CGIA Community Council Progress Report

Hydrography Workgroup	Report Date:
Workgroup page*: http://cgia.org/cagiscouncil/workgroups/hydrography/ Workgroup Chair: Jane Schafer-Kramer (jane.schafer-kramer@water.ca.gov) NHD pages on the CNRA Open Data site: https://data.cnra.ca.gov/dataset/national-hydrography-dataset-nhd and https://data.cnra.ca.gov/dataset/nhd-major-features NHD Stewardship Program page on the Department of Water Resources website: https://water.ca.gov/Programs/All-Programs/National-Hydrography-Dataset-Stewardship	March 9, 2023

*See the workgroup page for workgroup charter, members, contact information, and prior reports.

Members of this workgroup regularly interact as part of the ongoing work of the California Department of Water Resources (DWR) National Hydrography Dataset (NHD) Stewardship Program. Our primary partners are the **Geographical Information Center (GIC) at CSU Chico and the Center for Geospatial Science and Technology (CGST) at CSU Northridge**. Current and past stewardship partners are **Redwood National Park, Los Angeles County Public Works, the Marin County collaborators, and the US Forest Service. New partners are always welcome.**

Requests for Council Action

None

Status Update

NHD workshop and short presentation at CalGIS 2023

The stewardship team is preparing to present a *Mapping and Analysis with the National Hydrography Dataset and NHDPlus Workshop* on Monday, March 13, 2023, 8:00 a.m.-12:00 noon in conjunction with the CalGIS 2023 conference in Monterey County. On Wednesday, March 15, the team will present *"Creating 3D Hydrography from LiDAR and DEM's"* in the Hydrology & Hydrography breakout session. Registration information is available at https://urisa-portal.org/page/CalGIS

NHD and WBD to become static in 2023

Aside from the workshop, the stewardship team is devoting all resources to updating the NHD as we will be cut off from editing on April 1. Resources will then be dedicated to updating the WBD from April 1 to June 30, 2023. US Forest Service has directly edited some streams and springs in the last several months. The GIC and CGST teams were able to complete updates to four US Forest Units (California portions only) but have run out of time to complete all US Forest Units in CA. Since Forest Service areas were excluded from our earlier work (at the request of USFS) there will remain some inconsistencies in the NHD most noticeable at the border areas of USGS lands when the NHD becomes static. The final version of the NHD and WBD is slated to be published on September 30.

USGS plans to incorporate the static NHD into the 3D Hydrography Program (3DHP) as 3DHP gets built out over the next eight years. As new elevation-derived hydrography is accepted into 3DHD it will replace the NHD data for those extents. USGS has stated in meetings with the state stewards that the NHD portions of the new dataset will not be edited except for significant circumstances such as the removal of dams. USGS will continue to host the static NHD and WBD on its website for the duration of the 3DHP and beyond as legacy datasets.

3D Hydrography Program Data Model

While the data model for 3DHP datasets is not yet finalized, USGS has shared conceptual information in a presentation on January 24 by David Blodgett of the USGS Water Mission Area and the National Geospatial Technical Operations Center titled "WaterML2 Part 3: Surface Hydrology Features (HY_Features) Conceptual Model and the Mainstems logical data model." Here is the abstract: "HY_Features is the international standard conceptual data model for surface hydrologic features which will be used as the basis for the 3DHP data model – the planned successor to the NHD. HY_Features concepts have been used for design of the National Weather

Service Next Generation National Water Model (known as the Next Generation Water Resources Modeling Framework) and a national river-identifier scheme known as “Mainstems”. HY_Features has not yet been used in a specific data model for hydrographic data. We hope to define a well-documented logical and physical data model for the 3DHP to carry forward key functionalities of NHDPlusHR into the 3DHP. The concepts described by HY_Features are key to understanding how hydrographic data are organized across scales and how we integrate landscape and river information in a cohesive and modular way. It’s important that everyone have some knowledge of this conceptual basis to ensure we are able to communicate across teams in an accurate and productive way.”
This presentation is available for viewing on YouTube https://www.youtube.com/watch?v=lEtKCyUK47Q.

Background on the 3DHP Program is available at https://www.usgs.gov/national-hydrography/3d-national-topography-model-call-action-part-1-3d-hydrography-program

Ongoing Work

Our Interagency Agreements with the Geographical Information Center at CSU-Chico and the Center for Geospatial Science and Technology at CSU-Northridge will allow for us to continue a portion of our work plan after NHD and WBD editing work ceases, primarily the elevation-derived hydrography tools and workflow development, but amendments will be needed to cover new work more closely aligned with 3DHP. Our stewardship team meets regularly to discuss next steps and longer-range plans.

Action	Key Date
Continue NHD Update work through 3/31/2023 and WBD work through 6/30/2023	Q1&2 2023
Scope out future work under interagency agreements with CSU partners	Q1 2023
Complete elevation-derived hydrography pilot for Los Angeles County	Q3 2023

Other Notes

The datasets may be downloaded from these linked cloud hosting sites:
Download the NHD by 8-digit Hydrologic Unit (HU8)
Download the NHD by 4-digit Hydrologic Unit (HU4)
Download the NHD by State

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