data type attribute is also used to define stereotypes for entities and entity names for elements which are role names. These data types are generic types that do not infer an implementation."* (Base Part 7.4.6, quoted in full)

Address Standard Conformance to Base Part 7.4.6. The data type for each element and attribute is specified in its description in the Content Part. Data types are named and defined in accordance with the Code List for Data Type (see Base Part section 7.8.2.2, Table 4), except for certain address reference system elements, which are geometric. All geometric data types are 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):

7.9.3.7.4.7 Conformance to Subsection Base Part 7.4.7: Domain

Framework Base Part Section 7.4.7 reads in full: *"7.4.7: Domain. For an entity, the domain indicates line numbers covered by the elements of that entity in the table.*

"For an element, the domain specifies the values allowed. "Unrestricted" indicates that no restrictions are placed on the data type of the element. Code lists provide a list of potential values, although additional values can be used. Enumerations provide a non-extensible list of potential values." (Base Part 7.4.7, quoted in full)

Address Standard Conformance to Base Part 7.4.7. Domain information for each element and attribute is provided in its description in the Content Part. For address classes, no domain information is provided, because no address class has any domains.

7.9.3.7.5 Conformance to Subsection Base Part 7.5: Metadata

Framework Base Part Section 7.5 reads in full:

"7.5.1 Requirement for metadata

"All datasets shall have metadata that conforms to at least the minimal set of mandatory elements of either ISO 19115, Geographic Information – Metadata, or FGDC-STD-001-1998, Content Standard for Digital Geospatial Metadata (revised June 1988). However, more extensive metadata should be provided.

"7.5.2 Associating metadata entry with data transfer

"The mechanism used to associate a structured metadata entry with a data transfer is not explicitly declared in the Framework Data Content Standard due to possible complex dependencies on either the structure of FGDC or ISO metadata being used. It is the intention of the standard to logically insert the appropriately structured metadata from either standard wherever the class attribute "metadata" occurs. The implementation of this capability may be specified in the implementation annexes as referenced to external metadata schemas in the appropriate implementation or programming environment."

Address Standard Conformance to Base Part 7.5. The address standard incorporates by reference, for address data files, the FGDC"s *Content Standard for Digital Geospatial*

Metadata (CSDGM)(FGDC 1998). The address standard extends the CSDGM by providing attributes for record-level address metadata.

7.9.3.7.6 Conformance to Subsection Base Part 7.6: Model integration

Framework Base Part Section 7.6 reads in full: *"7.6: Model integration. The dependencies among the models specified in the thematic parts of the standard are shown in Figure 2. In Figure 2, the parenthetical text (from Transportation) means that there is a UML package called "Transportation" in which all transportation constructs reside, including Transportation Base."*

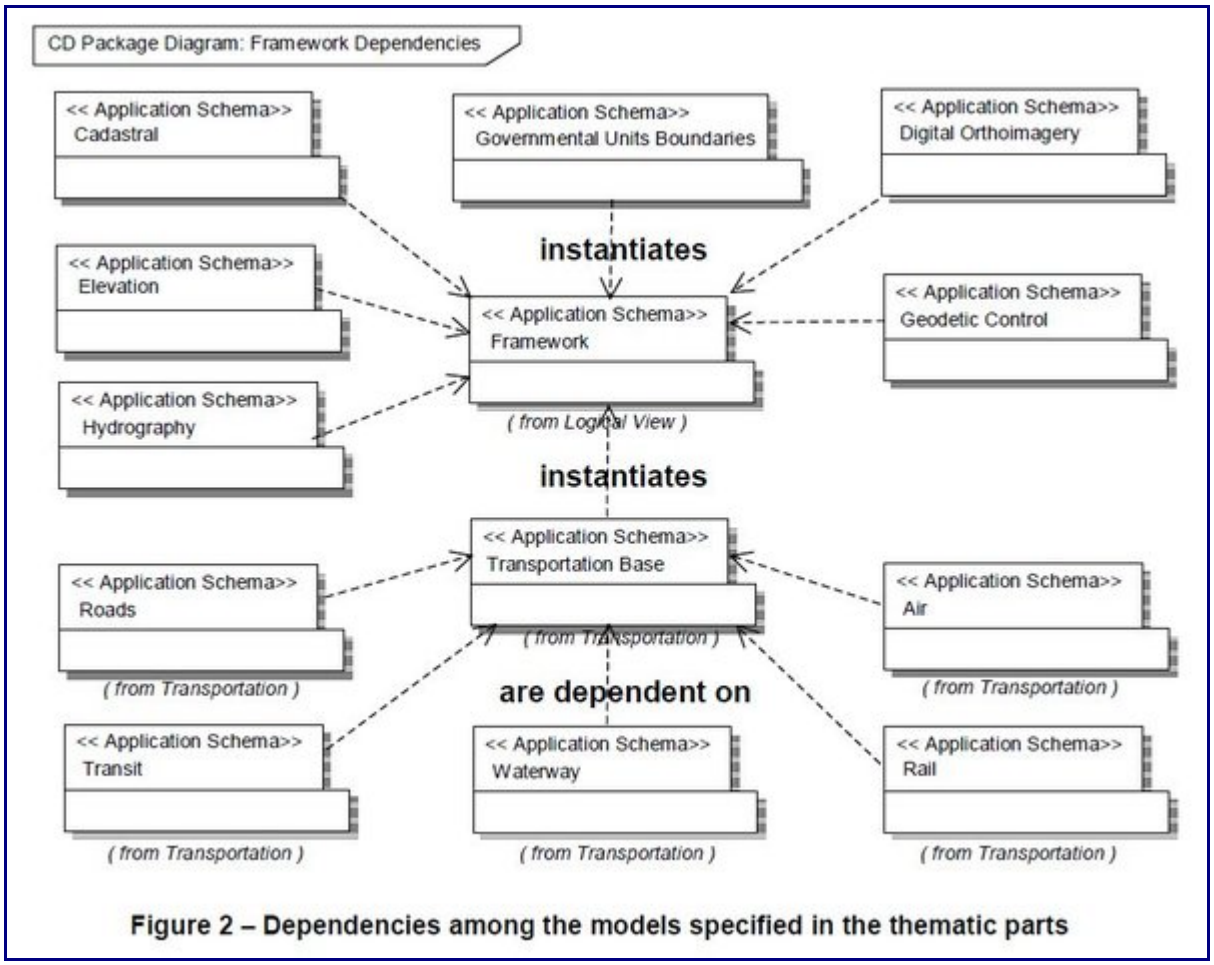

Figure 2 – Dependencies among the models specified in the thematic parts

Address Standard Conformance to Base Part 7.6. If the address standard were to be incorporated into the Framework Data Standard, it would be instantiated by and dependent on the Base Part. The address standard is also be related directly to the Cadastral and Transportation themes, as described in Sections 2.2 and 2.8 this Appendix.

7.9.3.7.7 Conformance to Subsection Base Part 7.7: Establishment of identifiers

Framework Base Part Section 7.7 reads in full (omitting the footnote): *"7.7: Establishment of identifiers. Every UML class that represents a feature type includes attributes for identifier and an optional identifier authority. This construct can be used to distinguish between similar values in different datasets. Policies may be developed within a community for assigning namespaces and permanent identifiers to features and expressing equivalencies among features that have been assigned different namespaces and, therefore, different identifiers, which may be permanent. If there is no standard way to create and manage identifiers, users may develop their own schema and include its description in the dataset metadata."*

Address Standard Conformance to Base Part 7.7. The address standard defines an address attributes, Address ID, to serve as an address identifier, and another attribute, Address Authority, to serve as an authority identifier. Address ID may be implemented as a local ID or as a UUID.

7.9.3.7.8 Conformance to Base Part Subsection 7.8: Framework feature model and common classes

7.9.3.7.8.1 Conformance to Subsection Base Part 7.8.1: Introduction

Framework Base Part Section 7.8.1 reads in full: *"7.8.1: Introduction. The Framework Data Content Standard organizes information using the ISO General Feature Model [ISO 19109]. Features are abstractions of real-world phenomena or man-made constructs that typically have a persistent or assigned identity, such as a name or code, a location represented by a formalized geometry, and a set of other properties and relationships.*

"Each framework theme, represented by a part in the standard, documents one or more formal feature types using a logical information model (attributes, associations, conditionality) represented as class diagrams in UML. All feature types (see darker shaded classes in Figure 3) are denoted in UML using the stereotype <<Feature>>. All features in every part of the standard are subclasses of this common framework Feature and thus inherit its properties as shown in the diagram. Except for identifier, all properties are optional and most of them are repeatable.

"All classes stereotyped as <<Feature>> implement the Abstract class named "Feature" in the Base and inherit all of its properties. Likewise, any class stereotyped as <<FeatureCollection>> implements the Abstract class of the same name in the Base and inherits its property of "metadata". Inheritance is also shown through an italicized parent classname in the upper right corner of the child class.

"The Framework Data Content Standard supports the transfer of geographic data from one party to another. A group of features, known as a feature collection, would define a transfer. Metadata may be associated with the contents of the transfer, as is done now with FGDC

"dataset-level" metadata. This feature collection may include features from one or more thematic parts of the standard, depending on the application and its requirements.

"Table 2 represents the information from Figure 3 in data dictionary format.

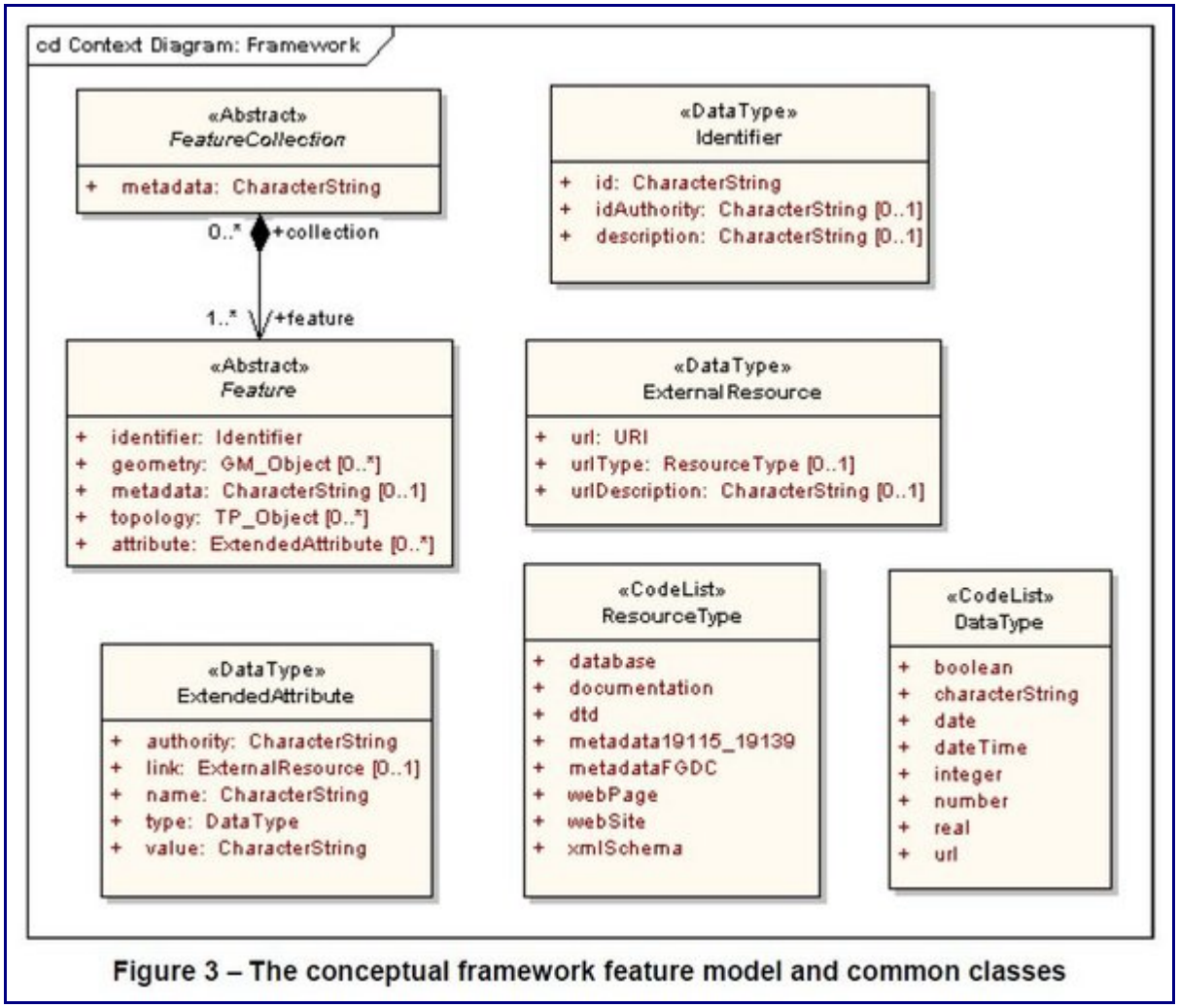

Figure 3 – The conceptual framework feature model and common classes

Table 2 – Description of common UML classes

Table 2 – Description of common UML classes

Line	Name/Role Name	Definition	Obligation/ Condition	Maximum Occurrence	Data Type	Domain
1	FeatureCollection	Aggregation of all features being transferred			<<Abstract>>	Lines 2-3
2	metadata	Structured or unstructured metadata as defined by the community of practice	M	1	CharacterString	May be text or structured metadata fragment or URI
3	Role name: feature	Features in the feature collection	M	*	<<Abstract>> Feature	Unrestricted
4	Feature	Abstraction of a real world phenomenon			<<Abstract>>	Lines 5-10
5	identifier	Label that uniquely identifies a feature, unique within the transfer	M	1	<<DataType>> Identifier	Unrestricted
6	geometry	Geometric representation of the feature	O	*	<<Type>> GM_Object	Defined in ISO 19107
7	metadata	Structured or unstructured metadata as defined by the community of practice	O	1	CharacterString	May be text or structured metadata fragment or URI
8	topology	Connectivity between one feature and another	O	*	<<Type>> TP_Object	Defined in ISO 19107
9	attribute	Producer-defined attribute for inclusion in transfer	O	*	<<DataType>> ExtendedAttribute	Unrestricted
10	Role name: collection	Collection of which this feature is a part	O	*	<<Abstract>> FeatureCollection	Unrestricted
11	Identifier	Construct to group an identifier with an authority and a description			<<DataType>>	Lines 12-14
12	id	Identification value (ID)	M	1	CharacterString	Unrestricted
13	idAuthority	Name of the issuing authority for the identifier	O	1	CharacterString	Unrestricted

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Geographic Information Framework Data Content Standard
Part 0: Base document

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Line	Name/Role Name	Definition	Obligation/ Condition	Maximum Occurrence	Data Type	Domain
14	description	Description or qualification of the identification value within the namespace of the authority	O	1	CharacterString	Unrestricted
15	ExtendedAttribute	Property that permits the identification and transport of an unofficial feature attribute			<<DataType>>	Lines 16-20
16	authority	Name of the organization responsible for the naming of this attribute	M	1	CharacterString	Unrestricted
17	link	Identification of an external resource that provides documentation of this attribute	O	1	<<DataType>> ExternalResource	Unrestricted
18	name	Name of the attribute being transferred	M	1	CharacterString	Unrestricted
19	type	Data type of the attribute being transferred	M	1	<<CodeList>> DataType	Unrestricted
20	value	Value of the attribute being transferred	M	1	CharacterString	Constrained by the valid companion data type
21	ExternalResource	Qualified link to a network accessible object			<<DataType>>	Lines 22-24
22	url	Network accessible resource in the form of a Uniform Resource Locator (URL) or valid Uniform Resource Identifier (URI)	M	1	URI	Unrestricted
23	urlType	Classification of the information content referenced by the URL	O	1	<<CodeList>> ResourceType	Unrestricted
24	urlDescription	Additional characteristics of the URL for advice or display	O	1	CharacterString	Unrestricted

"The extensibility mechanism shown in Figure 3 (ExtendedAttribute) allows for the description and transfer of additional ad hoc data content without requiring changes or extensions to the data schema. This repeatable structure may carry one or more additional attributes and their values for use in peer-to-peer transfer of unofficial feature properties. Any feature class may incorporate this reference to the ExtendedAttribute class. The link property of ExtendedAttribute expands to a triplet of elements associated with a Uniform Resource Locator (URL) for external documentation. Some ResourceTypes are shown as a code list to characterize the information content found at the referenced URL. For Transportation parts of this standard, events provide an alternative method of extending attributes when their values are not necessarily constant for the entire length of a feature."

Address Standard Conformance to Base Part 7.8.1. The address standard meets this requirement. Addresses meet the definition of "feature." The Classification Part defines an abstract Address class and defines subclasses of the feature "addresses", using a logical information model. The model is presented as both a UML model and an XSD. The standard supports both record-level and file-level metadata, and the Exchange Part provides a template for both monolithic and transactional exchanges. The data model is extensible.

7.9.3.7.8.2 Conformance to Base Part Subsection 7.8.2: Code lists

Framework Base Part Section 7.8.2 reads in full:

"7.8.2.1 ResourceType code list

" ResourceType is a CodeList of values for the attribute urlType.

"Table 3 – CodeList for ResourceType

Name	Definition
database	Collection of records where each record has the same structure of data elements
documentation	Resource file that describes usage of referenced URL
dtd	Schema expressed via a set of declarations written in Document Type Definition (DTD) language*
metadata 19115_19139	Metadata records formatted using structure from ISO 19115, Geographic information – Metadata, and ISO 19139, Geographic information – Metadata - XML schema implementation
metadataFGDC	Metadata records formatted using structure from a version of the FGDC Content Standard for Digital Geospatial Metadata
webPage	Resource on the World Wide Web usually in Hypertext Markup Language (HTML) format
webSite	Collection of Web pages that common to a particular domain name or subdomain on the World Wide Web
xmlSchema	Schema expressed using a version of the XML Schema World Wide Web Consortium (W3C) Recommendation

"7.8.2.2 DataType code list

" DataType is a CodeList of values for the attribute dataType.

"Table 4 – CodeList for DataType

Name	Definition
boolean	True or False
characterString	A CharacterString is an arbitrary-length sequence of characters including accents and special characters from repertoire of one of the adopted character sets
date	Values for year, month, and day
dateTime	A combination of year, month, and day and hour, minute, and second
integer	Any member of the set of positive whole numbers, negative whole numbers and zero
number	One of a series of symbols of unique meaning in a fixed order which may be

	derived by counting
real	Real numbers are all numbers that can be written as a possibly never repeating decimal fraction
url	Network accessible resource in the form of a Uniform Resource Identifier (URI)

Address Standard Conformance to Base Part 7.8.2. All data types in the data dictionary conform to the code list in Table 4, except for certain address reference system elements, which are geometric features. The address standard includes no resource types, so Table 3 does not apply to the address standard.

7.9.3.8 Conformance to Base Part Section 8: Encoding of framework data content

Framework Base Part Section 8 reads in full: *"8: Encoding of framework data content. To support data exchange, the parts of the Framework Data Content Standard may include informative annexes that provide guidance to implementers on the transformation of the UML information content into a specific encoding environment. These annexes not only document the context and environment of implementation and validation schema for the information content unique to a part of the standard, but also may include encoding or schema representation of heterogeneous collections of features from multiple themes. Because the standard includes a single UML model of all themes that are exposed progressively through a series of limited diagrams in the context of a theme, it represents an integrated set of classes for all framework data."*

Address Standard Conformance to Base Part 8. The address standard provides both a UML model and an XSD. The XSD provides guidance on the transformation of address information into a specific encoding environment. The Content and Classification parts of the address standard provide XML models for each class, element, and attribute defined in the standard. The Exchange part of the standard integrates the XML element, attribute, and class models into a single XSD. The XSD provides complete, open, standard XML data exchange templates for both monolithic and transactional data exchanges. For validation tests, similar guidance is provided by inclusion of complete SQL pseudocode in each test defined in the Data Quality Part of the address standard.