



The 2009 ICLR Plan and Budget

October 8, 2008



Contents

	Page
Executive Summary	1
Planned Activities in 2009.....	1
Key Accomplishments in 2008	2
Strategic Priorities for 2006-2011	3
The Institute for Catastrophic Loss Reduction	
Mission.....	4
Principles	4
Planning	5
Partners	5
People	6
Planned Activities for 2007-2011	
Disaster resilient communities - RSVP cities	
Quality research.....	11
Safety partnerships.....	12
Industry awareness.....	14
Consumer awareness.....	15
Safer design and construction of buildings – Designed for safer living	
Quality research.....	17
Safety partnerships.....	19
Industry awareness.....	20
Consumer awareness.....	22
Disaster risk reduction for small business - Open for Business™	
Quality research.....	24
Safety partnerships.....	24
Industry awareness.....	25
Consumer awareness.....	27
Conclusion	28

The 2009 ICLR Plan and budget

Executive Summary

Planned activities in 2009

- ICLR will continue to seek additional funding for the International Project Office for the International Council for Science's global hazard research program – Integrated Research on Disaster Risk (IRDR)
- ICLR will complete an ambitious flood research program in collaboration with Swiss Re to explore the conditions that could make flood an insurable risk in Canada. The early research will expand to also engage industry leaders in a discussion about insuring flood risks. The program will include a comprehensive report on the potential for flood insurance in Canada.
- ICLR's ***Designed for safer living*** program will expand significantly throughout the year propelled by the construction of disaster resilient homes; the beginning of testing on a full-scale house at the Insurance Research Lab for Better Homes (IRLBH); and the Institute's ongoing safety retrofit showcase program. Participation in the ONADAPT program with the Government of Ontario and potential collaborations with leading home builders like Monarch provide a foundation to influence the building code. ICLR will also complete a safety retrofit in Toronto, perhaps in partnership with Emergency Management Ontario.
- ICLR will continue to expand its ***Open for Business***TM program to promote disaster loss reduction for small business. This will include tools specifically designed for small and very small businesses to support continuity planning, risk assessment and loss reduction. This will include projects in local business improvement areas to test the effectiveness of the tools, partnerships with member insurers, and collaboration with government agencies responsible for emergency management and/or small business development.
- ICLR will also advance its most ambitious research effort, the ***RSVP cities*** program, teaming up with Toronto, Kelowna and other municipalities to champion comprehensive disaster loss reduction through a focus on resilient, sustainable, vibrant and prosperous communities. ICLR's unique "triple dividend" model addresses disaster management, climate change and sustainable development.
- The Institute will launch the Insurance Advisory Committee, an important new forum for members to work directly with ICLR researchers to advance industry practices and hazard loss resilience.
- ICLR will continue to support multidisciplinary disaster loss reduction research across a broad range of hazards. Gordon McBean continues to champion establishment of a comprehensive emergency management strategy that includes a national mitigation and loss prevention program, and is Canada's leading advocate for a climate change strategy that includes both a long term energy strategy and detailed plan to promote adaptation to change in the climate, including severe weather. Slobodan Simonovic is leading a climate change study for the City of London officials seeking to better manage urban flood risks. Mike Bartlett and his team has begun testing at the IRLBH of home design and construction practices to withstand damage from extreme wind events. Kristy Tiampo has launched her innovative research program into near term earthquake risk in British Columbia, Quebec and elsewhere, starting with an assessment of the quality of the data available concerning historic events.

The 2009 ICLR Plan and budget

Key accomplishments in 2008

- ICLR continued to reposition its activities to embrace the new five year strategic plan where the Institute's proven success in supporting quality disaster loss prevention research will increasingly provide a scientific base for actions that build resilient communities. The *Science to Action* theme will support ongoing research and public outreach in the three program areas of disaster resilient homes, cities, and small businesses.
- ICLR completed a home safety retrofit in Montreal attracting extensive media coverage. This was the sixth year ICLR has participated in Emergency Preparedness Week with a retrofit.
- In partnership with The Co-operators and the Downtown Guelph Business Association (Downtown Guelph), ICLR launched its **Open for Business™** program in Guelph, Ontario. With financial support from The Co-operators and in-kind support from Downtown Guelph, a university student was hired to roll out the program to 350 small businesses in the Guelph area. Remarkably, 97 percent of the local businesses participated in the program
- ICLR developed a Climate Change Adaptation reference collection for the City of Toronto. The collection of 350 reports will help better inform municipal decision makers.
- The Co-operators General Insurance Company initiated construction on Canada's third **Designed for safer living** home. The Co-operators partnered with ICLR to respond to a total loss by a policy holder - this time in Fort Erie, Ontario - by agreeing with the homeowner to construct a new home that includes all of the disaster resilience features identified in the Institute's *Safer Living* program. The build showcases the contribution of Canada's insurers in advancing and promoting the science of safer home construction and design.
- The Institute completed its first resilient, sustainable, vibrant and prosperous (RSVP) cities study with an assessment of resilience in Kelowna. City officials participated in a comprehensive evaluation of the 2003 Okanagan Mountain Park fire, showcasing the community actions taken to enhance resilience to wildfires.
- ICLR, in partnership with the Canadian Forest Service, hosted an international summit on the changing face of wildland fire. The summit brought together wildland fire experts from Canada, the United States and Australia to discuss current problems and future issues facing wildland fire management agencies.
- ICLR partnered with Swiss Re to launch a two year study of flood management in Canada. The research focus is on identification of reforms required to make flood insurable in Canada.
- ICLR completed a significant contract with the National Roundtable for the Environment and the Economy (NRTEE) by providing a major paper addressing the role of insurance to support adaptation of critical infrastructure in the Arctic due to change in the climate.
- ICLR hosted the world flood defence conference, successfully bringing together leading flood management professionals from around the globe.
- The Institute will complete the year within budget for the eleventh consecutive year, while building the organization and continuing to influence through strategic partnerships.

The 2009 ICLR Plan and budget

Strategic Priorities for 2006-2011

Natural disasters have killed more than one million people worldwide over the last ten years and have caused more than CAD 1 trillion in damage. Disaster losses have doubled every five to ten years since the 1950s, and in 2005 exceeded CAD 250 billion worldwide (economic). While seismic risks are stable, the frequency and severity of damaging storms is increasing. If this trend continues, insurers around the world will face a trillion dollars in damage claims over the next 15 years. Many disaster losses are entirely preventable. In order to help address this impending increase in natural disaster losses, the Institute for Catastrophic Loss Reduction (ICLR) has developed a long-term communications strategy to enhance its messaging. Under a broad theme of “science to action, Canada’s insurers building disaster resilient communities” the strategy is centred around three programs:

- RSVP cities (resilient, sustainable, vibrant and prosperous cities);
- Designed for safer living (safer design and construction of buildings); and
- Open for Business™ (disaster risk reduction for small business).

Working through ICLR, Canada’s insurers are the only group in the country providing comprehensive disaster loss prevention advice to homeowners and home builders, as well as to owners of small businesses. Actions have been identified to help homeowners and owners of small business reduce the risk of injury, damage, and interruption of business due to severe wind, hail, earthquakes, flood, wildfire and a number of other hazards. We are also working to promote the construction of disaster resilient homes. ICLR is internationally recognized for its leadership in multi-disciplinary disaster prevention research.

Through ICLR, insurers have provided support to dozens of academic researchers who are working to identify best practices. Quality research provides the foundation for better public policy and disaster management. ICLR’s research findings are used to help consumers and owners of small businesses better understand the hazards they face, and to identify simple steps they can take to better protect their families, homes and businesses.

ICLR is committed to reducing disaster deaths, injuries and property damage through the development of disaster prevention knowledge, and the broad dissemination of its research findings. Moreover, the Institute is working to transfer this emerging scientific knowledge into information available to decision makers to support actions to build resilient communities. This research deals with damage from wind, snow, ice, earthquakes, mould and a range of other hazards.

ICLR will seek to address the above three program areas by achieving its objectives in four key result areas:

- Quality research;
- Effective partnerships;
- Industry education; and
- Consumer awareness.

Nature’s extreme events can be relentless and unforgiving, but need not result in disasters. Hazards demand that individuals prepare, and that communities and businesses invest in resilience and continuity measures. Knowledgeable individuals and resilient communities are the best way to prevent hazards from becoming disasters. ICLR works to enhance the disaster resilience of homes, communities and businesses across Canada.

The Institute for Catastrophic Loss Reduction

The Institute for Catastrophic Loss Reduction (ICLR) is a world-class centre for multi-disciplinary disaster prevention research and communications. ICLR was established by Canada's property and casualty insurance industry as an independent, not-for-profit research institute affiliated with the University of Western Ontario. Institute staff and research associates are international leaders in wind and seismic engineering, atmospheric science, risk perception, hydrology, economics, geography, health sciences, public policy and a number of other disciplines.

Mission

To reduce the loss of life and property caused by severe weather and earthquakes through the identification and support of sustained actions that improve society's capacity to adapt to, anticipate, mitigate, withstand and recover from natural disasters.

Principles

- While the threat of severe weather and earthquakes is increasing, sustained action can reduce catastrophic losses.
- Hazard assessment and risk identification are the cornerstones of catastrophic loss mitigation.
- Solid, applied research provides an essential foundation for effective action to reduce future losses.
- Those who knowingly choose to assume greater risk must accept an increased degree of responsibility for their choice.
- Communication with the public before a peril strikes is an important means of reducing losses.
- Local and individual actions are the most effective means of reducing the loss of life and property.
- Partnership is the best approach to resolving shared problems, particularly public safety concerns.

The 2009 ICLR Plan and budget

Planning

ICLR's plan has three programs: Disaster resilient communities; Safer design and construction of buildings; and Disaster risk reduction for small business. ICLR will address the above three issues by achieving its objectives in four key result areas: quality research; safety partnerships; industry awareness; and consumer awareness. ICLR's Board of Directors regularly tracks performance in order to govern the Institute toward the realization of its mission and priorities. The Board oversees this process of planning, monitoring and evaluating performance by following an annual strategic planning cycle.

October

In October, the ICLR Board establishes the plan (this document) and budget for the year ahead.

January

Each January, the ICLR Board evaluates the organization's performance of the past year against ICLR's longer-term goals.

May

In May, the ICLR Board reviews progress to date on key performance measures. Performance for the previous year is presented to the ICLR membership at the Annual General Meeting (AGM) which is also held in May.

Partners

Partnership is the best approach to resolving shared problems -- particularly public safety concerns. ICLR has established strong working relationships with numerous parties, including:

- The University of Western Ontario (UWO)
- Canadian Red Cross Society
- Canadian Forest Service
- Disaster Prevention Research Institute, Kyoto
- Federation of Canadian Municipalities (FCM)
- Geological Survey of Canada
- Health Canada
- Industry Canada
- Institute for Business and Home Safety (IBHS), Tampa
- Insurance Bureau of Canada (IBC)
- Meteorological Service of Canada
- National Research Council (NseRC)
- National Roundtable for the Environment and the Economy (NRTEE)
- Emergency Preparedness Canada
- Emergency Management Ontario (EMO)
- Natural Resources Canada (NRC)
- United Nation's Educational, Scientific and Cultural Organization (UNESCO)
- International Strategy for Disaster Reduction (ISDR)
- United Nations/World Meteorological Organization's International Panel on Climate Change (IPCC)
- International Council for Science Union (ICSU)

The 2009 ICLR Plan and budget

People

Paul Kovacs, Executive Director and Founder. An economist specializing in insurance issues, natural disaster loss prevention, and public policy. He is President and CEO, PACICC and Adjunct Research Professor, Economics, UWO. Since 1997 he has been an active participant with the UN/WMO Intergovernmental Panel on Climate Change.

Dr. Alan Davenport, Research Director. Founder of the UWO Boundary-Layer Wind Tunnel Laboratory. He is currently working with several Canadian companies in the development of high performance, low cost, prefabricated housing for use in post-disaster situations and other applications. Professor Davenport was Chair of the Canadian Committee for the International Decade of Natural Disaster Reduction (IDNDR) and continues as an active participant in the follow-up activities.

Dr. Gordon McBean, Director, Policy Studies. Professor in the Departments of Geography and Political Science at UWO. He is a leading expert on climate change, its impacts and response strategies. He is the former Assistant Deputy Minister for the Meteorological Service of Canada and has worked with colleagues around the world on weather and climate. He is Chair of the Canadian Foundation for Climate and Atmospheric and Science, Chair of the hazard research program at the International Council for Science Union (ICSU)

Dr. Slobodan Simonovic, Director, Engineering Studies. Professor in the UWO Department of Civil and Environmental Engineering. He is a leading expert on flood prevention and management issues. He has been very involved in risk and adaptation strategies around the world. He was a member of the International Joint Commission's Red River Task Force and is serving as an officer for a number of national and international water organizations.

Dr. Ron Stewart, Department Head, Department of Geography, at the University of Manitoba. He is the former Research Chair in Extreme Weather. Ron is leading the study of hydrometeorological extremes around the world, including the examination of Prairie draught in Canada.

Dr. Mike Bartlett, Associate Chair and Associate Professor, Civil and Environmental Engineering Department, UWO. He is a registered Professional Engineer in British Columbia, Alberta, Yukon and Ontario. His research focuses on housing damage caused by natural hazards (snow loads, high winds and earthquakes), structural safety (resistance to heavy loads and stresses) and structural engineering (new construction materials and recycling in construction applications).

Dr. Kristy Tiampo, Benfield/ICLR Industrial Research Chair, Earthquake Hazard Assessment, Assistant Professor, Earth Sciences, UWO. Her research focuses on reducing losses from Canada's next earthquake through the assessment of earthquake damage risk over shorter time periods, i.e. the next five or ten years. She is developing comprehensive simulation models to assess near term seismic risk in British Columbia, Quebec and elsewhere.

Dr. Greg Kopp, Canadian Research Chair in Environmental Fluid Mechanics with Faculty of Engineering at UWO. He is a leader in the study of wind engineering and the response of structures to full-scale loads. His study of the response of structures to wind includes research in the laboratory and extensive field research.

The 2009 ICLR Plan and budget

Dr. Gail Atkinson, Canadian Research Chair in Earthquake Hazard and Ground Motions with the Department of Earth Sciences at The University of Western Ontario. An international leader in engineering seismology. She is working to enhance building codes, advance community preparedness and map seismic vulnerability.

ICLR Staff Members:

Tracy Waddington (Manager, Resilient Homes and Corporate Secretary). Tracy has managed ICLR's child care safety program and is leading the Institute's **Designed for safer living** program. Since 2001 she has managed the annual safety retrofit of a showcase home for presentation to the media during Emergency Preparedness Week. In 2004, Tracy completed a three-year course in association management sponsored by the Canadian Society of Association Executives and in 2005 she completed a board governance course.

Glenn McGillivray (Managing Director) joined ICLR in November 2005 after more than 11 years with Swiss Re, most recently as assistant vice president of corporate communications and corporate secretary. He has more than 15 years of corporate communications experience in the property and casualty insurance industry and has written more than 100 publications, journal, and magazine articles on a range of industry issues for Canadian Underwriter, Canadian Insurance, Claims Canada, Municipal World, Disaster Management Canada and Canadian Consulting Engineer magazines, as well as for the International Journal of Insurance Law. His main duties at ICLR centre around "getting the word out" on major ICLR projects and initiatives, and drafting research proposals. Glenn is also providing leadership in the implementation of the **Open for Business™** program.

Dan Sandink (Manager, Resilient Communities and Research) joined ICLR in September 2006 upon completion of his Masters degree in Geography. His research experience includes a detailed study of homeowner perceptions of flood and sewer backup damage in Peterborough and a comparative study of homeowners' perceptions of sewer backup loss prevention across two major Canadian cities. He is also working to, among other things, identify best practices for municipalities seeking to promote disaster resilience within the Institute's **RSVP for cities** program.

The 2009 ICLR Plan and budget

ICLR Research Associates

Lindsay Anderson (Cornell, Engineering)

Jean Andrey (Waterloo, Geography)

John Braun (UWO, Statistics/Actuarial)

Don Burn (Waterloo, Engineering)

Luc Chouinard (McGill, Engineering)

Jim Davies (UWO, Economics)

Matt Davison (UWO, Mathematics)

David Eaton (Calgary, Earth Sciences)

Hesham El Naggat (UWO, Engineering)

Ashraf El Damatty (UWO, Engineering)

Jon Galsworthy (UWO, Engineering)

Horia Hangan (UWO, Engineering)

Dan Henstra (Windsor, Political Science)

Hanping Hong (UWO, Engineering)

Diana Inculet (UWO, Engineering)

Judith Kulig (Lethbridge, Health Sciences)

Howard Kunreuther (Wharton, Economics)

Ryan Lee (Calgary, Risk Studies)

Tara McGee (Alberta, Earth & Atmospheric Sciences)

Craig Miller (UWO, Engineering)

Brian Mills (Waterloo, Geography)

Gerry Moschopoulos (UWO, Engineering)

Brenda Murphy (Laurier, Geography)

Tim Newson (UWO, Engineering)

Norma Nielson (Calgary, Risk Studies)

David Rosowsky (Oregon State, Engineering)

Andy Sancton (UWO, Political Science)

Eric Savory (UWO, Engineering)

James Scott (Toronto, Engineering)

Dan Shrubsole (UWO, Geography)

Kevin Simmons (Austin College, Economics)

Al Slivinski (UWO, Economics)

Dan Sutter (Oklahoma, Economics)

Keith Thompson (Dalhousie, Oceanography)

Peter Vickery (UWO, Engineering)

Ernest Yanful (UWO, Engineering)

Robert Young (UWO, Political Science)

Maged Youssef (UWO, Engineering)

Planned Activities for 2007-2011

ICLR is striving to support loss prevention in three areas (disaster resilient communities; safer design and construction of buildings; and disaster risk reduction for small business) -- each with four key result areas (quality research, effective partnerships, industry education and consumer awareness).

1. Disaster resilient communities - *RSVP for cities*

Over the past 10 years, ICLR staff and research associates have accumulated a significant amount of knowledge and expertise in natural hazards and hazards management. As well, researchers working within the hazard management field have generated a massive knowledge base on disaster mitigation. The logical next step is to develop strategies to ensure that this knowledge is applied to ensure that disaster damages are mitigated and/or prevented. Further, many municipalities have developed and implemented successful and progressive disaster mitigation strategies. However, there are few mechanisms in existence to ensure that good practices are shared amongst various municipalities. ICLR intends to fill this gap by pursuing a number of municipal-level disaster mitigation strategies and projects.

The primary focus of the community resilience efforts will be to enhance the ability of municipal government to protect the safety of their citizens and reduce private property damages. This objective is largely tied to enhancing the resilience of a community's critical infrastructure, ensuring new and existing development is resilience and/or resistant to hazards, and increasing public and professional knowledge of disaster risk reduction.

Over the next few years, ICLR will pursue disaster resilience in local communities through developing long-term strategies for community disaster resilience, and a long-term strategy on flood mitigation with a focus on urban flooding, basement flooding and sewer backup. ICLR will develop these strategies through pursuing the following themes for the promotion of disaster resilience:

- Pursue risk management tools and methods that can be applied at the municipal level for disaster mitigation;
- Identify and collaborate with communities that develop and employ progressive disaster mitigation strategies;
- Understand and implement effective insurance industry consumer awareness programs to encourage the adoption of disaster risk reducing practices;
- Develop and strengthen ties with professionals involved in disaster mitigation working in the private, non-government, non-profit and government sectors;
- Communication of research and best practices through publication of research findings in relevant industry publications, focussed both at the insurance and public sectors;
- Fostering links between the academic community, the insurance industry and municipal governments;
- Enhancing the role of disaster mitigation in municipal climate change adaptation strategies;
- Research and better understanding of existing homeowner level tools for disaster mitigation and how they can be applied at the municipal government level;
- Continued collaboration with the insurance industry to promote insurance involvement in the adoption of flood mitigation strategies by individual clients, including increasing the resilience and resistance of private homes to urban flood hazards;
- Understanding homeowner risk perceptions and effective risk communication and social marketing strategies;
- Promoting the role of land-use planning in disaster mitigation and emergency management;

The 2009 ICLR Plan and budget

- Promotion of information sharing by progressive municipalities for effective disaster management in all communities;
- Development of a municipal risks insurance committee to foster sharing of information between the insurance industry and municipalities in Canada, and;
- Presenting research findings and publishing papers at respected academic and non-academic conferences and journals.

Specific projects related to community disaster resilience that will be pursued over the next few years include:

- A country-wide municipal government level survey on major barriers and obstacles to the implementation of disaster mitigation and climate change adaptation strategies;
- Understanding insurance company reactions and strategies to handle increased sewer backup claim events;
- A study of best practices for disaster risk communication, with a focus on basement/urban flooding at the municipal level;
- Develop an insurance industry focussed, accessible educational document on homeowner level urban flood mitigation strategies and effective risk communication strategies;
- Development of a disaster risk management database and enterprise risk management software program in partnership with Bishop Phillips Consulting ;
- Understand insurance industry strategies to encourage the adoption of adjustments at the homeowner level within the context of climate change impacts and adaptation;
- Continue work with the Toronto Environment Office in the development and implementation of the comprehensive City of Toronto climate change adaptation strategy;
- Continue work with the City of Kelowna for the enhancement of community-level disaster mitigation;
- Identification and collaboration with progressive Canadian municipalities to enhance community disaster resilience, and ;
- Continue work with Swiss Re on the insurability of flood damages at the homeowner level in Canada.

A significant contribution that ICLR can make to community resilience is enhancing linkages and sharing of knowledge between municipal governments and the insurance industry. Communities across Canada are concerned about many of the impacts climate change, including increasing severity and frequency of storms, sea-level rise and heat waves. Of these many concerns, municipal professionals are particularly concerned with the potential impacts of increasing storm damage on the availability of insurance for their citizens. To date, some Canadian municipalities have experienced difficulties in ensuring that their constituents have access to insurance coverage for sewer backup damages. As an insurance industry organization, ICLR fills an important gap in the disaster management community. ICLR will continue to work to ensure that disaster mitigation strategies undertaken by the municipal and insurance sectors complement each other, and are based on shared knowledge and information. As both of these sectors are interested in mitigating disaster losses and properly managing impacts of climate change, ongoing collaboration will be highly beneficial.

The 2009 ICLR Plan and budget

a) Quality Research

i) Loss Prevention and Warnings Research (completed and underway)

- *Effective warning systems*, Gordon McBean, UWO
- *The role of government*, Gordon McBean, UWO & Dan Henstra, Windsor
- *Decision support tools for managing complex systems*, Slobodan Simonovic, UWO
- *Underground urban infrastructure & natural disasters*, Erez Allouche, UWO
- *Disaster management policy*, Dan Henstra, UWO & Andrew Sancton, UWO

- *Local emergency planning*, Joe Gordon, retired
- *Driving in severe weather*, Jean Andrey, Waterloo
- *Managing hazards*, Paul Kovacs, UWO & Howard Kunreuther, Wharton
- *Knowledge of insurance coverage*, Paul Kovacs, UWO
- *The media and public trust*, Kate White, United Nations Assoc. of Canada

- *Kelowna's resilience to wildfire*, Dan Sandink, ICLR
- *B.C. earthquake loss prevention*, Charles Scawthorne, EQE
- *B.C. earthquake and tuned dampers for tall buildings*, Ashraf El Damatty, UWO
- *B.C. earthquake and underground structures in tall buildings*, Hesham El Naggar, UWO
- *B.C. earthquake and hydroelectric dam safety*, Robin Charlewood, Acres

- *B.C./Alberta – community actions to wildfire risk*, Tara McGee, Alberta
- *Edmonton – wildfire risk management*, Tara McGee, Alberta
- *Edmonton homeowner basement flooding loss prevention practices*, Dan Sandink, ICLR
- *Alberta/Ontario tornado risk*, Brenda Murphy, Laurier & Gordon McBean, UWO
- *Alberta/Ontario tornado incentives to invest in mitigation*, Kevin Simmons, Austin
- *Alberta/Ontario tornado incentives to invest in mitigation*, Dan Sutter, Oklahoma

- *Flood management – Red River case study*, Slobodan Simonovic, UWO
- *Flood management – London case study*, Slobodan Simonovic, UWO
- *London's land use planning to reduce hazard damage*, Dan Shrubsole, UWO
- *Community acceptance of Hamilton infrastructure modernization*, Paul Kay, Waterloo
- *Ontario flood policy – history and best practices*, Dan Shrubsole, UWO
- *Toronto homeowner basement flooding loss prevention practices*, Dan Sandink, ICLR
- *Ontario cottage country wildfire exposure*, John Braun, UWO
- *Urban flood hazard management*, Dan Sandink, ICLR
- *Planning and urban flood management*, Greg Oulahen, ICLR
- *Toronto's strategy for adopting to climate change*, Dan Sandink, ICLR
- *Ontario hospital admissions & climate*, Gordon McBean, UWO & Denis Bourque, MSC

The 2009 ICLR Plan and budget

ii) Hazard Identification Research

- *Making flood insurable in Canada*, Paul Kovacs, ICLR
- *Geodetic Canadian hazard and risk monitoring network*, Michael Sidevis, Calgary
- *B.C. earthquake forecast*, Kristy Tiampo, UWO
- *B.C. earthquake risk by postal code*, Paul Kovacs, UWO (with EQE)
- *B.C. subsidence and flooding risk*, Kristy Tiampo, UWO
- *Prairie drought*, Ron Stewart, McGill
- *Prairie hail risk by postal code*, David Etkin, York
- *Barrie tornado*, David Etkin, York

- *Ontario earthquake analysis*, David Eaton, UWO
- *Ontario community hazard identification assessment*, Paul Kovacs, UWO
- *Toronto earthquake risk*, H. El Nagggar, UWO & D. Eaton, UWO
- *Toronto hurricane Hazel*, Harold Belore, Cumming Cockburn
- *Quebec earthquake risk by postal code*, Paul Kovacs, UWO (with EQE)
- *Montreal earthquake*, Luc Chouinard, McGill
- *Montreal ice storm*, Ron Stewart, McGill
- *Atlantic hurricane & storm surge*, Keith Thompson, Dalhousie
- *Atlantic coastal hazard mapping*, Georgia Fotopoulos, Toronto

b) Safety Partnerships

Partnerships are the best approach to resolving shared problems, particularly public safety concerns. More than a dozen national and international organizations have committed to partnering with ICLR to reduce disaster fatalities, injuries and property damage, including joint research, sharing of information and communications.

Clean Air Partnership

The Partnership and ICLR have launched the Alliance of Resilient Cities to promote best municipal practices.

Canadian Association of Emergency Management Professionals

Leading community experts will partner with ICLR to ensure that our community research is relevant and timely.

Canadian Federation of Municipalities

We will partner to share our municipal safety research and outreach materials. This has included seminars in Calgary, Edmonton and Montreal.

Emergency Management Ontario

ICLR staff participates on two advisory committees - the Emergency Management and Doctrine Standards Committee and the Prevention and Mitigation Working Group - dealing with community risk assessment and loss prevention and mitigation. ICLR also reviews and offers input on some EMO documents such as the Hazard Incidence and Risk Assessment report. ICLR will continue to work with EMO on disaster preparedness initiatives.

Emergency Preparedness Canada

ICLR continues to advise on the importance of establishing a national disaster loss prevention strategy.

The 2009 ICLR Plan and budget

Health Canada

ICLR has managed the Health and Natural Disasters Network, guiding and co-ordinating national research efforts. This information will empower all levels of government and health stakeholders to work collaboratively to build effective Canadian public health policies aimed at assisting communities to adapt successfully to climate change.

Meteorological Service of Canada

Contributes support for ICLR's industry awareness program, includes IRLBH team members when investigating storm events and supports ongoing road safety research.

United Nations

ICLR staff provides leadership to the UNESCO flood initiative, International Strategy for Disaster Reduction warnings program, Intergovernmental Panel on Climate Change assessment of community adaptation, International Council for Science Union hazards program, and the Committee for the Peaceful Use of Outer Space.

City of Toronto, Toronto Environment Office

ICLR has developed a working relationship with the City of Toronto's Toronto Environment Office (TEO). The TEO is currently developing a comprehensive climate change adaptation program, which will have a strong focus on the mitigation of climate related hazards. ICLR has provided research support and advice to a number of projects. In early 2008, the Municipal *Climate Change Adaptation Reference Collection* was published on TEO's website. The reference collection provides approximately 350 publicly available documents, categorized by content and audience. The website fills a significant knowledge gap of availability of information to municipal decision makers.

City of Kelowna

An initial project of the *RSVP...cities* program has begun in the City of Kelowna, B.C. The initial project is an exploratory study of the resilience of the City of Kelowna, with a case study of the 2003 Okanagan Mountain Park Fire. The study served to provide examples of how communities can adopt mitigation practices that foster community resilience, as well as how a community adapted to a hazard of greater magnitude than previously experienced. Further, it will serve as the foundation for ongoing work with the City of Kelowna, and other Canadian communities interested in increasing their resilience to natural hazards.

Canadian Institute of Planners

ICLR was a major contributor to the Canadian Institute of Planners' (CIP) climate change adaptation and municipal planning symposium.

City of London

Dr. Slobodan Simonovic, UWO, has been involved in studies examining impacts of climate change on London Ontario's water systems and flood risk.

Natural Resources Canada, Canadian Forest Service

ICLR continues to work with wildland fire professionals in the Canadian Forest Service, including providing significant input into the new Canadian Wildland Fire Strategy.

The 2009 ICLR Plan and budget

Ontario's Conservation Authorities

Through its flood work, ICLR has interacted with numerous Ontario conservation authorities and the conservation authority industry group (Conservation Ontario). Further collaboration will be sought with these important water and flood management organizations.

Swiss Re

ICLR will continue work with the Swiss Re Canadian office on the "Making flood damages insurable in Canada" project.

c) **Industry Awareness**

ICLR provides a forum for business leaders to work directly with researchers, disaster management professionals, government officials and others to share ideas and establish a new understanding of how to prevent natural hazards from becoming disasters. This includes an active publications program and workshop program. Insurance participants in ICLR will gain access to our research findings through a variety of mechanisms including: Friday Forums, CIP seminars, *Cat Tales* newsletter, ICLR research publications and articles in the insurance trade press.

Friday Forums

This popular program brings senior scientists together with industry members and others to present the latest findings in a particular area of expertise related to natural disaster mitigation. The forums are held 10 times per year, and the topics and speaker profiles are posted on ICLR's website.

Newsletter (Cat Tales)

Cat Tales is ICLR's electronic quarterly newsletter which offers the most up-to-date information about ICLR researchers and events through a number of short informative articles. *Cat Tales* is also posted on ICLR's website, for easy access.

Industry conferences and seminars

ICLR works with industry members to develop opportunities to participate in industry-sponsored seminars, conferences and workshops.

Trade publication articles

The Institute has well-established relationships with the insurance trade press. ICLR works with the two major monthlies - Canadian Insurance and Canadian Underwriter - to secure opportunities to write and place articles aimed at informing and educating industry professionals as to current practices in mitigation and disaster preparedness. ICLR staff members have also written for Claims Canada, and Institute news is often covered in Thompson's World Insurance News, a weekly trade publication. Additionally, ICLR staff have written articles for Municipal World Magazine and Disaster Management Canada Magazine.

Website (www.ICLR.org)

ICLR's website provides up-to-date news about ICLR research, media activity, and conferences as well as hazard-specific information for industry and consumers. It is an invaluable tool for member insurers to update their knowledge about specific natural disasters, and preparedness as well as stay on top of leading edge research. Some member insurers have chosen to incorporate ICLR's disaster preparedness information into their own company brochures and/or websites to share this knowledge with their clients.

The 2009 ICLR Plan and budget

Disaster Loss Prevention Conferences

ICLR partners with the University of Western Ontario, the United Nations, UNESCO and other sponsors to support occasional international conferences for academics, policy makers, business leaders and other stakeholders. In 2008, ICLR successfully hosted the 4th International Symposium on Flood Defence.

Speaking engagements

ICLR's partnerships provide potential information sharing opportunities within the industry as well as with many non-industry groups. ICLR speakers are highly sought after for speaking engagements and information forums. ICLR staff have spoken at such events as the Conference Board of Canada conference on Adapting to Climate Change (January 2008), Emergency Management Ontario (December 2007), the Real Property Institute of Canada's National Workshop (November 2007), the Real Estate Institute of British Columbia's annual conference (November 2007), the Globe Foundation's EECO 2007 (June 2007), and the Annual Joint Conference (Atlantic Canada) of the CICMA/CIAA (June 2007).

d) Consumer Awareness

Local and individual actions are the most effective means of reducing the loss of life, injuries and property due to disasters. Best practices for individuals to protect their families and homes are available in print and are published on ICLR's website (www.ICLR.org). ICLR also works with the media and our partners to promote awareness about actions that reduce the threat of disasters.

News media -- proactive media relations and media/press conferences

ICLR has established a media contact program which involves issuing press releases to announce ICLR achievements and events, release new research results and mark major anniversaries of significant historic weather events. This proactive media relations activity has helped to make ICLR front of mind with local, regional and national media. ICLR has been covered on CTV News, Global News, Canada AM, CBC TV, CBC Radio and Radio Canada International, among others; and The Globe and Mail, The Toronto Star, The Hamilton Spectator, and The Edmonton Journal, among others. Another instrument used as part of ICLR's media contact program is the press conference. ICLR co-hosted the 2007 Canadian media release of the Intergovernmental Panel on Climate Change report.

Member loss prevention brochures

Through ICLR, Canada's insurers are the only group in the country providing comprehensive disaster loss prevention advice to homeowners and owners of small businesses. ICLR has developed eight specific brochures which identify actions that homeowners should take to reduce the risk of injury and damage due to severe wind, hail, earthquakes, flood, wildfire and a number of other hazards. Some member insurers send this safety information to their policyholders. Since almost every homeowner in Canada has insurance, this is a powerful means of sharing safety knowledge with millions of homeowners across Canada. The Institute also makes this information available on its website. Some member insurers have loaded this information onto their own websites or have linked to ICLR's website to enhance the distribution of information.

Website (www.ICLR.org)

ICLR's website is a valuable resource for people to learn about disaster safety and provides valuable links for those interested in other stakeholders in disaster preparedness

The 2009 ICLR Plan and budget

and emergency management. The website lists each natural hazard and provides comprehensive information about the hazard and what can be done to protect home and life. The website is constantly updated to include the latest information, research and ICLR events.

Research papers

ICLR actively supports leading edge research that is conducted by some of the best Canadian and international researchers. ICLR researchers are engaged in work that encompasses many aspects of home safety, as well as research that allows us to better understand consumer behaviour. ICLR packages selected papers in a public friendly manner that impart useful disaster loss safety information to communities. In 2008, ICLR research papers were launched with a new, professional look.

2. Safer Design and Construction of Buildings - *Designed for safer living*

a) **Quality Research**

Through ICLR, member insurers have begun to invest in a long-term, science-based research program that identifies best practices for the design and construction of new homes. Insurers have provided support to dozens of academic researchers who are investigating damage from wind, snow, ice, earthquakes, mould and a range of other hazards.

The Insurance Research Lab for Better Homes (IRLBH) at UWO

Civil engineers have the challenge and obligation to design resilient and affordable housing stock and to constantly improve house performance under extreme and normal environmental actions for an enhanced quality of living. Through experimental studies and numerical modelling, we seek to understand the fundamental behaviour of houses under severe wind and rain loads, including interactions among building envelope, air/moisture flow and microenvironmental conditions that could lead to health risk and material biodeterioration. Potential beneficiaries of this research include anyone who lives in, owns, builds, supplies materials for, or insures a home.

The industry's largest investment has been to support the IRLBH. Coupled with the Boundary Layer Wind Tunnel (BLWT), UWO has established a world-class research team and facility capable of testing full-scale wood-framed houses under extreme loading. Dr. Mike Bartlett and his research team has turned seed money from ICLR into \$7.5 million to construct a state-of-the-art research facility. The team has tested model homes in the wind tunnel, and in summer 2008 began to test identical extreme load events on full-scale homes in the laboratory. These research facilities are unique in the world today, exploiting a network of collaborators in the engineering, construction, insurance and risk management industries. The facility permits, for the first time anywhere, the controlled application of simulated "natural" wind and snow loads to full-scale houses up to failure. It allows the investigation of the structural integrity of the house at load levels up to failure, the assessment of rain and moisture penetration through the building envelope and its consequences such as the growth of mould under realistic environmental conditions, and the examination of the impact of human error and partial damage on the optimum design criteria and quality control requirements.

Research themes include:

- applying simulated wind pressure to various full-scale tests by an innovative pneumatic loading system using "pressure boxes";
- assessing the structural responses of components and systems using full-scale and wind tunnel test results in conjunction with numerical modelling;
- investigating the ingress of rain and moisture through the building envelope and the consequences, including mould growth; and
- assessing the impact of human error in construction on the structural performance, evaluating the consequences of damage to houses due to strong wind and rain and developing optimal design criteria.

Long-term objectives of this research initiative include:

- developing mitigating strategies for a sustained, resilient and affordable housing stock;
- understanding the behaviour and retain the integrity of building envelope for enhanced quality of living;

The 2009 ICLR Plan and budget

- investigating the impact of extreme environmental loads and the effects on houses and low-rise buildings for improved design practice; and
- searching for the optimal design and quality of construction through cost/benefit assessment, quality control, insurance and social welfare.

The research team includes parties with combined expertise in full-scale and model testing, wind loads and fluid mechanics, structural engineering, codified design, wind-driven rain, mycology of mould growth and risk assessment. The team includes:

- *Dr. Mike Bartlett* (Civil and Environmental Engineering, UWO)
- *Dr. Ashraf El Damatty* (Civil and Environmental Engineering, UWO)
- *Dr. Hanping Hong* (Civil and Environmental Engineering, UWO)
- *Dr. Diana Inculet* (Boundary Layer Wind Tunnel Laboratory, UWO)
- *Dr. Greg Kopp* (Boundary Layer Wind Tunnel Laboratory, UWO)
- *Dr. David Rosowsky* (Oregon State University)
- *Dr. Eric Savory* (Mechanical & Materials Engineering, UWO)
- *Dr. James Scott* (Public Health Sciences, University of Toronto)
- *Dr. Peter Vickery* (Applied Research Associates Inc., Raleigh, North Carolina)

It is expected that the research team will identify aspects of over-engineering in current home construction practices – i.e. areas where savings are possible without any compromise in safety. At the same time, we also expect that they will identify additional design and structural elements that go beyond the current building code – i.e. that would significantly enhance safety at minimal cost.

This loss prevention research program will provide a science-based foundation for the construction of disaster resilient homes. The research team has been operational in the IRLBH research facility since September 2005. The insurance industry will use the research developed at this site to further shape the details of ICLR's ***Designed for safer living*** program. ICLR will share these findings with the U.S. insurance industry, so the information will also influence their safer living program with American home builders. We will also share it with Canadian government agencies that are developing policies to deal with climate change, as the ***Designed for safer living*** program represents an adaptive strategy to deal with the increasing frequency and severity of extreme weather events.

Other research initiatives

- *Dr. Horia Hangan* (Engineering Science, UWO) -- According to recent, unpublished reports, more than 66 per cent of all high-intensity wind events in the Northeastern U.S. and Canada involving damaging effects on buildings and structures are associated with tornadoes or downbursts. Dr. Hangan's research focuses on fundamental physical and applied numerical simulations of high Reynolds number shear flows such as wakes, boundary layers and jets with applications to wind engineering. He is also leading an ambitious wind turbine research program.
- *Dr. Tim Newson* (Engineering, UWO) -- Extensive damage to homes and buildings from severe wind events is often due to trees. However well-rooted trees also provide important protection, reducing wind losses. Dr. Newson is participating in the emerging international research on the stability of trees under wind loading.

The 2009 ICLR Plan and budget

b) Safety Partnerships

Partnerships are the best approach to resolving shared problems, particularly public safety concerns. More than a dozen national and international organizations have committed to partnering with ICLR to reduce disaster fatalities, injuries and property damage. Initiatives include joint research, sharing of information and communications.

ONADAPT

ICLR will partner with the Government of Ontario and others to launch a climate change adaptation initiative in the province. The program, initially to be called 'ONADAPT' will operate for two years on a trial basis, likely to be extended. ICLR will lead the housing program

Canadian Home Builders' Association/Provincial home builders associations

ICLR has begun to work with the national branch of the Canadian Home Builders' Association to join with the insurance industry and build disaster-resilient homes. This dialogue opens the door to further interaction with the national wing, as well as provincial and municipal home builders' associations via speaking engagements and/or regional meetings. ICLR expects that home builders, the manufactured home industry, manufacturers and others in the home construction industry will want to be active participants in the IRLBH.

Monarch Homes

Monarch Homes, the oldest and one of the largest home builders in the GTA, fully supports IRLBH research. It has made a financial contribution to the research program and has challenged the industry to support the project. Its partnership is significant because it is creating awareness in Canada's largest housing market of the need to conduct research into building safer and better homes.

Genesis

ICLR efforts with the Canadian Home Builders' Association introduced Genesis to the IRLBH project. Genesis is a world leading Canadian company that specializes in the engineering, manufacturing and installation of fully-integrated light-steel framed homes. Each structure is custom engineered and manufactured into large simplified wall panels, floor panels and roof trusses. The framing panels integrate mechanical and electrical holes, exact window and door openings, built-in structural supports, and a wide variety of sub-sheathing products and insulation systems. Currently used to build residential and commercial structures throughout the world, Genesis features structural-grade, galvanized steel framing materials in lieu of traditional softwood lumber, concrete or masonry block construction. The company has entered into discussion with Dr. Mike Bartlett to provide funds and a steel-framed home to test in the IRLBH, the results of which will be made available to the insurance industry.

The Canadian Institute of Steel Construction Ontario Region

The Canadian Institute of Steel Construction, the national industry association representing the structural steel, open web steel joist and steel platework fabricating industries, is another financial backer of the IRLBH.

3M Canada

3M Canada has partnered with ICLR over the past seven years to provide window film for ICLR's home retrofit program as part of Emergency Preparedness Week. ICLR plans to continue this working relationship with 3M Canada for its yearly retrofit program.

The 2009 ICLR Plan and budget

Partnering with a national manufacturer affords potential for Canada-wide publicity within the industry and the general public.

Retrofitters/renovators/contractors

ICLR works with suppliers from many aspects of the home reconstruction industry during the Emergency Preparedness Week initiative. Community based expertise is used to provide and install hazard-specific safety material for the home. Engaging community home supply manufacturers further expands disaster home-safety knowledge within the industry and builds on ICLR's commitment to inform homeowners about disaster safety.

Institute for Business and Home Safety

The Institute for Business and Home Safety (IBHS) is a Tampa, Florida-based sister organization of ICLR. ICLR participates in an annual meeting at IBHS in December each year and has worked with IBHS to create the **Designed for safer living** program in Canada, and to bring its **Open for Business™** program north. Through the program, ICLR will encourage and assist Canadian home builders in constructing new disaster-resilient homes. ICLR can count on the success of the program in the U.S. to build a solid base for the construction of new homes that are disaster resilient.

Housing safety initiative with insurance industry

In 2006 and 2007 The Co-operators General Insurance Company worked with ICLR to build Canada's first and second-ever **Designed for safer living home**, and has begun work on the country's third. Canada's insurance industry is leading the way to ensure that Canadians build better, disaster-resilient homes. ICLR will work to bring together home builders and the insurance industry in a formal relationship in the construction of new homes that are disaster resilient. The Institute will first identify cost-effective design and structural elements that must be included in a new home in a specific location. It will then conduct an independent inspection of the build.

Public Safety Canada/Showcase Homes

ICLR continues to advise on the importance of establishing a national disaster loss prevention strategy. Each year ICLR partners with Public Safety Canada as a participant in its *Emergency Preparedness Week* public education campaign. ICLR uses the campaign to make an existing home resilient to a natural hazard, and publicize the home in the media. This year was the sixth in which ICLR has retrofitted an existing home as part of Emergency Preparedness Week. In 2008, a home in Montreal was made more resilient to winter storms and earthquakes. In 2007, a home in Edmonton was made more resilient to tornados and winter storm and in 2006, a home in Ottawa was also made more resilient to those same perils. In 2005, a home in Vancouver was made more resilient to earthquakes and in 2004, a Halifax home was protected against hurricanes. In 2003, a home in London, Ontario was made more resilient to tornados. In 2009, the Institute will make a Toronto home more resilient to heat wave and in 2010, will make a home in Winnipeg more resilient to flood. In 2011, a home in Calgary will be made more resilient to hail. The Institute has also retrofitted several child care centres as part of its *Protecting our Kids from Disasters* program.

c) **Industry Awareness**

ICLR provides a forum for business leaders to work directly with researchers, disaster management professionals and government officials to share ideas and establish a new understanding of how to prevent natural hazards from becoming disasters. This includes an active publications program and workshop program. Insurance participants in ICLR will

The 2009 ICLR Plan and budget

gain access to our research findings through a variety of mechanisms including: Friday Forums, CIP seminars, *Cat Tales* newsletter, ICLR research publications and articles in the insurance trade press.

Friday Forums

This popular program brings senior scientists together with industry members and others to present the latest findings in a particular area of expertise related to natural disaster mitigation. The forums are held 10 times per year, and the topics and speaker profiles are posted on ICLR's website.

Newsletter (Cat Tales)

Cat Tales is ICLR's electronic quarterly newsletter which offers the most up-to-date information about ICLR researchers and events through a number of short informative articles. *Cat Tales* is also posted on ICLR's website, for easy access.

Insurance Advisory Committee

ICLR has established a committee where industry leaders and Institute researchers can regularly meet to discuss how findings can best advance disaster safety and insurance practices.

Industry conferences and seminars

ICLR works with industry members to develop opportunities to participate in industry-sponsored seminars, conferences and workshops.

Trade publication articles

The Institute has well-established relationships with the insurance trade press. ICLR works with the two major monthlies - Canadian Insurance and Canadian Underwriter - to secure opportunities to write and place articles aimed at informing and educating industry professionals as to current practices in mitigation and disaster preparedness. ICLR staff has also written for Claims Canada, and Institute news is often covered in Thompson's World Insurance News, a weekly trade publication. Additionally, ICLR staff have written articles for Municipal World Magazine and Disaster Management Canada Magazine.

Website (www.ICLR.org)

ICLR's website provides up-to-date news about ICLR research, media activity, and conferences as well as hazard-specific information for industry and consumers. It is an invaluable tool for member insurers to update their knowledge about specific natural disasters, and preparedness as well as stay on top of leading edge research. Some member insurers have chosen to incorporate ICLR's disaster preparedness information into their own company brochures and/or websites to share this knowledge with their clients.

Housing safety initiative with insurance industry

A major plank of the **Designed for safer living** program, ICLR will work to bring together home builders and the insurance industry to promote the construction of new homes that are disaster resilient. The Institute will identify cost-effective design and structural elements that must be included in a new home in a specific location. It will then conduct an independent inspection of the build. In 2006 Co-operators General Insurance Company agreed to build Canada's first disaster-resilient home based on ICLR's program and completed the country's second in 2007. Construction has begun on Canada's third disaster-resilient home. We hope to build many more disaster resilient homes across the country over the next few years.

The 2009 ICLR Plan and budget

Speaking engagements

ICLR's partnerships provide potential information sharing opportunities within the industry as well as with many non-industry groups. ICLR speakers are highly sought after for speaking engagements and information forums. In recent months, ICLR staff have spoken at such events as the Conference Board of Canada conference on Adapting to Climate Change (January 2008), Emergency Management Ontario (December 2007), the Real Property Institute of Canada's National Workshop (November 2007), the Real Estate Institute of British Columbia's annual conference (November 2007), the Globe Foundation's EECO 2007 (June 2007), and the Annual Joint Conference (Atlantic Canada) of the CICMA/CIAA (June 2007).

d) **Consumer Awareness**

Local and individual actions are the most effective means of reducing the loss of life, injuries and property due to disasters.

News media -- proactive media relations and media/press conferences

ICLR has established a media contact program which involves issuing press releases to announce ICLR achievements and events, release new research results and mark major anniversaries of significant historic weather events. This proactive media relations activity has helped to make ICLR front of mind with local, regional and national media. ICLR has been covered on CTV News, Global News, Canada AM, CBC TV, CBC Radio and Radio Canada International, among others; and The Globe and Mail, The Toronto Star, The Hamilton Spectator, and The Edmonton Journal, among others. Another instrument used as part of ICLR's media contact program is the press conference. ICLR co-hosted the 2007 Canadian media release of the Intergovernmental Panel on Climate Change report.

Showcase Home (Emergency Preparedness Week initiatives)

Homes retrofitted every Emergency Preparedness Week provide a showcase for the media to tour and photograph. Although these private homes are not open to the public, media coverage provides specific information about the retrofit and directs people to local contractors, ICLR's website and other resources. The coverage opens the door to creating awareness of the importance of preparedness and the simple cost effective actions that a homeowner can take today to protect against tomorrow's perils. This year was the sixth year that ICLR has retrofitted an existing home as part of Emergency Preparedness Week. In 2008, a home in Montreal was made more resilient to winter storms and earthquakes. In 2007, a home in Edmonton was made more resilient to tornados and winter storm and in 2006, a home in Ottawa was also made more resilient to those two perils. In 2005, a home in Vancouver was made more resilient to earthquakes and in 2004, a Halifax home was protected against hurricanes. In 2003, a home in London, Ontario was made more resilient to tornadoes. In 2009, the Institute will make a Toronto home more resilient to a heat wave and in 2010, will make a home in Winnipeg more resilient to flood. In 2011, a home in Calgary will be made more resilient to hail. The Institute has also retrofitted several child care centres as part of its *Protecting our Kids from Disasters* program.

Member Loss Prevention Brochures

Canada's insurers are committed to informing homeowners about disaster loss prevention. Through ICLR, Canada's insurers are the only group in the country providing comprehensive disaster loss prevention advice to homeowners and owners of small businesses. ICLR has developed eight specific brochures which identify actions that

The 2009 ICLR Plan and budget

homeowners should take to reduce the risk of injury and damage due to severe wind, hail, earthquakes, flood, wildfire and a number of other hazards. Some member insurers send this safety information to their policyholders. Since almost every homeowner in Canada has insurance, this is a powerful means of sharing safety knowledge with millions of homeowners across Canada. The Institute also makes this information available on its website. Some member insurers have loaded this information onto their own websites or have linked to ICLR's website to enhance the distribution of information.

The *Designed for safer living* program

This program has a consumer component designed to educate homeowners regarding the potential damage of natural disasters and how they can protect their home and life through brochures that provide instructions that are easy to understand and implement.

Website (www.ICLR.org)

ICLR's website provides up-to-date news about ICLR research, media activity, and conferences as well as hazard-specific information for industry and consumers. It is an invaluable tool for member insurers to update their knowledge about specific natural disasters, and preparedness as well as stay on top of leading edge research. Some member insurers have chosen to incorporate ICLR's disaster preparedness information into their own company brochures and/or websites to share this knowledge with their clients.

Conferences and seminars

ICLR works with industry members to develop opportunities to participate in industry-sponsored seminars, conferences and workshops.

Speaking engagements

ICLR's partnerships provide potential information sharing opportunities within the industry as well as with many non-industry groups. ICLR speakers are highly sought after for speaking engagements and information forums. In recent months, ICLR staff have spoken at such events as the Conference Board of Canada conference on Adapting to Climate Change (January 2008), Emergency Management Ontario (December 2007), the Real Property Institute of Canada's National Workshop (November 2007), the Real Estate Institute of British Columbia's annual conference (November 2007), the Globe Foundation's EECO 2007 (June 2007), and the Annual Joint Conference (Atlantic Canada) of the CICMA/CIAA (June 2007).

Research papers

ICLR actively supports leading edge research that is conducted by some of the best Canadian and international researchers. ICLR researchers are engaged in research that encompasses many aspects of home safety, as well as research that allows us to better understand consumer behaviour. ICLR packages selected papers in a public friendly manner that could impart useful disaster loss safety information to homeowners.

3. Disaster risk reduction for small business – *Open for Business*TM

a) **Quality Research**

Loss Prevention Research

ICLR's research is focused on the development and dissemination of a comprehensive disaster planning toolkit which helps small and very small (i.e. "micro") businesses to reduce the potential for loss should disaster strike, and reopen quickly should they be forced to close. This research will be completed in partnership with and largely under the leadership of the IBHS, our U.S. sister organization, with the objective of providing consistent advice to businesses across North America. Program components include:

- An *Open for Business*TM assessment tool to determine vulnerability to natural disasters and identify options to minimize damage. The toolkit also includes materials to help organize the business's critical information and review its essential operations, both of which lead to development of a continuity plan.
- The *Open for Business*TM disaster plan folder contains planning advice inside and out and can hold important papers such as leases, insurance policies, contact lists and more. Putting important resources and documents together before disaster strikes can save time and money when the materials are needed.
- The *Open for Business*TM getting back to business guide contains important steps for business owners to take when reporting losses, assessing damages and returning to business. It also contains a list of questions to ask the insurer of the business and a resource list of organizations that can assist in business recovery issues.

b) **Safety Partnerships**

Partnerships are the best approach to resolving shared problems, particularly public safety concerns. More than a dozen national and international organizations have committed to partnering with ICLR to reduce disaster fatalities, injuries and property damage, including joint research, sharing of information and communications.

In partnership with The Co-operators and the Downtown Guelph Business Association (Downtown Guelph), ICLR launched its *Open for Business*TM program in Guelph, Ontario. With financial support from The Co-operators and in-kind support from Downtown Guelph, a university student was hired to roll out the program to 350 small businesses in the Guelph area. Only 11 businesses opted not to accept a free kit, a 97 percent take-up rate. Overall, the project coordinator reported receiving very positive feedback both on the type of resource being offered and the manner in which it was being offered. He reported that the initiative got many businesses thinking about addressing backing up their files offsite, and other important steps in business continuity planning. With the high take-up, downtown Guelph now has the resources to be prepared if an unexpected disaster were to strike.

ICLR is now working with a major Canadian p&c insurance group to distribute *Open for Business*TM kits to 50,000 small businesses across the country. For the first time, the kits will be made available in French.

As per the original launch plan for the program, ICLR will continue to seek out other partners to help spread *Open for Business*TM across Canada.

The 2009 ICLR Plan and budget

Business groups

ICLR could enter into partnerships with business groups who can aid, through their membership rolls and databases and point of purchase pamphlet displays, in the dissemination of **Open for Business™** information and toolkits. Such groups may include, but wouldn't be limited to:

- Canadian Federation of Independent Business
- Provincial and city Chambers of Commerce
- Retail Council of Canada
- CIBC Small Business Resource Centre
- Small Business Centre, London, Ontario
- Small Business B.C.
- Canadian Youth Business Foundation
- Waterloo Region Small Business Centre
- Halton Region Business Development Centre
- The Business Link (Edmonton, Alberta)
- Business Victoria
- Small Business Enterprise Centres

Ethnic business groups

At a later date (when **Open for Business™** becomes well established), program material can be translated into languages other than English and French, and disseminated through ethnic business groups, such as the Toronto Chinese Business Association, the Hong Kong Canada Business Association, the Ontario Korean Businessmen's Association, the Federation of Portuguese Canadian Business and Professionals, and The Taiwan Merchants Association of Toronto, to name but a very few.

Government

ICLR could enter into partnerships with government departments and agencies who can aid in the promotion (and possibly dissemination) of **Open for Business™** information and toolkits. Such groups may include, but wouldn't be limited to:

- Ontario Ministry of Municipal Affairs and Housing
- Ontario Ministry of Small Business and Entrepreneurship
- Ontario Ministry of Economic Development and Trade
- Small Business Enterprise Centres
- Enterprise Toronto (www.enterprisetoronto.com)
- The City of Toronto Economic Development Office
- B.C. Ministry of Small Business and Revenue

Partnership with member insurers

ICLR will continue to work with member insurers to promote and disseminate **Open for Business™** information and toolkits.

Provincial broker associations

The majority of small businesses in Canada have insurance in one form or another and **Open for Business™** pamphlets or toolkits could be sent out with new policies and policy renewals as a value-added service provided by brokers to insureds.

c) **Industry Awareness**

ICLR provides a forum for business leaders to work directly with researchers, disaster management professionals and government officials to share ideas and establish a new

The 2009 ICLR Plan and budget

understanding of how to prevent natural hazards from becoming disasters. Most of these tools can readily expand to also embrace disaster loss reduction for small business. This includes an active publications program and workshop program. Insurance participants in ICLR will gain access to our research findings through a variety of mechanisms including: Friday Forums, CIP seminars, *Cat Tales* newsletter, ICLR research publications and articles in the industry media.

Friday Forums

This popular program brings senior scientists together with industry members and others to present the latest findings in a particular area of expertise related to natural disaster mitigation. The forums are held 10 times per year, and the topics and speaker profiles are posted on ICLR's website.

Newsletter (Cat Tales)

Cat Tales is ICLR's electronic quarterly newsletter which offers the most up-to-date information about ICLR researchers and events through a number of short informative articles. *Cat Tales* is also posted on ICLR's website, for easy access.

Industry conferences and seminars

ICLR works with industry members to develop opportunities to participate in industry-sponsored seminars, conferences and workshops.

Trade publication articles

The Institute has well-established relationships with the insurance trade press. ICLR works with the two major monthlies - Canadian Insurance and Canadian Underwriter - to secure opportunities to write and place articles aimed at informing and educating industry professionals as to current practices in mitigation and disaster preparedness. ICLR staff has also written for Claims Canada, and Institute news is often covered in Thompson's World Insurance News, a weekly trade publication. Additionally, ICLR staff have written articles for Municipal World Magazine and Disaster Management Canada Magazine.

Website (www.ICLR.org)

ICLR's website provides up-to-date news about ICLR research, media activity, and conferences as well as hazard-specific information for industry and consumers. It is an invaluable tool for member insurers to update their knowledge about specific natural disasters, and preparedness as well as stay on top of leading edge research. Some member insurers have chosen to incorporate ICLR's disaster preparedness information into their own company brochures and/or websites to share this knowledge with their clients. Others mail it to customers with annual policy renewal information.

Speaking engagements

ICLR's partnerships provide potential information sharing opportunities within the industry as well as with many non-industry groups. ICLR speakers are highly sought after for speaking engagements and information forums. In recent months, ICLR staff have spoken at such events as the Conference Board of Canada conference on Adapting to Climate Change (January 2008), Emergency Management Ontario (December 2007), the Real Property Institute of Canada's National Workshop (November 2007), the Real Estate Institute of British Columbia's annual conference (November 2007), the Globe Foundation's EECO 2007 (June 2007), and the Annual Joint Conference (Atlantic Canada) of the CICMA/CIAA (June 2007).

The 2009 ICLR Plan and budget

d) **Consumer Awareness**

Local and individual actions are the most effective means of reducing the loss of life, injuries and property due to disasters. Best practices for individuals to protect their families and homes are published on ICLR's website (www.ICLR.org). ICLR also works with the media and our partners to promote awareness about actions that reduce the threat of disasters. A special focus of our communications effort deals with the small business community.

Most large organizations have the resources and motivation to embrace disaster loss prevention, but most small enterprises need and welcome assistance. ICLR's loss prevention information for small business will be designed so it can be distributed by member insurance companies and other partners. **Open for Business™** is a continuity planning tool for small business. More than 25 percent of the small businesses that are forced to close because of a natural disaster never reopen.

The information package was developed by the insurance industry in the United States, through the IBHS. ICLR has modified the information for the Canadian business environment.

Along with some of the outlets mentioned above, several provinces have Business Improvement Area (BIA) umbrella organizations that might be able to assist ICLR to launch **Open for Business™** in other locales:

- Business Improvement Areas of British Columbia
- Alberta Business Revitalization Zones
- Saskatchewan Business Improvement Districts
- Manitoba Business Improvement Zones
- Ontario Business Improvement Area Association
- New Brunswick Association of Community Business Development Corporations
- Prince Edward Island Business Development
- Newfoundland and Labrador Association of Community Business Development
- Business Development Centres of the Northwest Territories

Advertising and article placement

Advertisements can be taken out in small business-related publications and Websites including:

- Enterprise magazine
- Globe and Mail small business / Report on [Small] Business Magazine
- Entrepreneur.com
- CanadaOne.com
- Business Improvement Areas of British Columbia newsletter
- firstbusiness.ca
- Women's Enterprise Centre
- Visa Small Business

Conclusion

Nature's extreme events can be relentless and unforgiving, but need not result in disasters. Hazards demand that individuals prepare, and that communities invest in resilience. Knowledgeable individuals and resilient communities are the best way to prevent hazards from becoming disasters.

By investing in science to action programs, Canada's insurers are working through the Institute to build disaster resilient communities. This paper outlines strategies to ensure that ICLR will continue to achieve its objective of reduced disaster fatalities, injuries and property damage in four key result areas -- quality research, effective partnerships, industry education and consumer awareness.