



NHDPlus Update

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Shepherdstown, WV

National Hydrography Products: Current

National
Hydrography
Dataset (NHD)

*Watershed
Boundary
Dataset (HUC12)*

NHDPlus

NHDPlus

1:100,000 resolution product (*original*)

2.7 million catchments

Developed by EPA and USGS

widely used for modeling

connects landsurface activities to downstream effects

upstream/downstream navigation

flow volume and velocity, time of travel

“NHDPlus V2” in 2013 (V1 in 2006)

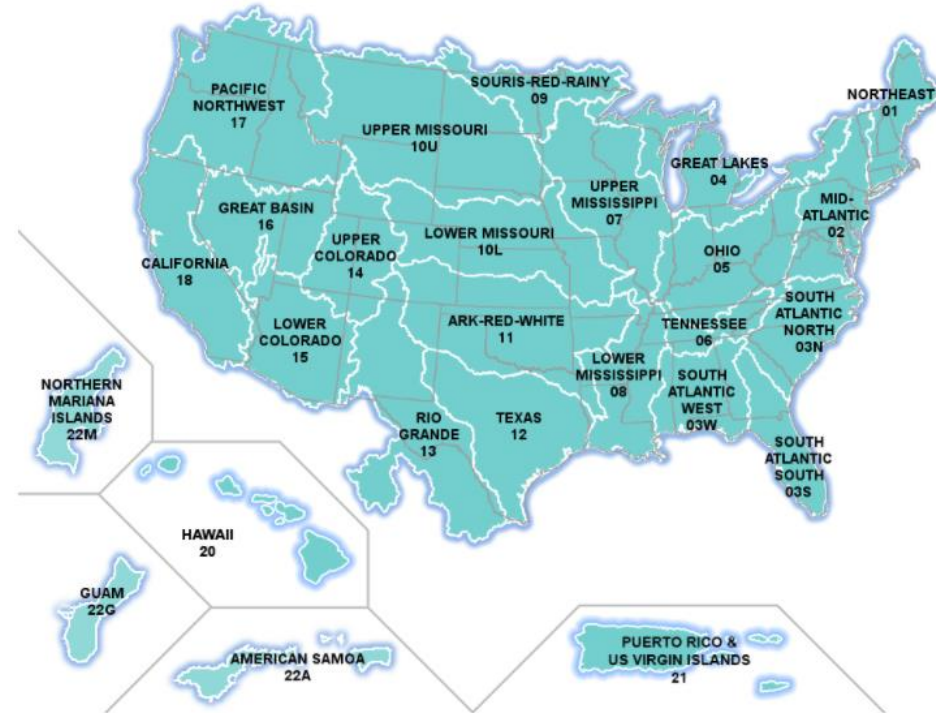
NHDPlus V2 Data

<https://www.epa.gov/wat/erdata/get-nhdplus-national-hydrography-dataset-plus-data>

NHDPlusV2 Data Map

Select the data region of your choice by clicking on the map below or selecting the name from the list.

[National Data](#) | [Global Data](#)



List of Areas by Number

- [01 Northeast](#)
- [02 Mid Atlantic](#)
- [03N South Atlantic North](#)
- [03S South Atlantic South](#)
- [03W South Atlantic West](#)
- [04 Great Lakes](#)
- [05 Ohio](#)
- [06 Tennessee](#)
- [07 Upper Mississippi](#)
- [08 Lower Mississippi](#)
- [09 Souris-Red-Rainy](#)
- [10U Upper Missouri](#)
- [10L Lower Missouri](#)
- [11 Ark-Red-White](#)
- [12 Texas](#)
- [13 Rio Grande](#)
- [14 Upper Colorado](#)
- [15 Lower Colorado](#)
- [16 Great Basin](#)
- [17 Pacific Northwest](#)
- [18 California](#)
- [19 \(unlabeled\)](#)
- [20 Hawaii](#)
- [21 Puerto Rico/U.S. Virgin Islands](#)
- [22A American Samoa](#)
- [22C Guam](#)
- [22M Northern Mariana Islands](#)

Introducing NHDPlus High Resolution (HR)

Same data model and methods
as original NHDPlus

Improved spatial resolution
1:24,000 or greater

30 million features

Version 1.0 released in 2022


EPA Snapshot available now

NHDPlus HR Data


<https://www.epa.gov/waterdata/get-nhdplus-national-hydrography-dataset-plus-data#DownloadHR>



Download NHDPlus High Resolution EPA Snapshot 2022 Data

National:

- [Esri File Geodatabase](#)  (39.4 GB)
- [OGC GeoPackage](#)  (72.7 GB)

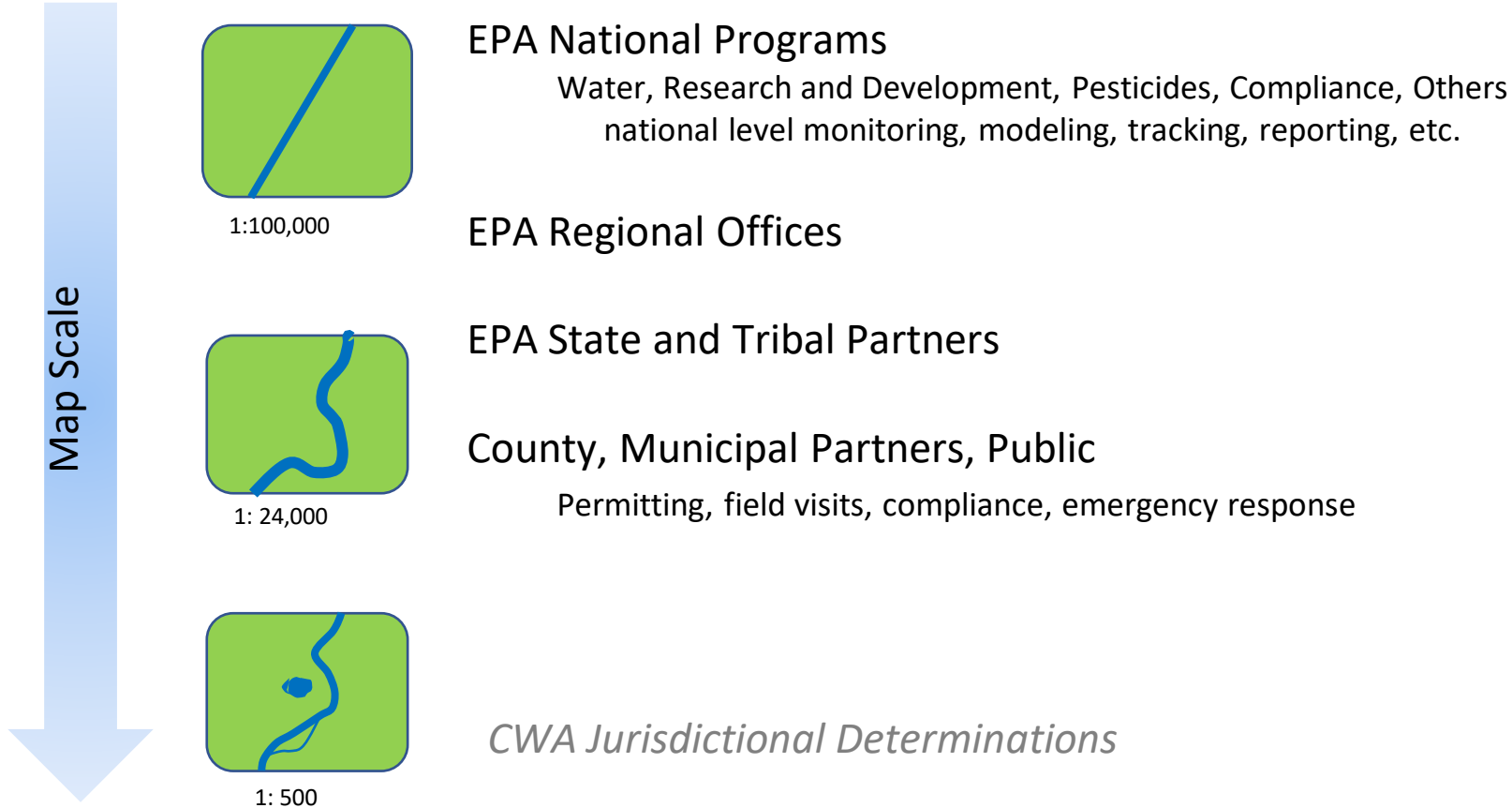
State and State-Equivalent:

Alabama 

- [Esri File Geodatabase](#)  (562 MB)
- [OGC GeoPackage](#)  (1.3 GB)

Release notes and metadata forthcoming.

EPA Activities Vary in Spatial Resolution



NHDPlusVFGen

Based on new NHDPlusHR

Pruned back to 1:100,000 network

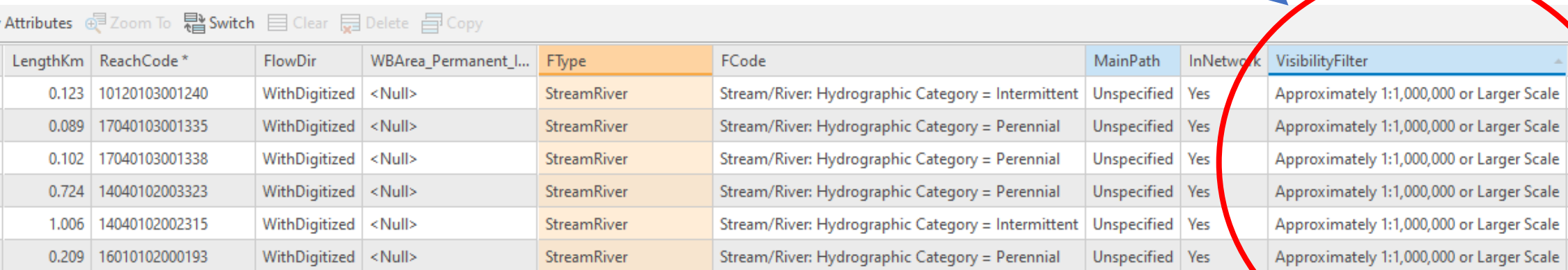
Regenerates all Value-Added Attributes (VAAs)

Retains all crosswalk information

Available in beta now

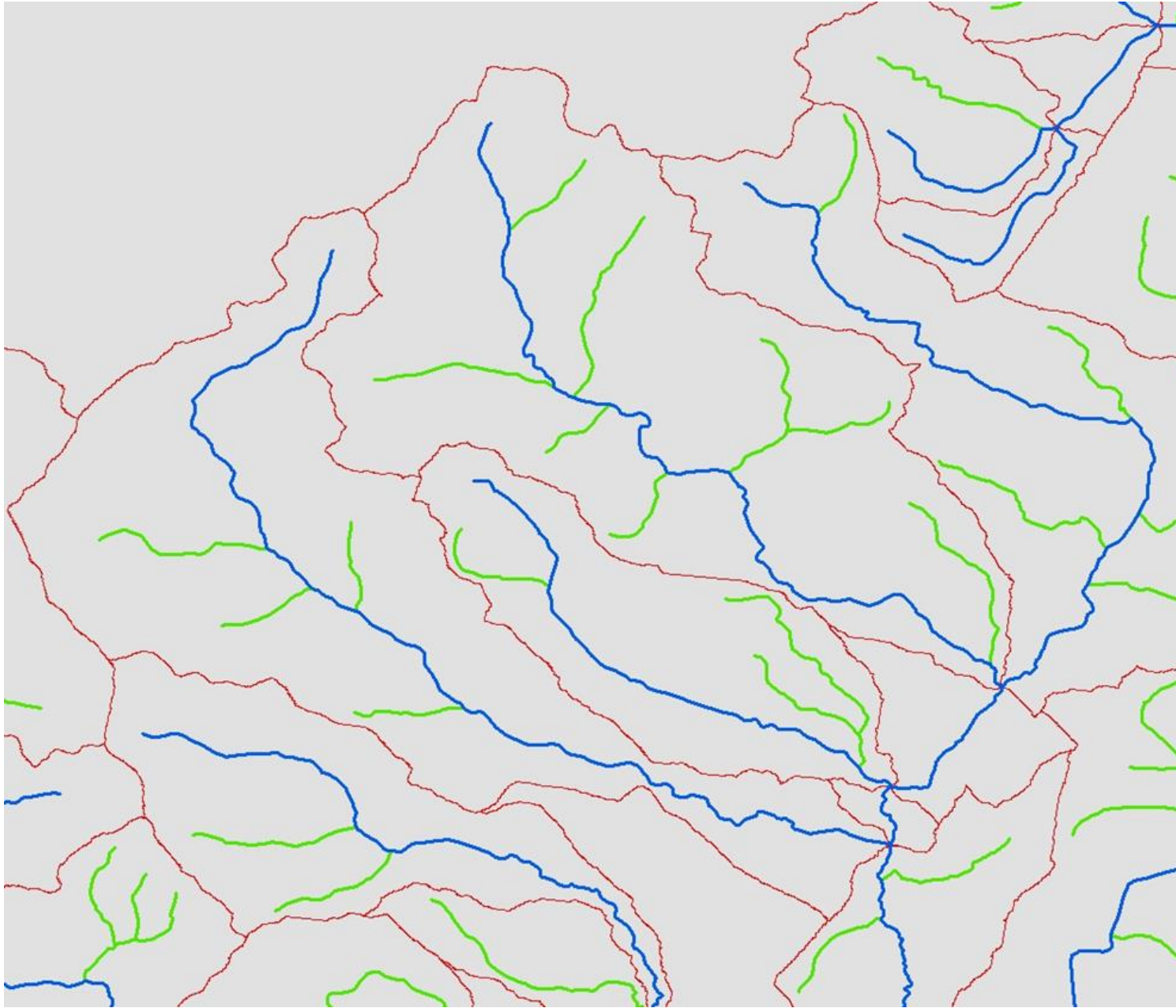
NHDPlus High Resolution or NHDPlus HR

Newly populated **VisibilityFilter** attribute



Attributes Zoom To Switch Clear Delete Copy

LengthKm	ReachCode *	FlowDir	WBArea_Permanent_I...	FType	FCode	MainPath	InNetwork	VisibilityFilter
0.123	10120103001240	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Intermittent	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale
0.089	17040103001335	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Perennial	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale
0.102	17040103001338	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Perennial	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale
0.724	14040102003323	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Perennial	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale
1.006	14040102002315	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Intermittent	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale
0.209	16010102000193	WithDigitized	<Null>	StreamRiver	Stream/River: Hydrographic Category = Perennial	Unspecified	Yes	Approximately 1:1,000,000 or Larger Scale



VFGen: VisibilityFilter
 >= 1:100,000

GREEN >= 1: 24,000 (HR)

BLUE >= 1:100,000 (VFGen)

RED VFGen Catchments

HR and VFGen have same data model but VFGen has an extra table.

FlowlineXWalk			
OBJECTID *	NHDPlusID	RcvingFlowline	Distance
22121	25000300000028	25000300000027	0.978
1190	25000300000029	25000300004758	1.57
3270	25000300000030	25000300016396	0.266
18662	25000300000032	25000300000033	1.077
22035	25000300000038	25000300035147	1.446
19365	25000300000039	25000300035147	0.956
19017	25000300000040	25000300000060	2.432
10365	25000300000045	25000300009447	1.893
19757	25000300000046	25000300032759	0.027

Moving Forward...

NHDPlusV2
Updated 2015

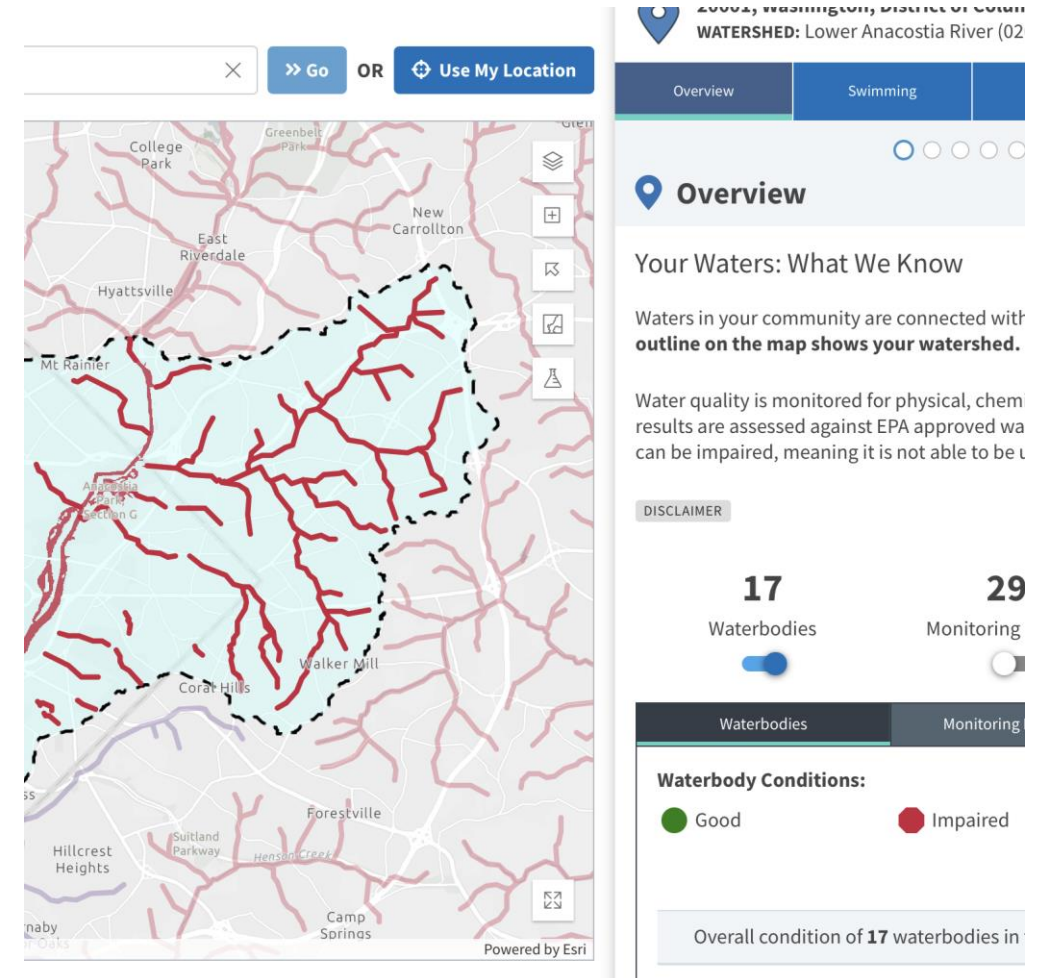
NHDPlusHR
*Released in 2022**

NHDPlusVGen
Release in 2023

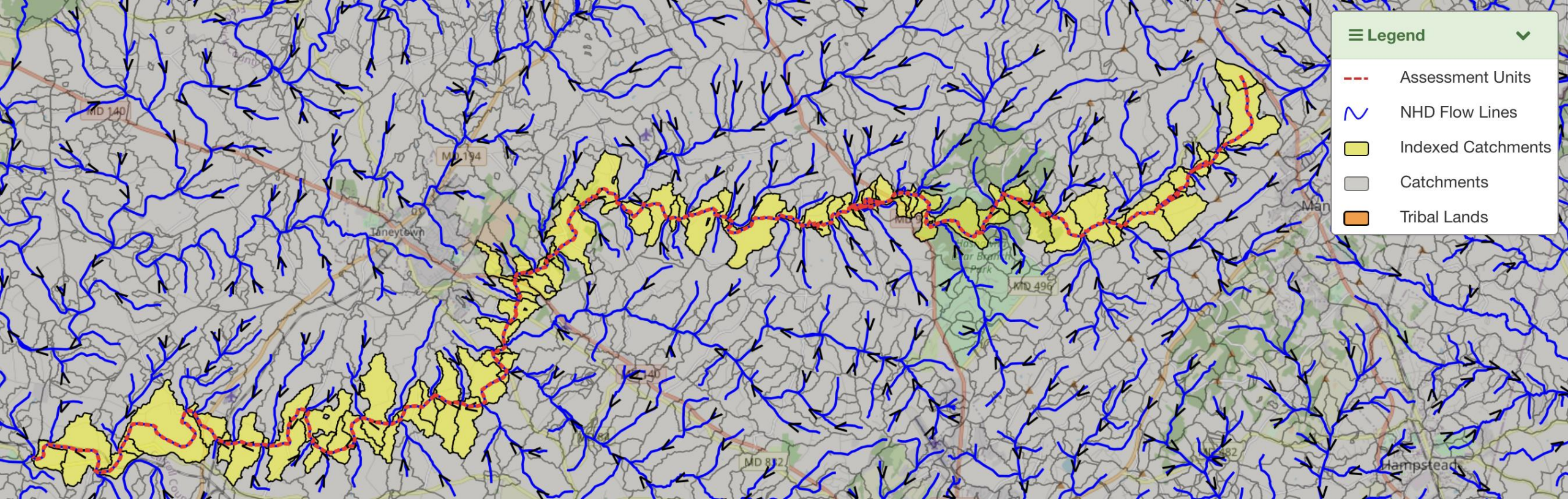


NHDPlus and ATTAINS

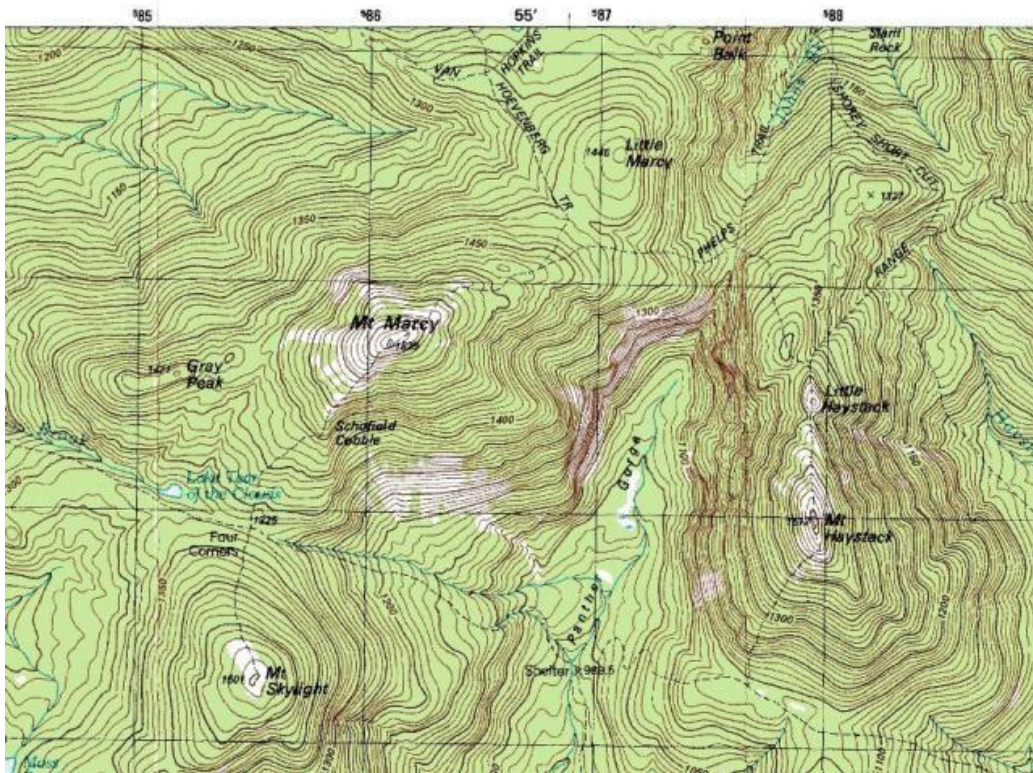
- ATTAINS transitioned to NHDPlus High Resolution in 2022
 - Involved reprocessing all state and tribal data through the Catchment Index Process (CIP) tool
 - All reprocessed data was QA'ed
- ATTAINS uses hexagons for Alaska and ocean catchments
- Measures use high resolution catchment area



NHDPlus and ATTAINS (cont.)



Future of Hydrography: LIDAR derived Hydrology





Hydrography: New Direction

- NHD, NHDPlus, and WBD maintenance* is ending
- NHD data model to be retired
- EPA will maintain a snapshot of NHD, NHDPlusHR, and WBD
EPA geofabric
- USGS will continue to maintain access to data and services

A large orange circle on the left side of the slide, partially cut off by the edge.

3DNTM Data Product

Funding constraints

Moving away from NHD data model to HY Features

New model in development with estimated completion by Dec. '23

No test data or pilots yet

New model to streamline attributes, mainly fcode

Applications that depend on data model will break

Upstream/downstream navigation will change

To Summarize

- USGS is proposing big changes in hydrography
- These changes will take years to implement
- Office of Water will maintain working versions of hydrographic data
- Office of Water will monitor and track interoperability
- Office of Water will participate in any testing opportunities



Questions?

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