

Experience from the Minnesota Geographic Metadata Guidelines

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Overview

- **Minnesota Geographic Metadata Guidelines (MGMG)**
 - What are they and why provide that option?
 - What's worked well? What hasn't?
- **Minnesota Geospatial Commons**
 - Clear business reason to create metadata
 - New recommendation for mandatory/desirable/optional elements
- **What's next - ISO?**
 - Similar approach to a simple ISO profile? North Carolina's?
 - Tool?

The Minnesota Geographic Metadata Guidelines

Set things
in order
before
there is
confusion.

-Tao Te Ching



POWERED BY
metadata

What is MGMT?

- **Streamlined version of FGDC CSDGM standard**
 - Includes all mandatory FGDC fields
 - Seven sections, many fields simplified
 - Doesn't specify mandatory/optional
 - Simple HTML presentation

Section 1

Originator

Minnesota Department of Natural Resou

Title

Hillshade, LiDAR-derived, Minnesota

Abstract

The hillshade is a black-and-white image shining from the northwest.

Purpose

Hillshades make it easier to visualize char

Time Period of Content Date

Currentness Reference

Hillshades were generated from a number
[/elevation/lidar.html](#)

Progress

Complete

Why create MGMG?

- Provide a simpler standard that many people would actually use
- But still provide enough info so:
 - Users can assess fitness for use
 - Publishers can remember what they did
 - Balance between “lite” and “complex”
- And retain compatibility with FGDC
- MGMG is an **option**, it is not mandated

Metadata Structure Examples

- **Many of the elements are the same and use the same tags**

FGDC

TITLE

ABSTRACT

BOUNDING BOX
COORDINATES

MGMG

TITLE

ABSTRACT

BOUNDING BOX
COORDINATES

Metadata Structure Examples

- **Some elements are simpler in MGMT**

FGDC

(SINGLE) DATE

BEGINNING DATE

END DATE

DATE DETAILS

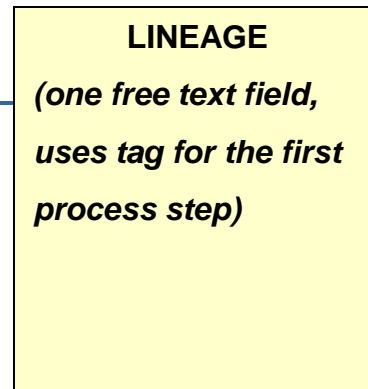
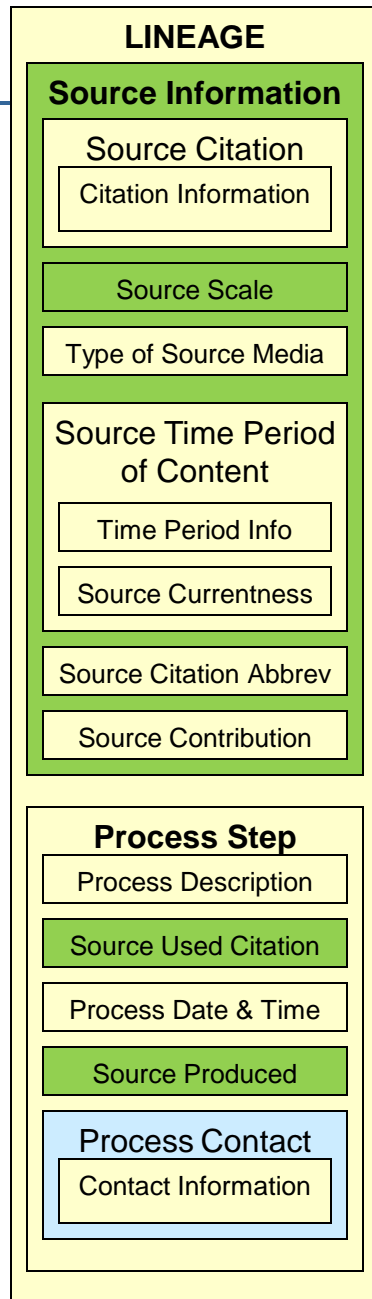
MGMG

(SINGLE) DATE

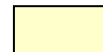
DATE DETAILS

FGDC

MGMG



■ **Some are much simpler in MGMG**



mandatory



mandatory, if applicable



optional

Seven Sections of the Minnesota Geographic Metadata Guidelines

Minnesota State Guideline 17-1.2

1 Identification	2 Data Quality	3 Spatial Data Organization	4 Spatial Reference	5 Entity and Attribute	6 Distribution	7 Metadata Reference
Originator	Attribute Accuracy	Native Data Set Environment	Horizontal Coordinate Scheme	Entity and Attribute Overview	Publisher	Metadata Date
Title	Logical Consistency	Geographic Reference (Tabular)	Ellipsoid	Entity and Attribute Detailed Citation	Publication Date	Metadata Contact Information
Identifier (optional)	Completeness	Spatial Object Types	Horizontal Datum & Units		Distributor Information	Metadata Standard Information
Abstract	Positional Accuracy	Tiling Scheme	Resolution		Distribution Liability	
Purpose	Lineage		Altitude Datum & Units		Transfer Format	
Content Date	Source Scale		Depth Datum & Units		Transfer Size	
Currentness			If Raster		Ordering Instructions	
Progress			If Geographic		Online Linkage	
Maintenance and Update Frequency			If UTM			
Spatial Extent Description			If State Plane			
Bounding Coordinates			If County Coordinate			
Keywords			If User Specified Projection			
Constraints			If Other			
Contact Information						
Browse Graphic Information						
Associated Data Sets						

www.mngeo.state.mn.us/committee/standards/mgmg/metadata.htm

Implementation: Tools + Training

- Tools then:
 - DataLogr
 - Customized ArcCatalog Editor (v. 8 & 9)
- Tools now:
 - Minnesota Metadata Editor (MME), customized version of EPA's EME 3.1
 - Working on guidance for ArcCatalog v. 10 (FGDC)
- FGDC CAP grants helped support training around the state and development of training materials available on our website

The screenshot shows the Minnesota Metadata Editor v1.2 application window. The interface is divided into several sections: Citation, Description, Time Period, Bounding Box, Keywords, Data Set Constraints, and Contact. Each section contains various input fields, dropdown menus, and buttons for editing metadata information. The Citation section includes fields for Origin, Title, Publication Date, and Published by. The Description section includes fields for Abstract, Success, Spatial Extent of Data, Link to example, Description of example, and Associated Data Sets. The Time Period section includes fields for Time Period of Content, Progress of data, Current status reference, and Update frequency. The Bounding Box section includes fields for NI, E, S, and W coordinates. The Keywords section includes fields for Theme and Place. The Data Set Constraints section includes fields for Access and User. The Contact section includes a field for Contact information. The interface also includes a menu bar (File, Edit, Tools, Help) and a status bar at the bottom with save and cancel buttons.

MME: www.mngeo.state.mn.us/chouse/mme/

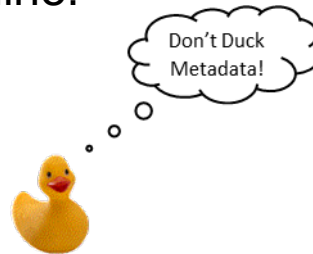
MGMG: What's worked well?

Keeping it simpler

- Easy to explain
- Focuses on what users most need to know and what publishers are most able to write
- No one has asked for more detail, except for entities & attributes
- HTML less cluttered

Providing tools + training

“Don't duck metadata” tag line!



MGMG: What hasn't worked well?

MGMG → FGDC goes well,
but FGDC → MGMG can lose some info

Maintaining customized tools

- DataLogr: out-dated
- MGMG ArcCatalog Editor: no longer works with v. 10
- MME: need more resources to maintain

Metadata still often perceived as optional

***That last point is changing with the
Minnesota Geospatial Commons...***

A collaborative website where publishers can share geospatial data, maps, services and applications and users can access these resources.



<https://gisdata.mn.gov/>

Metadata fuels the Commons

Initial search results:

The screenshot shows the Minnesota Geospatial Commons website. The header includes the logo, navigation links (Resources, Organizations, Categories, News, About, Help), and a search bar. The breadcrumb trail indicates the current location: / Organizations / Transportation Department. The left sidebar features the Minnesota Department of Transportation logo, a description of their mission, and statistics showing 4 followers and 11 resources. A 'Follow' button and an RSS feed icon are also present. The main content area displays search results for '11 resources found', ordered by relevance. The first result is 'City, Township, and Unorganized Territory (CTU) Boundaries, Minnesota, May 29...', with a description and file format tags (SHP, gpkg, HTML). The second result, 'Roads, Minnesota', is highlighted with a red box and includes a description and file format tags (JPEG, SHP, ags_mapserver, fgdb, gpkg, HTML).

Minnesota Geospatial Commons

Resources Organizations Categories News About Help Search

/ Organizations / Transportation Department

Minnesota Department of Transportation

Transportation Department

Plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the... read more

Followers: 4 Resources: 11

Follow RSS

Organizations

Resources Activity Stream About

Search datasets...

11 resources found Order by: Relevance

City, Township, and Unorganized Territory (CTU) Boundaries, Minnesota, May 29...

This medium-scale (nominally 1:24,000) dataset represents the boundaries of cities, townships, and unorganized territories (CTUs) in Minnesota. MnGeo created this file by...

SHP gpkg HTML

Roads, Minnesota

This dataset represents road centerlines for all public roads within the state of Minnesota. The roads are broken from intersection to intersection and attributed with...

JPEG SHP ags_mapserver fgdb gpkg HTML

Metadata fuels the Commons

More info:

The screenshot shows the Minnesota Commons website interface. The main content area is titled "Roads, Minnesota" and provides a detailed description of the dataset, which represents road centerlines for all public roads within the state of Minnesota. It lists key attribute fields such as route system, route number, and name. Below the description, there are several download options: State Preview - Sample Image, Shapefile, Esri ArcGIS Server Map Service, Esri File Geodatabase, OGC GeoPackage, and Full Metadata Record. A metadata table is also present, detailing the originator (Minnesota Department of Transportation), date details, access constraints, and purpose of the dataset. At the bottom, there is a "Dataset extent" section with a map showing the geographic coverage of the data.

Minnesota Geospatial Commons Resources Organizations Categories News About Help Search

/ Organizations / Transportation Department / Roads, Minnesota

Roads, Minnesota

Followers 1

Follow

Organization

Minnesota Department of Transportation

Transportation Department

Plan, build, operate and maintain a safe, accessible, efficient and reliable multimodal transportation system that connects people to destinations and markets throughout the...read more

Social

Google+

Twitter

Facebook

License

License not specified

Legal disclaimer

Roads, Minnesota

This dataset represents road centerlines for all public roads within the state of Minnesota. The roads are broken from intersection to intersection and attributed with information based on their designated route. Key attribute fields include route system (Interstate, US Highway, Minnesota Highway, County State Aid Highway, County Road, Township Road, etc.), Route Number (35W, 10, 53), and Name. A detailed description of the Roads layer attributes is included in Section 5 of this document - Entity and Attribute Overview.

Some route numbers are temporary. '900' Routes are for route segments that formerly were part of a trunk highway which was turned back to a local entity. These are temporary numbers assigned while MnDOT waits for an official local designation. These numbers are assigned in the 900-999 range and are not official route numbers but just for temporarily assigning data to unnumbered routes.

State Preview - Sample Image View

Shapefile Download

Esri ArcGIS Server Map Service View

Esri File Geodatabase Download

OGC GeoPackage Download

Full Metadata Record View

roads route direction route number routes ts code transportation

Originator	Minnesota Department of Transportation (MnDOT)
Date details	The downloadable dataset represents the route network as reported to MnDOT following the construction season ending in 2012. The online map services are updated periodically. The most recent update was 1/29/2014. Check the "Service Date" information on the services webpage to verify the date: http://giservices.dot.state.mn.us/ArcGIS/rest/services/MNDOT_ROADS/MapServer
Access constraints	None
Purpose	This dataset was developed to fill a need at MnDOT for a continuous, statewide GIS base map of the transportation system. It is part of the Transportation Information System (TIS). ***This data is to be deprecated in early 2015. Replacement data will have new Route IDs and more accurate measures based off the cartographic lengths.***

Dataset extent

Metadata fuels the Commons

Roads, Minnesota

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	Static Preview - Sample Image	View
	Shapefile	Download
	Esri ArcGIS Server Map Service	View
	ESRI File Geodatabase	Download
	OGC GeoPackage	Download
	Full Metadata Record	View

roads route direction route number routes tis code transportation

Title

Abstract

Preview

Full metadata
Keywords

Metadata fuels the Commons

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Originator

Date info

Access constraints

Purpose



Bounding box coordinates

- Making connection between metadata and a site people want to use to:
 - find, evaluate and access data
 - publish their data

- Bringing in new publishers who haven't created metadata before

Question

How much
metadata do I
need to write for
the Commons?

Metadata Recommendation

■ Goal

- Which metadata elements are required for the Commons?
- Guidance on quality and quantity of information

■ Criteria

- *Curated site, resources should be worth finding*
- Needed for a user to determine fitness for use
- Needed to support a Commons function



Summary recommendation

SECTION 1 - Identification	Mandatory	Mandatory if applicable	Desirable	Optional
Originator	✓			
Title	✓			
Abstract	✓			
Purpose			✓	
Time Period of Content Date		✓		

Detailed recommendation for each element

MGMG Element	What is Required	Comments
<i>For definitions of the elements, click on the section title link</i>		<i>Related to the recommendation for each element, not intended to provide complete best practices or examples</i>

<u>SECTION 1 - Identification</u>		
Originator	Mandatory	Users need to know the name of the organization(s) or individual(s) that developed the data set. This element is displayed on the Commons summary page for a data resource.
Title	Mandatory	Best practice is to start with the topic, followed by the geography covered, followed by a date, followed by anything else, such as originator, that's needed to distinguish this data resource from other similar ones. This element is displayed on the Commons summary page for a data resource.
Minnesota Clearinghouse ID		Never used – drop this element. Not in the Minnesota Metadata Editor (MME) .

Full recommendation:

www.mngeo.state.mn.us/councils/statewide/Commons_MGMG_element_requirements_recommendation.pdf

Implementation Options

- *Expectations for Publishers* document:
https://gisdata.mn.gov/content/?q=help/publisher_expectations
- Update best practices materials
- Work with new publishers
- Validate anything that can be automatically tested
- Monitor user feedback
- Periodically remind publishers to check metadata for accuracy
- Provide improved tools
- If all else fails, suspend from publishing until comply with metadata requirements

Next Steps – ISO?

- Has been too complex so far
 - Would like to use the web services elements

- Evaluate North Carolina's ISO-based state government / local profile
 - Similar approach of a simpler profile
 - Collaborate on tools and training?

- Tools: customize EME 4 → MME 4?

Summary

- Option for simpler standard
 - main info most users need to evaluate data for fitness of use
- Need to provide a package: standard + tool(s) + training
 - eliminate as many roadblocks as possible
- Curated site (the Commons) provides a clear business reason to create metadata
- State/local ISO-based profile has promise

Questions?

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