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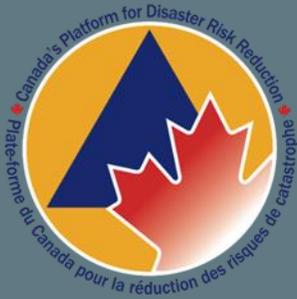
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# **Fifth Annual National Roundtable on Disaster Risk Reduction**

***Rethinking Roles in Disaster Risk Reduction***

**Canada's Platform for Disaster Risk Reduction**

**FINAL REPORT 2014**







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## Letter from the Advisory Committee

As the Advisory Committee for Canada's Platform for Disaster Risk Reduction, we are pleased to present you with the final report for the Fifth National Roundtable on Disaster Risk Reduction that took place in Toronto, Ontario on October 21, 2014. The Roundtable is the means through which the Platform membership communicates its views, perspectives and priorities on disaster risk reduction. Through this report, we, as the Advisory Committee, listen, provide linkages and help inform the working groups under Canada's Platform.

The objective of bringing the membership together for inclusive dialogue in Disaster Risk Reduction (DRR) was realized. We shared Platform successes and delved into emerging areas of interest with the talk-show. Important discussions were had on emergency management planning for aboriginal communities as well as on the analysis of data used in support of disaster planning. The Roundtable also brought forth informative sessions to remind us of the importance of DRR and to inspire new ideas; new ways of engaging on the topic. As we plan for continued important dialogue in 2015, we invite you to share your ideas with the Platform secretariat to ensure the Roundtable remains a current and valuable experience for everyone.

Thank you to all the speakers, panellists and contributors who helped make this Roundtable an inclusive and engaging event. Throughout this report, we have included some of the more thought-provoking ideas, questions, and considerations that panellists and participants shared. This is intended to give a sense of the kind of discussions facilitated at the Platform, and to inspire members to get engaged in working towards collaborative DRR solutions.

We look forward to seeing you at the Sixth Annual Roundtable to be held in Calgary, Alberta in 2015.

Sincerely,

Canada's Platform Advisory Committee

Stephanie Durand (chair)  
Marion Boon  
Francis Bradley  
Ian Burton  
Jeff Gill  
David McCormack  
Laurie Pearce  
John Saunders  
Michael Templeton  
Rodney Yip



# Canada's Platform Principles

## Platform Vision:

A safer and more resilient Canada through the reduction of risks and the leveraging of capacities and opportunities across all levels of government, the private sector, academia, NGOs, professional associations, Aboriginal groups, and the general public.

## Platform Aim:

To provide a gathering place for ideas where members can connect in a way that facilitates dialogue and enables objective consideration of the current state of DRR activities, as well as new perspectives on trusted roles and partnerships, while spurring exploration of new ideas and collaborative opportunities.

## Platform Objectives:

- Work in an integrated manner to reduce risk, vulnerability and impacts of natural and non-natural disasters to Canadians.
- Provide a coordinating mechanism for DRR across sectors and using our existing networks.
- Support stakeholders with relevant knowledge and information.

## Structure:

Canada's Platform has established an organization and governance structure that consists of four interconnected components: general members; working groups; an advisory committee; and a secretariat.

## Annual National Roundtable on DRR:

The Annual National Roundtable facilitates coordination and implementation of Canada's Platform activities, and serves as a multi-stakeholder mechanism for discussing national DRR issues and information sharing. Five Roundtables have been held in locations across Canada:

- October 26, 2010 - Fredericton, New Brunswick
- October 18, 2011 - Ottawa, Ontario
- October 23, 2012 - Vancouver, British Columbia
- November 5, 2013 - Regina, Saskatchewan
- October 21, 2014 - Toronto, Ontario

## Objectives and Outcomes for Roundtable 2014:

Inclusive, horizontal and participatory dialogue with DRR stakeholders across Canada is facilitated focusing on:

- taking stock of our achievements;
- reflecting on shared roles and responsibilities for DRR;
- exploring and encouraging innovative models; and,
- sharing views on the way forward for emergency management in Canada.

## Agenda at a Glance

**MC: Dan Hefkey, Commissioner for Community Safety, Government of Ontario**

Timing	Activity						
7:30 - 8:30	Registration						
8:30 - 8:45	Opening of the Roundtable - <i>Master of Ceremonies</i> Traditional Welcome – <i>Elder Jimmy Dick, Moose Cree First Nation</i>						
8:45 - 8:55	Welcome - <i>Roxanne James, Parliamentary Secretary to the Minister of Public Safety and Emergency Preparedness</i>						
8:55 - 9:10	Our Fifth Roundtable - Taking Stock of our Success and Shaping the Way Forward <i>Stéphanie Durand, Public Safety Canada</i>						
9:10 - 10:40	<b>A Talk-Show: Rethinking Risk – Insurance Solutions and Other Financial Tools</b> Moderator: Paul Bliss, CTV News Toronto <ul style="list-style-type: none"> <li>Mary-Lou O'Reilly, Senior Vice-President, Insurance Bureau of Canada</li> <li>Stéphane Jacobzone, Counsellor, Organization for Economic Cooperation and Development</li> <li>Shane Schreiber, Acting Managing Director, Alberta Emergency Management Agency</li> <li>John Livey, Deputy City Manager, City of Toronto</li> <li>François Guimont, Deputy Minister, Public Safety Canada</li> </ul>						
10:40 - 11:00	<b>Health Break and Information about Parallel Sessions</b>						
11:00 - 12:15	Parallel Sessions <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Session 1:</th> <th style="width: 33%;">Session 2:</th> <th style="width: 33%;">Session 3:</th> </tr> </thead> <tbody> <tr> <td style="vertical-align: top;"> <b>Case Studies: Canadian Extreme of Extremes</b> <ul style="list-style-type: none"> <li>Paul Kovacs, Institute for Catastrophic Loss Reduction</li> <li>Alex Kaplan, Swiss Re</li> <li>David Grimes, Environment Canada and World Meteorological Organization</li> </ul> </td> <td style="vertical-align: top;"> <b>Aboriginal Circle Discussion</b> <i>(Aboriginal Affairs and Northern Development Canada)</i> <ul style="list-style-type: none"> <li>Melanie Goodchild, Red Cross</li> <li>David Diabo, Assembly of First Nations</li> <li>Aaron Orkin, University of Toronto</li> <li>Terry Swan, Save the Children</li> </ul> </td> <td style="vertical-align: top;"> <b>Risk Data - Prototype Consultation</b> <ul style="list-style-type: none"> <li>Nicky Hastings, Natural Resources Canada</li> <li>Christina Shaw, Public Safety Canada</li> </ul> </td> </tr> </tbody> </table>	Session 1:	Session 2:	Session 3:	<b>Case Studies: Canadian Extreme of Extremes</b> <ul style="list-style-type: none"> <li>Paul Kovacs, Institute for Catastrophic Loss Reduction</li> <li>Alex Kaplan, Swiss Re</li> <li>David Grimes, Environment Canada and World Meteorological Organization</li> </ul>	<b>Aboriginal Circle Discussion</b> <i>(Aboriginal Affairs and Northern Development Canada)</i> <ul style="list-style-type: none"> <li>Melanie Goodchild, Red Cross</li> <li>David Diabo, Assembly of First Nations</li> <li>Aaron Orkin, University of Toronto</li> <li>Terry Swan, Save the Children</li> </ul>	<b>Risk Data - Prototype Consultation</b> <ul style="list-style-type: none"> <li>Nicky Hastings, Natural Resources Canada</li> <li>Christina Shaw, Public Safety Canada</li> </ul>
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12:15 -13:25	<b>Lunch and Voting for Four Rotating Members of Advisory Committee</b>						
13:25 -14:25	<b>Sharing Risk: Tales of Two Models of Corporate Citizenship and Innovation</b> <ul style="list-style-type: none"> <li>Pat Horgan, IBM Canada</li> <li>Corey Gillon, Walmart Canada</li> <li>Desiree Matel-Anderson, Global Disaster Innovation Group</li> </ul>						
14:25 - 14:40	<b>Health Break</b>						
14:40 - 16:15	<b>Looking Beyond 2020 – An Interactive Session</b> Moderator: Desiree Matel-Anderson, Global Disaster Innovation Group <ul style="list-style-type: none"> <li>Ricardo Mena, United Nations International Strategy for Disaster Reduction</li> <li>Shawn Tupper, Public Safety Canada</li> <li>David Grimes, Environment Canada and World Meteorological Organization</li> </ul>						
16:15 - 16:30	Election Results and Concluding Remarks - Shawn Tupper, Public Safety Canada						



# Summary of Proceedings

## The 5th Annual National Roundtable of Canada's Platform for Disaster Risk Reduction

**Courtyard Downtown Toronto by Marriott**

**Toronto, Ontario**

**October 21, 2014**

**8:30 - 16:30**

## Opening of the Roundtable & Traditional Welcome

Dan Hefkey, Commissioner for Community Safety, Government of Ontario opened the Roundtable and provided master of ceremonies services throughout the program.

Dan Hefkey provided background on current thinking in emergency management (EM) in Ontario. He also discussed how the Emergency Management and Civil Protection Act (EMCPA) of Ontario came into existence. The EMCPA was the starting point for recognizing that having a community EM plan was insufficient but that there needed to be an identified coordinator for preparedness, prevention and response activities at the municipal level and a community control group in addition to the incident commander.

Jimmy Dick, an elder from Moose Cree First nation in northern Ontario sang the Grande Entry song often used in pow-wows and said a prayer in the traditional Cree language.

## Welcome Remarks

François Guimont, Deputy Minister (DM), Public Safety Canada welcomed participants to the Fifth Anniversary Session of the Annual National Roundtable on DRR. He stressed the value of bringing a wide variety of stakeholders together who are in agreement that DRR is everybody's business. Deputy Minister Guimont also highlighted the importance for government officials of receiving input from stakeholders and thanked participants for attending.

DM Guimont referred to examples of the escalating toll that disasters are taking on Canadians, such as flooding in Manitoba and Kashechewan, the ice storm in southern Ontario and other events in 2014. Impacts from these events are experienced among families, within communities and within our financial system. DM Guimont stressed the idea that it is time to move beyond response, and strengthen risk information, coordination and collaboration. Governance, roles and responsibilities need to be clearly understood. Knowledge needs to be shared with citizens in order to enable the community to understand their risk and recognize the potential for their involvement. DM Guimont referred to mitigation activities such as the Government of Canada's commitment to provide \$200 million over five years to better protect Canadians through the development of a National Disaster Mitigation Program, and noted that working out flood mapping with the provinces is a starting point. First Nations have also been targeted to receive \$40 million over five years, beginning in 2015-16, for disaster mitigation programming in First Nations communities. Lastly, DM Guimont referred to Public Safety Canada's continued involvement with the Hyogo Framework for Action and ongoing work on its successor framework.

DM Guimont expressed his wish for members to validate that DRR in Canada is on the right track and indeed making progress. Feedback was requested about how Canada's Platform can serve to enhance cooperation and extend its reach to incorporate innovation and fresh ideas.

## Our Fifth Roundtable - Taking Stock of our Successes

Stephanie Durand, chair of the Advisory Committee provided an update on Platform successes noting that membership to Canada's Platform, in which Roundtable participants are included, has now reached over 500 individuals. This is a positive indication that the concept of DRR as well as the shared accountability for community resilience is growing. Ms. Durand also expressed that Canada's Platform is not only about the Roundtable event but includes sustaining Platform-related work throughout the year.

With support from other advisory committee members, examples and highlights of some of the working group accomplishments were showcased. As well, working group representatives invited interested parties to reach out and become involved in their activities.

### Highlights from the Private Sector Partnership Working Group (PSPWG) (Mark Baker and Rodney Yip)

- Conducted a Business Continuity Awareness Week webinar.
- Presented to Disaster Recovery Information Exchange and Ontario Risk and Insurance Management Society.
- Collaborated with National Non-Governmental Organisations (NGO) on the distribution of goods in disaster response.
- Collaborated with UNISDR-Private Sector Partnership Working Group at the UN level.
- Held discussion with Parliamentary Secretary Roxanne James to promote DRR issues.
- Refreshed membership package highlighted value proposition for private sector involvement in Canada's Platform.

To become involved and contribute to PSPWG initiatives, contact Rodney Yip, [ryip@bell.net](mailto:ryip@bell.net) or Tom Shebrek, [tom.shebrek@walmart.ca](mailto:tom.shebrek@walmart.ca).

### Highlights from the Voluntary Sector Working Group (VSWG) (Sarah Graham)

- Liaised with other working groups to set the foundation for what role VSWG can play to provide insight to establish and maintain strong volunteer engagement.
- Initiated a research project specifically looking at the utilization and engagement of volunteers (including episodic) in the Alberta Flood Response (research report to be finalized October, 2014).
- Supported the CRHNet Resource Library as an important resource for VS organizations and promoted best practice and recent research on DRR.
- Reinforced that the role of volunteer-based organizations play is integrated with the roles of the private sector and other partners.



To become involved and contribute to VSWG initiatives, contact Sarah Graham, [sarah.graham@redcross.ca](mailto:sarah.graham@redcross.ca).

**Highlights from the Resilient Communities Working Group (RCWG)**  
**(Laurie Pearce and Brenda Murphy)**

- Contributed to the development of a Risk-Based National Land Use Guide and obtained funding to host a workshop at JIBC in New Westminster (January 2015) to bring together key stakeholders (e.g., planners, architects, engineers, scientists, and, government officials).
- Held Resilient Communities Workshop to present initiatives and share knowledge (January, 2014 in B.C.).
- Spearheaded promotion of UN's making Communities Resilient Campaign in Canada
- Established a sub-working group on Aboriginal Resilience, which completed work on the customization of the Resilient Cities poster for First Nations, Inuit, and Métis.
- Adapted rural communities campaign to be more meaningful for aboriginal communities across Canada.
- Created a report for AANDC on the Aboriginal resilience activities taking place in the Canadian Risk and Hazards Network (CRHNet) and DRR communities.

Activities on the horizon include increasing rural resiliency, expanding the aboriginal program, furthering the cause of engaging children and youth in disasters and land-use planning.

To become involved and contribute to RCWG initiatives, contact Laurie Pearce, [laurie.pearce@shaw.ca](mailto:laurie.pearce@shaw.ca).

To become involved and contribute to Aboriginal initiatives, contact Brenda Murphy, [bmurphy@wlu.ca](mailto:bmurphy@wlu.ca)

Moving forward, Ms. Durand noted areas of priority for Canada's Platform such as sustaining the message of DRR and refining and reinforcing it over the next five years. Moving forward, Canada's Platform will focus on five key areas:

- Building our partnerships;
- staying in communication;
- focus on research;
- sharing knowledge with Platform members; and
- exploring linkages and other opportunities to participate in DRR dialogue.

## Talk Show: Rethinking Risk - Insurance Solutions and Other Financial Tools

Moderator: Paul Bliss, CTV News Toronto

Panellists representing Canadian municipal interests, the insurance industry, the global economic forum and Canadian federal and provincial governments were assembled who are intimately familiar with the devastating impacts that disasters have on families, communities and the Canadian economy at large.

Panellists:

- Mary-Lou O'Reilly, Senior Vice-President, Insurance Bureau of Canada (IBC)
- Stéphane Jacobzone, Counsellor, Organization for Economic Cooperation and Development (OECD)
- Shane Schreiber, Acting Managing Director, Alberta Emergency Management Agency (AEMA)
- John Livey, Deputy City Manager, City of Toronto
- François Guimont, Deputy Minister, Public Safety Canada

Paul Bliss introduced the talk-show providing some context regarding his own experience reporting from the aftermath of Hurricane Katrina in 2005, where he earned the nickname 'Disaster Boy'. He also set the stage with some facts, such as before 1995 only three disaster had exceeded \$5M in losses, whereas cumulative losses from the last 10 years are claimed to be over \$2B and TD Financial has predicted will reach \$5B/year by 2020.

Some of the hard questions tackled included:

- How should disaster risk mitigation be approached in Canada?
- Who do you think should bear responsibility for disaster financial costs?
- What would a wish list of ideal mitigation processes or tools include for you?
- Is there a will to impose increased insurance premiums on the public now?
- How do you balance the unwillingness of consumers to pay increased insurance premiums with the cost to government for not doing so?

With this in mind, what was anticipated as a potentially contentious discussion given the variety of seemingly diametrically opposed representatives on the panel, actually elicited aligned views and consensus among many of the themes.

### Sharing of Responsibilities

The first theme to emerge was the Canadian model that sees financial responsibility for recovery shared between the provinces/territories and the federal government. In addition to this necessary partnership, the need to collaborate at so many levels in various aspects of emergency management was identified as an important component in Canada's overall approach. The insurance industry noted its focus on adaptation by its efforts in spearheading earthquake preparedness through research and other earthquake preparedness activities. Although the insurance industry plays a significant role, both the challenge and the opportunity of collaboration among federal, provincial, territorial, municipal governments; the private sector; and individuals was highlighted.

Panellists largely supported the concept of the need for citizens to play an increased role, while recognizing that conveying the need for individual-level responsibility is difficult to impart because it



comes down to very personal decisions. Any particular individual's evaluation of risk may not always consider the impacts to the rest of society. A pertinent example was given relating to sailing, where an individual may chose to fulfill personal desires and sail out for a final adventure, notwithstanding the risk of the lateness of the season and the imminent danger of the weather. These personal decisions may have significant impact on the rescue response team, future policies of the sailing club and subsequent related fees and insurance premiums that affect the entire sailing community.

*"The biggest challenge and opportunity is collaboration...It is not just up to the three levels of government but includes private sector and goes all the way down to individual level to build resilient communities."*

Regarding who should pay, it was noted that there is a societal imbalance among those who's risk situation, albeit by personal decision or circumstance, is imposed on others. It would seem fair that risk burden be the responsibility of risk-taker, however, the reality is everyone pays. Open and frank discussion with the public about what response actually costs was proposed as a way to help make the case for better mitigation and support at finding long term solutions.

A healthy dialogue between governments and among industry partners would help in efforts to ensure equitable balance of responsibilities. Continued public awareness activities were also highlighted as important in conveying shared ownership of disaster risk among the public.

*"You and I and every other Canadian are ultimately going to pay costs, through tax dollars or insurance premiums, which is why we have to be so keen to be prepared and resilient."*

#### Necessity for Risk Knowledge

In addition to increasing awareness of disaster risk reduction responsibilities for all parties, right down to the average citizen, is the need to impart accurate knowledge about disaster risk. Panelists agreed that reliable risk data is a critical component of intelligent planning and mitigation. However, risk assessments accumulate information from a vast amount of sources from infrastructure vulnerabilities to meteorological hazards and environmental conditions as well as societal behaviours. There is no one-stop shop to obtain comprehensive risk data for all situations, however, it was agreed that there could be improvements to making data holdings more understandable and more accessible.

Planning ahead was cited as a critical part of city management and incorporates knowledge of inherited or evolved vulnerabilities. Understanding the effect of potential future hazards on current systems enables mitigative updates through regular or specific maintenance prior to the need for complete reconstruction. As cities grow, infrastructure systems such as sewers and drainage need to evolve to meet new needs. The better the understanding of the risk, the more informed mitigation investments will be, whether at local, regional or national levels.

The Insurance Bureau of Canada (IBC) briefly explained the new Municipal Risk Assessment Tool (MRAT) that is being tested in selected Canadian cities across Canada, which is hoped to help a great deal with risk assessment in future. Canadian municipalities currently have limited tools to quantify the susceptibility of

infrastructure to severe weather and the MRAT is intended to use local infrastructure, climate and insurance data to lend a scientific approach to enhance risk knowledge.

Panellists agreed that collecting exactly the right data is difficult. Despite the goodwill, there is tremendous variation across the country regarding the data, the engineering capacity and the tools required to apply the science of risk evaluation. This challenge makes it close to impossible to inform a larger regional, profile comparable on a national scale.

*"It is hard to envision Canada as a country with scarce suitable land. Better use of land and conscious planning will enable citizens to make better personal choices."*

#### Need to Influence Societal Behaviour

The IBC also cited recent natural disaster research that indicated that many Canadian individuals do not prepare in advance for disasters. This circumstance feeds the expectation that industry will come forward to respond in a benevolent way and that government will assume responsibility for reimbursement of the citizen's losses, notwithstanding insurance coverage or lack thereof.

Regardless of the stakeholder, adaptation to new reality was a point encouraged by several panel members. Several examples of successful societal behaviour modification campaigns were referred to throughout the talk-show. Specifically, the approach toward fire prevention that was initiated almost 100 years ago when homes used to burn down due to the "prohibitive" cost of fire retardant materials has realized fundamental changes for the better. The fire issue was taken seriously, fire codes were implemented, public awareness campaigns were rampant and fire drills became regular practice in schools and businesses. Any similar DRR campaign would need to be clear, focused and equally permeate the Canadian culture.

The insurance industry has been consistent and effective in terms of driving open market. This fact was predicted to soon be exemplified in Calgary as it relates to the cost for 'river view' accommodation. People need to know that building or living in a flood plain or other hazardous location assumes an acceptance of risk by the consumer. In Europe, there are obligations within the real estate industry to inform the purchaser on seismic and flood risk. In Canada, the insurance industry is currently relied upon to know the risk and to set appropriate premiums indicative of such risk, although the purchaser is not obliged to purchase.

*"... it is only when you pay... (and through insurance) when you realize the consequences of your decisions."*

It was also noted that public opinion polling demonstrates increased alignment with idea of premium linked to risk. Not so much building the house by the river, rather, repeated re-building has generated a sense of resentment from those witnessing what may appear as an attitude of entitlement to rebuild in an unsafe location at a cost to neighbouring tax-payers and land owners. With growth in sophistication of actuarial science and risk evaluation, it is believed that there is appetite among consumers to want to see premium linked to risk. No polls indicate consumer desire to pay a premium, however, there is a growing understanding that natural disasters are increasing and those who expose themselves to risk ought to have it reflected in their premium.



Dealing with cultural issues is another important matter, such as indigenous populations whose way of life and the existence of traditional lands are significant factors in prevention and mitigation. There are example communities however, that have taken a serious approach to addressing community resilience and made it a priority.

Societal behaviour is also sometimes a result of lack of options. In addition to the government's responsibility to influence behaviour comes the social responsibility to assist those who cannot afford safer choices. Significant populations still live in areas with increased risk because there is no safer choice available. There is a legitimate role for government to step in and accept collectively the costs for those populations.

*"You can't just pick people up and move them, such as people on traditional land."*

### Exploring New Models

Public Safety Canada mentioned the Disaster Financial Assistance Arrangements (DFAA) as a backstop to support provincial and territorial governments in the case of natural disasters costs that meet the program parameters. Although at the end of the program process, federal resources will be paid out at a rate of as much as 90%, the taxpayer remains one individual. In other words, regardless to which level of government taxes are paid or from which level of government disaster relief is disbursed, the dollars come from the same pocket. DFAA is not a full-value replacement program and in some cases, municipalities and individuals do have to expend more than what is eligible in order to get back to where they need to be. Although it is hoped that recovery funds would be used to build back better, it is understandably more expensive to invest after a disaster rather than to have prevented it in the first place.

Austria and France were noted as examples in which disaster insurance is mandatorily integrated into home insurance to establish a base response fund. In instances where government signals a state of catastrophe, these funds can then be accessed for response efforts. Although not a major source of funds, several billion dollars have been accumulated over the years, making it a model worthy of consideration.

With consensus among panelists regarding the complexity of collaborating at various levels within government, as well as among industry and private citizens, it was also agreed that sharing the financial burden of disaster mitigation and response in an equitable way is challenging. Insurance and increasing premiums may be a component of a solution; however, more important is the required culture shift, which will only arise with enhanced knowledge and awareness.

### Culture Shift to Prevention

The Red River Floodway known as "Duff's ditch", was Premier Dufferin Roblin's response to manage water flow around the City of Winnipeg. The significant financial cost of approximately \$200M in the late 1960's is said to have cost Roblin's re-election, although since its inception, it is also claimed that the floodway has prevented over \$100 B in cumulative flood damages. This example was used to demonstrate the point that political risk of investment in mitigation is very real. However, with increasing examples of high-financially impacting disasters, it is easier now to justify to the taxpayer that spending one dollar in prevention may avert future significant debilitating economic loss. Investments that have been and continue to be made in Alberta are easier for the taxpayer to accept and the economic argument that prevention pays off is recognized.

"More than one government official has lost his or her job due to poor disaster management"

The Organization for Economic Cooperation and Development (OECD) cited the European Commission's Flood Directive which has established a new flood time horizon mandating infrastructure be built on a 500-1000 year future rather than 100 years, which is said to have helped flood prevention efforts. The OECD has also been active in modelling to support prevention efforts. The four lakes built to help manage the Seine River was referred to as one of the principle reasons Paris, France has survived without floods in the past 100 years. Given continued development and construction over the past 20-30 years, OECD economic modelling was said to have demonstrated that potential financial losses from river flooding have increased to over \$40B Euro. Authorities are recommending building a fifth lake to further avert risk associated with such high population and infrastructure being located along the river. In the Quebec City-Montreal-Ottawa corridor there is a notable earthquake risk and yet polling data shows that 4% of that population base has earthquake insurance, whereas 40% think they have earthquake insurance, demonstrating that we do not even know we are unprepared.

*"Adaptation and preparation have to be foremost in everybody's mind."*

#### Summary

As the talk-show wrapped up, the panellists were given the opportunity to reiterate choice final points which indeed provide some powerful concluding key messages:

- For the public to accept new conditions, they must be convinced of the cause and effect. Our difficulty lies on the side of providing accurate convincing information.
- The public should expect the government to be proactive and make adequate informed mitigation investment. The public also needs to accept responsibility for being prepared and for their personal choices.
- Fortright conversations such as these help people know and understand their risks. Vigilance and the political will to take adequate mitigative measures will also have to be present.
- Canadian consumers are talking and becoming more aware. The more disasters, the more attuned people will be to the need to adapt.
- Canada is a society that is rich enough to be able to start making this front-end investment.

Twitter comments were shared via the hashtag [#CDNDRR](#).



# Parallel Session 1: Case Studies: Canadian Extreme of Extremes

*(Institute for Catastrophic Loss Reduction)*

## **Moderator**

Paul Kovacs, Founder and Executive Director, Institute for Catastrophic Loss Reduction

## **Panellists**

Alex Kaplan, Vice-President, Global Partnerships, Swiss Re

David Grimes, Assistant Deputy Minister, Environment Canada / President,  
World Meteorological Organization

## **Session Objective**

Exploration of the impact of recent extreme events around the globe and yet to be seen, but probable events in Canada in order to promote activities in DRR and motivate mitigative action from all stakeholders.

## **Highlights**

Paul Kovacs introduced his co-presenters and the discussion topics of the session:

- What the world could be like in the case of a high-intensity catastrophe down the road?
- What type of really extreme events have happened internationally and what would similar experience mean for Canada?
- What are the social consequences of high impact weather in Canada?

To fairly discuss these hot topics, Mr. Kovacs explained how some of the relevant terms are defined as they relate to the work performed at the Institute for Catastrophic Risk Reduction (ICLR) where they focus on analysis of the "very big ones". For this discussion, the following terms are deemed to mean

**Hazard:** a physical threat Mother Nature sends our way and in a big country like Canada, we have a lot of them.

**Disaster:** defined through many sources including the United Nations to mean when a hazard happens in a place that is not ready for it. The consistent element in the various definitions of disaster is that a community is overwhelmed by the hazard, where people are vulnerable or unprepared (not all hazards give rise to disasters).

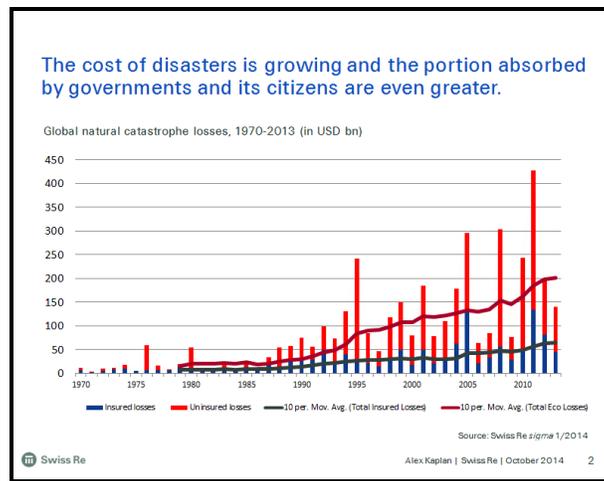
**Catastrophe:** from an economic perspective a catastrophe is a disaster that results in an economic loss of 2 % of a county's Gross Domestic Product (GDP), e.g., a 2 trillion dollar economy such as Canada experiences a catastrophe at a 40 billion dollar event, and by that definition, Canada has yet to have a true catastrophe.

Canada is a large country with many different hazards in its past and in its future, however disaster risk in Canada is very low. Occasionally, hazards occur where people are vulnerable and ill-prepared. Although not much can be done to change the hazard, vulnerability can be reduced.

Canada hasn't had a catastrophe yet, but we could. It would most likely be a severe earthquake in Vancouver or in Montreal. The scale would be far beyond what Canadians have ever seen. Current recovery programs, will be insufficient because they are not designed for this magnitude.

*"If we get hit with an extreme of extreme we will really struggle as our programs have not been designed for these larger events. As a country, there is more for us to work on in terms of extreme of extremes."*

Alex Kaplan introduced the topic of re-insurance, explaining that reinsurance is insurance for insurance companies. Reinsurance is managed by bundling risk and exposure from across the globe whereby both insurance companies and governments can seek financial protection against unforeseen loss due to a disastrous event.



Since the turn of the century (2000), international disaster costs have reached \$2.5 trillion.

The differential between insured loss and total economic loss is the most concerning part of increasing disaster costs. With the portion of disaster costs absorbed by governments and its citizens growing, being insufficiently prepared to recover increases the severity of the loss.

Loss figures are being driven overwhelmingly because of continued building in risk-prone areas and continued accumulation of assets in these areas. To illustrate some of the factors that affect degree of catastrophic loss, several snapshots of some known disasters were presented.

In 1960, Chile suffered a massive earthquake -- the largest ever recorded at a magnitude of 9.5 resulting in significant loss of life and damage. The earthquake experienced in Haiti in 2010 was 7.0 magnitude, killing over 220,000 people and eliminating 120% of Haiti's GDP in less than 60 seconds. Chile also suffered another significant earthquake in 2010 at 8.8 magnitude (500 more times more powerful than that of Haiti's). The epicentre of this earthquake was located 200 miles southeast of the country's capital Santiago, there were over 500 deaths and significant damage occurred to buildings and to the power grid. However, Chile's changed approach to its risk landscape after 1960, with implementation of strict building codes and other mitigative measures are credited for reduced catastrophic impact of the 2010 earthquake.



Japan is familiar with earthquakes and the country is very prepared. At a magnitude of 9.0, the 2011 earthquake was 1000 times more powerful than that of Haiti. With over 18,000 dead in Japan, the significant loss of life was largely attributed to the Tsunami, which was beyond what had been experienced in the modern world and for which they were much less prepared. The total economic loss was calculated at 4% of Japan's GDP. If the Japan earthquake had been 200 miles to the south, affecting Tokyo, it would have been 50% of Japan's GDP. As it was, 62% of the first budget to fund reconstruction borrowed from pension funds. A comparable scenario in Canada, with borrowing from the Canadian Pension Plan would need to recoup funds over generations deferring the burden to the nation's children. Japan had to seriously consider budget reallocations to fund reconstruction efforts.

Referring to the OECD's earlier statement of disaster risk financing being a priority on the global agenda, Mr. Kaplan expressed Swiss Re's advocacy for pre-financing the unknown disaster by putting in place reserve funds to reduce future burden on society.

*"Disasters should be treated as a contingent liability on society."*

David Grimes introduced the segment highlighting that social consequence is of primary importance and motivates political intervention. Providing the example of Hurricane Katrina, it was noted that one year later, 30% of the communities that had been moved out of New Orleans had not returned. The society was deeply affected by their losses and was not motivated by the fact that their home had washed away, rather, that they had lost their family possessions. The loss of family memorabilia was something that survivors indicated was the most debilitating.

Rebuilding weather and climate information capacity after the Haiti earthquake was critical prior to the hurricane season, as the damaged remains of the urban and rural infrastructure left the society more vulnerable than a normal season. An important lesson was realized in rebuilding society, which is to not engage survivors as victims, rather, to engage residents in rebuilding their society.

*"We need to be much more proactive in building resilience – not only from a financial perspective but also from one of social resilience."*

According to the United Nations' *World Urbanization Prospects*, there were currently 28 mega-cities with populations over ten million worldwide in 2014. By 2030, the world is projected to have 41 mega-cities with 10 million inhabitants or more. In a changing world with changing climate realities, it was suggested that our vulnerability is increasing due to ongoing urban development, more complex infrastructure and associated risk exposure.

Environment Canada's (EC) Meteorological Service of Canada issues 15,000 severe weather warnings (a type of alert) per year. These alerts notify those in affected areas so that they can take steps to protect themselves and their property from harm. EC issues alerts for weather-related events including snow, rain, wind chill, freezing drizzle, frost, heat, fog, hail, tornados, hurricane, thunderstorms, etc. but not for all types of natural hazards such as landslides, earthquakes, avalanches, etc.

Communication and dissemination are very important. In 2003, EC established warning preparedness capacity to work with EM agencies across the country. This included working with agencies as to how they can mobilize and respond, getting people out of the way, etc.

We need to rethink what we do and how we do it. Both social consequence and financial picture need to be considered.

## Parallel Session 2: Enhancing Aboriginal Planning and Preparedness

*(Aboriginal Affairs and Northern Development Canada & Resilient Communities Working Group - Aboriginal Resilience Sub-group)*

### Speakers / Panellists

Jimmy Dick, Moose Cree First Nation

Melanie Goodchild, National Director, Canadian Red Cross

David Diabo, Special Advisor, Assembly of First Nations

Aaron Orkin, University of Toronto

Terry Swan, Director, Save the Children

### Highlights

Aboriginal (First Nations, Metis and Inuit) involvement in planning and preparing for disasters varies widely across Canada, depending on jurisdiction, cultural group, geography and capacities. This session provided an opportunity for invited speakers to raise certain issues relating to disaster risk reduction from their specific context. Following introductory comments, a circle-style approach allowed all participants to express their views.

The Department of Aboriginal Affairs and Northern Development Canada (AANDC) noted current ongoing investment in federal emergency management spending with approximately \$19.11M targeted towards preparedness and mitigation in 2014-2015. It was recognized that private insurance is not typically available on reserves and there is interest in increasing this amount next year.

Frequency of humanitarian crises due to disasters is expected to continue to rise. Although the Canadian Red Cross will provide relief when a natural disaster strikes, it was asserted that more personnel are needed to work in First Nation communities on DRR issues, especially in mitigation and preparation as well as in the provision of psycho-social support. Working with the community as a whole was recognized as highly important, rather than limiting discussions to selected community representatives. Diplomacy is generally a factor in communication and it was agreed that to build trust, partners need to take a strength-based approach and focus on effective collaboration relevant to the unique aspects of each community.

The situation for First Nations was described as in a constant state of disaster, where current conditions are not acceptable, let alone when faced with disaster. The circle discussion provided the airing of grief and frustration over conditions such as waste disposal, potable water, and emergency care. It was strongly voiced that funding for ongoing delivery of emergency care training should be made available.



There was agreement on a larger systematic problem but willingness among some to work with the resource envelope available. DRR education was highlighted as a priority with a focus on learning coming from aboriginal peoples. Although following traditional ways had worked for centuries, current Aboriginal approaches need to be adapted to make local community level emergency plans considerate of regional geographic differences and traditional knowledge. The Five Feather program in Ontario was noted as an example train-the-trainer program relying on First Nations ownership of their individual emergency plans.

## Parallel Session 3 - Risk Data - Prototype Consultation

*(Public Safety Canada/Natural Resources Canada)*

### **Speakers / Panellists**

Christina Shaw, Policy Analyst, Public Safety Canada (PS)

Nicky Hastings, National Scale Geohazard Risk Project Leader, Natural Resources Canada (NRCan)

### **Session Objective**

This session sought to initiate discussion with disaster risk experts and key stakeholders regarding how risk assessments could be used to guide planning and priority setting of national disaster risk reduction and resilience initiatives, as well as initiate discussion on the development of a national risk and resilience assessment.

### **Highlights**

This joint session enabled Public Safety Canada and Natural Resources Canada to engage risk experts and key stakeholders in an interactive discussion on how a National Aggregate Risk and Resilience Assessment may be used by a variety of groups. Assessment indicators such as building performance (likelihood of damage and estimated time to restore functionality after a major event); public safety (likelihood of injury, death or disease, extent of social disruption, et cetera); lifeline resilience (capacity of infrastructure to withstand and/or recover); economic security (expected capital and income-related losses, and the benefits of investing in mitigation and/or adaptation measures); were explored through facilitated discussions.

Key questions, “Which sectors are at the greatest risk?”, “Which sectors bear the greatest cost?” and “Which sectors should bear the greatest cost?” were posed in relation to the established list of natural hazards to stimulate discussion on the aforementioned assessment indicators. Investigation also took place into how the indicators and other potential indicators could be profiled and used to take action to reduce disaster risk in Canada.

Discussion on the development of a National Aggregate Risk and Resilience Assessment (NARRA), highlighted challenges that may be faced such as the difficulty in assessing data that may not be readily available; varying local and regional contexts; varying levels of risk tolerance and resilience; as well as how these challenges might be addressed.

It was agreed that there could be many potential users of a NARRA for a variety of stakeholder groups at a variety of jurisdictional levels in both public and private sectors, and that the development of NARRA should reach beyond the federal government.

Information collected throughout this session will be used, in part, to prompt further discussions with stakeholder groups across jurisdictional lines to advance the development of a NARRA while ensuring its relevance across Canada.

## Sharing Risk: Tales of Two Models of Corporate Citizenship and Innovation

*(IBM, Walmart & Global Disaster Innovation Group)*

### Speakers / Panellists

Pat Horgan, Senior Vice-President, IBM Canada

Corey Gillon, Vice-President, Walmart Canada

Desiree Matel-Anderson, CEO, Global Disaster Innovation Group

### Session Objective

The objective of the session was to motivate participants to consider their role in DRR in the context of their home, workplace or community environment. To do this, IBM, Walmart and the Global Disaster Innovation Group's Field Innovation Team shared inspiring stories and provided their examples of some of the roles businesses can choose to take in DRR.

### Highlights

Harnessing Big Data and analysing it was emphasized an incredible tool to support predictions and help in preparations for disastrous circumstances. "Deep Thunder" is an immense data analytics weather-prediction model that can calculate water flow down to the meter level. Cities such as Rio de Janeiro and New York City used Deep Thunder to make important decisions, such as in the planning for the World Cup by having knowledge of possible water flows and shutting down the New York City subways 24 hours in advance of Hurricane Sandy.

Moving into the innovation space can happen on the fly with a corporate citizenship mentality. Some organizations may be in a position to innovate to find solutions, whereas some organizations simply need to be open to reflecting on what immediate resources they have to offer to reduce the trauma. For example, converting websites to the objective of finding people (family, employees) became of immediate priority for IBM during 911. New York City, in its entirety, moved quickly into its own innovation space -- a space unique to any emergency -- where innovation is pushed to another level due to necessity.

Employees are key to corporate citizenship. Companies can take a role enabling employees to go out and volunteer their skill sets and collaborate in the community. IBM's corporate service corps comprises winners of an internal competition (approximately 25 a year) who travel to a third world developing country to work there for six weeks as part of their employee development. It is a low-cost program that generates value for all parties. Walmart has 390 stores across Canada and an advantage in supporting partnerships such as those with the Canadian Red Cross, through volunteerism and early mobilization in the event of an emergency. In addition to providing pre-trained employees to help in disasters with boots on the ground or trailers of supplies ready to deploy, Walmart locations also serve as an informal gathering hub for the community.



Using innovation to get the next generation hungry will enable out of the box thinking and can help preparedness efforts. Field Innovation Team presented an example of the impact of introducing children in refugee camps to a learning opportunity with robotics. Children who had never experienced robotics before were able to dream up tools to collect and synthesize data, assess need and determine how to provide a helping hand in time of disaster. Self-prompting to innovate can be taught and is incredibly valuable tool in disaster scenarios.

Part of disaster response involves an emotional experience, whether it be as a survivor, a responder or a family / community member. When organizations can provide flexible work arrangements and an environment and work culture that recognizes the need for employees to care for their families, in addition to contributing to the community response, organizations contribute to a stronger more resilient society.

The highlights listed in this report are only some examples of the ways IBM, Walmart and Field Innovation Team are contributing to DRR. Canada's Platform Private Sector Partnerships Working Group (PSPWG) recognizes the important role the private sector plays in reducing risk and enhancing community resilience. The PSPWG is comprised of like-minded organizations willing to demonstrate strong corporate citizenship and leadership, and willing to commit to making DRR and resilience building an integral part of their sustainable development goals and programs. For ideas on how your organization can enhance its commitment to DRR, please contact the PSPWG co-chairs: Rodney Yip, IBM Canada and Tom Shebrek, Walmart Canada, at [dr-rrc@ps-sp.gc.ca](mailto:dr-rrc@ps-sp.gc.ca).

## Looking Beyond 2020 – An Interactive Session

*(United Nations/Public Safety Canada/Environment Canada and World Meteorological Organization)*

### **Speakers / Panellists**

Moderator: Desiree Matel-Anderson, CEO, Global Disaster Innovation Group

Ricardo Mena, Head of Regional Office, United Nations International Strategy for Disaster Reduction

Shawn Tupper, Assistant Deputy Minister, Emergency Management and Programs Branch,  
Public Safety Canada

David Grimes, Assistant Deputy Minister, Meteorological Service, Environment Canada and President,  
World Meteorological Organization

### **Description of the Session**

This session consisted of an interactive dialogue on “Looking Beyond 2020” and allow participants to explore ways of advancing DRR domestically as Canada works with partners on a United Nations (UN) Post-2015 Framework. Senior representatives from the UN and Environment Canada/ World Meteorological Organization launched the discussion that provided the opportunity for Public Safety Canada to engage the membership in a dialogue on Canada’s approach for emergency management going forward.

### **Background**

*The Hyogo Framework for Action 2005-2015, Building the Resilience of Nations and Communities to Disasters* is a 10-year plan that outlines five priorities for action, and offers guiding principles and practical means for achieving disaster resilience. The goal was for nations who voluntarily chose to follow this non-

binding plan to substantially reduce disaster losses by 2015 by building the resilience of nations and communities to disasters. It was endorsed by the UN General Assembly, following the 2005 World Disaster Reduction Conference.

The Post 2015 Framework for Disaster Risk Reduction focuses on what needs to be done differently and this opportunity for engagement with Canadian stakeholders is important laying out priorities and the future of emergency management in Canada and help shape Canada's contribution to the negotiations of the next framework document.

At the 10-year mark, much progress has been made but one area where progress has been limited is the underlying causes of risk. Mortality risk is going down – particularly for weather events – but economic losses are going up. Ongoing investment and development of assets in vulnerable and exposed areas is a continuing problem in Canada and worldwide.

### **Highlights Beyond 2020 Discussion**

Canada has many reasons to celebrate its achievements in the last 10 years in the sphere of disaster risk management. Five years ago, Canada's Platform did not exist. Every year the Platform has seen growth and increased interest from citizens, academics, senior levels of executives and government officials. The discourse has shifted slightly with emphasis on prevention and disaster risk management.

Shawn Tupper introduced the idea that Canada is ready to engage in a dialogue for a renewed approach to emergency management. Canada's Platform members and attendees of the Roundtable were the first group of stakeholders outside of government where the dialogue on what the end state of emergency management could be. The day's conversation was intended to improve understanding of the social dynamics of communities to help build more resiliency. Government focus will be on more comprehensive and whole-of-society understanding of risks and how to prevent them, as well as building stronger relationships, empowering individuals, spreading knowledge and innovation through important fora such as this Platform.

David Grimes highlighted that changing climate forces have multiplier effects. Urban planning and land use were claimed to have a role in emergency management in 2020, due to the impact of mega-cities and diasporic communities on the environment and subsequent weather events. The non-stationary climate, what is being done nationally and internationally does not respond to the rate of change environmentally, thus an important question for the future is, "What can we do that is fundamentally different from the way things have been done thus far?"

Attendees were provided with discussion questions in order to obtain input to inform the development of a potential new approach to EM in Canada. Feedback on the most important issues highlighted priorities directed at risk; governance; resilience; preparedness; vulnerability; attention to capacity and leadership. In response to the broad question of "describe your ideal EM system", focus was generally placed on a holistic, innovative and adaptive philosophical approach. Emphasis was also placed on community empowerment, robust resources, of horizontal people-focused design. Operationally, the ideal system would also be a collaborative, pro-active risk management system sensitive future and emergent threats.



# Elected Advisory Committee Members and Concluding Remarks

Assistant Deputy Minister Shawn Tupper closed the Roundtable with the announcement of the four newly elected and/or re-elected members of the Advisory Committee, who will serve for a two-year term alongside the other six permanent representatives.

## **The new representatives**

Rodney Yip (IBM)

Laurie Pearce (Justice Institute of British Columbia)

Ian Burton

International Association of Emergency Managers - Canada Council (John Saunders)

## **Special thanks and recognition were also conveyed to recent and past representatives to the Advisory Committee**

Mark Baker

Ron Kuban (for CRHNet)

Louise Geoffrion (for the Domestic Group for Emergency Management)

Ernie MacGillivray (for the Senior Officials Responsible for Emergency Management)

## **Final Comments**

Shawn Tupper thanked participants for attending in person, recognized participants who participated by teleconference and via Twitter. The fifth anniversary of the Roundtable marks an achievement for Canada and continued engagement of the membership to Canada's Platform is encouraged as Public Safety Canada explores and seeks to continue communications through the Roundtable and other fora.

There were over 210 tweets issued using the #CDNdr/#CDNrrc hashtags during the Roundtable, which reached more than 185,000 Twitter followers!

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Special thanks is offered to contributors supporting the organizing committee of the  
5th Annual National Roundtable on DRR

*Dan Hefkey (Master of Ceremonies)*  
*Tim Eashappie, Moose Cree First Nations*  
*Ricardo Mena, UNISDR Office for the Americas*  
*Desiree Matel-Anderson, Global Disaster Innovation Group*  
*CRHNet Symposium Planning Committee*