

NSGIC 3DHP Monthly Forum:

Question and Answers

New York: Incorporating 3DEP Data Into New York NHD Updates

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Participant Questions:

What do you mean by "waterbodies don't meet the EDH specifications"?

NYS has digitized tens of thousands of waterbodies that do not meet EDH specifications. EDH specification state that breaklines should have a z value and should be over 2 acres, many of these waterbodies that NYS has added to the NHD over the past two years are under 2 acres and are not breaklines.

How do you deal with waterbody names that are currently not in the GNIS? We have found the current process for adding names to GNIS to be both time consuming and challenging.

NYS adds names to its own web service of NHD data. NYS web service is based on only what is accepted thru USGS, so when a HUC is updated and uploaded by NYS and then approved by USGS we will then download the statewide NHD Data. The NYS web service has an extra field that is only available in the NYS web service, we add extra fields to add extra labels that are not in the GNIS.

Did you look to classify/reclassify any existing river/stream periodicity based on reviewing historic imagery?

NYS primary focus of phase one is to get all the NHD Waterbody polygons updated, we also do NHD area updates where we have hydro-breaklines from 3DEP projects. We only update flowline when necessary, we edit flowlines coming in, thru, and out of NHD waterbodies and often will align them to the orthoimagery several hundred beyond the NHD waterbody. We have not done much other flowline edits, that's what we hope to get out of EDH.

Interview Questions:

What advantages do you see to incorporating elevation data into the NHD update process?

- The primary reason why NYS ITS became involved with NHD was because we saw the benefit of adding State and Federal approved 3DEP hydro breaklines to the outdated NHD in NYS. NYS ITS has flown several 3DEP projects and also helps distributed federal LIDAR projects. We saw the value of adding all the LIDAR derived 3DEP breaklines to the NHD, so we got involved and I became the steward of NYS NHD.

- Thru updating NHD waterbodies for several HUCs we started getting some NHD waterbodies that were rejected by USGS. These waterbodies turned out to be bad polygons, in orthoimagery they certainly looked like they could be ponds when in reality they were just dark shadows on a hillside. Through this discovery we now developed a process to run against all the edited, and added NHD Waterbodies before they make it into the upload process. This involves dropping 20 random points per acre using GIS, we then interpolate that against a bare earth DEM and can see the range of Z values within one polygon. This allows us to quickly flag and false ponds and remove them.

During the 3DEP NHD update process, what most surprised you?

How long some of the tools run, and the review process in general. The NHD toolbar is a complicated tool, we now understand the intricacies behind it and have learned what process we can kick off overnight, or over the weekend to maximize our resources.

What resources, e.g., tool, document, online resource, etc., did you find of most value to the current process?

The NHD help portal has been really great in helping us identify ways to solve problems that arise when trying to submit a HUC for review.

What resource(s) would you recommend for development to assist the incorporation of elevation data into the NHD update process?

It would be good if there was a tool that could update flowlines for you, something you can plug existing data into along with and updated high resolution DEM. NHD Flowline is likely the most complex thing to update and will take the longest amount of time and expertise.