

Background

- Hydrographic Data Harmonization along both borders
- US and Canada meetings to discuss data models
 - Boston, 2016
 - Salt Lake City, 2017
 - Portsmouth, NH, March 2018
 - Quebec City, October 2018 ?
- Objectives for a future modernized data model
 - Handle large numbers of features (100's of millions)
 - Fast performance
 - Lower maintenance
 - Web interoperability
- Invitation to Mexico to participate

CHyF: Next Steps

- Activate the External Advisory Committee
- Set up a CHyF Working Group
- Software development of component parts
- Test in areas with wetlands, very large lakes, glaciers, etc.
- Continue interaction between NRCan, ECCC and USGS
- Initiate interaction with INEGI

CHyF: Software Development Tasks

- Structuring / fault tolerance / enhancements related to input hydrography
- Catchment generation from elevation cloud and feature geometry
- Extend hy-graph approach to handle 500 million hydrology features
- **Analytical functions**
 - Sequence, distance, area determination along river network for observations / points of interest
 - Support for drainage area determination from truly arbitrary points along the network
 - Additional support for unconnected features, including depressions and channels
- Determination of HUC12 equivalents through software, respecting existing work
- Test model in different geographies (prairies, north, coastal, etc.)
- **Interface with popular hydrologic models (SPARROW?, HEC-HMS?)**
- **Test in ESRI and open source stacks**

CHyF, Lidar and the Cloud

- Elevation point clouds and derivatives
- Watersheds, catchments, flowpaths, waterbodies
- High performance computing (HPC)
- Storage of high data volumes with dashboard for access and management
- Parallel processing capabilities are mandatory
- Web services - cloud based

Pursuing Interoperability

- Modify current Linked Open Data pilot model to conform to ELFIE recommendations
- CHyLE (*chili*): Common Hydrology Linked Experiment
 - NRCan, ECCC and USGS
 - Extending Richelieu to Richelieu-Champlain, with requests / data access spanning the border
 - Emphasis on Linked Open Data
 - Details to be determined
- Consider working with Open Geospatial Consortium

Summary

- Early days for a common model that could span North America
- However, the pilot represents a real advance
- Next steps are being mapped out
- Ongoing collaboration between Canada and the US
- We would welcome Mexico into this work, if interested