

Highways, Hydrology & Climate Change

Assessing the water-related effects of climate change on Yukon's northern highways

CONTEXT

The climate of northern regions has become warmer and wetter over the last three decades resulting in degrading permafrost and changing vegetation. In addition, a warming climate has already altered the hydrology – the distribution, movement, and quality of water – of Yukon, resulting in more frequent and intense flooding that has negative and expensive impacts on transportation infrastructure.



Photo: Government of Yukon

OBJECTIVE

To better understand how Yukon's water cycles (precipitation, evaporation, runoff, etc.) are changing, and to use computer-generated models of past and future climate changes to develop better ways to respond to these changes along the Dempster Highway.

APPROACH

Sensitivity to water changes and associated permafrost thawing will be assessed along the Dempster Highway Corridor. Using a range of climate change planning scenarios, assessments will be carried out within the eight distinct ecological regions that the Dempster Highway traverses. Weather stations have been installed along the highway where they do not already exist in order to supplement data collected at existing stations.

EXPECTED RESULTS

This initiative will generate a summary of projected hydrological changes that may result from climate change along the Dempster Highway. It will also develop flood frequency projections based on annual peak flows for Dempster Highway stream crossings. These products will allow for the development of adaptation strategies and options, which may include infrastructure design modifications.

Significance

Developing hydrological response projections will assist in adaptation planning and may reduce negative impacts of climate change on northern transportation infrastructure.

Partners

- Highways & Public Works, Government of Yukon
- Water Resources, Government of Yukon

FOR MORE INFO

Regional Program Manager
Highways & Public Works
Government of Yukon

p. (867) 633-7935
f. (867) 393-6447

461 Range Rd.
Whitehorse, YT
Y1A 3A4

www.hpw.gov.yk.ca

Pan-Territorial Information Notes
MAR.2015.YT.06
ISSN 2291-3904