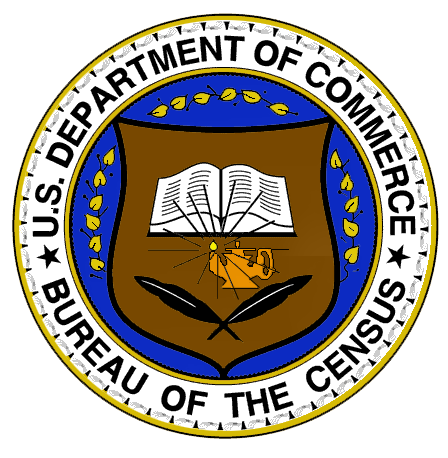
**U.S. Census Bureau**

**Geography Division**

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**Geospatial Product Metadata**

**Content Standard**

**July 2, 2018**

**Version 0.2.0**

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| **Date** | **Version** | **Approving Party** | **Signature** |
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**Change Control for this Document**

This document is subject to review and update throughout the lifecycle of the project. The Revision History tracks changes to this document. For more details, see section 1.7 of this document.

Document Name: Geospatial Product Metadata Content Standard v0.2.0.doc

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# 1. Introduction

The objective of the standard is to standardize the documentation of geospatial products offered by the U.S. Census Bureau’s Geography Division (GEO). The standard establishes a structure of metadata elements and compound elements (groups of data elements) to be used for this purpose.

Adherence to this standard ensures compliance with federally mandated metadata standards that the Census Bureau is required to fulfill when expending federal funds to produce geospatial data.

## 1.1. Purpose

The purpose of the Census Bureau Geospatial Product Metadata Content Standard (GPM CS) is to establish the content requirements of documentation, known as metadata, for Census Bureau products that have a geospatial component. This standard serves as a reference tool for Census Bureau staff responsible for the collection and generation of geospatial product metadata.

The standard provides a common set of elements and definitions for the documentation of geospatial products that will enable users to obtain consistent information concerning the availability and fitness of use of the division’s geospatial products.

## 1.2. Scope

The GPM CS applies to geospatial products and services that the Census Bureau offers to internal Census Bureau customers, the public, other agencies, governments, and organizations. Additionally, supporting data, such as internal files and databases that form the basis of Census Bureau geospatial products, must also comply with GPM CS requirements.

### 1.2.1. In-Scope Activities

This document considers the following activities and topics to be in-scope:

1. Describe metadata concepts for geospatial products.
2. Provide a common set of terminology and definitions for geospatial product metadata.
3. Identify metadata elements within the standard as mandatory, mandatory if applicable, or optional.

### 1.2.2. Out-of-Scope Activities

This document considers the following activities and topics to be out-of-scope:

1. The development of implementation guidelines.
2. The development of training materials.
3. The development or maintenance of software.
4. The development or maintenance of metadata databases.
5. The collection, creation, update, maintenance, or validation of metadata.
6. The evaluation of specific data sources.
7. Metadata for point features and landmarks.
8. Metadata for Master Address File (MAF) Structure Points (MSPs).
9. Metadata specific to Linear Features.
10. Metadata specific to area landmark features including hydrographic features.
11. Metadata specific to legal and statistical areas.
12. Metadata specific to addresses.

## 1.3. Assumptions

N/A

## 1.4. Goals and Guidelines

1. Develop consolidated metadata documentation that provides a standard set of terms, provides concise definitions, and explains data relationships for use across all GEO applications related to geospatial products.
2. Develop a common language of geospatial product metadata, as it exists within the GEO.
3. Simplify the International Organization for Standardization (ISO) metadata standard by providing specific guidance as to which elements are relevant to Census Bureau geospatial products.
4. Strengthen the requirement for relevant optional ISO metadata elements in order to make the metadata more meaningful and useful to the Census Bureau and its customers.
5. Provide for a metadata structure that will enable users to obtain consistent information about the availability and fitness of use of Census Bureau geospatial products.

## 1.5. Intended Audience

The intended audience for this document is ANY staff responsible for collecting, storing, formatting, editing, or delivering geospatial product and service metadata.

## 1.6. Participants

Table 1: Sec 1.6 - Participants, Roles, and Responsibilities

The following staff contributed to the development of this document.

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Org.** | **Phone** | **Role** |
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| McCready, Matt | GEO / GSCQB | 301-763-9101 | Product Metadata SME / Requirements Analyst |
|  |  |  |  |
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## 1.7. Change Control Plan

This document is a configuration item and is subject to review by stakeholders in the GEO. Authorized stakeholders may update this document in accordance with GEO policy for submitting controlled documents to Configuration Management (CM) using procedures established by the GEO Configuration Manager and described in the Geography Division Configuration Management Plan and the Geography Division Program Management Plan. The Revision History tracks changes to this document. When changes are approved, the CM staff will post a new version of the document on the intranet as a reference for all stakeholders.

### 1.7.1. Creating a Baseline

The GPM CS will be considered baselined when the Change Request (CR) requesting Baseline approval is approved by the GEO Change Control Board.

### 1.7.2. Changes to the Baseline

Changes to the baseline shall be in conformance with the GEO Configuration Management Plan. GSCQB Staff will be responsible for identifying changes and managing changes to the document.

## 1.8. Effective Date and Review Period

The GPM CS is effective immediately following baseline approval and will remain in effect until modified or replaced pursuant to the procedure described in Section 1.7 of this document.

# 2. Metadata Concepts

The New Merriam-Webster Dictionary defines metadata as “data that provides information about other data”. Metadata helps to locate and understand data.

## 2.1. Geospatial Metadata

The Office of Management and Budget (OMB), “Circular A-16: Coordination of Geographic Information Related Spatial Data Activities” [Ref 1], defines **Geospatial Data** as:

*“Information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth. This information may be derived from, among other things, remote sensing, mapping, and surveying technologies. Statistical data may be included in this definition at the discretion of the collecting agency.”*

OMB Circular A-16 [Ref 1] defines **Metadata** as:

*“Information about data, such as content, source, vintage, accuracy, condition, projection, responsible party, contact phone number, method of collection, and other characteristics or descriptions.”*

Geospatial metadata provide context for the geospatial data by describing what the dataset contains, the reason for its development, and any known limitations. Geospatial metadata supports the effective application of the geospatial data.

## 2.2. Geospatial Metadata within the GEO

Use of geospatial metadata within the GEO supports operations associated with the MAF/TIGER Database (MTDB). The following four general terms describe MTDB metadata: (1) Source Metadata; (2) Process Metadata; (3) Transaction Metadata and (4) Product Metadata. Within the context of this document, source, process, transaction, & product are equal and separate types of metadata; the first three types are used as source for product metadata.

### 2.2.1. Source Metadata

Identifies descriptive information about the source materials used for reference or update purposes to the MTDB. This information includes but is not limited to:

* Title of the source
* Vintage of the source
* Name of the provider
* Projection (if used)
* Geodetic model
* Accuracy of the horizontal coordinate measurements
* Data types
* Legal values
* Source development and maintenance
* Information that the GEO collects during the evaluation of the source

### 2.2.2. Process Metadata

Provides descriptive information about the operations, processes and application software used to update the MTDB. A process or operation can: (1) utilize both interactive and batch update processes; (2) include multiple software applications; and (3) initiate a series of update transactions or process steps. This information includes but is not limited to:

* Process or operation name
* Process or operation ID code
* Process or operation description
* Calendar date & time the process initiated

### 2.2.3. Transaction Metadata

Records information that describes the characteristics of a specific update action to a specific (point, line or area) feature in the MTDB. This information includes but is not limited to:

* Unique ID code of the updated feature/attribute
* Type of update action
* Date/Time stamp of the update
* Process or operation responsible for the update
* User ID of the staff member making the update
* Means/source that validated the update (when available).

The MTDB maintains transaction information only for those geospatial features that currently exist in the MTDB. Deleted features are not be tracked.

### 2.2.4. Product Metadata

Data that describe the composition, quality, purpose, spatial extent, temporal extent, and distribution of geospatial products and services published by the GEO. These metadata are structured through use of a standard and published to discovery portals on the internet. The publication of these metadata files allow users to discover relevant GEO products and services through searches. The metadata content must be sufficient to describe the product or service and to establish its validity for internal use or public consumption.

With the exception of data quality information, all product metadata content is developed/aggregated during the production process.

The content of product metadata files falls into the following nine categories:

1. **FGDC Required Information:** Keywords and URLs that satisfy federal requirements for the metadata files describing the GEO's geospatial products and datasets. For a complete description of the relevant federal requirements, refer to Chapter 3 – Compliance.
2. **Dataset Information:** Basic information about the dataset, and the responsible party(s).
3. **Data Quality Information:** A general assessment of the quality of the dataset. The assessment should include the tests performed and the results.
4. **Spatial Data Organization Information:** The mechanism used to represent spatial information in the dataset.
5. **Spatial Reference Information:** The description of the reference frame for, and the means to encode, coordinates in the dataset. This information includes projection information.
6. **Entity and Attribute Information:** Details about the information content of the dataset, including the entity types, their attributes, and their domains.
7. **Distribution Information:** Information about the distributor of and options for obtaining the dataset.
8. **Computer Service Information:** Information about online mapping services (OMS) like TIGERweb.
9. **Metadata Reference Information:** Information on the currentness of the metadata information, and the responsible party(s).

# 3. Compliance

The Census Bureau is a producer of geospatial data. The Census Bureau collects and maintains these data to support the Decennial Census, American Community Survey (ACS), and current surveys. The Bureau also produces and distributes a collection of public products developed from these data. Geospatial public products produced by the Census Bureau include TIGER/Line shapefiles, geodatabases, cartographic boundary files, and TIGERweb map services.

## 3.1. Policy

### 3.1.1. Federal

As a federal agency that produces digital spatial data to fulfill its mission, the Census Bureau is mandated to document this spatial data using federally endorsed metadata formats. OMB Circular A-16 [Ref 1] is the source of the requirement. Additional federal requirements for metadata content are found in the National Geospatial Data Assets (NGDA) Metadata Guidelines [Ref 11] and the GeoPlatform Profile of 19115-1 [Ref 12].

#### 3.1.1.1. OMB Circular A-16

Section 5 identifies the federal agencies that the requirement applies to:

*“This Circular applies to your agency if it collects, produces, acquires, maintains, distributes, uses, or preserves analog (e.g., paper maps) or digital spatial data to fulfill your mission, either directly or through a relationship with other organizations.”*

Section 6 identifies the data that the Circular applies to:

*“All spatial data and geographic information systems activities - financed directly or indirectly, in whole or in part, by federal funds.” (Bullet 1)*

Section 8 identifies what federal agencies are required to do:

*“Use FGDC data standards, FGDC Content Standards for Digital Geospatial Metadata, and other appropriate standards, documenting spatial data with the relevant metadata, and making metadata available online through a registered NSDI-compatible Clearinghouse node.”[[1]](#footnote-1) (Section 8a; bullet 4)*

OMB Circular A-16 [Ref 1] directs the Federal Geographic Data Committee (FGDC) to identify standards for geospatial metadata. The [FGDC](http://www.fgdc.gov/) [Link 1] has endorsed “ISO 19115-2: Geographic information - Metadata - Part 2: Extensions for imagery and gridded data” [Ref 6] and the associated ISO standards. Federal agencies are encouraged to transition to ISO metadata to document spatial data products. The Census Bureau has chosen ISO 19115-2 to document its geospatial products.

Adoption of this standard provides the GEO more flexibility in documenting its geospatial resources and services. The CSDGM Standard, last updated in 1998, was developed for the documentation of GIS vector, raster and point data. Since that time, geospatial data content, format, and supporting applications have evolved significantly. The ISO 19115-1 [Ref 5] standard was developed for the documentation of GIS vector and point data and geospatial data services such as web-mapping applications, data catalogs, and data modeling applications. ISO 19115-2 [Ref 6] includes the base ISO 19115-1 metadata standard plus extended elements for the description of imagery, gridded data, data collected using instruments and improved descriptions of lineage and processing information. **Metadata extensions found in ISO 19115-2 support the documentation of the following: (A) ground control points used to geo-locate data; (B) EPSG Geodetic Parameter Datasets; & (C) source imagery.** Specifically, ISO 19115-2 supports:

* Documentation of a wide range of geospatial resources including data, services, sensors/technologies, collection methods, QA/QC procedures, models, application schemas, ontologies, symbol sets, and more.
* Documentation of the relationships between geospatial data and associated services, technologies, methods, models, etc.
* Documentation of simple and complex geospatial data parent/child/sibling relations.
* Standardization and discoverability of metadata content via standardized Topic Categories.
* Standardization and discoverability of metadata records across geopolitical boundaries and community-designated profiles.
* Standardization and simplification of documenting geographic coordinate systems and parameters through the use of Spatial Reference System identifiers, e.g. EPSG:5070.

#### 3.1.1.2. NGDA Metadata Guidelines

National Geospatial Data Assets (NGDA) Datasets are essential national resources as designated by OMB Circular A– 16 Supplemental Guidance (November 2010). A NGDA dataset is a geospatial dataset that has been designated by the FGDC Steering Committee as a National Geospatial Data Asset. To be considered for designation a dataset must meet at least one of the following criteria: (a) used by multiple agencies or with agency partners such as State, Tribal and local governments; (b) needed for Presidential priorities as expressed by OMB; (c) required to meet shared mission goals of multiple Federal agencies, or (d) expressly required by statutory mandate.

As a result of this designation, the metadata files for all NGDA datasets are required to be ‘tagged’ with elements that identify them as an NGDA dataset. These required elements promote discovery of NGDA data resources on federally supported data portals like the GeoPlatform. All of these required elements are defined under the NGDA\_Information compound element and include an alternate title, NGDA specific theme keywords URLs for the web mapping and REST services.

#### 3.1.1.3. GeoPlatform Profile

???

### 3.1.2. Department of Commerce

“Policy on Creation and Publication of Metadata for Geospatial Data” [Ref 2] is a Department of Commerce (DOC) policy statement that addresses the requirements listed in OMB Circular A-16 [Ref 1]. The Census Bureau has acknowledged OMB Circular A-16. This policy states that the Census Bureau shall:

* Document all geospatial data that is collected, produced, acquired, maintained, distributed, used, or preserved by the Department using a metadata standard endorsed by the FGDC.
* Ensure metadata meets or exceeds the minimum requirements of the designated standard for both content and format.
* Include additional information whenever appropriate to provide the maximum information available through the standard.
* Submit all geospatial metadata for publication to the FGDC designated Clearinghouse.
* Ensure metadata meets requirements of the Privacy Act of 1974.
* Ensure information in the metadata does not release proprietary, protected, or classified information.

### 3.1.3. Geography Division

The GPM CS applies to geospatial products offered by the Census Bureau to the public, other agencies, governments, and organizations. The GPM CS provides content requirements for the production of metadata for all geospatial products offered by the Census Bureau. The objective of this standard is to provide a common set of elements and definitions for the documentation of geospatial products that will enable users to obtain consistent information concerning the availability and fitness of use of the product. The requirements in this standard meet or exceed all requirements found in the DOC metadata policy [Ref 2], and thereby federal requirements.

# 4. Product Profiles

The GPM CS’s design accommodates the Census Bureau’s diversity of products. It uses an array of profiles to provide an effective adaptation of the content standard to accommodate the wide range of Census Bureau products while assuring compliance with federal metadata standards. Each profile, a subset of GPM CS elements, represents a specific product type. The implementation of profiles allows for selective application of the GPM CS elements. By incorporating a common core set of elements, as well as those unique to a product, profiles serve to assure standardized content and specificity while remaining flexible. Profiles are predictable and offer consistency and reproducibility to facilitate automated production of metadata files.

To incorporate profiles into the GPM CS, Census Bureau products are categorized based on seven different product types. The seven profiles are: “Planned,” “Map,” “Vector,” “Tabular,” “Service,” “GDB,” and “Series.”

The GPM CS requirements vary for each profile, but all profiles are compliant with federal metadata standards. Mandatory GPM CS content includes citation information, product description, time-period of content, place and theme keyword, and contact information. Requirements for other elements differ by geospatial product type according to its assigned profile. Attachment C, GPM Element Obligations Table, specifies which elements apply to each of the profiles.

## 4.1 Planned

The Planned profile contains the fewest elements. It documents and serves as a notification of a planned data collection activity in accordance with the Commerce “Policy on Planned Geospatial Acquisitions [Ref 3]. This policy calls for building partnerships to reduce duplication of effort. The Planned profile includes basic documentation such as a description of the planned activity, the geographic location, citation and publication references, and information on metadata contacts.

## 4.2 Map

The Map profile documents paper maps. Maps refer to hardcopy or digital depictions of geography features, thematic data, and other census related content. This profile requires projection information. This requirement distinguishes the Map profile from the other profiles.

## 4.3 Vector

The Vector profile incorporates nearly every GPM CS element. It requires detailed spatial reference information that does not apply to the profiles for most other products. Use this profile to document the Census Bureau’s TIGER/Line shapefiles.

## 4.4 Tabular

The Tabular profile documents databases. This profile includes documentation for non-spatial entities and their attribute values, as well as detailed source data information.

## 4.5 Service

The Service profile documents OMSs. These services produce maps of spatially referenced data dynamically from geographic information through an HTTP request. Simply stated, they provide the user a method to create a map on a web browser. This is the only profile to use the *Computer\_Service\_Information* section. Use this profile to document Web Mapping Services (WMS) and Representational State Transfer (REST) files.

## 4.6 GDB

The GDB profile documents geodatabase files. A collection of geographic datasets held in a relational Database Management System (DBMS) like Oracle. These files are designed for use with ESRI ArcGIS software.

## 4.7 Series

The Series profile documents the existence a large series of data files based on a common theme (e.g. the 2016 Cartographic Boundary Files) that reside on a federally sponsored data discovery portal. These series can measure in the thousands of individual files. Rather than report every individual file that satisfies a search request, the portal sponsors opted to report the series. To that end, a Series Information File, or parent file, is produced. This file summarizes the series as a whole and is stored with the data files. The series profile file is the metadata file for the Series Information file. All links embedded within this file must point to the directory containing all records associated with the series. This profile includes the identification, distribution, and metadata information sections. With a few exceptions, all state and county themes have Series Information files created for them.

For a complete description of contents of the eight profiles refer to the GPM Element Obligations Table (Attachment C).

# 5. Metadata Elements

The GPM CS consists of 178 elements; 125 data elements organized into 53 compound elements also called descriptive categories. These categories serve to organize the metadata information into groups of related elements and sub-categories. Each of these elements may belong in one or more of the profiles.

## 5.1. Structure of the Element Obligations Table

The GPM Element Obligations Table (Attachment C) consists of ten columns. The first three columns describe the structure of the standard. Columns four through ten show the obligation assigned to each element by GPM CS profile. The number of elements that apply varies by profile. Refer to Section 6, Metadata Element Definitions, for a complete description of the individual GPM CS elements.

Within the table, the descriptive categories appear in *italic font* while the data elements appear in a **bold font** followed by a colon.

## 5.2. Obligation

The GPM CS stipulates whether metadata information is required or optional for each element based on product type. Obligation is the descriptor for a GPM CS metadata element that indicates whether the metadata information is required for the profile (or not). The obligation specifies whether the metadata element shall always be present (contain metadata information), or be present according to established conditions.

### 5.2.1. Descriptors

For the GPM CS, the obligation descriptor may have the following values:

* Mandatory (M) required for all products. If the information is not known for a mandatory data element, the entry "Unknown" or a similar statement should be given.
* Mandatory if Applicable (MA) required if the dataset exhibits the characteristic defined by the element.
* Optional (O) desired if available, but is not required.

### 5.2.2. Descriptors with numbers

Obligation descriptors may include numbers. A number indicates a choice between two or more options; the value of the number indicates the number of options. For example, an obligation of M2, in the *Time\_Period\_of\_Content* element, indicates that the provider must choose between two mandatory options. Here the provider must choose between using a single [Calendar\_Date] and a *Range\_of\_Dates*. Note: the M2 descriptor appears as the obligation for both the [Calendar\_Date] and *Range\_of\_Dates* elements.

An obligation of O2 indicates that the provider can choose between two options for providing metadata. For example, in the *Digital\_Form* element, the provider can provide: (1) a [Format\_Version\_Number], (2) [Format\_Version\_Date], or (3) nothing, because the element is optional.

### 5.2.3. Obligation respects structure

Every compound element within the content standard is identified as being mandatory, optional, or Mandatory if Applicable. All elements that constitute those compound elements are identified in the same way. A data element identified as mandatory that exists within a compound element identified as less than mandatory is not always required. If the parent element is not included, then its components are not required. This situation appears in the *Series\_Information* element (element 2.1.7). If this compound element, identified as optional, is included, then both the [Series\_Name] and [Issue\_Identification] data elements must be included. Conversely, if the *Series\_Information* element is not included, then its two data elements are deleted as well.

## 5.3. Repeating elements and categories

Selected data elements within the GPM CS can repeat individually or as a member of a descriptive category. The repeatability of each GPM CS element or category is indicated in column 2, ‘Repeats,’ of Attachment C; ‘GPM CS Metadata Element Obligation Listing.’ For a description of the “Repeats” column, see paragraph 4 under section 6.1 Compound (Descriptive Categories). If the data element does not repeat, the field remains empty.

An example of a repeatable element is [Theme\_Keyword]. A theme keyword is a common-use word or phrase used to describe the subject of the product. This structure provides for the storage of multiple theme keywords. Each [Theme\_Keyword] element stores a single theme keyword or phrase.

The [Theme\_Keyword] element is a member of a descriptive category called *Theme*. This descriptive category is comprised of a [Theme\_Keyword\_Thesaurus], which does not repeat; and a [Theme\_Keyword], which does repeat. This structure provides for the association of groups of theme keywords with specific theme keyword thesauri.

*Theme* is an example of a descriptive category that repeats. For each *Theme* descriptive category, there will always be a single [Theme\_Keyword\_Thesaurus] element as well as one or more [Theme\_Keyword] elements. This structure provides for the storage of multiple thesauri, each with its own collection of keywords.

## 5.4. GPM Element Obligations Table

For the GPM Element Obligation Table, see Attachment C.

# 6. Metadata Element Definitions

This section lists the GPM CS elements in alphabetical order of the element name. There are two types of elements found in this chapter: data elements and compound elements. Data elements contain the actual metadata information. Compound elements (AKA Descriptive Categories) contain both data elements and other compound elements. They serve to organize the metadata information into groups of related elements and sub-categories.

Insert GPM description here. Don’t use the structure described below.

## 6.1. Compound (Descriptive Categories)

Each element in this section includes an element name, definition, GPM CS Reference number, type, path, and Production Rules (PR).

The path indicates where to find the element within the standard. Elements used in more than one location include a separate path for each location. The elements reference number is enclosed in parentheses () and precedes the path.

The PR (production rule) specifies the relationship between one parent compound element and its individual components. Terms in the production rule include other compound elements (formatted in *italic font*) and data elements. By making substitutions using matching terms in the production rule, one can explain higher-level concepts using data elements. The symbols used in the production rules have the following meaning:

Symbol Meaning

+ **and**

[|] **selection** - select one term from the list of enclosed terms (exclusive or). Terms are separated by "|".

m {} n **iteration** - the term(s) enclosed is/are repeated from "m" to "n" times. “m” and “n” are both integers with no restrictions. “m” normally has values of 0 or 1.

() **optional** - the term(s) enclosed is/are optional

Examples

a = b + c "a consists of b and c"

a = [b | c] "a consists of one of b or c"

a = 4{b}6 "a consists of four to six occurrences of b"

a = b + (c) "a consists of b and optionally c"

**Geospatial\_Product\_Metadata**

Data about the content, quality, condition, and other characteristics of the Census Bureau’s geospatial data products. This is the root, or parent, element for metadata content standard. All other metadata elements are contained within this element.

Type: Compound Short name: GPM

Path: (0) GPM

Geospatial\_Product\_Metadata = 0{*FGDC\_Required*}1 +

*Identification\_Information* +

0{*Data\_Quality\_Information*}1 +

0{*Spatial\_Data\_Organization\_Information*}1 +

0{*Spatial\_Reference\_Information*}1 +

0{*Entity\_and\_Attribute\_Information*}1 +

*Distribution\_Information* +

0{*Computer\_Service\_Information*}1 +

*Metadata\_Reference\_Information*

#### A

##### Attribute

A defined characteristic of an entity.

Type: Compound Short name: attr

Path: (6.1.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute

PR: Attribute\_Label + Attribute\_Definition + Attribute\_Definition\_Source + 1{*Attribute\_Domain\_Values*}n

##### Attribute\_Accuracy\_Report

An explanation of the accuracy of the identification of the entities and assignment of values within the product and a description of the tests used to determine accuracy. This report includes documentation on the tests the authors used to check the attribute data and what the results of those tests were. This may refer to field checks, cross-referencing, statistical analyses, parallel independent measures, etc. The report will identify all tests used by name and result. Note: This report does NOT include any description of positional accuracy.

Type: Compound Short name: attraccr

Path: (3.1) Data\_Quality\_Information/Attribute\_Accuracy\_Report

PR: *Test\_Report*

##### Attribute\_Domain\_Values

The set of legal values that can be assigned to an attribute. The following four attributes types are used by the GEO in product metadata: (1) a user defined ‘enumerated’ set of codes; (2) a published ‘codeset’; (3) an alphanumeric ‘range’ of values; and (4) an ‘unrepresentable’ domain, not represented by the first three attribute types. For full definitions of these address types see Chapter 6. Section 6.2 defines the ‘unrepresentable’ domain. All others are defined in section 6.1.

Type: Compound Short name: attrdomv

Path: (6.1.2.4) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values

PR: [1{*Enumerated\_Domain*}n | *Range\_Domain* | *Codeset\_Domain* | Unrepresentable\_Domain]

#### B

##### Bounding\_Coordinates

The limits of coverage of a product/dataset expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most.

Type: Compound Short name: bounding

Path: (2.5.1) Identification\_Information/Spatial\_Domain/Bounding\_Coordinates

PR: West\_Bounding\_Coordinate + East\_Bounding\_Coordinate + North\_Bounding\_Coordinate + South\_Bounding\_Coordinate

##### Browse\_Graphic

The Browse Graphic is an illustration or sample image of the data set or application. Its purpose is an aid to data discovery and assessment. It can also serve to create image links to data sets and other resources. The Browse Graphic for a map or data set should display a portion of the map or data set. A Browse Graphic for an application should include the interface as well.

Type: Compound Short name: browse

Path: (2.9) Identification\_Information/Browse\_Graphic

PR: Browse\_Graphic\_File\_Name + Browse\_Graphic\_File\_Description + Browse\_Graphic\_File\_Type

#### C

##### Citation

The recommended reference for: (a) the product/dataset; (b) data or other products related to the product/dataset; or (c) source material for the product/dataset.

Type: Compound Short name: citation Section: 10

Path: (a)(2.1) Identification\_Information/Citation

(b)(2.12.1) Identification\_Information/Cross\_Reference/Citation

(c)(3.6.1) Data\_Quality\_Information/Source\_Information/Citation

PR: 1{Originator}n + Publication\_Date + Title + (Edition) + 0{Geospatial\_Data\_Presentation\_Form}1 + (*Series\_Information*) + 0{Online\_Linkage}n

##### Codeset\_Domain

A codeset domain is a collection of all valid values for a specific attribute, typically published as a standard or list. Examples of codesets include the Federal Information Processing Series that contain numeric codes for nations, states, and counties.

Type: Compound Short name: codesetd

Path: (6.1.2.4.3) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Codeset\_Domain

PR: Codeset\_Name + Codeset\_Source

##### Completeness\_Report

Information about omissions, selection criteria, generalization, definitions, and other rules used to develop the product/dataset. This report describes what is missing with respect to geography, time, and attributes. It identifies data omitted from the product that might normally be expected, as well as the reason for the exclusion. Deviations from standard definitions and interpretations shall be described. In particular, the report shall describe the exhaustiveness of a set of features, such as spatial and taxonomic (attribute) properties.

Type: Compound Short name: complete

Path: (3.4) Data\_Quality\_Information/Completeness\_Report

PR: *Test\_Report*

##### Computer\_Service\_Information

Facts about an OMS like TIGERweb. This information includes the type of mapping service, version of the service, and what operations the service can perform. The [Coupling\_Type] describes how closely associated, or coupled, the web service is with the dataset. For a more detailed description of the [Coupling\_Type], refer to section 6.2.

Type: Compound Short name: servinfo

Path: (8) Computer\_Service\_Information

PR: Service\_Type + (Service\_Type\_Version) + Coupling\_Type + 1{*Contains\_Operations*}n

##### Connect\_Point

The information and parameters needed to connect to a specific function of the OMS.

Type: Compound Short name: conpnt

Path: (8.4.5) Computer\_Service\_Information/Contains\_Operations/Connect\_Point

PR: CP\_Link + 0(Protocol)n + Resource\_Name + Resource\_Description

##### Constraints

The legal, security, and usage restrictions placed on a dataset or resource.

Type: Compound Short name: constrnt

Path: (2.7) Identification\_Information/Constraints

PR: Access\_Constraints + Use\_Constraints + 0{Other\_Constraints}1

##### Contact\_Address

A complete delivery address for the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. Often the distributor is the same as the point of contact.

Type: Compound Short name: cntaddr

Path: (a)(2.8.2) Identification\_Information/Point\_of\_Contact/Contact\_Address

(b)(7.1.2) Distribution\_Information/Point\_of\_Contact/Contact\_Address

(c)(9.5.2) Metadata\_Reference\_Information/Point\_of\_Contact/Contact\_Address

PR: 1{Address}n + City + State\_or\_Province + Postal\_Code + Country

##### Contains\_Operations

Information about the operations that comprise the OMS.

Type: Compound Short name: operatns

Path: (8.4) Computer\_Service\_Information/Contains\_Operations

PR: Operation\_Name + DCP + Operation\_Description + 0(*Operation\_Parameters*)n + *Connect\_Point*

##### Cross\_Reference

Information about other related datasets that are likely to be of interest.

Type: Compound Short name: crossref

Path: (2.12) Identification\_Information/Cross\_Reference

PR: *Citation*

#### D

##### Data\_Quality\_Information

A general assessment of the quality of the product/dataset. This element includes descriptions for: (a) the accuracy of codes for entities & attributes; (b) the fidelity of relationships encoded in the data structure; (c) missing data, selection criteria, generalization; and (d) the accuracy of the horizontal coordinate measurements.

Type: Compound Short name: dataqual

Path: (3) Data\_Quality\_Information

PR: 0{*Attribute\_Accuracy\_Report*}1 + 0{*Non\_Quantitative\_Attribute\_Accuracy\_Report*}1 + *Logical\_Consistency\_Report* + *Completeness\_Report* + 0{*Horizontal\_Positional\_Accuracy\_Report*}1 + *Source\_Information* + *Process\_Step*

##### Description

A characterization of the product/dataset as a whole. The description will include the following: (a) a brief summary; (b) reasons for development; and (c) any known limitations.

Type: Compound Short name: descript

Path: (2.2) Identification\_Information/Description

PR: Abstract + Purpose

##### Detailed\_Description

A description of the entities, attributes, attributes values, and related characteristics encoded in the product/dataset. This description includes the valid values for the entities and attributes within the dataset.

Type: Compound Short name: detailed

Path: (6.1) Entity\_and\_Attribute\_Information/Detailed\_Description

PR: *Entity\_Type* + 1{*Attribute*}n

##### Digital\_Form

A description of the options for obtaining the dataset on computer-compatible media. This includes a description of the technical means for obtaining the data and the format the data comes in.

Type: Compound Short name: digform

Path: (7.3.2) Distribution\_Information/Standard\_Order\_Process/Digital\_Form

PR: Format\_Name + 0{Format\_Version\_Number | Format\_Version\_Date}1 + 0{File\_Decompression\_Technique}1 + 0(Transfer\_Size)1 + 1{*Network\_Address*}n

##### Distribution\_Information

Information about the organization supplying the dataset and options for obtaining the dataset. This includes any liability assumed by the supplying organization and any technical capabilities the customer must have to use the product/dataset.

Type: Compound Short name: distinfo

Path: (7) Distribution\_Information

PR: 1{*Point\_of\_Contact*}n + Distribution\_Liability + 1{*Standard\_Order\_Process*}n + 0{Technical\_Prerequisites}1

#### E

##### Entity\_and\_Attribute\_Information

Details about the information content of the product/dataset. The description will include the entity types, their attributes, and their domains.

Type: Compound Short name: eainfo

Path: (6) Entity\_and\_Attribute\_Information

PR: {1{*Detailed\_Description*}n | 0{*Feature\_Catalogue\_Description*}n}

##### Entity\_Type

The description of a set into which similar object/entity instances are classified.

Type: Compound Short name: enttype

Path: (6.1.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Entity\_Type

PR: Entity\_Type\_Label + Entity\_Type\_Definition + Entity\_Type\_Definition\_Source + (Ontology\_URI)

##### Enumerated\_Domain

An enumerated domain is a list of all permissible values, typically categorical, for an attribute. For each value within the enumerated domain, specify the value or code, its definition, and the source of the definition.

Type: Compound Short name: edom

Path: (6.1.2.4.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Enumerated\_Domain

PR: Enumerated\_Domain\_Value + Enumerated\_Domain\_Value\_Definition + Enumerated\_Domain\_Value\_Definition\_Source

##### EPSG\_Reference

EPSG stands for European Petroleum Survey Group. They publish a database of coordinate system information and other related documents on map projections and datums. The database, an online registry at <http://www.epsg.org/>, is a collection of definitions of coordinate reference systems and coordinate transformations. The GEO references the systems stored in this database when identifying projections in metadata files.

Type: Compound Short name: epsgref

Path: (5.1.3) Spatial\_Reference\_Information/Map\_Projection/EPSG\_Reference

PR: EPSG\_Code + EPSG\_Code\_Space + (EPSG\_Version) + Spatial\_Resolution

#### F

##### Feature\_Catalogue\_Description

The information needed to link to the feature catalogue file (*also called the ISO 19110 file*).

Type: Compound Short name: featcatd

Path: (6.2) Entity\_and\_Attribute\_Information/Feature\_Catalogue\_Description

PR: FC\_Title + Included\_With\_Dataset + Feature\_Types + FC\_Online\_Linkage

##### FGDC\_Required

The contents of this element satisfy federal requirements for metadata files describing the Census Bureau's geospatial products and datasets. Included in this element are the ISO Theme Topic Categories and NGDA tagging information. These metadata elements are designed to promote data discovery on federal sites like Data.gov and GeoPlatform.

Type: Compound Short name: fgdc

Path: (1) FGDC\_Required

PR: *ISO\_Theme* + 0{*NGDA\_Information*}1

#### G

##### Geodetic\_Model

The parameters or set of physical properties describing the shape of the Earth. This information includes the name of the ellipsoid, the radius of the equatorial axis and the denominator of the ratio of the difference between the equatorial and polar radii of the ellipsoid when the numerator is set to one.

Type: Compound Short name: geodetic

Path: (5.2) Spatial\_Reference\_Information/Geodetic\_Model

PR: Horizontal\_Datum\_Name + Ellipsoid\_Name + Semi-Major\_Axis + Denominator\_of\_Flattening\_Ratio

#### H

##### Horizontal\_Positional\_Accuracy\_Report

An explanation of the accuracy of the horizontal coordinate measurements and a description of the tests used. This report is an overall description of the accuracy of the coordinates in the product/dataset. This description shall include the name of tests used, testing methodology, results obtained, and other relevant data that may be available. Commonly, this report includes information about digitizing, Root Mean Square Error (RMSE), surveying techniques, GPS triangulations, image processing or photogrammetric methods.

Type: Compound Short name: horizpar

Path: (3.5) Data\_Quality\_Information/Horizontal\_Positional\_Accuracy\_Report

PR: *Test\_Report*

#### I

##### Identification\_Information

Basic information on the product/dataset. This element includes, but not limited to: (a) a description of the product/dataset; (b) its state and maintenance; (c) the geographic area covered; (d) keywords; (e) constraints placed on the product/dataset; and (f) a point of contact.

Type: Compound Short name: idinfo

Path: (2) Identification\_Information

PR: *Citation* + *Description* + *Time\_Period\_of\_Content* + *Status* + *Spatial\_Domain* + *Keywords* + *Constraints* + 1{*Point\_of\_Contact*}n + (*Browse\_Graphic*) + Data\_Set\_Character\_Set + Data\_Set\_Language + 0(*Cross\_Reference*)n

##### ISO\_Theme

A mandatory collection of keywords in support of federal metadata catalog sites. They represent the main themes of the product/dataset. The catalog sites, like data.gov, use these keywords to sort/organize geospatial metadata. These keywords are not related to those found in element 2.6.1 - Identification\_Information/Keywords/Theme.

Type: Compound Short name: isotheme

Path: (1.1) FGDC\_Required/ISO\_Theme

PR: ISO\_Keyword\_Thesaurus + 1{ISO\_Keyword}n

#### K

##### Keywords

Words or phrases summarizing an aspect of the product/dataset. This element should also identify any appropriate thesaurus or data dictionary.

Type: Compound Short name: keywords

Path: (2.6) Identification\_Information/Keywords

PR: 1{*Theme*}n + 0{*Place*}n

#### L

##### Logical\_Consistency\_Report

This element describes the fidelity of relationships encoded in the data structure of the product/dataset. The report details the names of tests performed and the results of those tests. For example, tabular data may be tested for proper domain and format while graphic data may be tested to answer the following questions: (a) do lines intersect only where intended; (b) are any lines entered twice? (c) are all areas completely described? (d) are there any overshoots or undershoots? (e) are any polygons too small or any lines too close?

Type: Compound Short name: logic

Path: (3.3) Data\_Quality\_Information/Logical\_Consistency\_Report

PR: *Test\_Report*

#### M

##### Map\_Projection

The systematic representation of all or part of the surface of the Earth on a plane or developable surface. This compound element consists of a map projection name and a description of that projection. The description can be textual (stored in the Map\_Projection\_Description data element) or a reference to a map projection definition that is stored in the EPSG Geodetic Parameter Dataset (see EPSG\_Reference in section 6.1).

Type: Compound Short name: mapproj

Path: (5.1) Spatial\_Reference\_Information/Map\_Projection

PR: Map\_Projection\_Name + {Map\_Projection\_Description | *EPSG\_Reference*}

##### Metadata\_Reference\_Information

Information on the currentness of the metadata information and the responsible party.

Type: Compound Short name: metainfo

Path: (9) Metadata\_Reference\_Information

PR: Metadata\_Date + (Metadata\_Parent\_Identifier\_Name) + (Metadata\_Hierarchy\_Level) + (Metadata\_Hierarchy\_Level\_Name) + 1{*Point\_of\_Contact*}n + Metadata\_Standard\_Name + Metadata\_Standard\_Version + Metadata\_Character\_Set + Metadata\_File\_Identifier + Metadata\_Language

#### N

##### Network\_Address

The electronic address from which the data set can be obtained from the distribution computer.

Type: Compound Short name: netwrkr

Path: (7.3.2.6) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/Network\_Address

PR: Network\_Resource\_Name + Mime\_Type

##### NGDA\_Information

This element is mandatory for those products/datasets designated as National Geospatial Data Assets (NGDA). These datasets are essential national resources that satisfy multi-agency requirements, achieve Presidential priorities, or are required by statutory mandate. For a listing of DOC-Census products that are designated as NGDA datasets, set Attachment B: DOC-Census NGDA Datasets

Type: Compound Short name: ngda

Path: (1.2) FGDC\_Required/NGDA\_Information

PR: 0{Alternate\_Title}1 + NGDA\_Keyword\_Thesaurus + 3{NGDA\_Keyword}3 + WMS\_URL + 0{REST\_URL}1

##### Non\_Quantitative\_Attribute\_Accuracy\_Report

The measure of whether an attribute that cannot be directly measured is correct or incorrect.

Type: Compound Short name: nqanaar

Path: (3.2) Data\_Quality\_Information/Non\_Quantitative\_Attribute\_Accuracy\_Report

PR: *Test\_Report*

#### O

##### Operation\_Parameters

System or user defined constants that are required for an operation, listed in sequence.

Type: Compound Short name: opparams

Path: (8.4.4) Computer\_Service\_Information/Contains\_Operations/Operation\_Parameters

PR: Parameter\_Name + (Parameter\_Direction) + Parameter\_Description

#### P

##### Place

Words, phrases, and codes that describe the geographic locations characterized by the product/dataset. Most Census datasets use the American National Standards Institute Information Technology codes (ANSI INCITS) as the code list.

Type: Compound Short name: place

Path: (2.6.2) Identification\_Information/Keywords/Place

PR: Place\_Keyword\_Thesaurus + 1{Place\_Keyword}n

##### Point\_of\_Contact

The complete delivery address and other contact information for the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for supplying the product/dataset; or (c) responsible for the metadata information. Often the distributor is the same as the point of contact. Repeat this element as necessary to document necessary points of contact.

Type: Compound Short name: ptcontac Section: 11

Path: (a)(2.8) Identification\_Information/Point\_of\_Contact

(b)(7.1) Distribution\_Information/Point\_of\_Contact

(c)(9.5) Metadata\_Reference\_Information/Point\_of\_Contact

PR: Contact\_Organization + *Contact\_Address* + 1{Contact\_Voice\_Telephone}n + Contact\_Electronic\_Mail\_Address

##### Process\_Step

Information about an event or transformation in the life of a resource including the process used to maintain the resource.

Type: Compound Short name: procstep

Path: (3.7) Data\_Quality\_Information/Process\_Step

PR: Process\_Description + Process\_Date

#### R

##### Range\_Domain

A range domain is a sequence, series, or scale of values between limits. Typically, it is a numeric measure or count, but it may also be alphabetic (A–ZZZ). The minimum and maximum values are provided.

Type: Compound Short name: rdom

Path: (6.1.2.4.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Range\_Domain

PR: Range\_Domain\_Minimum + Range\_Domain\_Maximum + (Attribute\_Units\_of\_Measure)

##### Range\_of\_Dates

A means of encoding the beginning and ending dates of (a) the product/dataset or (b) source material.

Type: Compound Short name: rngdates

Path: (a)(2.3.2) Identification\_Information/Time\_Period\_of\_Content/Range\_of\_Dates

(b)(3.6.4.2) Data\_Quality\_Information/Source\_Information/ Time\_Period\_of\_Content/Range\_of\_Dates

PR: Beginning\_Date + Ending\_Date

#### S

##### SDTS\_Terms\_Description

Point and vector object information.

Type: Compound Short name: sdtsterm

Path: (4.4) Spatial\_Data\_Organization\_Information/SDTS\_Terms\_Description

PR: SDTS\_Point\_and\_Vector\_Object\_Type + Point\_and\_Vector\_Object\_Count

##### Series\_Information

The identification of the series, or group, of publications of which the product/dataset is a part.

Type: Compound Short name: serinfo

Path: (2.1.6) Identification\_Information/Citation/Series\_Information

PR: Series\_Name + Issue\_Identification

##### Source\_Information

A description of source(s) used to develop the product/dataset. The description of each source will include the source’s title, originator, publication date and information contributed.

Type: Compound Short name: srcinfo

Path: (3.6) Data\_Quality\_Information/Source\_Information

PR: *Citation* + 0{Source\_Scale\_Denominator}1 + Type\_of\_Source\_Media + *Time\_Period\_of\_Content* + Source\_Citation\_Abbreviation + Source\_Contribution

##### Spatial\_Data\_Organization\_Information

The mechanism used to represent spatial information in the product/dataset. This information includes the types of geographic features, addressing schemes, the system of objects used to represent the space, and the degree of complexity of the spatial relationships in the product/dataset.

Type: Compound Short name: spdoinfo

Path: (4) Spatial\_Data\_Organization\_Information

PR: Indirect\_Spatial\_Reference + Direct\_Spatial\_Reference\_Method + Topology\_Level + 1{*SDTS\_Terms\_Description*}n

##### Spatial\_Domain

The geographic area covered by the product/dataset expressed as a collection of 4 bounding coordinates.

Type: Compound Short name: spdom

Path: (2.5) Identification\_Information/Spatial\_Domain

PR: *Bounding\_Coordinates*

##### Spatial\_Reference\_Information

The description of the reference frame for, and the means to encode, coordinates in the product/dataset. The description includes the *Map\_Projection* and *Geodetic\_Model*.

Type: Compound Short name: spref

Path: (5) Spatial\_Reference\_Information

PR: *Map\_Projection* + *Geodetic\_Model*

##### Standard\_Order\_Process

Information about methods for obtaining the product/dataset. This includes data format, fees, and the URL where the product is found.

Type: Compound Short name: stdorder

Path: (7.3) Distribution\_Information/Standard\_Order\_Process

PR: {Non-Digital\_Form | 1{*Digital\_Form*}n} + Fees + (Ordering\_Instructions)

##### Status

The state of and maintenance information for the product/dataset.

Type: Compound Short name: status

Path: (2.4) Identification\_Information/Status

PR: Progress + Maintenance\_and\_Update\_Frequency

#### T

##### Test\_Report

A description of data quality testing completed within the following tests: (a) Attribute\_Accuraccy\_Report; (b) Non\_Quantitative\_Attribute\_Accuracy\_Report; (c) Logical\_Consistency\_Report; (d) Completeness\_Report; and (e) Horizontal\_Positional\_Accuracy\_Report.

Type: Compound Short name: testrpt Section: 13

Path: (a)(3.1.1) Data\_Quality\_Information/Attribute\_Accuracy\_Report/Test\_Report

(b)(3.2.1) Data\_Quality\_Information/ Non\_Quantitative\_Attribute\_Accuracy\_Report/Test\_Report

(c)(3.3.1) Data\_Quality\_Information/Logical\_Consistency\_Report/Test\_Report

(d)(3.4.1) Data\_Quality\_Information/Completeness\_Report/Test\_Report

(e)(3.5.1) Data\_Quality\_Information/Horizontal\_Positional\_Accuracy\_Report/ Test\_Report

PR: (Measure) + (Evaluation) + Result

##### Theme

Words or phrases indicating the subject(s) covered by the dataset. These keywords are not related to those found in element 1.1 - FGDC\_Required/ISO\_Theme. Both the ISO Theme keywords & Theme keywords contain keywords describing a main theme of the dataset. The difference is that the ISO Theme keywords are taken from a finite list of values defined by ISO. The Theme keywords in this element have no such restriction and are defined by the product sponsor.

Type: Compound Short name: theme

Path: (2.6.1) Identification\_Information/Keywords/Theme

PR: Theme\_Keyword\_Thesaurus + 1{Theme\_Keyword}n

##### Time\_Period\_of\_Content

The date or vintage of the: (a) product/dataset; or (b) source.

Type: Compound Short name: timeperd Section: 12

Path: (a)(2.3) Identification\_Information/Time\_Period\_of\_Content

(b)(3.6.4) Data\_Quality\_Information/Source\_Information/Time\_Period\_of\_Content

PR: {Calendar\_Date | Range\_of\_Dates} + Currentness\_Reference

## 6.2. Data

Each element in this section includes an element name, definition, GPM CS Reference number, path, and domain. Brackets [] enclose data elements referenced within element definitions.

The path indicates where to find the element within the standard. Elements used in more than one location include a separate path for each location. The element’s reference number is enclosed in parentheses () and precedes the path.

The domain describes/lists the acceptable/legal values for the data element. The domain may include a list of values, a range of values, a code set of legal values or un-representable values if the values are open-ended text. Quotes identify individual values. Frequently the domain list includes “free text” or “free date.” “Free” indicates the domain is free from restrictions. “Text” refers to the domain type. Additional domain types include integer, real, and date. The domain for some elements refers to both a restricted list of values and free unrestricted values. For these elements, one value from the restricted list is preferred if appropriate; an unrestricted value may be used if necessary.

#### A

##### Abstract

A brief narrative summary of the product/dataset. This element briefly describes the information that is included within the product/dataset and what geographic areas are covered. This element should include: (a) general content and features; (b) product form; (c) geographic coverage; (d) time period of content; and (e) any special data characteristics or limitations.

Type: Data Short name: abstract

Path: (2.2.1) Identification\_Information/Description/Abstract

Domain: free text

##### Access\_Constraints

Any restrictions or legal prerequisites that are in effect for accessing the product/dataset. These include any access constraints applied to assure the protection of privacy or intellectual property. This element commonly applies to products that contain Personally Identifiable Information (PII), or are exempt from public record laws such as those covered by Title 13. The domain of this element is restricted to code list values only. If none of the values accurately describes the constraints, use “otherRestrictions” as the data value. When “otherRestrictions” is used as the data value for this element, an explanation MUST be provided in the [Other\_Constraints] data element.

Type: Data Short name: accconst

Path: (2.7.1) Identification\_Information/Constraints/Access\_Constraints

Domain: “unrestricted, “otherRestrictions”

##### Address

A delivery address line for the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product dataset; or (c) responsible for the metadata information. Often the distributor is the same as the point of contact. Repeat this element if multiple address lines are required. For example, the following is the complete address for the Spatial Data Collection and Products Branch:

Spatial Data Collection and Products Branch

U.S. Census Bureau

4600 Silver Hill Road, stop 7400

Washington, DC. 20233-740

For this address, a separate [Address] element is necessary for each of the first three lines. The last line; composed of the city, state, and ZIP code; is stored in the [City], [State\_or\_Province], and [Postal\_Code] elements respectively.

Type: Data Short name: address

Path: (a)(2.8.2.1) Identification\_Information/Point\_of\_Contact/Contact\_Address/ Address

(b)(7.1.2.1) Distribution\_Information/Point\_of\_Contact/Contact\_Address/ Address

(c)(9.5.2.1) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Address/Address

Domain: free text

##### Alternate\_Title

A short name or other language name for the product/dataset. This element is required for datasets designated as National Geospatial Assets (NGDA). Construct the entry by concatenating the products theme name to the end of the following text string: “National Geospatial Data Asset (NGDA) ”. A special delimiting character is not used within the ‘title.’

Type: Data Short name: alttitle

Path: (1.2.1) FGDC\_Required/NGDA\_Information/Alternate\_Title

Domain: free text

##### Attribute\_Definition

A description of the attribute listed in the [Attribute\_Label] element.

Type: Data Short name: attrdef

Path: (6.1.2.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Definition

Domain: free text

##### Attribute\_Definition\_Source

The authority or organization responsible for establishing the attribute’s definition given in the [Attributte\_Definition] element. Normally, this organization provided the attribute list. Specify the default value for this element as “U.S. Census Bureau.”

Type: Data Short name: attrdefs

Path: (6.1.2.3) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Definition\_Source

Domain: free text

##### Attribute\_Label

The name of the attribute defined in the [Attribute\_Definition] element. If this attribute is not defined in an authoritative publication, and there is no verified source, leave the attribute out.

Type: Data Short name: attrlabl

Path: (6.1.2.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Label

Domain: free text

##### Attribute\_Units\_of\_Measure

The standard unit of measure used to define the *Range\_Domain* identified under the [Attribute\_Label] element. This element applies to the [Range\_Domain\_Minimum] and [Range\_Domain\_Maximum] elements.

Type: Data Short name: attrunit

Path: (6.1.2.4.2.3) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Range\_Domain/Attribute\_Units\_of\_Measure

Domain: free text

#### B

##### Beginning\_Date

The beginning date, or vintage, of (a) the product/dataset or (b) source material. Express the [Beginning\_Date] element as a year, a year and month, or a year, month and day. This element is mandatory if the [Ending\_Date] element is provided. Format: YYYYMMDD. Always express the month as an integer. Always include leading zeros for month (MM) and day (DD).

Type: Data Short name: begdate

Path: (a)(2.3.2.1) Identification\_Information/Time\_Period\_of\_Content/ Range\_of\_Dates/Beginning\_Date

(b)(3.6.4.2.1) Data\_Quality\_Information/Source\_Information/ Time\_Period\_of\_Content/Range\_of\_Dates/Beginning\_Date

Domain: “Unknown,” free date

##### Browse\_Graphic\_File\_Description

A textual description of the graphic file’s content.

Type: Data Short name: browsed

Path: (2.9.2) Identification\_Information/Browse\_Graphic/ Browse\_Graphic\_File\_Description

Domain: free text

##### Browse\_Graphic\_File\_Name

Name of the graphic file provided to illustrate the product/dataset. The Browse Graphic visually depicts the product for prospective users. The image might show a simple display of the product, the results of an application that used the product, different aspects of the quality of the product, or other information. List a URL if applicable.

Type: Data Short name: browsen

Path: (2.9.1) Identification\_Information/Browse\_Graphic/Browse\_Graphic\_File\_Name

Domain: free text

##### Browse\_Graphic\_File\_Type

Description of the graphic file format.

Type: Data Short name: browset

Path: (2.9.3) Identification\_Information/Browse\_Graphic/Browse\_Graphic\_File\_Type

Domain: “CGM,” “EPS,” “EMF,” “GIF,” “JPEG,” “PBM,” “PDF,” "PNG," “PS,” “TIFF,” “WMF,” “XWD,” free text

#### C

##### Calendar\_Date

The date, or vintage, of (a) the product/dataset or (b) source material. Express the [Calendar\_Date] element as a year, a year and month, or a year, month and day. Format: YYYYMMDD. Always express the month as an integer. Always include leading zeros for month (MM) and day (DD).

Type: Data Short name: caldate

Path: (a)(2.3.1) Identification\_Information/Time\_Period\_of\_Content/Calendar\_Date

(b)(3.6.4.1) Data\_Quality\_Information/Source\_Information/ Time\_Period\_of\_Content/Calendar\_Date

Domain: “Unknown,” free date

##### City

The postal city of the address for the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. The default value for this element is “Washington.”

Type: Data Short name: city

Path: (a)(2.8.2.2) Identification\_Information/Point\_of\_Contact/Contact\_Address/City

(b)(7.1.2.2) Distribution\_Information/Point\_of\_Contact/Contact\_Address/City

(c)(9.5.2.2) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Address/City

Domain: free text

##### Codeset\_Name

The title of the codeset. A codeset is a reference to a standard or published list of established valid values. InterNational Committee for Information Technology Standards (INCITS), formerly FIPS, County Codes are an example of a codeset. Each occurrence of a *Codeset\_Domain* will describe no more than one codeset.

Type: Data Short name: codesetn

Path: (6.1.2.4.3.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Codeset\_Domain/Codeset\_Name

Domain: free text “None,”

“National Standard Codes (ANSI INCITS 38-2009), Federal Information Processing Series (FIPS) – States/State Equivalents,”

“National Standard Codes (ANSI INCITS 31-2009), Federal Information Processing Series (FIPS) - Counties/County Equivalents,”

“National Standard Codes (ANSI INCITS 454-2009), Federal Information Processing Series (FIPS) - Metropolitan and Micropolitan Statistical Areas and Related Geographic Entities,”

“National Standard Codes (ANSI INCITS 455-2009), Federal Information Processing Series (FIPS) - Congressional Districts,”

##### Codeset\_Source

The authority for the codeset listed under the [Codeset\_Name] element.

Type: Data Short name: codesets

Path: (6.1.2.4.3.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Codeset\_Domain/Codeset\_Source

Domain: free text

##### Contact\_Electronic\_Mail\_Address

The address of the electronic mailbox of the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. Often the distributor is the same as the point of contact. The e-mail addresses of individual staff members shall not be referenced.

Type: Data Short name: cntemail

Path: (a)(2.8.4) Identification\_Information/Point\_of\_Contact/ Contact\_Electronic\_Mail\_Address

(b)(7.1.4) Distribution\_Information/Point\_of\_Contact/ Contact\_Electronic\_Mail\_Address

(c)(9.5.4) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Electronic\_Mail\_Address

Domain: free text

##### Contact\_Organization

The name of the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; (c) responsible for the metadata information. Often the distributor is the same as the point of contact. This element refers to specific branches or divisions within the Census Bureau; Individual staff members shall not be referenced.

Type: Data Short name: cntorg

Path: (a)(2.8.1) Identification\_Information/Point\_of\_Contact/Contact\_Organization

(b)(7.1.1) Distribution\_Information/Point\_of\_Contact/Contact\_Organization

(c)(9.5.1) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Organization

Domain: free text

##### Contact\_Voice\_Telephone

The telephone number by which individuals can speak to the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. The default value for this element is “301.763.1128.”

Type: Data Short name: cntvoice

Path: (a)(2.8.3) Identification\_Information/Point\_of\_Contact/ Contact\_Voice\_Telephone

(b)(7.1.3) Distribution\_Information/Point\_of\_Contact/Contact\_Voice\_Telephone

(c)(9.5.3) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Voice\_Telephone

Domain: free text

##### Country

The country of the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; (c) responsible for the metadata information. The default value for this element is “USA.”

Type: Data Short name: country

Path: (a)(2.8.2.5) Identification\_Information/Point\_of\_Contact/Contact\_Address/ Country

(b)(7.1.2.5) Distribution\_Information/Point\_of\_Contact/ Contact\_Address/Country

(c)(9.5.2.5) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Address/Country

Domain: free text

##### Coupling\_Type

How closely associated, or coupled, the web service is with the dataset. This element can either have a value of “tight,” “loose” or “mixed.” In a tightly coupled dataset, the service metadata describes both the service and the geographic dataset. A loosely coupled dataset’s metadata does not describe both the service and geographic dataset. In mixed coupled datasets, the service metadata describes some of the datasets but does not describe others. The default value for this element is “tight.”

Type: Data Short name: couptype

Path: (8.3) Computer\_Service\_Information/Coupling\_Type

Domain: “tight,” “loose,” “mixed”

##### CP\_Link

The URL of the specific operation (ex: query) that the OMS may be called to execute. For information on how to write a correct WMS URL, see the Open Geospatial Consortium’s (OGC) WMS Specification [Ref 8].

Type: Data Short name: cplink

Path: (8.4.5.1) Computer\_Service\_Information/Contains\_Operations/Connect\_Point/ CP\_Link

Domain: Valid URL

##### Currentness\_Reference

Information about the currentness of (a) the product/dataset or (b) source (how “up-to-date” is either the product or source?). Unfortunately, sometimes only the time that the information was recorded or published is known. The [Currentness\_Reference] element requires the producer to identify what the *Time\_Period\_of\_Content* dates refer to, the ground condition or the publication date.

Type: Data Short name: current

Path: (a)(2.3.3) Identification\_Information/Time\_Period\_of\_Content/ Currentness\_Reference

(b)(3.6.4.3) Data\_Quality\_Information/Source\_Information/ Time\_Period\_of\_Content/Currentness\_Reference

Domain: free text

“ground condition” *- When the “real world” looked the way it is described in the product. Dates reflect the source material.*

“publication date” *– Dates reflect when the information was recorded, published, etc.*

#### D

##### Data\_Set\_Character\_Set

Full name of the character-coding standard used for the product/dataset. This element has a default value of “UTF-8.” This stands for: “Unicode (or Universal Coded Character Set) Transformation Format – 8-bit.”

Type: Data Short name: datachar

Path: (2.10) Identification\_Information/Data\_Set\_Character\_Set

Domain: “UTF-8”

##### Data\_Set\_Language

The language used within the product/dataset. The domain represents a selection of language codes taken from “ISO 639-2, Code for the representation of names of languages [Ref 9].” “eng” stands for English and “spa” stands for Spanish. This element has a default value of “eng.”

Type: Data Short name: datalang

Path: (2.11) Identification\_Information/Data\_Set\_Language

Domain: “eng,” “spa,” free text

##### DCP

The method, or Distributed Computing Platform, used to deploy the operation, application or information listed in the [Operation\_Name] element. Most census datasets will use “WebServices.”

Type: Data Short name: opdcp

Path: (8.4.2) Computer\_Service\_Information/Contains\_Operations/DCP

Domain: “XML,” “COBRA,” “JAVA,” “COM,” “SQL,” “SOAP,” “Z3950,” “HTTP,” “FTP,” “WebServices,” free text

##### Denominator\_of\_Flattening\_Ratio

The denominator of the ratio of the difference between the equatorial and polar radii of the ellipsoid when the numerator is set to 1.

Type: Data Short name: denflat

Path: (5.2.4) Spatial\_Reference\_Information/Geodetic\_Model/ Denominator\_of\_Flattening\_Ratio

Domain: Denominator\_of\_Flattening\_Ratio > 0.0

##### Direct\_Spatial\_Reference\_Method

The system of objects used to represent space in the product/dataset. Indicate only one.

Type: Data Short name: direct

Path: (4.2) Spatial\_Data\_Organization\_Information/Direct\_Spatial\_Reference\_Method

Domain: “Point,” “Vector”

##### Distribution\_Liability

Statement of the liability assumed by the organization responsible for distributing the product/dataset. Use this section to: (a) deny liability if data within the product are incorrect, incomplete, or misused, or (b) limit third party distribution of the product.

Type: Data Short name: distliab

Path: (7.2) Distribution\_Information/Distribution\_Liability

Domain: free text

#### E

##### East\_Bounding\_Coordinate

The eastern-most coordinate of the limit of coverage expressed in decimal degrees of longitude. Provide this element to six decimal places. If this level of precision is not reflective of the actual data accuracy, indicate this in the [Horizontal\_Positional\_Accuracy\_Report] element.

Type: Data Short name: eastbc

Path: (2.5.1.2) Identification\_Information/Spatial\_Domain/Bounding\_Coordinates/ East\_Bounding\_Coordinate

Domain: -180.0 <= East\_Bounding\_Coordinate <= 180.0

##### Edition

The version of the title. This is normally the year the product/dataset was produced.

Type: Data Short name: edition

Path: (2.1.4) Identification\_Information/Citation/Edition

Domain: free text

##### Ellipsoid\_Name

Identification given to established representations of the Earth's shape.

Type: Data Short name: ellips

Path: (5.2.2) Spatial\_Reference\_Information/Geodetic\_Model/Ellipsoid\_Name

Domain: “Clarke 1866,” “Geodetic Reference System 80,” free text

##### Ending\_Date

The ending date, or vintage, of (a) the product/dataset or (b) source material. Express the [Ending\_Date] element as a year, a year and month, or a year, month and day. This element is mandatory if the [Beginning\_Date] element is provided. Format: YYYYMMDD. Always express the month as an integer. Always include leading zeros for month (MM) and day (DD).

Type: Data Short name: enddate

Path: (a)(2.3.2.2) Identification\_Information/Time\_Period\_of\_Content/Range\_of\_Dates/Ending\_Date

(b)(3.6.4.2.2) Data\_Quality\_Information/Source\_Information/ Time\_Period\_of\_Content/Range\_of\_Dates/Ending\_Date

Domain: “Unknown,” “Present,” free date

##### Entity\_Type\_Definition

A description of the entity type identified in the [Entity\_Type\_Label] element.

Type: Data Short name: enttypd

Path: (6.1.1.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Entity\_Type/ Entity\_Type\_Definition

Domain: free text

##### Entity\_Type\_Definition\_Source

The authority of the definition provided in the [Entity\_Type\_Definition] element. Usually this agency originally provided the definition for the entity. If the name of the document that defines this entity is available, provide it here. The default for this element is “U.S. Census Bureau.”

Type: Data Short name: enttypds

Path: (6.1.1.3) Entity\_and\_Attribute\_Information/Detailed\_Description/Entity\_Type/ Entity\_Type\_Definition\_Source

Domain: free text

##### Entity\_Type\_Label

The name of the object, feature type or table defined in the [Entity\_Type\_Definition] element. This is usually the name of the shapefile or shapefile series.

Type: Data Short name: enttypl

Path: (6.1.1.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Entity\_Type/ Entity\_Type\_Label

Domain: free text

##### Enumerated\_Domain\_Value

The name or label, of a member of a defined set of possible values or pick list. Enumerated domain values are typically categorical. Examples include road types and entity codes.

Type: Data Short name: edomv

Path: (6.1.2.4.1.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Enumerated\_Domain/Enumerated\_Domain\_Value

Domain: free text

##### Enumerated\_Domain\_Value\_Definition

The description of the value listed in the [Enumerated\_Domain\_Value] element.

Type: Data Short name: edomvd

Path: (6.1.2.4.1.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Enumerated\_Domain/ Enumerated\_Domain\_Value\_Definition

Domain: free text

##### Enumerated\_Domain\_Value\_Definition\_Source

The authority of the definition listed in the [Enumerated\_Domain\_Value\_Definition] element. Examples of sources include government agencies, standard organizations, and documents.

Type: Data Short name: edomvds

Path: (6.1.2.4.1.3) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Enumerated\_Domain/ Enumerated\_Domain\_Value\_Definition\_Source

Domain: free text

##### EPSG\_Code

The unique alphanumeric value that identifies an EPSG projection or the projection on any other online registry. This element has a default value of "gml=urn:ogc:def:crs:EPSG::3395."

Type: Data Short name: epsgcode

Path: (5.1.3.1) Spatial\_Reference\_Information/Map\_Projection/EPSG\_Reference/ EPSG\_Code

Domain: free text, “[EPSG::4269](http://www.epsg-registry.org/export.htm?gml=urn:ogc:def:crs:EPSG::4269)”, “EPSG::3395”

##### EPSG\_Code\_Space

The URL of the online registry that contains the projection used in the product/dataset. An example would be the EPSG. This element has a default value of "http://www.epsg-registry.org/export.htm?"

Type: Data Short name: epsgspce

Path: (5.1.3.2) Spatial\_Reference\_Information/Map\_Projection/EPSG\_Reference/ EPSG\_Code\_Space

Domain: Valid URL

##### EPSG\_Version

The format or vintage of the EPSG projection used in the product/dataset. This element may contain a date or some other alphanumeric combination.

Type: Data Short name: epsgver

Path: (5.1.3.3) Spatial\_Reference\_Information/Map\_Projection/EPSG\_Reference/EPSG\_Version

Domain: free text

##### Evaluation

A description of the test listed in the [Measure] element.

Type: Data Short name: eval

Path: (a)(3.1.1.2) Data\_Quality\_Information/Attribute\_Accuracy\_Report/Test\_Report/ Evaluation

(b)(3.2.1.2) Data\_Quality\_Information/ Non\_Quantitative\_Attribute\_Accuracy\_Report/Test\_Report/Evaluation

(c)(3.3.1.2) Data\_Quality\_Information/Logical\_Consistency\_Report/ Test\_Report/Evaluation

(d)(3.4.1.2) Data\_Quality\_Information/Completeness\_Report/Test\_Report/ Evaluation

(e)(3.5.1.2) Data\_Quality\_Information/Horizontal\_Positional\_Accuracy\_Report/ Test\_Report/Evaluation

Domain: free text

#### F

##### FC\_Online\_Linkage

An online computer resource or URL that contains the Feature Catalogue file.

Type: Data Short name: fconlink

Path: (6.2.4) Entity\_and\_Attribute\_Information/Feature\_Catalogue\_Description/ FC\_Online\_Linkage

Domain: valid URL

##### FC\_Title

The name of the Feature Catalogue (*ISO 19110*) file.

Type: Data Short name: fctitle

Path: (6.2.1) Entity\_and\_Attribute\_Information/Feature\_Catalogue\_Description/FC\_Title

Domain: free text

##### Feature\_Types

A list of the geographic entity types included (described) in the Feature Catalogue file.

Type: Data Short name: feattyps

Path: (6.2.3) Entity\_and\_Attribute\_Information/Feature\_Catalogue\_Description/ Feature\_Types

Domain: free text

##### Fees

The monetary costs and terms associated with acquiring the product/dataset.

Type: Data Short name: fees

Path: (7.3.3) Distribution\_Information/Standard\_Order\_Process/Fees

Domain: free text

##### File\_Decompression\_Technique

Recommendations of algorithms or processes, including means of obtaining these algorithms or processes, required to read or expand the product/dataset.

Type: Data Short name: filedec

Path: (7.3.2.4) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ File\_Decompression\_Technique

Domain: “No compression applied,” free text

##### Format\_Name

The name of the data transfer format, or method of organizing data.

Type: Data Short name: formname

Path: (7.3.2.1) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Format\_Name

Domain: “ARCE,” “ARCG,” “ASCII,” “BIL,” “BIP,” “BSQ,” “CDF,” “CFF,” “COORD,” “DBF,” “DEM,” “DFAD,” “DGN,” “DIGEST,” “DLG,” “DTED,” “DWG,” “DX90,” “DXF,” “ERDAS,” “GRASS,” “HDF,” “IGDS,” “IGES,” “MOSS,” “netCDF,” “NITF,” “PRJ,” “REST,” “RPF,” “RVC,” “RVF,” “SDTS,” “SHP,” “SHX,” “SIF,” “SLF,” “TIFF,” “TGRLN,” “VPF,” “WMS,” “XML,” free text

##### Format\_Version\_Date

The release date that this particular form of the format, or method of organizing data. Express this element as a year, a year and month, or a year, month and day. Format: YYYYMMDD. Always express the month as an integer.

Type: Data Short name: formverd

Path: (7.3.2.3) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Format\_Version\_Date

Domain: “Unknown,” free date

##### Format\_Version\_Number

The number of this particular form of the format, or method of organizing data. This number can be all numbers, all letters or a mix of both.

Type: Data Short name: formvern

Path: (7.3.2.2) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Format\_Version\_Number

Domain: free text

#### G

##### Geospatial\_Data\_Presentation\_Form

The intended presentation form of the geospatial data in the product/dataset. For example, a paper map would have “map” as a geospatial presentation form. A scanned image of a map also has “map” as the geospatial data presentation form.

Type: Data Short name: geoform

Path: (2.1.5) Identification\_Information/Citation/Geospatial\_Data\_Presentation\_Form

Domain: “diagram,” “document,” “map,” “model,” “raster digital data,” “remote-sensing image,” “spreadsheet,” “tabular digital data,” “vector digital data,”“Geodatabase,” “Web Mapping Service,” free text

#### H

##### Horizontal\_Datum\_Name

The identification given to the reference system used for defining the coordinates of points. This element has a default value of “North American Datum of 1983.”

Type: Data Short name: horizdn

Path: (5.2.1) Spatial\_Reference\_Information/Geodetic\_Model/Horizontal\_Datum\_Name

Domain: “North American Datum of 1927,” “North American Datum of 1983,” free text

#### I

##### Included\_With\_Dataset

Is the Feature Catalogue file included with the product (ex: TIGER\Line Shapefiles)?

Type: Data Short name: wdata

Path: (6.2.2) Entity\_and\_Attribute\_Information/Feature\_Catalogue\_Description/ Included\_With\_Dataset

Domain: “Yes,” “No”

##### Indirect\_Spatial\_Reference

Name of geographic feature types, addressing schemes, or other means through which locations are referenced in the product/dataset. An indirect spatial reference is any way to describe a location without using coordinates. The reference may use the name of the feature or a code that identifies the feature. Indirect spatial references are included because they are a very common means by which observations or other attribute information is tied to a location. While these indirect spatial references alone may not be sufficient for geographic analyses, they can serve as a means to link the attribute data to coordinate descriptions of the locations to which the attribute data apply.

Type: Data Short name: indspref

Path: (4.1) Spatial\_Data\_Organization\_Information/Indirect\_Spatial\_Reference

Domain: free text “None,”

“National Standard Codes (ANSI INCITS 38-2009), Federal Information Processing Series (FIPS) – States/State Equivalents,”

“National Standard Codes (ANSI INCITS 31-2009), Federal Information Processing Series (FIPS) - Counties/County Equivalents,”

“National Standard Codes (ANSI INCITS 454-2009), Federal Information Processing Series (FIPS) - Metropolitan and Micropolitan Statistical Areas and Related Geographic Entities,”

“National Standard Codes (ANSI INCITS 455-2009), Federal Information Processing Series (FIPS) - Congressional Districts,”

##### ISO\_Keyword

One keyword describing a main theme of the product. Keywords for this element are limited to those detailed on the FGDC web page “[Publishing to geodata.gov](https://outlook.office365.com/owa/?realm=uscensus.onmicrosoft.com&path=/mail/inboxhttps://www.fgdc.gov/dataandservices/pub_guidance)” [link 3].

Type: Data Short name: isokey

Path: (1.1.2) FGDC\_Required/ISO\_Theme/ISO\_Keyword

Domain: “Boundaries,” “Economy,” “GeoscientificInformation,” “ImageryBaseMapsEarthCover,” “InlandWaters,” “Location,” “Oceans,” “Structure,” “Transportation”

##### ISO\_Keyword\_Thesaurus

A reference to a formally registered thesaurus or a similar authoritative source of keywords that summarize the subject of a product/dataset. This element has a default value of “ISO 19115 Topic Categories.”

Type: Data Short name: isokt

Path: (1.1.1) FGDC\_Required/ISO\_Theme/ISO\_Keyword\_Thesaurus

Domain: “ISO 19115 Topic Categories”

##### Issue\_Identification

Information identifying the issue or version of the series publication of which the product is a part.

Type: Data Short name: issue

Path: (2.1.6.2) Identification\_Information/Citation/Series\_Information/ Issue\_Identification

Domain: free text

#### M

##### Maintenance\_and\_Update\_Frequency

The frequency with which changes and additions are made to the product after the initial dataset is completed.

Type: Data Short name: update

Path: (2.4.2) Identification\_Information/Status/Maintenance\_and\_Update\_Frequency

Domain: “Continually,” “Daily,” “Weekly,” “Monthly,” “Annually,” “Unknown,” “As needed,” “Irregular,” “None planned,” free text

##### Map\_Projection\_Description

A description of a projection used for the data set not defined in the EPSG Geodetic Parameter Dataset. The information provided shall include the name of the projection, names of parameters and values used for the data set, and the citation of the specification for the algorithms that describe the mathematical relationship between Earth and plane or developable surface for the projection.

Type: Data Short name: mapprojd

Path: (5.1.2) Spatial\_Reference\_Information/Map\_Projection/Map\_Projection\_Description

Domain: free text

##### Map\_Projection\_Name

The name of the map projection.

Type: Data Short name: mapprojn

Path: (5.1.1) Spatial\_Reference\_Information/Map\_Projection/Map\_Projection\_Name

Domain: “Albers Conical Equal Area,” “Azimuthal Equidistant,” “Equidistant Conic,” “Equirectangular,” “General Vertical Near-sided Perspective,” “Gnomonic,” “Lambert Azimuthal Equal Area,” “Lambert Conformal Conic,” “Mercator,” “Modified Stereographic for Alaska,” “Miller Cylindrical,” “Oblique Mercator,” “Orthographic,” “Polar Stereographic,” “Polyconic,” “Robinson,” “Sinusoidal,” “Space Oblique Mercator,” “Stereographic,” “Transverse Mercator,” “van der Grinten,” “Other Projection’s Definition,” free text

##### Measure

The name of the test(s) applied to evaluate the data quality elements of product/source materials.

Type: Data Short name: measure

Path: (a)(3.1.1.1) Data\_Quality\_Information/Attribute\_Accuracy\_Report/Test\_Report/ Measure

(b)(3.2.1.1) Data\_Quality\_Information/ Non\_Quantitative\_Attribute\_Accuracy\_Report/Test\_Report/Measure

(c)(3.3.1.1) Data\_Quality\_Information/Logical\_Consistency\_Report/Test\_Report/ Measure

(d)(3.4.1.1) Data\_Quality\_Information/Completeness\_Report/Test\_Report/Measure

(e)(3.5.1.1) Data\_Quality\_Information/Horizontal\_Positional\_Accuracy\_Report/ Test\_Report/Measure

Domain: free text

##### Metadata\_Character\_Set

Full name of the character-coding standard used for the metadata record. The value of this element is always “UTF-8.” This stands for: “Unicode (or Universal Coded Character Set) Transformation Format – 8-bit.”

Type: Data Short name: metachar

Path: (9.8) Metadata\_Reference\_Information/Metadata\_Character\_Set

Domain: “UTF-8”

##### Metadata\_Date

The creation/update date of the metadata. Express this element as a year, a year and month, or a year, month and day. Format: YYYYMMDD. Always express the month as an integer. Update this element every time the metadata file is modified. This date is used as a trigger for the ‘harvesting’ of files to discovery portals.

Type: Data Short name: metd

Path: (9.1) Metadata\_Reference\_Information/Metadata\_Date

Domain: free date

##### Metadata\_File\_Identifier

The unique identifier for the product’s metadata file should be the file name. Use “.mrf” as the file extension for all files in the MRF format. Use “.xml” as the file extension for all files in the XML format. For all files to be published to the Census web sites or discovery portals, the file extension should be “.xml.”

Type: Data Short name: metfilid

Path: (9.9) Metadata\_Reference\_Information/Metadata\_File\_Identifier

Domain: free text

##### Metadata\_Hierarchy\_Level

The type of resource for which metadata is provided. For most Census products, this value will either be “dataset” (shapefile), “series” (Series Information File), “service” (TIGERweb), or “mapdocument” (paper map).

Type: Data Short name: methlvl

Path: (9.3) Metadata\_Reference\_Information/Metadata\_Hierarchy\_Level

Domain: “dataset,” “series,” “service,” “application,” “map,” “mapdocument,” free text

##### Metadata\_Hierarchy\_Level\_Name

A description of the resource for which metadata is provided. This element is mandatory when the [Metadata\_Hierarchy\_Level] element does not equal “dataset.”

Type: Data Short name: methlvln

Path: (9.4) Metadata\_Reference\_Information/Metadata\_Hierarchy\_Level\_Name

Domain: free text

##### Metadata\_Language

The language used for documenting the metadata record. The domain represents a selection of language codes taken from “ISO 639-2, Code for the representation of names of languages [Ref 9].” “eng” stands for English and “spa” stands for Spanish. This element has a default value of “eng.”

Type: Data Short name: metalang

Path: (9.10) Metadata\_Reference\_Information/Metadata\_Language

Domain: “eng,” “spa,” free text

##### Metadata\_Parent\_Identifier\_Name

The name of a related file known as a Series Collection file that identifies this file as part of a larger collection of files. This element is mandatory for all state and county level files. (Exceptions: Alaska Native Regional Corporations, Estates, and Subbarrios)

Type: Data Short name: metpidnm

Path: (9.2) Metadata\_Reference\_Information/Metadata\_Parent\_Identifier\_Name

Domain: free text

##### Metadata\_Standard\_Name

The name of the metadata standard used to document the product/dataset.

Type: Data Short name: metstdn

Path: (9.6) Metadata\_Reference\_Information/Metadata\_Standard\_Name

Domain: “Content Standard for Digital Geospatial Metadata,” “ISO 19115-2: Geographic information - Metadata - Part 2: Extensions for imagery and gridded data,” free text

##### Metadata\_Standard\_Version

Identification of the version of the metadata standard listed in the [Metadata\_Standard\_Name] element.

Type: Data Short name: metstdv

Path: (9.7) Metadata\_Reference\_Information/Metadata\_Standard\_Version

Domain: “FGDC-STD-001-1998,” “ISO 19115-2:2009,” free text

##### Mime\_Type

The media type for the online resource identified in the [Network\_Resource\_Name] data element. It is a two-part identifier consisting of a type, and a subtype. MIME stands for "Multipurpose Internet Mail Extensions. It is a way of identifying files on the Internet according to their nature and format. Using this information the browser can open the file with the proper extension/plugin.

Type: Data Short name: mimetype

Path: (7.3.2.6.2) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Network\_Address/Mime\_Type

Domain: free text

“text/html; charset=UTF-8” *- for Html pages*

“application/xml” *- for XML files*

“application/zip” *- for Zip files*

#### N

##### Network\_Resource\_Name

The name of an online computer resource that contains the product/dataset. Provide a URL if available.

Type: Data Short name: networkr

Path: (7.3.2.6.1) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Network\_Address/Network\_Resource\_Name

Domain: free text

##### NGDA\_Keyword

One keyword describing a main theme of the product. In order to be NGDA compliant, the *NGDA\_Information* element must include the following three (3) instances of [NGDA\_Keyword]: (a) “NGDA;” (b) “National Geospatial Data Asset;” and (c) an NGDA theme keyword from the domain list below. For a complete discussion of the NGDA keyword requirements see the FGDC NGDA Metadata Guidelines [Ref 11].

Type: Data Short name: ngdakey

Path: (1.2.3) FGDC\_Required/NGDA\_Information/NGDA\_Keyword

Domain: “NGDA,” “National Geospatial Data Asset,” “Governmental Units and Administrative and Statistical Boundaries Theme,” “Transportation Theme,” “Cultural Resources Theme”

##### NGDA\_Keyword\_Thesaurus

A reference to a formally registered thesaurus or a similar authoritative source of keywords that summarize the subject of the product. This element has a default value of “NGDA Portfolio Themes.” For a complete discussion of the NGDA keyword requirements see the FGDC NGDA Metadata Guidelines [Ref 11].

Type: Data Short name: ngdakt

Path: (1.2.2) FGDC\_Required/NGDA\_Information/NGDA\_Keyword\_Thesaurus

Domain: “NGDA Portfolio Themes”

##### Non-Digital\_Form

The description of options for obtaining the data on non-computer related media like a paper map or for obtaining a hard copy of the data on digital media, such as a DVD or other related digital format.

Type: Data Short name: nondig

Path: (7.3.1) Distribution\_Information/Standard\_Order\_Process/Non-Digital\_Form

Domain: free text

##### North\_Bounding\_Coordinate

The northern-most coordinate of the limit of coverage expressed in decimal degrees of latitude. Provide this element to six decimal places. If this level of precision is not reflective of the actual data accuracy, indicate this in the [Horizontal\_Positional\_Accuracy\_Report] element.

Type: Data Short name: northbc

Path: (2.5.1.3) Identification\_Information/Spatial\_Domain/Bounding\_Coordinates/ North\_Bounding\_Coordinate

Domain: -90.0 <= North\_Bounding\_Coordinate <= 90.0;

North\_Bounding\_Coordinate >= South\_Bounding\_Coordinate

#### O

##### Online\_Linkage

The name of an online computer resource that contains: (a) the product/dataset; or (b) a related product. If the data is available online from the Originator, list the URL that leads directly to the product/dataset. For the majority of Census products (not the Cross Reference), this URL will be identical to the [Network\_Resource\_Name] URL.

Type: Data Short name: onlink

Path: (a)(2.1.7) Identification\_Information/Citation/Online\_Linkage

(b)(2.12.1.4) Identification\_Information/Cross\_Reference/Citation/ Online\_Linkage

Domain: free text

##### Ontology\_URI

A unique universal Resource Identifier that refers to the concept denoting the feature type. This is the URL of the Census website defining the physical feature. For all Census products, this will be https://www.census.gov/geo/reference/terms.html.

Type: Data Short name: onturi

Path: (6.1.1.4) Entity\_and\_Attribute\_Information/Detailed\_Description/Entity\_Type/ Ontology\_URI

Domain: valid URL

##### Operation\_Description

The purpose of an operation/command listed under the [Operation\_Name] element and the results of that operation/command. Use this element to describe the functions of an OWS.

Type: Data Short name: opdescrp

Path: (8.4.3) Computer\_Service\_Information/Contains\_Operations/Operation\_Description

Domain: free text

##### Operation\_Name

The phrase, or name, that identifies a specific command that a user of an OMS can request of the service.

Type: Data Short name: opname

Path: (8.4.1) Computer\_Service\_Information/Contains\_Operations/Operation\_Name

Domain: “GetCapabilities,” “GetMap,” “GetFeatureInfo,” “esri\_wms:GetStyles,” free text

##### Ordering\_Instructions

General instructions for obtaining the product/dataset. These instructions can also include information regarding special terms and services provided for the product/dataset by the distributor.

Type: Data Short name: ordering

Path: (7.3.4) Distribution\_Information/Standard\_Order\_Process/Ordering\_Instructions

Domain: free text

##### Originator

The name of the organization that: (a) developed the product/dataset; (b) developed data or other products related to the product/dataset; or (c) developed a dataset or product that was used as a source for the product. If the original product was edited or compiled by an organization other than the originator, the name must be followed by “(ed.)” or “(comp.)” respectively.

Type: Data Short name: origin

Path: (a)(2.1.1) Identification\_Information/Citation/Originator

(b)(2.12.1.1) Identification\_Information/Cross\_Reference/Citation/Originator

(c)(3.6.1.1) Data\_Quality\_Information/Source\_Information/Citation/Originator

Domain: “Unknown,” free text

##### Other\_Constraints

Restrictions and legal prerequisites for accessing the resource described by the metadata. This element provides a written description of the restrictions referenced in the [Access\_Contraints] and [Use\_Constraints] elements. This element is mandatory if either of the aforementioned elements have a value of “otherRestrictions.” Build each explanation as follows: “[“ + ‘*data element name*’ + “]: ” + ‘*The explanation*’. For data elements with both [Access\_Constraints] and [Use\_Constraints], place the explanations for both in the same [Other\_Constraints] data element. For example: “[Access\_Constraints]: *explanation* [Use\_Constraints]: *explanation*”

Type: Data Short name: othconst

Path: (2.7.3) Identification\_Information/Constraints/Other\_Constraints

Domain: free text

#### P

##### Parameter\_Description

An explanation of the role of the parameter

Type: Data Short name: paramdsc

Path: (8.4.4.3) Computer\_Service\_Information/Contains\_Operations/ Operation\_Parameters/Parameter\_Description

Domain: free text

##### Parameter\_Direction

An indication if the variable or parameter is an input or an output to the service

Type: Data Short name: paramdir

Path: (8.4.4.2) Computer\_Service\_Information/Contains\_Operations/ Operation\_Parameters/Parameter\_Direction

Domain: “Input,” “Output”

##### Parameter\_Name

The word or phrase used to designate the parameter

Type: Data Short name: paramnme

Path: (8.4.4.1) Computer\_Service\_Information/Contains\_Operations/ Operation\_Parameters/Parameter\_Name

Domain: free text

##### Place\_Keyword

The geographic name of a location, point or area, characterized by the product/dataset. Include specific and regional references such as: (a) city or county name; (b) state; (c) state acronym; or (d) ANSI Code. Examples include “Nevada,” “Montgomery County,” “Yellowstone National Park,” “Washington Monument,” “Appalachia,” “Puget Sound,” “Delmarva Peninsula,” “U.S. Territories,” “09,” “CT” etc. If an ANSI INCITS document or codelist is referenced in the [Place\_Keyword\_Thesaurus] element, all subsequent Keyword values must belong to that codelist.

Type: Data Short name: placekey

Path: (2.6.2.2) Identification\_Information/Keywords/Place/Place\_Keyword

Domain: free text

##### Place\_Keyword\_Thesaurus

A reference to a formally registered thesaurus or a similar authoritative source of keywords describing geographic locations characterized by the product. Do not include more than one thesaurus reference in this element. If multiple thesauri are required for this product, create a separate *Place* section for each thesaurus.

Type: Data Short name: placekt

Path: (2.6.2.1) Identification\_Information/Keywords/Place/Place\_Keyword\_Thesaurus

Domain: free text “None,”

“National Standard Codes (ANSI INCITS 38-2009), Federal Information Processing Series (FIPS) – States/State Equivalents,”

“National Standard Codes (ANSI INCITS 31-2009), Federal Information Processing Series (FIPS) - Counties/County Equivalents,”

“National Standard Codes (ANSI INCITS 454-2009), Federal Information Processing Series (FIPS) - Metropolitan and Micropolitan Statistical Areas and Related Geographic Entities,”

“National Standard Codes (ANSI INCITS 455-2009), Federal Information Processing Series (FIPS) - Congressional Districts,”

“INCITS 446:2008 - Geographic Names Information System (GNIS)

##### Point\_and\_Vector\_Object\_Count

The total number of the point or vector object types occurring in the product/dataset. This element gives a count of the object type identified in the [SDTS\_Point\_and\_Vector\_Object\_Type] element.

Type: Data Short name: ptvctcnt

Path: (4.4.2) Spatial\_Data\_Organization\_Information/SDTS\_Terms\_Description/ Point\_and\_Vector\_Object\_Count

Domain: Point\_and\_Vector\_Object\_Count > 0

##### Postal\_Code

The ZIP Code or other postal code of the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. The default value for this element is “20233-7400.”

Type: Data Short name: postal

Path: (a)(2.8.2.4) Identification\_Information/Point\_of\_Contact/Contact\_Address/ Postal\_Code

(b)(7.1.2.4) Distribution\_Information/Point\_of\_Contact/Contact\_Address/ Postal\_Code

(c)(9.5.2.4) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Address/Postal\_Code

Domain: free text

##### Process\_Date

The date when the series of actions described under the [Process\_Description] element were completed. Express the [Process\_Date] element as a year, a year and month, or a year, month and day. Format: YYYYMMDD. Always express the month as an integer.

Type: Data Short name: procdate

Path: (3.7.2) Data\_Quality\_Information/Process\_Step/Process\_Date

Domain: “Unknown,” “Not complete,” free date

##### Process\_Description

An explanation of the series of actions used to create the product/dataset. This should include any related parameters or tolerances. The description of the process can be a single collective description or a series of individual process steps based upon: (a) stages of processing; (b) incorporation of sources; and (c) project milestones. Including descriptions of updates to the MTDB is left to the discretion of the product sponsor.

Type: Data Short name: procdesc

Path: (3.7.1) Data\_Quality\_Information/Process\_Step/Process\_Description

Domain: free text

##### Progress

The development phase of the product/dataset.

Type: Data Short name: progress

Path: (2.4.1) Identification\_Information/Status/Progress

Domain: “Completed,” “Historical Archive,” “Obsolete,” “Ongoing,” “Planned,” “Required,” “Under development”

##### Protocol

The set of conventions governing the formatting of data used to connect to the OMS.

Type: Data Short name: cpprotcl

Path: (8.4.5.2) Computer\_Service\_Information/Contains\_Operations/Connect\_Point/ Protocol

Domain: “http/1.1,” free text

##### Publication\_Date

The date when a product was published or otherwise made available for release. The date in question may be describing: (a) the product/dataset; (b) a product related to the product/dataset; or (c) a source material. Express this element as a year, a year and month, or a year, month and day. Format: YYYYMMDD. Always express the month as an integer.

Type: Data Short name: pubdate

Path: (a)(2.1.2) Identification\_Information/Citation/Publication\_Date

(b)(2.12.1.2) Identification\_Information/Cross\_Reference/Citation/Publication\_Date

(c)(3.6.1.2) Data\_Quality\_Information/Source\_Information/Citation/ Publication\_Date

Domain: “Unknown,” “Unpublished material,” free date

##### Purpose

A summary of the intentions with which the product was developed. This element documents why the product was created and under what conditions it is appropriate for use.

Type: Data Short name: purpose

Path: (2.2.2) Identification\_Information/Description/Purpose

Domain: free text

#### R

##### Range\_Domain\_Maximum

This element represents the greatest used/known or legal value for the attribute within a continuum of valid values.

Type: Data Short name: rdommax

Path: (6.1.2.4.2.2) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Range\_Domain/Range\_Domain\_Maximum

Domain: free text

##### Range\_Domain\_Minimum

This element represents the least used/known or legal value for the attribute within a continuum of valid values.

Type: Data Short name: rdommin

Path: (6.1.2.4.2.1) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Range\_Domain/Range\_Domain\_Minimum

Domain: free text

##### Resource\_Description

A detailed text description of what the online resource is/does.

Type: Data Short name: cpdescrp

Path: (8.4.5.4) Computer\_Service\_Information/Contains\_Operations/Connect\_Point/ Resource\_Description

Domain: free text

##### Resource\_Name

A word or phrase that identifies the online resource.

Type: Data Short name: cpname

Path: (8.4.5.3) Computer\_Service\_Information/Contains\_Operations/Connect\_Point/ Resource\_Name

Domain: free text

##### REST\_URL

The web address or URL of the REST service for the product/dataset. Specifically, the export map function.

Type: Data Short name: resturl

Path: (1.2.5) FGDC\_Required/NGDA\_Information/REST\_URL

Domain: valid URL

##### Result

The output of the test listed in the [Measure] element.

Type: Data Short name: result

Path: (a)(3.1.1.3) Data\_Quality\_Information/Attribute\_Accuracy\_Report/Test\_Report/ Result

(b)(3.2.1.3) Data\_Quality\_Information/ Non\_Quantitative\_Attribute\_Accuracy\_Report/Test\_Report/Result

(c)(3.3.1.3) Data\_Quality\_Information/Logical\_Consistency\_Report/Test\_Report/ Result

(d)(3.4.1.3) Data\_Quality\_Information/Completeness\_Report/Test\_Report/Result

(e)(3.5.1.3) Data\_Quality\_Information/Horizontal\_Positional\_Accuracy\_Report/ Test\_Report/Result/

Domain: free text

#### S

##### SDTS\_Point\_and\_Vector\_Object\_Type

The type of point and vector spatial objects used to locate zero-, one-, and two-dimensional spatial locations in the product/dataset. The terminology within the domain is taken from “Spatial Data Concepts,” which is Chapter 2 of Part 1 in *Department of Commerce, 1992, Spatial Data Transfer Standard (SDTS) (FIPS 173)* [Ref 10]. Repeat this element once for each object type found within the dataset.

Type: Data Short name: sdtstype

Path: (4.4.1) Spatial\_Data\_Organization\_Information/SDTS\_Terms\_Description/ SDTS\_Point\_and\_Vector\_Object\_Type

Domain: “Point,” “Entity point,” “Label point,” “Area point,” “Node, planar graph,” “Node, network,” “String,” “Link,” “Complete chain,” “Area chain,” “Network chain, planar graph,” “Network chain, non-planar graph,” “Circular arc, three point center,” “Elliptical arc,” “Uniform B-spline,” “Piecewise Bezier,” “Ring with mixed composition,” “Ring composed of strings,” “Ring composed of chains,” “Ring composed of arcs,” “G-polygon,” “GT-polygon composed of rings,” “GT-polygon composed of chains,” “Universe polygon composed of rings,” “Universe polygon composed of chains,” “complex,” “composite,” “curve,” “point,” “solid,” “surface”

##### Semi-Major\_Axis

The radius of the equatorial axis of the ellipsoid expressed in meters.

Type: Data Short name: semiaxis

Path: (5.2.3) Spatial\_Reference\_Information/Geodetic\_Model/Semi-Major\_Axis

Domain: Semi-major\_Axis > 0.0

##### Series\_Name

The name of the series publication of which the product/dataset is a part.

Type: Data Short name: sername

Path: (2.1.6.1) Identification\_Information/Citation/Series\_Information/Series\_Name

Domain: free text

##### Service\_Type

The kind of OMS described by the metadata. This element should follow the following format:

<urn><:><domain-name><:><serviceType><:><unique name assigned by the vendor><:>version number>

For Census datasets, this will most likely be the OGC’s WMS.

Type: Data Short name: srvtyp

Path: (8.1) Computer\_Service\_Information/Service\_Type

Domain: free text

##### Service\_Type\_Version

The variation, form or variant of the Service Type listed in the [Service\_Type] element.

Type: Data Short name: srvtypv

Path: (8.2) Computer\_Service\_Information/Service\_Type\_Version

Domain: free text

##### Source\_Citation\_Abbreviation

A short-form alias or unique abbreviation assigned to each source for the source citation. One means to create an alias is to use a combination of the [Originator] and [Publication\_Date] of the *Source*. Use the alias in place of the source name when describing the process steps.

Type: Data Short name: srccitea

Path: (3.6.5) Data\_Quality\_Information/Source\_Information/ Source\_Citation\_Abbreviation

Domain: free text

##### Source\_Contribution

A brief statement identifying the information contributed by a source to the product/dataset.

Type: Data Short name: srccontr

Path: (3.6.6) Data\_Quality\_Information/Source\_Information/Source\_Contribution

Domain: free text

##### Source\_Scale\_Denominator

The denominator of the representative fraction on a map. This number shall not contain commas. For example, on a 1:24,000-scale map, the [Source\_Scale\_Denominator] is 24000.

Type: Data Short name: srcscale

Path: (3.6.2) Data\_Quality\_Information/Source\_Information/ Source\_Scale\_Denominator

Domain: Source\_Scale\_Denominator > 1

##### South\_Bounding\_Coordinate

The southern-most coordinate of the limit of coverage expressed in decimal degrees of latitude. Provide this element to six decimal places. If this level of precision is not reflective of the actual data accuracy, indicate this in the [Horizontal\_Positional\_Accuracy\_Report] element.

Type: Data Short name: southbc

Path: (2.5.1.4) Identification\_Information/Spatial\_Domain/Bounding\_Coordinates/ South\_Bounding\_Coordinate

Domain: -90.0 <= South\_Bounding\_Coordinate <= 90.0;

South\_Bounding\_Coordinate <= North\_Bounding\_Coordinate

##### Spatial\_Resolution

The hardcopy map equivalent scale of an EPSG projection expressed as a denominator.

Type: Data Short name: epsgres

Path: (5.1.3.4) Spatial\_Reference\_Information/Map\_Projection/EPSG\_Reference/ Spatial\_Resolution

Domain: Spatial\_Resolution > 1

##### State\_or\_Province

The state or province of the organization that is: (a) knowledgeable about the product/dataset; (b) responsible for distributing the product/dataset; or (c) responsible for the metadata information. The default value for this element is “DC.”

Type: Data Short name: state

Path: (a)(2.8.2.3) Identification\_Information/Point\_of\_Contact/Contact\_Address/ State\_or\_Province

(b)(7.1.2.3) Distribution\_Information/Point\_of\_Contact/Contact\_Address/ State\_or\_Province

(c)(9.5.2.3) Metadata\_Reference\_Information/Point\_of\_Contact/ Contact\_Address/State\_or\_Province

Domain: free text

#### T

##### Technical\_Prerequisites

A description of any technical capabilities that the consumer must possess to use the product/dataset in the form(s) provided by the distributor.

Type: Data Short name: techpreq

Path: (7.4) Distribution\_Information/Technical\_Prerequisites

Domain: free text

##### Theme\_Keyword

A common-use word or phrase used to describe the subject of the product/dataset. Examples include TIGER, MTFCC, Statistical Entity, etc. At least one [Theme\_Keyword] element must be included in every metadata file.

Type: Data Short name: themekey

Path: (2.6.1.2) Identification\_Information/Keywords/Theme/Theme\_Keyword

Domain: “None,” free text

##### Theme\_Keyword\_Thesaurus

A reference to a formally registered thesaurus or a similar authoritative source of keywords that summarize the subject of the product/dataset.

Type: Data Short name: themekt

Path: (2.6.1.1) Identification\_Information/Keywords/Theme/ Theme\_Keyword\_Thesaurus

Domain: “None,” free text

##### Title

The name of the product/dataset. The product in question may be: (a) the product/dataset; (b) a product/dataset related to the product/dataset; or (c) source material used to create the product/dataset. This should be informative. For the product, this is the field that is rendered when Web pages display search results.

Type: Data Short name: title

Path: (a)(2.1.3) Identification\_Information/Citation/Title

(b)(2.12.1.3) Identification\_Information/Cross\_Reference/Citation/Title

(c)(3.6.1.3) Data\_Quality\_Information/Source\_Information/Citation/Title

Domain: free text

##### Topology\_Level

A code that identifies the degree of complexity of the spatial relationships contained within the shapefile. The terms listed in the domain are defined in ISO-19115-1, [Ref 5]. Table B.3.31.

Type: Data Short name: topolvl

Path: (4.3) Spatial\_Data\_Organization\_Information/Topology\_Level

Domain: “geometryOnly,” “topology1D,” “planarGraph,” “fullPlanarGraph,” “surfaceGraph,” “fullSurfaceGraph,” “topology3D,” “fullTopology3D,” “abstract”

##### Transfer\_Size

The physical magnitude, or estimated size, of the product in megabytes.

Type: Data Short name: transize

Path: (7.3.2.5) Distribution\_Information/Standard\_Order\_Process/Digital\_Form/ Transfer\_Size

Domain: Transfer\_Size > 0.0

##### Type\_of\_Source\_Media

The medium of the source material.

Type: Data Short name: typesrc

Path: (3.6.3) Data\_Quality\_Information/Source\_Information/Type\_of\_Source\_Media

Domain: “paper,” “disc,” “online,” “DVD-ROM,” “electronic bulletin board,” “electronic mail system,” free text

#### U

##### Use\_Constraints

The restrictions and legal prerequisites for using the product. These include any use constraints applied to assure the protection of privacy or intellectual property, and any special restrictions or limitations on using the product. Common constraints include: (a) must read and fully comprehend the metadata prior to data use, (b) acknowledgement of the Originator when using the product as a source, (c) sharing of data products developed using the source materials with the Originator, (d) data should not be used beyond the limits of the source scale, (e) the product does not meet survey quality standards and should not be utilized as such, and (f) this product may not be resold. The domain of this element is restricted to code list values only. If none of the values accurately describes the constraints, use “otherRestrictions” as the data value. When “otherRestrictions” is used as the data value for this element, an explanation MUST be provided in the [Other\_Constraints] data element.

Special Note: All Census Bureau products that contain *governmental unit* boundaries must include the following disclaimer: “The boundaries in this file are for statistical data collection and tabulation purposes only. They do not represent legal boundaries. Their depiction and designation for statistical purposes does not constitute a determination of jurisdictional authority or rights of ownership or entitlement and they are not legal land descriptions.” For all products containing ‘governmental unit’ boundaries, use “otherRestrictions as the data value and add the full disclaimer to the [Other\_Constraints] data element.

Type: Data Short name: useconst

Path: (2.7.2) Identification\_Information/Constraints/Use\_Constraints

Domain: “trademark”, “copyright”, “otherRestrictions”

##### Unrepresentable\_Domain

A domain for which the set of data values cannot be represented by an enumerated list, range of values or codeset. Reasons include: (a) attributes whose values do not exist in a known predefined set; (b) attributes are a concatenation of other code sets; (c) attribute data is not available; and (d) attributes have values that cannot be depicted using the forms of representation used for the metadata. Provide the information content for the set of values as well as the reasons why they cannot be represented.

Type: Data Short name: udom

Path: (6.1.2.4.4) Entity\_and\_Attribute\_Information/Detailed\_Description/Attribute/ Attribute\_Domain\_Values/Unrepresentable\_Domain

Domain: free text

#### W

##### West\_Bounding\_Coordinate

The western-most coordinate of the limit of coverage expressed in decimal degrees of longitude. Provide this element to six decimal places. If this level of precision is not reflective of the actual data accuracy, indicate this in the [Horizontal\_Positional\_Accuracy\_Report] element.

Type: Data Short name: westbc

Path: (2.5.1.1) Identification\_Information/Spatial\_Domain/Bounding\_Coordinates/ West\_Bounding\_Coordinate

Domain: -180.0 <= West\_Bounding\_Coordinate < 180.0

##### WMS\_URL

The web address or URL of the GetMap request for a GetMap command. This command should give the user the folder containing the entire web mapping services.

Type: Data Short name: wmsurl

Path: (1.2.4) FGDC\_Required/NGDA\_Information/WMS\_URL

Domain: valid URL

# 7. References & Related Documents

## 7.1. Referenced Documents

The Geospatial Product Metadata Content Standard references the following documents:

[Ref 1] U.S. Office of Management and Budget, **“Circular A-16: Coordination of Geographic Information and Related Spatial Data Activities,”** August 2002

[Ref 2] U.S. Department of Commerce, **“Policy on Creation and Publication of Metadata for Geospatial Data,”** September 2013

[Ref 3] U.S. Department of Commerce, **“Policy on Planned Geospatial Acquisitions,”** September 2013

[Ref 4] Federal Geographic Data Committee, **“Content Standard for Digital Geospatial Metadata,”** June 1998

[Ref 5] International Organization for Standardization. **“ISO 19115-1: Geographic information - Metadata - Part 1: Fundamentals,”** 2014

[Ref 6] International Organization for Standardization. **“ISO 19115-2: Geographic information - Metadata - Part 2: Extensions for imagery and gridded data,”** January 2012

[Ref 7] International Organization for Standardization. **“ISO 19110: Geographic information - Methodology for Feature Cataloguing,”** December 2016

[Ref 8] Open Geospatial Consortium Inc. **“OpenGIS® Web Map Server Implementation Specification,”** March 15 2016

[Ref 9] International Organization for Standardization. **“ISO 639-2: Codes for the Representation of Names of Languages,”** 2010

[Ref 10] American National Standards Institute. “Spatial Data Transfer Standard (SDTS),

[Ref 11] Federal Geographic Data Committee, **“National Geospatial Data Assets (NGDA) Metadata Guidelines,”** February 2015

[Ref 12] National Geospatial Profile Initiative, **“GeoPlatform Profile of 19115-1, Draft Revision 1,”** July 2016

## 7.2. Referenced Codesets

American National Standards Institute **“National Standard Codes (ANSI INCITS 38-2009), Federal Information Processing Series (FIPS) – States/State Equivalents,”** November 2014

American National Standards Institute **“National Standard Codes (ANSI INCITS 31-2009), Federal Information Processing Series (FIPS) - Counties/County Equivalents,”** 2014

American National Standards Institute **“National Standard Codes (ANSI INCITS 454-2009), Federal Information Processing Series (FIPS) - Metropolitan and Micropolitan Statistical Areas and Related Geographic Entities,”** November 2014

American National Standards Institute **“National Standard Codes (ANSI INCITS 455-2009), Federal Information Processing Series (FIPS) - Congressional Districts,”** November 2014

## 7.3. Referenced URLs

[Link 1] FGDC website: *https://www.fgdc.gov/*

[Link 2] GeoPlatform Profile of ISO 19115-1:[*https://www.geoplatform.gov/gp-profile/*](https://www.geoplatform.gov/gp-profile/)

[Link 3] FGDC/Publishing to geodata.gov:[*https://www.fgdc.gov/dataandservices/pub\_guidance*](https://www.fgdc.gov/dataandservices/pub_guidance)

[Link 4] FGDC: A-16 NGDA Portfolio Management: National Geospatial Data Asset (NGDA) Datasets: [*https://www.fgdc.gov/ngda-reports/NGDA\_Datasets.html*](https://www.fgdc.gov/ngda-reports/NGDA_Datasets.html)

## 7.4. Related Documents

U.S. Census Bureau, **“Linear Features Metadata Master Plan,”** March 2015

International Organization for Standardization. **“ISO 19119: Geographic information – Services,”** January 2016

International Organization for Standardization. **“ISO 19157: Geographic information - Data quality standards,”** December 2016

# Attachments

## A: Metadata Lexicon

Within the GEO, the term Metadata is commonly used as the default term for all data maintained or produced within the division that describe the structure content, source, and update actions for features in the MTDB. As there are a number of different categories of metadata within the division, this results in substantial confusion and wasted time. The purpose of this attachment is to develop a lexicon of standard terms to be used in describing metadata as it is used within the GEO.

### A.1. Concepts

#### OMS vs WMS vs REST

A**n OMS** provides data to the data user through a structured URL request or an Application Programming Interface (API) that the data user constructs. OMS come in two varieties: the OGC WMS and ESRI’s REST service.

An **OGC WMS** provides the data in an open recognizable way across different platforms and clients. A WMS is a method of dynamically generating a geographic image from a GIS database using a URL or HTTP request. This HTTP request includes the region to be mapped, the datasets to be used, the Coordinate Reference System and the desired image output.

The GeoServices **REST** Specification also provides a standard method for data users to issue requests to the server through structured URLs. This is accomplished using REST technology, a way of providing interoperability between computer systems on the internet. Unlike the OGC WMS, the data user must invoke the REST service using an application written in PYTHON or JAVA, which can make HTTP requests.

#### ISO Suite of Geospatial Metadata Standards

ISO geospatial metadata standards have been developed as a suite of standards. The base Fundamental standard (ISO 19115-1) is the core of the suite. Fundamentals includes information common to most geospatial data resource types.

Additional standards have been developed to:

* **extend** the Fundamental standard by adding content that must be used in conjunction with the Fundamental standard
* **document** related information that can be stand alone or associated with a Fundamental metadata record
* **encode** and validate a standardize XML metadata record

The suite approach enables metadata creators to select and apply only those standards relevant to their organization and data types. The suite also enables the one time documentation of information, e.g., Data Acquisition and Processing, Feature Catalogs, Data Quality Methods and Measures, etc., that may be applied to multiple geospatial resources and their associated metadata records. The following ISO standards are supported by the GPM CS:

* ISO 19115-1: Geographic information - Metadata - Part 1: Fundamentals:: This is the foundational geospatial metadata standard for providing information about identification, extent, quality, spatial and temporal aspects, content, spatial reference, portrayal, distribution, and other properties of digital geographic data and services.
* ISO 19115-2: Geographic information - Metadata - Part 2: Extensions for imagery and gridded data:: ISO 19115-2 extends the existing geographic metadata standard by defining the schema required for describing imagery and gridded data. It provides information about the properties of the measuring equipment used to acquire the data, the geometry of the measuring process employed by the equipment, and the production process used to digitize the raw data.
* ISO 19110: Geographic information - Methodology for Feature Cataloguing:: ISO 19110 defines the methodology for cataloguing feature types and specifies how the classification of feature types is organized into a feature catalogue and presented to the users of a set of geographic data.
* ISO 19119: Geographic information – Services:: This standard identifies and defines the architecture patterns for service interfaces used for geographic information, defines its relationship to the Open Systems Environment model, presents a geographic services taxonomy, and a list of example geographic services placed in the services taxonomy.
* ISO 19157: Geographic information - Data quality standards:: ISO 19157 establishes principles for describing the quality of geographic data. It defines components for describing data quality; specifies components and content structure of a register for data quality measures; describes general procedures for evaluating the quality of geographic data; and establishes principles for reporting data quality.

#### National Geospatial Data Assets

* NGDA Portfolio: A group of NGDA Themes, each of which is comprised of related NGDA Datasets. These datasets are selected from a much larger and continually changing universe of geospatial datasets. Only a select subset of these are designated as NGDA Datasets by the FGDC Steering Committee. There are ~17 NGDA Themes made up of ~176 NGDA Datasets. Together, these NGDA Datasets comprise the NGDA Portfolio.
* NGDA Portfolio Theme: An NGDA Portfolio Theme is a management unit for a collection of related NGDA datasets. There are ~17 NGDA Themes, 2 of which are maintained by the GEO.
* NGDA Dataset: A NGDA dataset is a geospatial dataset that has been designated by the FGDC Steering Committee as a National Geospatial Data Asset. To be considered for designation a dataset must meet at least one of the following criteria: (a) used by multiple agencies or with agency partners such as State, Tribal and local governments; (b) needed for Presidential priorities as expressed by OMB; (c) required to meet shared mission goals of multiple Federal agencies, or (d) expressly required by statutory mandate. There are ~176 NGDA Datasets, 36 of which are maintained by the GEO.

### A.2. Terms

**Database:** A collection of related data that is organized so that it can be easily accessed, managed and updated.

**Dataset:** Actual logical and physical data representations of geographic features.

**Descriptive Category:** These are also known as compound elements. A compound element is a group of related elements and other compound elements that in combination describe the element. All compound elements are described by data elements, either directly or through intermediate compound elements. Compound elements represent higher-level concepts that cannot be represented by an individual data element.

**Discovery Portal:** An Internet-based capability providing a managed portfolio of shared and trusted geospatial data, services, and applications for use by government agencies and partners to meet their mission needs. Discovery portals provide an enhanced focal point for easy discovery and access to trusted geospatial data, services, applications, and infrastructure. They effectively support problem solving and policy formulation while avoiding duplicative costs. These discovery portals are open to the public.

**Geographic Names Information System (GNIS):** (INCITS 446:2008) A database developed by the United States Geological Survey (USGS) that identifies official, variant and historical names for physical and select cultural geographic features of the United States, its territories, outlying areas, and freely associated areas, and the waters of the same to the limit of the twelve-mile statutory zone.

**Geodatabase:** A collection of geographic datasets of various types held in a common file system folder, a Microsoft Access database, or a multiuser relational DBMS (such as Oracle, Microsoft SQL Server, PostgreSQL, Informix, or IBM DB2). It is the native data structure for ArcGIS and is the primary data format used for editing and data management.

**Geospatial Data:** Information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the Earth. This is information derived from, among other things, remote sensing, mapping, and surveying technologies.

**Geospatial product:** The Census Bureau considers geographic feature data to be geospatial data. A Census Bureau geospatial product can be defined as: the compilation of geospatial data in any medium or form, including textual, numerical, graphical, cartographic, or audiovisual, to be disseminated to a defined audience or customer, either public or inter/intra division. Product types defined in this standard include vector digital data files, tabular digital data files, maps, atlases, documents, planned acquisitions, and legacy products.

**Metadata:** Data about data. In the context of geographic features, metadata may describe the source, vintage, provider, and the assessed quality of geospatial data as well as the operations, applications, operator, update transactions responsible for the update.

**National Geospatial Data Asset (NGDA) Dataset:** An NGDA Dataset is defined as a geospatial dataset that has been designated by the FGDC Steering Committee and meets at least one of the following criteria: supports mission goals of multiple federal agencies, statutorily mandated, supports Presidential priorities as expressed by Executive Order, or by the Office of Management and Budget (OMB). Together, these NGDA Datasets comprise the A-16 NGDA Portfolio.

**Online Mapping service (OMS):** These services access vector and raster data and render them in the form of a map for display (combines access and portrayal). Independent of whether the underlying data are features (point, line, and polygon) or coverages (such as gridded digital terrain models or images), the OMS produces data that can be directly viewed in a Web browser.

**Product profile:** A subset of GPM CS metadata elements needed to describe the distinctive features or characteristics of Census Bureau geospatial products. Since each geographic product is unique, each profile will contain different elements and different obligations for each element and section.

**Provider:** The organization responsible for compiling geospatial data and submitting a geospatial dataset to the Census Bureau for the purpose of updating the MTDB. The provider may have compiled the data from other sources.

**Root Mean Square Error:** A common measure for evaluating the quality of an estimate.

**Service:** A specific type of component that is explicitly intended to be shared and reused by multiple applications, either internal or external to the organization. Also defined as a distinct part of the functionality that is provided by an entity through interfaces.

**Source:** A specific data file or document used to update geospatial data in the MTDB. Each source has a defined coverage area, a specific vintage, and a known provider. Note that datasets covering the same area but having either a different provider or vintage or both constitute separate sources.

**Vintage:** A date indicating how current a source is. It may represent the last update date or the last date that a source dataset was reviewed and verified to be current.

### A.3. Acronyms

ACS American Community Survey

ADC Assistant Division Chief

ANSI American National Standards Institute

API Application Programming Interface

CM Configuration Management

CP Connect Point

CR Change Request

CSDGM Content Standard for Digital Geospatial Metadata

DBMS Database Management System

DCP Distributed Computing Platform

DOC Department of Commerce

EPSG European Petroleum Survey Group

ESRI Environmental Systems Research Institute

FGDC Federal Geographic Data Committee

FIPS Federal Information Processing Series

GEO Census Bureau Geography Division

GNIS Geographic Names Information System

GPM CS Geospatial Product Metadata Content Standard

GPS Global Positioning System

GSCQB Geographic Standards, Criteria, and Quality Branch

GSS-I Geographic Support System Initiative

INCITS InterNational Committee for Information Technology Standards

IPT Integrated Project Team

ISO International Organization for Standardization

MA Mandatory if Applicable

MAF Master Address File

MSP MAF Structure Point

MTDB MAF/TIGER Database

MTFCC MAF/TIGER Feature Classification Codes

NGDA National Geospatial Data Assets

NSDI National Spatial Data Infrastructure

OGC Open Geospatial Consortium

OMB Office of Management and Budget

OMS Online Mapping Service

PII Personally Identifiable Information

PR Production Rule

QA Quality Assurance

QC Quality Control

REST Representational State Transfer

RMSE Root Mean Square Error

SDTS Spatial Data Transfer Standard

SME Subject Matter Expert

TIGER Topologically Integrated Geographic Encoding and Referencing System

URL Uniform Resource Locator

USGS United States Geological Survey

UTF Unicode Transformation Format

WG Working Group

WMS Web Mapping Service

XML EXtensible Markup Language

ZIP Zone Improvement Plan

## B: DOC-Census NGDA Datasets

Select Census Bureau datasets are designated as NGDA datasets by the FGDC Steering Committee. NGDA datasets are essential national resources that satisfy multi-agency requirements, achieve Presidential priorities, or are required by statutory mandate. As a result of this designation, these datasets require additional metadata elements to promote their discovery on federally supported data discovery portals like the GeoPlatform. These extra elements include [Alternate\_Title], [NGDA\_Keyword\_Thesaurus], [NGDA\_Keyword], [WMS\_URL], and [REST\_URL]. All of these data elements are defined under the NGDA\_Information compound element.

What follows is the official list of NGDA designated datasets produced by the GEO. This list is found on the FGDC web site under “A-16 NGDA Portfolio Management” subpage “National Geospatial Data Asset (NGDA) Datasets” [Link 4]. This list is current as of May 9 2018.

### Governmental Units, and Administrative and Statistical Boundaries

Governmental Units designated datasets describe boundaries that delineate geographic areas for the following uses:

* + governance and the general provision of services (e.g., States, American Indian reservations, counties, cities, towns, etc.),
  + administration and/or for a specific purpose (e.g., Congressional Districts, school districts, fire districts, Alaska Native Regional Corporations, etc.),
  + provision of statistical data (e.g., census tracts, census blocks, metropolitan and micropolitan statistical areas, etc.).

Other boundaries may include international limits, those of federal land ownership, the extent of administrative regions for various federal agencies, as well as the jurisdictional offshore limits of U.S. sovereignty. Boundaries associated solely with natural resources and/or cultural entities are excluded from this theme and are included in the appropriate subject themes. The Governmental Units designated datasets distributed by the GEO are:

1. 115th Congressional District National

2. 2010 Census 5-digit ZIP Code Tabulation Area

3. 2010 Census Population & Housing Unit Counts

4. 2010 Census Public Use Microdata Area

5. 2010 Census Urban Area

6. 2010 Census Urban Growth Area (UGA)

7. 2010 Census Voting District

8. Alaska Native Regional Corporation (ANRC)

9. American Indian Tribal Subdivision

10. American Indian/Alaska Native/Native Hawaiian (AIANNH) Homeland Areas

11. Block Group

12. Census Block

13. Census Bureau Regional Office Boundaries

14. Census Tract

15. Combined New England City and Town Area

16. Combined Statistical Area (CSA)

17. Consolidated City

18. County and Equivalent

19. County Subdivision

20. Elementary School Districts

21. Estate (US Virgin Islands)

22. Metropolitan Division

23. Metropolitan Statistical Area/Micropolitan Statistical Area (CBSA)

24. NECTA Division

25. New England City and Town Area

26. Place

27. Secondary School District

28. State and Equivalent

29. State Legislative District (SLD) Lower Chamber

30. State Legislative District (SLD) Upper Chamber

31. Subbarrio (Subminor Civil Division)

32. Tribal Block Group

33. Tribal Census Tract

34. Unified School Districts

### Transportation

Transportation designated datasets describe those features that are the means of conveying persons and/or goods between locations. Transportation features include both physical (e.g. roads) and non-physical (e.g. 2010 Census Traffic Analysis Zone) components. The Transportation designated datasets distributed by the GEO are:

1. 2010 Census Traffic Analysis Zone (TAZ)

2. Roads (All Roads)

## C: GPM Element Obligations Table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| *1* |  | *FGDC\_Required* | | | | | |  | *M* | *M* |  | *M* | *M* | *M* |
| *1.1* |  |  | *ISO\_Theme* | | | | |  | *M* | *M* |  | *M* | *M* | *M* |
| 1.1.1 |  |  |  | **ISO\_Keyword\_Thesaurus:** | | | |  | M | M |  | M | M | M |
| 1.1.2 | 1{x}n |  |  | **ISO\_Keyword:** | | | |  | M | M |  | M | M | M |
| *1.2* |  |  | *NGDA\_Information* | | | | |  |  | *MA* |  |  | *MA* | *MA* |
| 1.2.1 |  |  |  | **Alternate\_Title:** | | | |  |  | MA |  |  | MA | MA |
| 1.2.2 |  |  |  | **NGDA\_Keyword\_Thesaurus:** | | | |  |  | M |  |  | M | M |
| 1.2.3 | 3{x}3 |  |  | **NGDA\_Keyword:** | | | |  |  | M |  |  | M | M |
| 1.2.4 |  |  |  | **WMS\_URL:** | | | |  |  | M |  |  | M | M |
| 1.2.5 |  |  |  | **REST\_URL:** | | | |  |  | MA |  |  | MA | MA |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *2* |  | *Identification\_Information* | | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| *2.1* |  |  | *Citation* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.1.1 | 1{x}n |  |  | **Originator:** | | | | M | M | M | M | M | M | M |
| 2.1.2 |  |  |  | **Publication\_Date:** | | | | M | M | M | M | M | M | M |
| 2.1.3 |  |  |  | **Title:** | | | | M | M | M | M | M | M | M |
| 2.1.4 |  |  |  | **Edition:** | | | |  | O | O | O |  | O | O |
| 2.1.5 |  |  |  | **Geospatial\_Data\_Presentation\_Form:** | | | |  | M | M | M | M | M | M |
| *2.1.6* |  |  |  | *Series\_Information* | | | |  | *O* | *O* | *O* |  | *O* | *O* |
| 2.1.6.1 |  |  |  |  | **Series\_Name:** | | |  | M | M | M |  | M | M |
| 2.1.6.2 |  |  |  |  | **Issue\_Identification:** | | |  | M | M | M |  | M | M |
| 2.1.7 | 0{x}n |  |  | **Online\_Linkage:** | | | | M | M | M | M | O | M | M |
| *2.2* |  |  | *Description* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| 2.2.1 |  |  |  | **Abstract:** | | | | M | M | M | M | M | M | M |
| 2.2.2 |  |  |  | **Purpose:** | | | | M | M | M | M | M | M | M |
| *2.3* |  |  | *Time\_Period\_of\_Content* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.3.1 |  |  |  | **Calendar\_Date:** | | | | M2 | M2 | M2 | M2 | M2 | M2 | M2 |
|  |  |  |  | ***OR*** | | | |  |  |  |  |  |  |  |
| *2.3.2* |  |  |  | *Range\_of\_Dates* | | | | *M2* | *M2* | *M2* | *M2* | *M2* | *M2* | *M2* |
| 2.3.2.1 |  |  |  |  | **Beginning\_Date:** | | | M | M | M | M | M | M | M |
| 2.3.2.2 |  |  |  |  | **Ending\_Date:** | | | M | M | M | M | M | M | M |
| 2.3.3 |  |  |  | **Currentness\_Reference:** | | | | M | M | M | M | M | M | M |
| *2.4* |  |  | *Status* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.4.1 |  |  |  | **Progress:** | | | | M | M | M | M | M | M | M |
| 2.4.2 |  |  |  | **Maintenance\_and\_Update\_Frequency:** | | | | M | M | M | M | M | M | M |
| *2.5* |  |  | *Spatial\_Domain* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| *2.5.1* |  |  |  | *Bounding\_Coordinates* | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.5.1.1 |  |  |  |  | **West\_Bounding\_Coordinate:** | | | M | M | M | M | M | M | M |
| 2.5.1.2 |  |  |  |  | **East\_Bounding\_Coordinate:** | | | M | M | M | M | M | M | M |
| 2.5.1.3 |  |  |  |  | **North\_Bounding\_Coordinate:** | | | M | M | M | M | M | M | M |
| 2.5.1.4 |  |  |  |  | **South\_Bounding\_Coordinate:** | | | M | M | M | M | M | M | M |
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| *2.6.1* | *1{x}n* |  |  | *Theme* | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.6.1.1 |  |  |  |  | **Theme\_Keyword\_Thesaurus:** | | | M | M | M | M | M | M | M |
| 2.6.1.2 | 1{x}n |  |  |  | **Theme\_Keyword:** | | | M | M | M | M | M | M | M |
| *2.6.2* | *0{x}n* |  |  | *Place* | | | | *O* | *O* | *M* | *O* | *M* | *M* | *M* |
| 2.6.2.1 |  |  |  |  | **Place\_Keyword\_Thesaurus:** | | | M | M | M | M | M | M | M |
| 2.6.2.2 | 1{x}n |  |  |  | **Place\_Keyword:** | | | M | M | M | M | M | M | M |
| *2.7* |  |  | *Constraints* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
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| 2.7.2 |  |  |  | **Use\_Constraints:** | | | | M | M | M | M | M | M | M |
| 2.7.3 |  |  |  | **Other\_Constraints:** | | | | O | O | O | O | O | O | O |
| *2.8* | *1{x}n* |  | *Point\_of\_Contact* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 2.8.1 |  |  |  | **Contact\_Organization:** | | | | M | M | M | M | M | M | M |
| *2.8.2* |  |  |  | *Contact\_Address* | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
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| 2.8.2.2 |  |  |  |  | **City:** | | | M | M | M | M | M | M | M |
| 2.8.2.3 |  |  |  |  | **State\_or\_Province:** | | | M | M | M | M | M | M | M |
| 2.8.2.4 |  |  |  |  | **Postal\_Code:** | | | M | M | M | M | M | M | M |
| 2.8.2.5 |  |  |  |  | **Country:** | | | M | M | M | M | M | M | M |
| 2.8.3 | 1{x}n |  |  | **Contact\_Voice\_Telephone:** | | | | M | M | M | M | M | M | M |
| 2.8.4 |  |  |  | **Contact\_Electronic\_Mail\_Address:** | | | | M | M | M | M | M | M | M |
| *2.9* |  |  | *Browse\_Graphic* | | | | |  | *O* | *O* |  | *O* | *O* | *O* |
| 2.9.1 |  |  |  | **Browse\_Graphic\_File\_Name:** | | | |  | M | M |  | M | M | M |
| 2.9.2 |  |  |  | **Browse\_Graphic\_File\_Description:** | | | |  | M | M |  | M | M | M |
| 2.9.3 |  |  |  | **Browse\_Graphic\_File\_Type:** | | | |  | M | M |  | M | M | M |
| 2.10 |  |  | **Data\_Set\_Character\_Set:** | | | | | M | M | M | M | M | M | M |
| 2.11 |  |  | **Data\_Set\_Language:** | | | | | M | M | M | M | M | M | M |
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| *3* |  | *Data\_Quality\_Information* | | | | | |  | *M* | *M* | *M* | *M* |  |  |
| *3.1* |  |  | *Attribute\_Accuracy\_Report* | | | | |  | *O* | *M* | *O* | *M* |  |  |
| *3.1.1* |  |  |  | *Test\_Report* | | | |  | *M* | *M* | *M* | *M* |  |  |
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| 3.1.1.3 |  |  |  |  | **Result:** | | |  | M | M | M | M |  |  |
| *3.2* |  |  | *Non\_Quantitative\_Attribute\_Accuracy\_Report* | | | | |  | *O* | *M* | *O* | *M* |  |  |
| *3.2.1* |  |  |  | *Test\_Report* | | | |  | *M* | *M* | *M* | *M* |  |  |
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| 3.2.1.2 |  |  |  |  | **Evaluation:** | | |  | O | O | O | O |  |  |
| 3.2.1.3 |  |  |  |  | **Result:** | | |  | M | M | M | M |  |  |
| *3.3* |  |  | *Logical\_Consistency\_Report* | | | | |  | *M* | *M* | *M* | *M* |  |  |
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| 3.3.1.2 |  |  |  |  | **Evaluation:** | | |  | O | O | O | O |  |  |
| 3.3.1.3 |  |  |  |  | **Result:** | | |  | M | M | M | M |  |  |
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| *3.4.1* |  |  |  | *Test\_Report* | | | |  | *M* | *M* | *M* | *M* |  |  |
| 3.4.1.1 |  |  |  |  | **Measure:** | | |  | O | O | O | O |  |  |
| 3.4.1.2 |  |  |  |  | **Evaluation:** | | |  | O | O | O | O |  |  |
| 3.4.1.3 |  |  |  |  | **Result:** | | |  | M | M | M | M |  |  |
| *3.5* |  |  | *Horizontal\_Positional\_Accuracy\_Report* | | | | |  | *M* | *M* |  | *M* |  |  |
| *3.5.1* |  |  |  | *Test\_Report* | | | |  | *M* | *M* |  | *M* |  |  |
| 3.5.1.1 |  |  |  |  | **Measure:** | | |  | O | O |  | O |  |  |
| 3.5.1.2 |  |  |  |  | **Evaluation:** | | |  | O | O |  | O |  |  |
| 3.5.1.3 |  |  |  |  | **Result:** | | |  | M | M |  | M |  |  |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| *3.6* | *1{x}n* |  | *Source\_Information* | | | | |  | *M* | *M* | *M* | *M* |  |  |
| *3.6.1* |  |  |  | *Citation* | | | |  | *M* | *M* | *M* | *M* |  |  |
| 3.6.1.1 | 1{x}n |  |  |  | **Originator:** | | |  | M | M | M | M |  |  |
| 3.6.1.2 |  |  |  |  | **Publication\_Date:** | | |  | M | M | M | M |  |  |
| 3.6.1.3 |  |  |  |  | **Title:** | | |  | M | M | M | M |  |  |
| 3.6.2 |  |  |  | **Source\_Scale\_Denominator:** | | | |  | M |  |  |  |  |  |
| 3.6.3 |  |  |  | **Type\_of\_Source\_Media:** | | | |  | M | M | M | M |  |  |
| *3.6.4* |  |  |  | *Time\_Period\_of\_Content* | | | |  | *M* | *M* | *M* | *M* |  |  |
| 3.6.4.1 |  |  |  |  | **Calendar\_Date:** | | |  | M2 | M2 | M2 | M2 |  |  |
|  |  |  |  |  | **OR** | | |  |  |  |  |  |  |  |
| *3.6.4.2* |  |  |  |  | *Range\_of\_Dates* | | |  | *M2* | *M2* | *M2* | *M2* |  |  |
| 3.6.4.2.1 |  |  |  |  |  | **Beginning\_Date:** | |  | M | M | M | M |  |  |
| 3.6.4.2.2 |  |  |  |  |  | **Ending\_Date:** | |  | M | M | M | M |  |  |
| 3.6.4.3 |  |  |  |  | **Currentness\_Reference:** | | |  | M | M | M | M |  |  |
| 3.6.5 |  |  |  | **Source\_Citation\_Abbreviation:** | | | |  | M | M | M | M |  |  |
| 3.6.6 |  |  |  | **Source\_Contribution:** | | | |  | M | M | M | M |  |  |
| *3.7* | *1{x}n* |  | *Process\_Step* | | | | |  | *M* | *M* | *M* | *M* |  |  |
| 3.7.1 |  |  |  | **Process\_Description:** | | | |  | M | M | M | M |  |  |
| 3.7.2 |  |  |  | **Process\_Date:** | | | |  | M | M | M | M |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *4* |  | *Spatial\_Data\_Organization\_Information* | | | | | |  |  | *M* |  | *M* |  |  |
| 4.1 |  |  | **Indirect\_Spatial\_Reference:** | | | | |  |  | M |  | M |  |  |
| 4.2 |  |  | **Direct\_Spatial\_Reference\_Method:** | | | | |  |  | M |  | M |  |  |
| 4.3 |  |  | **Topology\_Level:** | | | | |  |  | M |  | M |  |  |
| *4.4* | *1{x}n* |  | *SDTS\_Terms\_Description* | | | | |  |  | *M* |  | *M* |  |  |
| 4.4.1 |  |  |  | **SDTS\_Point\_and\_Vector\_Object\_Type:** | | | |  |  | M |  | M |  |  |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| 4.4.2 |  |  |  | **Point\_and\_Vector\_Object\_Count:** | | | |  |  | M |  | M |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *5* |  | *Spatial\_Reference\_Information* | | | | | |  | *M* | *M* |  | *M* |  |  |
| *5.1* |  |  | *Map\_Projection* | | | | |  | *M* | *M2* |  | *M2* |  |  |
| 5.1.1 |  |  |  | **Map\_Projection\_Name:** | | | |  | M | M |  | M |  |  |
| 5.1.2 |  |  |  | **Map\_Projection\_Description:** | | | |  | M | M2 |  | O |  |  |
|  |  |  |  | **OR** | | | |  |  |  |  |  |  |  |
| *5.1.3* |  |  |  | *EPSG\_Reference* | | | |  |  | *M2* |  |  |  |  |
| 5.1.3.1 |  |  |  |  | **EPSG\_Code:** | | |  |  | M |  |  |  |  |
| 5.1.3.2 |  |  |  |  | **EPSG\_Code\_Space:** | | |  |  | M |  |  |  |  |
| 5.1.3.3 |  |  |  |  | **EPSG\_Version:** | | |  |  | O |  |  |  |  |
| 5.1.3.4 |  |  |  |  | **Spatial\_Resolution:** | | |  |  | M |  |  |  |  |
| *5.2* |  |  | *Geodetic\_Model* | | | | |  | *M* | *M* |  | *M* |  |  |
| 5.2.1 |  |  |  | **Horizontal\_Datum\_Name:** | | | |  | M | M |  | M |  |  |
| 5.2.2 |  |  |  | **Ellipsoid\_Name:** | | | |  | M | M |  | M |  |  |
| 5.2.3 |  |  |  | **Semi-Major\_Axis:** | | | |  | M | M |  | M |  |  |
| 5.2.4 |  |  |  | **Denominator\_of\_Flattening\_Ratio:** | | | |  | M | M |  | M |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *6* |  | *Entity\_and\_Attribute\_Information* | | | | | |  | *O* | *M* | *O* | *M* |  |  |
| *6.1* | *1{x}n* |  | *Detailed\_Description* | | | | |  |  | *M2* | *M2* | *M2* |  |  |
| *6.1.1* |  |  |  | *Entity\_Type* | | | |  |  | *M* | *M* | *M* |  |  |
| 6.1.1.1 |  |  |  |  | **Entity\_Type\_Label:** | | |  |  | M | M | M |  |  |
| 6.1.1.2 |  |  |  |  | **Entity\_Type\_Definition:** | | |  |  | M | M | M |  |  |
| 6.1.1.3 |  |  |  |  | **Entity\_Type\_Definition\_Source:** | | |  |  | M | M | M |  |  |
| 6.1.1.4 |  |  |  |  | **Ontology\_URI** | | |  |  | O | O |  |  |  |
| *6.1.2* | *1{x}n* |  |  | *Attribute* | | | |  |  | *M* | *M* | *M* |  |  |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| 6.1.2.1 |  |  |  |  | **Attribute\_Label:** | | |  |  | M | M | M |  |  |
| 6.1.2.2 |  |  |  |  | **Attribute\_Definition:** | | |  |  | M | M | M |  |  |
| 6.1.2.3 |  |  |  |  | **Attribute\_Definition\_Source:** | | |  |  | M | M | M |  |  |
| *6.1.2.4* | *1{x}n* |  |  |  | *Attribute\_Domain\_Values* | | |  |  | *M* | *M* | *M* |  |  |
| *6.1.2.4.1* | *1{x}n* |  |  |  |  | *Enumerated\_Domain* | |  |  | *M4* | *M4* | *M4* |  |  |
| 6.1.2.4.1.1 |  |  |  |  |  |  | **Enumerated\_Domain\_Value:** |  |  | M | M | M |  |  |
| 6.1.2.4.1.2 |  |  |  |  |  |  | **Enumerated\_Domain\_Value\_Definition:** |  |  | M | M | M |  |  |
| 6.1.2.4.1.3 |  |  |  |  |  |  | **Enumerated\_Domain\_Value\_Definition\_Source:** |  |  | M | M | M |  |  |
|  |  |  |  |  |  | **OR** | |  |  |  |  |  |  |  |
| *6.1.2.4.2* |  |  |  |  |  | *Range\_Domain* | |  |  | *M4* | *M4* | *M4* |  |  |
| 6.1.2.4.2.1 |  |  |  |  |  |  | **Range\_Domain\_Minimum:** |  |  | M | M | M |  |  |
| 6.1.2.4.2.2 |  |  |  |  |  |  | **Range\_Domain\_Maximum:** |  |  | M | M | M |  |  |
| 6.1.2.4.2.3 |  |  |  |  |  |  | **Attribute\_Units\_of\_Measure:** |  |  | O | O | O |  |  |
|  |  |  |  |  |  | **OR** | |  |  |  |  |  |  |  |
| *6.1.2.4.3* |  |  |  |  |  | *Codeset\_Domain* | |  |  | *M4* | *M4* | *M4* |  |  |
| 6.1.2.4.3.1 |  |  |  |  |  |  | **Codeset\_Name:** |  |  | M | M | M |  |  |
| 6.1.2.4.3.2 |  |  |  |  |  |  | **Codeset\_Source:** |  |  | M | M | M |  |  |
|  |  |  |  |  |  | **OR** | |  |  |  |  |  |  |  |
| 6.1.2.4.4 |  |  |  |  |  | **Unrepresentable\_Domain:** | |  |  | M4 | M4 | M4 |  |  |
|  |  |  | **AND/OR** | | | | |  |  |  |  |  |  |  |
| *6.2* | *0{x}n* |  | *Feature\_Catalogue\_Description* | | | | |  | *O* | *M2* | *M2* | *M2* |  |  |
| 6.2.1 |  |  |  | **FC\_Title:** | | | |  | M | M | M | M |  |  |
| 6.2.2 |  |  |  | **Included\_With\_Dataset:** | | | |  | M | M | M | M |  |  |
| 6.2.3 |  |  |  | **Feature\_Types:** | | | |  | M | M | M | M |  |  |
| 6.2.4 |  |  |  | **FC\_Online\_Linkage:** | | | |  | M | M | M | M |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| *7* |  | *Distribution\_Information* | | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| *7.1* | *1{x}n* |  | *Point\_of\_Contact* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 7.1.1 |  |  |  | **Contact\_Organization:** | | | | M | M | M | M | M | M | M |
| *7.1.2* |  |  |  | *Contact\_Address* | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 7.1.2.1 | 1{x}n |  |  |  | **Address:** | | | M | M | M | M | M | M | M |
| 7.1.2.2 |  |  |  |  | **City:** | | | M | M | M | M | M | M | M |
| 7.1.2.3 |  |  |  |  | **State\_or\_Province:** | | | M | M | M | M | M | M | M |
| 7.1.2.4 |  |  |  |  | **Postal\_Code:** | | | M | M | M | M | M | M | M |
| 7.1.2.5 |  |  |  |  | **Country:** | | | M | M | M | M | M | M | M |
| 7.1.3 | 1{x}n |  |  | **Contact\_Voice\_Telephone:** | | | | M | M | M | M | M | M | M |
| 7.1.4 |  |  |  | **Contact\_Electronic\_Mail\_Address:** | | | | M | M | M | M | M | M | M |
| 7.2 |  |  | **Distribution\_Liability:** | | | | | M | M | M | M | M | M | M |
| *7.3* | *1{x}n* |  | *Standard\_Order\_Process* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 7.3.1 |  |  |  | **Non-Digital\_Form:** | | | |  | M2 |  |  |  |  |  |
|  |  |  |  | **OR** | | | |  |  |  |  |  |  |  |
| *7.3.2* | *1{x}n* |  |  | *Digital\_Form* | | | | *M* | *M2* | *M* | *M* | *M* | *M* | *M* |
| 7.3.2.1 |  |  |  |  | **Format\_Name:** | | | M | M | M | M | M | M | M |
| 7.3.2.2 |  |  |  |  | **Format\_Version\_Number:** | | | O2 | O2 | O2 | O2 | M2 | O2 | O2 |
|  |  |  |  |  | **OR** | | |  |  |  |  |  |  |  |
| 7.3.2.3 |  |  |  |  | **Format\_Version\_Date:** | | | O2 | O2 | O2 | O2 | M2 | O2 | O2 |
| 7.3.2.4 |  |  |  |  | **File\_Decompression\_Technique:** | | |  |  | M | M |  | M | M |
| 7.3.2.5 |  |  |  |  | **Transfer\_Size:** | | |  | O | O | O |  | M | O |
| *7.3.2.6* | *1{x}n* |  |  |  | *Network\_Address* | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 7.3.2.6.1 |  |  |  |  |  | **Network\_Resource\_Name:** | | M | M | M | M | M | M | M |
| 7.3.2.6.2 |  |  |  |  |  | **Mime\_Type:** | | M | M | M | M | M | M | M |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| 7.3.3 |  |  |  | **Fees:** | | | | M | M | M | M | M | M | M |
| 7.3.4 |  |  |  | **Ordering\_Instructions:** | | | | O | O | O | O |  | O | O |
| 7.4 |  |  | **Technical\_Prerequisites:** | | | | |  |  | M | O | M | M | M |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *8* |  | *Computer\_Service\_Information* | | | | | |  |  |  |  | *M* |  |  |
| 8.1 |  |  | **Service\_Type:** | | | | |  |  |  |  | M |  |  |
| 8.2 |  |  | **Service\_Type\_Version:** | | | | |  |  |  |  | O |  |  |
| 8.3 |  |  | **Coupling\_Type:** | | | | |  |  |  |  | M |  |  |
| *8.4* | *1{x}n* |  | *Contains\_Operations* | | | | |  |  |  |  | *M* |  |  |
| 8.4.1 |  |  |  | **Operation\_Name:** | | | |  |  |  |  | M |  |  |
| 8.4.2 |  |  |  | **DCP:** | | | |  |  |  |  | M |  |  |
| 8.4.3 |  |  |  | **Operation\_Description:** | | | |  |  |  |  | M |  |  |
| *8.4.4* | *0{x}n* |  |  | *Operation\_Parameters* | | | |  |  |  |  | *O* |  |  |
| 8.4.4.1 |  |  |  |  | **Parameter\_Name:** | | |  |  |  |  | M |  |  |
| 8.4.4.2 |  |  |  |  | **Parameter\_Direction:** | | |  |  |  |  | O |  |  |
| 8.4.4.3 |  |  |  |  | **Parameter\_Description:** | | |  |  |  |  | M |  |  |
| *8.4.5* |  |  |  | *Connect\_Point* | | | |  |  |  |  | *M* |  |  |
| 8.4.5.1 |  |  |  |  | **CP\_Link:** | | |  |  |  |  | M |  |  |
| 8.4.5.2 | 0{x}n |  |  |  | **Protocol:** | | |  |  |  |  | O |  |  |
| 8.4.5.3 |  |  |  |  | **Resource\_Name:** | | |  |  |  |  | M |  |  |
| 8.4.5.4 |  |  |  |  | **Resource\_Description:** | | |  |  |  |  | M |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| *9* |  | *Metadata\_Reference\_Information* | | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 9.1 |  |  | **Metadata\_Date:** | | | | | M | M | M | M | M | M | M |
| 9.2 |  |  | **Metadata\_Parent\_Identifier\_Name:** | | | | |  |  | O | O |  | O |  |
| 9.3 |  |  | **Metadata\_Hierarchy\_Level:** | | | | |  |  | O | O |  | O |  |
| **GPM CS Element #** | **Repeats** | **GPM CS Elements:** (**Bold font** indicates value required. *Italic font* indicates descriptive category) | | | | | | **Planned** | **Map** | **Vector** | **Tabular** | **Service** | **GDB** | **Series** |
| 9.4 |  |  | **Metadata\_Hierarchy\_Level\_Name:** | | | | |  |  | O | O |  | O |  |
| *9.5* | *1{x}n* |  | *Point\_of\_Contact* | | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 9.5.1 |  |  |  | **Contact\_Organization:** | | | | M | M | M | M | M | M | M |
| *9.5.2* |  |  |  | *Contact\_Address* | | | | *M* | *M* | *M* | *M* | *M* | *M* | *M* |
| 9.5.2.1 | 1{x}n |  |  |  | **Address:** | | | M | M | M | M | M | M | M |
| 9.5.2.2 |  |  |  |  | **City:** | | | M | M | M | M | M | M | M |
| 9.5.2.3 |  |  |  |  | **State\_or\_Province:** | | | M | M | M | M | M | M | M |
| 9.5.2.4 |  |  |  |  | **Postal\_Code:** | | | M | M | M | M | M | M | M |
| 9.5.2.5 |  |  |  |  | **Country:** | | | M | M | M | M | M | M | M |
| 9.5.3 | 1{x}n |  |  | **Contact\_Voice\_Telephone:** | | | | M | M | M | M | M | M | M |
| 9.5.4 |  |  |  | **Contact\_Electronic\_Mail\_Address:** | | | | M | M | M | M | M | M | M |
| 9.6 |  |  | **Metadata\_Standard\_Name:** | | | | | M | M | M | M | M | M | M |
| 9.7 |  |  | **Metadata\_Standard\_Version:** | | | | | M | M | M | M | M | M | M |
| 9.8 |  |  | **Metadata\_Character\_Set:** | | | | | M | M | M | M | M | M | M |
| 9.9 |  |  | **Metadata\_File\_Identifier:** | | | | | M | M | M | M | M | M | M |
| 9.10 |  |  | **Metadata\_Language:** | | | | | M | M | M | M | M | M | M |

1. The FGDC Content Standard for Digital Geospatial Metadata (CSDGM) [Ref 4] has been depreciated in favor of ISO metadata standards now endorsed by the FGDC. [↑](#footnote-ref-1)