



US Topo

Topographic Maps for the Nation

U.S. Department of the Interior
U.S. Geological Survey

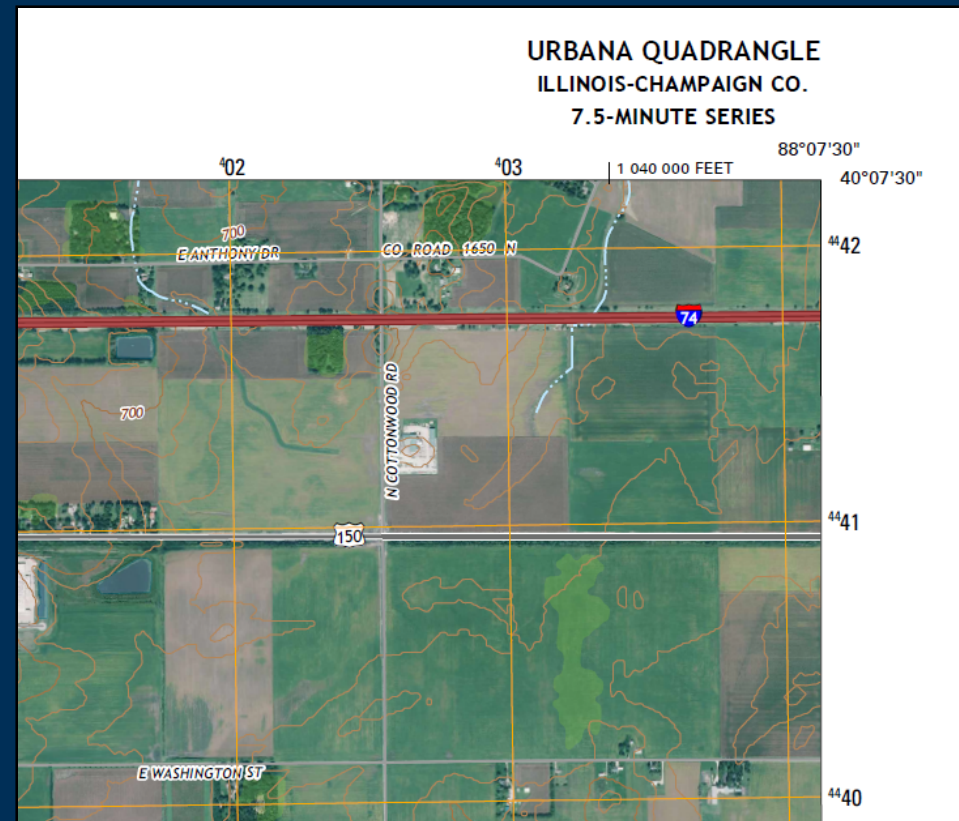
Accomplishments

- **Public launch of US Topo (December 2009)**
- **Completed US Topo for the 48 contiguous states in September 2012 totaling nearly 54,000 new maps**
- **Redesign in 2013 improved legibility and symbology**
- **Second round of US Topo map completion for continental U.S. completed in September 2015**
- **Hawaii, Puerto Rico, and US Virgin Islands added into second round production in 2013**
- **Alaska production started in 2013**

US Topo

The USGS topographic map product

- Built from The National Map data
- Digital
- GeoPDF® format
- Available free on the Web
- Image base
- Core feature layers
- Regular updates



US Topo Maps Content

2009, 2010, 2011, 2012, 2013, 2014, 2015 Feature Content

Ortho-rectified Aerial Imagery

Roads

Names

Elevation Contours

Hydrography

State/County/USFS Boundaries

Runways

Woodland

Railroads

PLSS

Fire Stations

Hospitals

Schools

Military Boundaries

Cemeteries

Post Offices

Shaded Relief

USFS Trails

FWS Boundaries

State Capitals

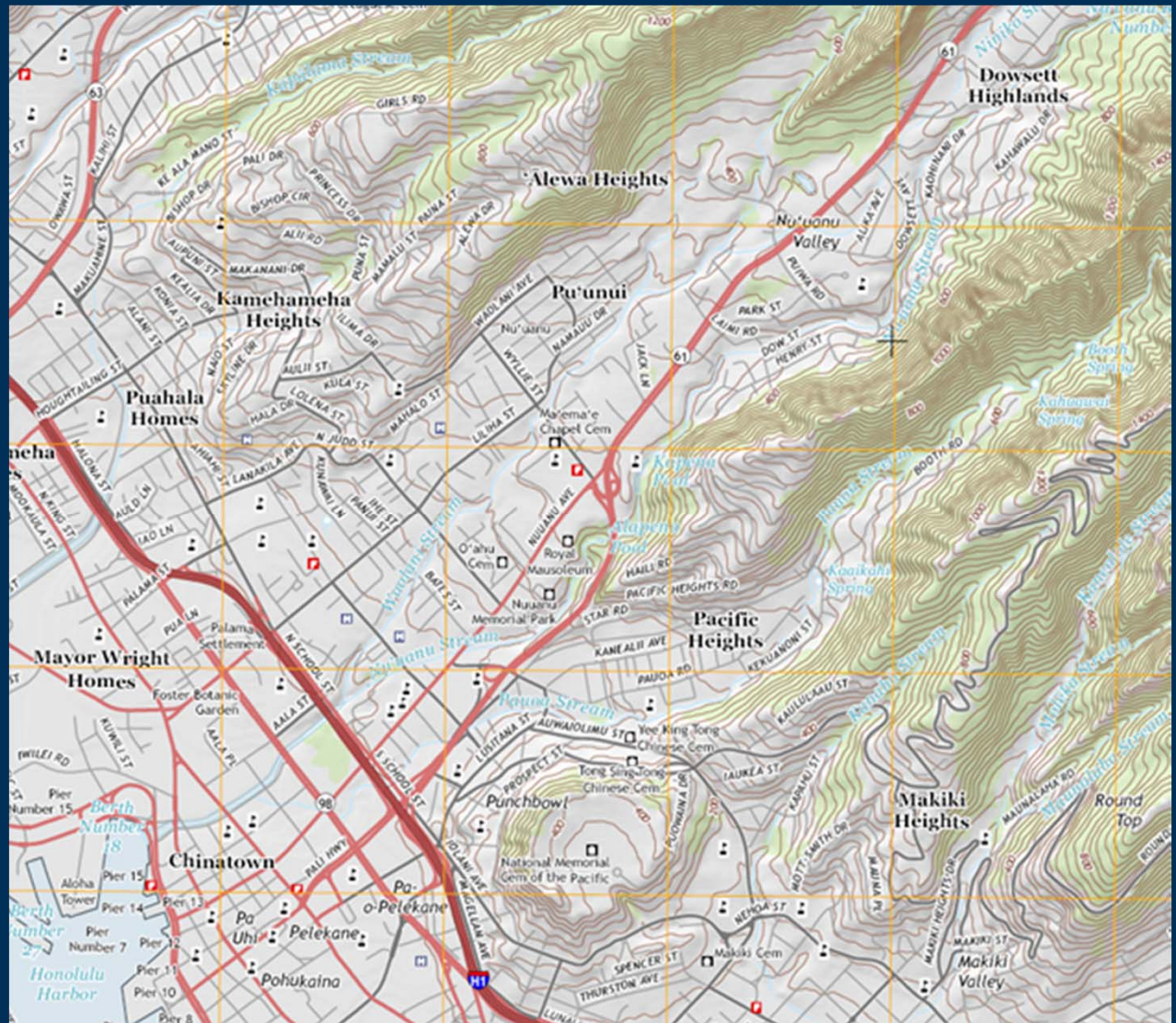
Police Stations

Correctional Facilities

IMBA Trails

National Scenic Trails

Wetlands



Strategy

- **Evolution**
 - ✓ Data layers added as they become available in The National Map
 - ✓ Features added as technical processes are perfected
- **Three-year revision cycle**
 - ✓ Linked to US Department of Agriculture's National Agriculture Imagery Program (NAIP) image acquisition schedule

Data Sources

■ The National Map

- ✓ Transportation – roads from US Census TIGER files and US Forest Service
- ✓ Boundaries – National Boundaries Dataset (via partnerships)
- ✓ Names - Geographic Names Information System
- ✓ Orthoimage – National Agriculture Imagery Program (NAIP)
- ✓ Elevation – 3D Elevation Program
- ✓ Hydrography – National Hydrography Dataset
- ✓ Structures – National Structures Dataset (includes crowdsourcing)
- ✓ Woodland – National Land Cover Dataset

■ Other Sources

- ✓ Public Land Survey System – Bureau of Land Management
- ✓ Trails – National Scenic Trails, IMBA, US Forest Service



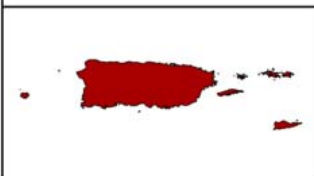
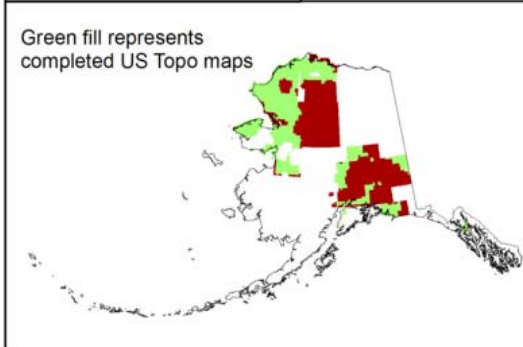
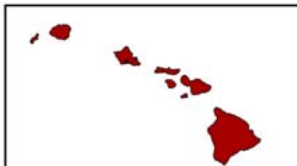
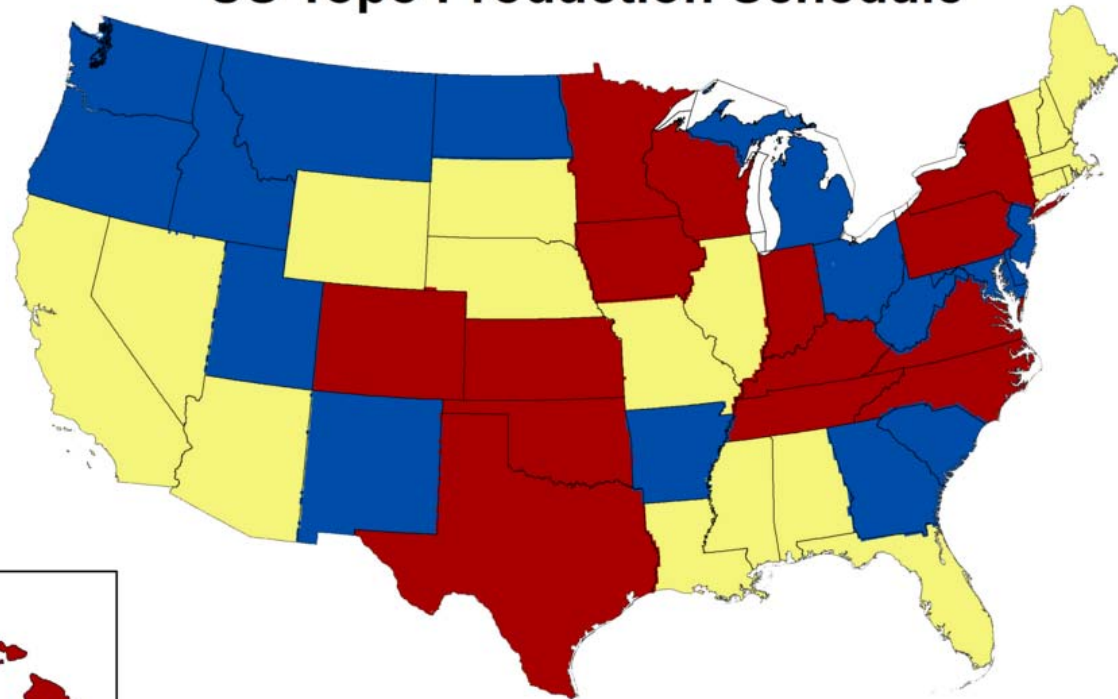
Product Characteristics

- Traditional USGS 7.5-minute topographic quadrangle format
- Nationally consistent and complete
- Can be used electronically or plotted
- Reference systems with traditional annotation:
 - ✓ Latitude/Longitude
 - ✓ U.S. National Grid

Product Characteristics

- **GeoPDF format**
 - ✓ A TerraGo Technologies® published extension to the Adobe® PDF file format (free download)
- **File size varies - about 18 to 35 Mb**
- **Georeferenced**
 - ✓ Locations defined in terms of map projection and coordinate systems
- **Layered (select layers, turn layers on/off)**
- **Limited interactive capabilities, free tools**

US Topo Production Schedule



- Update in 2015
- Update in 2016
- Update in 2017

September 22, 2015

Internet Access Pathways

USGS Store
(store.usgs.gov)

TNM Download Client
(viewer.nationalmap.gov/basic)

The screenshot shows the USGS Store homepage. At the top, there is a navigation bar with the USGS logo and the tagline "science for a changing world". Below this, a search bar and a "Map Locator & Downloader" section are visible. The main content area features a "Welcome To The USGS Store" message and a "Popular Gift Item" section highlighting "Earth as Art" Landsat Posters. A sidebar on the left contains various product categories like "Recreation Passes", "Education Products", and "Maps".

The screenshot displays the TNM Download Client interface. It features a top navigation bar with "USGS" and "The National Map" logos. The main area is divided into a left sidebar with "Advanced Search Options" and a central map area. The search options include checkboxes for various datasets such as "Boundaries - National Boundary Dataset", "Elevation Products (3DEP)", and "Imagery - 1 foot (HRO)". The map area shows a topographic map of the United States with various geographical features and city labels.



Internet Access Pathways (cont)

Geonames (geonames.usgs.gov/pls/topomaps)

The screenshot shows the 'USGS Home Contact USGS Search USGS' header with a topographic map background. Below is the 'US Topo and Historical Topographic Map Collection' section. It features a search interface with dropdown menus for 'State' (set to 'All states') and 'Scale' (set to 'All scales'), a 'Map Name' text input field, and radio buttons for 'Map Type' (set to 'All', with 'US Topo' and 'Historical' as options). A 'Search' button and a 'Clear Search Fields' button are also present. To the right of the search fields, there is a section titled 'Searching for USGS US Topo and Historical Topographic Map Collection (HTMC)' with instructions on how to search and what results are available. At the bottom of the page, there are links for 'Accessibility', 'FOIA', 'Privacy', and 'Policies and Notices', along with the USGS logo and the 'USA.gov' logo.

USGS
science for a changing world

USGS Home
Contact USGS
Search USGS

US Topo and Historical Topographic Map Collection

State: All states
Scale: All scales
Map Name:
Map Type: All US Topo Historical
Search
Clear Search Fields

Searching for USGS US Topo and Historical Topographic Map Collection (HTMC)

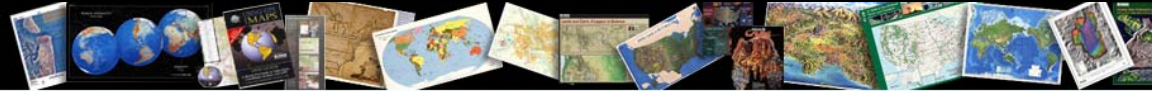
To find your desired map(s), you can search by:
You must enter a value for at least one of the following:
State
Scale
Map Name - The map name you enter is checked against the original map file and the USGS Cells database, including historical cell names. The map name field will accept % as a multiple-character wildcard and _ as a single-character wildcard.
Map Type - Selecting "US Topo" map type will return current and historical US Topo maps (digital maps from 2000 and later). Selecting "Historical" map type will return HTMC maps (scanned images of paper maps prior to 2000) and historical US Topo maps.

The results of the search will allow you to:
View summary metadata for HTMC maps.
View FSDC metadata XML file for all maps (a metadata file is attached to each GeoPDF).
Download a GeoPDF of each map (file download may be slow depending on network).
View thumbnail image of each map.
Download a spreadsheet (CSV) file for all maps found by a search. To download a CSV file of all database records, do not attempt a search, but instead [click here](#).

Accessibility FOIA Privacy Policies and Notices
U.S. Department of the Interior | U.S. Geological Survey
URL: <http://geonames.usgs.gov/topomaps/>
Page Contact Information: Contact Us

USA.gov
THE NATIONAL MAP
AMERICA

Accessing US Topo



[USGS Home](#)
[Contact USGS](#)
[Search USGS](#)

The USGS Store

[Log on](#) | No Items in Basket | [Help](#)

Search

Map Locator & Downloader

or Enter Search Term:

go

[Advanced Search](#)

Product Catalog

[USGS Store Home](#)

[Recreation Passes](#)

[Education Products](#)

[Featured & New Products](#)

[Maps](#)

[Books & Reports](#)

[Other Products](#)

Other Items of Interest

Other USGS Links

Find a [USGS Map Dealer](#) in your area.

Tips For Using This Site

This website will time out after 30 minutes of inactivity, if you cannot complete your order please "SAVE YOUR BASKET" for later, otherwise your shopping basket will be lost.

Some products have a detailed PDF version, download Adobe Reader to view them.



We Want To Know

If you encounter any problems or have questions please call **1-888-ASK-USGS** (1-888-275-8747) **Select Option 1** or email us at: usgsstore@usgs.gov.

Message Center:

If during your shopping session you encounter an out of stock item, please call Customer Service (1-888-ASK-USGS (1-888-275-8747), Select Option 1), to verify product availability.

Welcome To The USGS Store

Here you can find maps, Federal Recreation passes, scientific reports, educational materials, and much more!

"Earth as Art" Landsat Posters

[View All >>](#)



These stunning, full-color Landsat satellite posters make the perfect gift for any science, geography, or art lover!

Popular Gift Item

Product Number: See more...

3 / 7

Maps >>



Maps, Maps, Maps read more about different kinds of USGS map products.

Map Locator & Downloader >>



Find, Order, or Download FREE US Topo and Historical Topographic Maps!

You can find out more about [US Topo](#) and our [Historical Topographic Maps](#) as well as explore our new [Historical Topo Map viewer](#) called TopoView at these linked locations.

Recreation Passes >>



Provides entry into US National Parks, National Forests, and other places.

Education Products >>



Several hundred of the most useful USGS maps for teaching and learning.

Books and Reports >>

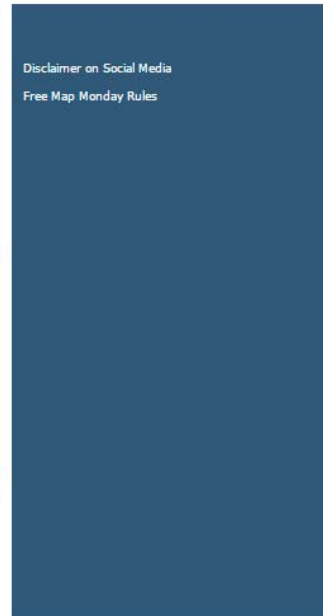


Scientific reports on earthquakes, volcanoes, minerals, fossils, geologic processes, water supply, water quality, USGS

Other Products >>



Pamphlets, brochures, booklets, fact sheets, videos, and other great items.



nal Map

USGS Store – US Topo Download

Search: Address or Place Search Help

Navigation Help

- NAVIGATE:
Click and drag to pan; use upper-left and lower-right corners to zoom in and out.
- MARK POINTS:
Click on a place to add a marker. Click on a marker to see an information popup. Switch between Navigate and Mark Points by clicking on the appropriate radio button. Map footprints can optionally be displayed. Select a footprint size from the dropdown menu.

7.5 and 15 Minute

SELECT AND GET YOUR MAPS:

Click marker to see an information popup. Click on the appropriate marker to download cart.

2 items

	Size	Date	View		
Bastrop US Topo	7.5X7.5 GRID	2013	view	26.32MB	
Bastrop US Topo	7.5X7.5 GRID	2010	view	15.60MB	
Austin	30X60 GRID	1985	view	30.53MB	
Austin	30X60 GRID	1985	view	23.93MB	
Austin	30X60 GRID	1985	view	29.80MB	
Bastrop	7.5X7.5 GRID	1982	view	12.87MB	
Bastrop	7.5X7.5 GRID	1982	view	12.83MB	

USGS - The National Map

30-04.420N 97-18.133W
USNG 14R PU 6363 2816

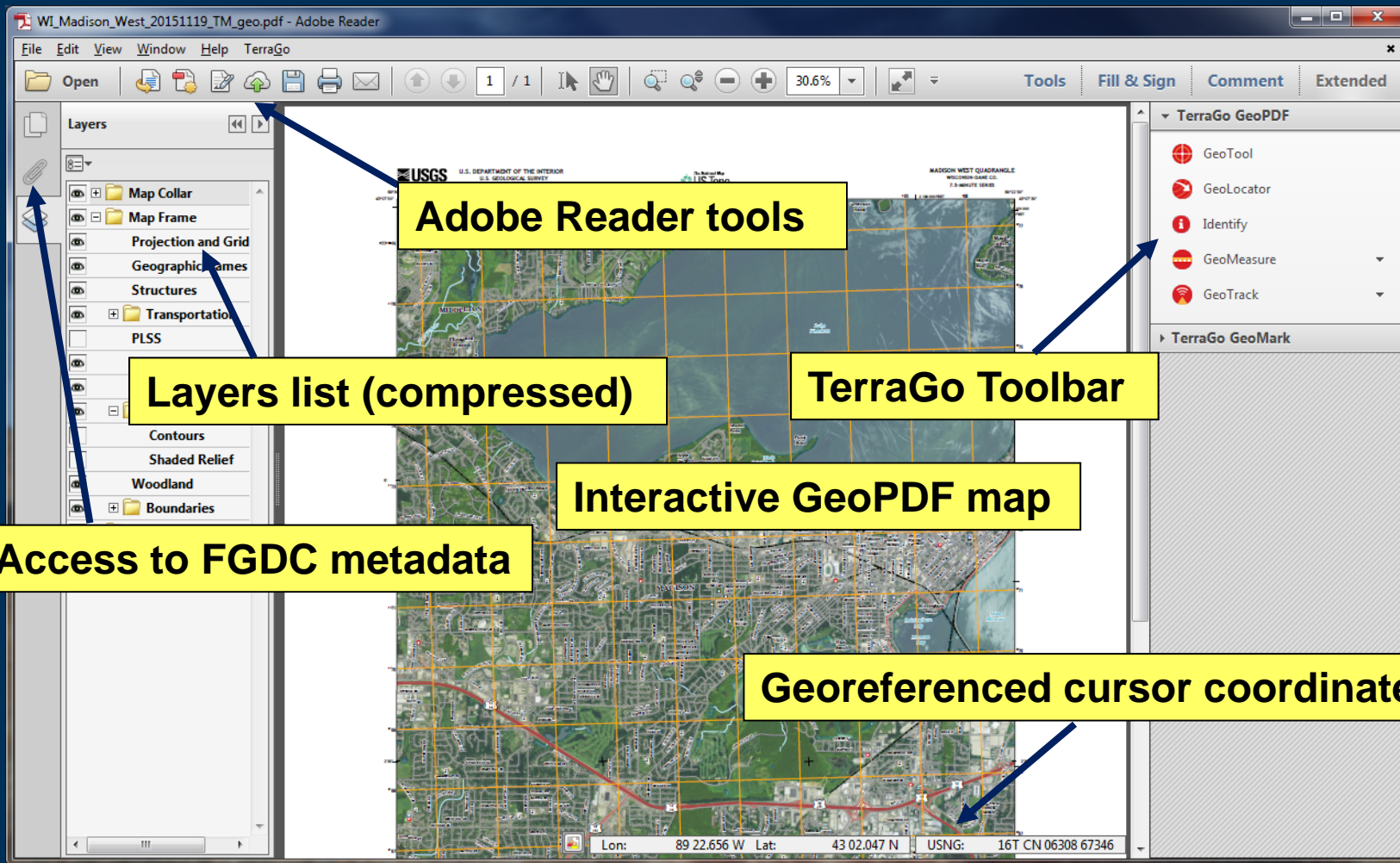
Free plug-in for Adobe® Reader®

- ACCESS** geospatial maps & imagery
- MEASURE** distances & area
- CAPTURE** field information

System Requirements

- **Recent operating system**
 - ✓ Microsoft® Windows 7 or higher recommended
 - ✓ Mac OS®
 - ✓ Broadband Internet access
 - ✓ Highly recommended
- **Adobe Reader® software**
 - ✓ Free download on Internet
 - ✓ Will also work with Adobe Acrobat® (\$\$)
- **TerraGo Technologies Toolbar (Windows only)**
 - ✓ Not required, but recommended for enhanced functions
 - ✓ Free download

Downloaded Map Adobe Reader with TerraGo Toolbar



Access to FGDC metadata

Layers list (compressed)

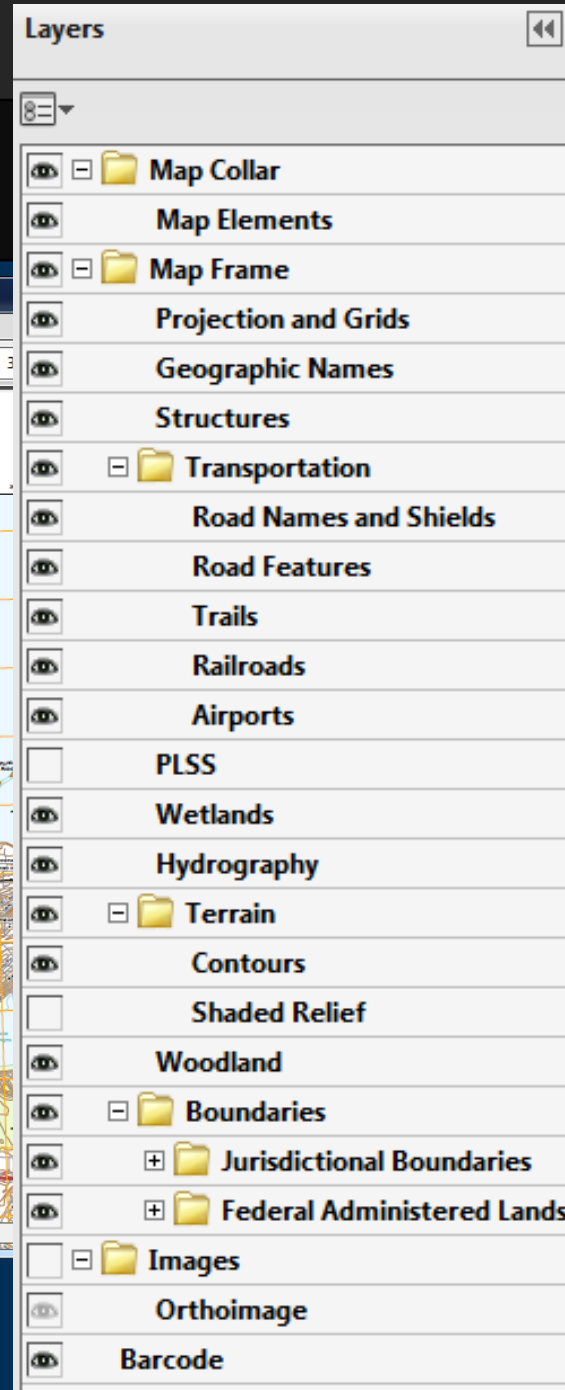
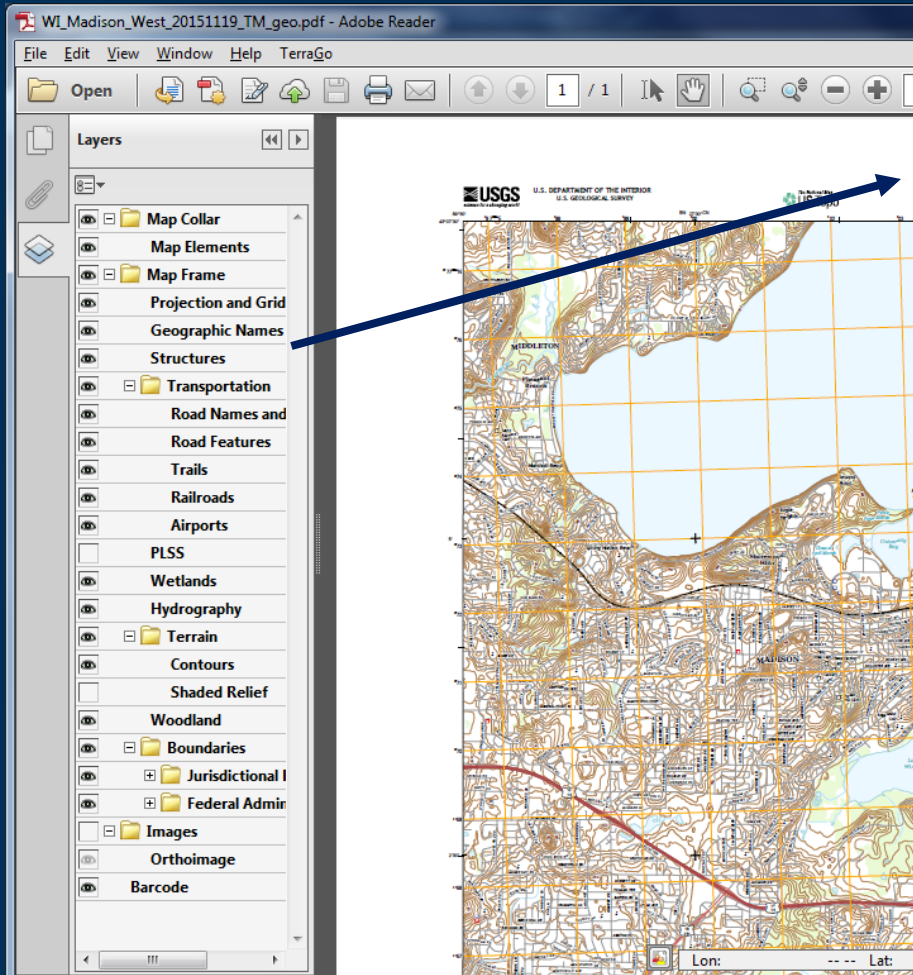
Adobe Reader tools

TerraGo Toolbar

Interactive GeoPDF map

Georeferenced cursor coordinates

Downloaded Map Layer List (expanded)



Metadata and Map Symbols

The screenshot shows the Adobe Reader interface. The title bar reads "WI_Madison_West_20151119_TM_geo.pdf - Adobe Reader". The menu bar includes "File", "Edit", "View", "Window", "Help", and "TerraGo". The toolbar contains icons for "Open", "Save", "Print", "Email", "Page Up", "Page Down", "Page 1 / 1", "Hand", "Zoom In", "Zoom Out", and "75%".

The "Attachments" panel on the left contains a table with the following data:

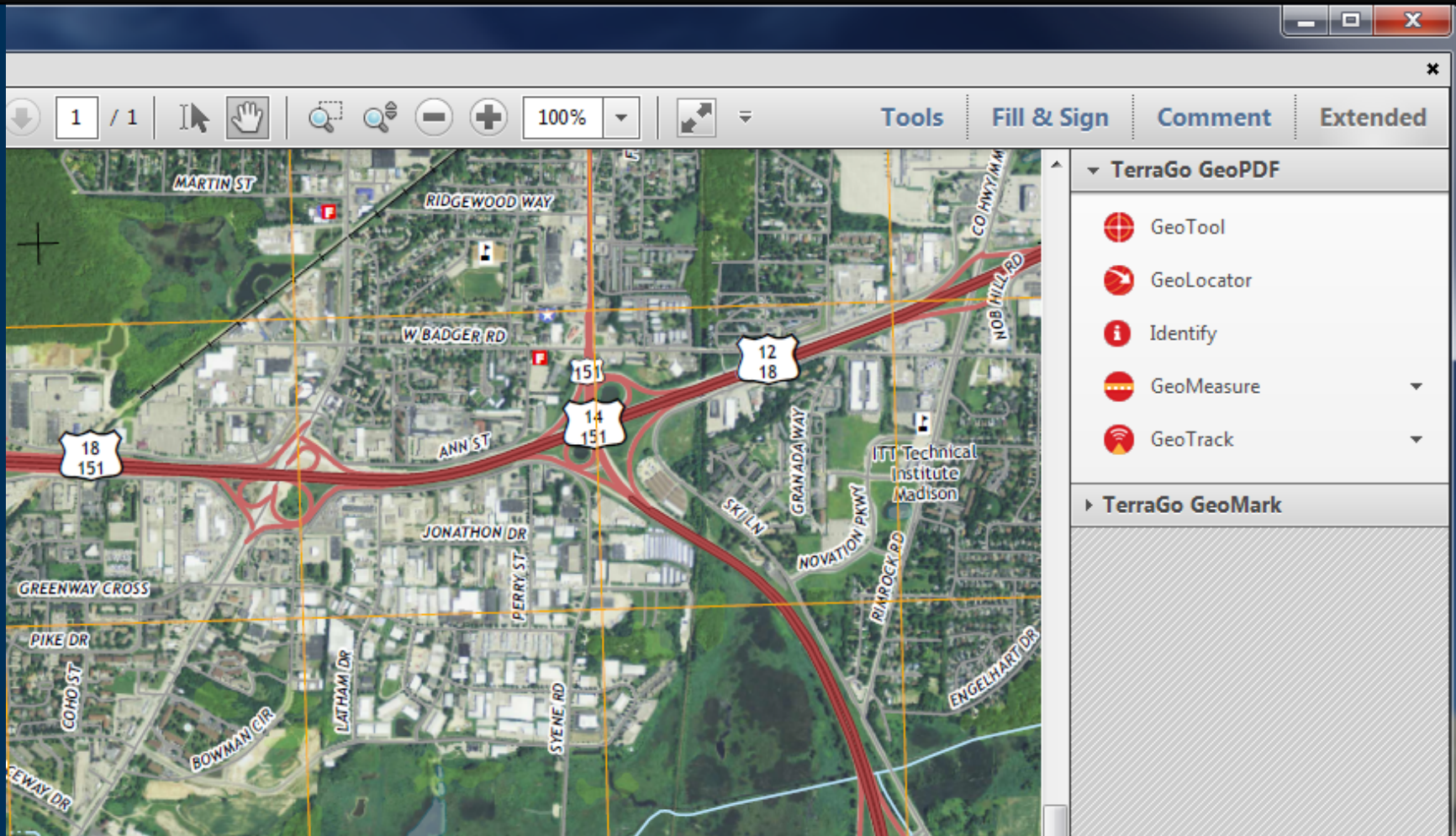
Name	Description
US Topo Map Symbols.pdf	Legend for the map
WI_Madison_West_20151119_T...	Metadata for the map

The main content area displays a topographic map with the USGS logo and "U.S. DEPARTMENT U.S. GEOLOGICAL SURVEY" text. The map includes contour lines, roads (PHEASANT BRANCH RD, WHITTLESEY RD, RAMSEY RD), and a coordinate grid. The coordinates shown are 89°30' longitude, 43°07'30" latitude, and 2970000m E / 4770000m N.

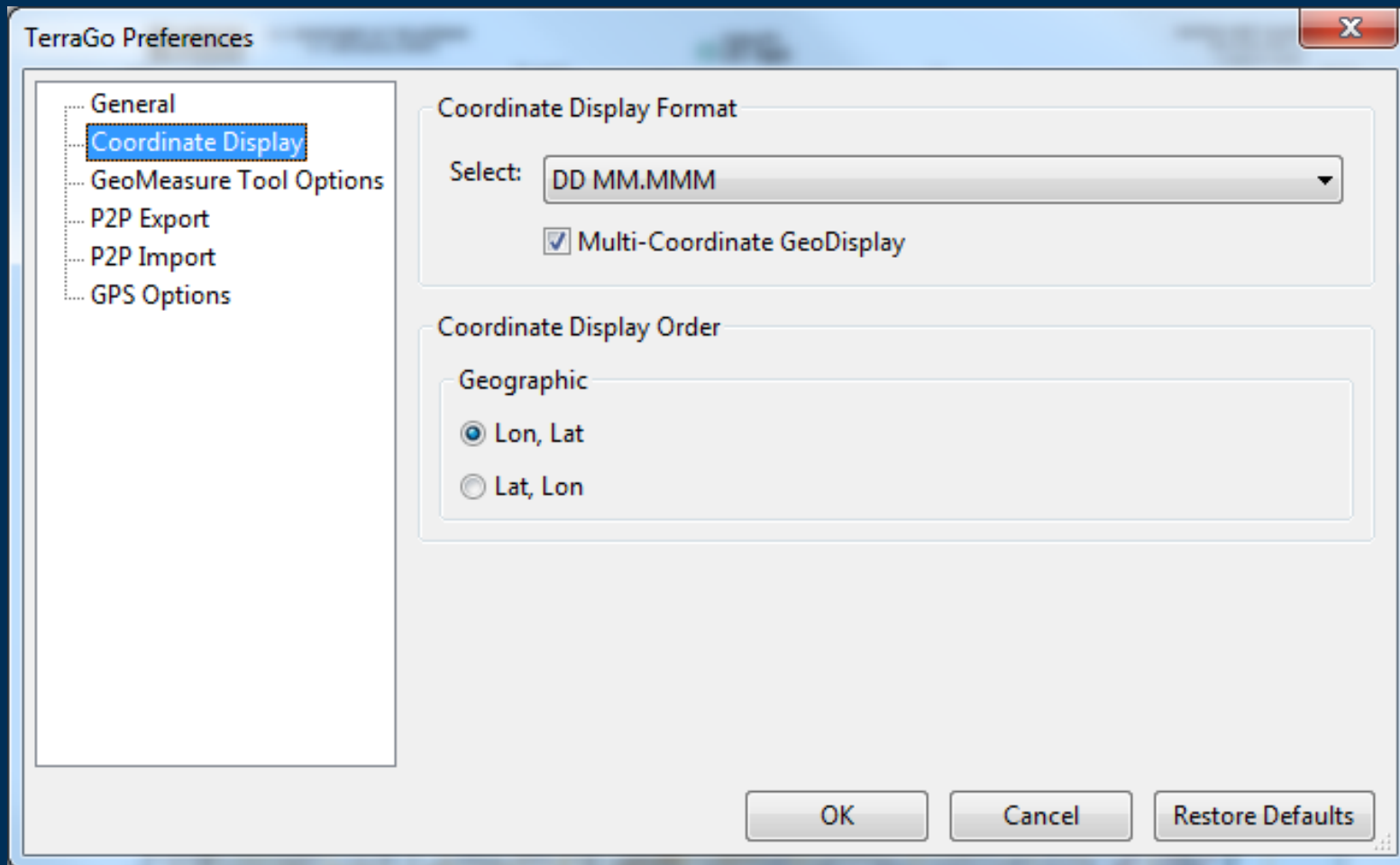
Metadata Reader

```
<?xml version="1.0" encoding="UTF-8"?>
<!--<?xml-stylesheet type="text/xsl" href="http://webhosts.cr.usgs.gov/mod/FGDC_Plus.xsl"?-->
<!DOCTYPE metadata>
- <metadata>
  - <idinfo>
    - <citation>
      - <citeinfo>
        <origin>U.S. Geological Survey</origin>
        <pubdate>20151119</pubdate>
        <title>US Topo 7.5-minute map for Madison West, WI</title>
        <geoform>map, raster digital data</geoform>
      - <pubinfo>
        <pubplace>Rolla, MO and Denver, CO</pubplace>
        <publish>USGS - National Geospatial Technical Operations</publish>
      </pubinfo>
    </citeinfo>
  </citation>
  - <descript>
    <abstract>Layered GeoPDF 7.5-minute map showing contours, hydrography, and other geospatial data.
    <purpose>This map depicts geospatial data holdings and other geospatial information.
    <supplinf>GNIS Cell ID = 2719
  </descript>
  - <timeperd>
    - <timeinfo>
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        <enddate>2015</enddate>
      </rngdates>
    </timeinfo>
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  </timeperd>
  - <status>
    <progress>Complete</progress>
    <update>Irregular</update>
  </status>
  - <spdom>
    - <bounding>
      <westhc>-89.5</westhc>
```

TerraGo Toolbar Options

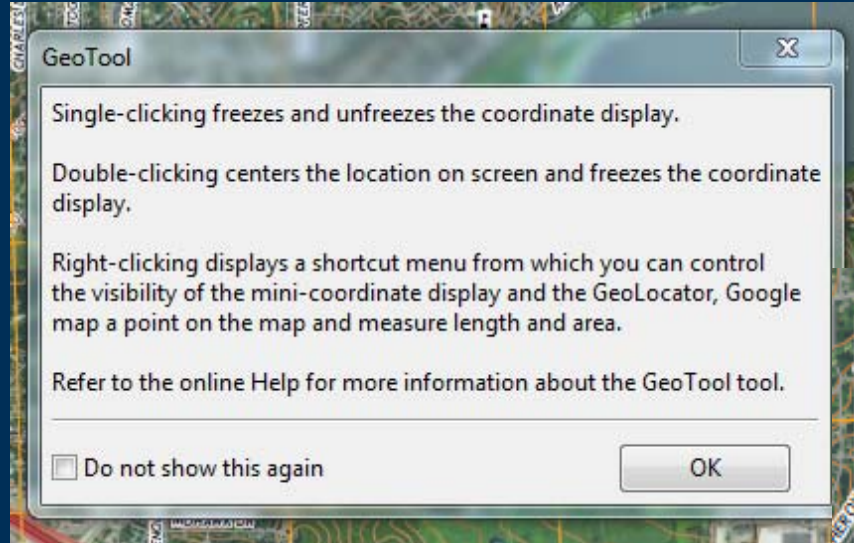


Terrago Preferences

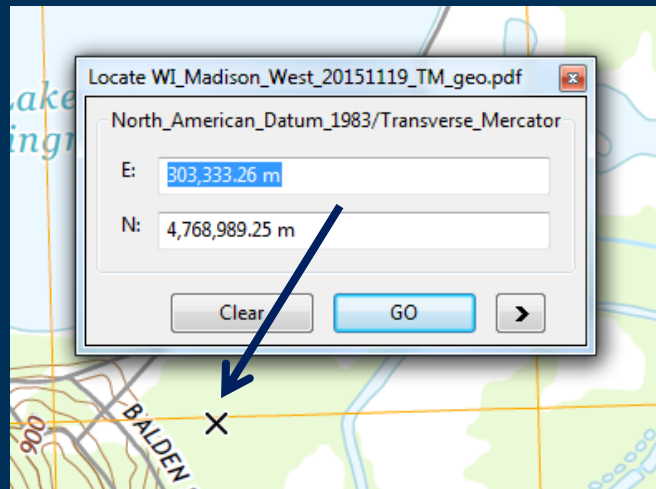


TerraGo Toolbar Options

- GeoTool

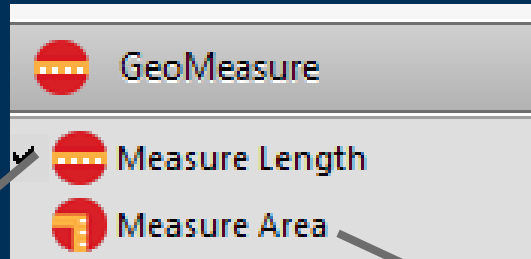


- GeoLocator



TerraGo Toolbar Options

- GeoMeasure



The 'Measure Length' dialog box is shown over a topographic map. A blue line segment is drawn on the map, with a red square at the start and a green square at the end. The green square is labeled 'Second Point'. The dialog box displays the following data:

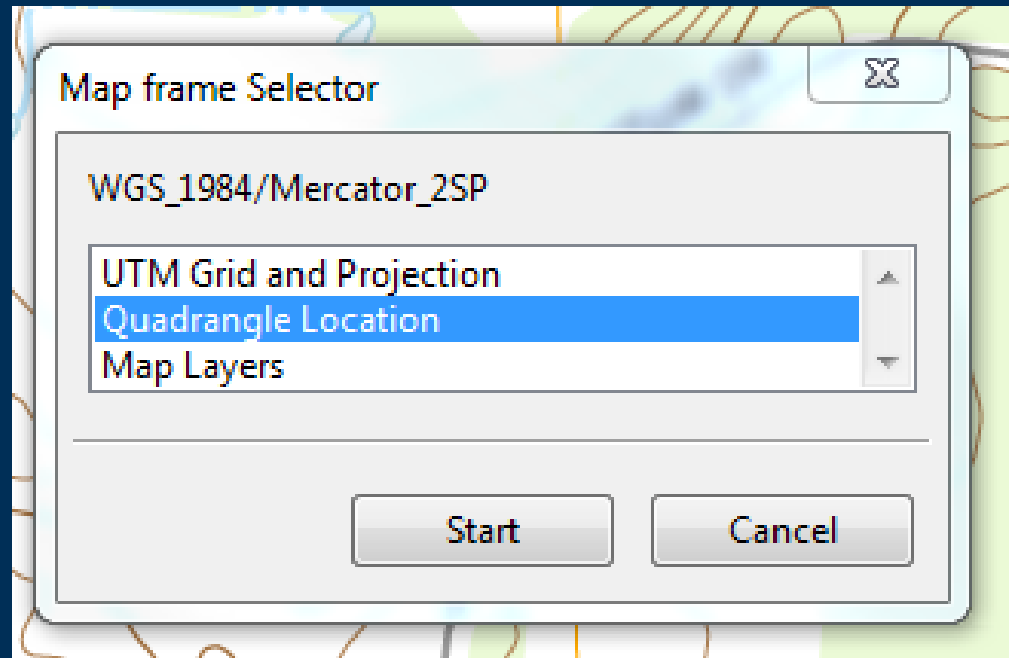
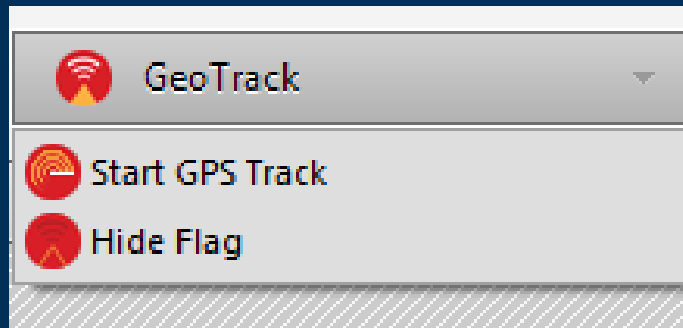
Totals	
Length	473.66 m
Convert to GeoMark	
Current Segment	
Length	
Azimuth	
Magnetic Bearing	
Previous Segment	
Length	473.66 m
Azimuth	221
Magnetic Bearing	223
Previous Totals	
Length	486.33 m

The 'Measure Area' dialog box is shown over a topographic map. A blue polygon is drawn on the map. The dialog box displays the following data:

Totals	
Area	80,228.32 sq m
Perimeter	1,092.05 m
Convert to GeoMark	
Current Segment	
Length	
Azimuth	
Magnetic Bearing	
Previous Segment	
Length	
Azimuth	
Magnetic Bearing	
Previous Totals	
Area	80,228.32 sq m
Perimeter	1,092.05 m

TerraGo Toolbar Options

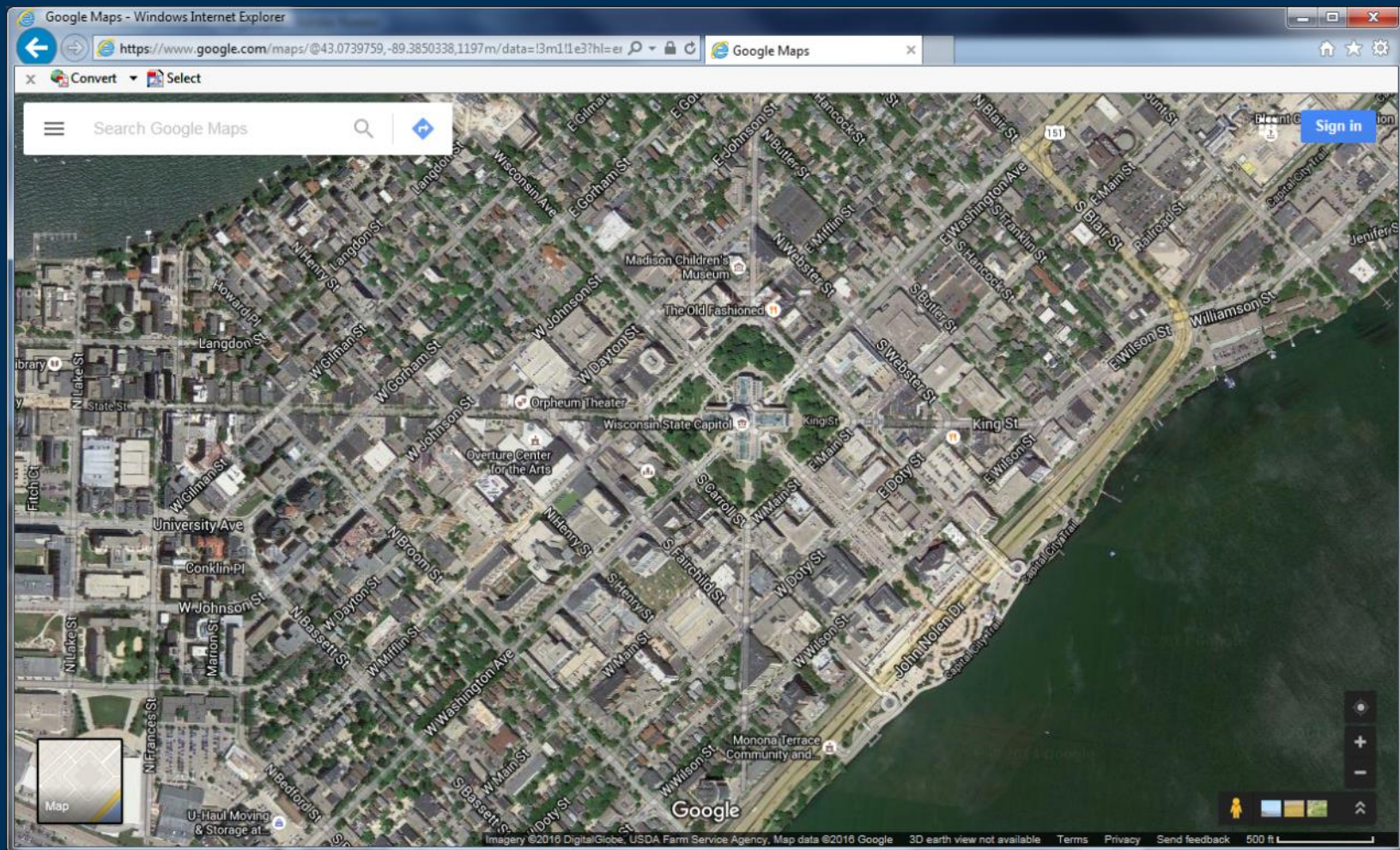
- GeoTrack



TerraGo Toolbar – GeoTool Google™ Map it! Tool



Google Maps



Coordinate System Change

Coordinate System Selector

Predefined Custom Import History

Projection: Transverse Mercator

Latitude of Origin: 0.0
 Central Meridian: -87.0
 Scale Factor: 0.9996
 False Easting: 500.000.0
 False Northing: 0.0

Parameter Units: Meter

Datum: Smart Search

- North American Datum 1927 (1976)
- North American Datum 1927 (CGQ77)
- North American Datum 1983**
- Nouakchott 1965

WGS 84 Transformations: Custom Shift

X Axis Translation: 0.99100000
 Y Axis Translation: -1.90720000
 Z Axis Translation: -0.51290000
 X Axis Rotation: 0.00000000
 Y Axis Rotation: 0.00000000
 Z Axis Rotation: 0.00000000
 Scale Difference: 0.00000000

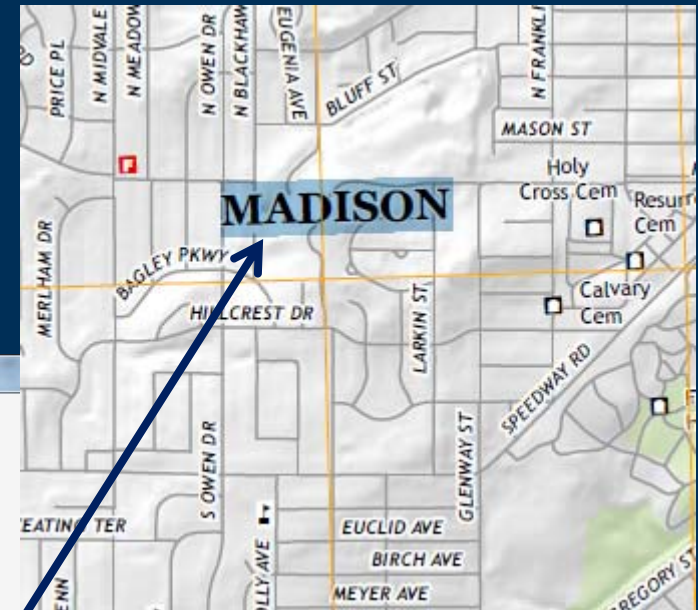
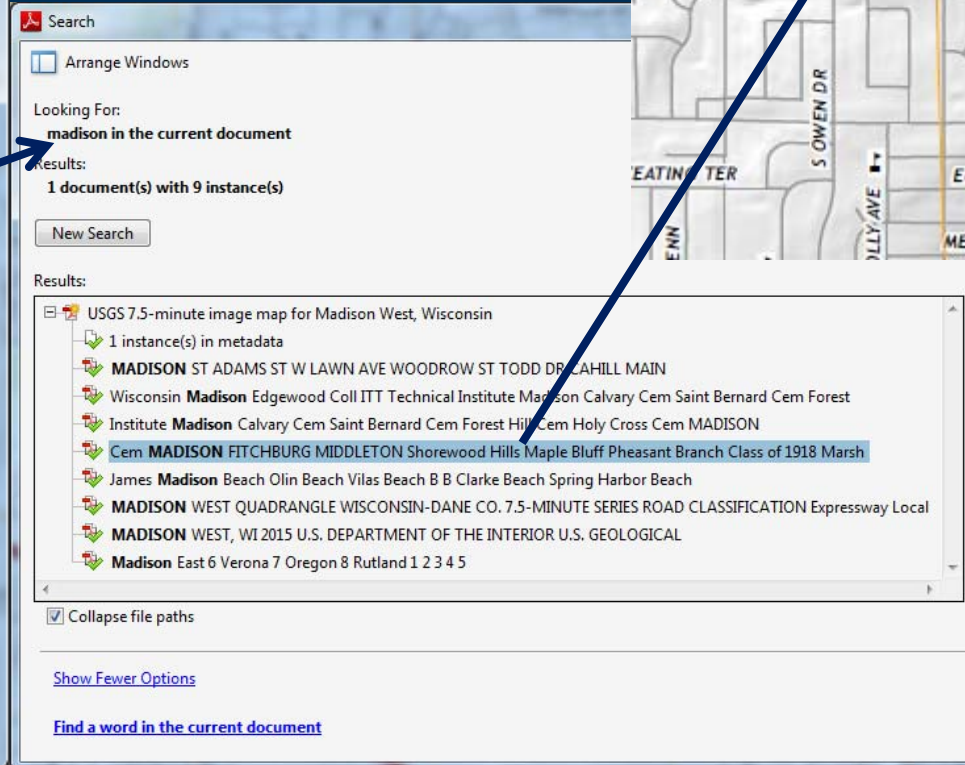
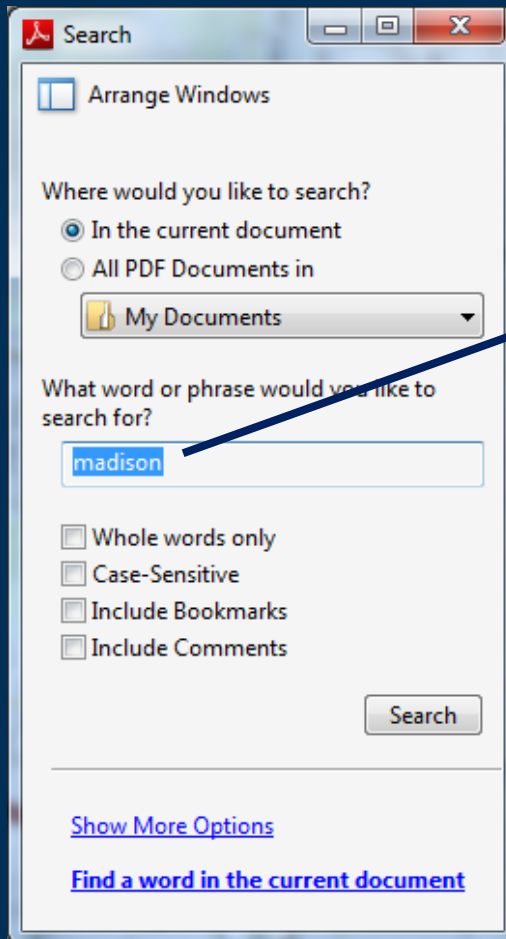
PROJCS["North_American_Datum_1983/Transverse_Mercator",
 GEOGCS["North_American_Datum_1983",
 DATUM["North_American_Datum_1983",
 SPHEROID["GRS 1980",6378137,298.257222101],
 TOWGS84[0.991,-1.9072,-0.5129,0,0,0]],
 PRIMEM["Greenwich",0],
 UNIT["degree",0.0174532925199433]],
 PROJECTION["Transverse_Mercator"],
 PARAMETER["latitude_of_origin",0],
 PARAMETER["central_meridian",-87],
 PARAMETER["scale_factor",0.9996],
 PARAMETER["false_easting",500000],
 PARAMETER["false_northing",0],
 UNIT["Meter",1]]

Save to file OK Cancel

Lon: 89 26.530 W Lat: 43 05.544 N USNG: 16T CN 01237 73971

Text Searching

Using “Advanced Search” to find all occurrences of names containing “madison”

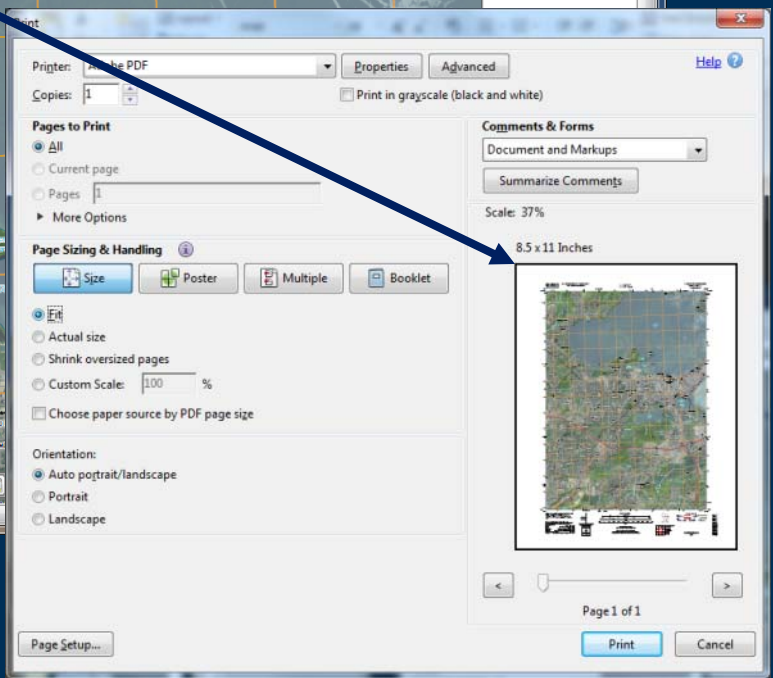
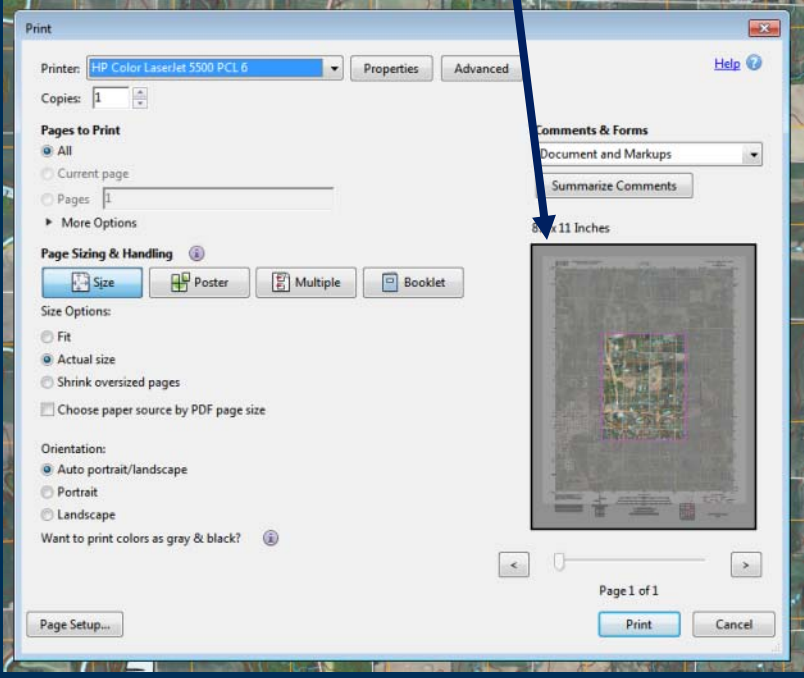
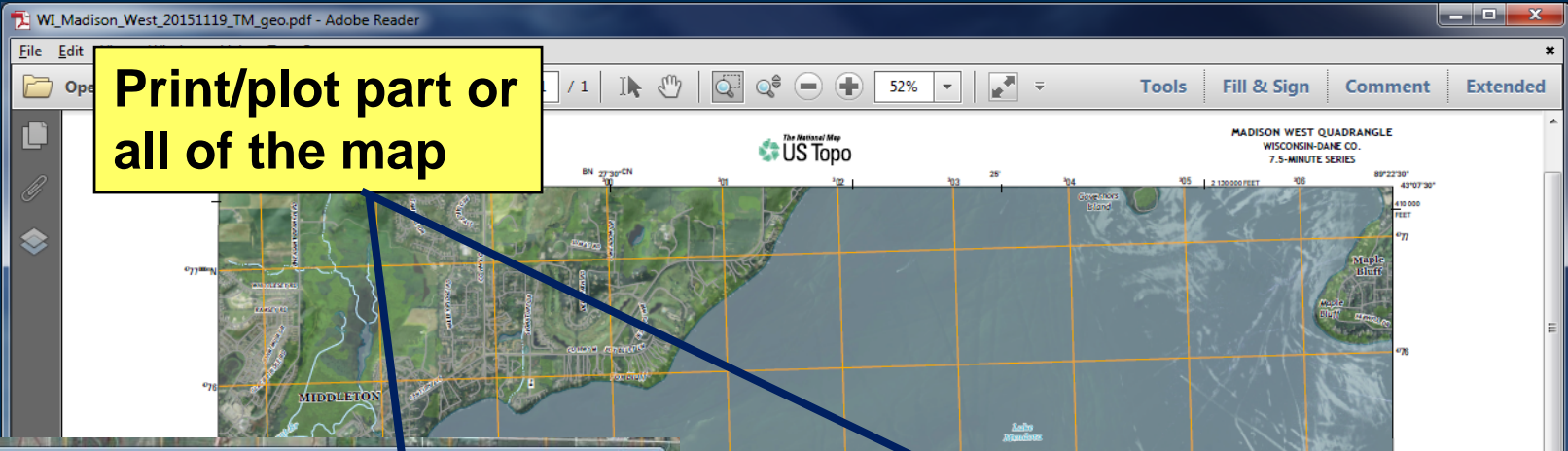


TerraGo GeoMark

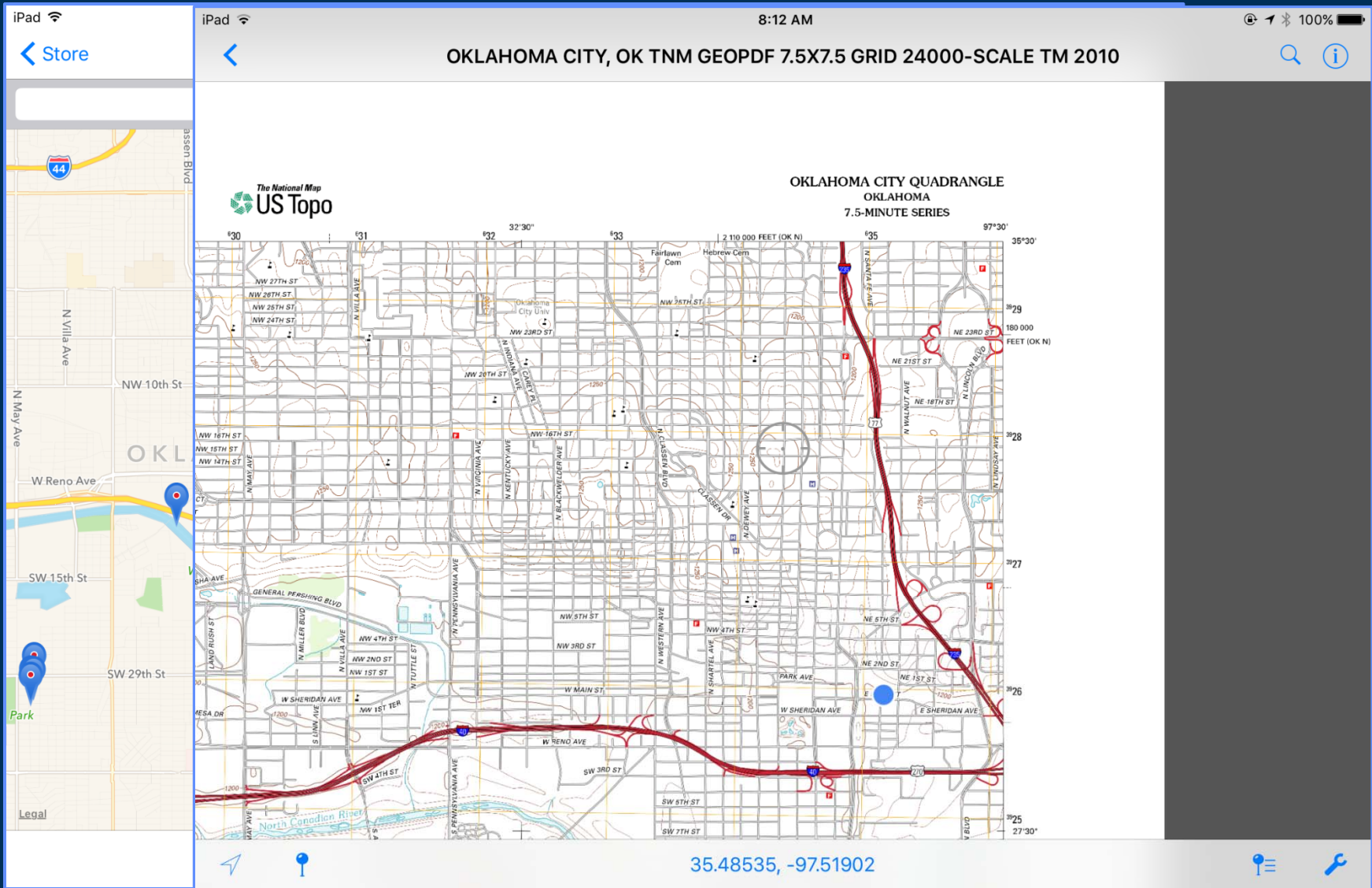
The screenshot displays the Adobe Reader interface for a file named 'WI_Madison_West_20151119_TM_geo.pdf'. The main window shows a topographic map of Madison, Wisconsin, with a red polygon overlaid on a green area. A 'GeoMark Editor' dialog box is open, showing the 'General' tab with fields for 'Name', 'Subject' (set to 'Polygon'), and 'Notes'. The 'Created' and 'Modified' timestamps are both '01/06/2016 03:42:57 PM'. The 'Tools' menu is open, showing options like 'Add Text', 'Add Rectangle', 'Add Line', 'Add Polyline', 'Add Polygon', 'Add Stamp', and 'Collaboration'. A blue arrow points from the 'Add Polygon' option in the toolbar to the polygon on the map. The status bar at the bottom shows coordinates: Lon: 89 23.352 W, Lat: 43 03.664 N, and USNG: 16T CN 05449 70367.

Printing/Plotting

Print/plot part or all of the map



Avenza PDF Maps app



Website – Homepage

USGS science for a changing world

The National Map US Topo

USGS Home
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The National Map

[The National Map Home](#) >> US Topo

- About US Topo Maps
- Download Maps (Map Store)
- Frequently Asked Questions
- User's Guide-Quickstart (1 MB PDF)
- Fact Sheet
- US Topo News
- Contact Us

US Topo Quadrangles – Maps for America

US Topo topographic maps are produced by the [National Geospatial Program](#) of the [U.S. Geological Survey](#) (USGS). The project was launched in late 2009, and the term "US Topo" refers specifically to quadrangle topographic maps published in 2009 and later. These maps are modeled on the familiar 7.5-minute quadrangle maps of the period 1947-1992, but are mass-produced from national GIS databases on a repeating cycle. US Topo maps repackage geographic information system (GIS) data in traditional map form; this benefits non-specialist map users, as well as applications that need traditional maps.

US Topo maps can be downloaded free of charge from [several USGS interfaces](#). The maps are published in Portable Document Format (PDF) with geospatial extensions (GeoPDF®). They can be viewed and printed with Adobe Reader or comparable PDF viewing software. The geospatial extensions provide limited GIS functionality, such as displaying ground coordinates and measuring distances and areas.

Layered PDF files allow users to turn data layers on and off. The maps include layers not present on most traditional topographic maps, such as aerial photo and shaded relief images. The US Topo median file size is 22 megabytes.

US Topo maps are produced by the USGS [National Geospatial Technical Operations Center](#). The first 3-year production cycle for the conterminous 48 states was completed in September 2012, and the second in September 2015. We are currently in the third cycle. Hawaii, Puerto Rico, and US Virgin Islands also have US Topo coverage. Alaska has been started, and should be complete by 2018.

More information about US Topo maps:

- [Background articles](#)
- [Frequently Asked Questions \(FAQ\)](#)
- [US Topo Users Guide](#) (PDF, 1 MB)

 **Exploring US Topo GeoPDFs** — Short "how-to" video about accessing, using and enhancing USGS US Topo map products. <http://gallery.usgs.gov/videos/663>

[7.5 MINUTE SERIES QUADRANGLE \(1:24,000 SCALE\) US TOPO MAP](#)
[Download Map \(GeoPDF 27 MB\)](#)>

click on map to view larger image
[download map \(GeoPDF 27 MB\)](#)

1 2 3 4 5 6 7 8 9 10



nationalmap.gov/ustopo



Website - Frequently Asked Questions

USGS
science for a changing world

[USGS Home](#)
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[Search USGS](#)

USGS FAQs

Search

- Basics About USGS
- Biology
- Climate Change
- Earthquakes
- Ecosystems
- Education
- Energy
- Fossils
- Geology
- Glaciers
- Health and Disease
- Jobs
- Landslides
- Maps and Mapping
- Oceans
- Publications and Photographs
- Recreation
- Remote Sensing and Imagery
- Severe Storms
- Tsunamis
- Volcanoes
- Water
- Wildfires

US Topo

How do I find and download US Topo and HTMC maps?
US Topo maps and the maps of the Historical Topographic Map Collection (HTMC) can be downloaded free of charge, in PDF fo
[MORE ▶](#)


Is it possible to obtain USGS PDF topographic maps in bulk -- say, for a State or the entire country?
Yes.
[MORE ▶](#)


The new topo maps aren't as good as the old maps!?
The new ones don't have xxxx....
Traditional national mapping programs gathered data from primary sources, including direct field observation. Such maps were compiled, drawn, and edited by hand.
[MORE ▶](#)

Can I still get the older topographic maps?
Yes.
[MORE ▶](#)

Can I convert a US Topo from GeoPDF to GeoTIFF

Popular Media


Rio Grande, San Luis Hills, and Blanca Peak in San Luis Basin - Photo captures the Rio Grande, volcanic San Luis Hills, and Blanca Peak massif in the San Luis Basin, part of the Rio Grande rift. The basin - currently being studied by the USGS - is of interest for groundwater, petroleum, and mineral resources.
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2013 USGS Releases Latest Bakken Oil and Gas Assessment - On April 30, 2013, USGS released an updated assessment of the Bakken Formation of North Dakota and Montana as part of the National Oil and Gas Assessment. We are joined by USGS Energy Resources Program Coordinator Brenda Pierce and Bakken Assessment Lead Stephanie Gaswirth to learn more about the assessment itself; why it was performed; and some context for the Bakken Formation.

Website - Users Guide



US Topo Map and Historical Topographic Map Users Guide

May 2015. Based on Adobe Reader XI version 11.0.10 and TerraGo Toolbar version 6.6.02

This guide explains how to access and use two types of USGS digital topographic maps: US Topo maps and USGS historical topographic maps.

US Topo maps are the current generation of USGS topographic maps. The first of these maps were published in 2009. They are modeled on the legacy 7.5-minute series of the mid-20th century, but unlike traditional topographic maps they are mass produced from GIS databases, and are published as PDF documents instead of as paper maps. US Topo maps include base data from *The National Map* and other sources, including roads, hydrography, contours, boundaries, woodland cover, structures, geographic names, an aerial photo image, Federal land boundaries, and shaded relief. More information about this series is available on at <http://nationalmap.gov/ustopo>.

The **Historical Topographic Map Collection (HTMC)** includes all editions and all scales of USGS standard topographic quadrangle maps originally published as paper maps in the period 1884-2006. Lithographic copies of these maps have been scanned and published as PDF documents. The best-known USGS topographic map series is the 7.5-minute series, published primarily at 1:24,000 scale in the period 1947-1992; images of these maps are now part of the HTMC. More information on the HTMC is available at <http://nationalmap.gov/historical>.

US Topo and HTMC maps are available on the Web at no cost, in PDF format with geospatial extensions (GeoPDF®). Free tools allow users to read coordinates, measure distances and angles between points, measure areas, track positions using a GPS device, display coordinates in various map projections and datums, turn layers on and off (US Topo maps only), zoom in and out, and print the map image. As of May 2015, the HTMC maps are also available in GeoTIFF format.

This guide applies to both US Topo and HTMC PDF maps, though there are some differences between the two series. US Topo maps are layered PDFs with both vector and raster data, while HTMC maps are a single-layer raster file. US Topo maps are all georeferenced to the UTM coordinate system on the NAD83 datum, while HTMC maps are georeferenced to the spatial reference system of the original published map. For the most part, only advanced users will notice these differences. Navigation and other tools generally work identically for all GeoPDF maps.

HTMC maps only are also available (as of April, 2015) in GeoTIFF format; this format requires different viewing software, which is not discussed in this document.

Users Guide – Detailed Instructions

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Website - Fact Sheet

Revised Sept 2013



US Topo—*Topographic Maps for the Nation*

Building on the success of 125 years of mapping, the U.S. Geological Survey (USGS) created the US Topo, a georeferenced digital map produced from *The National Map*¹ data. Georeferencing provides the capability to display the ground coordinate location as the user moves the cursor around the map. US Topo maps are designed to be used like the traditional 7.5 minute quadrangle paper topographic maps for which the USGS is so well known. However, in contrast to paper-based maps, US Topo maps provide modern technological advantages that support faster, wider public distribution and basic, on-screen geospatial analysis for all users.

What is New about US Topo?

A significant design change is being phased in during 2013. The goal of the first cycle of US Topo maps for the 48 conterminous states was to use *The National Map*¹ databases to create a digital image-based cartographic map that retained the look and feel of the traditional USGS 7.5 minute quadrangle map. This approach served as a transitional step into digital map production and delivery, product recognition, and customer acceptance. However, a major issue that needed to be resolved was the readability of the map symbols superimposed on a digital orthoimage (aerial photograph) background (fig. 1). To resolve the readability issue, the USGS worked with The Pennsylvania State University to redesign the US Topo maps so that map elements are visually distinguishable with the imagery turned on and off, while keeping the file size as small as possible (fig. 2). The US Topo map redesign includes improvements to various display factors, including symbol definitions (color, line thickness, line symbology, area fills), layer order, and annotation fonts. Adjusting the transparency of some features also has enhanced the visibility of multiple competing layers. For example, the lake area fill symbol is layered on top of the imagery, but is partially



Figure 1. US Topo map of the Chattanooga, Tennessee quadrangle.

transparent so that the user can see the imagery through the blue lake area symbol (fig. 3).

US Topo maps are available online for free download.² Each map is constructed in a Portable Document Format (PDF) with a geospatial extension called Georeferenced PDF (GeoPDF[®])

using key layers of geospatial data (orthoimagery, transportation, geographic names, topographic contours, boundaries, hydrography, woodland, and structures) from *The National Map*¹ databases. New features for 2013 include the following: a raster shaded relief layer, military boundaries,



Topo TNM Style Template

- A new GIS-read topographic map style template!
- Provides the GIS user with a fully customizable map in the style of US Topo maps using the most current TNM data
- <http://viewer.nationalmap.gov/tools/topotemplate/>

Training Videos

- <http://training.usgs.gov/TEL/TheNationalMap/TNM-TEL-Index.html>
- From TNM Viewer Launch Page, click “How To Videos” link

The screenshot shows a web browser window with the URL viewer.nationalmap.gov/launch/. The page header includes the USGS logo and the text "The National Map Your Source for Topographic Information". Below the header is a green bar with the text "The National Map". The main content area is titled "Data Download and Visualization Services" and is organized into six columns:

- Maps**:
 - Download Maps
 - Explore Historical Topo Maps and Download
 - Buy a Printed Map
 - CSV of Map Products
- GIS Data**:
 - Download GIS Data
 - Cloud Browse
 - FTP Access
 - Historical Data Archives
 - Hazards Events
- Visualization**:
 - TNM Viewer (legacy)
 - List of Map Services
 - How to Use Map Services
 - Map Service Status
 - Viewer Prototypes
- Applications**:
 - TNM Download Client
 - TNM Download Manager
 - TNM Mobile (new)
 - USGS Streamer
 - Application List
- Tools**:
 - Elevation Tools
 - Point Query Service (PQS)
 - Raster Conversion Tools
 - Topo TNM Style Template
 - Other API Example Demos
- More Information**:
 - How To Videos
 - FAQs
 - List of Datasets
 - TNMAccess API
 - TNM Metrics
 - Contact Us

Future Goals

- **Committed to a third 3 year cycle (2016 – 2018)**
 - Significantly more recreational trails, especially in National Forests
 - Federally designated Wilderness areas
 - PLSS coverage for all PLSS states
 - Improved text placement for natural landform features
- **Complete US Topo coverage for Alaska by 2018**
- **Continuing Research**
 - Transition to production based on change detection
 - Topo TNM Style Template
 - Alternative formats, scales, and customized content/AOIs

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US Topo

Topographic Maps for the Nation

