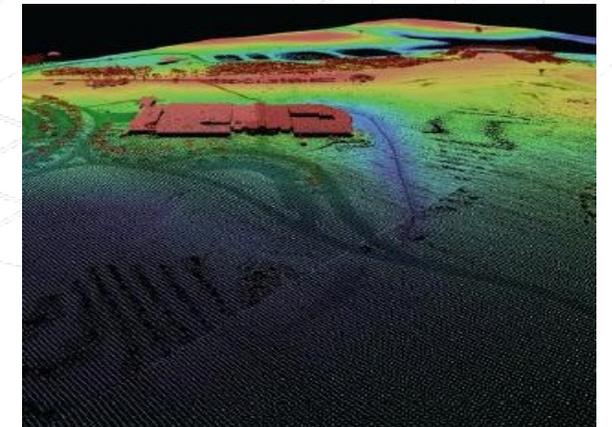
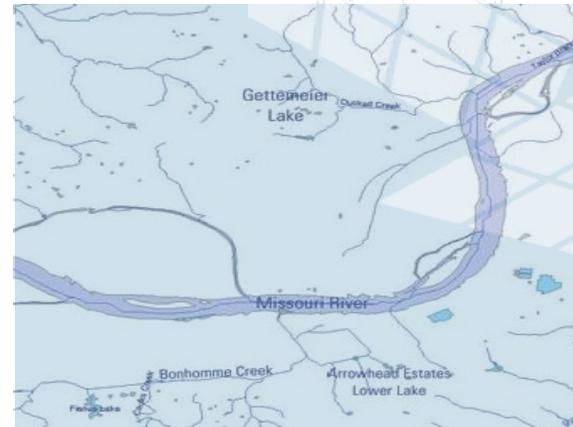
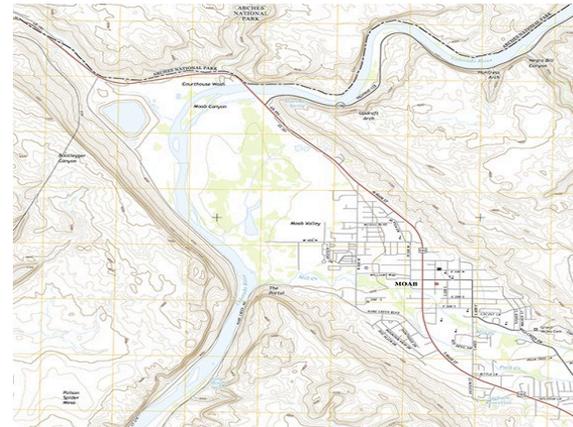




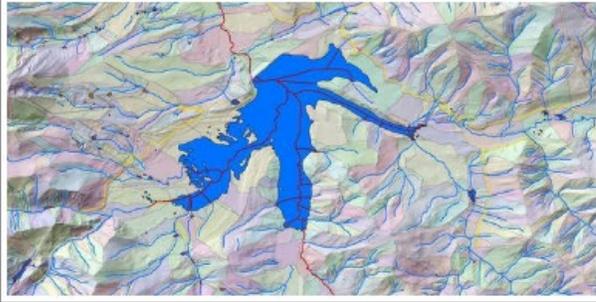
# US Geological Survey's Role in the National Hydrography Dataset and the 3D Hydrography Program



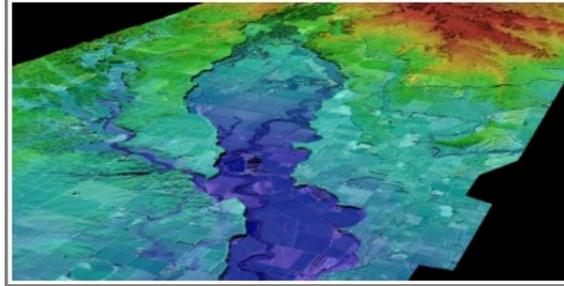
# + USGS National Geospatial Program

**Mission:** Provide National topographic information to advance science, support government, enlighten citizens, and enable decision making.

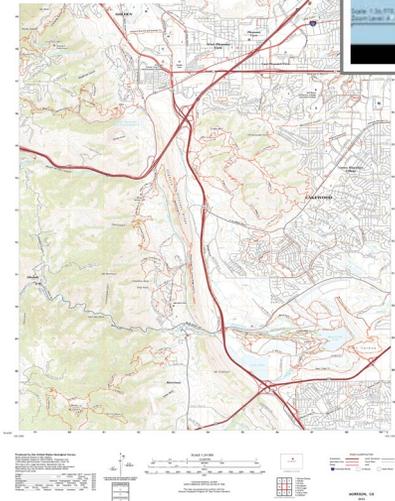
## GIS Data



## Data Access and Visualization Apps



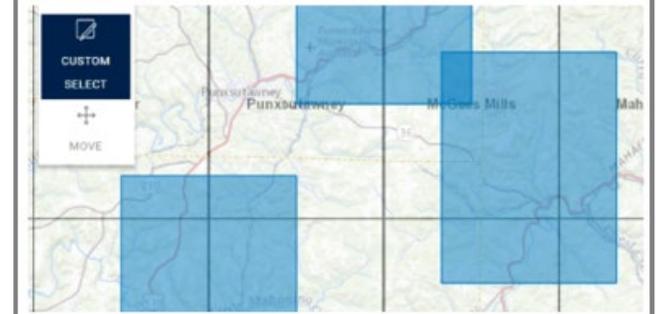
## US Topo



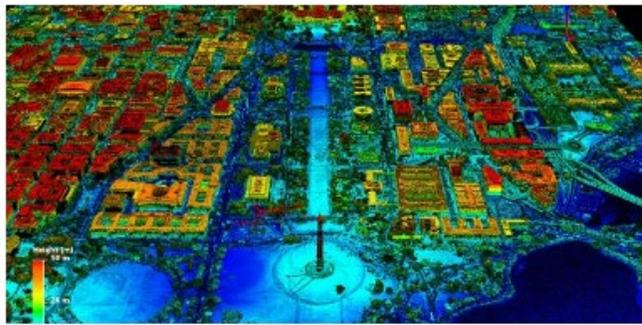
## The National Map Viewer



## topoBuilder & OnDemand Topo



## 3D Elevation Program



## 3D Hydrography Program



## NGP Emergency Response Event Support Map

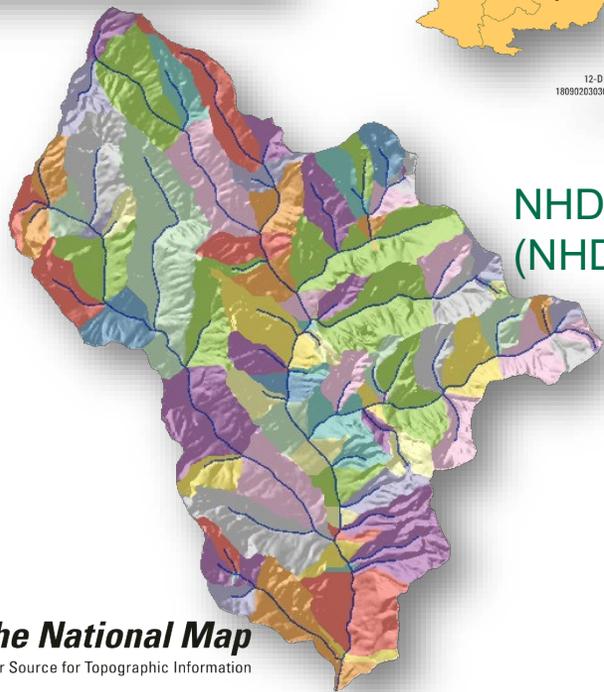
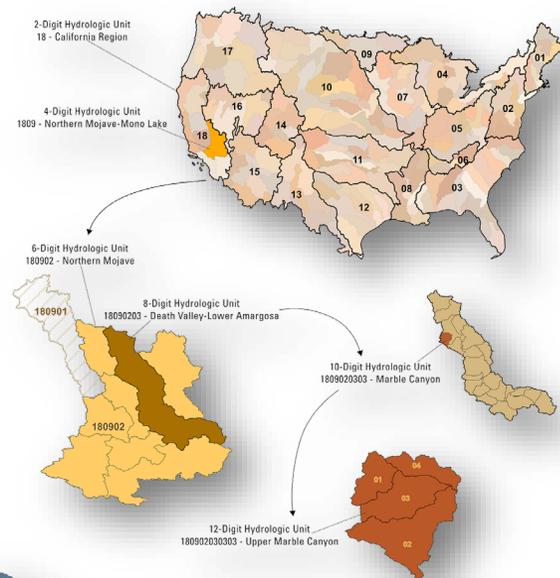
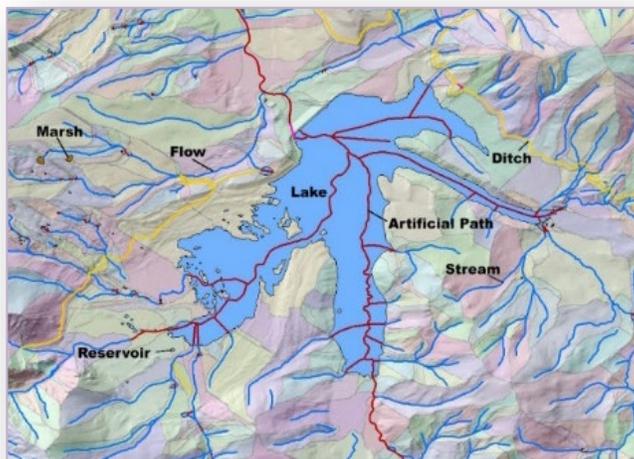


## The National Map Training Videos

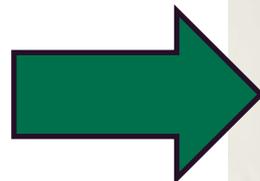


# + Hydrography data on The National Map

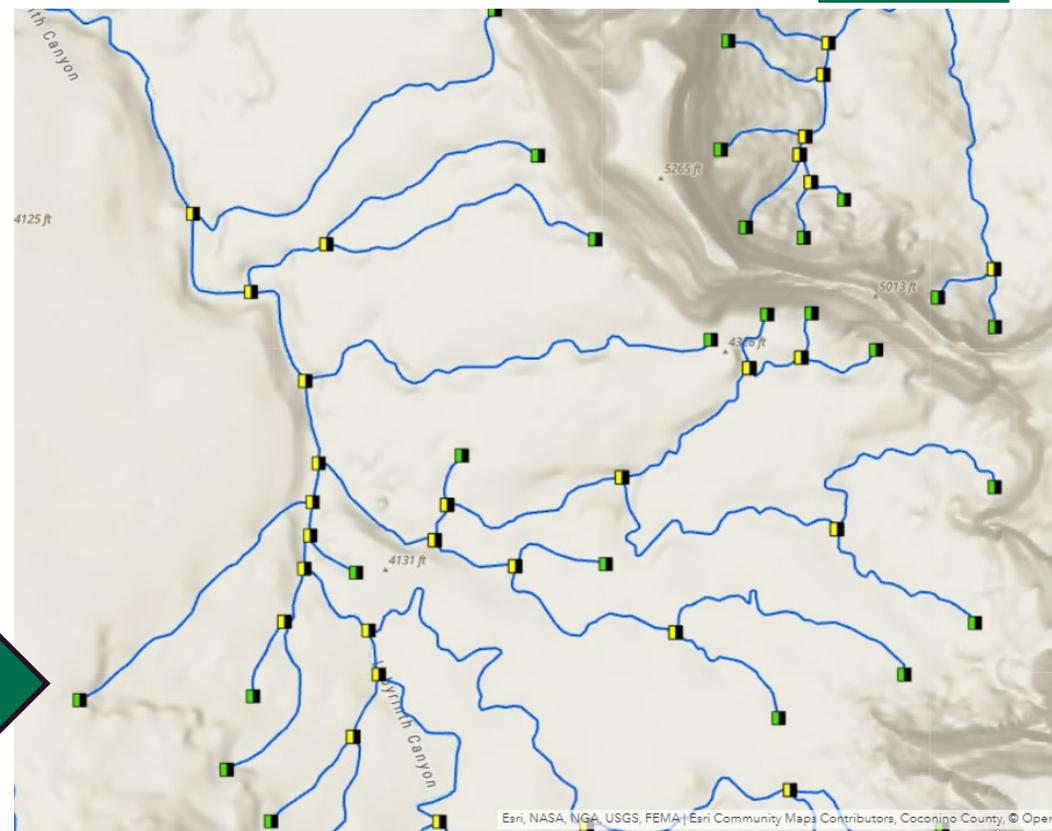
National Hydrography Dataset (NHD) Watershed Boundary Dataset (WBD)



NHDPlus High Resolution (NHDPlus HR)



## 3D Hydrography Program (3DHP)

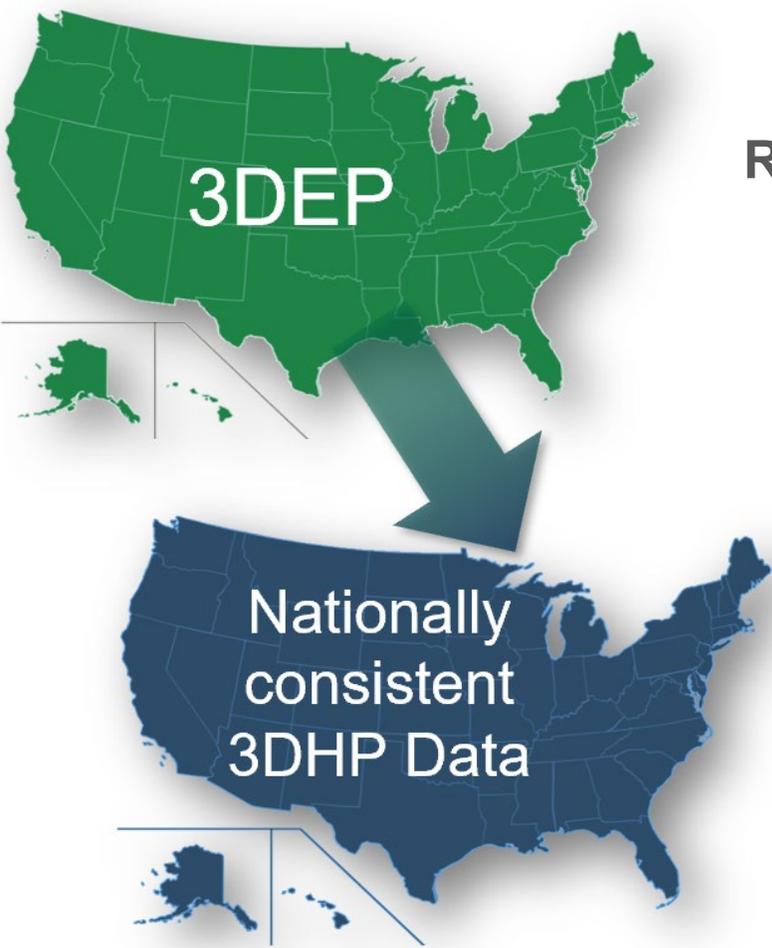


Static versions of NHD, WBD, and NHDPlus HR are available and can be found:

<https://www.usgs.gov/national-hydrography/access-national-hydrography-products>



# + 3DHP Program Goals



Replace older, inconsistent hydrography with higher accuracy data

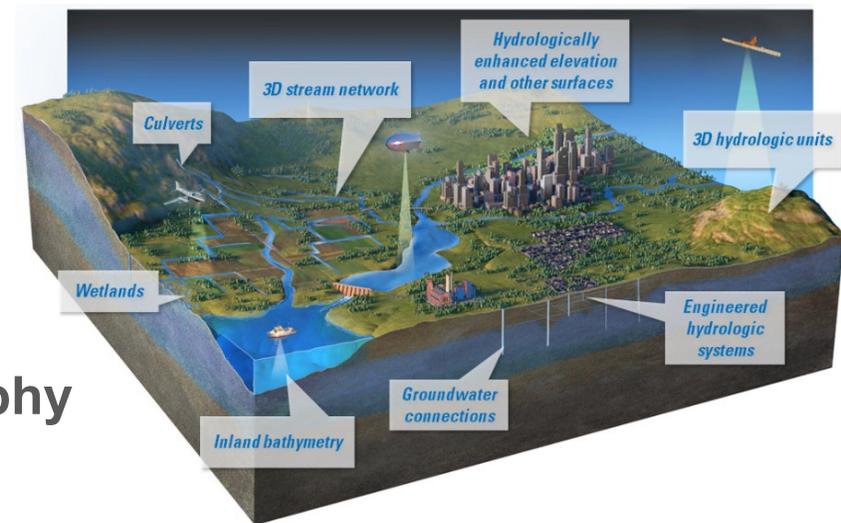
Derive from and align with 3DEP elevation

Follow 3DEP Best Practices for governance and acquisition

**Data and systems built for hydrologic applications**

Better accounting of the hydrologic cycle with connections to water-related information

Interoperability with non-hydrographic data



# + The 3DHP Data Lifecycle



 Federal, state, tribal, local or private entities partner on an area of interest

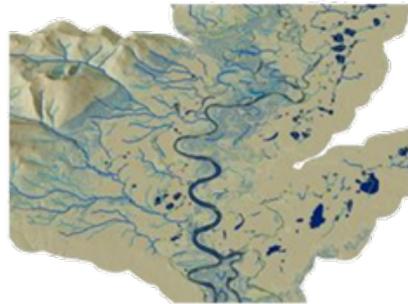
 USGS and/or partners plan the project & award a task order



 Contractors acquire and process data

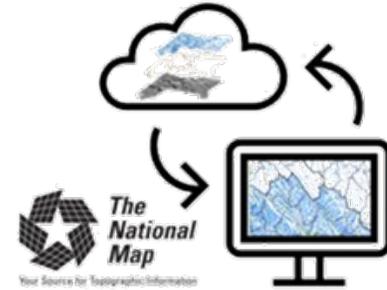


 USGS validates data & produces standard 3DHP data products

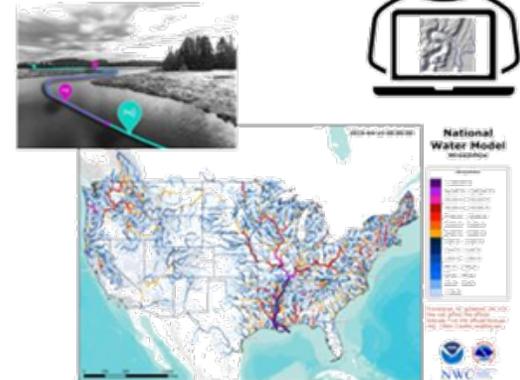


Over \$ 1B in annual benefits to the Nation if hydrography data needs are met (HRBS, 2016)

 USGS makes 3DHP data publicly available on The National Map & via services in the Cloud



 Users can download analysis ready data or access via map services



# + The Beginning



Federal, state, tribal, local or private entities partner on an area of interest



USGS and/or partners plan the project & award a task order



Learn More About 3DHP

HOME The USGS National Geospatial Program (NGP) collaborates with a wide range of stakeholders to share costs of topographic data acquisition in support of collective mission and business requirements. The Fiscal Year (FY) 2024 3DNTM DCA has been released. The initial deadline for project submissions is October 20, 2023.

COMPONENTS OF NGP

SUPPORTING THEMES

GEOGRAPHIC NAMES

SUPPORT

TOPOGRAPHIC MAPS

MEETINGS

DATA

MULTIMEDIA

FAQ

PUBLICATIONS

WEB TOOLS

NEWS

CONNECT

PARTNERS

**3D Elevation Program DCA**  
FY24 3DEP DCA

**3D Hydrography Program DCA**  
FY24 3DHP DCA

**DCA Frequently Asked Questions**  
FY24 FAQ

**FY24 Collaboration Announcement (DCA)**  
The DCA provides a mechanism for partnering with the USGS and other Federal Agencies to acquire high-quality 3D Elevation or 3D Hydrography data to provide the Nation with high-resolution topographic products to support a broad array of applications. The FY2024 3DNTM DCA was released on September 7, 2023. The initial deadline for project submissions is October 20, 2023. Project submissions received after the deadline will be considered for review after initial project selections are made. See links above for detailed information on how to partner with the USGS and other Federal agencies to collect updated topographic information for 3DEP or 3DHP.

**Contacts**  
Questions related to the 3DEP DCA  
General Mailbox  
3D Elevation Program  
Email: 3dep\_dca@usgs.gov



[usgs.gov/3DNTM/DCA](https://usgs.gov/3DNTM/DCA)



# 3DNTM Data Collaboration Announcement (DCA)



## Navigate the 3DNTM DCA

The 3DNTM Data Collaboration Announcement facilitates partnering with the USGS and other Federal agencies to acquire high-quality 3D elevation and hydrography data for the Nation. Follow these steps to apply.

1 Find partnerships



Engage Federal, State, Tribal, local, academic, and private partners and stakeholders in your geographic area of interest

2 Select approach

**USGS manages project via the Geospatial Products and Services Contracts**



**Partner manages project via their own contract**

3 Find instructions and forms at [www.usgs.gov/3DNTM/DCA](http://www.usgs.gov/3DNTM/DCA)



- Project Submission Form
- Request for Preliminary IGCE Form (optional)
- Validation of Funding Partners Form
- Instructions to create GIS file of project area

4 Submit completed forms and project area GIS file

**3dhp\_dca@usgs.gov**  
3D Hydrography Program  
Data Acquisition



**3dep\_dca@usgs.gov**  
3D Elevation Program  
Data Acquisition

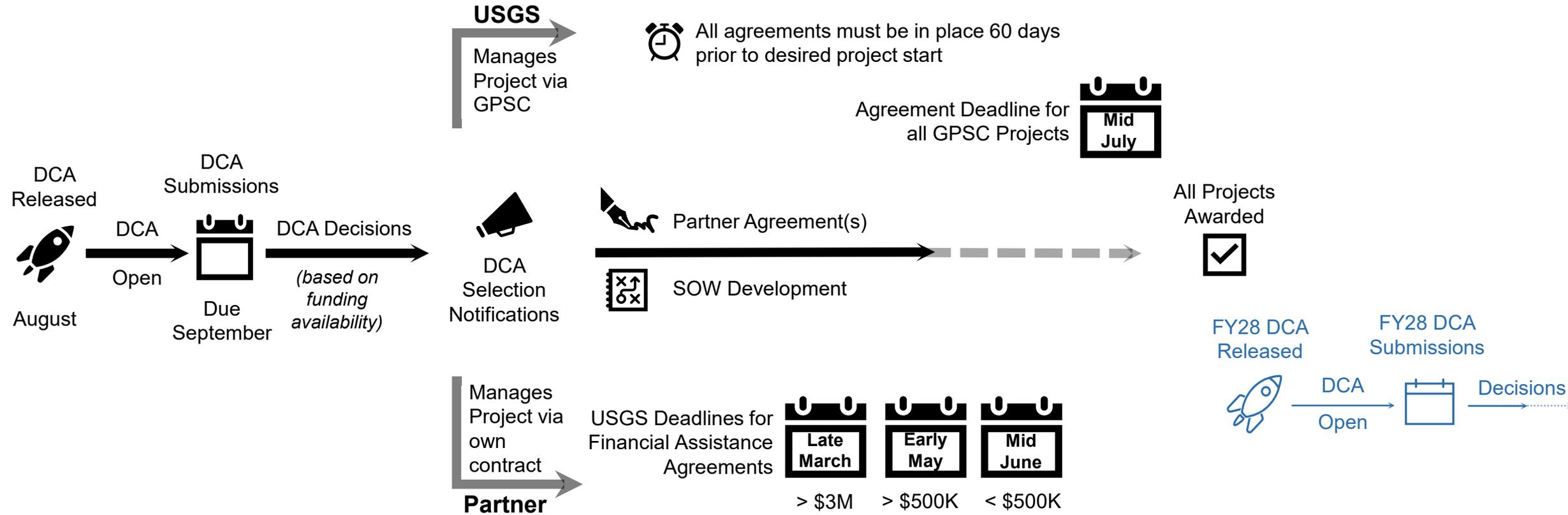


science for a changing world



Your Source for Topographic Information

# 3DNTM DCA Timeline





+

# NGP User Engagement



## USGS National Map Liaisons Engagement Areas

- Working relationships with partners and users are key to data acquisition and other aspects of The National Map
- National Map Liaisons across the country work with states, Tribes, local governments
- Other UE staff outreach to Federal partners and to national organizations
- If you have questions – contact us – we are here to help!
- [usgs.gov/UserEngagement](https://usgs.gov/UserEngagement)



Cynthia Ritmiller

[critmiller@usgs.gov](mailto:critmiller@usgs.gov) 303-202-4550

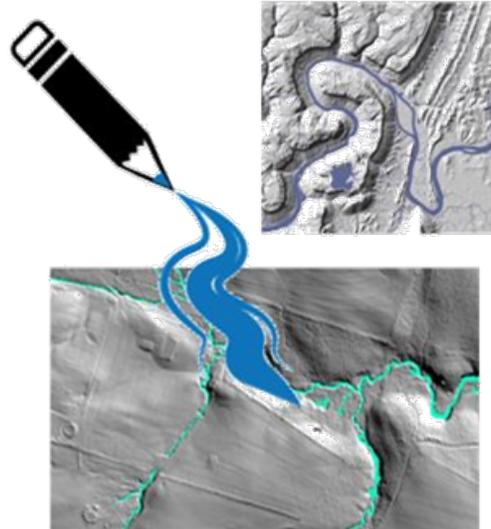
# + Specifications Guide Hydrography Collection

Planning

Acquisition



Contractors acquire and process data

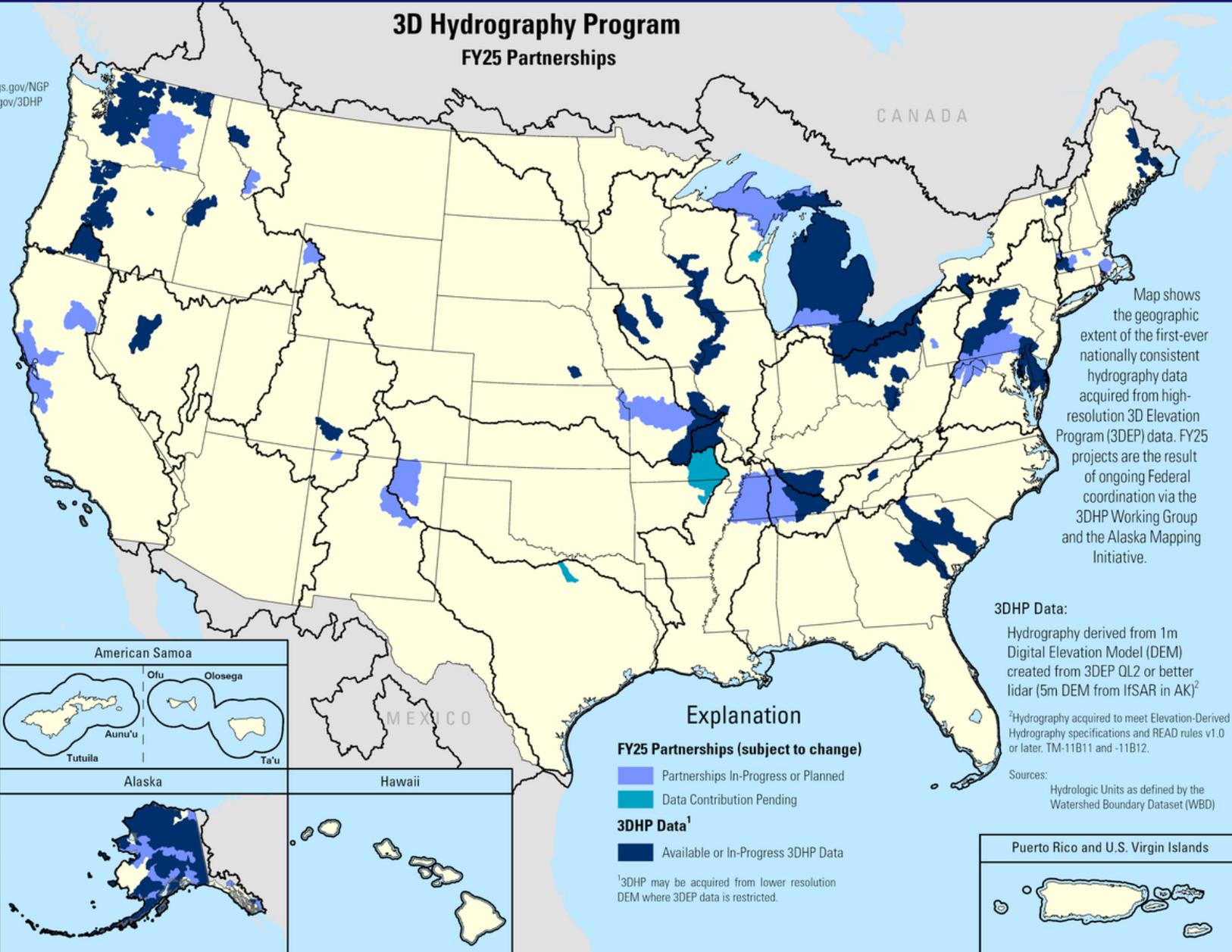


The screenshot shows the USGS website interface. At the top is the USGS logo and navigation menu. The main heading is "Elevation-Derived Hydrography Specifications" by NGP Standards and Specifications. Below the heading is a large image of a 3D terrain model with a blue river channel overlaid, and a "Resource Library" button. A sidebar on the left contains a navigation menu with links to HOME, STANDARDS AND SPECIFICATIONS, PUBLICATIONS, NEWS, and ABOUT. The main content area includes a paragraph about the USGS providing specifications and a "Resource Library" section with links to "Elevation-Derived Hydrography Acquisition Specifications" (with a "Current Acquisition Specifications" button), "Elevation-Derived Hydrography – READ Rules" (with a "View Document" button), and "Resources" including "Resource Library Including Help Guide", "Topology and Network Error Examples", and "Delineation and Attribution Error Examples".

# 3D Hydrography Program FY25 Partnerships

as of 9/30/2025

For more information:  
National Geospatial Program [usgs.gov/NGP](https://usgs.gov/NGP)  
3D Hydrography Program [usgs.gov/3DHP](https://usgs.gov/3DHP)



Map shows the geographic extent of the first-ever nationally consistent hydrography data acquired from high-resolution 3D Elevation Program (3DEP) data. FY25 projects are the result of ongoing Federal coordination via the 3DHP Working Group and the Alaska Mapping Initiative.

### 3DHP Data:

Hydrography derived from 1m Digital Elevation Model (DEM) created from 3DEP QL2 or better lidar (5m DEM from IfSAR in AK)<sup>2</sup>

<sup>2</sup>Hydrography acquired to meet Elevation-Derived Hydrography specifications and READ rules v1.0 or later. TM-11B11 and -11B12.

Sources:  
Hydrologic Units as defined by the Watershed Boundary Dataset (WBD)

### Explanation

#### FY25 Partnerships (subject to change)

- Partnerships In-Progress or Planned
- Data Contribution Pending

#### 3DHP Data<sup>1</sup>

- Available or In-Progress 3DHP Data

<sup>1</sup>3DHP may be acquired from lower resolution DEM where 3DEP data is restricted.

#### Puerto Rico and U.S. Virgin Islands

Commonwealth of the Northern Mariana Islands

- Salpan
- Tinian
- Aguijan
- Pagan
- Alamagan
- Rota
- Sarigan
- Anatahan
- Ferrelion De Medinilla

Guam

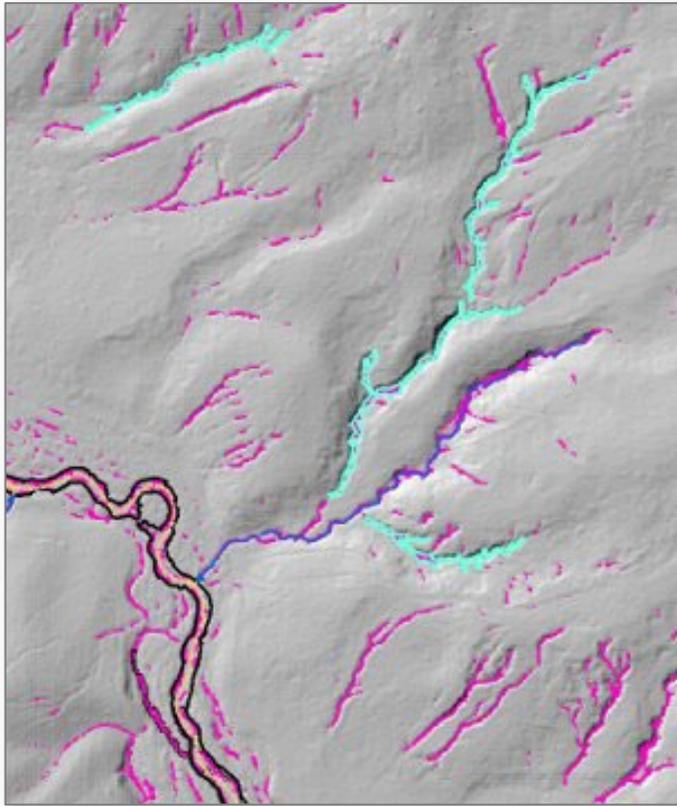
American Samoa

- Ofu
- Olosega
- Aunu'u
- Tutuila
- Ta'u

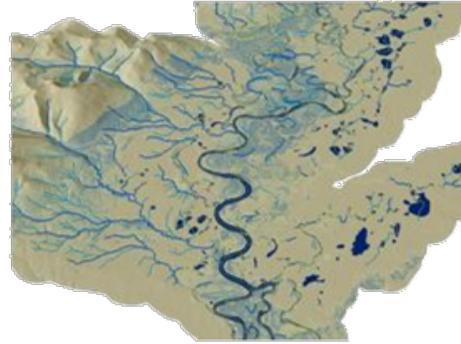
Alaska

Hawaii

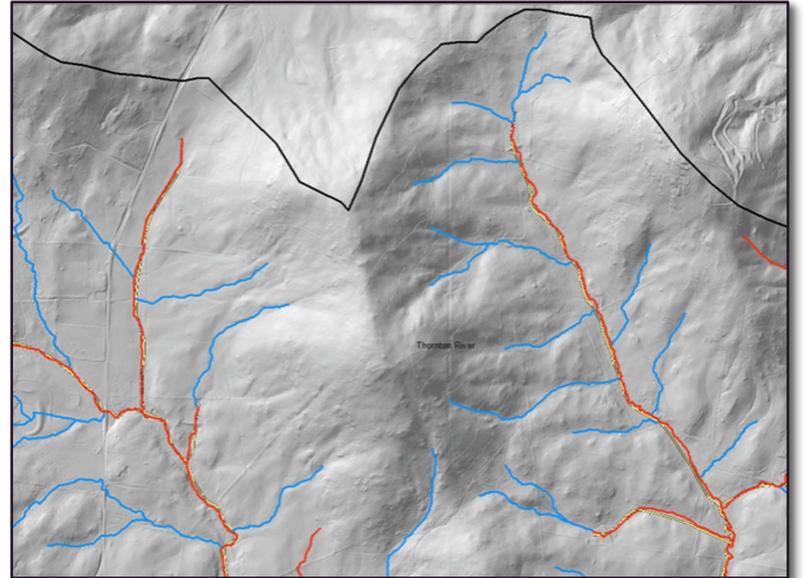
# + Ensuring standards are met



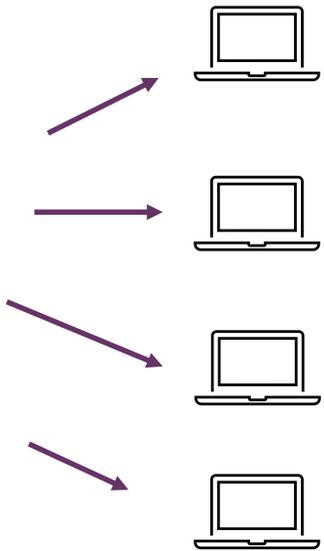
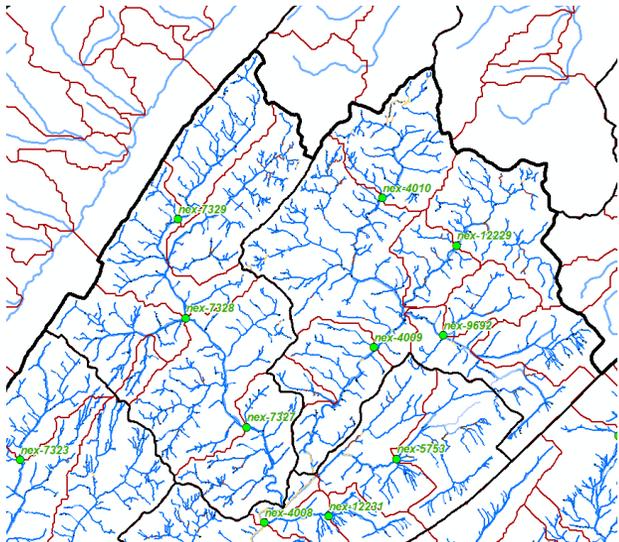
 **USGS validates data & produces standard 3DHP data products**



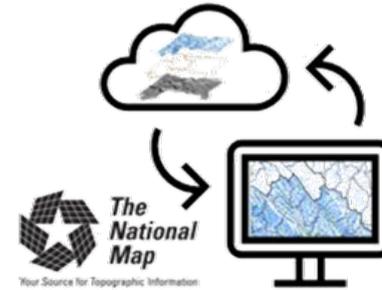
and Ingestion into 3DHP database



# + Data distribution



 **USGS makes 3DHP data publicly available on The National Map & via services in the Cloud**



# + The National Map Data Access via Services



**USGS**  
science for a changing world

### The National Map Services

Expand All Collapse All Reset Show only these categories Keyword

- Base Maps (Cached)
- Availability/Index Overlays (US Topo, 3DEP...)
- Land Cover
- Theme Overlays (NHD, Names, Elevation, Transportation...)**
- Natural Hazards

USGS 3D Hydrography Program (3DHP)  
[RESTs](#) [WMS/WMTS](#) [ArcGIS.com](#) [Legend](#) [Thumbnail](#) Refreshed Date: See Copyright Text section of the service Spatial Reference: 102100 (3857) Min Scale: Max Scale:

USGS 3D Hydrography Program (3DHP) FeatureServer  
[RESTs](#) [ArcGIS.com](#) [Legend](#) [Thumbnail](#) Refreshed Date: See Copyright Text section of the service Spatial Reference: 102100 (3857) Min Scale: Max Scale:

Watershed Boundary Dataset  
[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

**Users can download analysis ready data or access via map services**

[usgs.gov/3DHP/AccessData](https://usgs.gov/3DHP/AccessData) or

[apps.nationalmap.gov/services/](https://apps.nationalmap.gov/services/)

# + Downloadable 3DHP Product

23



## 3D Hydrography Program (3DHP) 2025 Staged Product (FY26 Release) [Folder View]

View

This product is new in federal fiscal year 2026 (FY26), and consists only of vector data in a series of feature classes. The product represents the 3DHP dataset and the schema in which it is contained as of September 30, 2025 Future Annual Staged Product releases will reflect the schema at the ...

Search [refresh] [grid]

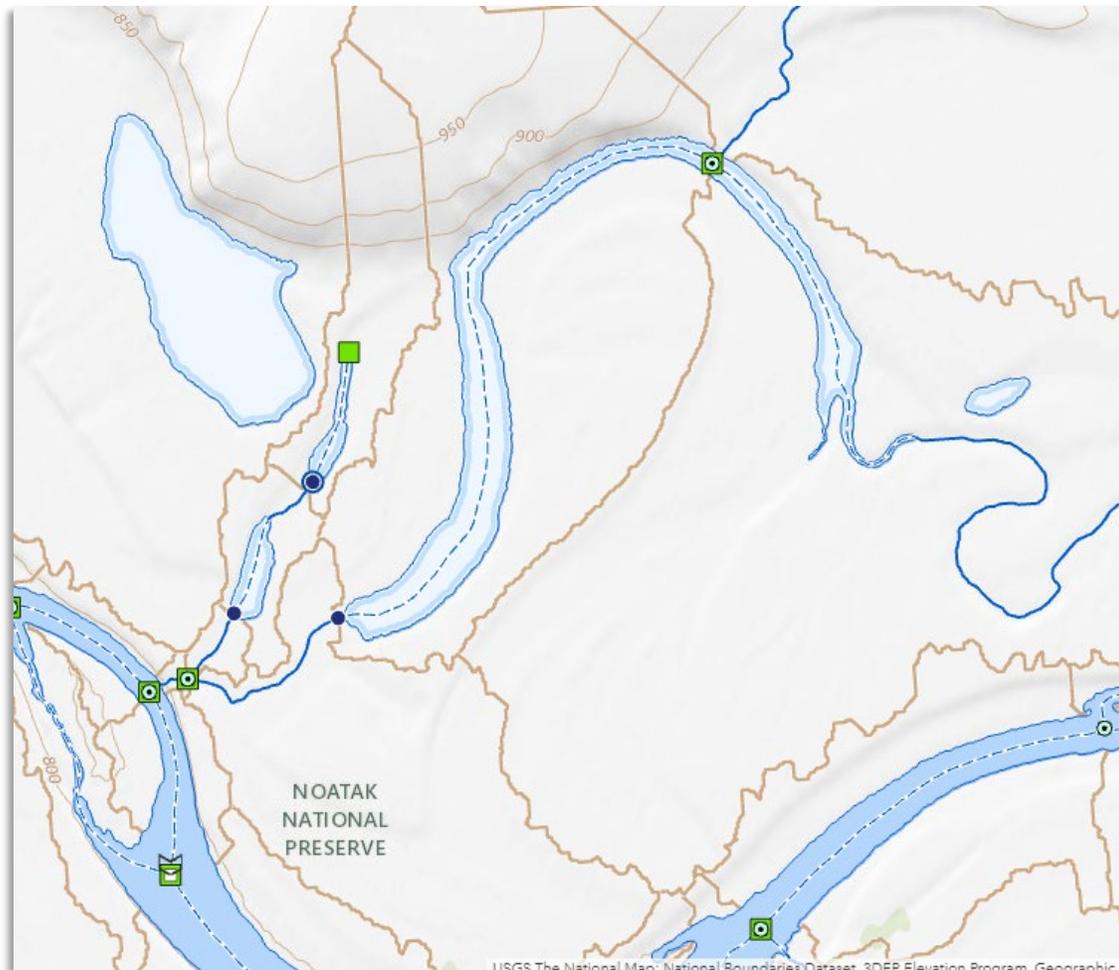
Title	Summary	Date Modified
<a href="#">3D Hydrography Program (3DHP) (Alaska) (published 20260123) FileGDB</a>	The USGS 3D Hydrography Program (3DHP) datasets are an integrated, National, 3D-enabled hydrologic dataset derived from the USGS 3D Elevation Program (3DEP) data. For areas where Elevation-derived Hydrography (EDH) has not yet been collected, 3DHP data is supplemented by hydrographic vector data from the (retired) USGS National Hydrography Dataset (NHD). As further EDH-sourced hydrographic data are collected, they will replace the NHD-sourced data in those [...] <a href="#">Read more...</a>	2026-01-24T03:41:06.655Z
<a href="#">3D Hydrography Program (3DHP) (Alaska) (published 20260123) GeoPackage</a>	The USGS 3D Hydrography Program (3DHP) datasets are an integrated, National, 3D-enabled hydrologic dataset derived from the USGS 3D Elevation Program (3DEP) data. For areas where Elevation-derived Hydrography (EDH) has not yet been collected, 3DHP data is supplemented by hydrographic vector data from the (retired) USGS National Hydrography Dataset (NHD). As further EDH-sourced hydrographic data are collected, they will replace the NHD-sourced data in those [...] <a href="#">Read more...</a>	2026-01-24T03:41:06.654Z
<a href="#">3D Hydrography Program (3DHP) (CONUS) (published 20260123) FileGDB</a>	The USGS 3D Hydrography Program (3DHP) datasets are an integrated, National, 3D-enabled hydrologic dataset derived from the USGS 3D Elevation Program (3DEP) data. For areas where Elevation-derived Hydrography (EDH) has not yet been collected, 3DHP data is supplemented by hydrographic vector data from the (retired) USGS National Hydrography Dataset (NHD). As further EDH-sourced hydrographic data are collected, they will replace the NHD-sourced data in those [...] <a href="#">Read more...</a>	2026-01-24T03:41:12.798Z
<a href="#">3D Hydrography Program (3DHP) (CONUS) (published 20260123) GeoPackage</a>	The USGS 3D Hydrography Program (3DHP) datasets are an integrated, National, 3D-enabled hydrologic dataset derived from the USGS 3D Elevation Program (3DEP) data. For areas where Elevation-derived Hydrography (EDH) has not yet been collected, 3DHP data is supplemented by hydrographic vector data from the (retired) USGS National Hydrography Dataset (NHD). As further EDH-sourced hydrographic data are collected, they will replace the NHD-sourced data in those [...] <a href="#">Read more...</a>	2026-01-24T03:41:06.654Z

[usgs.gov/3DHP/AccessData](https://www.usgs.gov/3DHP/AccessData) or



<https://www.sciencebase.gov/catalog/>

# + 3DHP Map Service



3DHP all

HydroLocation

Sink, Spring, Waterbody Outlet

- Sink
- Spring
- Waterbody Outlet

Headwater, Terminus, Divergence, Confluence, Catchment Outlet

- Confluence
- Divergence
- Headwater
- Terminus
- Catchment Outlet

Reach Code, External Connection



featuretype

- Reachcode End
- Reachcode Start
- External Connection

Flowline

- Canal
- Drainageway
- Elevation Breaching Connector
- Hydro Unenforced Connector
- River
- Surface Connector
- Waterbody Connector

Waterbody

- Canal
- Lake
- Ocean or Great Lake
- River

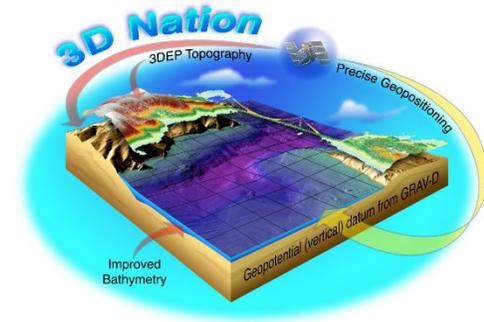
DrainageArea



Catchment



# + 3D National Topography Model (3DNTM)



## 3D Hydrography Program (3DHP)

- Hydrography derived from/integrated with 3D Elevation Program data
- Connections to groundwater, wetlands, and engineered hydrography
- 3DHP Infostructure for data sharing as part of the Internet of Water



## Next Gen 3D Elevation Program (3DEP)

- New quality levels and refresh cycles
- Integration of inland bathymetry
- 3DEP Ecosystem for data and resource sharing
- Continual improvement with new technologies and approaches

## Future Integrated 3D Model

- *Research and develop a 3D data model to fully integrate 3DHP and next gen 3DEP*
- *Integrate other data from The National Map*