The National Geospatial Data Asset for Roads: Topologically Integrated Geographic Encoding and Referencing (TIGER)

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This presentation does not contain Title 13 data
Master Address File (MAF) / Topologically Integrated Geographic Encoding and Referencing (TIGER) System

1) MAF, a comprehensive list of addresses in the United States, created in partnership with the U.S. Postal Service and other partners, supports censuses and surveys.

2) TIGER, the first nationwide digital map of roads, boundaries, and other features; is the authoritative source for road and boundary data.
A dataset that has been designated as such by the Federal Geographic Data Committee (FGDC).

To meet FGDC requirements, NGDAs must have:
1) metadata (preferably in ISO format), and
2) web services.

The Census Bureau TIGER roads dataset is currently a FGDC National Geospatial Data Asset and per Office of Management and Budget Circular A-16, must be maintained using data life cycle management processes.
1) The TIGER roads dataset is assessed periodically for lifecycle maturity by the Census Bureau dataset manager as part of the FGDC Maturity Assessment.

2) The roads dataset was assessed as fully mature in 2015 and again in 2017.

Lifecycle Management: The maturity assessment for roads, 2017.
Partnerships

Maintaining dataset maturity

1) The Census Bureau makes updates to its database through integrating partner supplied data, referencing aerial imagery, and fieldwork.

1) TIGER roads cover the entire United States, the District of Columbia, Puerto Rico, and the Island Areas.
**TIGER Basics**

**TIGER Roads at a Glance**

1) Over 7 million miles of roads.

1) Seamlessly edge-matched across the Nation.

1) Updated continuously through ongoing partnership programs.

1) Data is published biannually, free to the public via TIGERweb.

1) Metadata meets FGDC mandated standards.

1) Metadata includes feature level source of coordinates and horizontal accuracy.
TIGER Metadata

Documented at the feature level, as shown in the example below:

- **TLID**: Permanent edge ID
- **MTFCC**: MAF/TIGER feature class code of the primary feature for the edge
- **SMID**: Spatial metadata identifier
TIGER Feature Level Metadata

**Metadata File**

<origin>341 Gloucester County County Planning</origin>
<title>Gloucester County, NJ Spatial Data Sets</title>

<origin>3138 New Jersey Department of Transportation</origin>
<title>NJ_ROADWAY_NETWORK</title>

<origin>7190 Census Bureau - Geography Division US Census Bureau - Geo Div - LFGPB</origin>
<title>2010 ADCAN GPS Feature Updates</title>

**TIGER/Line Shapefile**

TLID = 623690685
MTFCC = S1400
FULLNAME = Edgewood Dr
SMID = 7190
Road attributes at the feature level include:

1) Full street name.
2) Primary and alternate street name identifier.
3) Route type code.
4) MAF/TIGER feature classification codes (MTFCC).
5) Spatial metadata identifier (SMID).
6) Address ranges.
7) Address range parity.
8) ZIP Codes (ZIPL/ZIPR).

Note: SMIDs identify the source of the coordinates for each road and the horizontal spatial accuracy information for a particular road.
Road Update Partnership Programs

1) Geographic Support System (GSS) Partnership Program and its successor, the Spatial, Address, and Imagery Data (SAID) Program.

1) Local Update of Census Addresses Operation (LUCA).

1) United States Geological Survey (USGS)/Census Bureau Partnership.
Road Update

Partner Roads File Process

Acquire Data from Tribal, State, Local Government Partners

Conflation
- Scrubbing
- TIGER Topology Cleanup
- Matching

Processing and Verification

Conflation Proposal Review

Update

INTERACTIVE
Road Update

Partner Roads File Example
2018 Conflation Results

533 counties/independent cities processed through conflation.
43,959 new roads added.
23,305 reshapes applied.
24,000 total miles of added/reshaped features.

Road Update
Participants in the LUCA program are given the ability once a decade to provide updates to road features. Types of transactional updates for roads include adds, deletes, and attribute changes.

1) Ensure minimum requirements are met and validate legal values by automating the invocation of Python scripts in ArcGIS.

1) Automated creation of file specific .mxd for use in multiple LUCA feature processing steps.
Road Update

USGS/Census Bureau Partnership

1) Partnership started as early as the 1980’s.

1) Use of TIGER roads as the primary roads data source was recommended for The National Map.

1) Memorandum of Understanding (MOU) that was first signed in 2014 and the partnership was so successful a new MOU is currently in the approval process.

1) A continuous exchange of updated data has benefited both agencies.
The Census Bureau:

1) Ensures the spatial accuracy of the road network.

1) Dataset is updated continuously, leveraging data from our partners.

1) Meets or exceeds FGDC metadata requirements.

1) Dataset is the FGDC recognized National Geospatial Dataset Asset for road data.

1) The Census Bureau supports the Department of Transportation’s goal of assuming responsibility as the authoritative source for roads.
Questions???

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