

3D Geomatics Committee: Hydrogeomorphology Workgroup

Mission: *The Hydrogeomorphology Workgroup exists to promote the consistent development of Minnesota's hydrography data and to enable data exchange through coordination, cooperation and standards development.*

The Hydrogeomorphology Workgroup is committed to the need for modern lidar-derived hydrography data in Minnesota. The group represents diverse needs of government, academia, and the private sector as one collective voice for hydrography data. Developing a foundational data product to serve as the authoritative source for hydrography in Minnesota will improve watershed management decisions with modern, field-scale spatial data of rivers, streams, lakes, wetlands, and watersheds. The Hydrogeomorphology Workgroup is continuing work started by the legacy Hydrography Committee.

Why "Hydrogeomorphology"?

Water is an essential agent in forming and shaping the geology of earth.

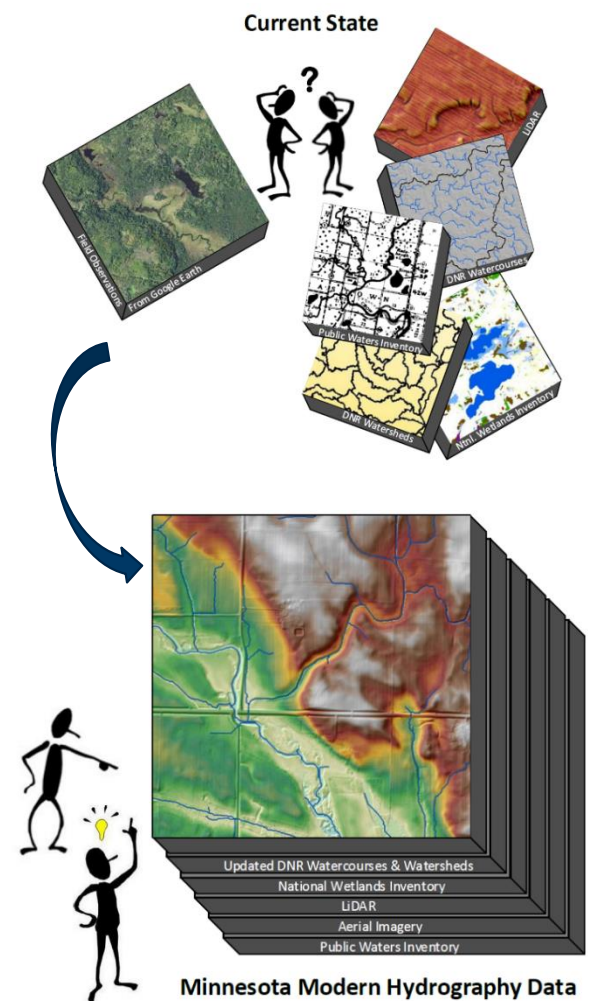
Hydrogeomorphology is an interdisciplinary science dedicated to the study of landforms produced by the interaction of anthropogenic influences and natural hydrologic and geomorphic processes.

Where we are now

- Multiple, out-of-sync copies of hydrography data
- Locations of stream centerlines based on numerous historic maps and imagery sources
- Updates are not made with coordinated methodologies and documentation
- Inefficient and redundant processes for creating derived data products
- Costly field site verifications
- Missing and inaccurate data that introduces uncertainty and lowers public trust

The Future

- Single, authoritative data source created using the most recent lidar data available
- Reviewed and approved processes are used to create derivative products
- Recognition of authoritative hydrography spatial datasets
- Harmonized data that leverages recent state investments
- Automated processes that identify changes on the landscape
- High-resolution data that minimizes field site verifications
- Enhanced public trust in watershed management decisions



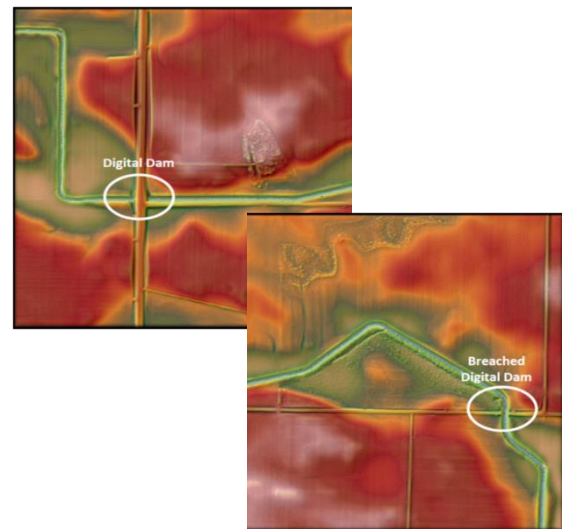
Subgroups

Subgroups focus on topics identified by the workgroup as important issues or tasks needed in creating new LiDAR-derived hydrography. They aim to be agile and responsive to changing needs.

DEM Hydro-modification Subgroup

Mission: To develop the foundation for a single, authoritative, digital dam breachline and hDEM datasets for Minnesota utilizing standards and methodology through collaboration with breachline subject matter experts.

The DEM Hydro-modification subgroup has extensive knowledge gained in building their own individual digital dam breachline datasets and hydro-modified digital elevation model raster datasets. Collectively, these datasets have hundreds of thousands of breachlines. The long term goal is to publish these features into one authoritative dataset for use in developing hydro-modified digital elevation models (hDEMs) that serve public and private business needs associated with hydro-terrain analysis tools (e.g. PTMAApp and ACPF), hydrology, and hydraulic modeling of the landscape. The next generation of lidar-derived DEM's will benefit from this authoritative breachline dataset in producing modern hydro-modified Digital Elevation Models.



Foundational Data Stewards Subgroup

The Foundational Data Stewards subgroup will foster technical communication between foundational hydrography data stewards. This specialized group works to keep hydrography data stewards informed and poised to make decisions regarding hydrography data. Maintenance or update opportunities will provide ability to collaborate for the greater good, and development and dissemination of new data can be coordinated to best serve the data users.

Data Catalog Subgroup

Mission: To create an inventory of existing geospatial hydrography data used across Minnesota to help guide the development of new LiDAR-derived hydrography to better serve modern business needs.

The Data Catalog subgroup will maintain a list of data layers widely used in Minnesota, along with information about user needs that are not being met by the existing data. This data will be presented to the Hydrogeomorphology Workgroup to aid them in determining requirements to be able to provide modern LiDAR-derived hydrography data in Minnesota.



Orange line – existing stream data
Blue line – improved county data

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