

Article rank | 31 Jul 2008 | Times Colonist | MIKE DE SOUZA and SCOTT SIMPSON | Canwest News Service

Climate change poses big threat to infrastructure, engineers warn

Climate change is making Canadian roads, water supplies, sewer systems and government buildings more vulnerable to multibillion-dollar failures that place human health and safety at risk, warns a new national engineering assessment uncovered by the Vancouver Sun.

IAN SMITH, CANWEST NEWS SERVICE



The Vancouver intersection of West Broadway and Cambie streets was the scene last November of heavy flooding when a storm sewer was overwhelmed with water, undermining the sidewalk and area roadways. A new national engineering assessment includes the state of Vancouver sewage system as one of its prime concerns.

The study, *Adapting to Climate Change*, is the first national engineering vulnerability assessment in Canada and comes on the heels of other government reports about the impacts of global warming and potential health implications.

"The diversity and range of infrastructures that may be vulnerable to climate change is enormous," said the report, co-sponsored by a national association of engineers and the federal Natural Resources Department.

The report warned many existing infrastructure facilities in categories such as water resources, buildings, roads and bridges were built using "now-outdated assumptions" that "may not have sufficient resiliency" to the anticipated impacts of global warming, such as rising temperatures or the increased frequency of extreme weather events.

It also noted that historic weather statistics can no longer be used for infrastructure design and operation decisions, since climate scientists are now observing and predicting increases in average air and ocean temperatures, as well as "widespread melting of snow and ice, and a rising global average

sea level.”

“Added demands arising from changing climatic conditions could mean that, given their lifespan, some infrastructure lack the necessary load capacity or adaptive capability. Shortfalls of this kind could leave some of Canada’s infrastructure vulnerable and ill-prepared to cope with adverse climate effects,” said the report.

“Disruption or damage to these widespread and common categories of physical infrastructure could have major ramifications for public health, safety and effective functioning.”

Despite the significance of the warnings, the report — which was based on reviews of new research literature and a series of case studies and analysis by Ouranos, a climate change adaptation research consortium that was established by the Quebec government — is the second federal government report about climate change impacts to be quietly posted on an Internet website with little fanfare.

Authors of a third study, sponsored by Health Canada, have alleged the Harper government has delayed its release and will try to downplay its findings.

A leading engineering expert said there was still time to adapt the nation’s infrastructure since it was built to withstand the traditionally harsh extremes of Canadian winters and summers. He added it was important to get the message out that the risk of infrastructure failures was going up.

“Our infrastructure, for the most part, is designed for extremes and so we’re only looking at [an] incremental difference, one way or the other,” said Darrel Danyluk, chair of the Public Infrastructure Engineering Vulnerability Committee.

“Yes, your risk has gone up ... (but) it gives you time to address the specific issue. It doesn’t mean that it won’t happen this year, but it’s not guaranteed that it’s going to happen this year.”

The Harper government dismissed suggestions the report indicates it is not investing enough resources to protect infrastructure from the impacts of climate change. A spokeswoman for Natural Resources Minister Gary Lunn, the MP for Saanich-Gulf Islands, suggested the government’s Building Canada plan, consisting of a \$33 billion investment over seven years, is an adequate response.

“I think the (federal) government is doing its part,” said Louise Girouard, Lunn’s director of communications, adding she was under the impression the engineering committee was in charge of deciding how to release the report.

She also said the analysis was meant to be a tool for engineers to move forward with new designs and standards.

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