

MoTI Rural Roads and Transportation

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Ministry of
Transportation
and Infrastructure

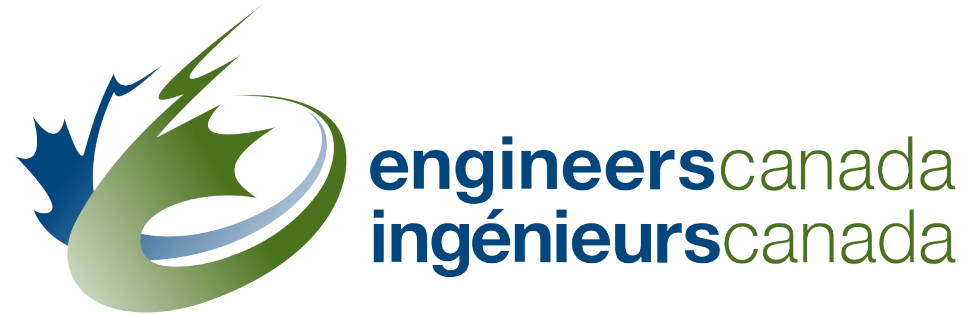
Agenda

- What MoTI is doing on rural roads to keep communities moving and connected given the effects of climate change
- MoTI Summer Road Maintenance Specs (specifically Class 4,5,6 and 7 roads)

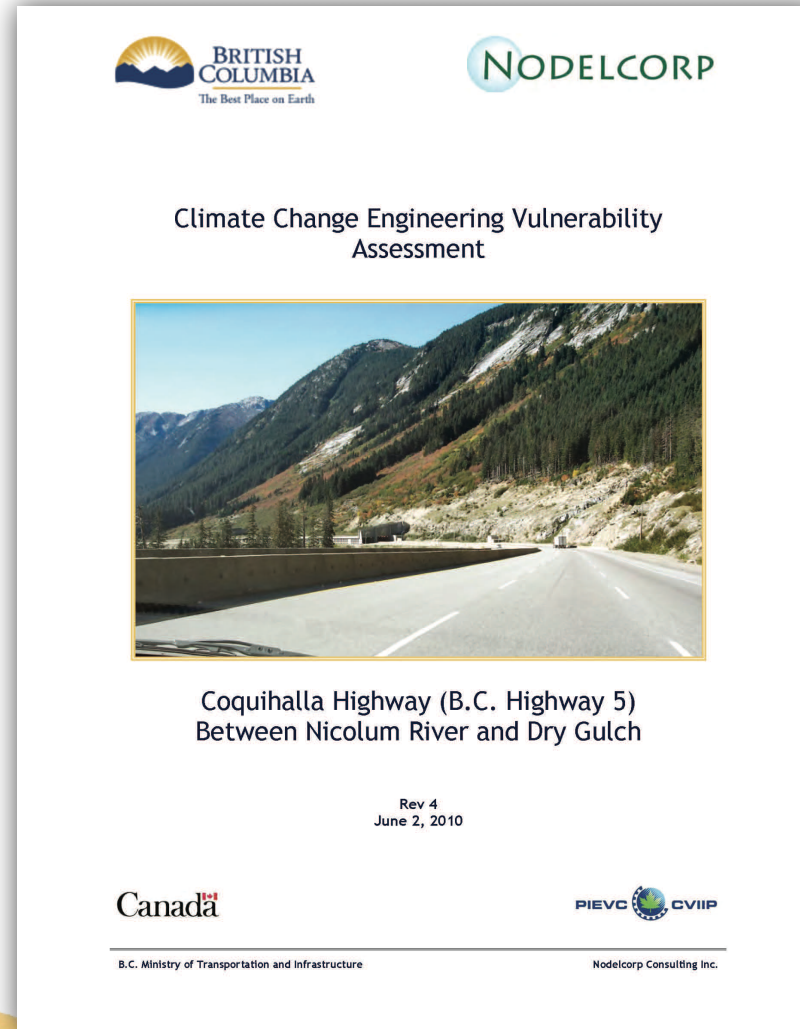
MoTI Rural Road Network

- MoTI is responsible for all public roads outside of incorporated areas (approximately 46,000 lane km)
- Many of those roads are rural roads
 - Two-lane numbered highways
 - Side roads between communities
 - Roads leading to industry and recreation road network

Climate Adaptation



PIEVC Reports



PCIC Climate Explorer

The screenshot displays the PCIC Climate Explorer web application interface. At the top, the status bar shows the time as 12:05 PM on Sun Jan 30, and the battery level is at 100%. The header features the Pacific Climate Impacts Consortium logo and the title "PCIC Climate Explorer". Navigation links include "Home/Data", "Help", "Science", and "About". Below the header, a secondary navigation bar offers options: "Single Variable", "Compare Variables", "Extreme Precipitation", and "Extreme Streamflow".

The main content area is divided into several sections:

- All Datasets Summary:** Indicates 16487 datasets total.
- Dataset Filter:** Includes dropdown menus for "Model" (set to PCIC12), "Emissions Scenario" (set to Historical, t...), and "Variable" (set to cdd - Cooling Degree Days (Thresh...)).
- Filtered Datasets Summary:** Shows the result of the filter: "PCIC12 historical, rcp85: cdd → 12 datasets".
- Data Map:** Displays a map titled "PCIC12; historical, rcp85; rXi1p1 1961-1990: Annual cdd (raster)". It includes a legend on the left with a plus sign, a minus sign, a map icon, and a home icon.
- Data Graphs:** Shows a graph titled "PCIC12 historical, rcp85: cdd". It includes tabs for "Annual Cycle", "Long Term Average", and "Model Context". Below these are links for "Change from Baseline" and "Snapshot".
- Dataset:** A dropdown menu showing "Run 1 (rXi1p1), 1...".
- Export Data:** Buttons for "XSLX" and "CSV".

MoTI Technical Circular T-04/19

Technical Circular T-04/19

Date: March 27, 2019

To: All TRAN Staff

Subject: Resilient Infrastructure Engineering Design - Adaptation to the Impacts of Climate Change and Weather Extremes

Requirements:

- Provide engineering design adaptation to climate change and weather extremes using climate projections and risk analysis
- Submit a Design Criteria Sheet for Climate Change Resilience (Appendix 1) to the Chief Engineer's Office

Purpose:

This technical circular supersedes Technical Circular T-06/15 – Climate Change and Extreme Weather Event Preparedness and Resilience in Engineering Infrastructure Design.

Given the potential for climate change to impact transportation infrastructure in BC, it is prudent to develop directives and guidance for incorporating climate adaptation into engineering designs provided to the BC Ministry of Transportation and Infrastructure.

Thus, the Ministry requires engineering design work to evaluate risk and include adaptation measures to the impacts of future climate change, weather extremes and climate-related events, as well as changes in average climate conditions. This policy applies to all new projects, as well as rehabilitation and maintenance projects.

Supporting resources for this policy, such as practice guidance, adaptation project examples and risk assessment methods, can be obtained from sources such as professional associations. Climate information can be obtained from climate resource providers. Some of these resources are found on the BCMoTI Climate Change and Adaptation website.

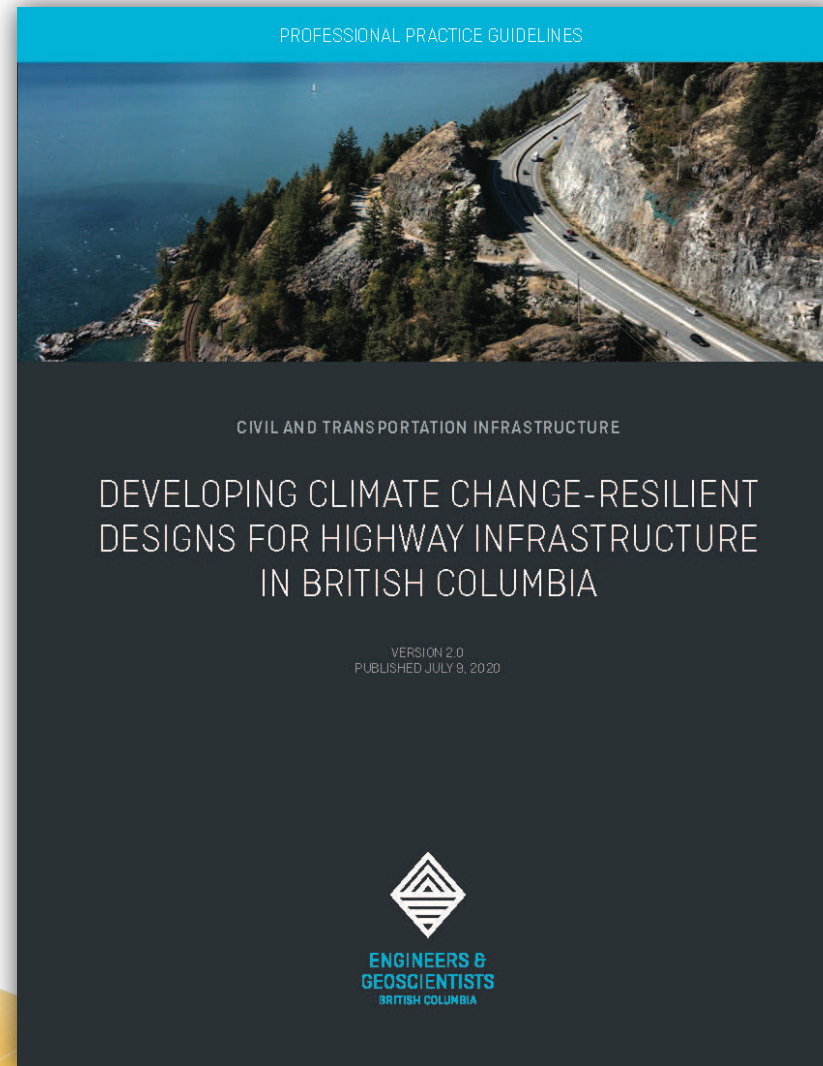
This policy aligns with the BC Climate Action Plan - in developing strategies to help BC adapt to the effects of climate changes. And therefore, the Ministry will continue to provide a provincial transportation system that is resilient, reliable and efficient regardless of unfolding impacts of climate change.

Background:

Climate change impacts are being felt in communities across the province with more frequent and intense weather extremes and climate-related events causing damage to infrastructure, property, and ecosystems. Therefore, climate change adds additional challenges to environmental risks of flood, wildfire, landslide, geologic subsidence, rock falls, avalanche, snow, ice, temperature extremes and variability, extreme precipitation, and storms of various intensities.

Furthermore, the design life of transportation infrastructure is inherently long, thus service requirements for roads, bridges, tunnels, railways, ports and runways may be required for decades, while rights-of-way and specific facilities may continue to be used for transportation purposes for much longer. Thus, climate change presents added risks to the long-term reliability of interconnected systems that are already exposed to a range of stressors such as

EGBC Guidelines for Climate Resilient Design



MoTI Climate Adaptation Initiatives

- Climate Adaptation Program: \$295M over 9 years from 22/23
 - Replace undersized culverts
 - Creek channel armouring
 - Slope stabilization
- Culvert risk database (expanding to other climate risks)
- Working with Infrastructure Canada to incorporate climate change impacts and resiliency benefits into business cases
- Opportunities in the Fed Disaster Mitigation & Adaptation Fund

MoTI Summer Road Maintenance Specs

- MoTI highway maintenance is through our Maintenance Agreements
- Contracts were retendered in 2018/19
- Some updates to the summer maintenance specs
 - Ability to have additional sweeping
 - Increased litter pickup on lower class roadways
 - Increased rest area maintenance
 - New Invasive Plant Spec
 - New Traffic Management requirements

MoTI Summer Road Maintenance Specs

- Summer maintenance is a Quantified Activity
- Now require a two-year Quantified Plan
 - Goal is to plan summer maintenance over a two year period
 - Work with Ministry staff to ensure the summer maintenance activities are most suited to what the road network needs



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Thank you

