USGS
science for a changing world

Discovering The National Map

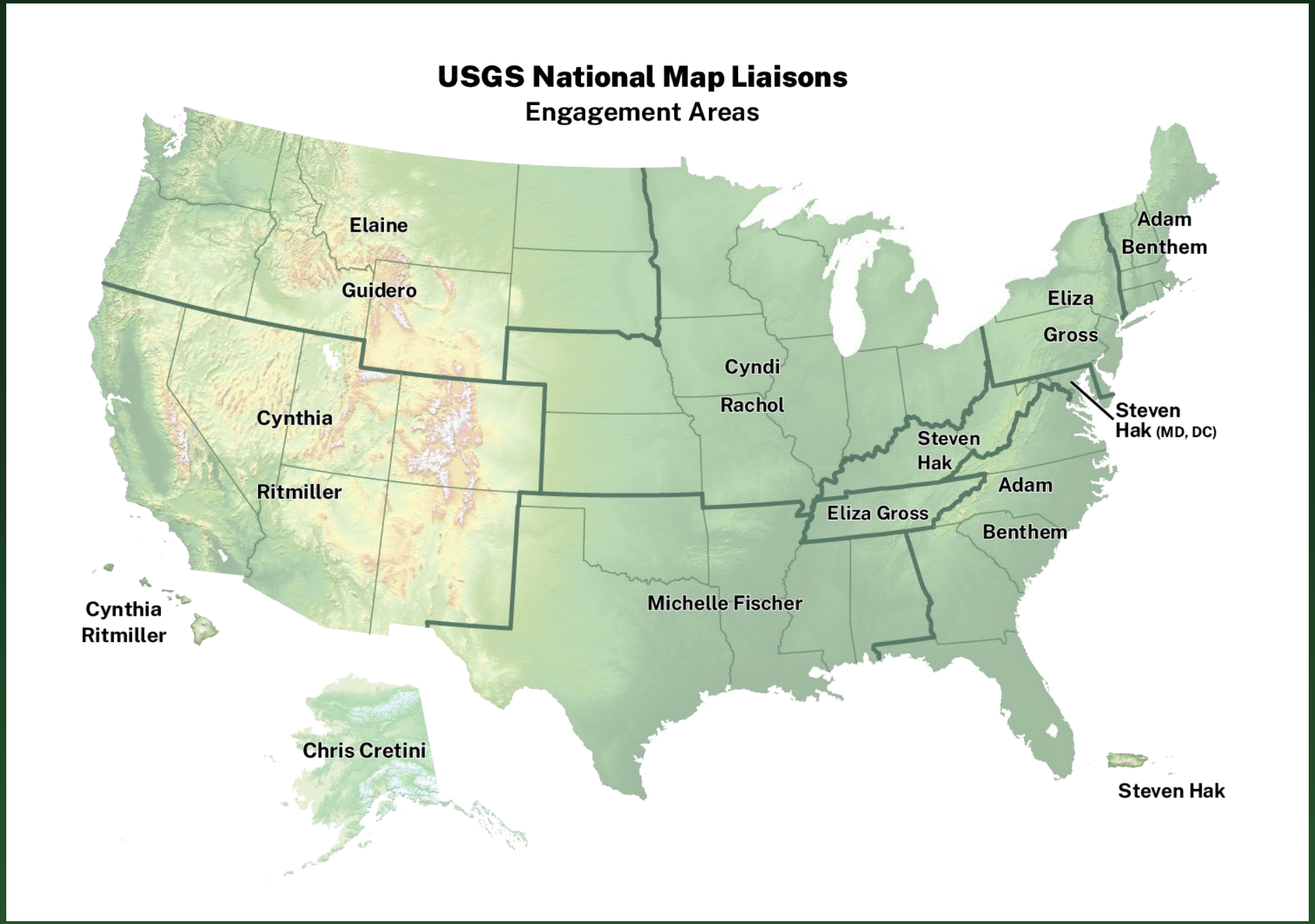
Michelle Fischer
National Map Liaison AL, AR, LA, MS, OK, TX

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

The National Map

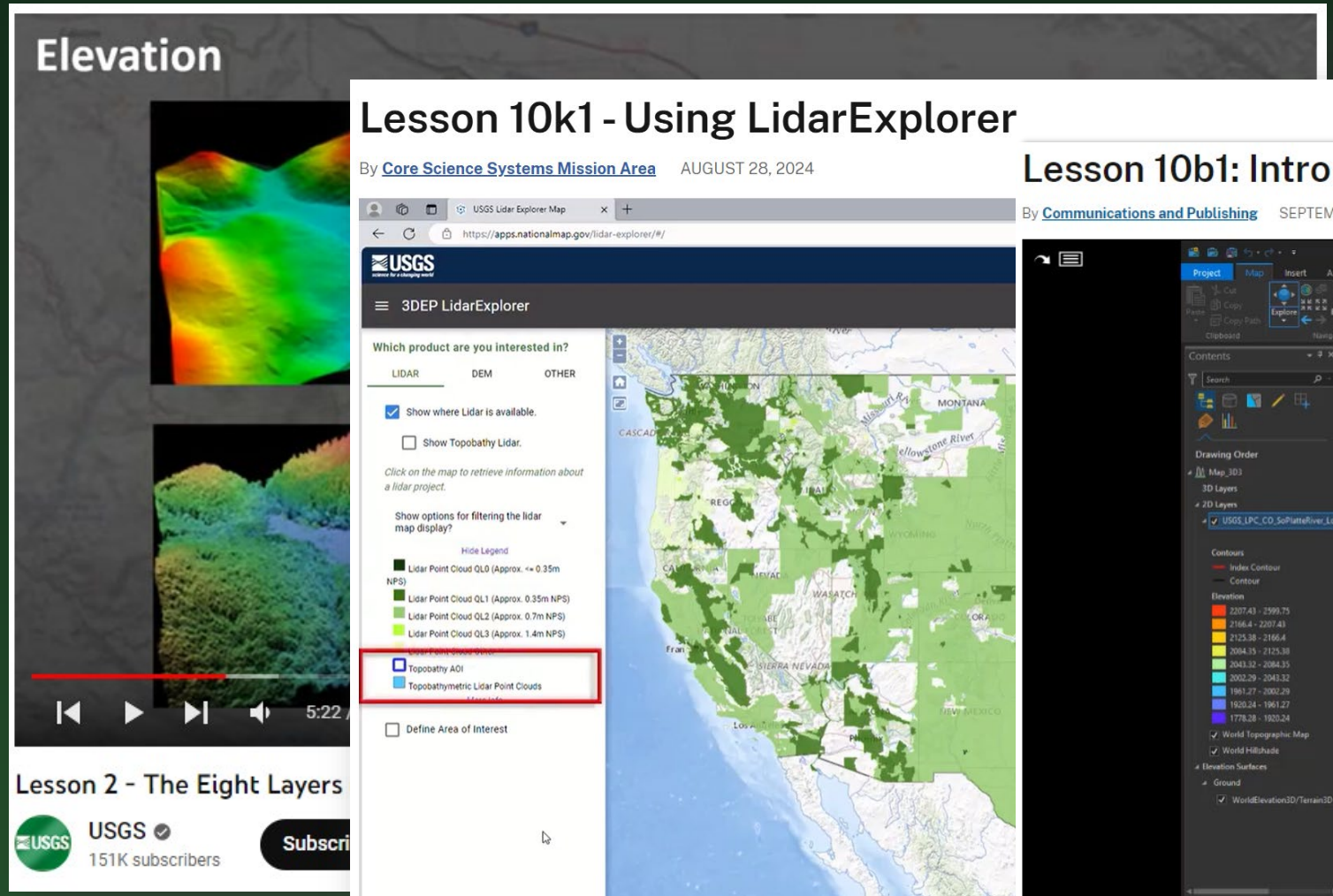


- *The National Map* includes many foundational data layers
- USGS is the authoritative source for hydrography, elevation, and geographic names
  - Public domain data to support
    - USGS topographic maps at various scales
    - Products and services at multiple scales and resolutions
    - Analysis, modeling and other applications at multiple scales and resolutions
  - *The National Map* is built on partnerships and standards
  - Resource focus is on building and maintaining data; automating creation of derived products and services


USGS National Map Liaisons
Engagement Areas
Elaine
Guidero
Cynthia
Ritmiller
Cynthia
Ritmiller
Chris Cretini
Cyndi
Rachol
Michelle Fischer
Adam
Benthem
Eliza
Gross
Steven
Hak (MD, DC)
Steven
Hak
Adam
Benthem
Eliza Gross
Steven Hak

www.usgs.gov/NGPvideos

The National Map Training Videos

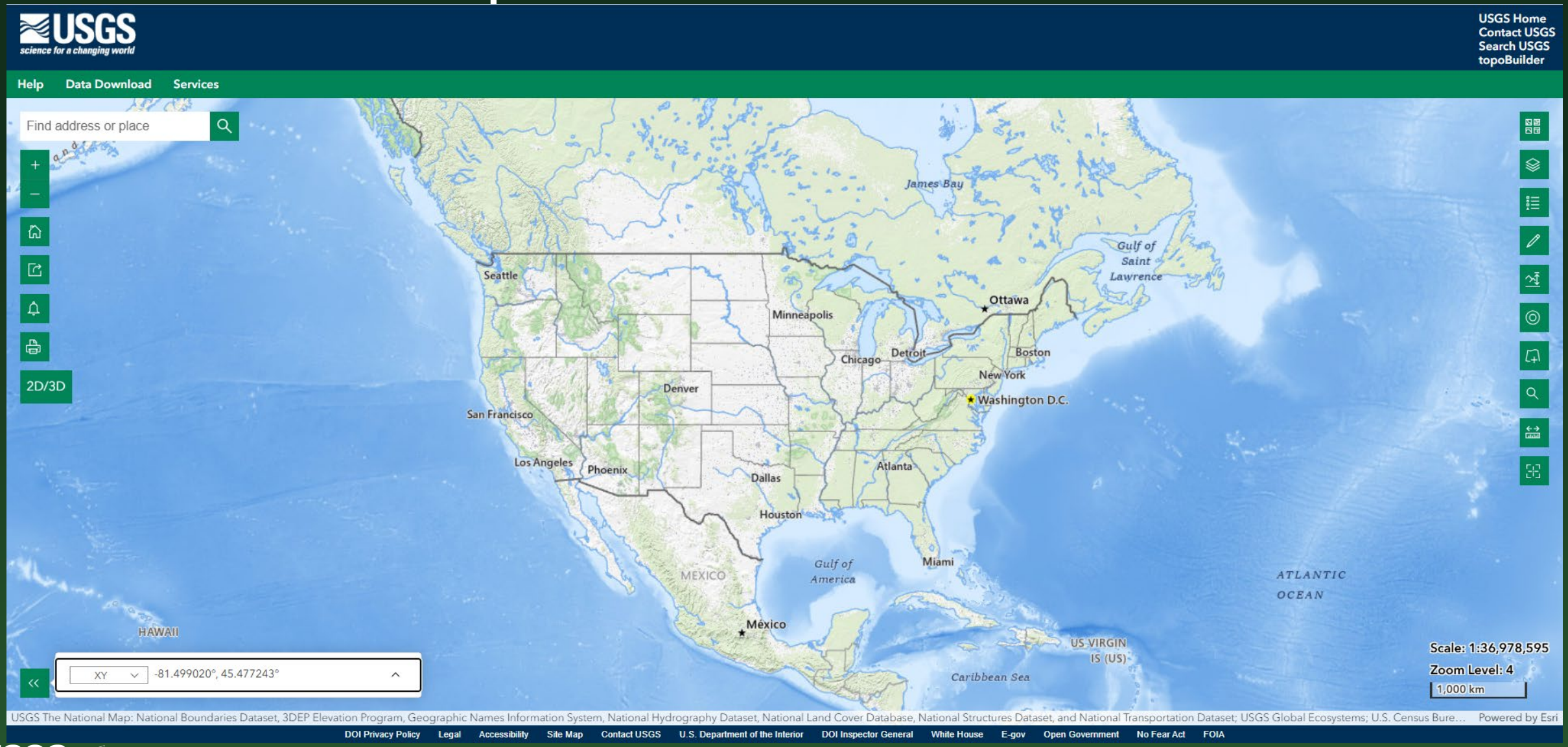


USGS The National Map Data Access

- The National Map Viewer
- The National Map Downloader
- The National Map Services
- Topo Maps
  - topoView
  - topoBuilder
- Data
  - Elevation
    - Lidar Explorer
    - 3DEP Elevation Viewer
    - RockyWeb
    - USIEI
  - Hydrography
    - Web Services

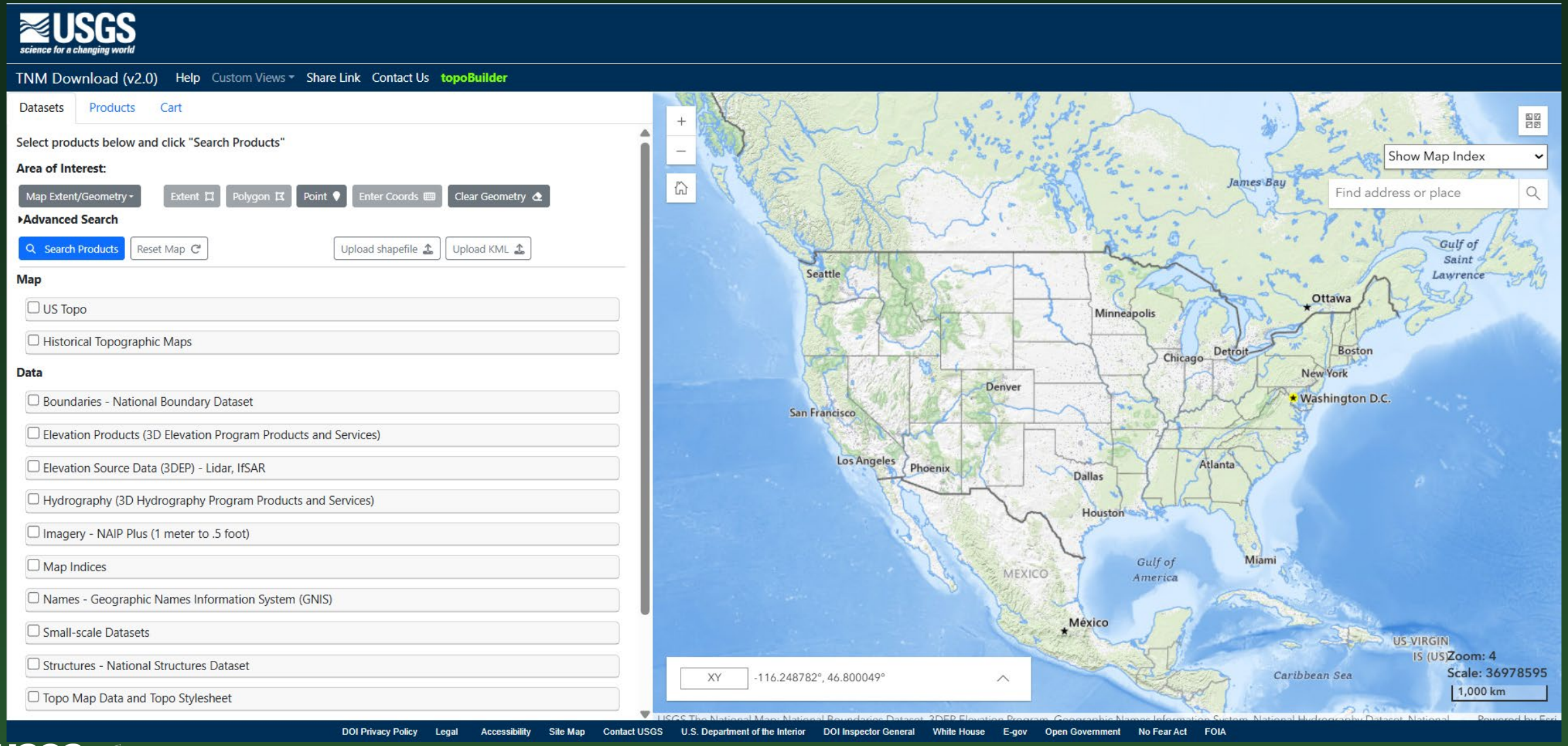
https://apps.nationalmap.gov/viewer/

The National Map Viewer



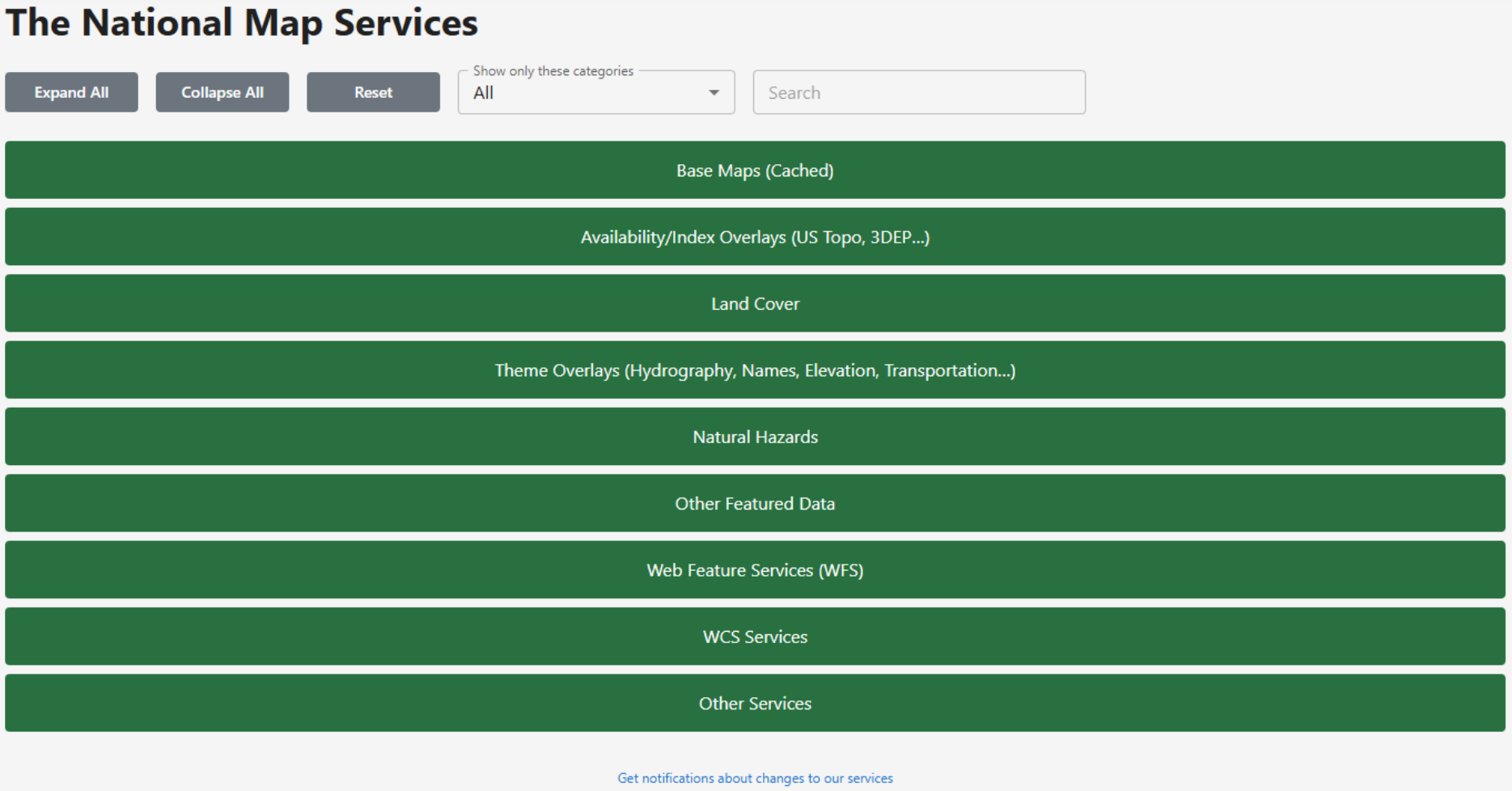
https://apps.nationalmap.gov/downloader/

The National Map Downloader



https://apps.nationalmap.gov/services/

The National Map Services



The National Map Services

Expand All | Collapse All | Reset | Show only these categories: All | Search

Base Maps (Cached)

Availability/Index Overlays (US Topo, 3DEP...)

Land Cover

Theme Overlays (Hydrography, Names, Elevation, Transportation...)

3DEP Elevation

RESTs WMS/WMTS ArcGIS.com Legend Thumbnail **Refreshed Date:** See Copyright Text section of the service

Spatial Reference: 102100 (3857)
Min Scale: 0
Max Scale: 0

Contours

RESTs WMS/WMTS ArcGIS.com Legend Thumbnail **Refreshed Date:** See Copyright Text section of the service

Spatial Reference: 102100 (3857)
Min Scale: 0
Max Scale: 0

FWS Wetlands - Topo Symbols

RESTs WMS/WMTS ArcGIS.com Legend Thumbnail **Refreshed Date:** See Copyright Text section of the service

Spatial Reference: 102100 (3857)
Min Scale: 0
Max Scale: 0

Geographic Names (GNIS)

https://elevation.nationalmap.gov/arcgis/rest/services/3DEPElevation/ImageServer

TOMIS | Current Act... Lidar--current proje... Rockyweb HTTP Topomaps_All National Hydrograp... TNM Download v2 The National Map -... GovDelivery Admin... Google USDA Forest Servic... 3DHP/3DEP FTN Inf... The National Map... Other favorites

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ArcGIS REST Services Directory

Home > services > 3DEPElevation (ImageServer) Help | API Reference

JSON | SOAP | WMS | WCS

3DEPElevation (ImageServer)

View In: ArcGIS JavaScript ArcGIS Online Map Viewer ArcGIS Earth ArcMap

View Footprint In: ArcGIS Online Map Viewer

Service Description: The USGS 3D Elevation Program (3DEP) Bare Earth DEM Dynamic service is based on multi-resolution USGS DEM sources and provides dynamic functions for visualization. These functions include: Hillshade, Aspect Map, Hillshade Stretched, Multi-directional Hillshade, Slope Map, Elevation Tinted Hillshade, Contour. In addition the OGC Web Map Service (WMS) and Web Coverage Service (WCS) interfaces are enabled. Data available in this map service reflects all 3DEP DEM data published as of February 26, 2024.

Name: 3DEPElevation

Description: The USGS 3D Elevation Program (3DEP) Bare Earth DEM Dynamic service is based on multi-resolution USGS DEM sources and provides dynamic functions for visualization. These functions include: Hillshade, Aspect Map, Hillshade Stretched, Multi-directional Hillshade, Slope Map, Elevation Tinted Hillshade, Contour. In addition the OGC Web Map Service (WMS) and Web Coverage Service (WCS) interfaces are enabled. Data available in this map service reflects all 3DEP DEM data published as of February 26, 2024.

Single Fused Map Cache: false

Extent:
XMin: -2.00375070672E7
YMin: -1689391.823360186
XMax: 2.0037507532527123E7
YMax: 1.88090019719E7
Spatial Reference: 102100 (3857)

Initial Extent:
XMin: -2.00375070672E7
YMin: -1689391.823360186
XMax: 2.0037507532527123E7
YMax: 1.88090019719E7
Spatial Reference: 102100 (3857)

Full Extent:
XMin: -2.00375070672E7
YMin: -1689391.823360186
XMax: 2.0037507532527123E7
YMax: 1.88090019719E7
Spatial Reference: 102100 (3857)

Pixel Size X: 0.9999999900119095

Pixel Size Y: 0.9999999900119095

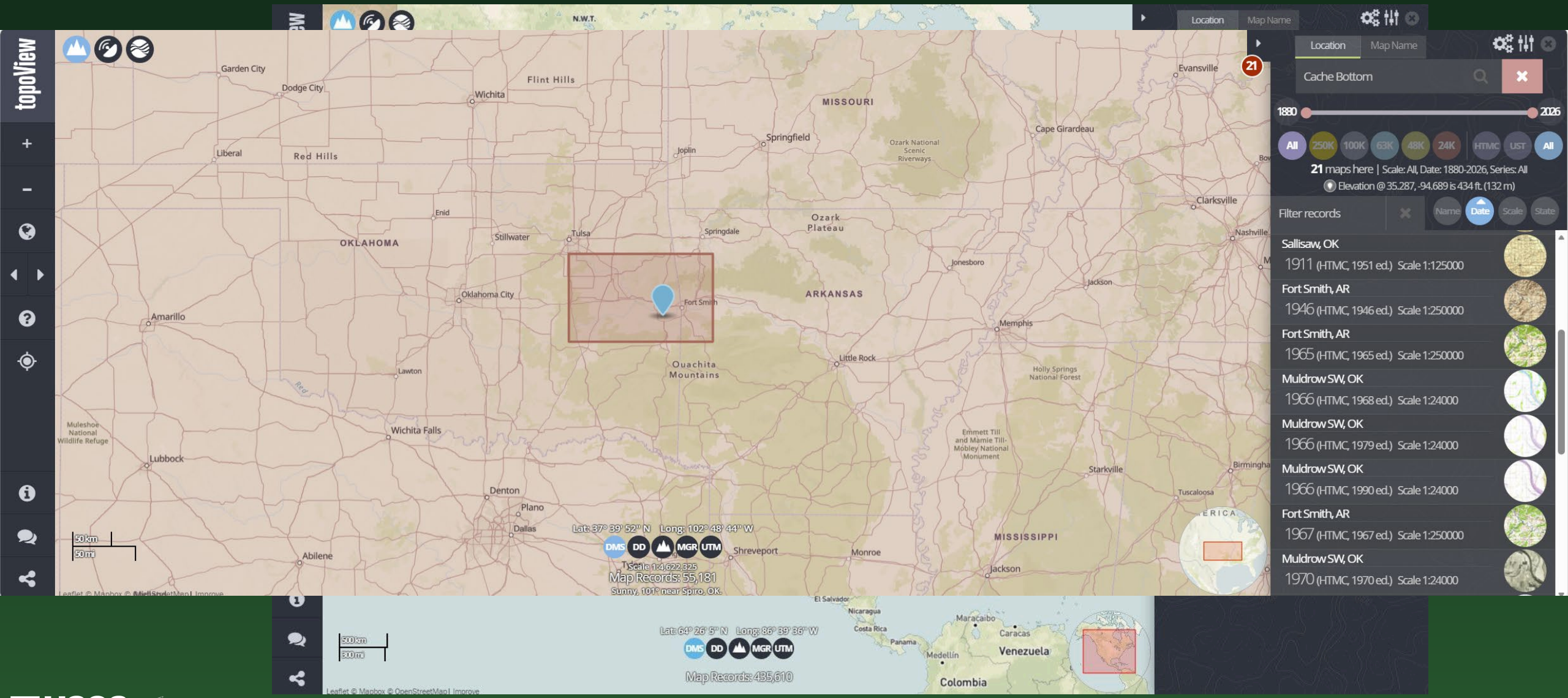
Band Count: 1

Pixel Type: F32

RasterFunction Infos: {"rasterFunctionInfos": [{ "name": "Hillshade Gray", "description": "Provides a hillshaded surface generated dynamically using the hillshade server-side function on the elevation layer with a solar azimuth of 315 degrees and solar altitude of 45 degrees.", "help": "" }, { "name": "Aspect Degrees", "description": "This server-side function will apply an on-the-fly process to the input elevation data to generate an aspect layer.", "help": "Raster Function Templates may be activated in ArcMap by loading the service into the map, right clicking on the service in the Table of Contents to select Properties, and selecting the desired function from the Server Functions tab. For help with invoking raster functions via REST calls, see http://resources.arcgis.com/en/help/rest/apiref/. " }, { "name": "Aspect Map", "description": "This server-side function will apply an on-the-fly process to the input

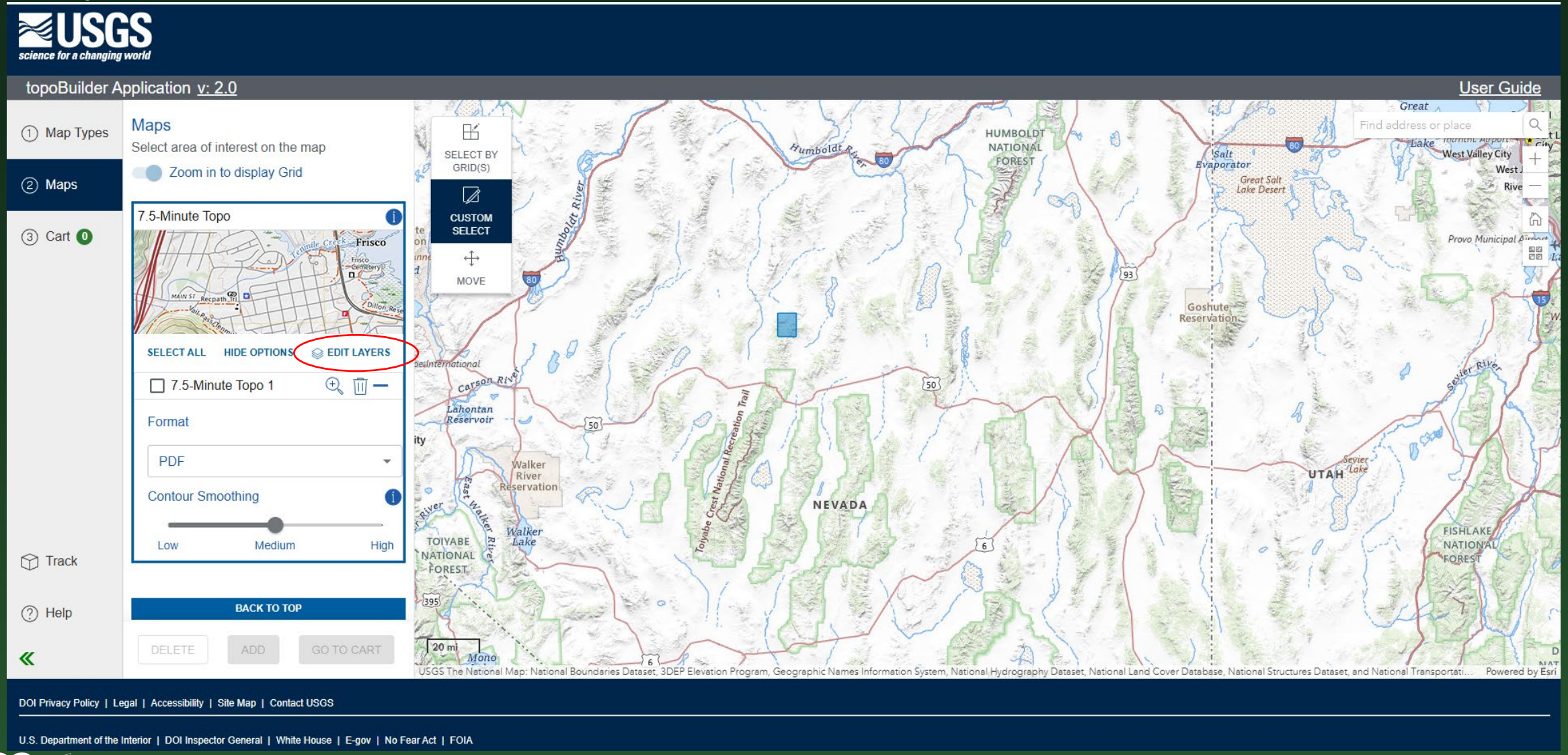
https://ngmdb.usgs.gov/topoview/viewer

topoView



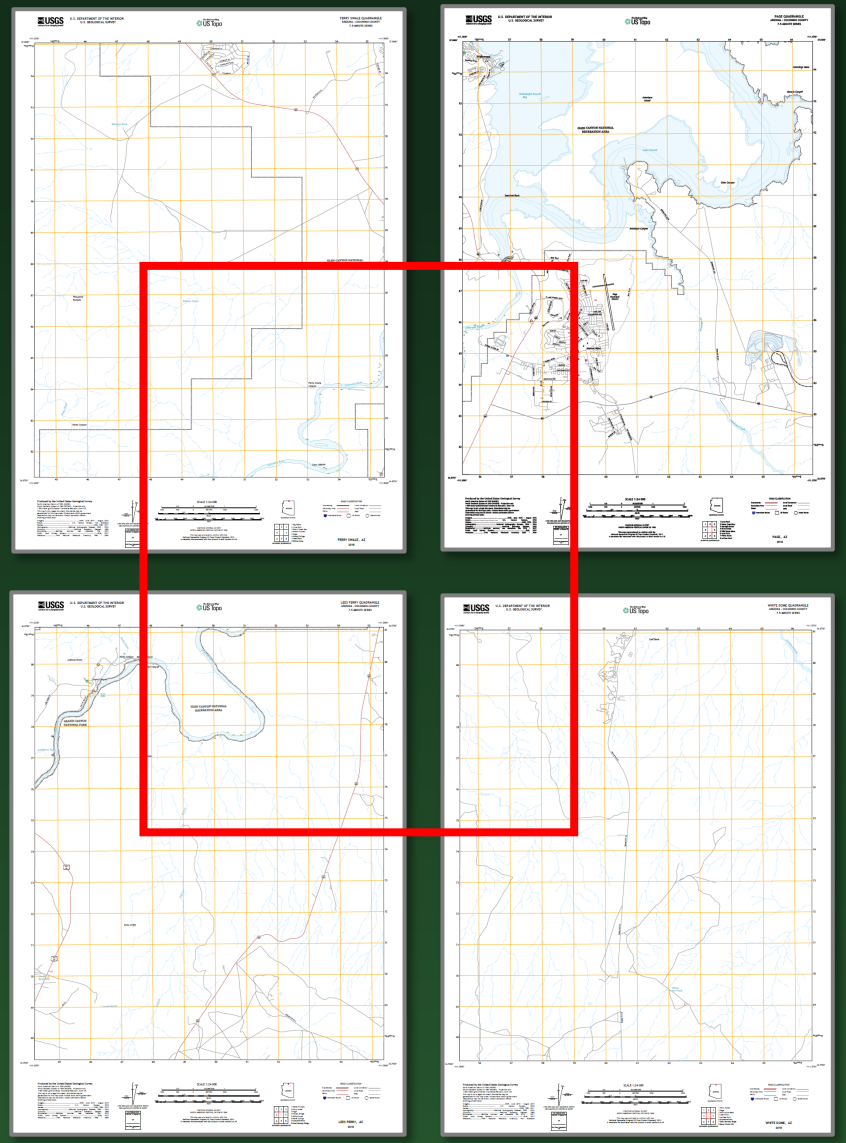
https://topobuilder.nationalmap.gov/

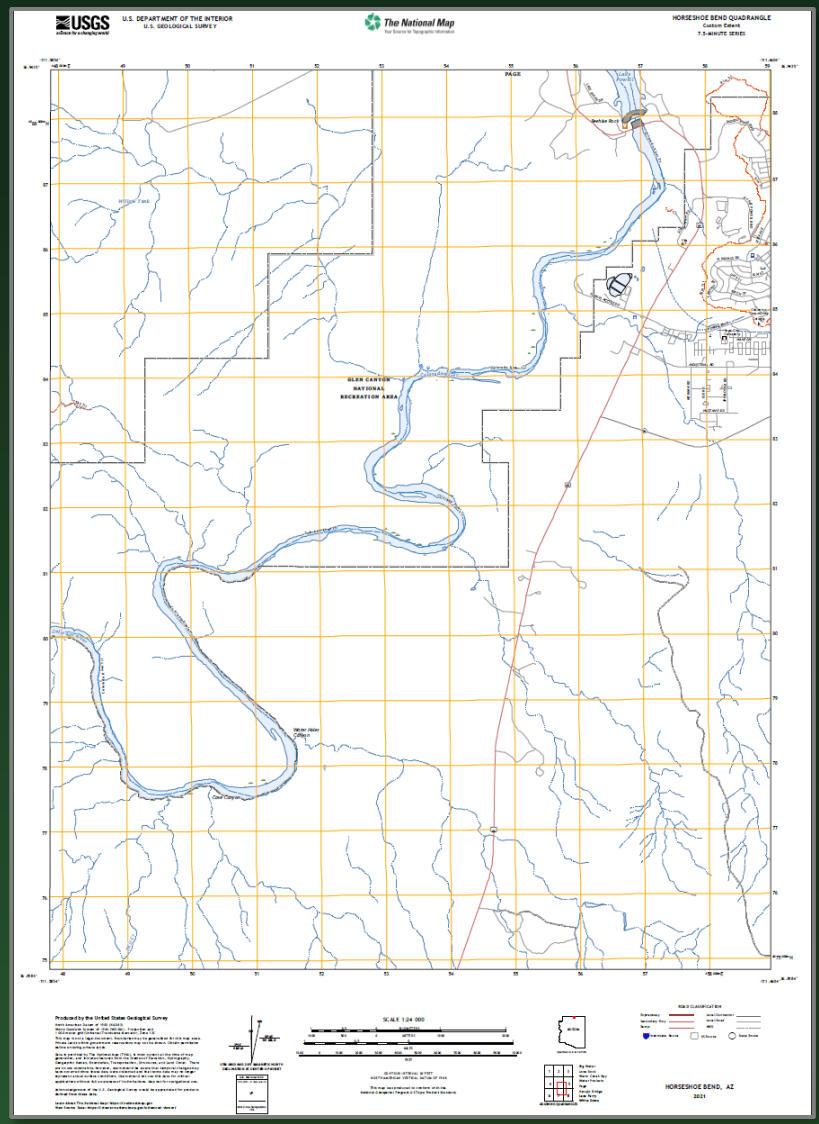
topoBuilder



https://topobuilder.nationalmap.gov/

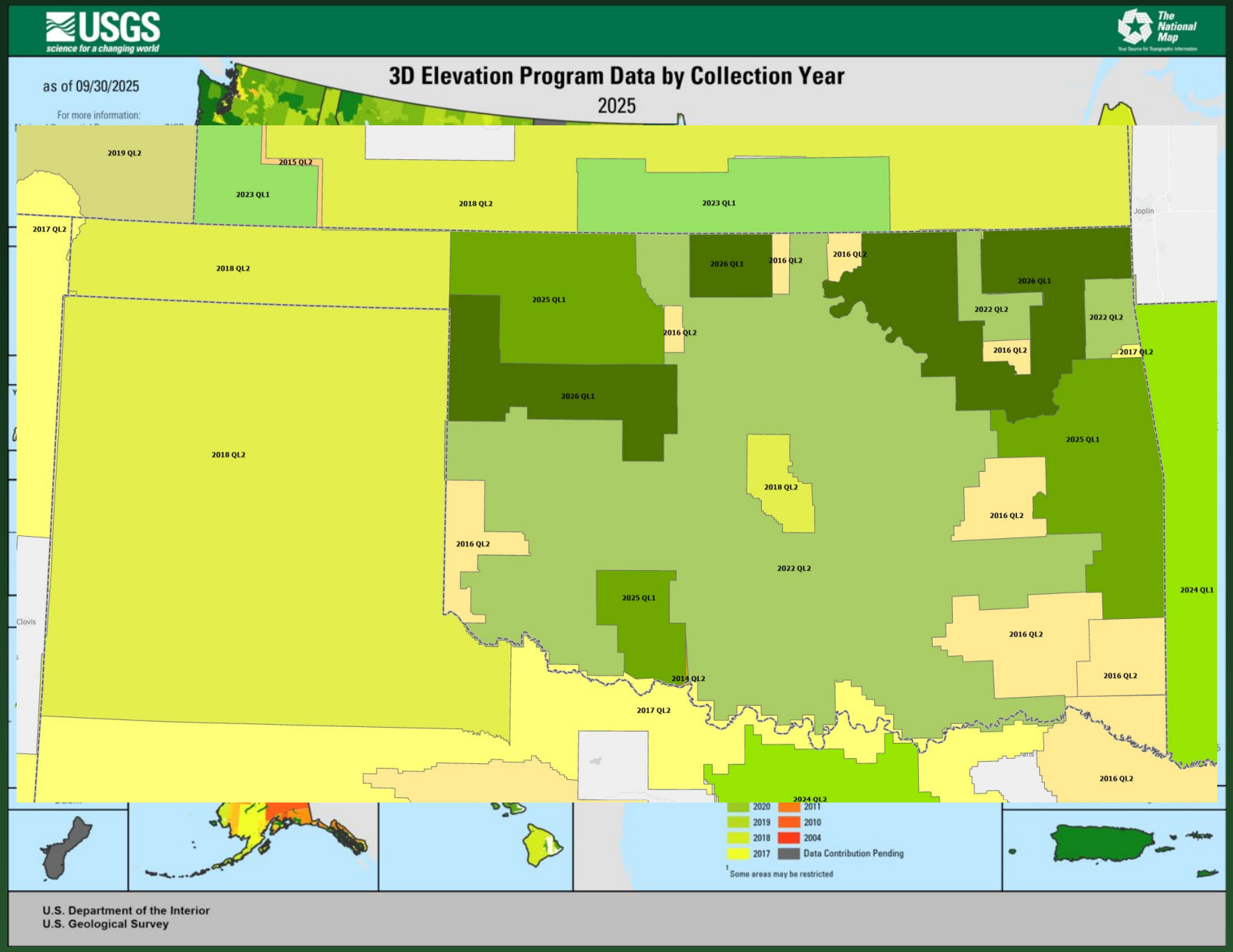
topoBuilder - Deliverable





3DEP Status

usgs.gov/3DEP



https://www.usgs.gov/3d-elevation-program/about-3dep-products-services

Access Elevation 3DEP Data

HOME
COLLABORATION AND PARTNERSHIPS
PROGRAM BENEFITS AND USES
STANDARDS AND SPECIFICATIONS
MULTIMEDIA
PUBLICATIONS
WEB TOOLS
NEWS
FAQS
CONNECT
ABOUT
Products & Services
Data Access and Visualization
By The Numbers
Governance

The 3DEP products and services available through The National Map consist of lidar point clouds and digital elevation models (DEMs) at various horizontal resolutions. All 3DEP products are available, free of charge and without use restrictions.

GIS Data Download

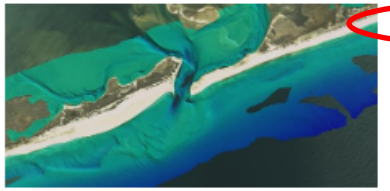
3DEP Spatial Metadata



Spatial metadata for the 3D Elevation Program (3DEP) is now published and available by work unit in the Work Unit Extent Spatial Metadata (WESM) geopackage.

Learn more

3DEP Product Metadata



Two classes of metadata are provided for each product: textual metadata (XML files) and spatial metadata (Geopackage file).

Learn more

Quick Links

3DEP Lidar Explorer
3DEP Dynamic Elevation Viewer
Lidar Availability Status Application
1-meter DEM Availability Status Application
The National Map Services
The National Map - Data Delivery

Source Data Products

Source data products include lidar point clouds, source (original) resolution DEMs from which the 3DEP standard DEM datasets were produced, and additional data types produced from IfSAR collections.

Facts Block

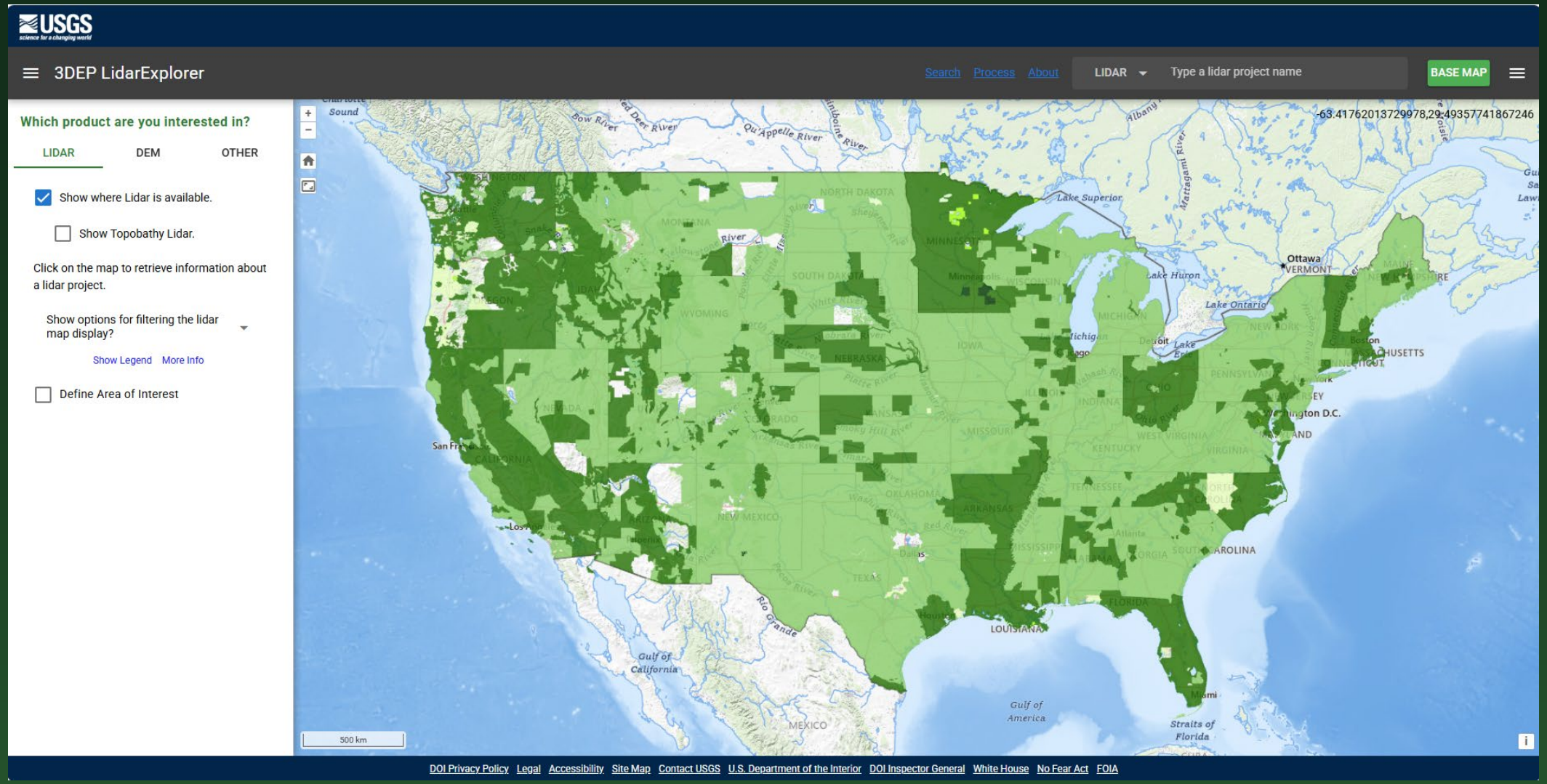
NOAA staff wrote two helpful blog posts:

- Good ol' Rockyweb

USGS science for a changing world
The National Map Your Source for Topographic Information

https://apps.nationalmap.gov/lidar-explorer/

LidarExplorer



USGS science for a changing world

3DEP LidarExplorer

Search Process About

LIDAR Type a lidar project name

BASE MAP

Which product are you interested in?

LIDAR DEM OTHER

Show where Lidar is available.

Show Topobathy Lidar.

Click on the map to retrieve information about a lidar project.

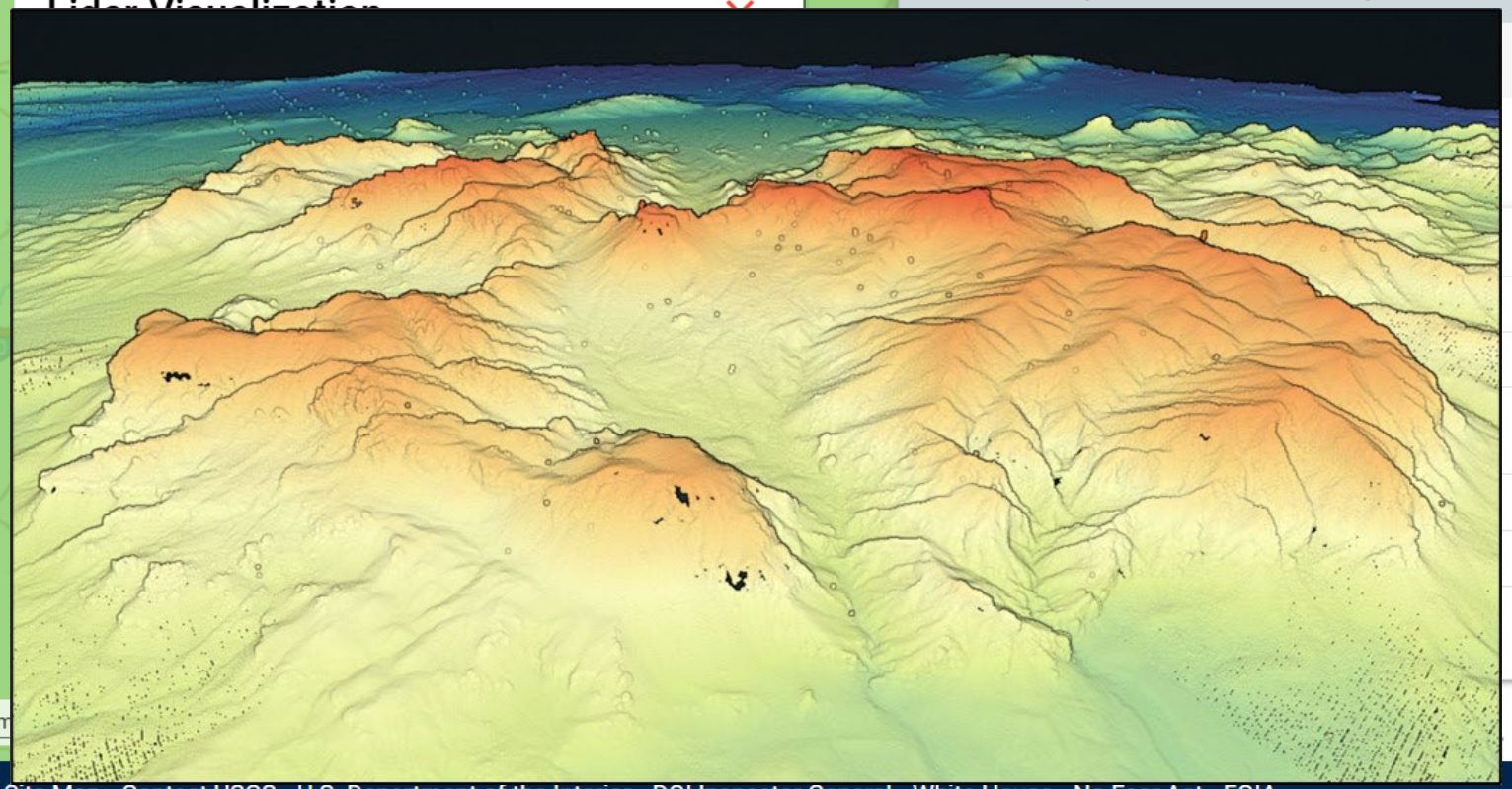
Show options for filtering the lidar map display?

Show Legend More Info

Show AOI Results

Hold the **Ctrl** key down while dragging a box

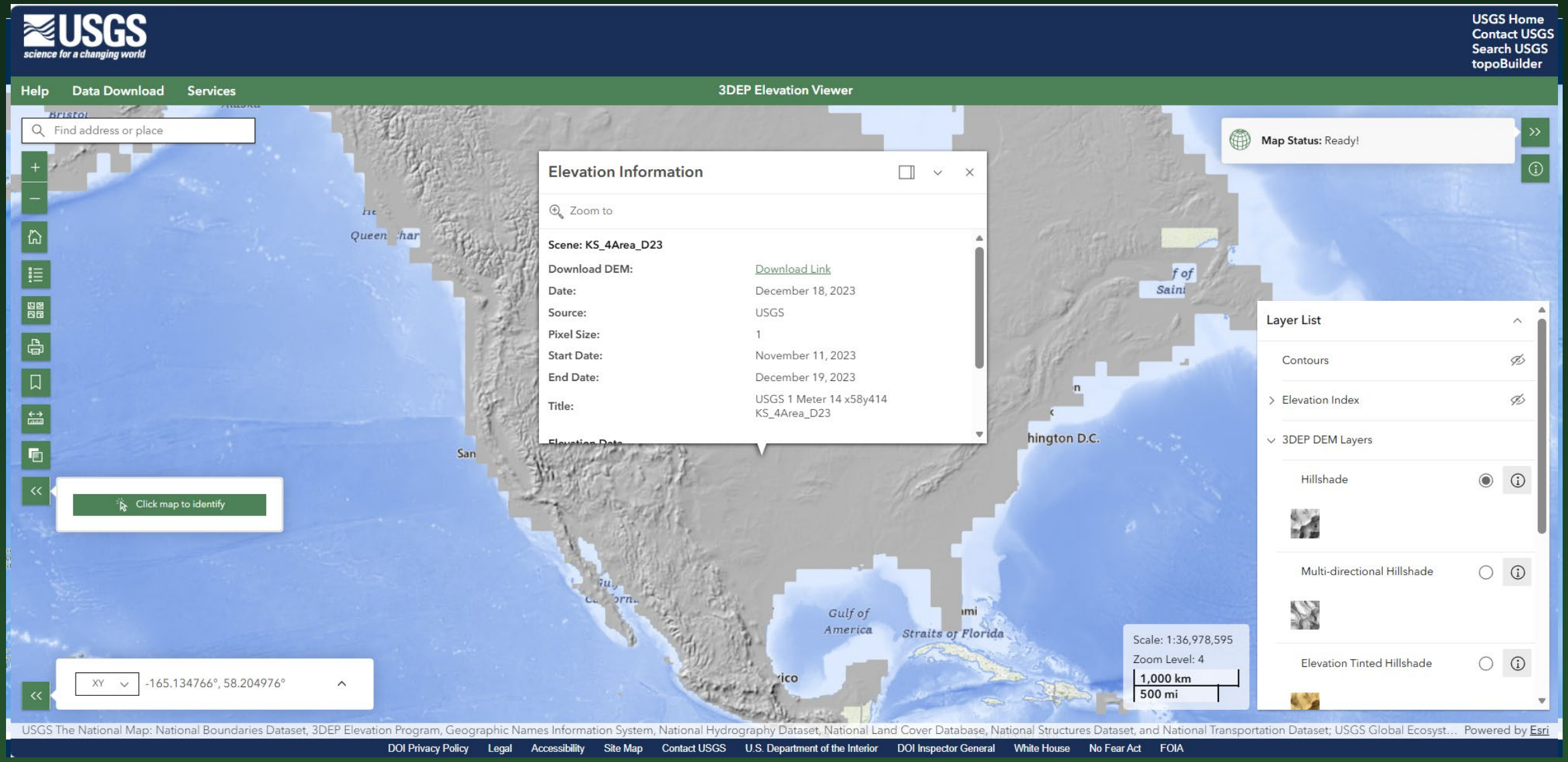
Results (4,801.2 miles^2)



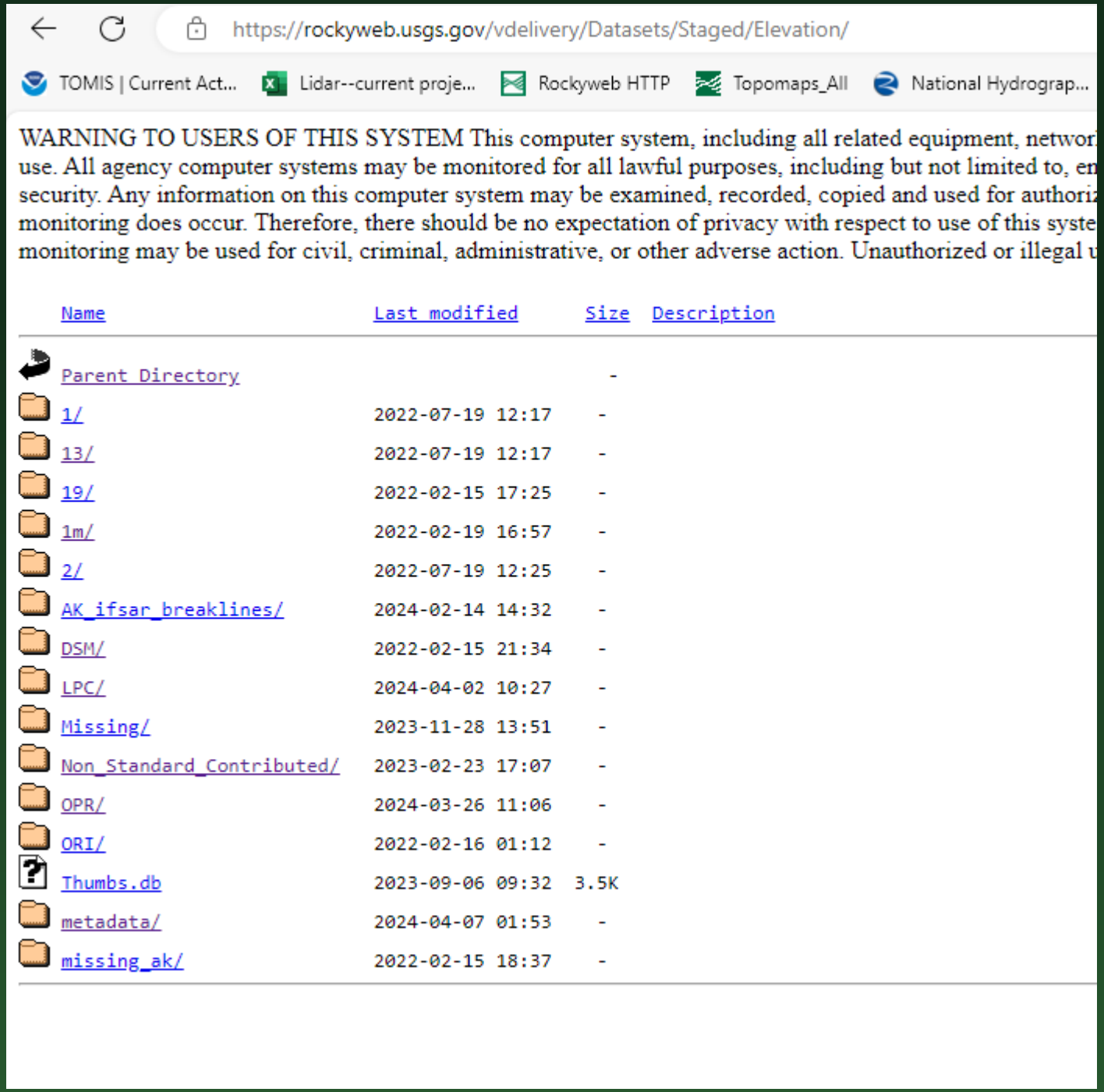
DOI Privacy Policy Legal Accessibility Site Map Contact USGS U.S. Department of the Interior DOI Inspector General White House No Fear Act FOIA

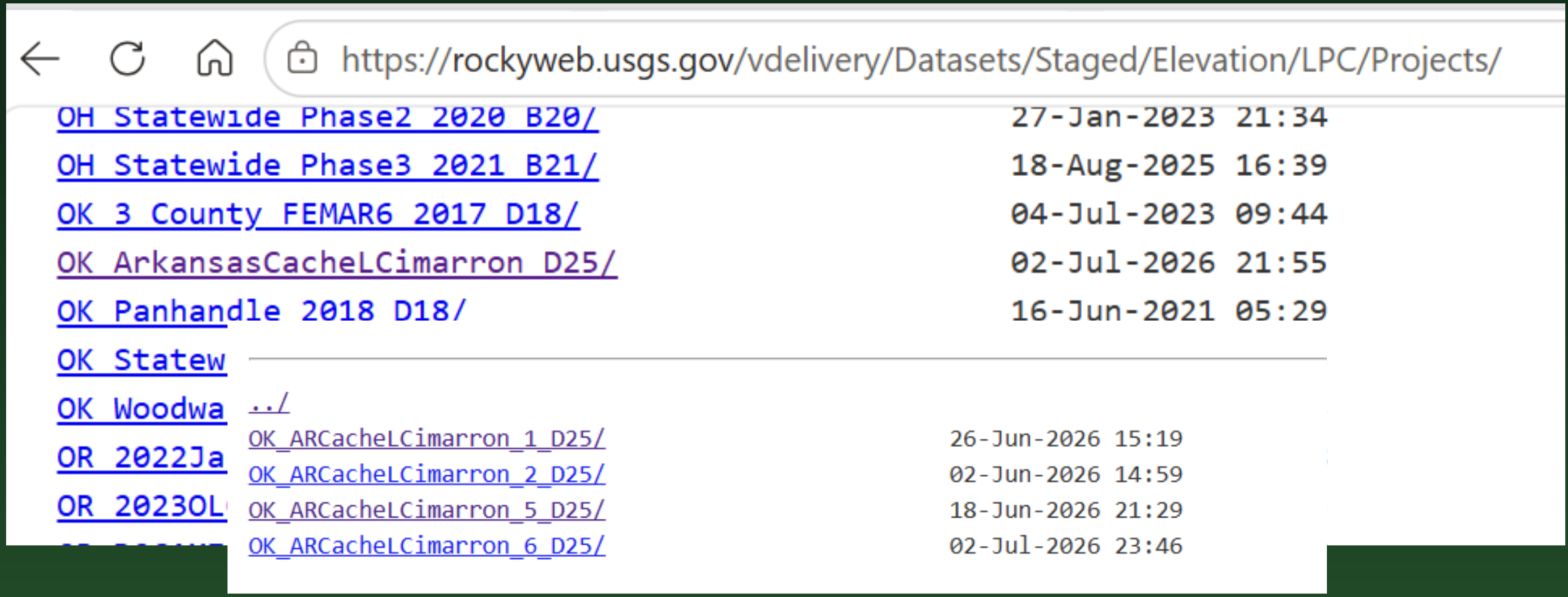
https://apps.nationalmap.gov/3depdem

3DEP Elevation Viewer



Rockyweb


https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/
TOMIS | Current Act...
Lidar--current proje...
Rockyweb HTTP
Topomaps_All
National Hydrograp...
WARNING TO USERS OF THIS SYSTEM This computer system, including all related equipment, networ
use. All agency computer systems may be monitored for all lawful purposes, including but not limited to, en
security. Any information on this computer system may be examined, recorded, copied and used for authoriz
monitoring does occur. Therefore, there should be no expectation of privacy with respect to use of this syste
monitoring may be used for civil, criminal, administrative, or other adverse action. Unauthorized or illegal u
Name Last modified Size Description
Parent Directory -
1/ 2022-07-19 12:17 -
13/ 2022-07-19 12:17 -
19/ 2022-02-15 17:25 -
1m/ 2022-02-19 16:57 -
2/ 2022-07-19 12:25 -
AK_ifsar_breaklines/ 2024-02-14 14:32 -
DSM/ 2022-02-15 21:34 -
LPC/ 2024-04-02 10:27 -
Missing/ 2023-11-28 13:51 -
Non_Standard_Contributed/ 2023-02-23 17:07 -
OPR/ 2024-03-26 11:06 -
ORI/ 2022-02-16 01:12 -
Thumbs.db 2023-09-06 09:32 3.5K
metadata/ 2024-04-07 01:53 -
missing_ak/ 2022-02-15 18:37 -


https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/LPC/Projects/
OH Statewide Phase2 2020 B20/ 27-Jan-2023 21:34
OH Statewide Phase3 2021 B21/ 18-Aug-2025 16:39
OK 3 County FEMAR6 2017 D18/ 04-Jul-2023 09:44
OK ArkansasCacheLCimarron D25/ 02-Jul-2026 21:55
OK Panhandle 2018 D18/ 16-Jun-2021 05:29
OK Statew
OK Woodwa
OR 2022Ja
OR 2023OL
../
OK_ARCacheLCimarron_1_D25/ 26-Jun-2026 15:19
OK_ARCacheLCimarron_2_D25/ 02-Jun-2026 14:59
OK_ARCacheLCimarron_5_D25/ 18-Jun-2026 21:29
OK_ARCacheLCimarron_6_D25/ 02-Jul-2026 23:46

https://apps.nationalmap.gov/uget-instructions/

Bulk Download using uGET

USGS science for a changing world | The National Map

Downloader Manager/uGET

uGet is an open source download manager application which supports many platforms. It is portable and can be downloaded for usage without installation. The instructions below describe how to use uGet to download files using URLs saved in a text or CSV file from TNM Download. Video tutorial available here: https://www.youtube.com/watch?v=QhN0Zuy1yKc

USGS does not assume responsibility for usage or functionality of uGet software for downloading data. More information about uGet can be found on Home, Features, and Help pages on the uGet website.

Download and Setup - Windows

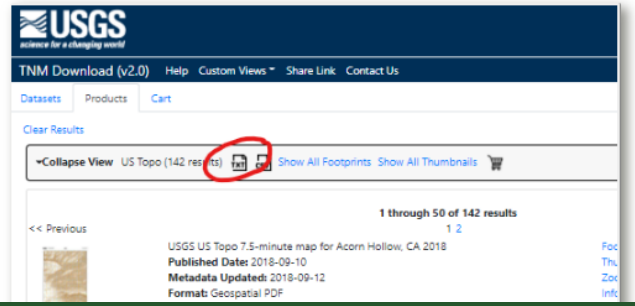
- 7-zip is required to unzip the .7z file you will download in the third bullet below.
  - **Installation Instructions:**
  - Go to the 7-zip website
  - Download and install the 32-bit x86 .exe file or 64-bit x64 .exe file depending on your operating systems.
- Go to https://ugetdm.com/downloads/windows/ or https://sourceforge.net/projects/urlget/.
- Download the package zip (.7z) file. Select "without translation files" unless multi-language support is necessary.
- Unzip the downloaded .7z package file in a folder using 7-zip which you installed in the first bullet above.
- Run the application by double-clicking \bin\uget.exe in the installation folder.
- Once the uGet program is installed, you can run it as many times as you need to in the future. You do not need to install it again.

Instructions - using Text file as input

Preparing Input Text File

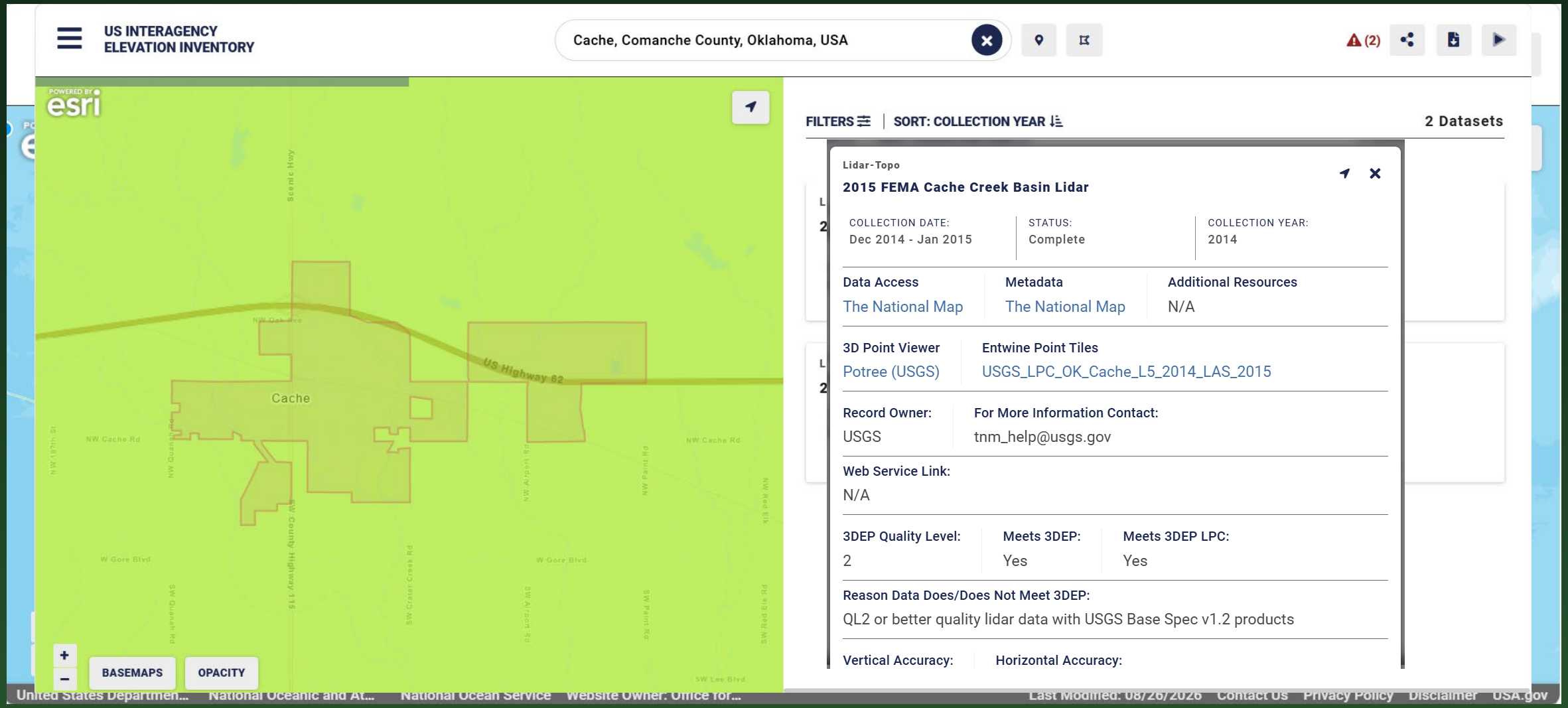
In the TNM Download application, download URLs can be saved in a text file using one of the two methods described below:

Option #1
After product search is completed, click “Save as Text” in the Product view.



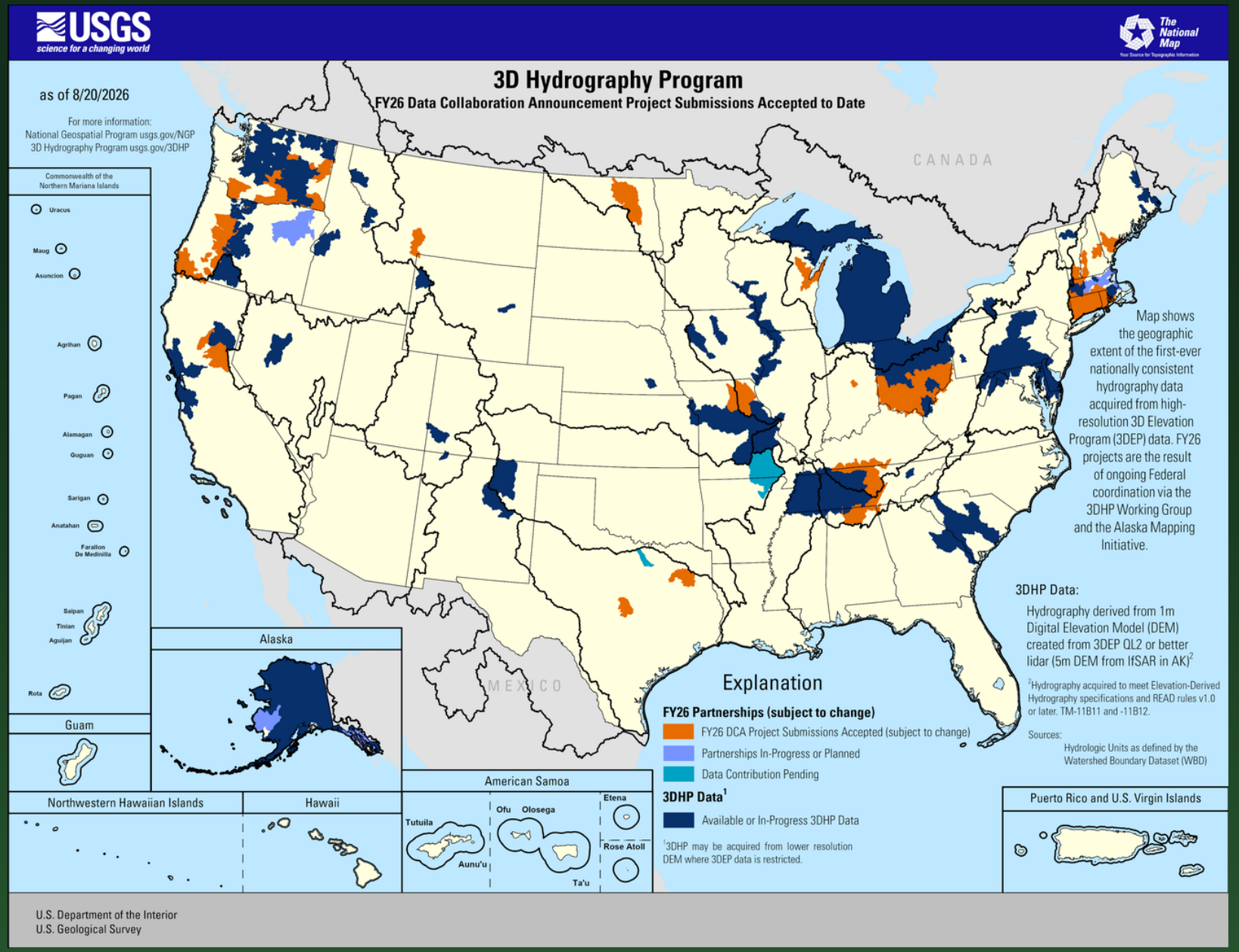
https://coast.noaa.gov/inventory/

U.S. Interagency Elevation Inventory (USIEI)



3DHP Status

usgs.gov/3DHP



usgs.gov/3DHP/AccessData

Access Hydrography Data

3D HYDROGRAPHY PROGRAM

Access 3DHP Data Products

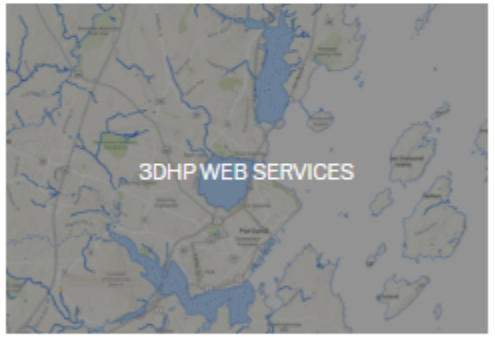
By 3D Hydrography Program

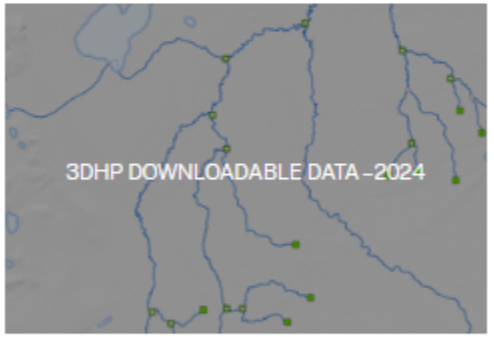
- HOME
- 3D NATIONAL TOPOGRAPHY MODEL
- ACCESS 3DHP DATA PRODUCTS
- PARTNER WITH USGS TO ACQUIRE DATA
- BENEFITS AND APPLICATIONS
- STANDARDS AND SPECIFICATIONS
- RESOURCES
- MULTIMEDIA
- PUBLICATIONS
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3D Hydrography Program data and legacy National Hydrography data products are available for download and as web-based map and data services.

3D Hydrography Program Data Products

3DHP products are available in two forms – web services and a downloadable product. New Elevation-Derived Hydrography (EDH) data and attributes will be added to the services quarterly, and the downloadable product will be updated early each Fiscal Year. The annual downloadable products will remain available for reference with Digital Object Identifiers.



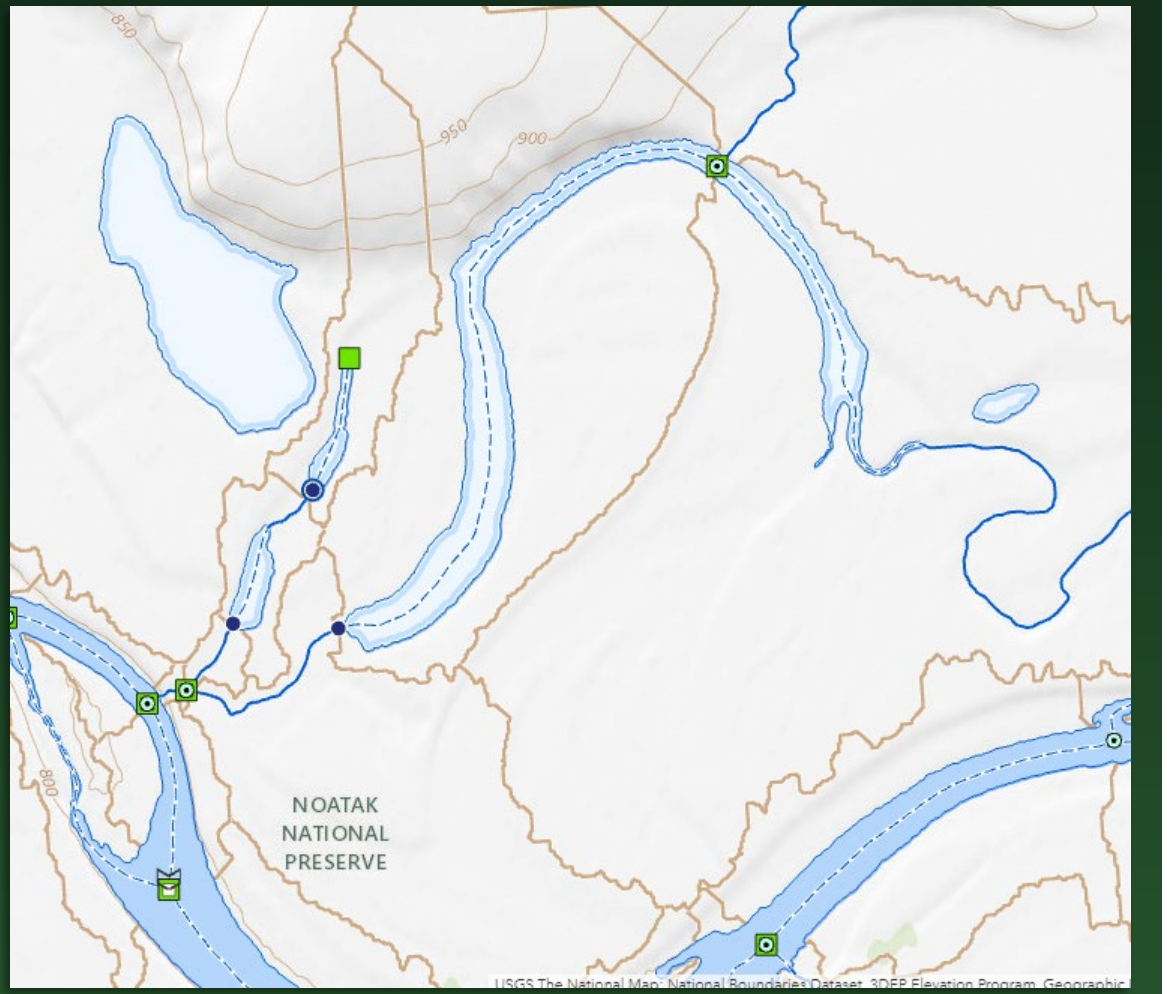


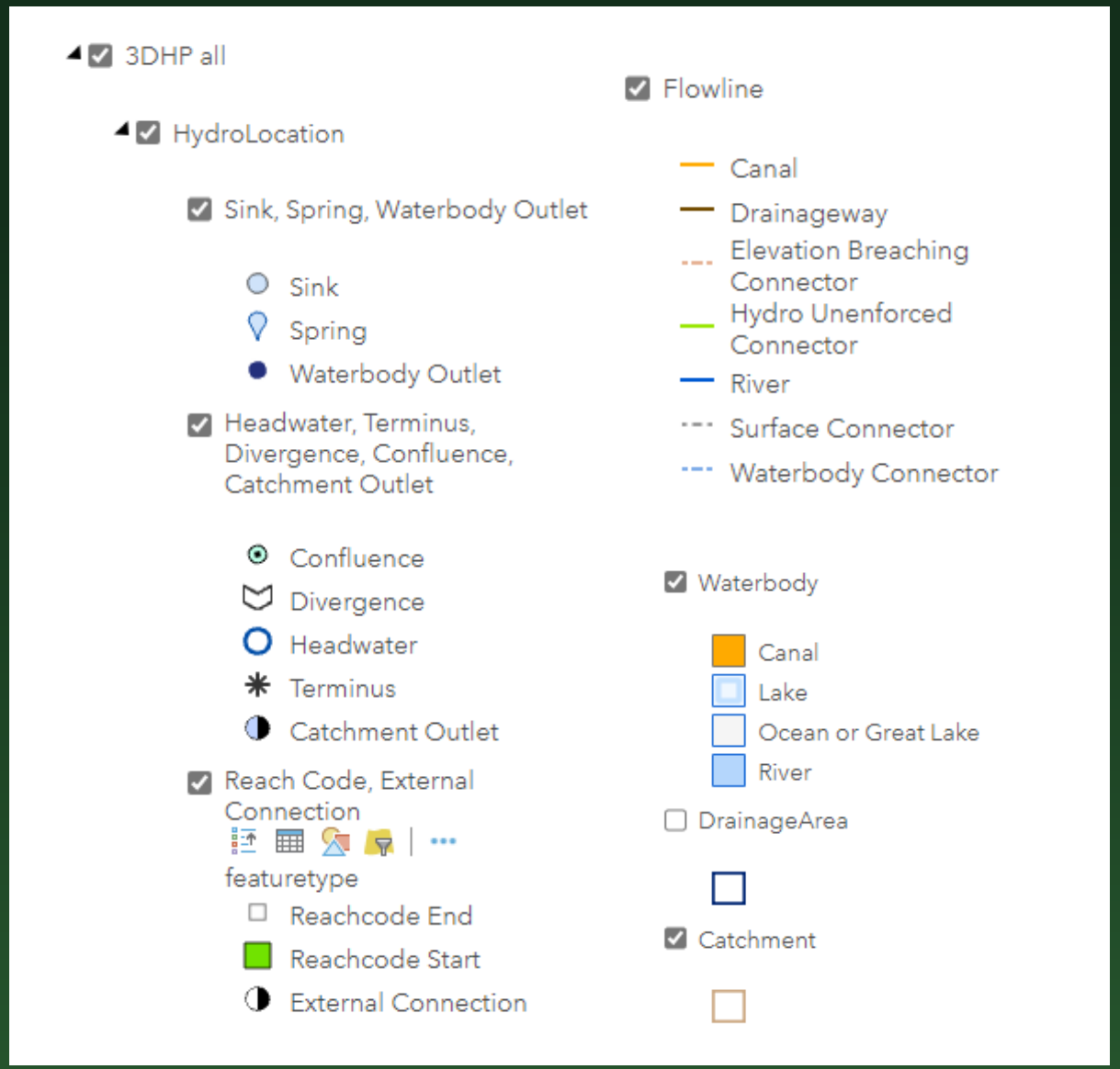
3DHP Web Services Last Updated January 2025

Legacy National Hydrography Products

In 2024, the USGS shifted from maintaining the National Hydrography Dataset (NHD), the Watershed Boundary Dataset (WBD), and the NHDPlus High-Resolution to production of 3D Hydrography Program products. While these legacy products are no longer updated and maintained, they are provided here as both downloadable products and as services for reference purposes. More information about the legacy datasets is available on the About National Hydrography Products webpage.

3DHP_all Service



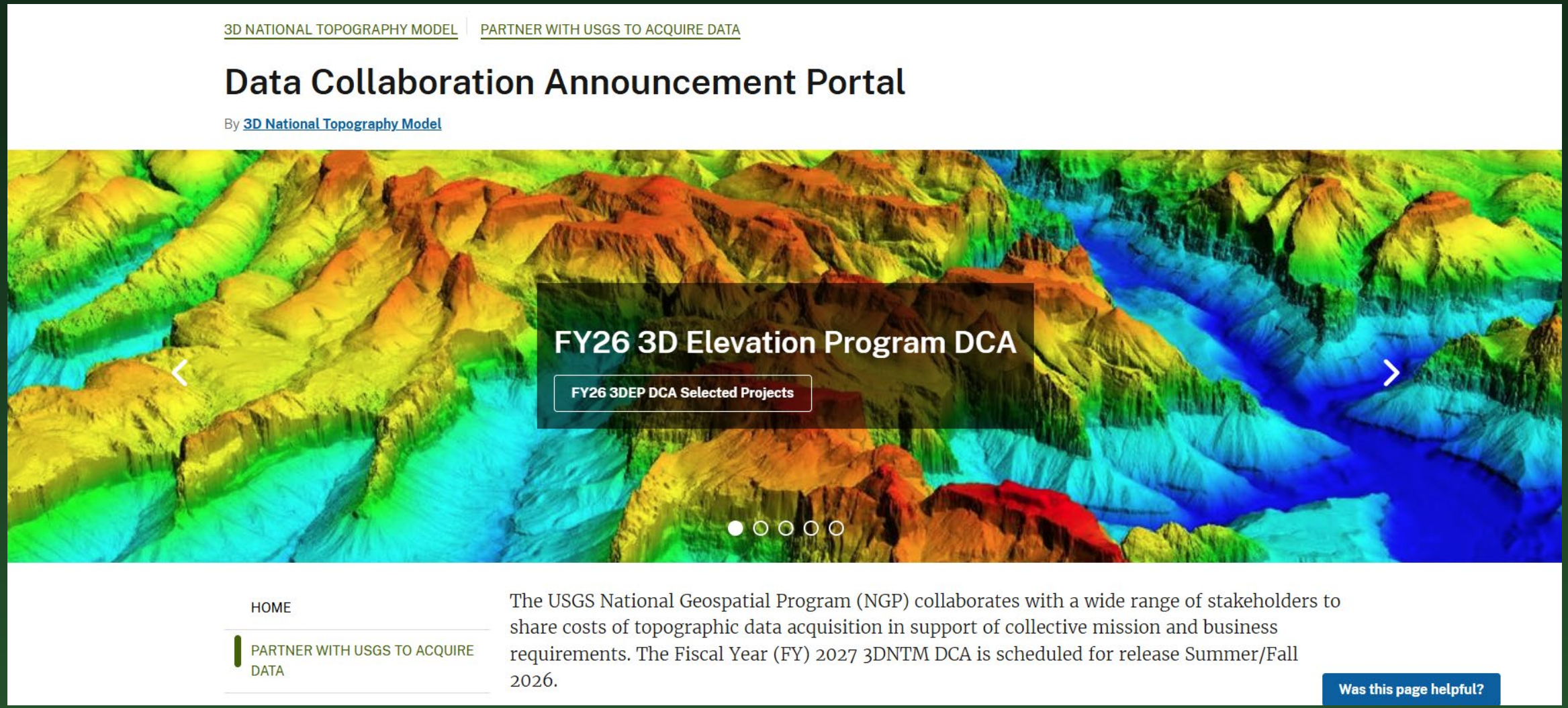


Data Access Links

1. The National Map Viewer — https://apps.nationalmap.gov/viewer/
   a) TNM Video Series: Lessons 3a - 3c
2. The National Map Services — https://apps.nationalmap.gov/services/
   a) TNM Video Series: Lessons 5a – 5b
3. The National Map Downloader — https://apps.nationalmap.gov/downloader/
   a) TNM Video Series: Lessons 4a - 4d
4. Rockyweb (Cloud Storage links) — https://rockyweb.usgs.gov/vdelivery/Datasets/Staged/Elevation/
5. LidarExplorer — https://apps.nationalmap.gov/lidar-explorer/
   a) TNM Video Series: Lesson 10k1
6. US Interagency Elevation Inventory (USIEI) — https://coast.noaa.gov/inventory/
   a) TNM Video Series: Lesson 11a
7. topoBuilder — https://topobuilder.nationalmap.gov/
   a) TNM Video Series: Lesson 17.1

https://www.usgs.gov/3d-national-topography-model/data-collaboration-announcement-portal

3DNTM Data Collaboration Announcement



Where are you going to explore first?