NSGIC EDH for 3DNHD Monthly Forum:

Question and Answers

USGS Elevation-Derived Hydrography (EDH) Specifications March 17, 2021

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Participant Questions:

WBD updates are important for NHD updates. Are WBD updates required for EDH?
NHD and WBD updates should go hand in hand, but the Elevation-derived Hydrography Specifications and READ rules only address a subset of the NHD features and do not address the WBD.

When complete within a HUC, will the EDH features automatically replace the features within NHD?
No , additional work is needed. Data produced with EDH specifications need to be conflated with the existing NHD to maintain names, reachcodes, periodicity, and other attributes. Not all NHD features can be updated using elevation data, so additional NHD editing may be needed even after the NHD is updated with EDH features.

Is USGS developing guidelines and rules to increase / standardize the mapping density of new EDH features? USGS is investigating ways to calculate target drainage density. For CONUS projects based on a 1 meter DEM from QL2 or better lidar, any features that meet the collection criteria outlined in the READ rules should be delineated.

Could the GMI methods used for assessment also be used as tools to develop the EDH?
Possibly. Some contractors have used some aspects of the geomorphic indicators to aid their delineations. One challenge is that most of the geomorphic indicators classify a raster surface, but do not create a network, so some additional steps, processing, and interpretation are required to create the networked dataset.

Do you foresee any training or workshops to help state and local partners understand the terminology (like a geomorphon?)
Possibly. Please let NSGIC know if this would be a topic of interest for this group.

Do inspection routines exist for WBD?
Yes, WBD has methods for inspection, and review tools are under development.

Will you apply new methods to assign feature codes?
Simple feature codes described in the EDH Specifications are assigned when the features are delineated, but the full codes are still added through the Geoconflation and NHDEdit tools. We

are evaluating improvements or replacements for these tools, but for the time being, conflation and NHDEdit are the only path to get to NHD.

Can you elaborate on differences in inspection/QC between the Alaska and Texas experiences, given the different base data tolerances?

Interview Questions:

What was the primary motivation for creating the specifications? Was there an event or issue that made clear that a specification was needed?

- The findings of the 2016 Hydrography Requirements and Benefits Study
- We realized during an early pilot project that we were not speaking the same language and that we needed to develop a common language in order to move to a production update cycle
- We had not updated the existing NHD specification for almost twenty years

While developing the specification, what most surprised or challenged you?

- It was difficult to get people to think about hydrography and elevation as co-existing vs different products and to think of them as data resources, beyond cartographic products, that can be used to model geographic phenomena and to develop other data.

What additional resources do you think *should be developed* (by you or others) to support stakeholders in developing, integrating, and managing EDH data?

- The Hydrography Standards and Specifications website provides links to the specifications documents as well as other guidance.
- This NSGIC EDH Forum will be a good resource
- The NSGIC/USGS cooperative agreement project is intended to yield information and resources to help us determine:
    - from a program perspective
        - how do we fund this kind of work?
        - how do we work across state and other administrative boundaries (unlike 3DEP)?
        - how do we create a harmonious, national dataset that is relevant at the state or local level?
    - from a science perspective
        - how do we improve and publicize EDH methods?
        - what are the best practices for performing EDH?
        - what is the most effective way to further the science via publications, training, and outreach?
- New tools and processes
- Guidance resources - as we execute more projects, we are building experience and examples of what works and what doesn't. Better documentation to show where and how to apply different techniques to derive hydrography from elevation would help everyone start one step ahead.