

USGS Topo TNM Style Template



Objective

- Provide an efficient, 'one-stop shopping' approach to secure GIS-ready map data configured to US Topo map layout and cartographic design
 - ✓ Requirement originated with Geologic Mapping and Hazards (GMH) Community of Use (COU) (2011)
 - ✓ Applicable to:
 - **✓** Natural Resources Conservation (NRC) COU
 - ✓ Water Resources COU
 - **✓ USGS** scientists
 - **✓** Private industry

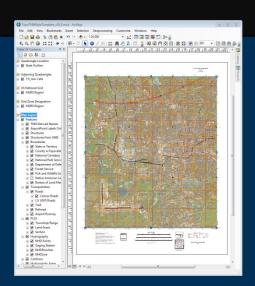




Description: Template

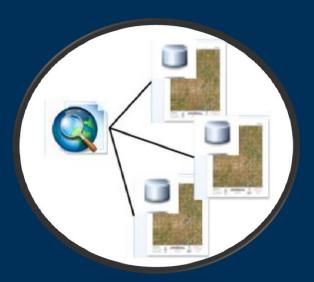
- Delivered as a zip file via TNM Web Site
 - ✓ http://viewer.nationalmap.gov/tools/topotemplate/
 - ✓ http://viewer.nationalmap.gov/basic/ (Topo Map Data and Style Sheet section)
- ArcMap document (mxd)
 - ✓ US Topo map cartographic design
 - ✓ Layout, labeling and symbology
 - ✓ Service links for imagery, shaded relief, and Fish and Wildlife Service (FWS) National Wetlands Inventory (NWI)
- Ancillary Data and Files
 - ✓ User Guide to tailor the template
 - ✓ Publicly available Military Grid Reference System (MGRS) data for representing US National Grid and Zone Designations in marginalia
 - ✓ NGTOC-produced table containing data for manually tailoring the map layout





Description: Data

- Single template can be used in any geographic area where TNM data is available for download
 - ✓ http://viewer.nationalmap.gov/basic/
- Best suited for use with Topo Map Vector Data products
 - ✓ Esri File Geodatabase containing all vector data themes
 - ✓ Hydrography
 - **✓** Transportation
 - ✓ TNM Derived Names
 - **✓** Structures
 - **✓** Boundaries
 - ✓ Elevation Contours
 - **✓** Woodland Polygons
 - **✓** 7.5-minute Cells







Description: Data

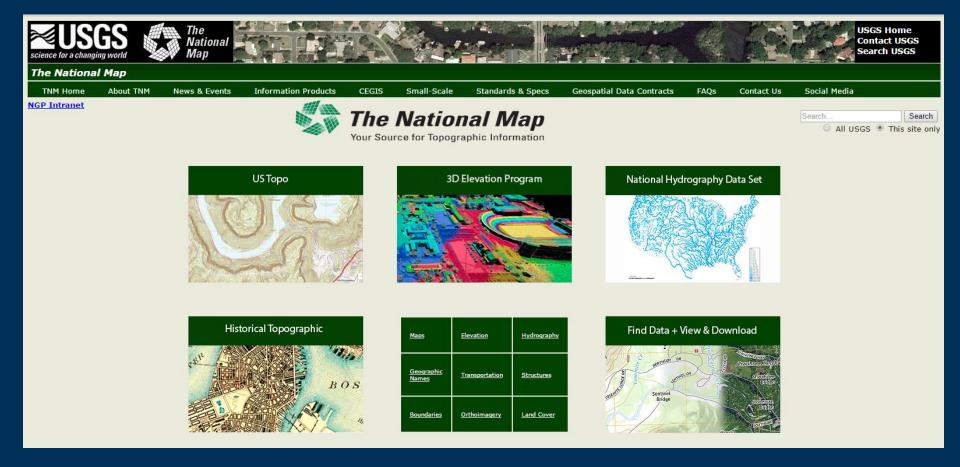


- TNM Derived Names
 - ✓ Filtered and enriched content extracted from Geographic Names (GNIS)
 - ✓ May be used in the Topo TNM Style Template for symbolizing and labeling named features
 - ✓ Provided only in conjunction with Topo Map Vector Data products
 - ✓ Due to the filtering process, it does not include all GNIS names available in the standard GNIS dataset





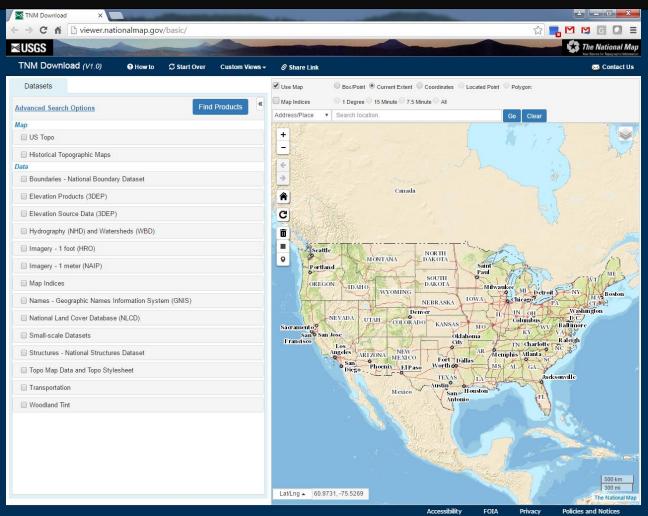
Website – TNM Homepage







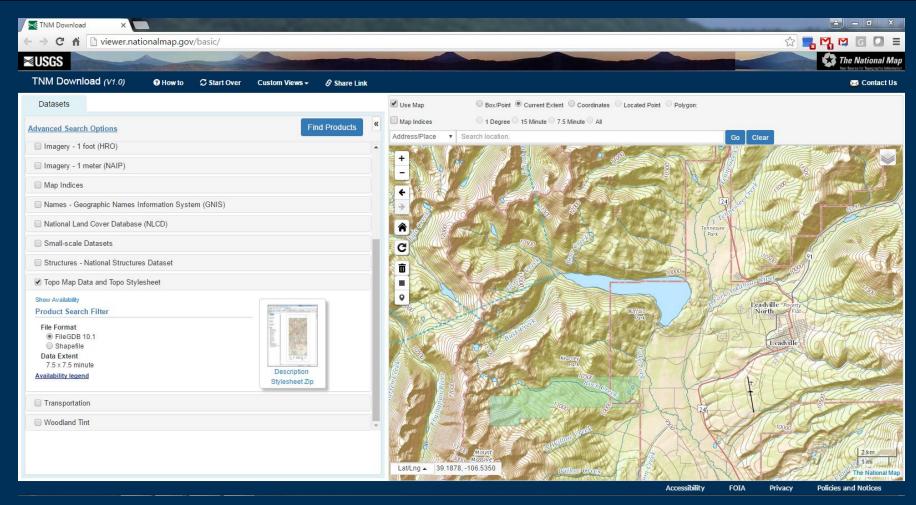
Website – TNM Download







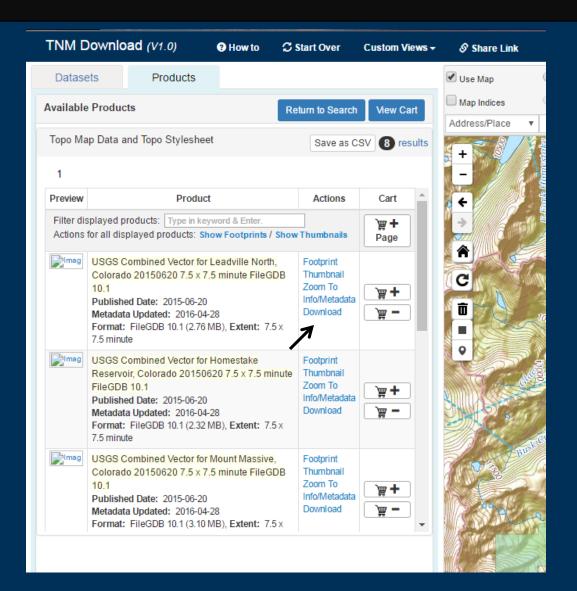
Website - TNM Download







Website – TNM Download

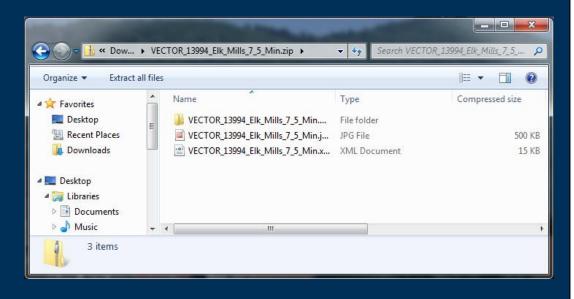


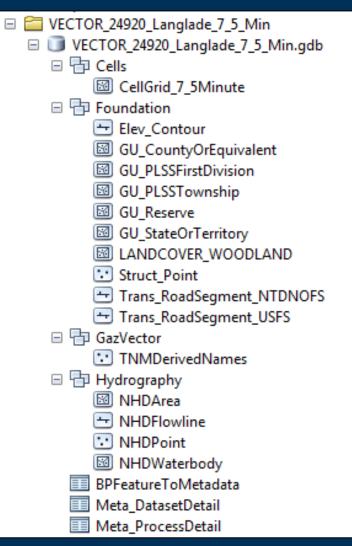




National Geospatial Program

Topo Map Vector Data: Zip File Contents

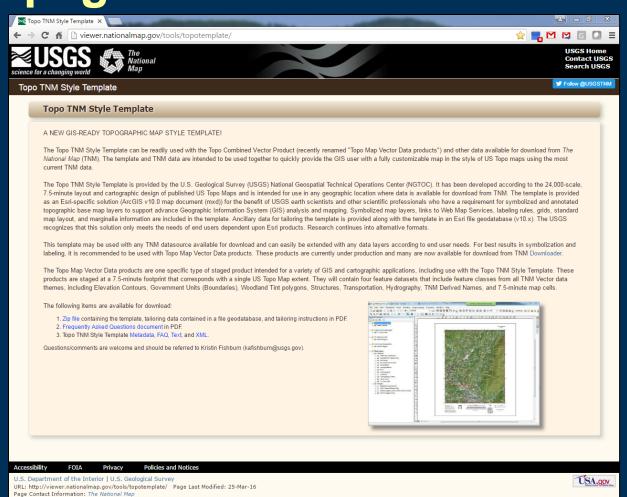






National Geospatial Program

Website – Topo TNM Style Template Homepage







Frequently Asked Questions

Topo TNM Style Template and Topo Map Vector Data Product FAQs

1. What is the Topo TNM Style Template?

The Topo TNM Style Template is provided by the U.S. Geological Survey (USGS) National Geospatial Technical Operations Center (NGTOC). It has been developed according to the 24,000-scale, 7.5-minute layout and cartographic design of published US Topo maps and is intended for use in any geographic location where data is available for download from The National Map (TNM). The template is provided as an Esti-specific solution (ArcGIS v10.0 map document) for the benefit of USGS earth scientists and other scientific professionals who have a requirement for symbolized and annotated topographic base map layers to support advanced Geographic Information System (GIS) analysis and mapping. Symbolized map layers, links to Web Map Services, labeling rules, grids, standard map layout, and marginalia information are included in the template. The USGS recognizes that this solution only meets the needs of end users dependent upon Esti products. Research continues into alternative formats.

Symbolized layers within the template can be linked to data downloaded from TNM and include layers from TNM vector data themes of transportation, hydrography, elevation contours, geographic names, boundaries, structures, and woodland tint. Web Map Service layers in the template include orthoimagery and shaded relief services produced by the USGS, as well as a National Wetlands Inventory (NWI) Web Map Service produced by the US Fish and Wildlife Service. An ancillary file geodatabase, provided along with the template, contains a Military Grid Reference System (MGRS) feature class and a data table created by the National Geospatial Technical Operations Center (NGTOC) containing 7.5-minute map cell names, UTM zones, and other information for use in tailoring the template to a specific 7.5-minute map.

This template may be used with any TNM data source available for download and can easily be extended with data layers supported by ArcGIS according to end user needs. For best results in symbolization and labeling, it is recommended to be used with the Topo Map Vector Data products, and at scales between 1:18,000- and 1:36,000. These products are available for download from TNM (http://viewer.nationalmap.gov/basic/).

<u>Topo TNM Style Template Disclaimer</u>: Initial styling of this Map Template was provided by the U.S. Geological Survey (USGS). The USGS does not endorse any products created from the template.

2. What is the Topo Map Vector Data product?

The Topo Map Vector Data products are one specific type of staged product available from The National Map. They are intended for a variety of GIS and cartographic applications. These products are staged at a 7.5-minute footprint to correspond with the USTopo map 7.5-minute extent. They contain feature classes from all TNM vector data themes, including Elevation Contours, Government Units (Boundaries), Woodland Tint polygons, Structures, Transportation, Hydrography, TNM Derived Names, and 7.5-minute map cells.

3. What is the TNM Derived Names feature class?

The National Map (TNM) Derived Names dataset is a feature class derived from the Geographic Names Information System (GNIS). The GNIS is the official repository of domestic geographic names data; the official vehicle for geographic names used by all departments of the Federal Government; and the source for applying geographic names to Federal electronic and printed products of all types. See http://geonames.usgs.gov for additional information. TNM Derived Names is a filtered and enriched dataset intended specifically to be used in the Topo TNM Style Template for symbolizing and labeling named features. TNM Derived Names data are provided only in conjunction with Topo Map Vector Data products and due to the filtering process does not include all GNIS names available in the standard GNIS dataset. Figures 1 and 2 demonstrate the differences in the labels when using standard GNIS names (Figure 2) compared to TNM Derived Names (Figure 1).

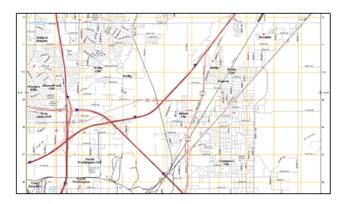
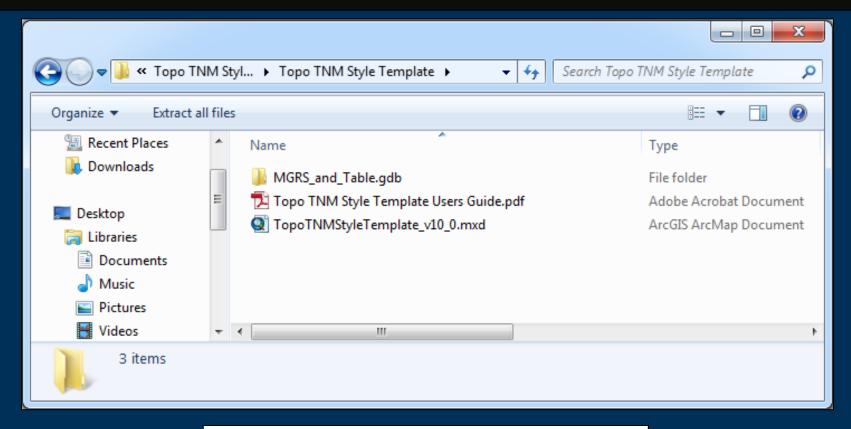


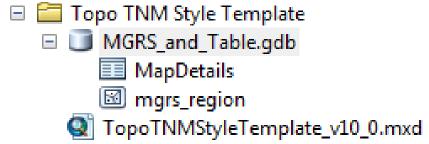
Figure 1: View of Commerce City, Colorado using the Topo TNM Style Template and Topo Map Vector Data that includes TNM Derived Names (road labels are also turned on).

1

Template Zip File Contents









Users Guide





Topo TNM Style Template Users Guide

May 2016

A new GIS-ready topographic map style template is Survey (USGS) National Geospatial Program (NGP). readily used with the Topo Map Vector Data produfrom The National Map (TNM). The template and Ti to quickly provide an advanced Geographic Informa customizable map in the style of US Topo maps using guide explains how to tailor the template to a speci

The Topo TNM Style Template has been developed layout and cartographic design of published US Top geographic location where data is available for dow as an Esri-specific solution (ArcGIS V10.0 ArcMap Discientists and other science professionals who have annotated topographic base map layers to support Symbolized map layers, links to Web Map Services, and marginalia information are included in the tem only meets the needs of end users dependent upor alternative formats.

Topo TNM Style Template Users Guide Ouickstart

Prerequisites

- A computer with a recent Windows operating system and Esri[®] ArcGIS[®] v10.0 (or more recent ArcMap[®] and ArcCatalog[®] software.
- 2. Internet access (to download the template and data).

Download Data and Topo TNM Style Template

- 1. Go to The National Map (TNM) Download Client at http://viewer.nationalmap.gov/basic/.
- 2. Check the box for Topo Map Vector Data and Topo Stylesheet.
 - a. To search for and download data:
 - i. Pan and zoom to your area of interest in the Map Locator.
 - Click on the Find Products button and a list of Topo Map Vector Data production will be provided.
 - Click on the Download link next to the desired product and a ZIP (.zip) file containing the dataset will be automatically downloaded to your computer
 - b. To download the template:
 - Click on the Thumbnail Description, which will open the web page for the template (http://viewer.nationalmap.gov/tools/topotemplate/).
 - Click on the link for the "Zip file" containing the template, tailoring data, and tailoring instructions. A ZIP file will be automatically downloaded to your computer.
 - c. NOTE: Data from the individual TNM vector themes (Map Indices, Boundaries, Conto Hydrography, Structures, Transportation and Woodland Tint) may be used in place o the Topo Map Vector Data products if larger data download footprints are desired.
- Unzip the ZIP files for the Topo Map Vector Data and the Template, ideally collocated in a fol on your computer.

Tailoring the Template

- Open the Topo TNM Style Template (TopoTNMStyleTemplate_v10.0.mxd) using ArcMap.
- Connect Map Layers in the template with appropriate data sources in the Topo Map Vector product(s) or other TNM data that was downloaded.
- Identify the 7.5-minute extent-specific map configuration details using the MapDetails table provided in the ancillary file geodatabase "MGRS_and_Table.gdb" provided with the templa
 - Apply the 7.5-minute extent map configuration details to the template for the US National Grid, Grid Zone Designation, and Map Layers data frames.
 - i. Set the Projection Property.
 - ii. Set the Map Rotation Property (Map Layers data frame only).
 - Set the Data Frame Size Properties (Map Layers data frame only).
- Pan the data frame to the 7.5-minute extent using the Map Indices data that was downloade and reset the scale to 1:24,000 as needed.
- 5. Update the Marginalia Text.
 - Update the Map Title.
 - Update the Contour Interval using the information in the contour data that was downloaded.
 - c. Identify and update Citation Dates and other marginalia text as needed.

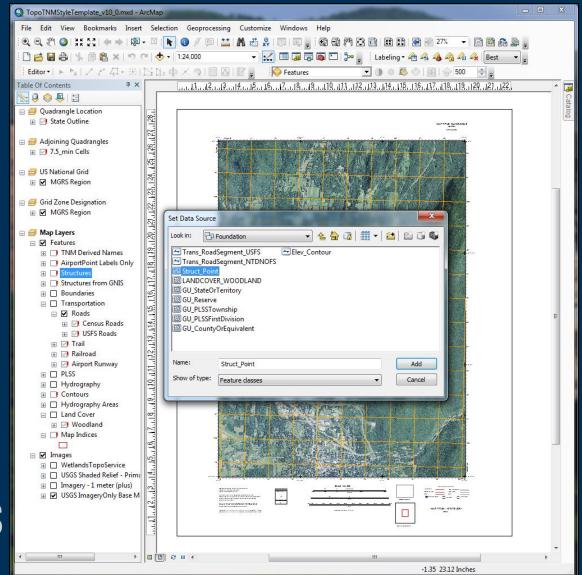


Topo TNM Style Template Users Guide

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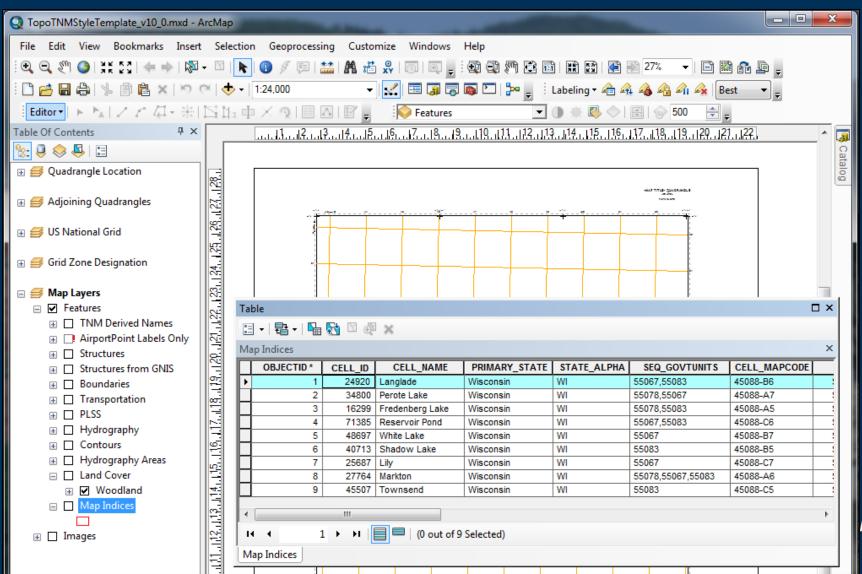
Connect Data Layers



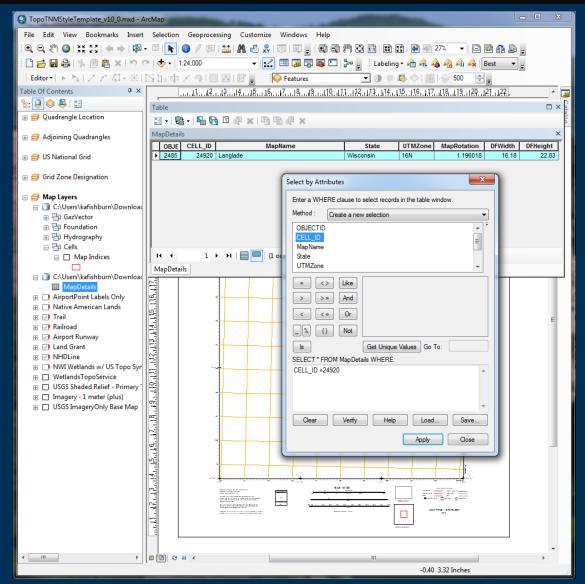




Identify 7.5-minute Cell ID



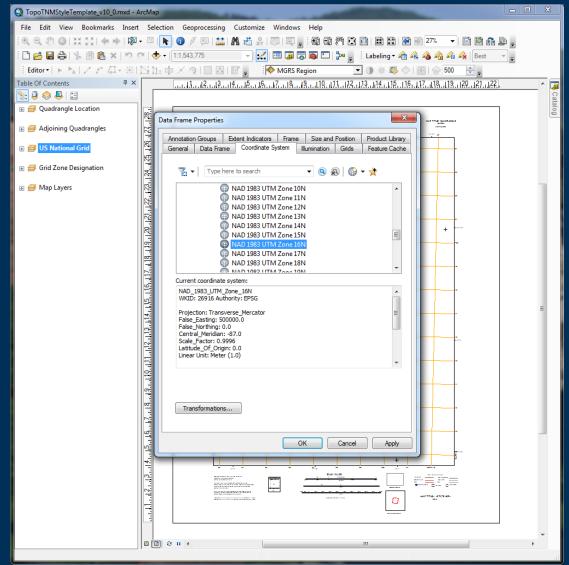
Identify Data Frame Properties







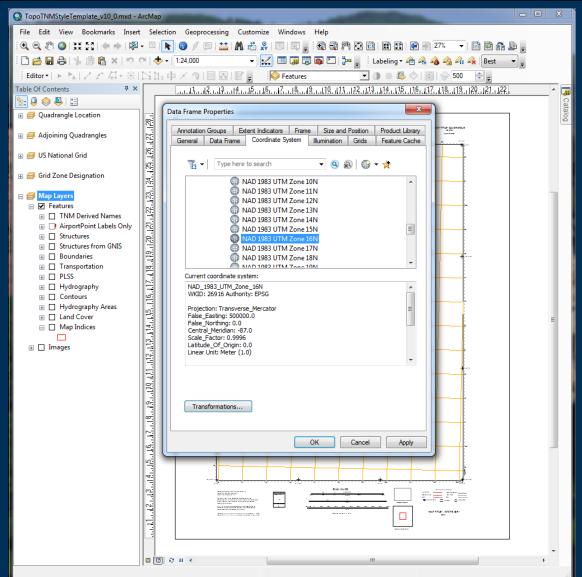
Set the Projection Property for US National Grid and Grid Zone Designation Data Frames







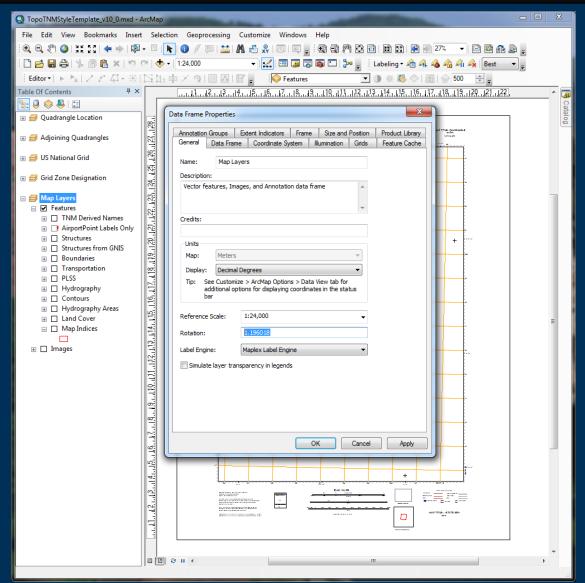
Set the Projection Property for the Map Layers Data Frame







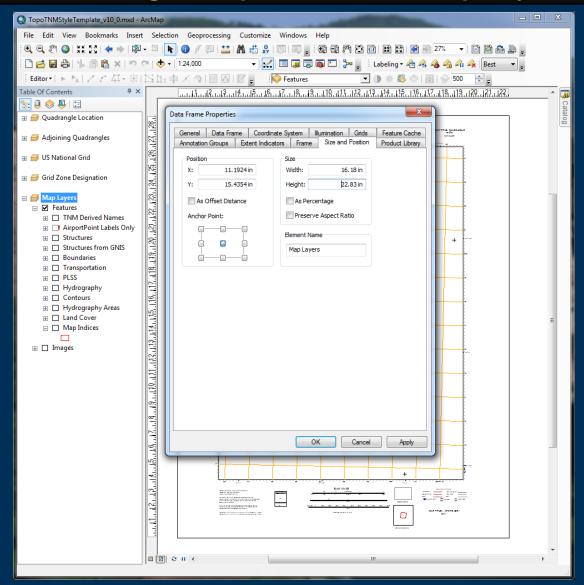
Set the Map Rotation Property for the Map Layers Data Frame







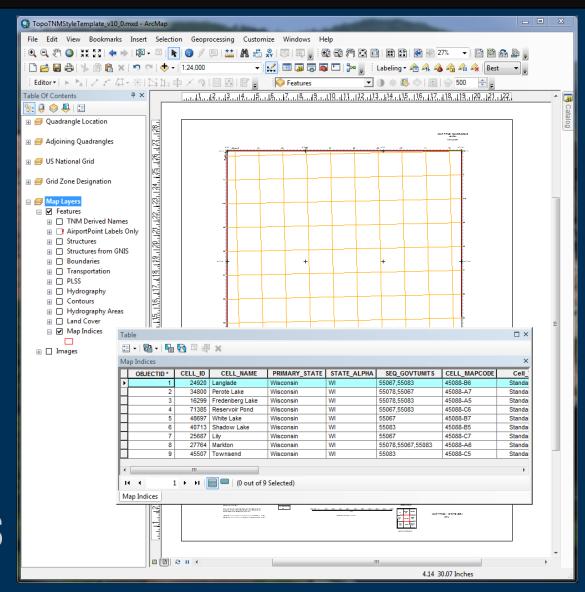
Set the Width and Height Properties for the Map Layers Data Frame







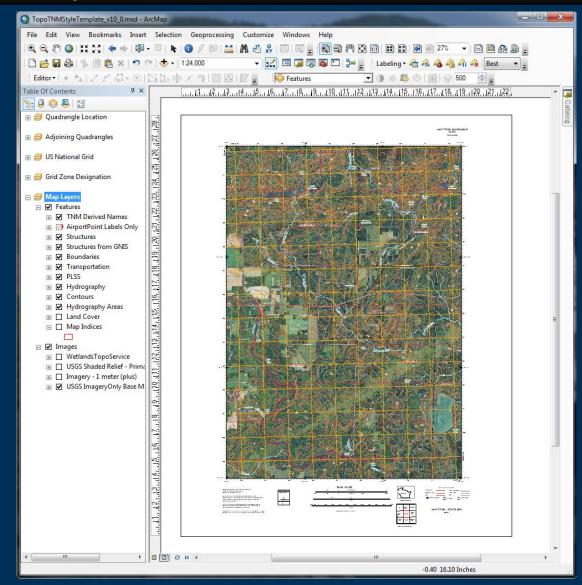
Pan to Cell







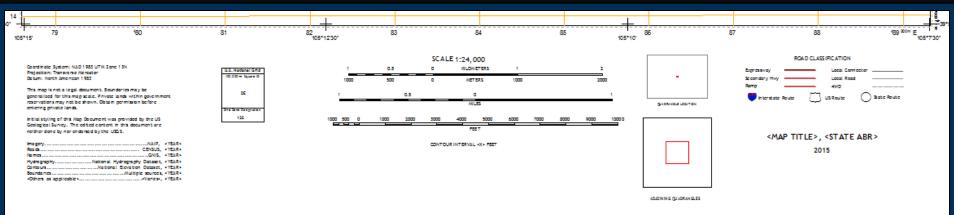
Display Data Layers







Marginalia



Coordinate System: NAD 1983 UTM Zone 16N

Projection: Transverse Mercator Datum: North American 1983

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Initial styling of this Map Document was provided by the US Geological Survey. The edited content in this document are neither done by nor endorsed by the USGS.

<DATASET>.....<SOURCE>, <YEAR>
Contours.....National Elevation Dataset, <YEAR>

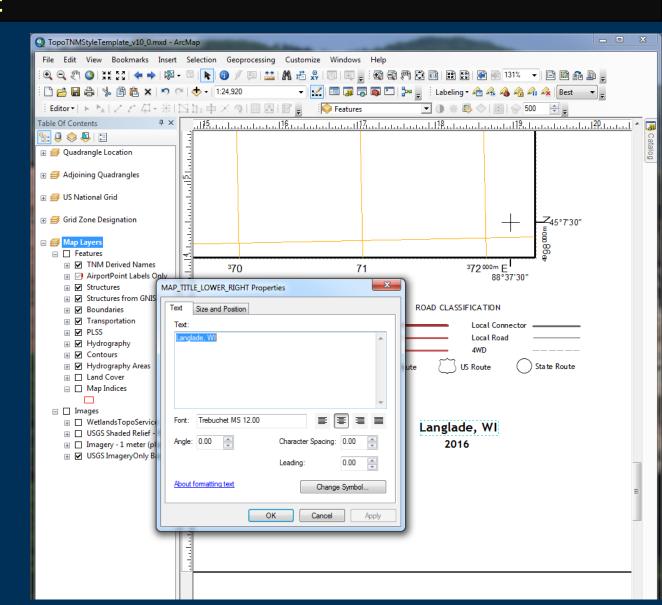
<MAP TITLE>, <STATE ABR>
2016





Edit Marginalia Text

<MAP TITLE>, <STATE ABR>
2016





Future Goals

- Complete nationwide coverage of Topo Map Vector Data Products
- Evaluate a second template for use at 1:100,000-scale
 - ✓ Complete cartographic design
 - ✓ Continue with VisibilityFilter attribute research for pruning 1:24,000-scale data to 1:100,000-scale
- Evaluate both the 1:24,000-scale and 1:100,000-scale templates in conjunction with future Product On Demand (POD) research





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 - ✓ Irdavis@usgs.gov
- Kristin Fishburn
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- The National Map Partner & User Engagement Contacts
 - √ http://liaisons.usgs.gov/geospatial/





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