

## Part 1

**SUSTAINABLE  
INFRASTRUCTURE  
STATE OF  
PRACTICE  
IN CANADA**

**Reg Andres**

Reviewing global  
sustainability with  
current infrastructure  
management practice

## Part 2

**NEW  
PERSPECTIVES  
FOR  
SUSTAINABILITY**

Bill W...

**STATE OF PRACTICE  
IN CANADA**

**Climate  
Change**  
Hans Arisz

## Part 3

**RESPONSE  
TO NEW  
PERSPECTIVES**

Discussion of  
how to apply this  
for infrastructure  
managers and  
community leaders

community leaders  
managers and  
for infrastructure  
how to apply

# Climate Change – impact on infrastructure...

## Global concerns

- food production threatened
- contamination of coastal freshwater reserves due to rising sea levels
- increased risk of catastrophic flooding
- pole-ward spread of pests and diseases aided by warming atmosphere



## Infrastructure concerns

- extreme events changing design parameters
- validity of historic climate data based design in doubt
- performance and durability affected
- risk of catastrophic failures

## Climate Change – impact on infrastructure...

# “National Engineering Vulnerability Assessment of Public Infrastructure” 2007-2008

By Engineers Canada and co-funded by Natural Resources Canada



Canada

### **Objective and Approach:**

Create a vulnerability assessment methodology with climate change predictions based on climate model output

- Five-step generic assessment protocol developed
- Protocol tested with seven case studies

# Climate Change – impact on infrastructure...



Evaluate four categories of public infrastructure:

1. Buildings (Ottawa, ONT. / Northwest Territories)
2. Roads and bridges (Sudbury, ONT., Edmonton, AB)
3. Storm water and wastewater systems (Placentia, NFLD., Vancouver, BC)
4. Water resources (Portage la Prairie, MAN.).

## Climate Change – impact on infrastructure...

### Results:

- Infrastructure vulnerabilities were identified & quantified
- Design & data shortcomings were identified
- Recommendations (5) to guide climate change adaptation
  - ✓ *Assess the need for changes to standard engineering practices to account for adaptation to climate change*
- Report and details at: [www.pievc.ca](http://www.pievc.ca)

**Changes are needed to ensure sustainability of infrastructure design and operations**



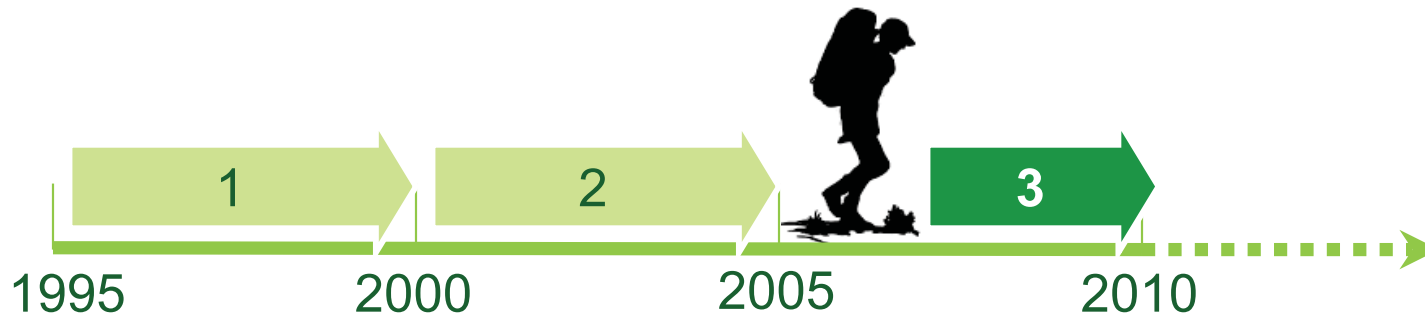
## Sustainability from an infrastructure lens...

In addition to continuing infrastructure failures, the past 5 years of the infrastructure journey included two other significant events:

- Introduction of new financial reporting requirements to include value of tangible capital assets on financial statement of governments – **PSAB 3150** and
- The global **economic recession**



September 30, 2006  
Five killed and six injured when  
Montreal overpass collapses  
(Ryan Remiorz/Canadian Press)



# Sustainability from an infrastructure lens...



Canada's economic action plan to address the recession is about jobs

Infrastructure is a mechanism to achieve this goal.



## Economic Action Plan (2009)

- ✓ Green Infrastructure Fund
- ✓ Infrastructure Stimulus Fund

