



Backgrounder - Infrastructure Assessment Pilot Studies

NATIONAL ENGINEERING ASSESSMENT OF THE VULNERABILITY OF PUBLIC INFRASTRUCTURE TO CLIMATE CHANGE

Background

The Canadian Council of Professional Engineers established the Public Infrastructure Engineering Vulnerability Committee (PIEVC) to oversee the planning and execution of a broad-based national engineering assessment of the vulnerability of Canadian public infrastructure to changing climatic conditions. This is a priority for the engineering profession since the uncertainty caused by changing climatic conditions may be undermining the meteorological data used to design infrastructure.

The National Engineering Assessment will evaluate the changes anticipated to the risks to Canadian public infrastructure posed by climate change. In order to determine how to best tackle this large and complex assessment, the PIEVC is executing scoping and pilot studies to provide guidance to the National Engineering Assessment.

The scoping and pilot studies will undertake the initial stages of this review and will, in the process, develop methodologies and protocols that can be applied generally to infrastructure vulnerability analysis across the country.

The complete project will comprise three Phases:

- Phase I
 - Scoping Study
 - In progress
- Phase II
 - Pilot Study
 - In development
- Phase III
 - Canada-Wide Infrastructure Assessments
 - Will comprise the *National Engineering Assessment of the Vulnerability of Public Infrastructure to Climate Change*
 - PIEVC will develop the detailed scope of work for Phase III based on the findings from Phases I and II

Who is PIEVC?

PIEVC is a steering committee comprising senior level representatives from:

- Canadian Council of Professional Engineers
- Public Works and Government Services Canada
- Natural Resources Canada
- National Research Council
- Environment Canada

- Infrastructure Canada
- Transport Canada

- Alberta Infrastructure and Transportation
- Government of the Northwest Territories

- City of Montreal
- The Corporation of Delta
- City of Portage la Prairie
- City of Calgary

- Federation of Canadian Municipalities
- Ouranos
- Canadian Standards Association
- Institute of Catastrophic Loss Reduction

PIEVC provides guidance and advice to the *National Engineering Assessment of the Vulnerability of Public Infrastructure to Climate Change*. This advice includes the identification of priorities and the definition of effective and appropriate approaches for the Canada-Wide Assessment and its associated reviews and studies.

Why Pilot Studies?

PIEVC has identified a step-by-step process for evaluating infrastructure vulnerability. PIEVC's first initiative will evaluate four key infrastructures:

- Buildings
- Roads and Associated Structures
- Stormwater and Wastewater
- Water Resources

The first stage of this process requires the execution of scoping studies for the identified infrastructures. These scoping studies will identify the key elements necessary for an effective review of infrastructure vulnerability and will help PIEVC focus and prioritize the more detailed Canada-Wide Assessments. The scoping studies will address key questions regarding the breadth and depth of work necessary to effectively answer the climate change vulnerability question for specific infrastructures. As a final step, the scoping studies will develop draft assessment protocols that PIEVC will use to guide the execution of the Canada-Wide Assessment for each infrastructure area. These infrastructure scoping studies are presently in progress.

PIEVC has identified the need to refine the effectiveness and hone the applicability of the assessment protocols with respect to specific infrastructure issues. The Pilot Studies will:

- Apply the protocols in a detailed vulnerability assessment of specific municipal or provincial infrastructures
- Identify generic areas of climate change vulnerability that may become priorities for the Canada-Wide Assessments
- Provide a benchmark for assessing similar infrastructures across Canada

PIEVC will use the Scoping Study and Pilot Study results to plan the execution of the Canada-Wide Assessment.

After completing the assessments of these first four infrastructure areas, PIEVC may expand the study focus to other priority areas of public infrastructure.

What are the benefits of participating in a Pilot Study?

Participants in the Pilot Studies will receive the following benefits:

- Influence on the focus and direction of Canada-Wide Assessments of infrastructure vulnerability to climate change
- Preliminary, generic, assessments of their specific infrastructures
- Access to preliminary and ongoing results from the Canada-Wide Assessments of infrastructure vulnerability to climate change
- Access to the Canada-Wide Assessment Report
- Linkage to experts who are conducting frontier work in this area
- Critical information that can be used for infrastructure planning and design

What would the partners contribute?

Participants in the Pilot Studies may be asked to provide:

- Key contacts for consultants executing the Pilot Studies
- Access to records on the design, operation, maintenance and performance of specific infrastructure
- Staff support for consultants who may be required to conduct field visits to specific infrastructure facilities
- Advice and input regarding the results generated by the Pilot Studies
- Report review and input to ensure that participant confidentiality is maintained throughout the process

Who will share the results?

In order to protect the proprietary interests of specific Pilot Study participants, PIEVC will aggregate the results from the municipal/provincial infrastructure assessments to prepare the Pilot Study reports. The Pilot Study results will provide insight into generic climate change vulnerabilities for the various types of infrastructures that PIEVC's consultants reviewed.

The results from the Pilot Studies will be used by PIEVC to establish a basis for the terms of reference for Canada-Wide vulnerability assessments for the four key infrastructures identified by PIEVC.

Pilot Study results will be available to all members of PIEVC and to members of PIEVC sub-committees.

PIEVC may post pilot study reports on the PIEVC internet site, contingent upon the agreement of all pilot study participants.