



Modernizing California's Water Map

Stewards of the California portion of National Hydrography
Dataset (NHD) Transition to 3D Hydrography

Progress Update, February 2026

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CALIFORNIA DEPARTMENT OF
WATER RESOURCES



California Stewardship of the NHD Program, est. FY 2015-16



“Fund and revive the National Hydrological (*sic*) Dataset for California to improve high-quality framework geospatial data and the precision and accuracy of mapping and scientific studies. “

http://resources.ca.gov/california_water_action_plan/

2014
California
Water
Action
Plan

Aerial view of Lake Oroville's Enterprise Bridge on October 23rd, 2015, showing the water level at 48 percent of historical average or 29 percent of total capacity.

photo credit: Zack Cunningham, DWR <https://pixel-ca-dwr.photoshelter.com>

California Hydrography Stewardship Partnerships; *Improving NHD and WBD* from 2014 to 2023*

Interagency Agreements w/ California State Universities

- CSU Chico Geographical Information Center *and*
- CSU Northridge Center for Geospatial Science and Technology



California State University **Chico**
North State Planning and
Development Collective



CENTER FOR GEOSPATIAL
SCIENCE & TECHNOLOGY

- Other partners who contributed to NHD:
 - California Department of Fish & Wildlife
 - U.S. Forest Service
 - Los Angeles County Public Works
 - Marin County Collaborative (elevation-derived)
 - Redwood National Park

****Watershed Boundary Dataset***

NHD on CNRA Open Data

<https://data.cnra.ca.gov>

-  **USGS NHD Website**
-  **National Map Specifications on Spec-X**
You can explore the data dictionaries and specifications for the NHD on USGS' Spec-X website....
-  **NHD Stewardship Reports to the California GIS Council**
The National Hydrography Dataset (NHD) is the authoritative surface water component of...
-  **California Business Rules for Updating the National Hydrography ...**
This document describes the rules that our editors of California's portion of the NHD should...
-  **NHD Major Rivers and Creeks 🔥**
Major Rivers and Creeks in California selected from the NHD in a zipped shapefile format....
-  **NHD Major Rivers 🔥**
Major Rivers in California selected from the NHD in a zipped shapefile format. Resource last...
-  **NHD Major Lakes and Reservoirs 🔥**
Major lakes and reservoirs in California selected from the NHD in a zipped shapefile format....
-  **How to Use the NHD Visibility Filter in a GIS 🔥**
The NHDFlowline feature class of the NHD now has an attribute field name VisibilityFilter which...
-  **Reference Data Used in Updating the California NHD**
This is a spreadsheet used to record the datasets used for reference in the updating of the...
-  **Report Errors in the NHD and WBD with the Markup App**
The Markup Application is a web-based mapping communication tool that allows users to suggest...
-  **Guidance for Helping to Improve the NHD**
A short document providing guidance on using the USGS Markup Application to report errors in the...

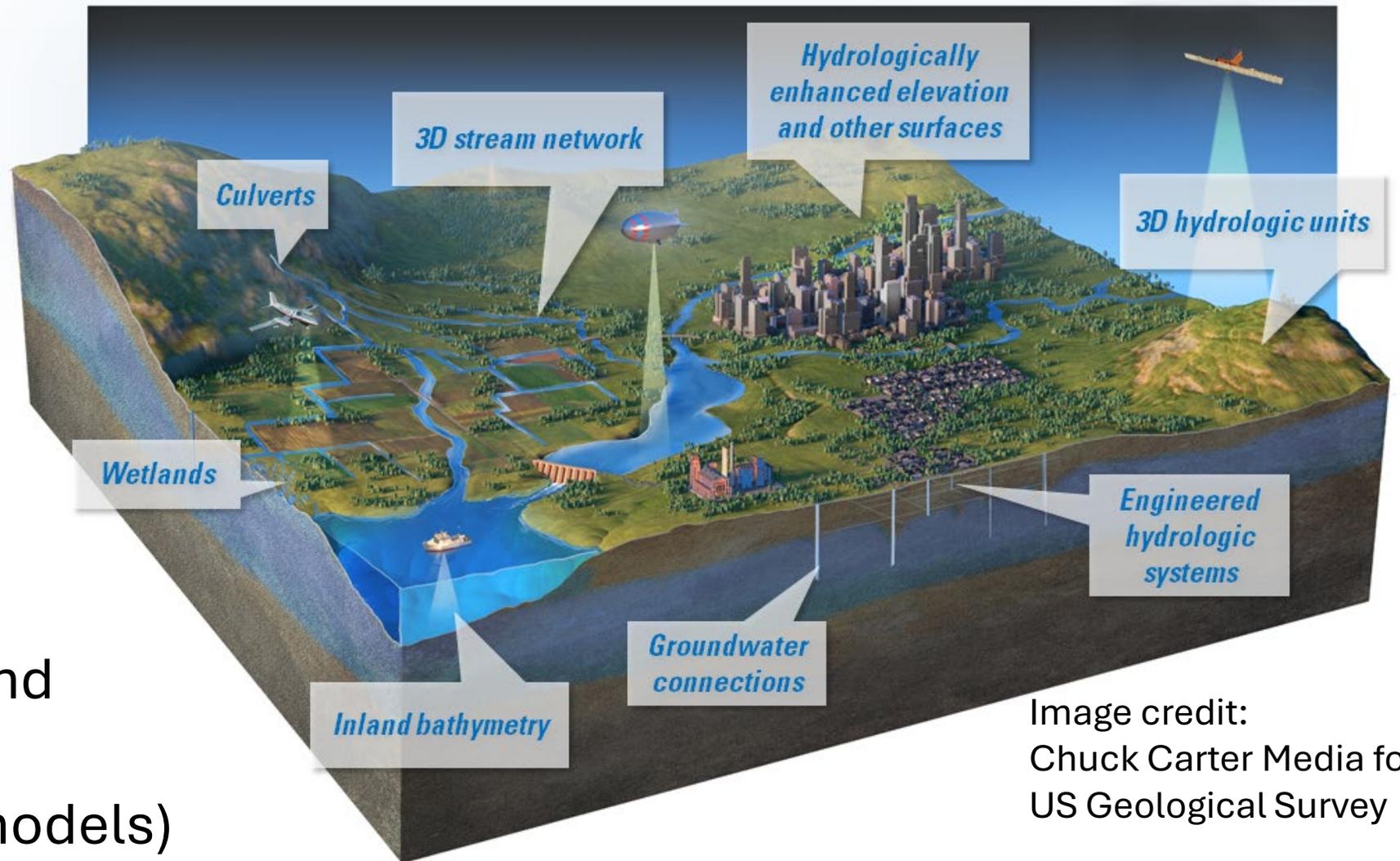
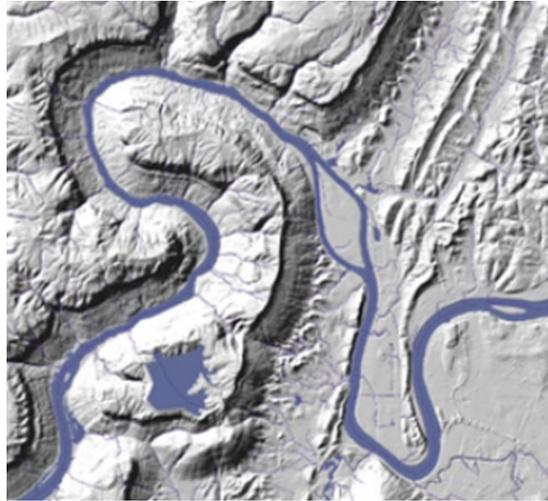


National Hydrography Dataset (NHD)

- <https://data.cnra.ca.gov/dataset/national-hydrography-dataset-nhd>

USGS Vision: The 3D National Topography Model

Part 1: The 3D Hydrography Program (3DHP)



3D Data from LiDAR DEMs

(Light detection and ranging, digital elevation models)

Image credit:
Chuck Carter Media for
US Geological Survey

Pilot Project: Develop Elevation Derived Hydrography (EDH) tools and workflow to produce data that complies with USGS standards for 3DHP *and* is non-proprietary and shareable

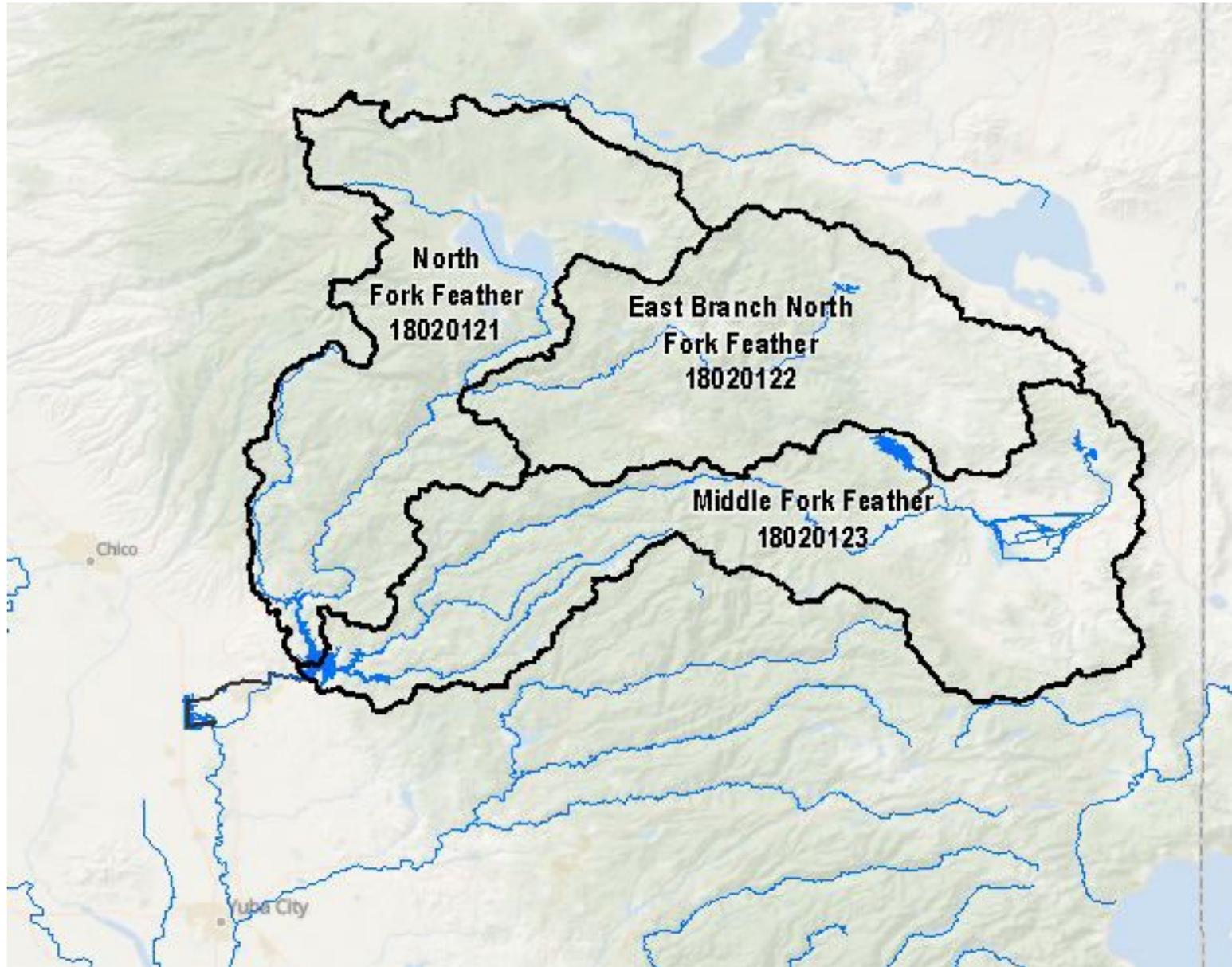
Start with watersheds in Los Angeles County

Received reference data for roads, bridges, culverts, catch basins, outfalls, etc. from Los Angeles County Department of Public Works, US Forest Service, and Calfire Timber Harvest Plans



Other EDH Development Pilot Project Work in Progress





USGS-Accepted
Data Collaboration
Announcement Proposal
by DWR for FY 25

3 – HUC 8 subbasins
3,604 square miles
estimated cost:
\$125 per sq mile

DWR commitment
\$382,925
USGS commitment
\$67,575



USGS 3DHP Data Collaboration Announcement (DCA) Awarded Projects for California in FY25

<https://www.usgs.gov/3d-national-topography-model/fy25-3dhp-data-collaboration-announcement-dca-selected-projects>

State	Project Name	Project Partner	Project Size (mi ²)	Project Approach
CA	Feather River Headwaters	California Department of Water Resources	3,604	Financial Assistance
CA	North Bay Regional Hydrography Program	Solano County, CA	4,092	Geospatial Product and Services Contract
CA	Santa Cruz Mountain Stewardship Network Hydrography Program	San Mateo Resource Conservation District	2,369	Geospatial Product and Services Contract

California 3DHP Projects: In-Progress, Proposed, and In-Planning

