Flood Risk Mapping

Using LiDAR imagery to help predict Yukon community flood risks

CONTEXT
Yukon communities are likely to encounter more frequent flooding in the future as a result of a changing climate. The Government of Yukon’s Emergency Measures Organization recognizes the need to better identify potential floodable areas. This project acquired detailed elevation data along rivers and lakes in Yukon communities. This elevation data can then be used to better determine where and how communities may be at risk of flooding, so that Yukoners can protect their property and prepare for emergency situations. Utilizing the data is just one piece of enabling regional and community leaders, managers and planners to make more informed decisions related to building structures, town designs and development planning.

OBJECTIVE
The flood risk mapping project acquired detailed elevation data, especially around lakes and rivers, to support an increased understanding of and prediction capabilities for high risk flood areas in Yukon communities, both now and in the future.

APPROACH
A LiDAR (light detection and ranging) imagery survey captured elevation data in and around 13 Yukon communities in 2014-15. Prior to this work, Yukon had limited elevation data for communities bordering lakes or rivers. Areas for targeted research were chosen based on community members' traditional knowledge and data on historical flooding threats gathered in 2013. Elevation data can then be fed into mapping or modeling programs that will identify flood prone areas.

EXPECTED RESULTS
Information collected through this project can now be used to help individuals and community representatives to prepare for potential flooding situations. It will support the ability of the Yukon government to understand and predict likely flooding areas in Yukon communities and when those areas are prone to flooding.

Results of future projects using this data can be used by community members to better understand and prepare for potential floods. It can also help decision-makers prioritize areas where land-use planning and infrastructure development (e.g., buildings and bridges) may need to be modified to better prepare for emergency situations.

Significance
Flood risk mapping can provide communities with a clearer understanding of flood prone areas so they can protect property and prepare for emergency situations.

Supporters
- Northern Climate Exchange, Yukon Research Centre, Yukon College
- Geomatics, Highways and Public Works, Government of Yukon
- Vuntut Gwitchin First Nation
- City of Whitehorse
- Indigenous and Northern Affairs Canada

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