



California GIS Council Progress Report

Workgroup: National Hydrography Dataset (NHD) Workgroup page*: http://cgia.org/cagiscouncil/workgroups/hydrography/ Workgroup Chair: Jane Schafer-Kramer (jane.schafer-kramer@water.ca.gov) NHD page on the CNRA Open Data site: https://data.cnra.ca.gov/dataset/national-hydrography-dataset-nhd NHD Stewardship Program page on the Department of Water Resources website: https://water.ca.gov/Programs/All-Programs/National-Hydrography-Dataset-Stewardship	Report Date: March 10, 2022
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*See the workgroup page for workgroup charter, members, contact information, and prior reports.

Requests for Council Action

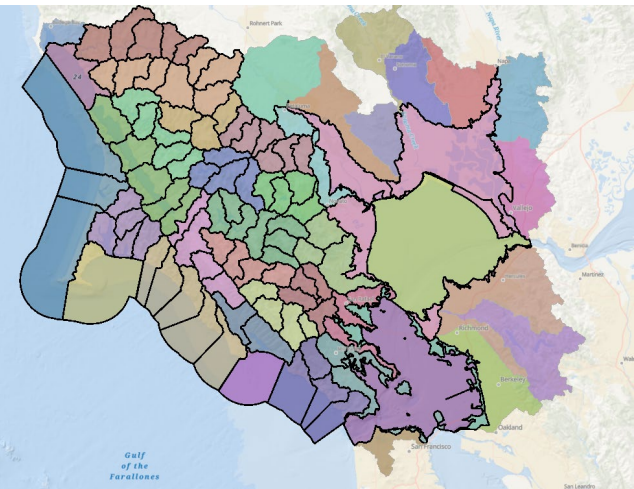
No formal action.

Status Update

Members of the NHD workgroup regularly interact as part of the ongoing work of the California Department of Water Resources (DWR) NHD Stewardship Program. (Stand-alone CA GIS Council NHD Workgroup meetings have not been held.)

Marin Collaborative Project

A collaborative effort to update the Marin County portion of the NHD to a scale of approximately 1:5,000 using LiDAR elevation data collected in 2018 and hydrography derived according to USGS standards **is complete**. The Watershed Boundary Dataset edits at the HU 12 and new HU14 levels have been approved by the national database QC process and will appear in the NHD and WBD downloadable products and map services within a few weeks. There are the first HU14 watersheds in California.



Ongoing Work

A four-year extension to our Interagency Agreements with the Geographical Information Center at CSU-Chico and the Center for Geospatial Science and Technology at CSU-Northridge has been executed, committing funding for the work we've been planning over the past year.



Maintenance on the California NHD at the 1:24,000 scale continues. HU 8 subbasins that were first edited by these centers up to six years ago are being updated using recent NAIP imagery and new reference data sources.

Los Angeles County Department of Public Works Collaboration

A pilot study on elevation-derived hydrography for conflation into the NHD and updating the WBD has been funded and work is commencing. The focus is the Los Angeles River basin using reference datasets provided to us by Los Angeles County Public Works Department. This pilot work will inform our workflows for California NHD Maintenance as USGS develops its 3D Hydrography Program. More information on the 3D Hydrography Program may be found at

<https://www.usgs.gov/national-hydrography/3d-national-topography-model-call-action-part-1-3d-hydrography-program>.

U.S. Forest Service NHD and WBD Updates

We have received approval from the U.S. Forest Service update the NHD and WBD areas within their administrative boundaries and will begin this work in 2022. This accounts for approximately 20% of the land in California. Until now we have excluded those areas in our updates due to a handshake agreement going back to the early days of this program, when USFS was more directly involved in NHD editing. The California Business Rules will be applied to these areas. Users of NHD can expect to see a more seamless NHD as it crosses into USFS lands.

Streamgages Added to the NHD

Work continues on bringing all stream gage locations that collect flow data from the California Data Exchange Center (CDEC) <https://cdec.water.ca.gov/> into the NHD with supplemental join tables to allow users to link directly from the 1:24,000 scale NHD to the CDEC website for the latest flow data. Some of these are already appearing as NHDPoint Gaging Station features, and the join tables along with hydro-linked point events will be available later in 2022 on the CNRA Open Data site.

Coastal and Other Feature Improvements

While the focus of ongoing NHD maintenance work has been on the flowlines and waterbodies, we now have funding in place to begin an update of the Coastline, Estuaries, Bays, and Inlets. This would align with the best available data from NOAA and other authoritative resources and will populate the NHD with more of the named features that are shown on the USGS Topo Maps. Other tasks being planned are bringing additional dams, weirs, levees, springs, and wetlands features into the dataset.

Redwood National Park

NHD improvement work within Redwood National and State Parks continues. The work is being done by USGS-trained editors in the National Park Service.

Policy Update

The Memorandum of Understanding for the Stewardship of the National Hydrography Dataset in California was signed by USGS and is awaiting signature by the Director of the Department of Water Resources.

Action	Key Date
Finalize MOU (awaiting action by USGS)	open
Continue NHD Update work	ongoing
Scope out future work	

Other Notes



The NHD, NHDPlus High Resolution, and WBD are now available in **Geopackage** format. The attribute tables in the .gpkg files contain extra fields in order to convey the attributes residing in subtypes and domains of the Esri file geodatabase format. The .gpkg files provide improved functionality over shapefiles for use in QGIS and other open source applications. Download them at <https://prd-tnm.s3.amazonaws.com/index.html?prefix=StagedProducts/Hydrography/>

The statewide extract of the NHD available for download at <https://www.usgs.gov/core-science-systems/ngp/national-hydrography/access-national-hydrography-products> has been updated after a nearly two-year delay due to technical issues.

DWR archives the California extracts of the NHD (going back to March 2018) on the Natural Resources Agency Open Data site <https://data.cnra.ca.gov/dataset/nhd-archive> each time the dataset is refreshed on the USGS website, which normally happens two to four times each year. Also found on the CNRA Open Data site are quick links to the various NHD websites and three derivative datasets: NHD Major Rivers, NHD Major Rivers and Creeks, and NHD Major Lakes and Reservoirs. <https://data.cnra.ca.gov/dataset/nhd>. The NHD-aligned Wild and Scenic Rivers – California Designations are available for download at <https://data.cnra.ca.gov/dataset/wild-and-scenic-rivers-california-state-designations-only-2020>.

We are actively reviewing suggested corrections to the NHD received via the [USGS Markup Application](#) and coordinating the editing work needed to resolve the errors. We are making progress on the backlog. Users of the NHD and the Watershed Boundary Dataset may report errors and omissions by way of this application or by contacting the steward at nhd_stewardship@water.ca.gov.

Here is some guidance for reporting errors discovered in the National Hydrography Dataset and Watershed Boundary Datasets to the California State Steward

<http://cgia.org/caqiscouncil/wp-content/uploads/2021/06/Improving-the-California-NHD-One-Markup-at-a-Time.pdf>

Appendix

Accurate and vetted regional and local reference datasets are extremely useful in bringing comprehensive improvements to the NHD as they can provide additional detail that is not always accessible from readily available datasets and aerial imagery. We would love to hear from you if you can share quality reference datasets of your area.

Hydrographic reference datasets (vector) with the following specifications are desired:

- Scale: 1:50,000 or finer

- Primary Composition/Features of Interest:

 - River/Streams

 - Lakes/Ponds/Reservoirs

 - Washes

 - Swamps/Marshes

 - Canals/Ditches

- Attribution Composition:

 - Seasonality/Periodicity of Rivers/Streams

 - Feature Types

- Currentness: Updated within last 5 years

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Department of Water Resources, Division of Planning