



2nd Annual Roundtable

Canada's Platform for
Disaster Risk Reduction



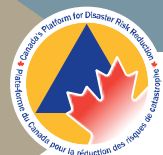
FINAL REPORT

OCTOBER 18, 2011
OTTAWA, ONTARIO



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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 Second National Roundtable on Disaster Risk Reduction that took place in Ottawa, Ontario on October 18, 2011. This report highlights remarks made during the Roundtable by invited guests, Advisory Group members and participants, and includes insights and next-steps from working group and thematic sessions. Most importantly, it identifies seven cross-cutting themes that emerged during the Roundtable, which are relevant to the Platform for advancing its goals.

We were pleased that attendance at the Roundtable has grown from the previous year and that the Platform is gaining strength as it engages more Canadians. Not only is participation and membership up, but a fourth Working Group has emerged representing an important player in disaster risk reduction—the volunteer sector. We are excited about the opportunities these new partners will bring to the disaster risk reduction dialogue in Canada.

We would like to thank everyone who attended and participated in this Roundtable event. Your input is vital to the implementation of Canada's Platform and the final aim of reducing the risks associated with disasters in Canada. Specifically, this year participants were asked to make commitments and we look forward to following up and reporting on what Canadians have done in either their own lives or to engage their friends, family or community in disaster risk reduction. We would also like to thank the volunteers who have made this on-going work successful, especially the Chairs and members of the four Working Groups; these individuals have demonstrated leadership and a commitment to disaster risk reduction.

We look forward to seeing you at the Third Annual Roundtable to be held in Vancouver, British Columbia on October 23, 2012.

Sincerely,

Canada's Platform Advisory Committee

Serge C. Beaudoin (co-chair)
Ernest MacGillivray (co-chair)

Mark Baker
Francis Bradley
David Day
Louise Geoffrion
Ron Kuban
Gordon McBean
David McCormack
Laurie Pearce

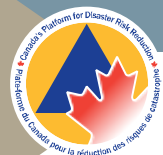
Executive Summary

The National Roundtable of Canada's Platform for Disaster Risk Reduction began in 2010 in response to an initiative by the United Nations International Strategy for Disaster Reduction. The purpose of this annual event is to make Canadians safer by reducing risks, making communities more resilient and partnering with all levels of government, universities, professional associations, voluntary organizations and the general public.

The Second Roundtable meeting in Ottawa, in October 2011, continued the process begun the previous year. The meeting included a keynote address by Mr. Paul Kovacs from the Institute for Catastrophic Loss Reduction on how the insurance industry can play a larger role in disaster risk reduction; a lunch address by Mayor Richard Walton from the District of North Vancouver on their successful risk reduction program; reports from four Working Groups (Resilient Communities, Volunteerism, Private Enterprise/Economic Resilience and Science & Technology) on their progress and plans for the future; a panel discussion on risk assessment; a session on mitigation; and, various break-out sessions focused on the working groups. Though the Platform is still in its formative stages, it reported considerable progress and a number of success stories.

Seven themes emerged from the day's discussions – working with others, leadership, knowledge transfer, community-based approaches, resilient communities, engagement, and the role of the private sector. Canada and Canadians have done much to reduce disaster risk. Within each of these themes, there are opportunities to do more.

We know ways to make our society more resilient, less exposed to hazards and less vulnerable. However that doesn't mean we should stop research, engaging Canadians and building capacity across all sectors. Accomplishing these objectives requires action. Canada's Platform for Disaster Risk Reduction provides a vehicle for people to participate in a process to achieve these goals. Many of us are already contributing, but more Canadians have to be engaged. We are acting. We are reaching out.



Introduction

In 2009, Canada's Platform for Disaster Risk Reduction was launched as part of Canada's commitment to the United Nations International Strategy for Disaster Reduction.

Disaster risk reduction¹ is about making people safer. In part this can be done by minimizing the hazards we face, but that is not always possible. Some hazards, like tornadoes, are beyond our control. We can, however, make ourselves safer by strengthening our ability to resist, respond and recover. Much of disaster risk reduction is based on the four overlapping pillars of comprehensive emergency management:

1. Prevention and mitigation;
2. Preparedness;
3. Response; and
4. Recovery.

All these pillars are important, but prevention and mitigation have the greatest potential to reduce the impact of future harmful events. When it comes to disasters, an ounce of prevention is worth a pound of cure!

To be successful in prevention and mitigation it is necessary to develop capacity in all sectors of society, facilitate informal networks, and foster trust and collaboration. Canada's Platform for Disaster Risk Reduction is a forum for professionals in disaster and emergency management and interested Canadians to come together to discuss reducing risk, influence national policy-making, build networks, and learn how everyone can help make Canada safer.

This report summarizes the discussions at the Second Annual Roundtable of Canada's Platform for Disaster Risk Reduction, held on October 18, 2011, in Ottawa, Ontario. The event included keynote speakers, as well as working group and information sessions on themes identified as relevant to disaster risk reduction.² The day culminated with attendees making personal commitments to further disaster risk reduction in Canada over the coming year.³ The response of the attendees was very positive, with most of them being very satisfied with the Roundtable as a means of networking and creating dialogue.⁴

Canada's Platform for Disaster Risk Reduction

Aim: To make Canadians safer by reducing risks, by making communities more resilient and by partnering with all levels of government, universities, professional associations, voluntary organizations and the general public.

Objectives: To reduce risk, vulnerability and impacts of natural and non-natural disaster to Canadians; provide a coordinating mechanism for disaster risk reduction across sectors; and, support stakeholders with relevant knowledge and information.

¹ Definitions for disaster risk reduction and other terms are listed in Appendix A.

² Agenda is shown in Appendix B.

³ Personal commitments and follow-up are listed in Appendix C.

⁴ Feedback is captured in Appendix D.

The International Context

As part of the United Nations International Strategy for Disaster Reduction, the World Conference on Disaster Risk Reduction held in Kobe, Japan in 2005, created the *Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disaster*.⁵ The Framework was endorsed by the General Assembly of the United Nations and adopted by 168 nations. It created three strategic goals and five priorities for action.

Strategic Goals:

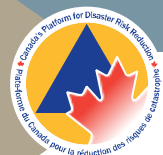
- The more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with a special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction;
- The development and strengthening of institutions, mechanisms and capacities at all levels of government, in particular, at the community level, that can systematically contribute to building resilience to hazards; and
- The systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programs in the reconstruction of affected communities.

Priorities for action:

- Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation;
- Identify, assess and monitor disaster risks and enhance early warning;
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels;
- Reduce the underlying risk factors; and
- Strengthen disaster preparedness for effective response at all levels.

Canada is committed to the Hyogo Framework for Action. Canada's Platform for Disaster Risk Reduction is an example of work towards reducing risk in Canada.

⁵ <http://www.unisdr.org/we/coordinate/hfa>



Canada's Platform

National Platforms for Disaster Risk Reduction are broadly defined as a forum to bring together interdisciplinary stakeholders on the basis of their shared interest in reducing the risks posed by disasters. National Platforms seek to build a sense of national, cross-sectoral ownership in the disaster risk reduction process through coordinated leadership and action.

Canada's Platform for Disaster Risk Reduction was announced in June 2009, and is one component of Canada's commitment to implementing the Hyogo Framework for Action. It is currently co-chaired by Public Safety Canada and a Provincial/Territorial representative, the Province of New Brunswick, and has four parts:

- **Advisory Committee:** composed of 10 people representing key disaster risk reduction sectors (federal institutions, provincial and territorial representatives, non-governmental organizations, academia, the private sector and other levels of government). The Advisory Committee sets priorities, guides, and supports the development, implementation and operation of Canada's National Platform;
- **General Membership:** Open to all Canadians and stakeholder groups, through existing forums or through individual membership;
- **Working Groups:** Developed around topics of relevance, specific issues or priority areas and in which any member can participate (there are currently four working groups: Resilient Communities; Volunteerism; Science and Technology; and Private Enterprise/Economic Resilience); and
- **Secretariat:** Located within Public Safety Canada. Supports the Advisory Committee and other components of the Platform.

An Annual Roundtable provides an opportunity to advance Canada's Platform objectives and to evaluate progress on key action items, creating a forum for discussion, knowledge exchange and planning for the future. The Roundtable and membership to the Platform are open to participation from a broad range of people, including the public and private sectors, and non-governmental organizations.⁶

Further information on the Canadian Platform can be found on Public Safety Canada's website: http://www.publicsafety.gc.ca/prg/em/ndms/disaster_risk_reduction-eng.aspx. Interested parties may also contact the National Platform Secretariat: DRR-RRC@ps-sp.gc.ca.

Highlights of successes in advancing disaster risk reduction in Canada:

- *Four cities in British Columbia have been designated as Disaster Resilient Cities by the United Nations; and*
- *The Second Roundtable in 2011 resulted in 45 attendees making personal commitments to further disaster risk reduction in the coming year.*

⁶ Appendix E shows the distribution of participants by sector at the 2010 Roundtable.

Opening Address

The Honorable Vic Toews, Minister of Public Safety

Minister Toews introduced resilience as the theme of this year's Roundtable, and emphasized that having resilient communities creates a resilient country.

Protecting the safety and security of Canadians is the business of the Government of Canada and particularly Public Safety Canada. The work done under Canada's Platform for Disaster Risk Reduction helps to build community resiliency. The Minister highlighted national accomplishments over the previous year that assist in building a more resilient Canada.

In January 2011, a suite of announcements were made with the Provinces and Territories. Important updates were made to *An Emergency Management Framework for Canada*, and a number of related strategies and actions plans were approved by Federal/Provincial/Territorial Ministers, including: a *Communications and Interoperability Strategy and Action Plan for Canada*; a *Chemical, Biological, Radiological, Nuclear and Explosives Resilience Strategy and Action Plan for Canada*; and a *National Emergency Response System*. Together these allow the federal, provincial and territorial governments to link disaster relief plans and enables an interoperable communications network, ensuring faster response times, saving lives and protecting property. Public Safety also announced a new national standard for Personal Protective Equipment, ensuring that first responders have the highest standard of protective equipment available.



The Minister noted Prime Minister Harper's commitment to discuss a mitigation strategy that would apply to all provinces and territories, enhancing infrastructure to better withstand future floods. Public Safety has also updated the guidelines for the Disaster Financial Assistance Arrangements to give provincial and territorial governments more flexibility under the program to determine how to enhance disaster-damaged infrastructure.

The Minister took the opportunity to make two further announcements at Roundtable: the release of the *GetPrepared.ca* mobile website, which enables Canadians to use their mobile devices to access crucial information on how to react quickly and appropriately to emergencies, no matter where they are; and the launch of the geospatial version of the *Canadian Disaster Database*, which incorporates new technologies, such as a mapping interface to assist in the study of significant disaster events.

The Minister recognized the honour bestowed on the District of North Vancouver by being one of the recipients of the United Nations Sasakawa Award for Disaster Reduction for their innovative and participatory approach to addressing disaster reduction. The Minister also encouraged the delegates to take advantage of the Roundtable forum to explore opportunities in disaster risk reduction.

Co-Chairs Address

The Advisory Committee Co-chairs, Serge Beaudoin (Director General, Emergency Management Policy and Planning Directorate, Public Safety Canada) and Ernie McGillivray (Director of Emergency Services, Department of Public Safety, New Brunswick), set the stage for the day's activities. They noted the continued increase in the frequency,⁷ severity and cost of natural disasters. Globally, 2011 was the most expensive year on record for natural disasters and the decade of 2000-2009 was Canada's most costly by far. Increasing urbanization is part of the reason for this trend, and because of this the Co-chairs highlighted the importance of encouraging Canadian communities to join the United Nations Resilient Cities Campaign.



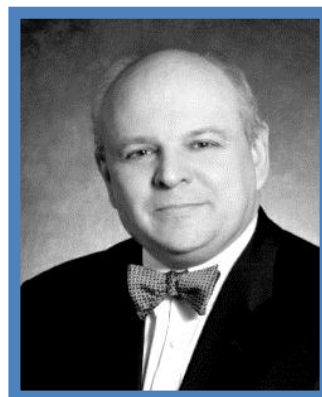
After reviewing the purpose and history of Canada's Platform, the Co-chairs outlined the Five-Year Action Plan developed at the First Roundtable, and acknowledged the remarkable progress achieved over the past year by the Working Groups and Advisory Committee. The Working Group chairs spoke briefly about their accomplishments and the upcoming afternoon's working group sessions. The Co-chairs challenged participants to actively engage in the sessions to ensure that the Roundtable is both relevant and successful, and to start another productive and successful year of work.

Keynote Address

Paul Kovacs

Executive Director, Institute for Catastrophic Loss Reduction

Mr. Paul Kovacs is an economist and Executive Director of the Institute for Catastrophic Loss Reduction, University of Western Ontario. He has worked with the Insurance Bureau of Canada since 1992 and in 2004 was appointed President and CEO of the Property and Casualty Insurance Compensation Corporation. He is one of Canada's leading experts on the role of insurance in disaster risk reduction.



Mr. Kovacs addressed how public/private partnerships can be used to build disaster resilience. He noted that the damage from disasters could be reduced by up to half over the next 25 years if mitigation measures are taken, similar to how the risk of vehicle collisions, urban fire and property theft have been reduced. He also emphasized that Canada's Platform can play a significant role in making this happen. Mr. Kovacs noted the need for a broad-based approach to managing different types of threats, and

⁷ <http://prezi.com/7-bijofhm9pn/second-annual-national-roundtable-of-canadas-platform-for-disaster-risk-reduction-co-chairs-presentation-delta-city-ottawa-ontario-canada-october-18-2011/>

the great potential benefits of prevention and mitigation. While this broad-based approach will require partnerships between organizations traditionally associated with response, such as non-governmental organizations, and leaders from the business community, it will also need to include the insurance and engineering sectors. In his view the insurance industry is a crucial partner for governments across Canada in the successful efforts to prevent catastrophic urban fires, and would be an equally helpful partner to address current major risks like urban flooding, earthquakes, wildfires and severe winds. In addition, insurance is the primary method used to manage and finance the recovery of homeowners and businesses from most disasters in Canada, with the exception of overland flooding. Mr. Kovacs suggested that it was worth considering the role of private insurance, in partnership with the public sector, as the primary source of funds to support the recovery and rebuilding of either homes after a flood, or public infrastructure after a disaster.

The insurance industry bases many of their risk assessments on sophisticated catastrophe models that they have found to be essential to their work. Mr. Kovacs believes that the types of investments needed for better disaster risk reduction will require more advanced hazard and risk assessments than are currently the standard for most emergency managers. The floodway in Manitoba and the school seismic safety program in British Columbia are examples where a significant additional hazard assessment was required to successfully justify public spending projects.

In addition to reliable risk assessments, there need to be effective tools available to policy-makers that can be used to manage risk. Mr. Kovacs believes that Canada already has many of these in place, including land-use planning, building codes, public education and awareness campaigns, and public-private partnerships.

The insurance industry, in partnership with government, can play a major role in managing risk and funding recovery.

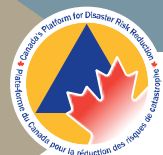
Lunch Address

Mayor Richard Walton, District of North Vancouver

The presentation by Mayor Walton (“*Evolution of a risk-based approach toward community resiliency*”) acquainted Roundtable participants with the District of North Vancouver’s experience in creating and implementing a successful disaster risk reduction program. Their program received the 2011 Sasakawa Award for Disaster Reduction from the United Nations International Strategy for Disaster Reduction, along with San Francisco (Philippines) and Santa Fe (Argentina).



The District of North Vancouver’s work was largely the outcome of a landslide disaster that occurred in January 2005. This tragic event galvanized the community to action. The process emphasized public education and the need for transparency. In 2007, the District of North Vancouver established a comprehensive Natural Hazards Management Program that maintains a hazard database, educates stakeholders and works to liaise with scientific, academic and government organizations to create and follow best practices. Part of this program includes a landslide risk monitoring and inspection warning system for the public.



The Mayor reported on a number of successes resulting from their program, including a better understanding of hazards and vulnerability which have contributed to the reduction of many risks, and community planning has become more proactive and included the establishment of partnerships. Through Canada's Platform and other fora, the District of North Vancouver is sharing their best practices, what they have learned, and is gaining national and international recognition for their approach.

In spite of their successes, the Mayor noted that the future will hold new challenges that will have to be addressed. These include urban expansion into more hazardous areas, adapting to climate change and changing levels of risk tolerance by communities. Risks are being managed, but not eliminated.

Lessons Learned by the District of North Vancouver

- *Proactively investigate hazards and risks*
- *Partner with science-based organizations and academic institutions*
- *Access grant funding wherever possible*
- *Involve the community throughout the process*
- *Make information visual & accessible to all*
- *Educate & inform*
- *Encourage shared responsibility*
- *Political support is crucial.*

Mayor Richard Walton

Results of Working Group Discussions

The Working Groups are an essential component of Canada's Platform for Disaster Risk Reduction. Each Working Group targets a critical aspect of disaster risk reduction, and creates opportunities for focused networking and for developing strategies to implement the Platform's Action Plan. During the discussions at the Roundtable, each Working Group reviewed progress made so far and then, during break-out sessions, engaged participants in exploring opportunities and actions to move disaster risk reduction forward.

Resilient Communities Working Group

Objective

The Resilient Communities Working Group supports the Canadian Platform by working to provide information to Canadians, communities, and regions on actions they can take to increase their resilience to disasters. Group members work to bring the idea and importance of disaster risk reduction to communities and regions, and encourage communities to engage in activities that can make them more resilient. Examples include the United Nation's "*Making Cities Resilient – My City is Getting Ready*" campaign.

Working Group Summary

The Resilient Communities Working Group was held over two sessions, providing information to participants on actions undertaken by the Working Group and also providing an opportunity for participants to identify what they can do to make their communities more resilient. The focus was on a community-based perspective to resilience and how organizations can provide support to communities. Key messages were that resilience must be defined within the context of the community, including: knowledge and awareness of the local situation; being clear about expectations; how to anticipate disasters; adapting creatively; seeking opportunities to make changes; and engaging all levels of society and government in the process.

Small group discussions addressed four issues:

- Resilience education and training;
- Local mitigation support from national levels;
- Incorporating resiliency in community planning; and
- Planning for resilience within the context of climate change.

Opportunities for progress include: integrating concepts of resilience into schools and other existing organizations, such as the Scouts and Girl Guides; developing campaigns to help promote concepts of resiliency, such as Smokey the Bear; local community involvement and engagement; completing informed risk analyses; and providing support through the sharing of knowledge.

During the past year the Working Group made significant progress towards their goals by contributing to the development of a Canadian National Land-Use Guide and creating a resilient communities' poster campaign. The Working Group encouraged participation in the United Nations "*Making Cities Resilient*" campaign including publishing an article in *Municipal World*, which included a fold-out poster about the campaign for Canadian English-speaking communities.



Moving Forward

The Resilient Communities Working Group plans to continue to engage municipalities and communities in resilience, specifically:

- Encourage communities to become registered Resilient Communities under the United Nations “*Making Cities Resilient*” campaign;
- Reach out to unincorporated communities (including aboriginal communities) and to French-speaking communities with the production of a French fold-out poster;
- Promote the National Land-Use Guide; and
- Establish a national award to recognize resilient communities in Canada.

Voluntary Sector Working Group

Objective

The Voluntary Sector Working Group supports Canada’s Platform by raising awareness of the value of volunteer engagement in disaster response, raising knowledge of organizations that provide volunteers at the community level, developing a systematic mechanism for the inclusion of the voluntary sector in disaster evaluations and dissemination, and supporting the Government of Canada’s efforts to update and report on national disaster risk reduction activities.

Summary

The first meeting of this group took place during the Roundtable on October 18, 2011. A significant portion of the session was spent discussing the Terms of Reference, in particular, the size and composition of the group. The discussion indicated that a comfortable working group would be 18 members. These core members would be selected from both traditional and non-traditional emergency response organizations; however, it was agreed that the reach and diversity of the working group could be expanded with the inclusion of additional contributing members via subcommittees.

The group recognized that different types of volunteers require different management strategies in order to maximize their contribution. One important discussion was how to utilize traditional volunteers who maintain a continued presence, but also those from emergent groups that are temporary, as well as volunteers who do their work virtually via the internet. The emergence of social media and the virtual world creates new opportunities, but also new challenges that are not yet fully understood, but will evolve over time.

Moving Forward

In the coming years, the Voluntary Working Group plans to:

- Strengthen the committee by finalizing its Terms of Reference;
- Establish a group of core members;
- Develop an action plan;
- Identify potential sources of funding; and
- Focus on implementing specific items in the Action Plan to move advance the objectives of the Voluntary Sector Working Group.

Private Enterprise/Economic Resilience Working Group

Objective

The Private Enterprise/Economic Resilience Working Group⁸ brings the voice of the private sector to Canada's Platform to advance the critical role played by the private sector in contributing to disaster resilient communities and in accelerating post-disaster restoration of services.

Summary

With the majority of critical infrastructure, including labour in Canada, owned privately, the private sector is a crucial partner. No comprehensive assessment of vulnerability or risk is possible without their participation. Resilient communities cannot exist without a resilient private sector.

The Private Enterprise/Economic Resilience Working Group was formed in August 2011. In the Working Group session, there was general overall agreement that there should be a focus on disaster risk reduction as it relates to supply chains. After creating Terms of Reference, the Working Group intends to develop disaster risk reduction concepts for business. To do this, the Working Group will leverage existing networks and organizations, develop incentives for private risk reduction initiatives, and will participate in local and national awareness events. Advocacy groups such as community associations, professional associations and Chambers of Commerce will also be engaged. Disaster risk reduction helps business and their host communities survive. A profitable, sustainable private sector strengthens community resilience.

Moving Forward

The Private Enterprise/Economic Resilience Working Group plans over the coming years include:

- Engage key partners;
- Conduct a survey of domestic and international private sector recovery best practices;
- Work on a National Disaster Recovery Strategy for the private sector;
- Write a paper and host a workshop on performance metrics;
- Develop a case study; and
- Write two research papers, one on insurance/re-insurance and another on market resilience.

Science and Technology Working Group

Objective

The Science and Technology Working Group works to provide science and technology advice to policy makers by highlighting the predictability of risk, understanding how people make choices and translate these lessons into knowledge-based action.

Summary

There are many challenges and opportunities in the science and technology field to help identify potential risks and reduce impacts of disasters, including understanding networks, identifying policy gaps, transferring learning between fields, developing co-operation between people or organizations work in silos, and building the public's understanding of the science of natural disasters to facilitate broad participation in proactive/preventative action.

⁸ In April 2012, the Private Enterprise/Economic Resilience Working Group was renamed the Private Sector Partnership Working Group.

Moving Forward

The Science and Technology Working Group will develop short and long-term goals, along with the identification of tools that can be used to create support from the public and policy makers. Longer-term plans include:

- Identification of Science and Technology networks along with themes for these networks;
- Development of a campaign for the use of social networks and target audiences;
- Assessment of availability of geo-data related to risk;
- Inventory and assessment of processes and good practices related risks in Canada;
- Development of a lexicon of common terminology;
- Work towards assessments combined into a common information system and map; and
- Providing information and maps on websites.

Success stories: moving disaster risk reduction forward in Canada

- *The Land and Infrastructure Resiliency Assessment Project helps Canadians understand the potential costs of natural disasters, and the value of adaptation.*
- *The Invitational Drought Tournament helped policy makers develop strategies to deal with a multi-year drought.*
- *The Village of Cumberland on Vancouver Island dedicated an issue of its quarterly magazine "Cumberland Now" to emergency management. The issue? The village? has been incredibly successful, both nationally and internationally.*

Results of Thematic Sessions

Risk Assessment Panel

Assessing risk with respect to hazards and vulnerabilities underlies disaster risk reduction and is fundamental to good decision-making. The panel, moderated by Mr. Mark Williamson (Deputy Director General, Centre for Security Science, Defence Research and Development Canada), included presentations by Mr. John Ash (Chief, Security and Emergency Services, City of Ottawa), Mr. David Lapp (Manager, Professional Practices, Engineers Canada) and Mr. Harvey Hill (Manager, Climate Decision, Support and Adaptation Unit, Agriculture and Agri-Food Canada).

Risk Assessment and Emergency Management for the City of Ottawa

Mr. John Ash discussed how the City of Ottawa conducted a vulnerability analysis in 2003, based on the variables of hazard probability, consequence and response capability. The City's top 10 risks were identified as infectious disease outbreak, earthquake, radiation, water contamination, a lifeline (sewer system) failure, ice storm, terrorism, explosion, demonstration or riot and hazardous material spill. Since 2003, the order of risks has changed, with some no longer being in the top 10; a reminder that risk assessments need to be revisited on a regular basis and that priorities shift over time.

Through this process, the City of Ottawa developed an improved understanding of existing capacity and capability. Challenges in developing the assessment included the availability of information, restrictions on institutions being willing or able to share information, the inherent limitations of disaster scenarios and too great a reliance upon outside organizations for response. The project provided opportunities to more broadly engage stakeholders, to incorporate risk analysis into municipal planning and to build risk reduction into community planning.

An Engineering Perspective on Climate Change

Mr. David Lapp presented a protocol developed through a partnership between Natural Resources Canada and Engineers Canada, the *National Engineering Vulnerability Assessment Project* that can be used to help adapt to climate change and involve engineers in the process.

Risk assessments based upon historical data are unlikely to be accurate in the future, due to climate change, thus there is a need for engineers to review rules, standards and practices. It is particularly important because small changes in hazards such as wind speeds, snow loads and rainfall rates can result in large increases in damages to infrastructure. For example, a 25% increase in peak wind gusts can cause a 650% increase in building damages. Most hazards are beyond our control, but we can adapt by reducing our vulnerability.

The protocol that Mr. Lapp presented assesses the impacts of climate change on infrastructure. The goal of this tool is to assist infrastructure owners and operators in effectively incorporating climate change adaptation into design, development and decision-making. The five-step evaluation process is intended for use by qualified professional engineers, but requires local knowledge and experience to be effective.

The protocol focuses on the principles of vulnerability and resiliency and its use ensures due diligence on the part of designers.



The Impact of Natural Disasters on Land, Infrastructure and Drought

Mr. Harvey Hill from Agriculture and Agri-Food Canada presented two initiatives, both of which are aimed at assisting decision-makers in understanding the costs and opportunities under different adaptive responses, by providing a visualization of potential impacts of natural disasters, adaptations strategies, and to evaluate the responses.

The Land and Infrastructure Resiliency Assessment Project provides a standard method to assess risk to infrastructure and the environment, and develops and ranks adaptive responses. It is a computerized scenario-based approach that incorporates a simulated hazard event, a regional economic analysis and the effect of different adaptive options in terms of reduced costs.

The Invitational Drought Tournament was held in February 2011, and was a multi-disciplinary forum whose goal was to reduce drought risk over the short- and long-term by maximizing economic potential, minimizing social stress and improving environmental conditions. During the tournament, teams had to assess opportunities associated with choosing a course of action, understanding that this decision could impact future vulnerabilities and risks and to plan adaptation strategies accordingly.

Concluding Summary

The presenters emphasized the importance of conducting assessments of vulnerability, probability, consequence and response capability. The assessment process requires the participation of many stakeholders, a good understanding of capacity, capability, communication and marketing. The presenters highlighted that challenges in implementing risk assessments echo the City of Ottawa experience; the availability of information, the ability or willingness to share information and the limitations inherent in using scenarios.

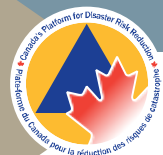
Mitigation Session

The mitigation thematic session provided an opportunity for the membership to discuss issues of common concern and provide feedback on mitigation strategies.

Mitigation is any pre-disaster activity taken to eliminate or reduce the impacts of disasters in order to protect lives, property, the environment, and reduce economic disruption. It assumes that society is exposed to risks, regardless of whether or not a hazard occurs. Examples of mitigation include building and safety codes, land-use management, monitoring/inspection, public education, research, risk mapping, regulations, tax incentives and tax disincentives. Prevention and mitigation offers the greatest opportunities to reduce the cost of disasters, and have been shown to have very favourable cost-benefit ratios. Mitigation strategies must be carefully thought-out or there can be unintended consequences that result in failure.

The session participants noted the importance of creating community-based programs that begin with the people, needs and expertise of the community, support local initiatives, and are based upon common standards. Such programs should rely upon mapping risk information, hazard data and capability inventories. Incentives and disincentives through private sector insurance could also be used to encourage mitigation activities. It was noted that while there is a great deal of academic research on this topic it should be better incorporated into the practice of mitigation.

Session participants also noted that education and awareness are crucial to help create a culture of safety through the better use of lessons learned, information sharing and education. It was also emphasized that there are opportunities for enhanced disaster risk reduction activities as people and institutions who work in this field continue to collaborate towards common goals. In particular, the mentoring of youth and young professionals was highlighted.



Report Back Session and Emergent Themes

This plenary session provided an opportunity for the attendees to report on the working group and thematic sessions and to discuss cross-cutting issues. While a wide range of topics were covered, common elements emerged. An analysis of the various presentations and discussions resulted in the identification of seven themes, each of which provides opportunities for Canada's Platform, the Working Groups and the General Members to advance disaster risk reduction in Canada.

During the Report Back session, 45 attendees responded to a call for action to make specific personal commitments to advance the Platform agenda during the coming year. Some of the commitments included personal preparedness, community work, public education and carrying the Platform message to professional organizations.⁹

Themes

- 1. Collaboration:** Disaster risk reduction by definition requires people and organizations from many different sectors to work together toward common goals. Canada's Platform is an example of an organization that enables representatives from a large variety of organizations and individual Canadians to come together. Progress has been made in bringing stakeholders together and continued support will enable Canada's Platform to increase participation in disaster risk reduction activities.
- 2. Leadership:** The importance of disaster risk reduction champions to create the social and political momentum necessary to move this agenda forward was noted during the Roundtable, in particular during the Mitigation Session. Leadership is needed from all sectors and at all levels; champions can come from anywhere.
- 3. Knowledge Transfer:** Good hazard and risk analysis requires information from many sources that, though available, are often not accessed by communities with limited resources. The District of North Vancouver successfully engaged all stakeholders in the community in this process, and provides an example for others to follow. The Science and Technology Working Group and Mr. Paul Kovacs both highlighted the importance of sharing information.
- 4. Community-Based Approaches:** Disaster risk reduction strategies that are community-based are essential to creating a safe society, particularly when they incorporate local knowledge and engage the community. The United Nations International Strategy for Disaster Reduction has incorporated community-based initiatives as a basis for much of their disaster risk reduction strategy, particularly through their "*Making Cities Resilient*" campaign. A Canadian example of a community-based

⁹ Appendix C lists participants personal commitments

approach is a project by the Justice Institute of British Columbia to assist rural, remote and coastal communities to better map local vulnerabilities, and to harness local assets.

5. **Resilient Communities:** Resilient communities are communities that are able to resist, absorb, accommodate, recover, and to spring back from a disaster. The notion of resilience has a long history in other fields and has increasingly been adopted within the disaster management community over the past decade. As a cross-cutting approach, resilience is foundational in terms of its significance to disaster risk reduction, not only at local levels but also at regional and national levels.
6. **Engagement:** Disaster risk reduction is about bringing people together to talk, identify and take action to make Canada more resilient. When people, communities and other stakeholders are engaged, successful disaster risk reduction follows. Engagement enables the development of local and national networks, cross-sectorial groups, or virtual communities sharing information and ideas to reduce risk. Canada's Platform for Disaster Risk Reduction is an example of an engagement forum, bringing together non-governmental organizations, the private sector and Canadians.
7. **The Role of the Private Sector:** With most of the critical infrastructure in Canada being owned by the private sector, they are a crucial stakeholder in disaster risk reduction. Private sector stakeholders, like the insurance industry, can use incentives to encourage good prevention and mitigation practices. Strategies such as the development and promotion of insurance may provide opportunities for effective risk reduction within the context of public-private partnerships.

Conclusion and Call to Action

Canada is a relatively wealthy and resilient society that has already done much to reduce disaster risk. Nevertheless, both our own disaster history and recent catastrophic events in other parts of the world remind us that Canadians are still vulnerable. There are actions that individuals, organizations, businesses and government can take to not only make us safer, but ensure that Canadians are resilient and can spring back from a disaster. Doing this requires that people and institutions understand both the risks and the opportunities, collaborate and share information and take action—this is everyone's responsibility.

We know how to make our society more resilient, less exposed to hazards, and less vulnerable. Accomplishing these objectives requires action. Canada's Platform for Disaster Risk Reduction provides a vehicle for people to participate in a process to achieve these goals. Many of us are already contributing, but more Canadians have to be engaged. We are acting. We are reaching out.

*The Third Annual Roundtable of
Canada's Platform for Disaster
Risk Reduction
will be held in Vancouver
October 23, 2012*



Appendix A

Definitions

All-Hazards: Emergency management adopts an all-hazards approach in every jurisdiction in Canada by addressing vulnerabilities exposed by both natural and human-induced hazards and disasters. The all-hazards approach increases efficiency by recognizing and integrating common emergency management elements across all hazard types, and then supplementing these common elements with hazard specific sub-components to fill gaps only as required. As such, “All-Hazards” does not literally mean preparing to address any and all potential hazards in existence. Rather, it emphasizes the leveraging of synergies common across hazards and maintaining a streamlined and robust emergency management system. The “All-Hazards” approach also improves the ability of emergency management activities to address unknown hazards or risks.

Disaster: Essentially a social phenomenon that results when a hazard intersects with a vulnerable community in a way that exceeds or overwhelms the community’s ability to cope and may cause serious harm to the safety, health, welfare, property or environment of people; may be triggered by a naturally occurring phenomenon which has its origins within the geophysical or biological environment or by human action or error, whether unintentional or malicious, including technological failures, accidents and terrorist acts.

Disaster Risk Reduction: The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through the mitigation and prevention of exposure to hazards, decreasing vulnerability of individuals and society, strategic management of land and the environment, improved preparedness for disaster risks, coordinated response and planning and forward looking recovery measures.

Emergency: A present or imminent event that requires prompt coordination of actions concerning persons or property to protect the health, safety or welfare of people, or to limit damage to property or the environment.

Emergency Management: The management of emergencies concerning all-hazards, including all activities and risk management measures related to prevention and mitigation, preparedness, response and recovery.

Hazard: A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Partner: Any individual, group, or organization that might be affected by, or perceive itself to be affected by an emergency.

Prevention: Actions taken to avoid the occurrence of negative consequences associated with a given threat; prevention activities may be included as part of mitigation.

Prevention/Mitigation: Actions taken to eliminate or reduce the impact of disasters in order to protect lives, property, the environment, and reduce economic disruption. Prevention/mitigation includes structural mitigative measures (e.g. construction of floodways and dykes) and non-structural mitigative measures (e.g. building codes, land-use planning and insurance incentives). Prevention and mitigation may be considered independently or one may include the other.

Resilience: Resilience is the capacity of a system, community or society exposed to hazards to adapt to disturbances resulting from hazards by persevering, recuperating or changing to reach and maintain an acceptable level of functioning. Resilient capacity is built through a process of empowering citizens, responders, organizations, communities, governments, systems and society to share the responsibility to keep hazards from becoming disasters.

Resistance: The ability to resist or withstand impacts so that inevitable damage from an extreme event does not reach 'disastrous' proportions.

Risk: The combination of the likelihood and the consequence of a specified hazard being realized; refers to the vulnerability, proximity or exposure to hazards, which affects the likelihood of adverse impact.

Risk-based: The concept that sound emergency management decision-making will be based on an understanding and evaluation of hazards, risks and vulnerabilities.

Risk Management: The use of policies, practices and resources to analyze, assess and control risks to health, safety, environment and the economy.

Sustainable: A sustainable approach is one that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Vulnerability: The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards. It is a measure of how well prepared and equipped a community is to minimize the impact of, or cope with, hazards.


Appendix B

Platform Agenda

Agenda

2nd Annual National Roundtable on Disaster Risk Reduction - October 18, 2011

Delta Ottawa City Center
101 Lyon Street, Ottawa, Ontario



Time	Activity			
8:30-08:40	Overview			
8:40-9:10	Opening Comments – Public Safety Minister Toews			
9:10-9:55	Keynote address – Paul Kovacs, Institute for Catastrophic Loss Reduction			
10:00-10:30	Update on Canada's Platform Action Plan – Advisory Committee Co-chairs			
	Health Break			
10:45-12:00	Working Group and Thematic Breakout Sessions			
	Resilient Communities	Risk Assessment	Voluntary Sector	Private Enterprise/ Economic Resiliency
12:00-13:00	Working Lunch - Mayor Richard Walton, District of North Vancouver			
13:00-15:00	Working Group and Thematic Breakout Sessions			
	Resilient Communities	Science & Technology	Mitigation	Platform's Way Forward
	Health Break			
15:30-16:30	Reporting Back – outcomes from Working Group and Thematic Sessions			
16:30-17:00	Concluding remarks and way forward – Gina Wilson, Assistant Deputy Minister, Emergency Management, Public Safety Canada			
17:30	Social event hosted by the Canadian Risk and Hazards Network (CRHNet) and the Vancouver Institute for Visual Analytics (VIVA)			

Appendix C

Participant Commitments

Participants were asked to make personal commitments to advancing disaster risk reduction in Canada. Below are the commitments and as well as select reporting on implementation.

Outreach – providing information to the broader community through publications, social media and presentations at meetings.

- I will have a talk with the President of Associations to which I am affiliated about the Platform and get them to get involved;
- I will get more information and disseminate around me;
- I will talk with my Provincial Emergency Management Office about their community emergency plans;
- I will give a presentation about the Platform to my Provincial risk analysis/management community;
- I will share My City is Getting Ready and Canada's Platform for Disaster Risk Reduction with my local municipalities;
- I will reach out to Northern and remote communities;
- I will build cross links with other national programs;
- I will approach my city to talk about the Platform;
- I will get on a local radio program to talk about disaster risk reduction;
- I will advocate for the Platform in my organization to promote effective engagement;
- I will get my students engaged in the Platform;
- I will develop new contacts for the Platform, specifically the media;
- I will develop a YouTube video; and
- I will develop a virtual community of practice for risk assessment users.

"I am pleased to let you know that I did make contact with the Association President and we are talking about bringing a presentation to the organizations to inform their members about the National Platform and its role"

"I have indeed managed a first meeting with one Provincial Emergency Management Office regional manager where weather-related elements of emergency plans were discussed. I hope to have a few more meetings on this topic. The opportunity to talk about emergency plans and other weather-related issues with community emergency coordinators might also present itself later this spring."



Resources – Developing new tools or providing resources to help inform people on disaster risk reduction.

- I will work towards developing a new National Disaster Mitigation Program within Public Safety Canada;
- I will create a national land-use risk guide through the Resilient Communities Working Group;
- I will advocate for an interoperable mapping of risks and hazards;
- I will train crew on disaster risk reduction;
- I will provide materials on foresight and trend analysis germane to the resolution of risk of emergencies;
- I will offer a pilot project on community resiliency in small remote community to test tools;
- I will try and incorporate the Platform in my recommendations and strategies in my final phase of my PhD research;
- I will ensure that disaster risk reduction is included in one or more courses in 2012;
- I will build a match-making / networking tool; and
- I will identify existing information on Disaster Risk Reduction at provincial, community and federal levels and offer a platform to share this information.

“On December 8, 2011, a workshop was held for local stakeholders in a Metro Vancouver to develop a risk-based land-use guide. Participants provided practical suggestions on how to use existing municipal instruments to reduce risk through a land-use strategic or operational decision. That material is currently being collated into a wiki for communal writing.”

Engagement – Participating in Working Groups and the Platform.

- I will participate in the Resilient Communities Working Group;
- I will initiate a Voluntary Sector Working Group Action Plan;
- I will work with the Voluntary Sector Working Group;
- I will volunteer to a volunteer organization and talk to engagement to Emergency Management and Risk Reduction;
- I will partake in a public sector exercise as an observer and share the knowledge internally; and
- I will work to increase membership in the Economic/Private Sector Working Group.

“Working with Resilient Communities Working Group, I have assisted the Chair with national outreach and developed a poster to raise awareness of the UN Campaign.”

Personal preparedness – committing to work at home, in a community or within a sector / business to understand what disaster risk reduction is and start building a plan / developing capacity.

- I will give a talk to my community group about disaster risk reduction;
- I will prepare my household;
- I will work on disaster resilience for my home/family;
- I will work on a neighborhood disaster plan (three families); and
- I will engage my crucial facility communities in the Platform and its communities.

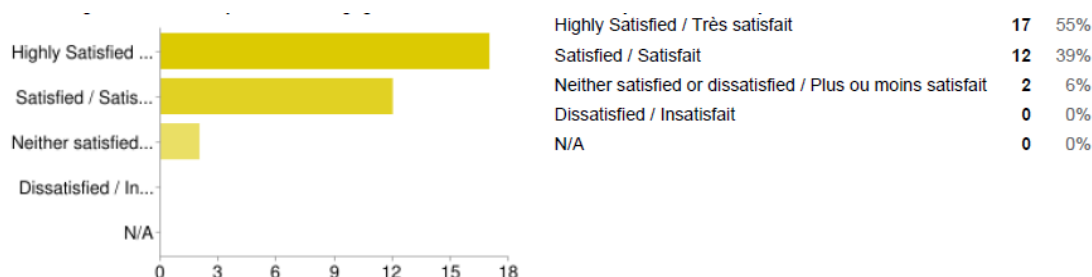
Appendix D

Attendee Evaluations

Evaluation forms filled out by the attendees demonstrate a high degree of satisfaction with the Roundtable as a means to engage with others and create dialogue. Most people indicated a willingness to continue to actively work on issues that arose during the day's discussions.

Attendee Evaluation:

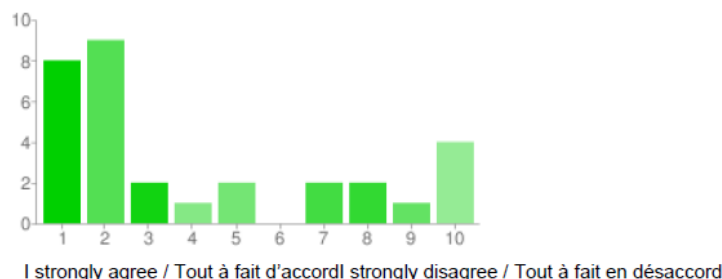
The 2nd Annual Round Table on Disaster Risk Reduction as a forum to network with other persons engaged in Disaster Risk Reduction



The 2nd Annual Round Table on Disaster Risk Reduction as a forum to enable an open dialogue (deliberative dialogue) on Disaster Risk Reduction

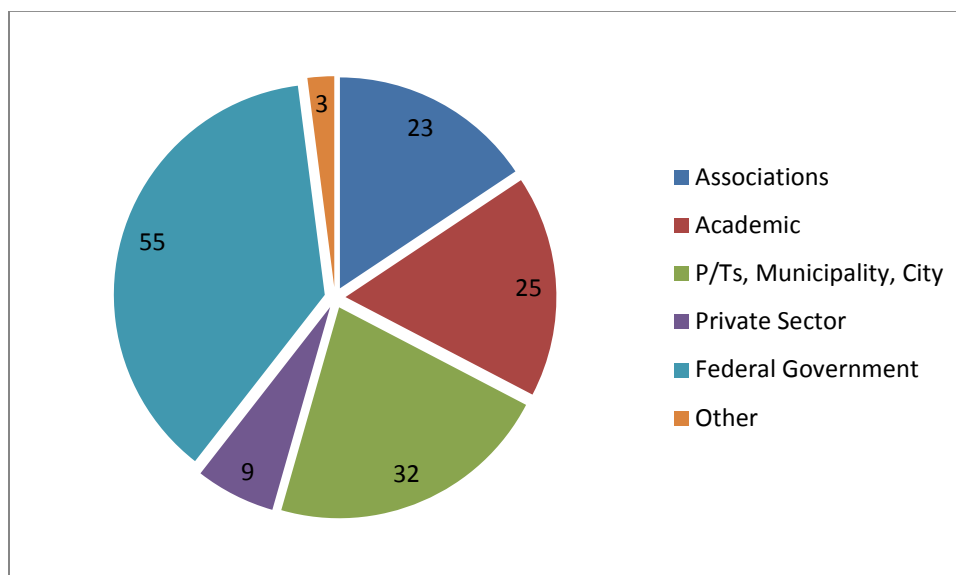


I am interested in engaging more actively on issues discussed at the 2nd Annual Round Table on Disaster Risk Reduction.



Appendix E

Participant Representation



Of the 147 people who attended the Roundtable 87 were from various levels of government, 25 were academics, 23 were from professional associations with the remainder being from the private sector or another category. The Platform will benefit from greater engagement with the private sector.

