

NCDOT Geospatial Data Metadata Standard

Creating and Editing Content for ArcGIS Pro



GIS Unit
North Carolina Department of
Information Technology-Transportation



Document Version History

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1.0	10/18/2023	NCDIT-T GIS Unit	

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Purpose

This document will outline the North Carolina Department of Transportation Standard for Geospatial Data Metadata. It will guide the user through the array of elements comprising a geospatial data metadata record in ArcGIS Pro, providing information for dataset content compliance, enabling successful adherence to NCDOT's metadata standards.

Geospatial Metadata: An Introduction

Geospatial metadata is a descriptive record providing information about a geospatial data item such as a feature class or a shape file. Geospatial data is not complete without a complete metadata record; metadata is saved with the item it describes. Once created, metadata is copied, moved, and deleted with the item when it's managed by ArcGIS Pro. A metadata record plays an important role in accompanying and documenting your item's content. It describes the "who, what, where, when, why, and how" of the associated data. When metadata is created for a geospatial data product, it serves as a channel of information for data consumers about NCDOT's data products and their uses.

Metadata Standards

Metadata has grown to be a valuable component of information attached to geospatial data. The proliferation of local governments providing geospatial data makes it imperative that agencies provide compliant metadata in a global environment. The North Carolina Geographic Information Coordinating Council (GICC) formally adopted the [State and Local Government Metadata Profile](#), based on the ISO 191** suite of geospatial metadata standards, as the current recommended standard for compliant geospatial metadata for North Carolina state agencies and local governments. The International Organization for Standardization (ISO) is the world's foremost developer of voluntary international standards. By adopting the ISO series of standards, state agencies and local governments ensure their metadata will be published and searched in a consistent manner by agencies, organizations, and individuals throughout the world.

In addition to these standards, NCDIT-T GIS Unit has developed an in-house department specific standard to which geospatial data metadata should comply. The NCDOT Geospatial Data Metadata Standard is compliant with the [State and Local Government Metadata Profile](#) and its base ISO 191** standards but seeks to standardize further for NCDOT geospatial data needs. The standard presented in this document works in conjunction with the [Geospatial Service Content Metadata Guide](#) to define compliance requirements for metadata for the broad suite of publishing formats for geospatial data and service based content for NCDOT.

This user guide details **required elements** for adhering to the NCDOT GIS standard and aims to instruct users for geospatial data metadata creation and maintenance. This guide presents the NCDOT Geospatial Data Metadata Standard through guidance of how to implement using ArcGIS Pro. The required elements are detailed and where relevant, samples or recommended content are provided. This standard works in conjunction with NCDOT's GIS Standards and Practices.

This guide covers required elements for compliance with the standard and content should be filled in as directed below. However, if additional information exists that is pertinent to the metadata, data owners are welcome to include that content where they deem appropriate.

Required Metadata Elements

The following is a reference table of required metadata elements organized by Menu and Submenu, as is arranged in ArcGIS Pro's Metadata Editor Contents Pane. Hover the mouse over any Menu, Submenu, Element, or Minor Element and *Click* to go directly to it in this document.



Menu	Submenu	Element	Minor Element
OVERVIEW	<i>Item Description</i>	Title	
		Thumbnail	
		Tags	
		Summary (Purpose)	
		Description (Abstract)	
		Credits	
		Use Limitation	
		Appropriate Scale Range	
		Bounding Box	
	<i>Topics & Keywords</i>	Topic Categories	
		Content Type	
		Theme Keywords	
			Thesaurus Citation: Title
			Thesaurus Citation: Dates
		Place Keywords	
			Thesaurus Citation: Title
			Thesaurus Citation: Dates
	<i>Citation</i>	Titles	
		Presentation Form	
		Dates	
	<i>Citation Contacts</i>	Contact	
			Contact Information
METADATA	<i>Contacts</i>	Contact	
	<i>Maintenance</i>	Update Frequency	
		Update Scope	
		Contact	
	<i>Constraints</i>	General Constraints	
		Security Constraints	
			Classification
			Classification System

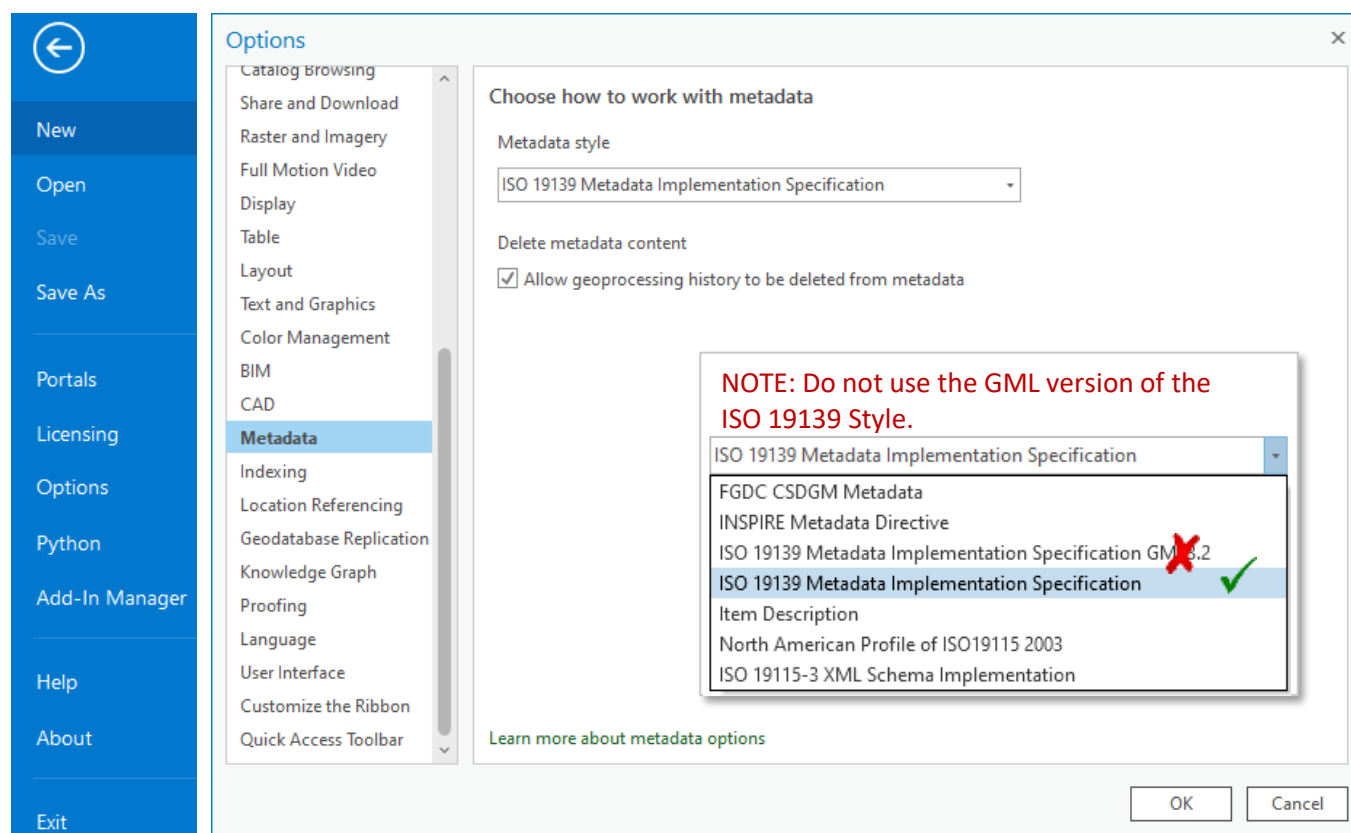
Menu	Submenu	Element	Minor Element
RESOURCE	<i>Details</i>	Status	
		Credit	
		Spatial Relationship Type	
	<i>Extents</i>	Bounding Box	
	<i>Points of Contact</i>	Contact	
	<i>Maintenance</i>	Update Frequency	
		Update Scope	
		Contact	
		Maintenance Note	
	<i>Constraints</i>	General Constraints	
		Legal Constraints	
			Access Constraints
			Use Constraints
		Security Constraints	
			Classification
			Classification System
	<i>Quality</i>	Scope Level	
		Report	Types:
			Completeness Commission
			Conceptual Consistency
			Quantitative Attribute Accuracy
	<i>Lineage</i>	Statement	
		Process Step	
	<i>Distribution</i>	Distribution Format	
			Feature Name
			Format Version
		Distributor	
	<i>Fields</i>	Details	
			Label
			Entity Type
			Attribute
			Attribute Domain


ArcGIS Pro: Setting the Correct Metadata Style

A metadata style identifies the metadata standard you are following, the appearance of metadata when you view it, the pages included in the ArcGIS Pro Metadata Editor, what information must be provided, the XML schema used to validate metadata, and how to export metadata to an XML file that is formatted correctly for the XML schema. To be compliant with the North Carolina State and Local Government Metadata Profile for Geospatial Data and Services, and thus, the NCDOT Geospatial Data Metadata Standard, the ISO 19139 Metadata Implementation Specification metadata style should be used.

Select the Metadata Style in ArcGIS Pro

- Go to the Settings page in either of the following ways:
 - On the ArcGIS Pro start page, click **Settings** in the lower-left corner.  **Settings**
 - In an open ArcGIS Pro project (.aprx) click the **Project** tab on the ribbon. 
- Select **Options** in the list along the left side. Click the **Metadata tab** in the **Options** dialog box and then click the **Metadata style** drop-down arrow to select the ISO 19139 Metadata Implementation Specification style.



- Check “Allow geoprocessing history to be deleted from metadata” and click **OK** to close the **Options** dialog. Then click the back button to return to or open your project. 

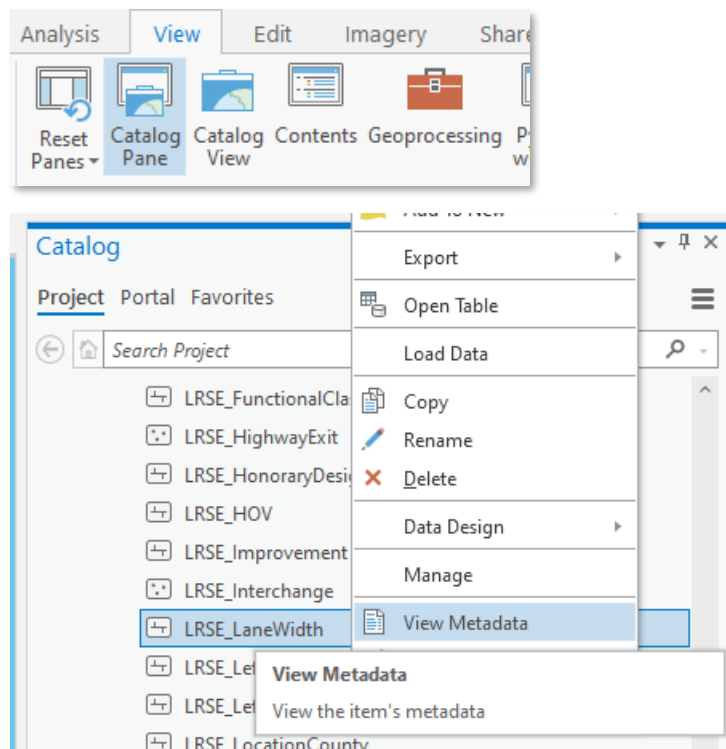
Delete metadata content

☒ Allow geoprocessing history to be deleted from metadata

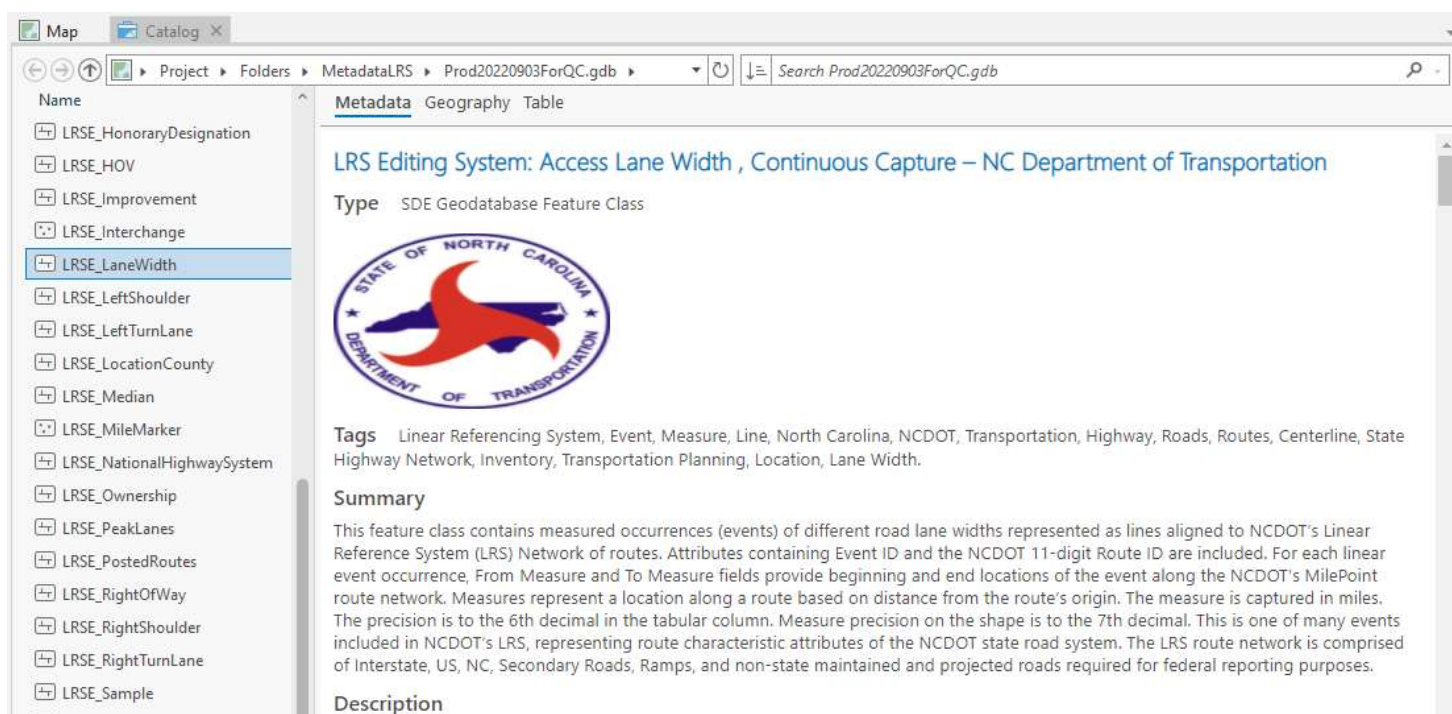
ArcGIS Pro: Viewing Metadata

The most direct way to view an item's metadata is to navigate to your feature class in the **Catalog Pane**, right-click it and select **View Metadata**.

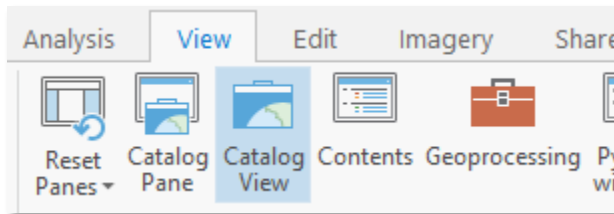
If the **Catalog Pane** is not open in your ArcGIS Pro project, it can be shown by clicking the **Catalog Pane** button in the **View** tab.



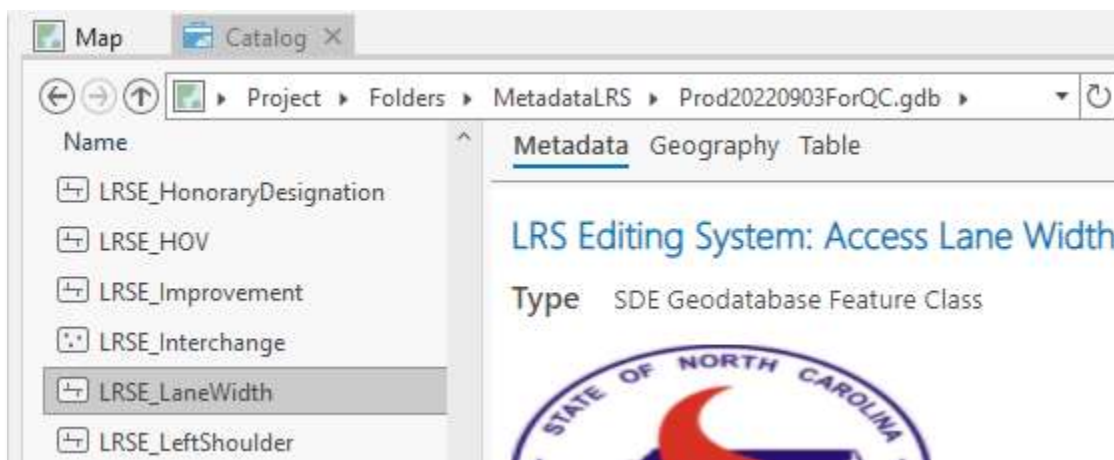
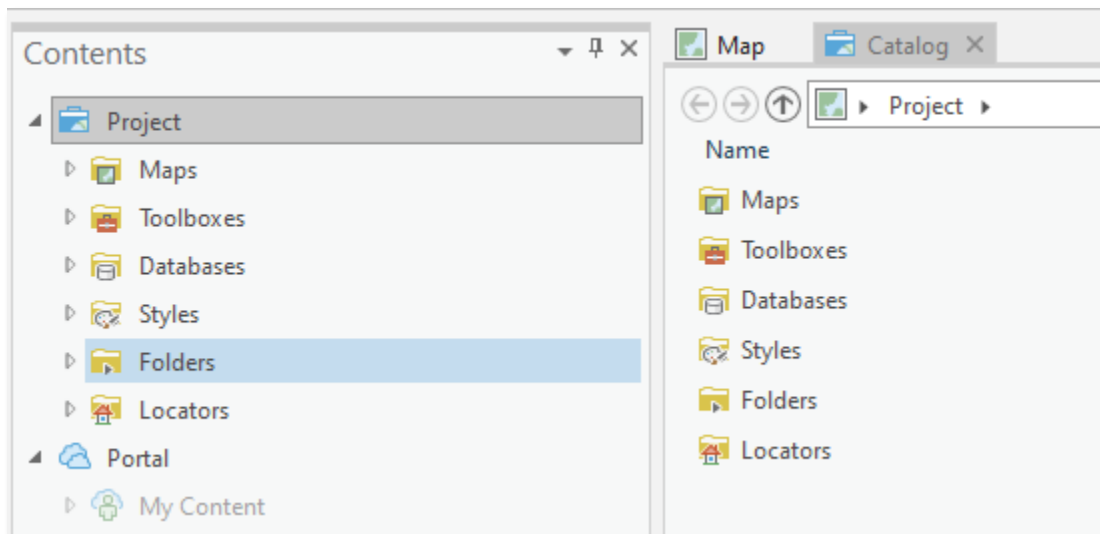
The **Catalog View** opens with the item's metadata in the **Details Panel** as shown in the example below.



Alternatively, you can view an item's metadata by first opening the **Catalog View**.



Then navigate to your feature class and display the metadata as shown here.



NOTE: If the ISO 19139 metadata standard stylesheet was used to edit the item's metadata, it will state this in the *Metadata Details* section near the end of the metadata content page as shown in the example below.

Metadata Details

Metadata language ⇌ English (UNITED STATES)

Scope of the data described by the metadata ⇌ dataset

Scope name ⇌ dataset

Last update ⇌ 2022-12-08

ArcGIS metadata properties

Metadata format ArcGIS 1.0

Standard or profile used to edit metadata **ISO19139**

Created in ArcGIS for the item 2022-09-03 17:01:23

Last modified in ArcGIS for the item 2022-12-08 12:36:29

Automatic updates

Have been performed Yes

Last update 2022-09-26 13:45:02

An item with an empty metadata record will have the beginning of its metadata page typically looking like this example. It will have just the feature class name without any descriptive information. Only intrinsic feature class properties are provided by default such as the data's current extent, geometry type, the number of features it contains, its spatial reference, and the fields in the attribute table.

Metadata Geography Table

LinearEventDynamic

Type File Geodatabase Feature Class

Tags There are no tags for this item.

Summary

There is no summary for this item.

Description

There is no description for this item.

Credits

There are no credits for this item.

Use limitations

There are no access and use limitations for this item.

Extent

There is no extent for this item.

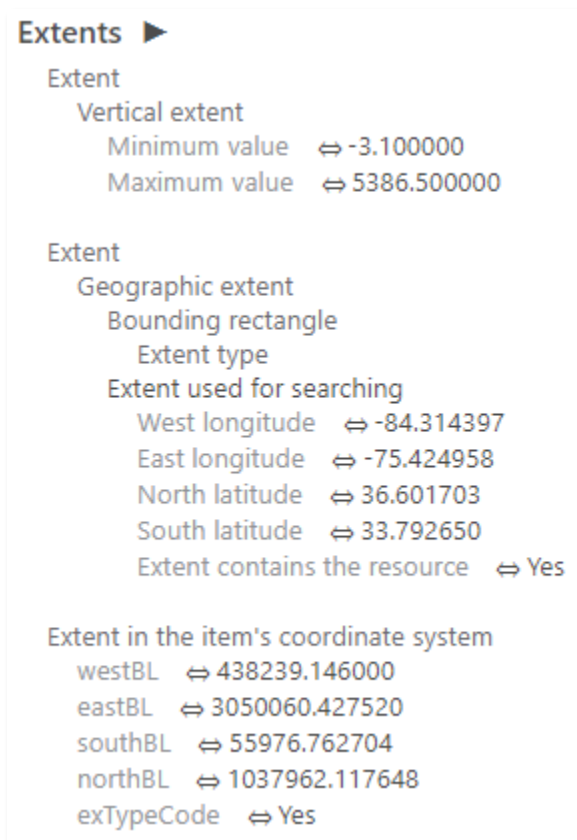
Creating Metadata Content to Meet NCDOT Standards in ArcGIS Pro

This section provides guidance in writing metadata in accordance with the NCDOT Geospatial Data Metadata Standard. These are instructions for creating content for each required element in the pages of the ArcGIS Pro's Metadata Editor with the ISO 19139 metadata style configuration.

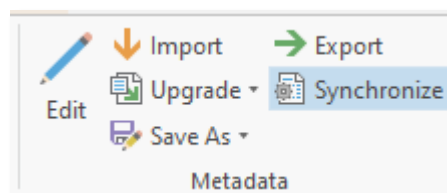
Prior to Initial Metadata Edits: Synchronize Metadata

Intrinsic properties of an item are provided automatically as minimal metadata when seen in **Catalog View**. As you manage the item and its content, its properties can change such as attributes, extent, and number of features. This metadata content is not updated automatically for performance reasons. It is good practice to first **Synchronize** the item's metadata to include the current properties before diving in to create a full metadata record.

For example, when a feature class's metadata is **synchronized**, the current extent of the data, the number of features it contains, its spatial reference, and the fields in its attribute table are all recorded. The character ⇌ appears next to metadata elements that have been updated by the synchronization process to indicate the element's content represents a property of the item.

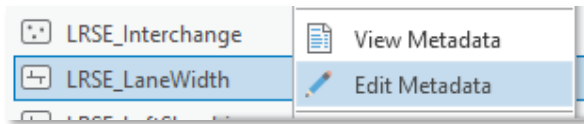


1. To **Synchronize** your metadata, view the item's metadata in the **Catalog View** as described above.
2. On the **Catalog tab** on the ribbon, in the **Metadata group**, click **Synchronize**.

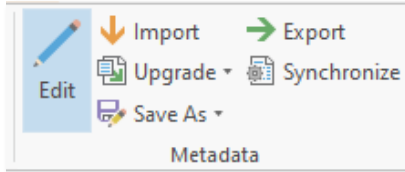


The Metadata Editor

Creating and editing metadata content can be done by first right clicking an item in your **Catalog Pane** and selecting **Edit Metadata**.



Alternatively, you can navigate to the item and view metadata in **Catalog View**. On the **Catalog tab** on the ribbon, in the **Metadata group**, click Edit.



The metadata configuration for the ISO 19139 Style is shown in the list of menus in the Metadata Editor's Contents Pane below.

NOTE: The Metadata Editor has built in validations according to the chosen Metadata Style. Metadata Editing Notifications are set as a reminder to update certain metadata elements. These reminders do not fully comply with this metadata criteria. It is recommended to fulfill the compliance requirements according to the NCDOT Data Metadata Standard as outlined in this guide rather than strictly following ArcGIS Pro's built in validation. Notifications will appear at the top of the menu item you are editing. Here is an example: **Fields**

at least one type of attribute domain is required
 at least one type of attribute domain is required

Contents

LinearEventDynamic

- Overview
 - Item Description
 - Topics & Keywords
 - Citation
 - Citation Contacts
 - Contacts Manager
 - Locales
- Metadata
 - Details
 - Contacts
 - Maintenance
 - Constraints
- Resource
 - Details
 - Extents
 - Points of Contact
 - Maintenance
 - Constraints
 - Spatial Reference
 - Spatial Data Representation
 - Content
 - Quality
 - Lineage
 - Distribution
 - Fields
 - References
 - Geoprocessing History

Map LinearEventDynamic

abstract is required

Item Description

Title LinearEventDynamic

Thumbnail

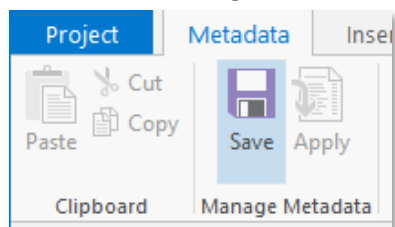
Tags

Summary (Purpose)

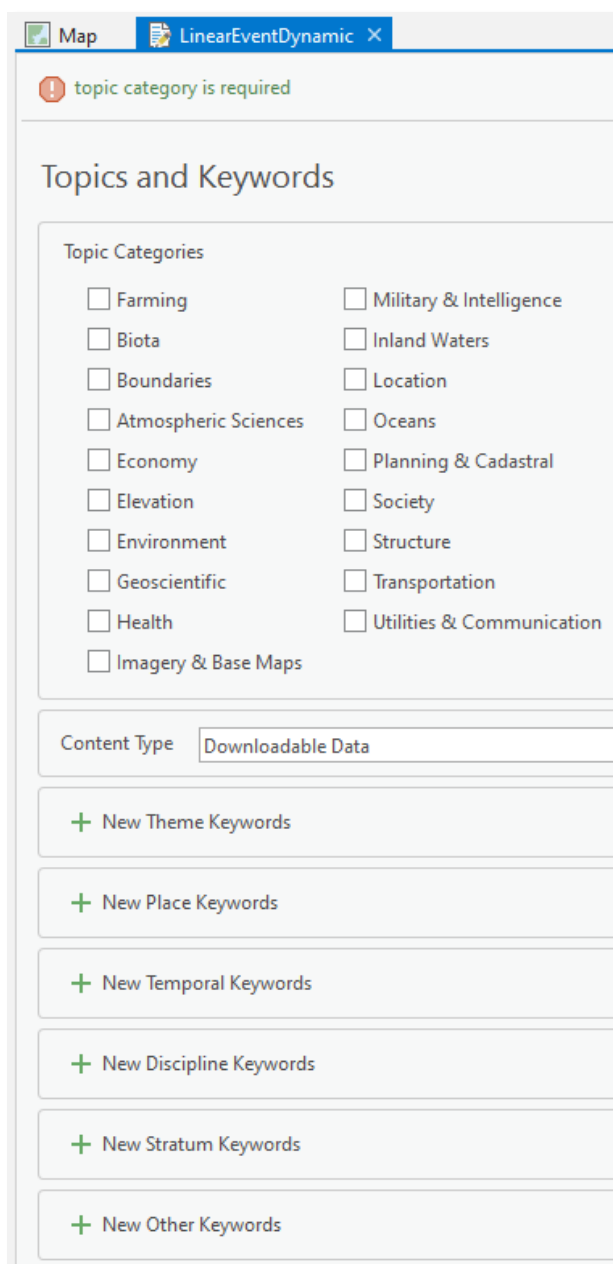
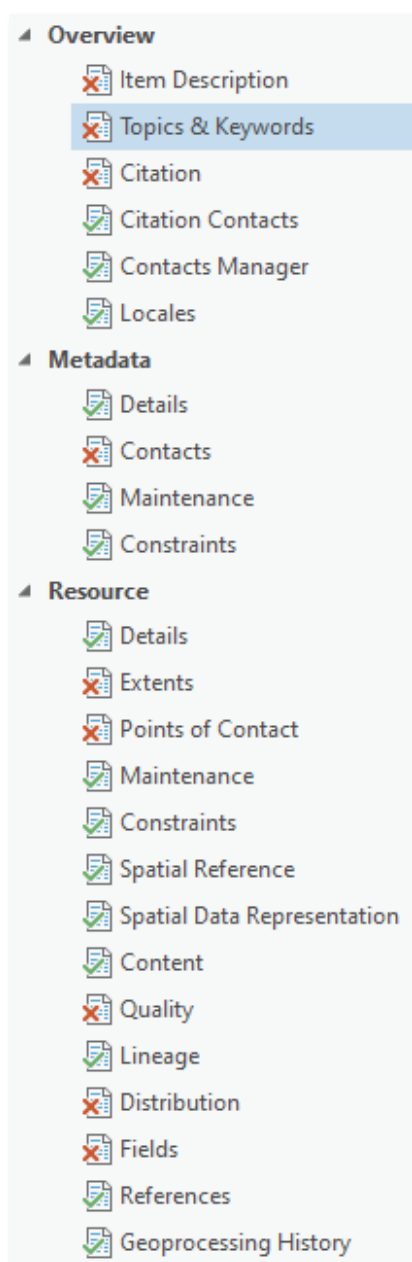
Description (Abstract)

B I U A[^] A^v List Bulleted Numbered Link Unlink Bold Italic Undo Redo

NOTE: While editing metadata content, save often with the **Save** button in the ribbon's **Metadata tab**.



There are three main menus (**Overview**, **Metadata**, and **Resource**) and a series of submenus, each containing metadata elements where metadata content compliant to the NCDOT standard will be entered. Metadata elements appear in the content pane to the right of each selected submenu.



OVERVIEW Menu

This menu contains elements with general data identification and description information. The question, “What is this data and its purpose?” should be answered here.

Item Description Submenu Elements

■ Title

A unique, descriptive name revealing the “what”, “where”, and “when” of your data.

Title format: [descriptive data name] + [data time frame] + “- NC Department of Transportation”.

Title	NC Gamelands, Quarter 2 2023 - NC Department of Transportation
Title	Carolina Thread Trail, Quarter 1 2021 - NC Department of Transportation
Title	NC Existing Railroad Lines, Continuous Capture – NC Department of Transportation
Title	NC Fiber Asset Management System: Junctions, Continuous Capture – NC Department of Transportation

NOTE: Use "NC" in the title only when data is entirely located within the state. Some data may cross into other states, such as the Carolina Thread Trail.

NOTE: Use "Continuous Capture" as the data time frame when data described exists in an editing environment that is regularly maintained or updated. This allows for differentiation between published product cuts and data living in editing environments.

■ Thumbnail

Either screen capture the NCDOT Seal image here or contact gishelp@ncdot.gov for a high resolution image file and use as the metadata thumbnail.

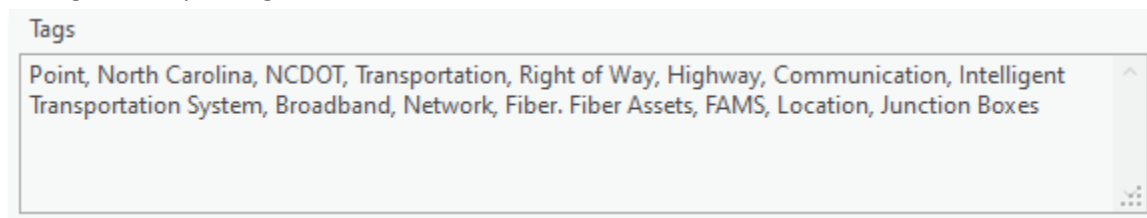


Click **Update. . .** and navigate to the dotsymbol.gif file.

■ Tags

A comma separated list of all words and terms useful to a search for this particular data. This should include broad, general tags such as “Point/Line/Polygon”, “NC”, “North Carolina”, “NCDOT”, “Transportation” as well as data specific tags that pinpoint the nature and character of your data.

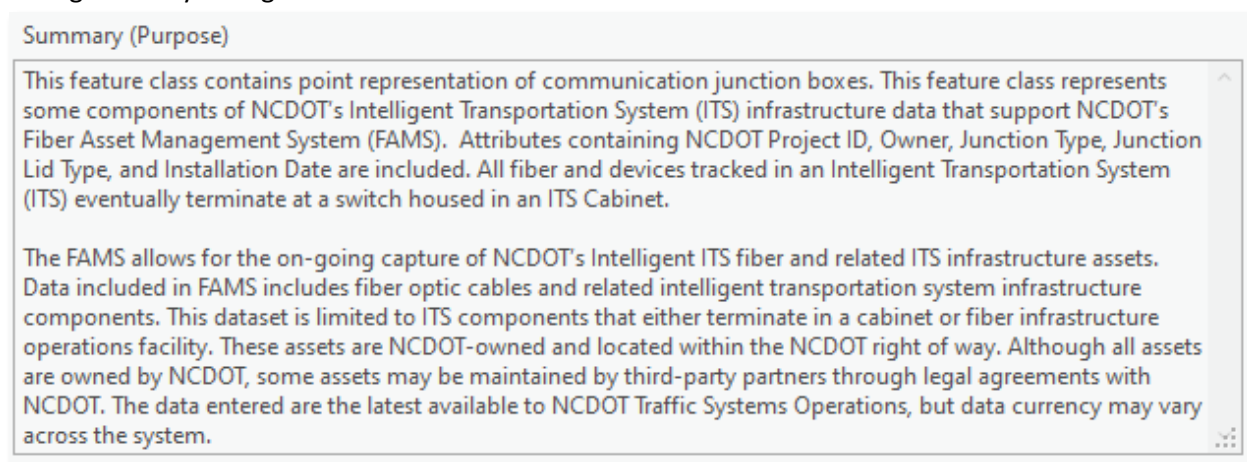
The example below lists tags for a point feature class representing Junctions in the NC Fiber Asset Management System geodatabase.



■ Summary (Purpose)

Explain what the data represents, why was it created, and what use(s) it serves. Provide details about the data’s specific purpose. This is a very important metadata element, and it is often the first words a user reads. It should answer the question: *What am I looking at?*

A Summary example from a point feature class representing Junctions in the NC Fiber Asset Management System geodatabase.



■ Description (Abstract)

Provide a description of the data content and features including data application (GIS, CAD, image, etc.), geographic coverage, special data characteristics, limitations or other information that will aid data consumers in determining if the data is relevant to their intended application. It is highly recommended to include the data's currency. This can be different from the data's creation or published dates. More specifically, from what time period does the data represent? It can be beneficial to also provide the data’s context and some background information. This is a critical metadata element as it communicates data essentials and thus should be written clearly and concisely. The [Description](#) is often read immediately following the [Summary](#) and should answer the question: *What information does this data provide?*

- Use Limitation

At a minimum, use the following disclaimer for NCDOT geospatial data. This verbiage was developed in partnership with departmental legal teams to help NCDOT customers understand usage for NCDOT produced geospatial data products.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Additional information, access, and use constraints relevant to the data may be necessary and should be added here.

Use Limitation

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

This data is produced as a derivative of a reporting product out of the NCDOT Linear Referencing System, and is intended for visualization and reference use only. This is representative data only and is not designed for participation in data analysis or modelling. Use of this data is not analogous to integration with or alignment to NCDOT's Linear Referencing System.

Use Limitation

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

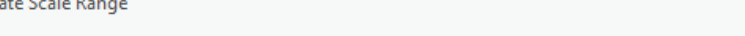
All fiber asset data is the sole property of NCDOT and any public purpose use is subject to approval and release by NCDOT. No data, whole or in part, shall be released, published, or shared without prior written approval by NCDOT. No information concerning the data shall be divulged to anyone outside the proper officials at NCDOT. All fiber asset data is strictly confidential to NCDOT and its approved contractors.

This data should be used for planning, maintenance, and decision-making support purposes only. It should be used only by those who fully understand the extents, limitations, and content of the data. The data should not be used in place of field survey or data collection efforts that are normally performed by licensed professionals and it should not replace any data collection efforts that are typically required as a part of detailed design and construction efforts.

- Appropriate Scale Range

With the minimum and maximum scale sliders, define a practical scale range for viewing the data. Most NCDOT data can be reasonably viewed zoomed out to the state level.

Appropriate Scale Range



State
1:5,000,000

Buildings
1:5,000

■ Bounding Box

The west, east, south, and north extent limits of the data *should* be auto populated by the ArcGIS Pro software (if not, see the [Synchronize](#) section above) in decimal degrees format.

Bounding Box

West

-84.321586

East

-75.461696

South

33.865941

North

36.587392

☒ Extent contains the resource

Topics & Keywords Submenu Elements

■ Topic Categories

Select “Transportation” and any other high-level subject from the Topic Categories list that would best describe the data.

Topic Categories

☐ Farming

☐ Military & Intelligence

☐ Biota

☐ Inland Waters

☐ Boundaries

☒ Location

☐ Atmospheric Sciences

☐ Oceans

☐ Economy

☐ Planning & Cadastral

☐ Elevation

☐ Society

☐ Environment

☐ Structure

☐ Geoscientific

☒ Transportation

☐ Health

☒ Utilities & Communication

☐ Imagery & Base Maps

■ Content Type

Indicate how the geospatial data is shared and accessible to other users. If it can be downloaded from a web site, then select [Downloadable Data](#) from the drop down list. If the data is used as a source for one or more [Go! NC](#) products, select [Live Data and Maps](#).

Content Type

Downloadable Data

Empty

Live Data and Maps

Downloadable Data

Offline Data

Static Map Images

Other Documents

Applications

Geographic Services

Clearinghouses

Map Files

Geographic Activities

■ Theme Keywords

Compile a list of words that best describe the nature and key characteristics of your data. Think of words a user may enter in a search for your data. Include both broad and specific terms. Begin the keyword list with either “Point”, “Line”, or “Polygon”.

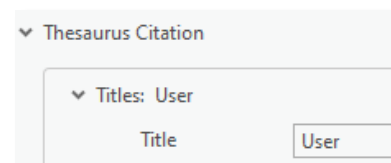


▼ Theme Keywords

Point, NCDOT, Transportation, Right of Way, Highway, Communication, Intelligent Transportation System, Broadband, Network, Fiber, Fiber Assets, FAMS, Junction Boxes

● Thesaurus Citation: Title

An official thesaurus may be used to source different keywords for the geospatial metadata record. Depending on the topic category and thematic purpose of the data, the use of official thesauri may be more relevant. In the absence of an official thesaurus citation, it is recommended to site "User" thesaurus meaning the keywords are sourced by the user/metadata author.



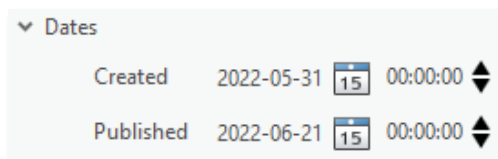
▼ Thesaurus Citation

▼ Titles: User

Title User

● Thesaurus Citation: Date

Enter a data Creation and Publication date. These dates should align to the publishing and creation dates throughout the metadata.



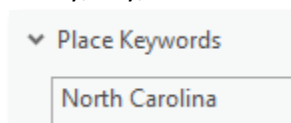
▼ Dates

Created 2022-05-31 15 00:00:00

Published 2022-06-21 15 00:00:00

■ Place Keywords

At a minimum, enter “North Carolina”. If applicable, include more specific terms such as a region, county, city, or some other descriptive area where the data is located.

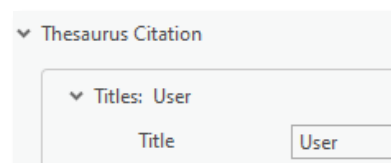


▼ Place Keywords

North Carolina

● Thesaurus Citation: Title

An official thesaurus may be used to source different keywords for the geospatial metadata record. Depending on the topic category and thematic purpose of the data, the use of official thesauri may be more relevant. In the absence of an official thesaurus citation, it is recommended to site "User" thesaurus meaning the keywords are sourced by the user/metadata author.



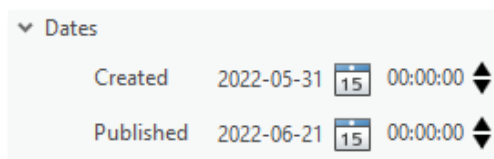
▼ Thesaurus Citation

▼ Titles: User

Title User

● Thesaurus Citation: Date

Enter a data Creation and Publication date.



▼ Dates

Created 2022-05-31 15 00:00:00

Published 2022-06-21 15 00:00:00

Citation Submenu Elements

■ Titles

Title: This is autopopulated and should match the full **Title** element in the *Item Description* submenu.
Alternate Title: Enter a shorter, more common name or actual name of the data.

▼ Titles: NC Proposed Road Lines, Continuous Capture – NC Department of Transportation	
Title	NC Proposed Road Lines, Continuous Capture – NC Department of Transportation
Alternate Title	ProposedRoadPolyline

■ Presentation Form

Presentation Form: Select “Digital Map” for NCDOT geospatial data.

FGDC Geospatial Data Presentation Form: Select “Vector Digital Data”. Most NCDOT geospatial data is vector (points, lines, polygons). However, select “Raster Digital Data” if your geospatial data is a raster such as aerial or satellite imagery, surface model, etc.

Presentation Form	Digital Map ▼
FGDC Geospatial Data Presentation Form	Vector Digital Data ▼

■ Dates

Enter a data Creation and Publication date.

NOTE: This should match the dates entered in the *Topics and Keywords* submenu.

▼ Dates			
Created	2022-05-31	15	00:00:00 ▼
Published	2022-06-21	15	00:00:00 ▼

Citation Contacts Submenu Elements

■ Contact

Three contact entries must be created, one for each of the following roles: **Originator**, **Resource Provider**, and **Point of Contact**.

- **Role: Originator** — The organization that created and produced the data.
- **Role: Resource Provider** — The organization that provides/distributes the data, making it available to others.
- **Role: Point of Contact** — A specific office or staff person that serves as a point of contact for questions about the data.

The contact entries can all be the same or all different organizations. The contact’s role identifies how the organization is associated with the data. [+ New Contact](#)

It is more relevant for government products to reference a position title rather than an individual's name. Enter the organization and a position, as shown in the example below.

▼ Contact: North Carolina Department of Transportation, Pavement Management Unit (Originator)

Name

Organization

North Carolina Department of Transportation, Pavement Management Unit

Position

Pavement Management Engineer

Role

Originator

► Contact Information

● Contact Information

Complete the Contact element by entering the appropriate specific contact information as shown in the example below.

Add this statement in the **Instructions** box: *Please send an email with any issues, questions, or comments regarding the data. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.*

Contact: North Carolina Department of Transportation, Pavement Management Unit (Originator) ✕

Name			
Organization	North Carolina Department of Transportation, Pavement Management Unit		
Position	Pavement Management Engineer		
Role	Originator ▼		

Contact Information

Email	jdoe@ncdot.gov	✕	+
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+ New Online Resource

Address Type	Physical ▼		
Address	4809 Beryl Road	✕	+
City	Raleigh		
State	NC		
Postal Code	27606		
Country	UNITED STATES ▼		

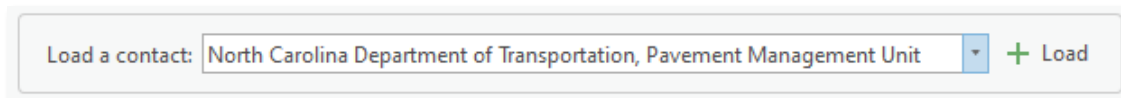
Phone	919-555-1234	✕	+
Fax		✕	+

Instructions	Please send an email with any issues, questions, or comments regarding the data. If it is an immediate need, please call the contact number or indicate as such in the subject line in an email.		
--------------	--	--	--

Hours	9:00am - 5:00pm Monday - Friday		
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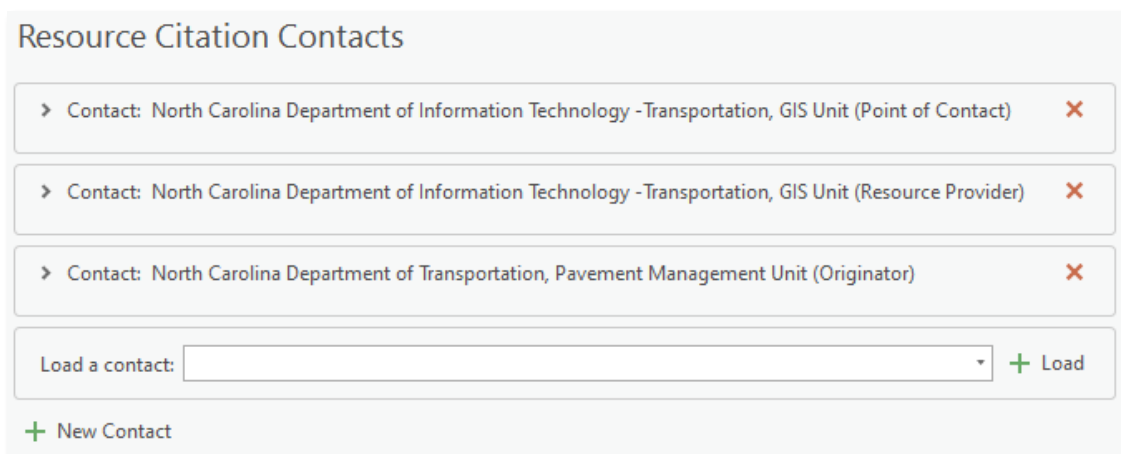
+ New Contact Add two more **Contacts** with information entered as shown above.

NOTE: Once a new contact is added to the metadata, it is stored in the [Contacts Manager](#) submenu. These contact entries can then be easily accessed and quickly added in full by means of the [Load Contact](#) element. **Be sure to verify the contact information when loading a saved contact.**



Load a contact: North Carolina Department of Transportation, Pavement Management Unit + Load

When completed, the [Citation Contacts](#) submenu content should look similar to this example.



Resource Citation Contacts

- > Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact) ✕
- > Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Resource Provider) ✕
- > Contact: North Carolina Department of Transportation, Pavement Management Unit (Originator) ✕

Load a contact: + Load

+ New Contact

[Contacts Manager Submenu](#)

Saves contacts and allows access to quickly add frequently used contacts in the metadata. The same contact with just a different role will also be added to the contacts here. Contact information can't be edited on this page; it can only be used to manage saved contacts.

[Locales Submenu](#)

Content does not need to be added.

[METADATA Menu](#)

This menu contains elements describing information about the geospatial data's metadata record.

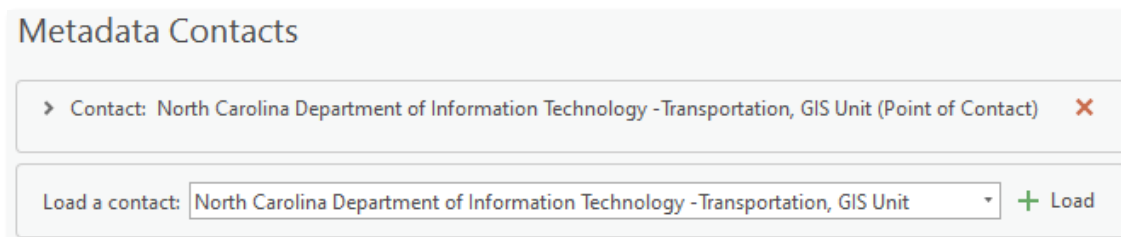
[Details Submenu](#)

Several elements are autopopulated and no additional content needs to be added.

[Contacts Submenu Element](#)

■ Contact

Add the contact with the [Point of Contact](#) role as it was entered in the [Citation Contacts](#) submenu.



Metadata Contacts

- > Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact) ✕

Load a contact: North Carolina Department of Information Technology -Transportation, GIS Unit + Load

Maintenance Elements

■ Update Frequency

Select the data or metadata update frequency from the drop down list.

■ Update Scope

Select “Dataset”. This is the scope of data for which this maintenance information applies.

■ Contact

Add the contact with the [Point of Contact](#) role as it was entered in the [Citation Contacts](#) submenu.

Metadata Maintenance

Update Frequency

As Needed

Custom Frequency

Next Update

15

Update Scope

Dataset

✕

+

+ New Scope Description

➤ Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact)

✕

Load a contact:

North Carolina Department of Information Technology -Transportation, GIS Unit

+

Load

+ New Maintenance Contact

+ New Maintenance Note

Constraints Elements

■ General Constraints

At a minimum, the following disclaimer is to be used for all NCDOT geospatial data.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Additional specific use limitation language may be needed for some data as shown in the example below with the second paragraph.

General Constraints

Use Limitation

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

All Right of Way data is the sole property of NCDOT and any public purpose use is subject to approval and release by NCDOT. No data, whole or in part, shall be released, published, or shared without prior written approval by NCDOT. No information concerning the data shall be divulged to anyone outside the proper officials at NCDOT or the Federal Highway Administration. All Right of Way data is strictly confidential to NCDOT and its approved contractors.

■ Security Constraints

At a minimum, the following disclaimer is to be used for all NCDOT geospatial data.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

● Classification

Select “Unclassified”. Most NCDOT geospatial data is unclassified.

● Classification System

Enter “None”. There is no classification for which NCDOT geospatial data adheres.

Additionally, specific use limitation language may be needed for some data as shown in the example below with the second and third paragraphs. Data can also be classified as confidential.

Security Constraints

Use Limitation

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

All fiber asset data is the sole property of NCDOT and any public purpose use is subject to approval and release by NCDOT. No data, whole or in part, shall be released, published, or shared without prior written approval by NCDOT. No information concerning the data shall be divulged to anyone outside the proper officials at NCDOT. All fiber asset data is strictly confidential to NCDOT and its approved contractors.

This data should be used for planning, maintenance, and decision-making support purposes only. It should be used only by those who fully understand the extents, limitations, and content of the data. The data should not be used in place of field survey or data collection efforts that are normally performed by license professionals and it should not replace any data collection efforts that are typically required as a part of detailed design and construction efforts.

+ New Use Limitation

Classification: Confidential

Classification System: None

RESOURCE Menu

This menu contains elements containing descriptive data characteristics and details such as attribute information, data quality, data maintenance, spatial reference, data lineage, and data distribution.

Details Submenu Elements

■ Status

Indicated the status of the data. Select “Completed” if production of the data is finalized and not continually updated. Select “On Going” if the data is being actively and continually updated.

■ Credit

Name the parties who created or contributed to the data as well as support and maintain the data. The content in this element should match what is in the *Item Description* submenu’s *Credits* element in the *Overview* menu.

The screenshot shows a web form titled "Resource Details". It has two main sections. The first section is labeled "Status" and contains a dropdown menu with "On Going" selected. To the right of the dropdown are red "X" and green "+" icons. The second section is labeled "Credit" and contains a text area with the following text: "The North Carolina Department of Transportation, Division of Highways, Pavement Management Unit. Support and maintenance of the enterprise spatial database where this data resides is handled by the North Carolina Department of Information Technology-Transportation, GIS Unit." To the right of the text area is a red "X" icon.

■ Spatial Representation Type

The data type used to represent the geospatial data. Much of NCDOT’s geospatial data is “Vector”: points, lines, or polygons. If the data is a raster type (e.g., aerial, satellite imagery) then select “Grid”.

The screenshot shows a dropdown menu labeled "Spatial Representation Type" with "Vector" selected. The dropdown arrow is on the right side of the menu.

Additional elements are autopopulated and no extra content needs to be added to the other elements in this submenu.

Extents Submenu Elements

■ Bounding Box

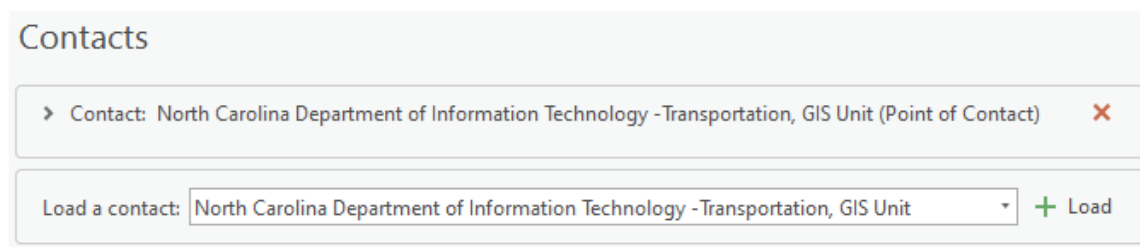
The screenshot shows a form titled "Bounding Box". It has four rows of input fields: "West" with value "-84.383620", "East" with value "-75.492709", "South" with value "33.853316", and "North" with value "36.617254". Below these fields is a checkbox labeled "Extent contains the resource" which is checked.

The data’s bounding coordinates should be autopopulated.
(See the [Synchronize Metadata](#) section above)

Points of Contact Submenu Element

■ Contact

Add the contact with the [Point of Contact](#) role as it was entered in the [Contacts](#) submenu above.

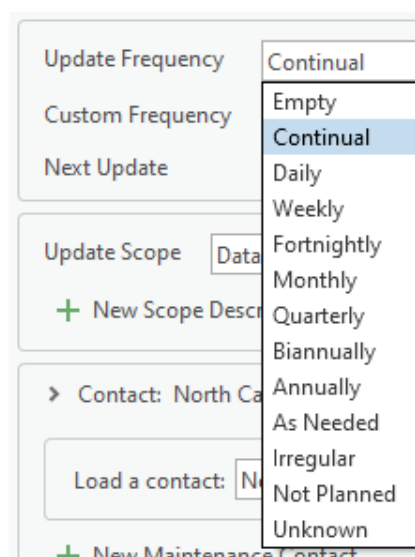


The screenshot shows a 'Contacts' submenu with a list of contacts. The first contact is 'Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact)' with a red 'X' icon. Below the list is a 'Load a contact:' dropdown menu with the same text selected, followed by a green '+' icon and a 'Load' button.

Maintenance Submenu Elements

■ Update Frequency

Select from the drop down list that best describes how often the data is updated. If the [Status](#) of the data is “Completed” select “As Needed” if staff are available to make as-needed changes, otherwise select “Not Planned” if no changes are foreseen. If the data [Status](#) is “On Going” select the most applicable value to describe the known frequency of planned updates such as Continual, Monthly, Quarterly, Annually, etc.



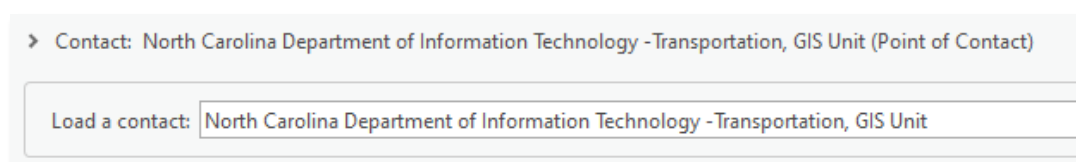
The screenshot shows a dropdown menu for 'Update Frequency'. The menu is open, displaying a list of options: Continual, Empty, Continual (highlighted), Daily, Weekly, Fortnightly, Monthly, Quarterly, Biannually, Annually, As Needed, Irregular, Not Planned, and Unknown. The 'Update Frequency' label is visible at the top of the dropdown.

■ Update Scope

Select “Dataset”. This is the scope of data for which this maintenance information applies.

■ Contact

Add the contact with the [Point of Contact](#) role as it was entered in the [Contacts](#) submenu above.



The screenshot shows a 'Contact' submenu with a list of contacts. The first contact is 'Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact)'. Below the list is a 'Load a contact:' dropdown menu with the same text selected.

■ Maintenance Note

Name the parties who created or contributed to the data as well as support and maintain the data. The content in this element should match what is in the [Item Description](#) submenu [Credits](#) element in the [Overview](#) menu.

Resource Maintenance

Update Frequency
Continual

Custom Frequency

Next Update
15

Update Scope
Dataset

+ New Scope Description

> Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Contact)

Load a contact:
North Carolina Department of Information Technology -Transportation, GIS Unit

+ Load

+ New Maintenance Contact

Maintenance Note

The North Carolina Department of Transportation, Division of Highways, Pavement Management Unit maintenance is as needed and not regularly scheduled.

Support and maintenance of the enterprise spatial database where this data resides is handled by the North Carolina Department of Information Technology-Transportation, GIS Unit.

Constraints Submenu Elements

This submenu must contain [General](#), [Legal](#), and [Security Constraints](#) elements.

■ General Constraints

At a minimum, the following disclaimer is to be used for all NCDOT geospatial data.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

Additional specific use limitation language may be needed for some data as shown in the General Constraints element example in the Metadata menu above.

■ Legal Constraints

At a minimum, the following disclaimer is to be used for all NCDOT geospatial data.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

- [Access Constraints](#)

Select “Empty”. Most NCDOT geospatial data does not have additional access or legal constraints.

- [Use Constraints](#)

Select “Empty”. Most NCDOT geospatial data does not have additional use constraints.

Additional specific legal constraint language may be needed for some data as shown in the example below with the second paragraph. Data can also have restricted access and use constraints.

Legal Constraints

Use Limitation

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

All Right of Way data is the sole property of NCDOT and any public purpose use is subject to approval and release by NCDOT. No data, whole or in part, shall be released, published, or shared without prior written approval by NCDOT. No information concerning the data shall be divulged to anyone outside the proper officials at NCDOT or the Federal Highway Administration. All Right of Way data is strictly confidential to NCDOT and its approved contractors.

+ New Use Limitation

Access Constraints: Restricted

Use Constraints: Restricted

■ Security Constraints

At a minimum, the following disclaimer is to be used for all NCDOT geospatial data.

The North Carolina Department of Transportation shall not be held liable for any errors in this data. This includes errors of omission, commission, errors concerning the content of the data, and relative and positional accuracy of the data. This data cannot be construed to be a legal document. Primary sources from which this data was compiled must be consulted for verification of information contained in this data.

- [Classification](#)

Select “Unclassified”. Most NCDOT geospatial data is unclassified.

- [Classification System](#)

Enter “None”. There is no classification for which NCDOT geospatial data adheres.

Additional specific use limitation language may be needed for some data as shown in the Security Constraints element example in the Metadata menu above.

Spatial Reference Submenu

Elements are autopopulated and no additional content needs to be added.

Spatial Data Representation Submenu

Elements are autopopulated and no additional content needs to be added.

Content Submenu

Content does not need to be added.

Quality Submenu Elements

■ Scope Level

Select “Dataset”. This is the specific data for which this data quality information applies.

■ Report

Three Reports need to be added, one for each of the following **Report Types**:

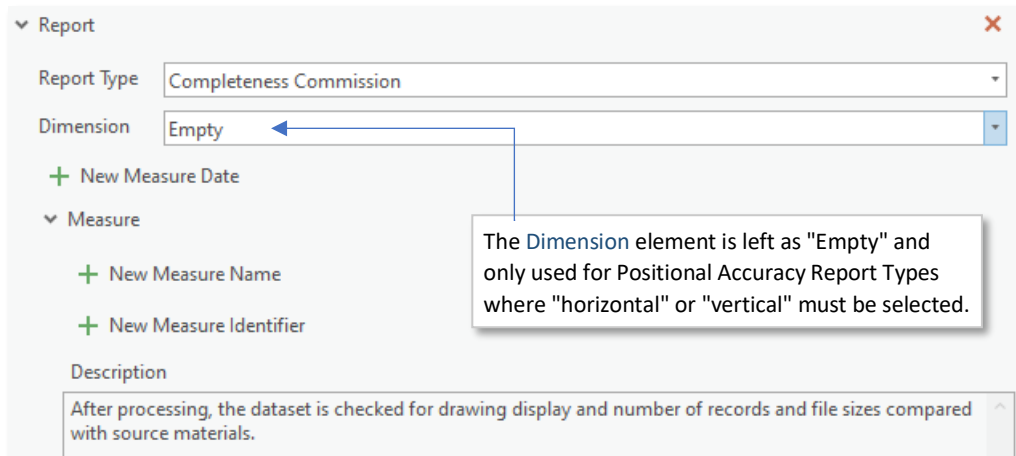
- Completeness Commission
- Conceptual Consistency
- Quantitative Attribute Accuracy

These three reports identify and describe the measure in which the data’s quality is being assessed in terms of completeness, logical consistency, and attribute accuracy.

● Report Type: Completeness Commission

Select “Completeness Commission”. The **Dimension** value should be “Empty”. Add information in the **Measure Description** text box describing the assessment to ensure data is complete.

An example:

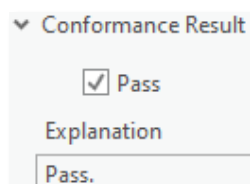


The screenshot shows a 'Report' form with the following fields:

- Report Type:** A dropdown menu with 'Completeness Commission' selected.
- Dimension:** A dropdown menu with 'Empty' selected. A blue arrow points to this field from a callout box.
- + New Measure Date:** A button to add a new measure date.
- Measure:** A section containing:
 - + New Measure Name:** A button to add a new measure name.
 - + New Measure Identifier:** A button to add a new measure identifier.
- Description:** A text box containing the text: 'After processing, the dataset is checked for drawing display and number of records and file sizes compared with source materials.'

The callout box states: 'The Dimension element is left as "Empty" and only used for Positional Accuracy Report Types where "horizontal" or "vertical" must be selected.'

▼ **Conformance Result:** This element is recommended but not required. Check the box next to ‘Pass’ and enter “Pass.” In the **Explanation** text box.



The screenshot shows a 'Conformance Result' form with the following fields:

- Conformance Result:** A section containing a checkbox labeled 'Pass' which is checked.
- Explanation:** A text box containing the text: 'Pass.'

- ▼ **Specification** This element is recommended but not required.
 - ▼ **Titles:** Enter any subject matter specific data quality specifications that the data aligns to.

▼ Specification

▼ Titles: NCDOT Geospatial Data Specifications

Title	NCDOT Geospatial Data Specifications
-------	--------------------------------------

- ▼ **Dates:** Provide any published/creation dates related to this Specification.

▼ Dates

Created	2022-05-31	15	00:00:00	▲▼
Published	2022-06-21	15	00:00:00	▲▼

● **Report Type: Conceptual Consistency**

Select “Conceptual Consistency”. The **Dimension** value should be “Empty”. Add information in the **Measure Description** text box describing the assessment performed to test the fidelity of the data structure. An example:

▼ Report

Report Type

Conceptual Consistency

Dimension

Empty

+ New Measure Date

▼ Measure

+ New Measure Name

+ New Measure Identifier

Description

This dataset is converted to file geodatabase (FGDB) format using tools in ArcGIS. The geometry is checked, and if needed repaired.

- ▼ **Conformance Result:** This element is recommended but not required. Check the box next to ‘Pass’ and enter “Pass.” In the **Explanation** text box.

▼ Conformance Result

☒ Pass

Explanation

Pass.

- ▼ **Specification:** This element is recommended but not required.
- ▼ **Titles:** Enter “NCDOT Geospatial Data Specifications” as the title.

▼ Specification

▼ Titles: NCDOT Geospatial Data Specifications

Title	NCDOT Geospatial Data Specifications
-------	--------------------------------------

- ▼ **Dates:** Enter a data Creation and Publication date (see [Dates](#) above).

▼ Dates

Created	2022-05-31	<div>15</div>	00:00:00	⬆⬇⬆
Published	2022-06-21	<div>15</div>	00:00:00	⬆⬇⬆

- **Report Type: Quantitative Attribute Accuracy**

Select “Quantitative Attribute Accuracy”. The [Dimension](#) value should be “Empty”. Add information in the [Measure Description](#) text box describing the assessment performed to ensure the data’s attribute accuracy.

An example:

▼ Report

Report Type

Quantitative Attribute Accuracy

Dimension

Empty

+ New Measure Date

▼ Measure

+ New Measure Name

+ New Measure Identifier

Description

The source data may be checked using standard review procedures. Attributes and null values were checked by using visual inspection as well as automated verification routines. Geometry checks were done post processing by the users.

- ▼ **Conformance Result:** This element is recommended but not required. Check the box next to ‘Pass’ and enter “Pass.” In the [Explanation](#) text box.

▼ Conformance Result

☒ Pass

Explanation

Pass.

- ▼ **Specification:** This element is recommended but not required.

- ▼ **Titles:** Enter “NCDOT Geospatial Data Specifications” as the title.

▼ Specification

▼ Titles: NCDOT Geospatial Data Specifications

Title

NCDOT Geospatial Data Specifications

- ▼ **Dates:** Enter a data Creation and Publication date (see [Dates](#) above).

▼ Dates

Created	2022-05-31	<div>15</div>	00:00:00	⬆⬇⬆
Published	2022-06-21	<div>15</div>	00:00:00	⬆⬇⬆

Lineage Submenu Elements

■ Statement

Write a summary that encapsulates your data's processing information from its origin to the current state. Below are some examples.

Statement

[This dataset was originally created by the North Carolina Department of Transportation, Right of Way Unit, to provide a geographic representation of proposed roads affected by proposed Right of Way acquisition in North Carolina. The data contained within this dataset is automatically loaded to the enterprise database environment through the data conversion process. Web mapping services are created with this data from the database. These services support the Right of Way Management System (ROWMS) online GIS data viewer which is utilized by the NCDOT's Right of Way Unit.

Statement

[This data is created using an automated process designed to generate feature classes with short hatch lines at specific milepost intervals along routes. The publication product NC Public Road Arcs is used as the input for the application to generate hatchmarks at specific milepost intervals from the beginning point (milepost zero) of a route. NC Public Road Arcs is a route publication product derived using an internal procedure designed to generate reporting products from the Linear Referencing System maintained by the Spatial Data Operations Group within the North Carolina Department of Information Technology- Transportation, GIS Unit.

Statement

[This dataset originated as attribute information collected in the Pavement Condition Survey database. This database consists of the Asphalt table and the Jointed Concrete Pavement (JCP) tables, with IRI (International Roughness Index) data attached. The NCDOT Pavement Management Unit under Division of Highways, Operations Program Management maintains the authoritative pavement data in the NCDOT Pavement Management System. Information from that Pavement Management Systems is consumed through an automated integration with the North Carolina Department of Information-Transportation (NCDIT-T) GIS Unit database systems. These Pavement Condition Survey database attributes were dynamically matched to the NCDIT-T GIS Unit's Linear Reference System Network of routes to produce this spatial, linear representation layer. This spatial representation is then distributed in the form of geospatial services in Go!NC (<https://ncdot.maps.arcgis.com/home/index.html>).

■ Process Step

Provide a description of how the data was created and indicate source data used, where applicable. Multiple [Process Step](#) elements can be added in order to illustrate a series of major processing tasks executed to compile and create the data. For each [Process Step](#) element, a [Process Description](#), [Process Step Date](#), and the [Processor](#) organization name, its [Role](#), and [Contact Information](#) is required.

NOTE: A minimum of two [Process Steps](#) must be added. It is best practice to have the first process step's [Contact Role](#) set to "Originator", the second step with the [Contact Role](#) set to "Point of Contact". The same processor organization and contact information can be applied to all [Process Step](#) elements, if appropriate.

A common third [Process Step](#) is often added with the [Contact Role](#) set to "Resource Provider" with the [Process Step Date](#) set to occur following the step with the Originator Role. The [Process Step](#) with the Point of Contact Role should have the latest date among the [Process Steps](#).

Enter contact information as is done with previous [Contact](#) elements, as shown in the [Overview Menu](#), [Citation Contacts](#) submenu above. As with other [Contact](#) elements, a contact saved in the Contact Manager can be easily accessed and quickly added in full by means of the [Load Processor](#) element.

Below is an example of a completed Lineage submenu listing three [Process Step](#) elements, followed by examples of the Process Steps with [Originator](#), [Resource Provider](#), and [Point of Contact](#) processor rolls.

Lineage

Statement

This dataset was originally created by the North Carolina Department of Transportation, Right of Way Unit, to provide a geographic representation of proposed roads affected by proposed Right of Way acquisition in North Carolina. The data contained within this dataset is automatically loaded to the enterprise database environment through the data conversion process. Web mapping services are created with this data from the database. These services support the Right of Way Management System (ROWMS) online GIS data viewer which is utilized by the NCDOT's Right of Way Unit.

+ New Data Source

> Process Step

> Process Step

> Process Step

+ New Process Step

Process Step

Process Description

The ROW DGN format data is converted into a geospatial enterprise database utilizing a GIS data conversion process.

Rationale

Process Step Date

2018-09-10 15 00:00:00

Processor: North Carolina Department of Transportation, Right of Way Unit (Resource Provider)

Name

Organization

North Carolina Department of Transportation, Right of Way Unit

Position

Right of Way Agent II (Real Property Conveyance Specialist)

Role

Resource Provider

Contact Information

Load a processor:

+ Load

+ New Processor

+ New Data Source

▼ Process Step

Process Description

The ROW DGN format data is converted into a geospatial enterprise database utilizing a GIS data conversion process.

Rationale

Process Step Date

2018-09-10

15

00:00:00

⬆️⬆️

▼ Processor: North Carolina Department of Transportation, Right of Way Unit (Resource Provider)

Name

Organization

North Carolina Department of Transportation, Right of Way Unit

Position

Right of Way Agent II (Real Property Conveyance Specialist)

Role

Resource Provider

➤ Contact Information

Load a processor:

+ Load

+ New Processor

+ New Data Source

Process Step

Process Description

The Right of Way enterprise geodatabase data is published as a series of map services for display in the online ROWMS application, maintained by the NCDIT-Transportation GIS Unit.

Rationale

Process Step Date

2018-09-13

15

00:00:00

Processor: North Carolina Department of Information Technology -Transportation, GIS Unit (Point of Con

Name

Organization

North Carolina Department of Information Technology -Transportation, GIS Unit

Position

GIS Data and Services Consultant

Role

Point of Contact

Contact Information

Load a processor:

+ Load

+ New Processor

+ New Data Source

Distribution Submenu Elements

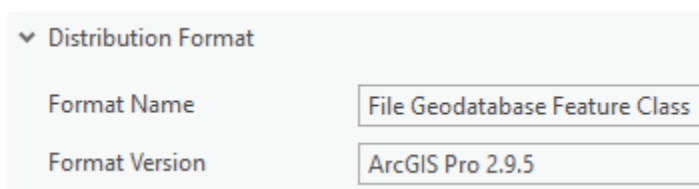
■ Distribution Format

● Feature Name

Depending on the type of data the metadata is representing, this is usually either “Shapefile” or “File Geodatabase Feature Class”.

● Format Version

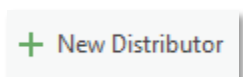
The software (and version) used to create the data.



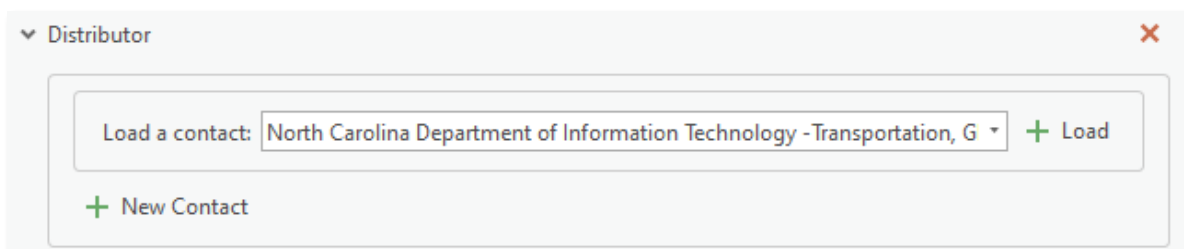
▼ Distribution Format	
Format Name	File Geodatabase Feature Class
Format Version	ArcGIS Pro 2.9.5

■ Distributor

Add the organization name and [Contact](#) information of the data distributor. As with other [Contact](#) elements, a contact saved in the Contact Manager can be easily accessed and quickly added in full by means of the [Load Contact](#) element, appearing after clicking **New Distributor**. Select “Distributor” as the Role.



+ New Distributor

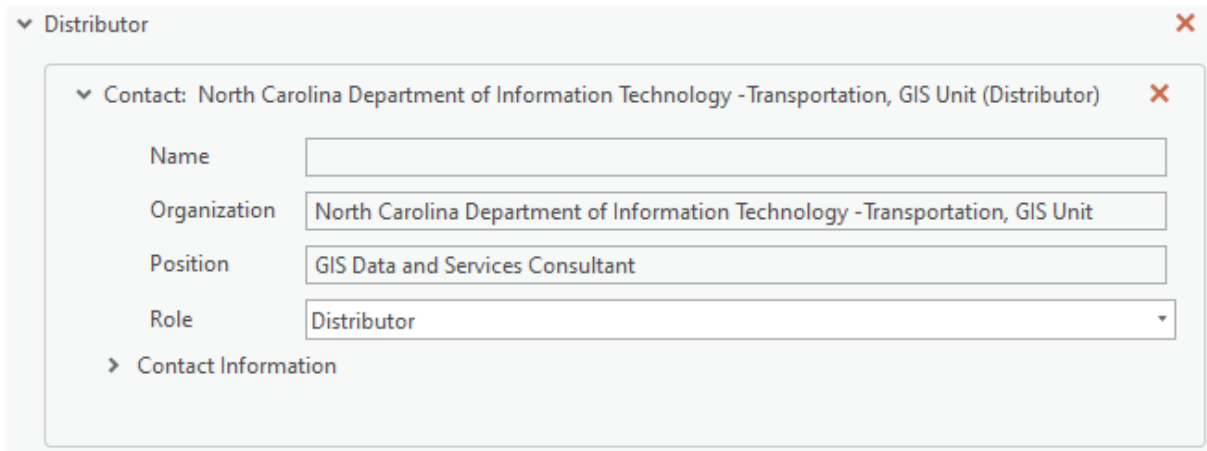


▼ Distributor

Load a contact: North Carolina Department of Information Technology -Transportation, G

+ Load

+ New Contact



▼ Distributor

▼ Contact: North Carolina Department of Information Technology -Transportation, GIS Unit (Distributor)

Name

Organization North Carolina Department of Information Technology -Transportation, GIS Unit

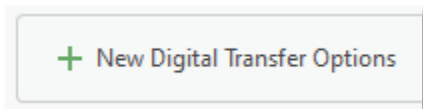
Position GIS Data and Services Consultant

Role Distributor

> Contact Information

■ Digital Transfer Options

If the data is available online, provide a URL address that provides access, preferably direct access, to the data and select “Download” for the function as shown below. To add the online resource, first Click **New Digital Transfer Options**, then click **New Online Resource**.



Digital Transfer Options

Units of Distribution

Transfer Size

+ New Online Resource

> Offline Medium

+ New Digital Transfer Options

Digital Transfer Options

Units of Distribution

Transfer Size

Online Resource

Linkage
https://xfer.services.ncdot.gov/gisdot/DistDOTData/NCRouteCharacteristics.gdb.zip

Protocol

Profile

Name

Description

Function
Download

+ New Online Resource

> Offline Medium

+ New Digital Transfer Options

Fields Submenu Elements

■ Details

Expand the [Details](#) element to reveal the [Entity Type](#) element and the list of your data's attributes, each represented as a separate element. If the data has a large number of attributes, it may take a few moments before this element expands. **NOTE:** If the attribute list appears empty, see the [Synchronize](#) section above. The metadata may need to be synchronized for the attributes to then be listed.

Entity and Attribute Information

▼ Details: PmuNetworkMaster

Label

PmuNetworkMaster

▶ Entity Type

▶ Attribute: OBJECTID

▶ Attribute: Shape

▶ Attribute: ROUTEID

▶ Attribute: COUNTY

▶ Attribute: ROUTE

● Label

This is autopopulated with the dataset's name.

● Entity Type

- ▶ **Object:** Autopopulated with the data type, such as "Feature Class".
- ▶ **Count:** Autopopulated with the data's feature count.
- ▶ **Definition:** Enter the data's alias or a name taken from the metadata's [Title](#).
- ▶ **Definition Source:** Enter the name of the organization where the data originated.

▼ Details: PmuNetworkMaster

Label

PmuNetworkMaster

▼ Entity Type

Object

Feature Class

Count

106275

Definition

Pavement Condition - Combined Data (Network Master)

Definition Source

North Carolina Department of Transportation, Pavement Management Unit

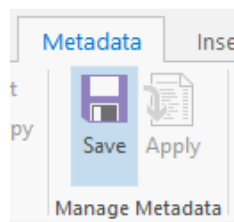
● Attribute

A metadata element exists for each attribute. Each attribute element contains properties with information about the attribute. Some are autopopulated but others need content added, such as and most importantly, the attribute's [Definition](#) and [Definition Source](#).

- ▶ **Label:** Autopopulated with the attribute's name.
- ▶ **Alias:** Autopopulated with the attribute's alias.
- ▶ **Definition:** Enter a description of the data contained within the attribute field. This should be concise but informative so it clearly communicates what the data represents.
- ▶ **Definition Source:** Enter the authority that provided the description of the field's data. In most cases this will be "NCDOT".
- ▶ **Type, Width, Precision, Scale:** Values are autopopulated.

Attribute: SEC_WIDTH	
Label	SEC_WIDTH
Alias	SEC_WIDTH
Definition	Indicates the surface width of the entire section to the nearest whole foot from the edge of pavement to the edge of the pavement, including any paved shoulders. Short turning lanes or parking lanes that are less than 0.3 miles in length are not included.
Definition Source	NCDOT
Type	Double
Width	8
Precision	0
Scale	0

NOTE: Save your progress often when working on attribute metadata.



● Attribute Domain

At the bottom of each attribute element's properties interface is a section to enter [Enumerated](#), [Range](#), [Codeset](#), or [Unrepresentable Domain](#) values. A domain is the set of possible data values of an attribute. Content should be filled in whether using an Esri domain on a field or not. If the field does not have an Esri domain, values can still be added to one of the appropriate domain types described below. See the [Unrepresentable Domain](#) section below for metadata requirements for data values. The option to provide separate linked and publicly accessible domain and field information in other formats is acceptable. Metadata compliance is met using a linked resource to a spreadsheet or published document maintained with the required attribute and domain details.

- + New Enumerated Domain
- + New Range Domain
- + New Codeset Domain
- + New Unrepresentable Domain

Enumerated Domain

An Enumerated Domain is one comprised of a list of values. For example, the "Surface" attribute has an enumerated domain which contains the values "BST", "JCP", and "Plant Mix". In this case, the list of possible values, the definitions of the values, and the sources of the definitions should be provided.

▼ Enumerated Domain ✕	
Value	<input type="text" value="BST"/>
Definition	<input type="text" value="Bituminous Surface Treatment"/>
Definition Source	<input type="text" value="NCDOT"/>

▼ Enumerated Domain ✕	
Value	<input type="text" value="JCP"/>
Definition	<input type="text" value="Jointed Concrete Pavement"/>
Definition Source	<input type="text" value="NCDOT"/>

▼ Enumerated Domain ✕	
Value	<input type="text" value="Plant Mix"/>
Definition	<input type="text" value="Plant Mix: A mixture of emulsified (or cutback) asphalt and unheated min"/>
Definition Source	<input type="text" value="NCDOT"/>

Range Domain

A Range Domain is one comprised of a sequence, series, or scale of (usually numeric) values between limits. For example, the NCDOT Division Number attribute would have a range domain of integers from 1 to 14. In this case, the minimum and maximum values should be provided.

Range Domain

Minimum

1

Maximum

14

Mean

Standard Deviation

Units

Measurement Resolution

Codeset Domain

A Codeset Domain is one in which the data values are defined by a set of codes. Examples include the Federal Information Processing Standards (FIPS) that contain numeric codes for nations, States, and counties. In this case, the title of the publication containing the code set and the source of the codeset should be provided.

Codeset Domain

Name

North Carolina FIPS County Codes

Source

Federal Information Processing System (FIPS) Codes for States and Counties

Unrepresentable Domain – This element must be populated if there is no existing Enumerated, Range, or Codeset Domain for the attribute.

An Unrepresentable Domain is one for which the set of data values cannot be represented. Reasons include attributes whose values do not exist in a known, predefined set (for example, the values for an attribute of people's names). In these cases, the information content of the set of values should be provided.

References Submenu

Content does not need to be added.

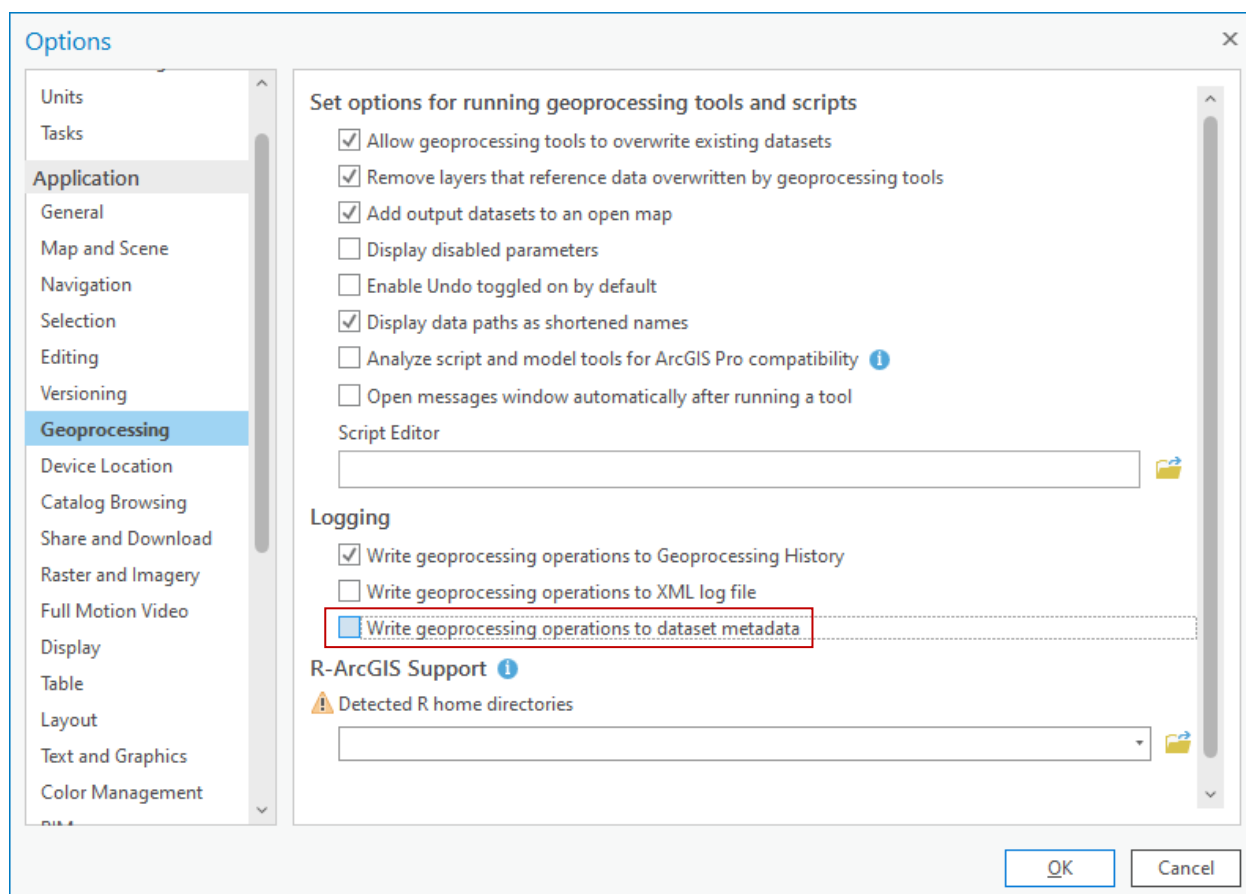
Geoprocessing History Submenu

Content does not need to be added.

Information here is autopopulated from geoprocessing action on data. Each geoprocessing tool that creates new output data or updates the input data (such as Add Field) will add metadata about the execution of the geoprocessing tool, which includes the tool name, its location, and the parameters used. This section can contain sensitive information about the environment in which the geoprocessing was conducted, NCDOT requires that geoprocessing information is removed before publication of data.

There is an ArcGIS Pro Settings option that can help reduce the amount of geoprocessing history logged to metadata. However, it should not be assumed using it results in the [Geoprocessing History Submenu](#) void of any content.

As shown above in the [Select the Metadata Style](#) section above, open the **Options** dialog box. Click the **Geoprocessing** tab and then uncheck the “Write geoprocessing operations to dataset metadata” option in the **Logging** section.



To obtain the NCDIT-T GIS Unit’s ArcGIS Pro Toolbox tool to remove geoprocessing history from metadata, contact GIS Help at gishelp@ncdot.gov.

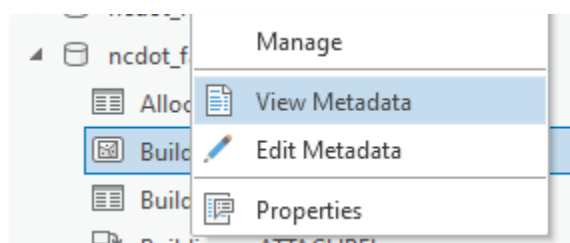
For more information about NCDOT Metadata Tools, or any questions or issues developing metadata for your geospatial data products, please contact GIS Help at gishelp@ncdot.gov.

Moving Metadata Between Datasets with Minimal Loss

This section details the process for successfully moving geospatial metadata between two schema comparable datasets with minimal metadata loss. This process does not involve the generation of any intermediate XML metadata files and doesn't allow for the creation of shareable metadata files outside of the ArcGIS Pro data product. This process should be employed when there is a need to transfer metadata between datasets in the event of data corruption, new data version generation, and other automated data generation work.

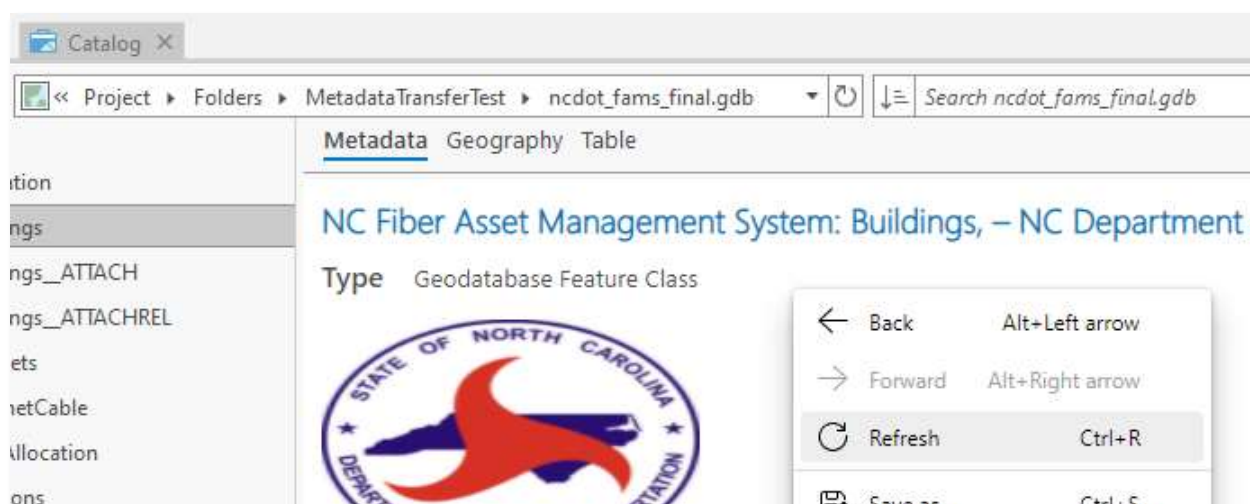
NOTE: Be sure the metadata style is set to the ISO 19139 Metadata Implementation Specification in ArcGIS Pro's settings. Refer to the [Select Metadata Style](#) section above in this document.

- In the ArcGIS Pro **Catalog Pane**, navigate to the feature class with metadata you want to transfer to another feature class, right-click it and select **View Metadata**.



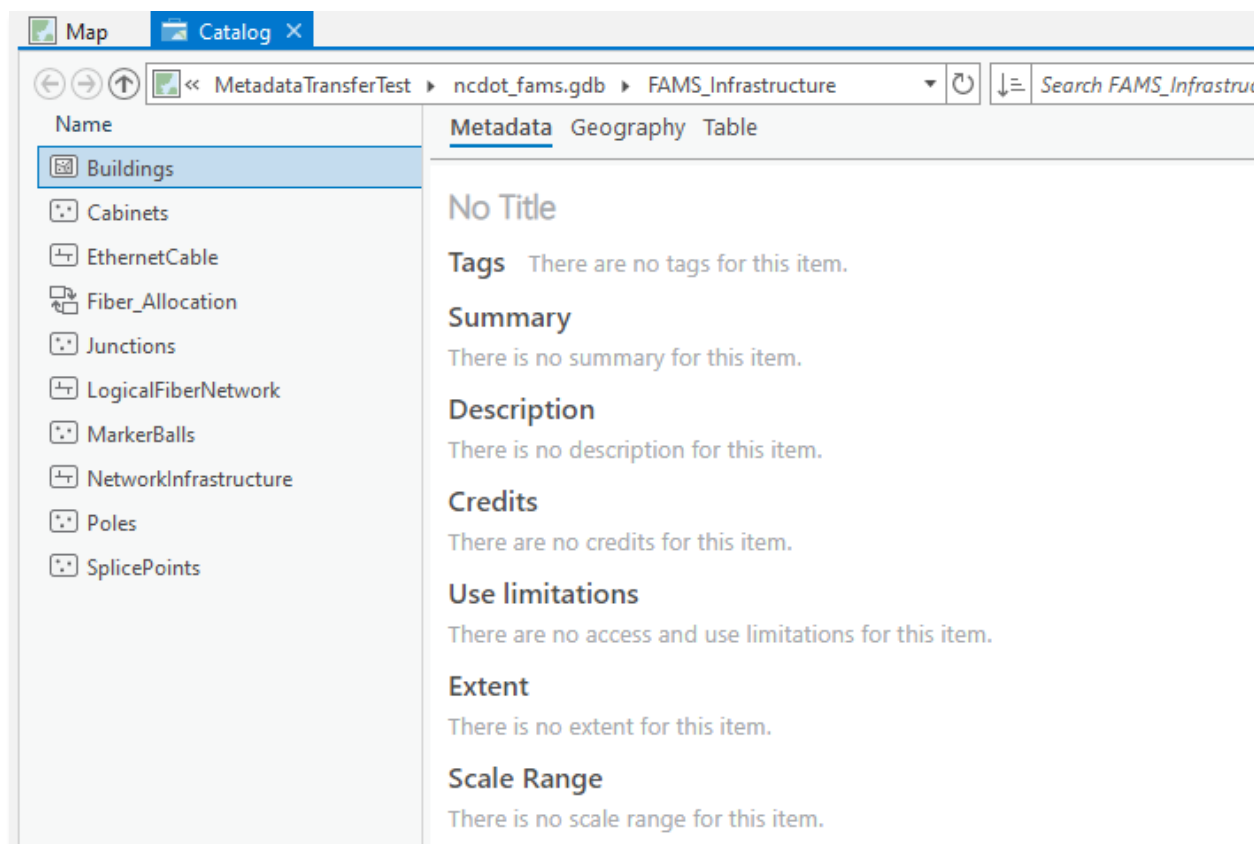
- The metadata is visible in the **Catalog View**. It may need to be refreshed to reflect the ISO 19139 metadata style. Right-click in the metadata content window and select **Refresh**. It may also be good practice to **Synchronize** your metadata to ensure any changed data properties are updated. Refer to the [Synchronize Metadata](#) section above in this document.

This will be the metadata that will be "moved" to the new dataset. Before attempting the transfer process, ensure steps needed to make this metadata compliant to the NCDOT Geospatial Data Metadata Standard have been completed as instructed in this document. If the metadata on the source feature class is already compliant, there will be little work required following the metadata transfer to maintain the compliance.

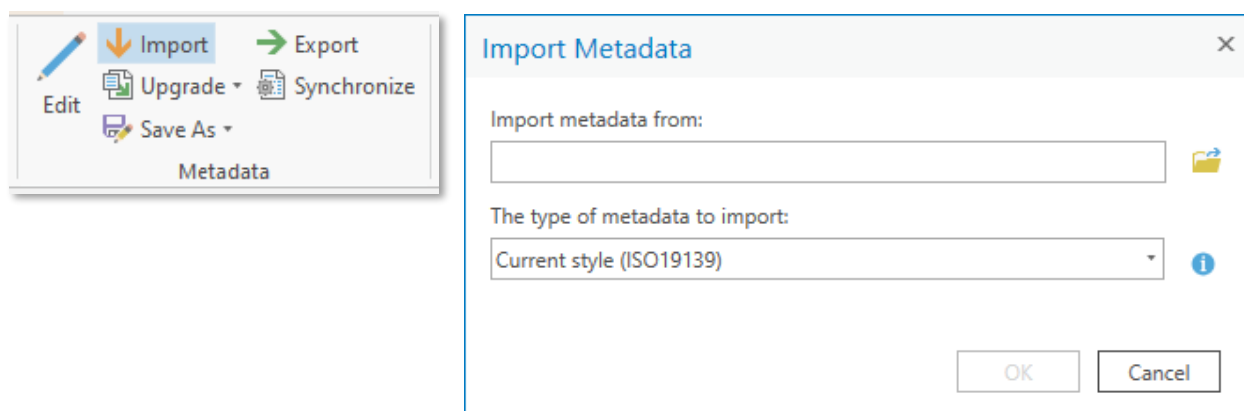


○ In the **Catalog Pane**, navigate to the feature class receiving the metadata to be transferred from the source feature class. Right-click it and select **View Metadata**. This data should be schema comparable to the source data. If there are schema differences between the datasets, the metadata on those fields will not transfer automatically. For any schema differences, ensure metadata is applied appropriately following the metadata transfer.

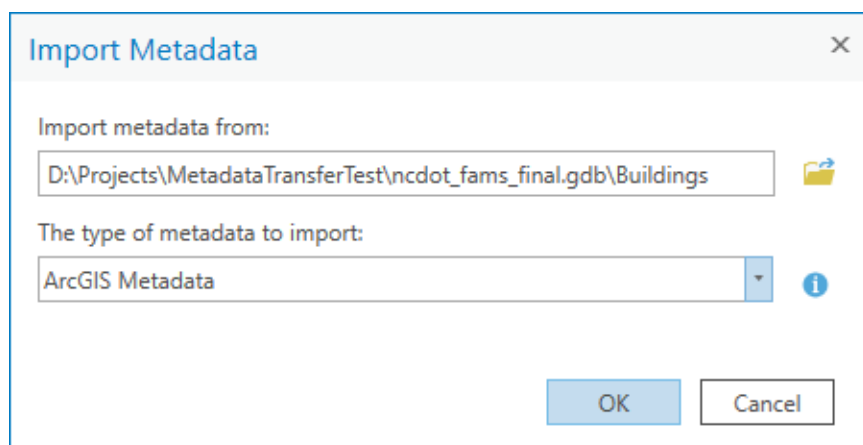
In the **Catalog View** the target feature class has no metadata applied as shown in the example below. This is expected as this data is newly created.



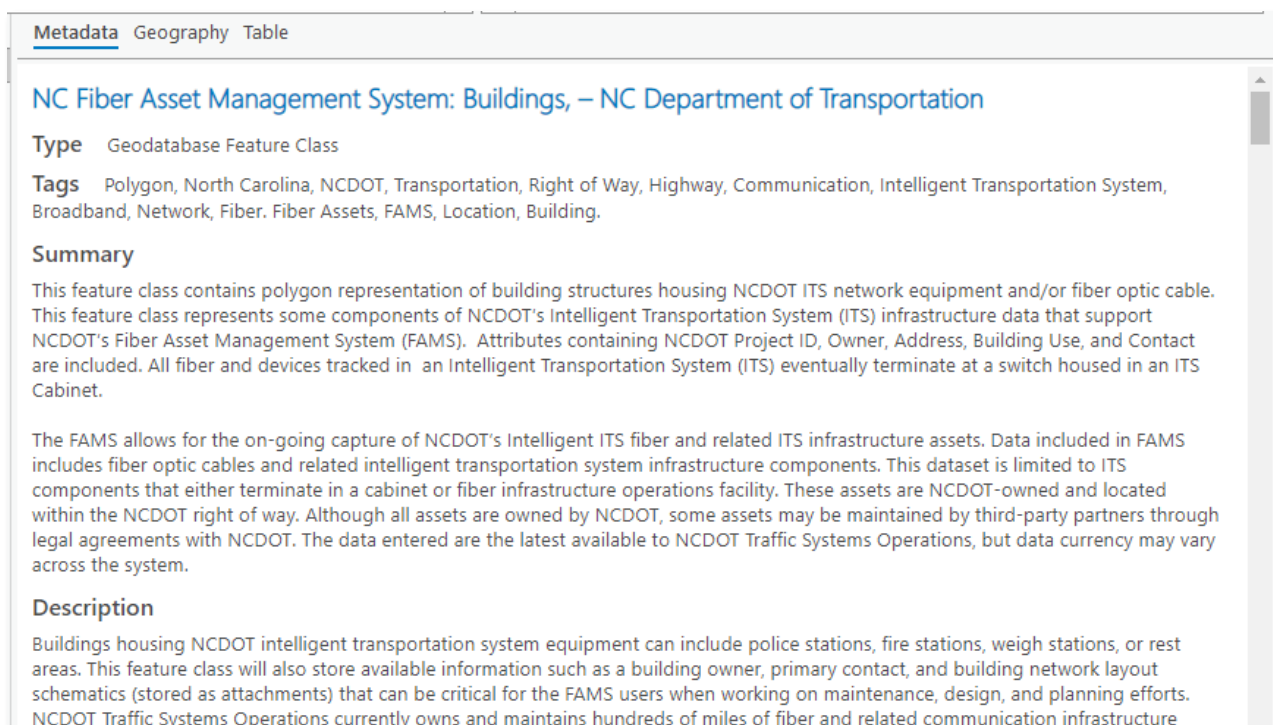
○ Click **Import** from the **Metadata** group in the **Catalog** tab. The **Import Metadata** tool is opened.



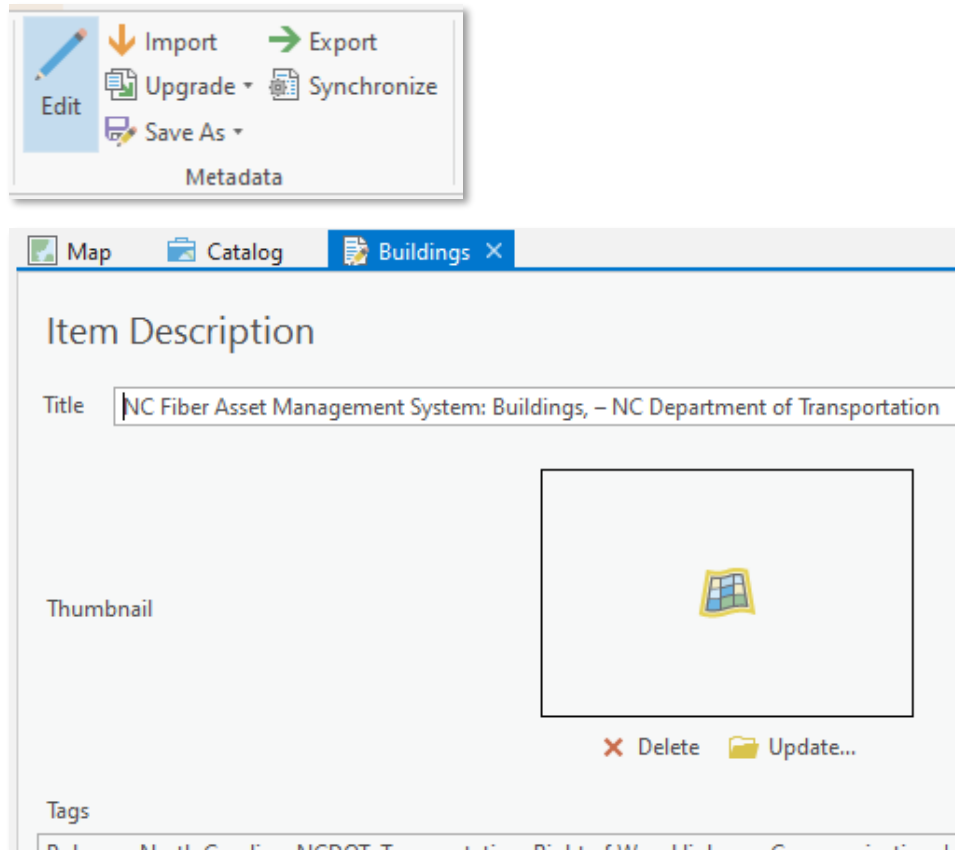
- Navigate to select the source feature class for the tool's "Import metadata from:" parameter.
- Select "ArcGIS Metadata" from the drop down list for the tool's "The type of metadata to import:" parameter.
- Click **OK** to run the tool. The tool works very fast and should only take a second or two to complete.



The metadata content automatically refreshes in **Catalog View** to reveal the metadata imported from the source feature class successfully. However, the metadata transfer process is not complete. The metadata thumbnail needs to be added with the NCDOT Seal image. See the [Thumbnail](#) section above in this document. [Field information](#) should be checked in case there was a difference in schema that could cause metadata information to be missing.



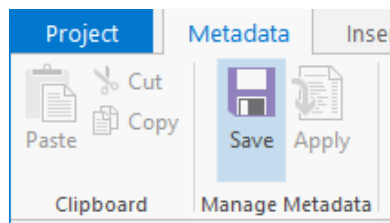
- Click **Edit** from the **Metadata** group in the **Catalog** tab. The **Metadata Editor** is opened.



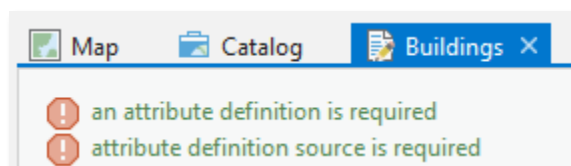
- Click **Update...** and navigate to the dotsymbol.gif file.



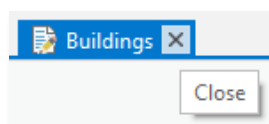
- Click the **Save** button in the **Metadata** tab.



- Click the **Fields Submenu** under the Resource Menu in the **Metadata Editor**. If a field is missing required metadata information such as an attribute definition, it will be indicated by a warning at the top of the window, as shown in this example.



- Make any necessary edits and **Save** the metadata once completed. Close the **Metadata Editor**. You will now see the NCDOT Seal thumbnail, and any other edits made in the metadata content displayed in the **Catalog View**.



- Following the metadata transfer process, it is important to ensure any updates to the dataset which has driven this process are documented appropriately in the metadata. If this target dataset is a new version of the data, publication dates and updates to description information may be warranted. If this dataset contains schema changes from the source dataset, metadata will need to be written and applied to those fields via the **Metadata Editor** window, as mentioned above. Additionally perform removal of Geoprocessing History and Local Data Storage information as needed. Ensure all appropriate updates are made before distributing or loading this data.