Benefits of Documenting Geospatial Data and Services Using ISO Metadata

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FGDC ISO Metadata Summit

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The Census Bureau's Geospatial Metadata Footprint

- The Census Bureau's Geography Division (GEO)
  - Provides the framework for survey design, sample selection, data collection, tabulation, and dissemination
  - Produces geospatial data to support the decennial census and ongoing surveys and offers the data to the public
- GEO publishes over 50,000 metadata files annually for **T**opologically **I**ntegrated **G**eographic **E**ncoding and **R**eferencing (TIGER) products

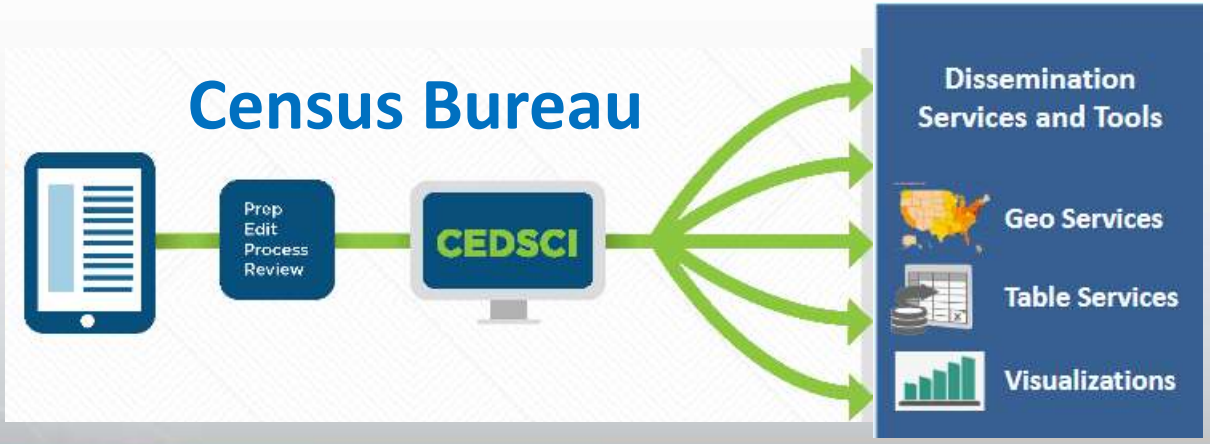
Benefits of Using ISO Metadata

- Enables data for applications
- Documents services
- Availability of support to assist the transition
- Scalable implementation
- Options for efficiencies

Enables Data for Applications

- **FGDC Geospatial Platform**

  provides shared and trusted geospatial data, services, and applications for the advancement of the NSDI



Documents Services

ISO Service Identification Package includes:

- Service type
- Service type version
- Service keywords
- Service extent
- Coupling type
- Operations

+

Data Identification:

- Citation
- Abstract
- Purpose

Service Identification - Type

```
<srv:serviceType>
<gco:LocalName>urn:ogc:serviceType:WebMapService</gco:LocalName>
</srv:serviceType>
<srv:serviceTypeVersion>
<gco:CharacterString>1.3.0</gco:CharacterString>
</srv:serviceTypeVersion>
```

Service Identification

Abstract: This web mapping service contains data from the American Community Survey (ACS), which is an ongoing survey that provides data every year in order to give communities the current information they need to plan investments and services. Information from the survey generates data that help determine how more than $400 billion in federal and state funds are distributed each year. This survey contains information about the age, sex, race, family and relationships, income and benefits, health insurance, education, veteran status, disabilities and the cost of living of the communities surveyed. The Census ACS 2014 WMS web mapping service contains data as of January 1, 2014.

Title: Census ACS 2014 WMS

Alternate Title: WMS (MapServer)

Date: 20170309

Date Type: Publication Date

Point Of Contact:

Keyword Collection:

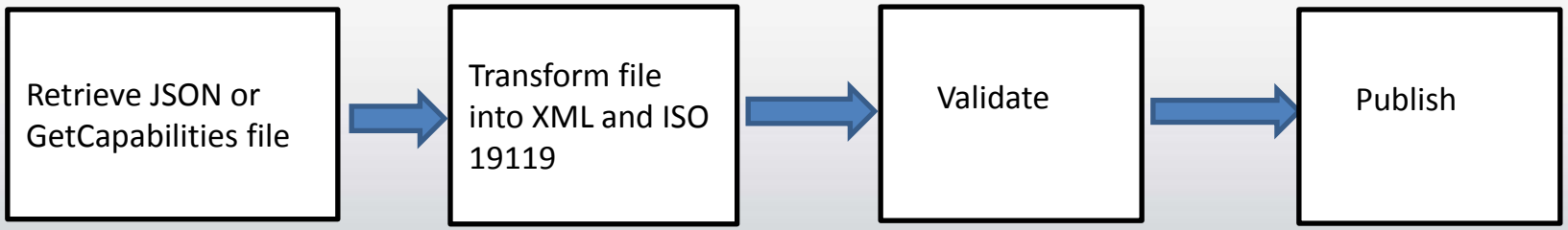
Keyword: Census ACS 2014 WMS

Service Type: urn:ogc:serviceType:WebMapService

Service type version: 1.3.0

Service Metadata Workflow

- For Representational State Transfer (REST) services:
  - Utilize Java Script Object Notation (JSON)
- For Web Mapping Services (WMS):
  - Utilize GetCapabilities file



ISO Metadata Support

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All updates

MEETING MATERIALS

The Metadata Working group meets via teleconference twice a year.

- MWG Meetings

FGDC also hosts a monthly ISO Geospatial Metadata Implementation Forum where members of MWG actively participate and the materials from the forum including Webinar recordings are available on the forum page.

TOOLS

The FGDC ISO Geospatial Metadata Editors Registry was developed to address regular requests from the NSDI community for information about available ISO geospatial metadata editors. The FGDC Metadata Working Group (MWG) provided guidance as to editor features commonly used as selection criteria.

- FGDC ISO Geospatial Metadata Editors Registry

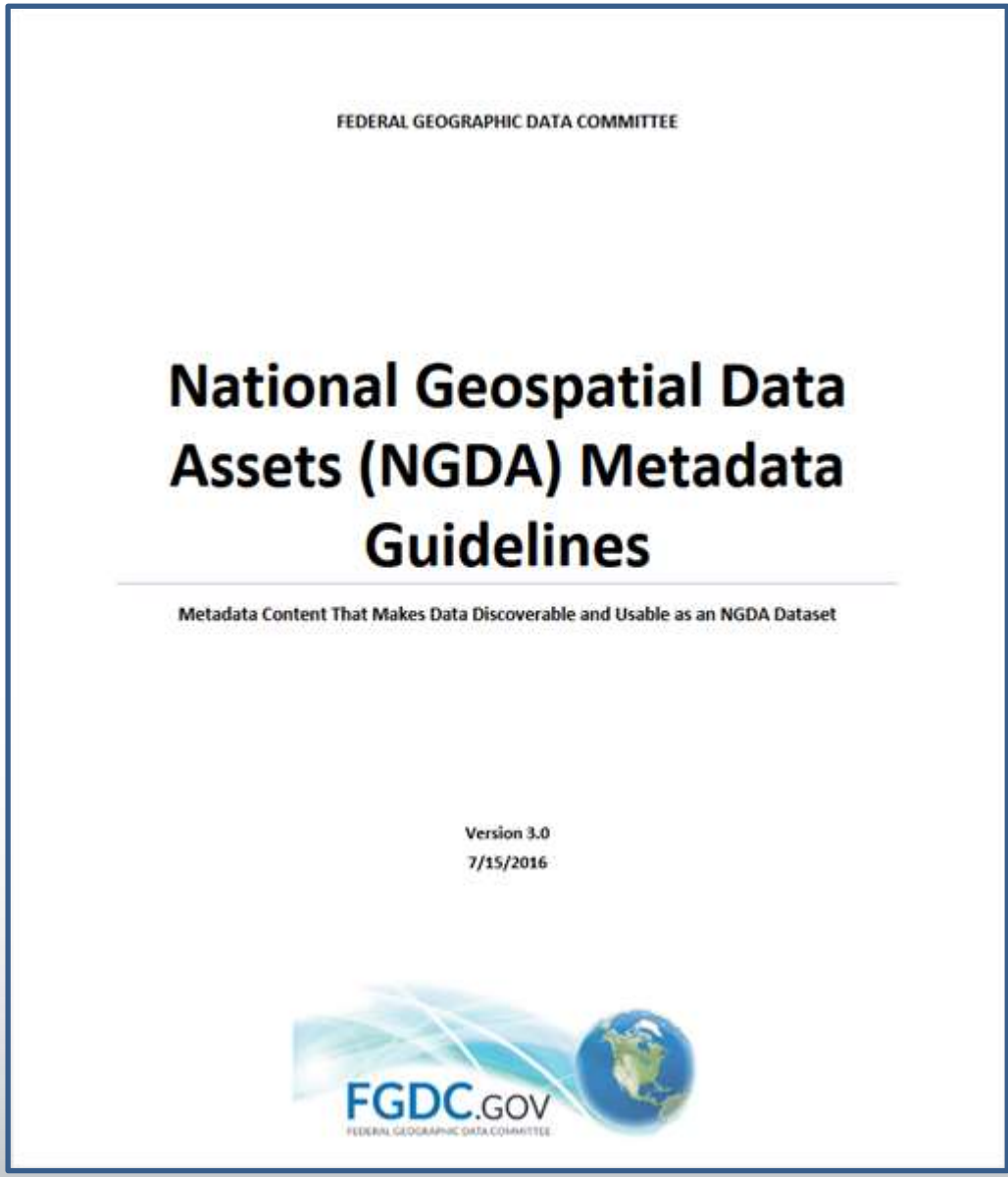
PARTICIPATE

The working group welcomes everyone that has an interest in participating and contributing to its activities. Please send an email to Jen Carlino, jcarlino@usgs.gov to receive instructions on how you can participate.

RESOURCES

- Preparing for International Metadata (pdf) - This document provides an overview of ISO 19115 and NAP geospatial metadata and specific guidance on preparing for the transition to ISO standards.
- 2013 ISO Metadata Implementation Webinar
- 2011 FGDC Metadata Summit

FGDC NGDA Metadata Guidelines



FEDERAL GEOGRAPHIC DATA COMMITTEE

National Geospatial Data Assets (NGDA) Metadata Guidelines

Metadata Content That Makes Data Discoverable and Usable as an NGDA Dataset

Version 3.0
7/15/2016

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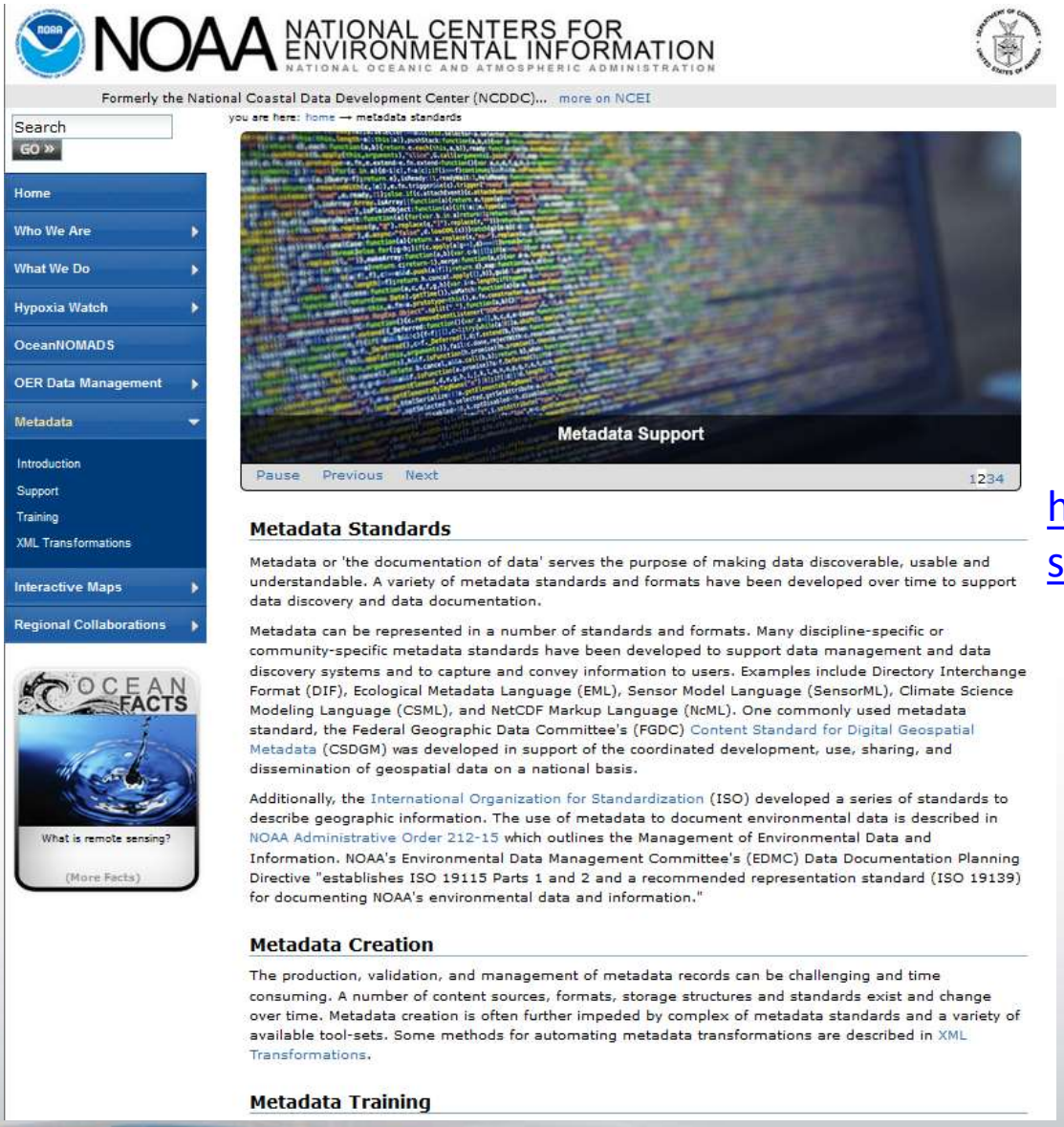
FEDERAL GEOGRAPHIC DATA COMMITTEE

https://cms.geoplatform.gov/sites/default/files/document_library/

NGDA_Metadata_Guidelines_v3.pdf

NOAA Metadata Support



https://www.ncddc.noaa.gov/metadata-standards/

Scalable Implementation

- Phase 1 – get familiar with the ISO format via the crosswalk; transform a CSDGM file to ISO
- Phase 2 – produce ISO metadata, but without detailed entity and attribute information
- Phase 3 – incorporate re-usable components
- Phase 4 – produce complete ISO metadata records for all data and services

CSDGM to ISO Crosswalk

FGDC Name	FGDC XML Tag	ISO Name	Comment
Time Period of Content	timeperd		Compound element, unnecessary mapping
Time Period Information	timeinfo	MD_Metadata, identificationInfo, MD_DataIdentification, extent, EX_Extent, temporalElement, EX_TemporalExtent, gml:TimePeriod	TimePeriod seems to make more sense since this is refering to the time period of the content; refer to Time Period Information Section for further mapping guidance
Source Time Period of Content	srctime		Compound element, unnecessary mapping
Process Date	procdate	MD_Metadata, gmd:dataQualityInfo, gmd:DQ_DataQuality, gmd:lineage, gmd:LI_Lineage, gmd:processStep, gmd:LI_ProcessStep, gmd:dateTime	
Beginning Date of Attribute Values	begdatea	gfc:FC_FeatureCatalogue, gfc:featureType, gfc:FC_FeatureType, gfc:carrierOfCharacteristics, gfc:FC_FeatureAttribute, gfc:constrainedBy, gfc:FC_Constraint, gfc:description	convert the date from FGDC format to ISO format, if this exists, HC 'Beginning Date of Attribute Values:' and map value
Ending Date of Attribute Values	enddatea	gfc:FC_FeatureCatalogue, gfc:featureType, gfc:FC_FeatureType, gfc:carrierOfCharacteristics, gfc:FC_FeatureAttribute, gfc:constrainedBy, gfc:FC_Constraint, gfc:description	convert the date from FGDC format to ISO format, if this exists, HC 'Ending Date of Attribute Values:' and map value
Format Version Date	formverd	MD_Metadata, gmd:distributionInformation, gmd:MD_Distribution, gmd:distributionFormat, gmd:MD_Format, gmd:version	should this be mapped to gmd:amendmentNumber instead? According to FGDC def, it is the DATE of the format version. What fits best? This really could go either way.

Options for Efficiencies - xlink

Full contact information:

```
• <gmd:contactInfo>
• <gmd:CI_Contact>
  • <gmd:phone>
    • <gmd:CI_Telephone>
      • <gmd:voice>
        • <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">301-763-1128</gco:CharacterString>
      • </gmd:voice>
      • <gmd:facsimile>
        • <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">301-763-4710</gco:CharacterString>
      • </gmd:facsimile>
    • </gmd:CI_Telephone>
  • </gmd:phone>
  • <gmd:address>
    • <gmd:CI_Address>
      • <gmd:deliveryPoint>
        • <gco:CharacterString xmlns:gco="http://www.isotc211.org/2005/gco">4600 Silver Hill Road, Stop 7400</gco:CharacterString>
```

Contact information component with xlink:

```
<gmd:contact xlink:title="U.S. Department of Commerce, U.S. Census Bureau, Geography Division, Geographic Products Branch" xmlns:gmd="http://www.isotc211.org/2005/gmd"
xlink:href="https://www.ngdc.noaa.gov/docucomp/c5ceb003-1ed6-4126-8a16-bc08ce8fc267"
xmlns:xlink="http://www.w3.org/1999/xlink"/>
```

Challenges to Implementing ISO Metadata

- It is a change
- ISO metadata files are larger in size than CSDGM files
- Naming convention for metadata files
  - For publishing CSDGM and ISO files
  - For publishing detailed entity and attribute info

Questions?

Contact Information

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charles.s.spicer.ii@census.gov

Facilitate Discovery

- Manage large homogenous collections by establishing parent/child relationships
  - Query returns one metadata record per collection
  - Explore collection to access single data file and documentation
  - Homogeneous collection established via harvest source
  - Child metadata file has link to parent record

Collection vs. Single Records

Collection **TIGERweb, 2017, Series Information for the TIGERweb, Web Mapping Service and REST files**

Federal

US Census Bureau, Department of Commerce — TIGERweb allows the viewing of TIGER spatial data online and for TIGER data to be streamed to your mapping application. TIGERweb consists of a web mapping service...

HTML HTML PDF

California State Waters Map Series--Hueneme Canyon Web Services

Federal

U.S. Geological Survey, Department of the Interior — In 2007, the California Ocean Protection Council initiated the California Seafloor Mapping Program (CSMP), designed to create a comprehensive seafloor map of...

Esri REST HTML WMS HTML Esri REST WMS 2 more in dataset

California State Waters Map Series--Drakes Bay Web Services

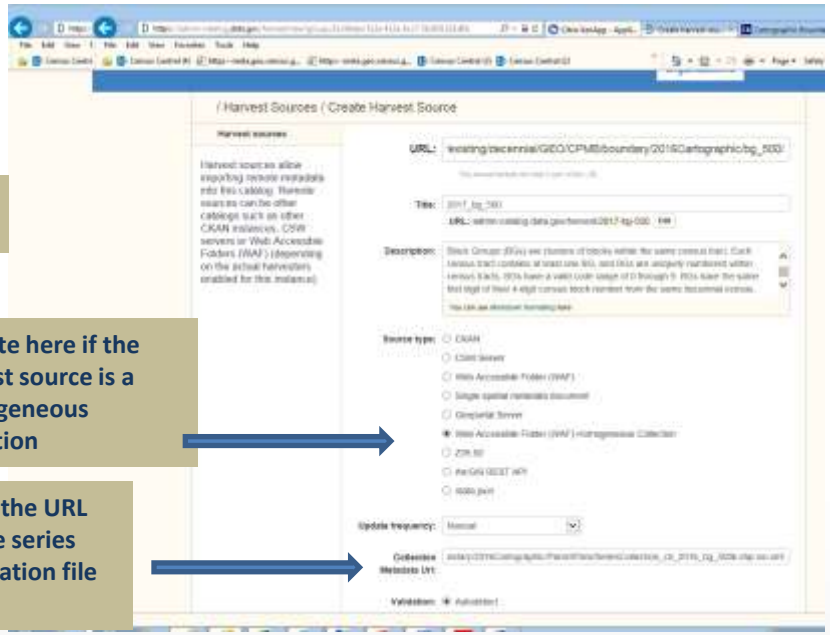
Federal

U.S. Geological Survey, Department of the Interior — In 2007, the California Ocean Protection Council initiated the California Seafloor Mapping Program (CSMP), designed to create a comprehensive seafloor map of...

Esri REST HTML WMS HTML Esri REST WMS 2 more in dataset

Configure a Homogeneous Collection

Establish harvest source in data.gov



Indicate here if the harvest source is a homogeneous collection

Insert the URL for the series nformation file here

Link to parent in child metadata file:

```
<gmd:parentIdentifier>
    <gco:CharacterString>Series Information for the 2016 Cartographic Boundary File, Current Block Group , 1:500,000</gco:CharacterString>
  </gmd:parentIdentifier>
```

TIGER/Line Collection

Collection:

Collection **TIGER/Line Shapefile, 2016, Series Information for the Current Unified School Districts Shapefile State-based Shapefile** 10 recent views

The TIGER/Line shapefiles and related database files (.dbf) are an extract of selected geographic and cartographic information from the U.S. Census Bureau's Master Address File...

HTML HTML WMS Esri REST XML

55 datasets found

TIGER/Line Shapefile, 2016, state, Puerto Rico, Current Unified School Districts Shapefile State-based

Federal

US Census Bureau, Department of Commerce — The TIGER/Line shapefiles and related database files (.dbf) are an extract of selected geographic and cartographic information from the U.S. Census Bureau's Master...

ZIP HTML WMS Esri REST

TIGER/Line Shapefile, 2016, state, Colorado, Current Unified School Districts Shapefile State-based

Federal

US Census Bureau, Department of Commerce — The TIGER/Line shapefiles and related database files (.dbf) are an extract of selected geographic and cartographic information from the U.S. Census Bureau's Master...

ZIP HTML WMS Esri REST

TIGERweb Collection

Collection:

Collection **TIGERweb, 2017, Series Information for the TIGERweb, Web Mapping Service and REST files**

TIGERweb allows the viewing of TIGER spatial data online and for TIGER data to be streamed to your mapping application. TIGERweb consists of a web mapping service and a REST...

HTML HTML PDF

64 datasets found

2017 Census Tracts and Blocks REST File

Federal

US Census Bureau, Department of Commerce — Census REST files provide a way for users to request TIGERLine information from Census GIS servers files through Representational State Transfer (REST)technology....

HTML Esri REST Esri REST Esri REST Esri REST