

MINNESOTA METADATA EDITOR TUTORIAL



The purpose of this tutorial is to introduce you to viewing and creating metadata records using the [Minnesota Metadata Editor](#) tool (MME). MME is customized for the [Minnesota Geographic Metadata Guidelines](#) (MGMG), a streamlined version of a national metadata standard.

OVERVIEW OF THE TUTORIAL

PART 1: GET STARTED

- Open the Minnesota Metadata Editor (MME) and find the main tabs and buttons
- Open an example metadata record

PART 2: EDIT A RECORD

- Become familiar with the different field types; make simple edits
- Cut-and-paste from an existing document
- Edit contact information in the Access database
- Add detailed entity and attribute information

PART 3: DISPLAY METADATA

- Learn how to view and save the metadata in XML and HTML formats
- Understand how the Online Linkage text changes
- View and use metadata on the Minnesota Geospatial Commons website

PART 4: CREATE A NEW RECORD

- Create your own metadata starter template

INSTALLATION AND REQUIREMENTS

MME is a standalone (portable) application. This means that you do not need administrator rights on your computer to get the software working.

MME requires Microsoft .NET Framework 3.5 or above to run. Microsoft Access is required to edit any of the background databases, including those that hold contact information and default values, but is not required to run the program. For more information on what is necessary to use this software, see the [MME Requirements](#) webpage.

After downloading MME from MnGeo's [MME website](#), unzip the file on your computer. All necessary files are in the Minnesota Metadata Editor folder (which is found in the "MME-master" folder). It is not critical where you place the folder for MME (as long as you have write privileges). Your user directory on your C: drive is recommended (e.g., C:/users/jsmith/MME).

PART 1: GET STARTED

Goals:

- Open MME and find the main tabs and buttons
- Open an example metadata record

STEP 1 OF 2: OPEN MME AND FIND THE MAIN TABS AND BUTTONS

To run the program, double-click on the **MetadataEditor.exe** file, found in the “Minnesota Metadata Editor” folder.

After opening MME, you should see a window that has three tabs across the top labeled “**Basic Data Set Information**”, “**Quality, Coordinate System, and Attribute Information**”, and “**Distribution & Metadata Information**”. These tabs are three categories of metadata information and are organized to help you create a metadata record.

Notice the **three buttons** on the bottom of the window:

- **Save**: saves your changes to an .xml file and keeps the editor window open
- **Save & Close**: saves your changes to an .xml file and closes the editor window
- **Cancel**: does NOT save changes and closes the editor window

STEP 2 OF 2: OPEN AN EXAMPLE METADATA RECORD

In order to better explain the features and functionality of MME, we will be using a previously created metadata record about electric utility service area boundaries for the State of Minnesota which is included with the tutorial.

Click on **File** and then **Open**. Navigate to the folder in which you saved the tutorial. Select the file called “**eusa.xml**”. Now click the **Open** button in the bottom right corner of the window. The metadata record will be opened and the fields will be populated with the information.

PART 2: EDIT A RECORD

Goals:

- Become familiar with the different field types; make simple edits
- Cut-and-paste from an existing document
- Edit contact information in the Access database
- Add detailed entity and attribute information

STEP 1 OF 4: BECOME FAMILIAR WITH THE DIFFERENT FIELD TYPES; MAKE SIMPLE EDITS

There are five different field types in the MME in which metadata will be entered:

- **Free text**
- **Date**
- **Closed Picklist:** provides a menu of fixed choices; does not allow you to add your own text
- **Open Picklist:** provides a menu of choices and also allows you to add your own text
- **Website URLs**

Let's take a look at some specific fields to get a better understanding of what they look like and what they are used for.

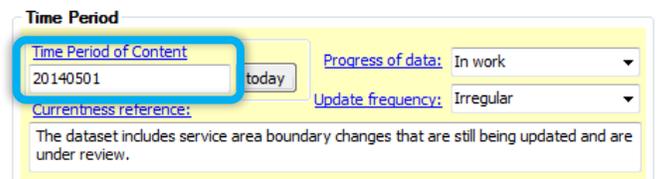
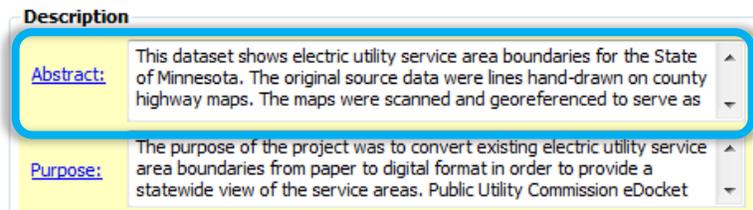
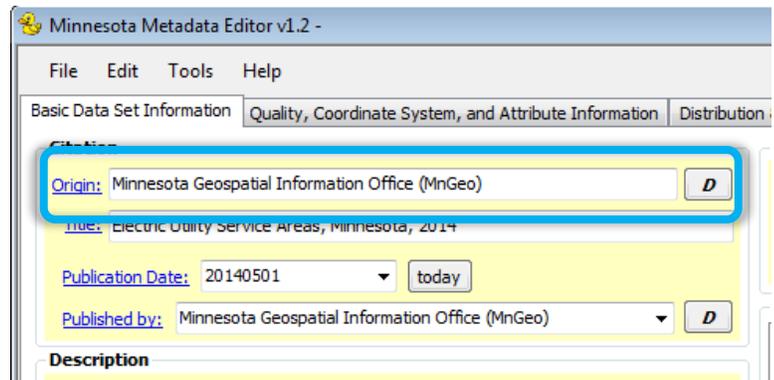
Free Text: Look at the first field in the record in the upper left corner of the first tab, called **Origin** (the name of the originator of the data set). Click anywhere in the text; you can use the left and right arrow keys and the Home and End keys to move around.

You can also double-click in almost all of the free text boxes to open a new larger window – this helps you see what you're typing. Double-click in the **Abstract** field. To practice editing, add some text to let people know that a printed map has been made from this data set. At the end of the text that's already in the abstract, type in:

In addition to the digital data, printed maps are also available; see Ordering Instructions.

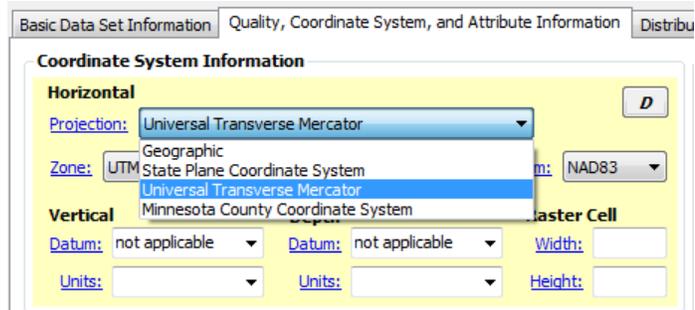
Now click the **Save & Close** button at the bottom of this text editing window.

Date Field: Now click in the **Time Period of Content** field towards the bottom left corner of the same tab. The date is formatted as "YYYYMMDD" (for example, "20140501" is May 1, 2014). It is important to format the dates this way in order for them to appear correctly in the HTML file¹. If you only know the year, or just the year and the month, it's OK to just have YYYY or YYYYMM. The "today" button is a useful shortcut to add today's date when that's appropriate.

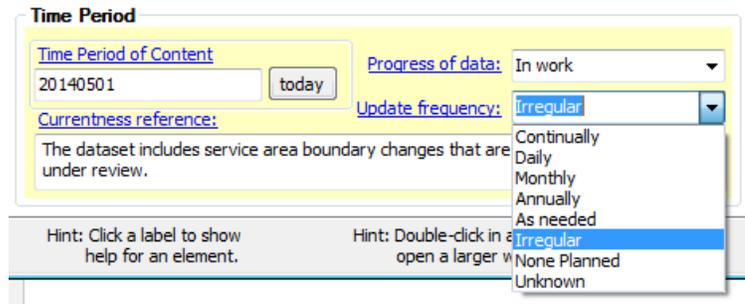


¹ The three date fields (Publication Date, Time Period of Content, and Metadata Date) are intended for a single date to make it easier to search for data that is older than or more recent than a particular date, so it is best practice to follow the YYYYMMDD format (MME does not, however, enforce this). Put any other free text information about dates into the "Currentness reference" field.

Closed Picklist: Click on the second tab called **Quality, Coordinate System, and Attribute Information**. In the upper left corner, there will be an area where the coordinate system information can be defined. Go to the **Projection** field and click the drop-down. Note that there are only 4 choices to fill in this field. You cannot add any other text. To select an option, click on it.



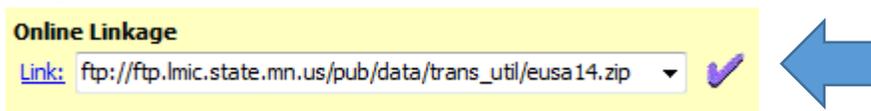
Open Picklist: Go back to the first tab, **Basic Data Set Information**. Now look back down at the **Update Frequency** field. Click on the downward arrow to see the options given. Delete “Irregular” and type in some free text of your choice, for example:



When updates are received from the Public Utilities Commission.

Website URLs: Three fields are for URL web addresses, the **Link to example**, **Online Linkage**, and **Standard Link** fields. These links should start with **http://**, **https://**, or **ftp://** and will be changed to hotlinks in the HTML version of the metadata.

In the last two fields, located in the **Distribution & Metadata Information** tab, you can check to see if the link works by clicking on the purple “check mark” button next to the field; this will make MME attempt to open the link in a web browser.



STEP 2 OF 4: CUT-AND-PASTE FROM AN EXISTING DOCUMENT

You can copy information from external sources and paste it into your metadata record. For example, MnGeo has already established a standard distribution liability statement, which is published on a website. There is standard language that provides a link to that liability statement, and there’s no need to retype it every time you create a metadata record. Let’s delete the full text of the disclaimer from the metadata record and replace it with the link to the online version.

Copy the following sentence (highlight the sentence with your mouse, then right-click and choose **Copy** from the menu or use the Ctrl+C keyboard shortcut).

MnGeo's data disclaimer is online: <http://www.mngeo.state.mn.us/choose/disclaimer.html>

Return to the MME window. Click on the **Distribution & Metadata Information** tab. Find the **Distribution Liability** field, located on the middle, left side of the window. Delete the disclaimer text by highlighting all the current text in the field and hitting the Backspace key. Then paste in the single sentence you'd copied by right-clicking your mouse and choosing **Paste** (or use the Ctrl+V keyboard shortcut).

Be sure to review your results after cutting and pasting from another document or webpage since text formatting (e.g., bold or italic) is removed, and special characters (such as ** ** (non-breaking space), smart quotation marks, or symbols such as ©) may not appear correctly.

The screenshot shows the MME window with three tabs: 'Basic Data Set Information', 'Quality, Coordinate System, and Attribute Information', and 'Distribution & Metadata Information'. The 'Distribution & Metadata Information' tab is active and contains two main sections: 'Distribution Information' and 'Metadata Information'. The 'Distribution Information' section includes fields for 'Distribution Contact' (Minnesota Geospatial Information Office | Norman Anderson), 'Distributor's Data Set Identifier' (eusa14 - Electric Utility Service Areas 2014), and 'Online Linkage' (ftp://ftp.imic.state.mn.us/pub/data/trans_util/eusa14.zip). The 'Distribution Liability' field is highlighted with a blue border and contains the disclaimer text. The 'Metadata Information' section includes fields for 'Metadata Date' (20140729), 'Metadata Contact' (Minnesota Geospatial Information Office), and 'Metadata Standard' (Minnesota Geospatial Information Office, Standard Name: Minnesota Geospatial Information Office, Standard Version: 1.2, Standard Link: http://www.mngeo.state.mn.us/).

STEP 3 OF 4: EDIT CONTACT INFORMATION IN THE ACCESS DATABASE

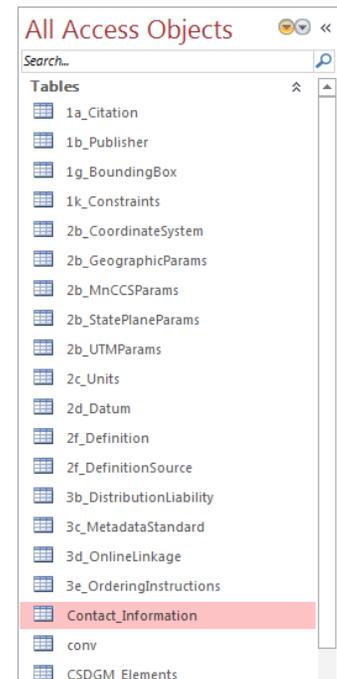
Data can also be added to the metadata record by pulling it from a Microsoft Access Database. This is mostly used for filling out the three different contact fields:

- **Contact** (Basic Data Set Information Tab): This is the contact person for questions about the *dataset content*.
- **Distribution Contact** (Distribution & Metadata Information Tab): This is the contact person for questions about *distribution procedures or problems*.
- **Metadata Contact** (Distribution & Metadata Information Tab): This is the contact person for questions about the *metadata content*.

If data has already been added to the **Contact_Information** table of the default database, there will be a list of contacts to choose from. If there are no records, you can add your own, assuming you have MS Access installed on your computer. If you don't, you can skip this section.

Let's add a new contact:

1. Click on **Tools** in the MME toolbar and select **Open Database**
2. Once the Access database opens, double-click on the **Contact_Information** table in the list to the left to open the table.

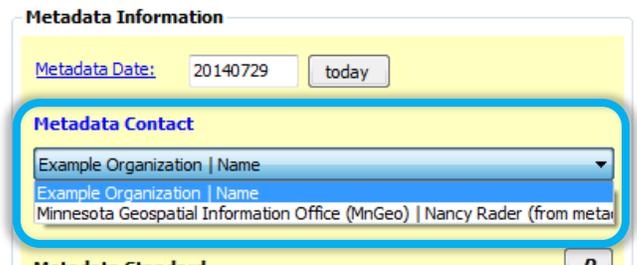


- Enter some example contact information into the fields. Pay attention to the name of the columns to ensure the correct information is being supplied in the correct area:

cntorg: contact organization
 cntper: contact person
 cntpos: contact position
 addrtype: address type²
 address1: contact address
 city: contact city
 state: contact state
 postal: contact ZIP code or postal code
 cntvoice: contact telephone number
 cntemail: contact email address

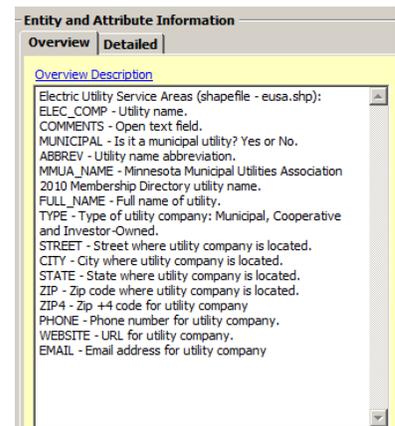
- Close Access and return to MME (the data is automatically saved), click on **Tools** and select **Refresh From Database**. This step must be performed separately for the “Basic...” and “Distribution...” tabs, which have contact information fields. The refresh adds the new contact information you entered to the dropdown menu choices.

- In the **Distribution & Metadata Information** tab, under **Metadata Contact**, click on the menu and select the contact record you just created.



STEP 4 OF 4: ADD DETAILED ENTITY AND ATTRIBUTE INFORMATION

Return to the **Quality, Coordinate System, and Attribute Information** tab. There is a section under **Entity and Attribute Information** where specific information about specific fields in a data table and their attributes can be defined. The example metadata for electric utility service area boundaries has each attribute and a description listed in the **Overview Description** field in the **Overview** tab. This is one approach to providing detail on the attributes of the dataset.

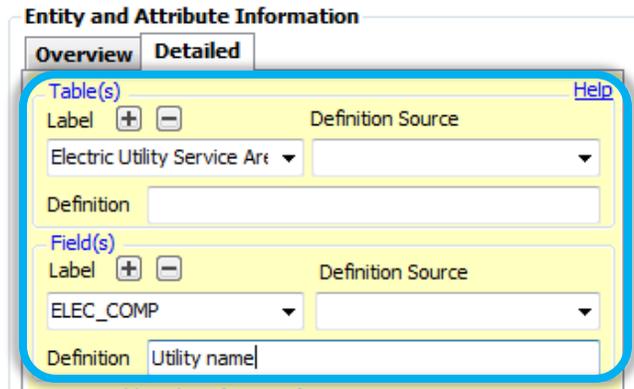


² Although this field is not included in the Minnesota Geographic Metadata Guidelines, it is required by the federal data.gov website. If you leave this field blank, MME will automatically fill this in as ‘mailing and physical’ when the metadata xml is saved.

Another approach is to use the **Detailed** tab. Either tab can be used, depending on the needs of the data. Let's practice entering attribute information in the **Detailed** tab.

Click on the **Detailed** tab. This tab allows the table and its fields to be defined and explained individually.

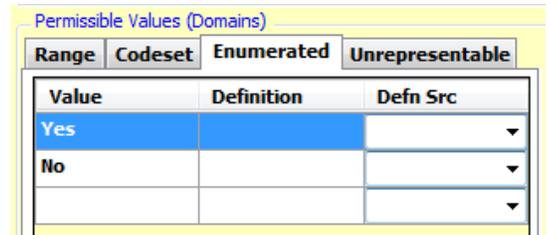
Below **Table(s)**, first click on the **(+)** button next to **Label**. In the text box below where it says "new entity", replace the "new entity" text with the name of the attribute table, which is "Electric Utility Service Areas" in this case. This step must be completed before any of the table fields can be defined.



Next, the **Field(s)** section is where each field in the table and its possible attribute values are given. First click the **(+)** button next to **Label**, and in the text box below, replace the "new_attribute" text with the name of the first attribute, which is "ELEC_COMP". Now right below this field, there is a **Definition** field. Enter the description "Utility name" here.

Now on your own, repeat this process for the next attribute, with a **Label** of "COMMENTS" and a **Definition** of "Open text field." Always remember to click the **(+)** button before entering each new attribute. The **(-)** button can be used to remove field and table labels.

Now let's practice with an attribute that has a limited set of values: the "MUNICIPAL" field. Click back to the **Overview** tab, and notice how it is simply described as: "MUNICIPAL - Is it a municipal utility? Yes or No." The "Yes or No" describes the two valid values for this field. Now click back to the **Detailed** tab, and enter the attribute name "MUNICIPAL" and description as usual. Then, below in the **Permissible Values (Domains)** section, you can define the accepted specific values for the current attribute:



1. Click on the **Enumerated** tab.
2. In the first cell of the first row, type in "Yes" for the **Value**.
3. In the row below, type in "No".

If you want more practice, enter more of the attributes.

When you are finished, click the **Save** button then go up to the **Tools** menu and select **View Metadata as HTML** and save the HTML file. Once the web browser automatically opens the file, scroll down to **Section 5 Attributes**. Using the attribute information entered in the Detailed tab, a table is automatically generated allowing a more clear display of the attributes.

Table Detail:

Electric Utility Service Areas			
Field Name	Valid Values	Definition	Definition Source
ELEC_COMP	-	Utility name	
COMMENTS	-	Open text field	
MUNICIPAL	enumerated	Is it a municipal utility?	
	Yes		
	No		

Notice how the “Table Detail” section shows up in addition to the “Overview”. Typically you would not have both of these sections provide the detail about the attributes, but this demonstration shows you how the two methods produce different displays of the same information.

PART 3: DISPLAY METADATA

Goals:

- View and save the metadata in XML and HTML
- Understand how the Online Linkage text changes
- View and use metadata on the Minnesota Geospatial Commons

Now that we have edited this record, we can view the resulting metadata files. Before doing so, save the current version of the metadata record by clicking on the **Save** button at the bottom of the window. Next choose **File** and **Save As** to save the file to a new xml file.

STEP 1 OF 4: VIEW METADATA IN XML FORMAT

Click on **Tools** and select **View Metadata as XML**. The XML file will automatically open in a web browser.

This file contains all of the data that has been entered into the fields of the editor along with XML tags that

specify what kind of data has been entered. For example, when the XML file is opened, you will be able to find an `<origin>...</origin>` tag at the top of the document. In-between these tags, the Origin information that is displayed in the **Origin** field in MME will be visible. XML tags are established according to the MGMG metadata standard and assure that the XML record is searchable by metadata search tools.

```

- <metadata>
  - <idinfo>
    - <citation>
      - <citeinfo>
        <origin>Minnesota Geospatial Information Office (MnGeo)</origin>
        <pubdate>20140501</pubdate>
        <title>Electric Utility Service Areas, Minnesota, 2014</title>
        <mgmg1cid/>
      - <pubinfo>
        <publish>Minnesota Geospatial Information Office (MnGeo)</publish>
        </pubinfo>
        <onlink>ftp://ftp.lmic.state.mn.us/pub/data/trans_util/eusa14.zip</onlink>
      </citeinfo>
    </citation>
  - <descript>

```

STEP 2 OF 4: VIEW AND SAVE METADATA IN HTML FORMAT

While the XML file gives you the necessary information and is somewhat readable, having an HTML version that is formatted for user legibility is the most ideal.

Section 1	Overview
Originator	Minnesota Geospatial Information Office (MnGeo)
Title	Electric Utility Service Areas, Minnesota, 2014
Abstract	This dataset shows electric utility service area boundaries for the State of Minnesota. The original source data were lines ha maps. The maps were scanned and georeferenced to serve as a background for on-screen digitizing. The utilities were then and correct the service areas. Changes filed with the Public Utilities Commission (eDockets) were also reviewed to update ti
Purpose	The purpose of the project was to convert existing electric utility service area boundaries from paper to digital format in ord the service areas. Public Utility Commission eDocket filings can then be used to maintain this dataset. Other goals and objectives: 1. Create a consistent, state-wide GIS dataset of EUSA, as vetted by the utilities 2. Achieve a positional accuracy of 1:24,000 (+/- 60 feet) 3. Identify (and eventually resolve) service area boundary issues 4. Create a cost-effective process for tracking and updates 5. Make data easily accessible
Time Period of Content Date	05/01/2014

To generate an HTML page containing the metadata, click on **Tools** and select **View Metadata as HTML**. Give the file a name, choose a location, and click **Save**. The HTML page will automatically open in a browser, and will reflect the changes you made in previous steps. Keep this HTML page open.

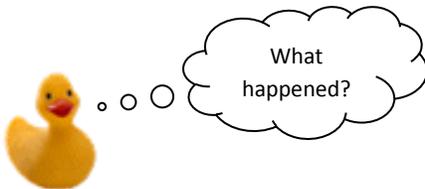
STEP 3 OF 4: UNDERSTAND HOW THE ONLINE LINKAGE TEXT CHANGES

In the HTML page, scroll down to the **Section 6 Distribution** heading. At the bottom of this section, notice how the text entered into the Online Linkage field in the **Distribution & Metadata Information** tab in MME:

Online Linkage
Link:

is different from the text that appears in the HTML:

Online Linkage [I AGREE](#) to the notice in "Distribution Liability" above. Clicking to agree will either begin the download process, link to a service, or provide more instructions. See "Ordering Instructions" above for details.



MME puts in this standard text and uses the url text you type in to create the "I AGREE" hotlink. Since many people download data first, without reading the metadata, this changed wording ensures that people are made aware of the Ordering Instructions and Distribution Liability fields.

Click on the "**I AGREE**" link to confirm that the link goes to the FTP address that you saw in the editing interface. Now close the internet browser window.

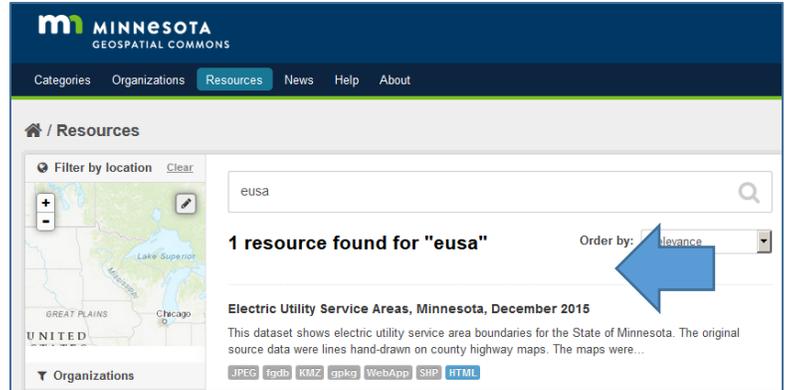
STEP 4 OF 4: VIEW AND USE METADATA ON THE MINNESOTA GEOSPATIAL COMMONS

If you choose to publish your data on the Minnesota Geospatial Commons, your metadata will help users with searching, viewing, and understanding your data.

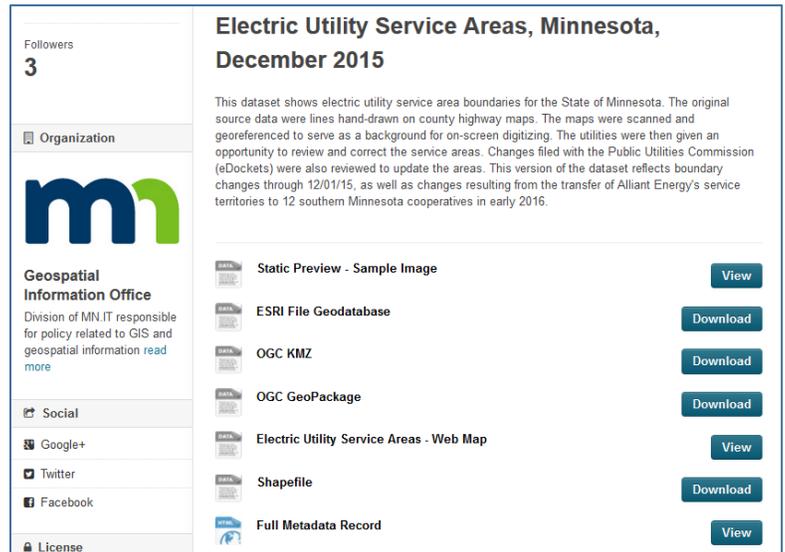
Search Results: When a user searches for data on the Commons, they will be presented with the full title of the data, the first few lines of the abstract, and a list of formats in which the data is available.

Try it out and see for yourself. Follow this link to the Minnesota Geospatial Commons: <https://gisdata.mn.gov/>. In the center of the screen, there will be a search box. Type in "eusa" and hit the enter key. One of the top results should be the record you've been working with, as shown below.

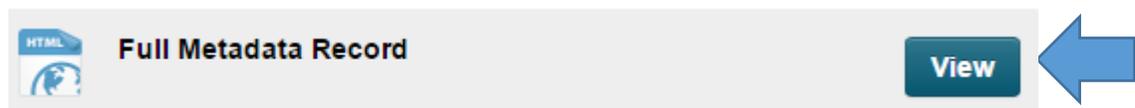
Summary View: Click on the link for the “**Electric Utility Service Areas, Minnesota, December 2015**”.



Once a user clicks on the title in the search results list, they will be brought to the data summary page. They will be given a wide range of information, including (but not limited to) the organization responsible for the data, the full abstract, download links for the data in different formats, the metadata record link, and a table of some quick facts about the data. Virtually all of this information is derived from the metadata you create.



Full Metadata: Lastly, the metadata for the data can be viewed directly from the summary page. At the bottom of the download list there will be an option labeled “Full Metadata Record”. Click on the **View** button on that page to open the metadata record. That link will bring you to the HTML version of the metadata.



Try some other search terms to see how other records appear.

PART 4: STARTER TEMPLATE

Goal:

- In order to streamline the metadata creation process, create your own metadata starter template.



Some information in a metadata record will likely be the same for every, or almost every, metadata record you create. For example, origin and contact information typically won't change. Why type it over and over? Instead, create a "starter template" with the default information. When it's time to create a new metadata record, save a copy of this file with a new name, then add the information that is specific to the particular data set, for example, the title and abstract.

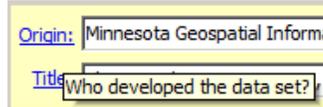
To create a starter template:

1. In MME, go to **File** and then **New**.
2. Fill out the fields that will likely be the same from record to record (for example, origin, contact information, bounding box coordinates, projection, metadata information, etc.), and leave the fields that are likely to change blank (for example, title and metadata date).
 - a. *Hint: To find latitude/longitude bounding box coordinates for each Minnesota county and for the full state, follow this link: <http://www.mngeo.state.mn.us/chouse/coordinates.html> Custom bounding boxes can also be defined and copied from <http://bboxfinder.com>.*
3. Save the template with an identifiable name (such as **metadata_template.xml**) in an accessible location.

Now, whenever you start documenting a new dataset, use Windows Explorer to make a copy of your metadata_template.xml file, rename it to a filename appropriate for your dataset, and edit that new file using MME.

GET HELP

To see a brief description of what a field or a text box is asking for, place the cursor over the field name to bring up a tool tip.

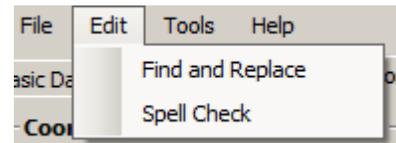


For more information, click on the blue, underlined field name. This will open the help documentation and take you directly to the webpage for the field you clicked on. The help documentation can also be accessed by clicking on the **Help** menu and selecting **Contents**.

Also see the MME Frequently Asked Questions webpage:

http://www.mngeo.state.mn.us/chouse/mme/faq/mme_faq.html

MME also provides **Find and Replace** and **Spell Check** tools, found under the **Edit** menu.



GET MORE HELP

To get more information on geospatial metadata, see these webpages:

MnGeo

http://www.mngeo.state.mn.us/chouse/meta_help.html

Metadata Resources



Don't Duck Metadata!

Why create metadata?

- [The Business Case for Metadata](#)

Metadata guidelines

- [The Minnesota Geographic Metadata Guide](#)

FGDC

<http://www.fgdc.gov/metadata/>



FEDERAL GEOGRAPHIC DATA COMMITTEE

GEOSPATIAL METADATA

Metadata is information about data. It describes the location, where, how, and why of a data resource, such as imagery, and other location-based data.