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# **USGS ANNOUNCEMENT REGARDING THE TRANSITION FROM THE NHD AND WBD TO THE 3DHP**

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**OR Hydro FIT Lead**



# Thanks for the slides!

- Tom Carlson, USGS
- Jay Stevens, BLM
- Brian Staab, USFS



## There and back again

- Topographic maps included inherently integrated data – **USGS collected data to make maps**
- We harvested data from those maps to develop NHD and early elevation – **USGS maps made the data**
- We are now able to collect new, high accuracy 3DEP data and derive new, aligned hydrography data – **USGS back again to collecting data to make maps**



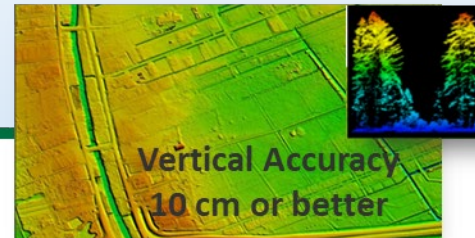
Topographic mapping began  
began at the USGS

1884



1976

1st Digital Elevation Model  
1st Digital Line Graph (DLG)  
Digitized from contours and  
delivered as 24k tiles



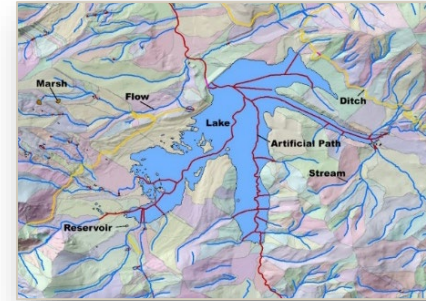
1st full year of 3DEP Production  
Including lidar point cloud as a product

2016



# Current Approach to National Hydrography Datasets

- The National Hydrography Dataset (NHD) portfolio of datasets is the most comprehensive and current data of the Nation’s surface waters
  - 9.4 million miles stream of network, including 8 million waterbodies and over 130,000 nested hydrologic units
- NHD and Watershed Boundary Dataset (WBD) leverage local knowledge and updates through a [stewardship](#) program with participants from 41 states and Washington DC
  - \*Pacific Northwest (PNW) Hydro: Oregon, Washington, Federal and local agencies in region
- Updates are not uniform
  - Some areas have been updated, others untouched and based on older information – sometimes 40+ years old
  - National consistency of data quality has decreased over time
  - NHD surface water features don’t align well with highly accurate 3D Elevation Program data



National Hydrography Dataset

Watershed Boundary Dataset

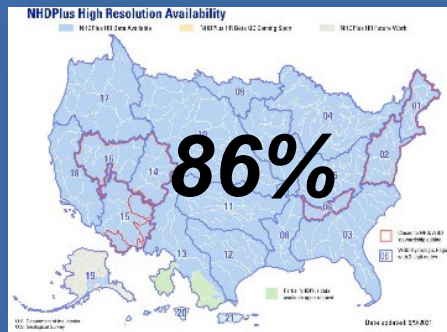


NHDPlus High Resolution

## National Baseline Datasets

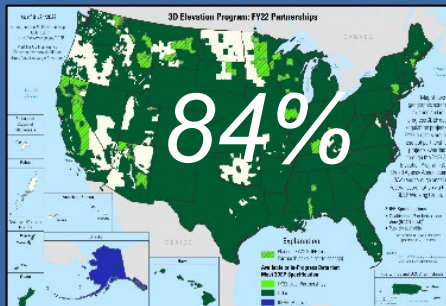
**NHDPlus High Resolution (NHDPlus HR) hydrography framework**

*On track to complete by 2029*



**3D Elevation Program (3DEP) first national high-resolution elevation baseline**

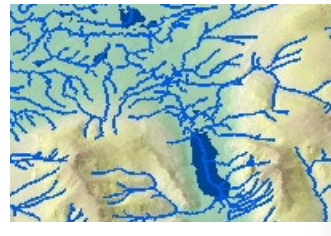
*On track to complete acquisition by FY26*



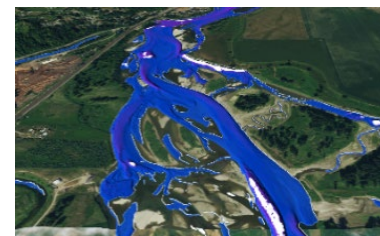
*Ongoing*

## Next Generation Programs

**3DNTM Call for Action Part 1: 3D Hydrography Program (3DHP)**

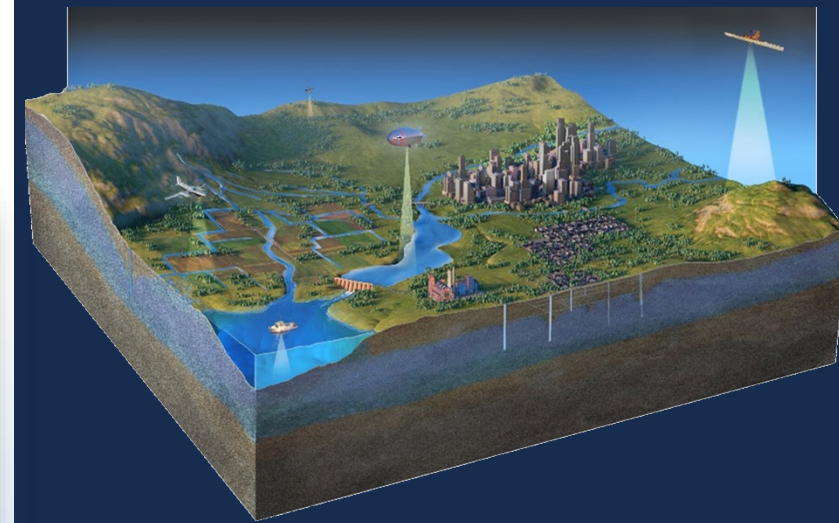


**3DNTM Call for Action Part 2: Next Gen 3DEP**



*Under development*

## Integrated 3D Model



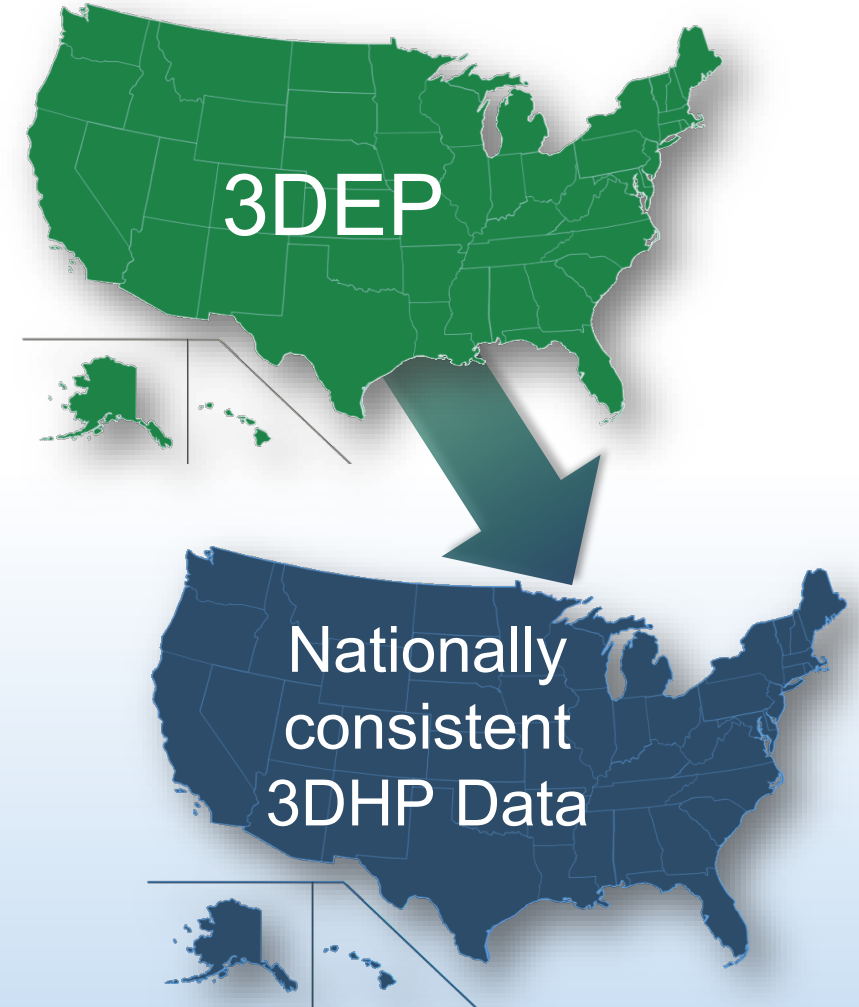
- Research and develop a 3D data model to fully integrate 3DHP and Next Gen 3DEP
- Integrate other data from *The National Map*

*Longer-term goal*



# Introducing the 3D Hydrography Program (3DHP)

- 3DHP will provide national consistency while meeting local needs
- Goal to acquire new hydrography standardized to align vertically, horizontally, and temporally with 3DEP data, as well as other improvements
  - Supports national and regional-level issues like flooding, contaminant spills, water quality and quantity, drought, climate change, etc.
  - Supports more accurate, updated modeling and analysis capabilities
  - Supports sharing of water data as the geospatial framework underpinning the internet of water
- Data acquisition process to follow 3DEP Best Practices including coordinated governance and data acquisition
- Building on decades of work and concepts from current hydrography products





## Transition period – Federal FY 2023

- USGS will complete queued markups to NHD and WBD
  - User markups submitted before **November 30, 2022** will be implemented
- **Phase out NHD Editing during Q1 (December 31, 2022)**
  - Discontinue new editor training
  - Phase out new job checkouts
  - Phase out external edit access to the database
- **Phase out WBD Editing by Q3 (June 30, 2023)**
- Complete production work on NHDPlus HR after meeting 2023 GPRA goals
- **Publish static versions of NHD, WBD, and NHDPlus HR (Sept 30, 2023)**
  - Static versions will remain available for the foreseeable future
  - Services will remain active for the foreseeable future
- HydroAdd (formerly HEM (Hydro Event Management tool))
  - Line event functionality will be released in FY23 and will continue to work against the static NHD.
  - HydroAdd will also work with 3DHP in FY24.



# PNW Hydro reaction

- Major impact to PNW since we are actively improving the data and use it to support so many mission-critical activities.
- So far, multiple interagency dialogues with USGS have not altered the decision.



FY 2022 NHD Stewardship Activity



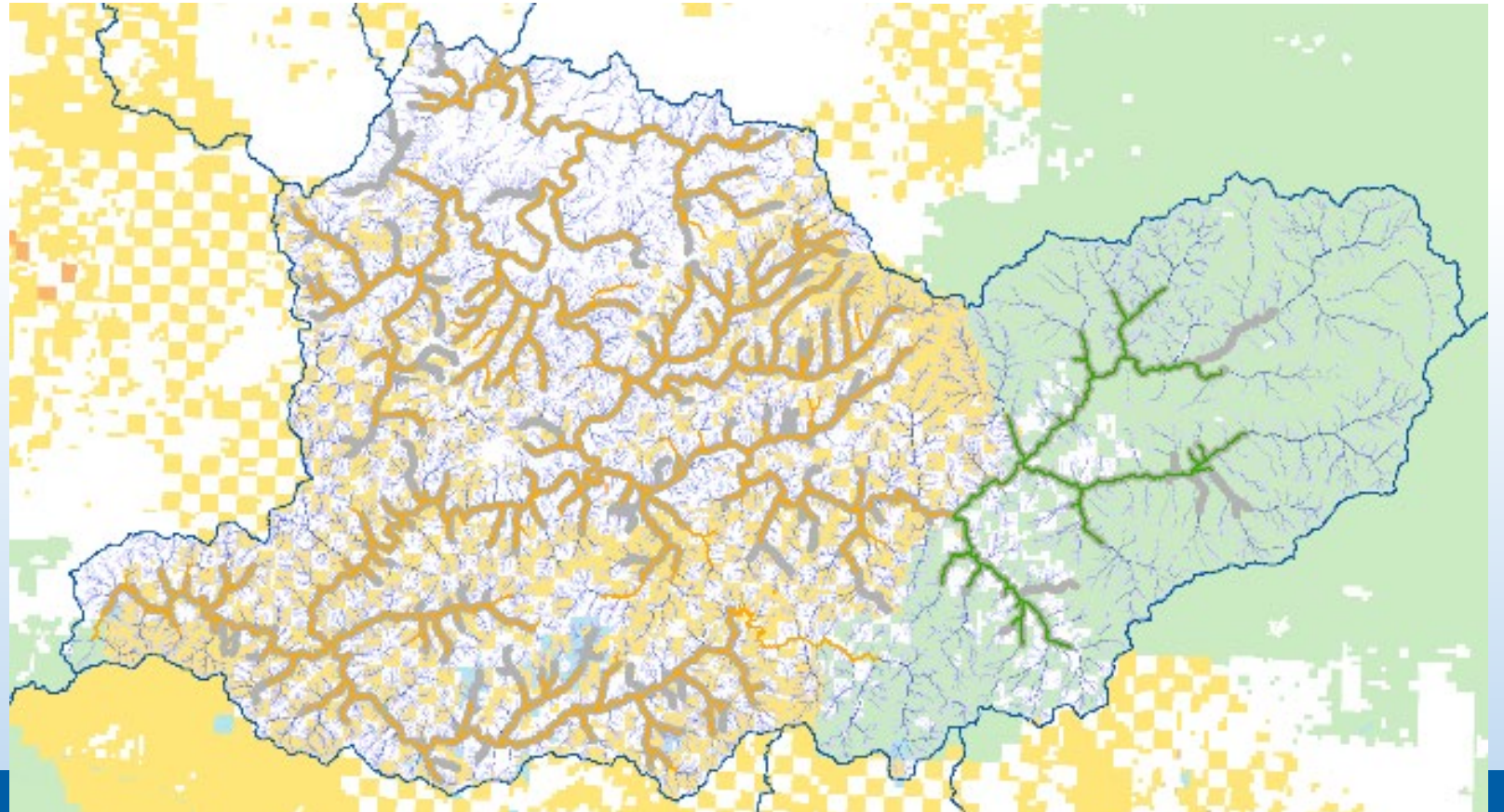
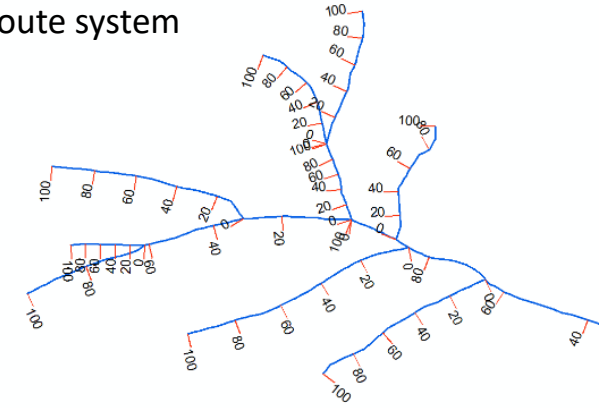


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# Data integration and interagency exchange

- Shared geometry and route system
- Key to interagency data integration
- Ex. Fish habitat and distribution

NHD route system

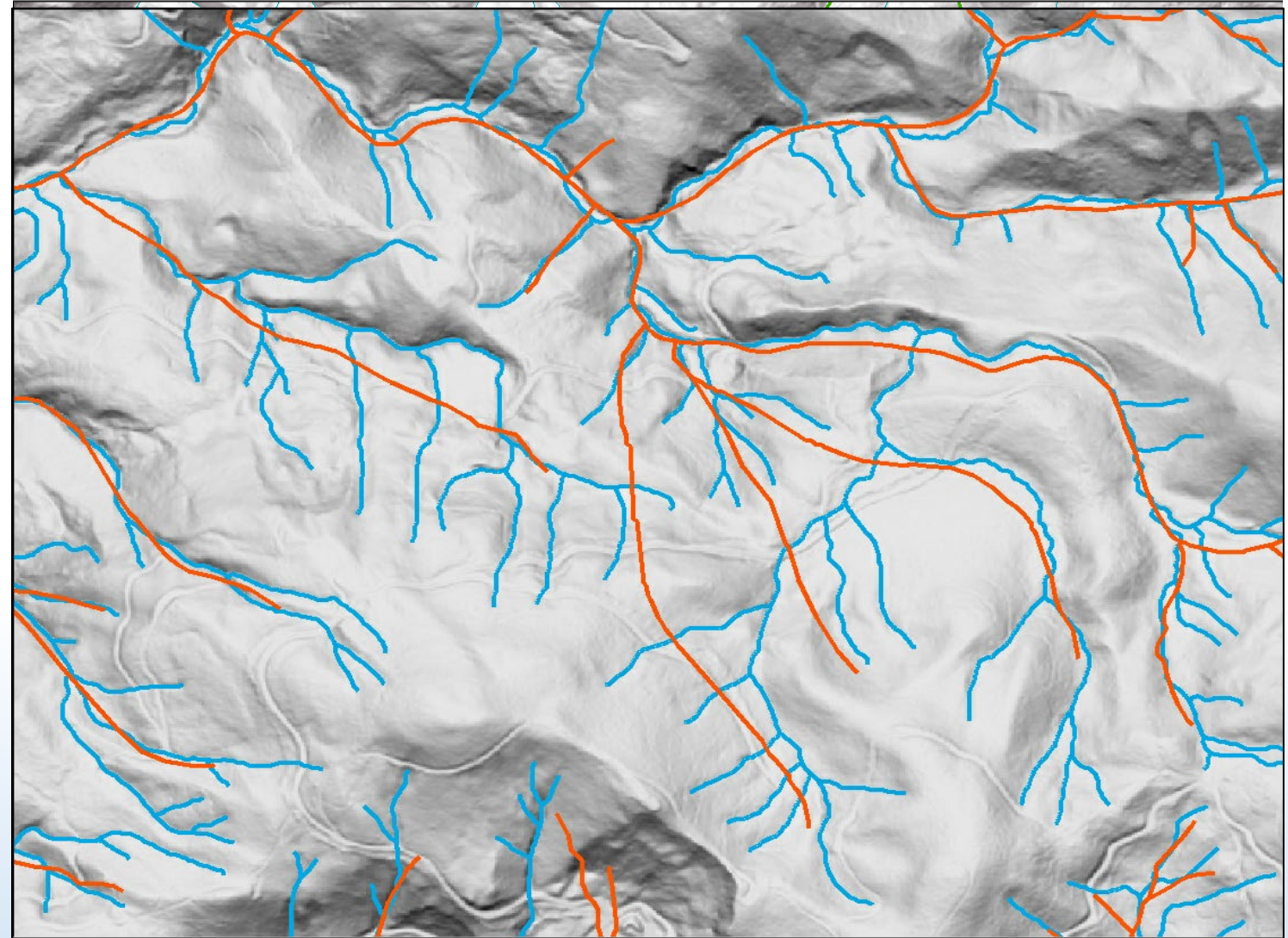




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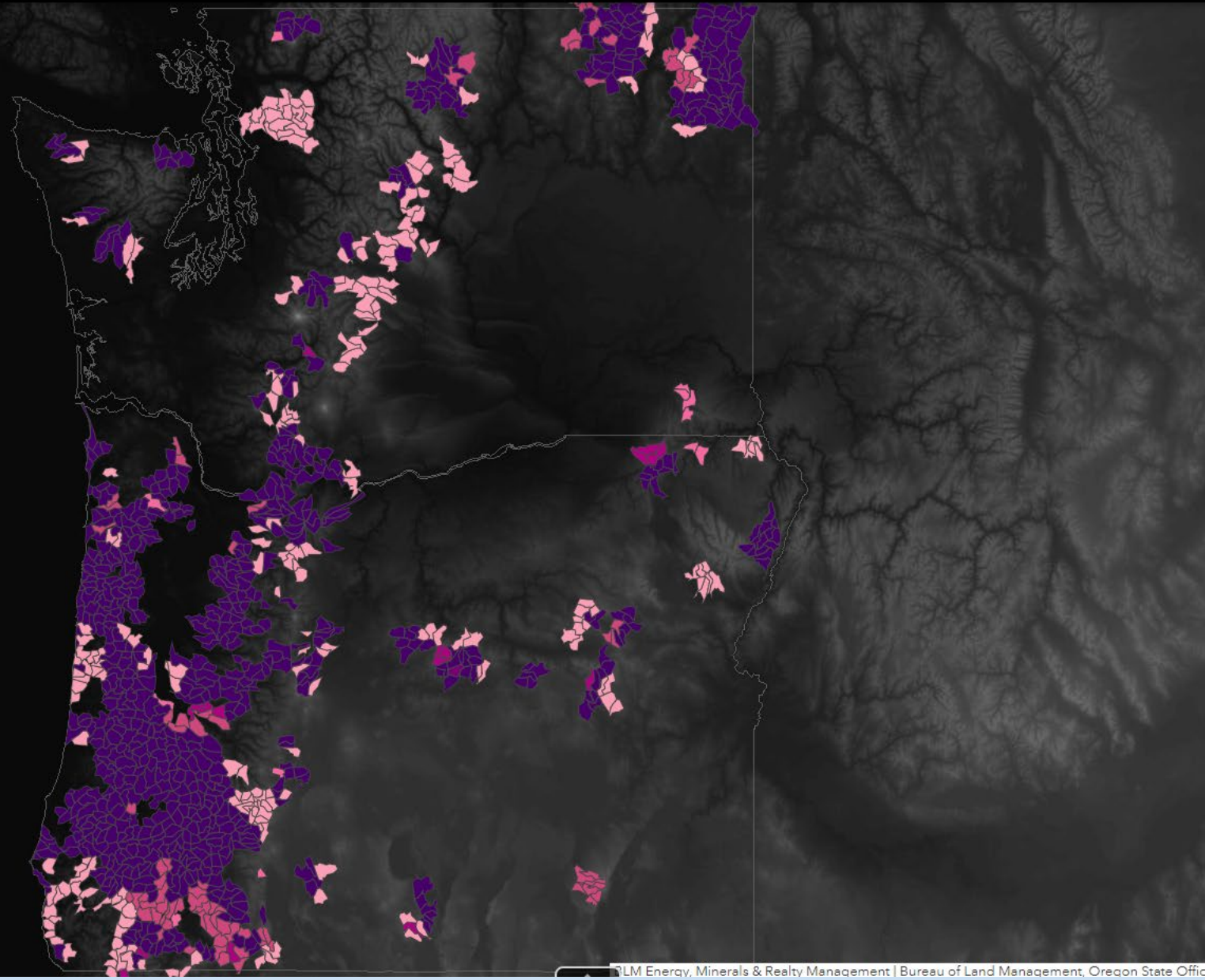
# Active Investment in NHD/WBD Data Quality

- Active improvement from field work and lidar-based DEMs
- Recent heavy investment in lidar-based hydrography, re-delineating whole watersheds



Red lines in image show old NHD lines  
Adds and deletes from field-based surveys  
before PNW update with lidar-based data.

Find address or place



### Layer List

Layers

- NHD LiDAR Delineation Status
  - Complete
  - NHD Update In Progress
  - Ready for NHD Update
  - Review In Progress
  - Delineation In Progress
  - Planned
  - Other
- WBD LiDAR Delineation Status
- U.S. State Boundaries (DOC 2019) - BND - States (Census 2019)
- Terrain: Elevation Tinted Hillshade
- BLM OR District and Field Office Land Boundaries
- Hydrologic Unit Boundaries
- State
- USFS Admin Boundaries
- Cached ORWA BLM Carto Basemap
- Terrain
- DOGAMI Bare Earth Hillshade
- WA DNR Lidar Hillshade



60mi  
-120.307 47.072 Degrees

BLM Energy, Minerals & Realty Management | Bureau of Land Management, Oregon State Office

Map shows watersheds where lidar-based stream delineations are complete or in-work

## Coordination thus Far

PNWHF agencies have been meeting with USGS National 3DHP Program Managers.

- business needs
- implications of USGS decision
- potential solutions



- National USFS/USGS discussions have recently begun.

# Options

(presented to NW Forest Plan Executives by BLM & USFS)

1. Request that USGS-Geospatial support NHD/WBD while building 3DHP
  - National or PNW only
2. Request USGS-Geospatial
  - extend NHD/WBD support until at least March 2024
  - build a hybrid 3DHP/NHD system that meets our needs
3. Support separate interagency data system
  - simpler than NHD/WBD
  - PNW only or National
4. Agencies manage separate datasets, work to share as needed
  - Regional/State Offices or Unit level



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