

# Protection Through Research

*What the Canadian insurance industry is doing about climate change*



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The Institute for Catastrophic Loss Reduction (ICLR) has documented a number of changes in the experiences and practices of our member insurance companies due to changes in the climate. First, disaster damage payments are rising to homeowners and businesses. Second, the industry is shifting from pricing based on historic experience to projections of future loss claims based on scientific models. Third and fourth, the insurance industry – through ICLR – is investing in academic research to identify loss prevention options and is working to share its loss prevention knowledge with the general public and other interested stakeholders.

Many of Canada's insurers would like to do more in the area of natural catastrophe and climate change research. Their involvement with ICLR, a research institute that is about to enter its tenth year of

operation, gives them an opportunity to contribute to the science and the dialogue. In this way, with a modest investment, they are also able to contribute to the education without a duplication of effort.

What are Canadian insurers doing to combat the effects of climate change?

Plenty.

Essentially, ICLR has been concentrating its recent efforts on three main areas where adaptation to climate change can reduce the potential for injuries, loss of life, and insured losses – homes, small business and cities. How all of these areas fit within ICLR's broader mandate will be discussed below.

## HOMES

Personal property net premiums written totalled CD\$5.08 billion in Canada in 2004, accounting for 15.3% of Canada's measure of nature, wealth and power (NPW), making it a key market segment. Accordingly, Canada's insurers are investing in a long-term, science-based research program that identifies best practices for the design and construction of new homes and the retrofitting of existing homes.

ICLR's largest investment to date has been to support the Three Little Pigs Project at The University of Western Ontario (see *Defending Against the Wolf*,

CU, April 2006). Coupled with the Boundary Layer Wind Tunnel (BLWT), Western has established a world-class research team and facility capable of testing full-scale wood frame houses under extreme loading.

Canada's insurers provided seed money to the Three Little Pigs Project, and the team levered this into CD\$8 million to construct a state-of-the-art research facility. The research team can test scale model homes in the wind tunnel, then test identical extreme load events on full-scale homes. We expect the research team will be able to identify additional design and structural elements that go beyond the current building code. This would significantly enhance safety at minimal cost.

Canada's insurers will use this research to shape the details of ICLR's *Designed...for Safer Living* program. Insurance companies, through ICLR, are partnering with the home construction industry and other stakeholders to roll out this program, which specifies construction, design and landscaping guidelines to increase a new home's resilience to natural disasters.

The program has two key elements. First, the Institute has identified cost-effective design and structural elements

that must be included in a new home in a specific location. Second, upon completion of the home, ICLR will conduct an independent inspection of the build. Homes that include these design features can be designated as *Designed...for Safer Living* homes; this designation is registered with the Institute.

Insurers occasionally receive claims in which a home has suffered catastrophic damage and must be completely rebuilt. This year, one of our member insurers will rebuild the first of these homes to the safer living standard. The home will be showcased this month. Insurers supporting the program are demonstrating their willingness to go beyond their contractual obligations to build disaster-resilient homes.

Each spring through ICLR, Canada's insurers retrofit an existing home to make it more resilient to local hazards. This year, in Ottawa, ICLR again chose Emergency Preparedness Week (May 7-13) to unveil its latest home retrofit project. Given the risk profile of the area, the home was retrofitted to make it more resilient against earthquake and winter storm. The Ottawa home retrofit included:

- Anchoring cabinets, office equipment, and bedroom furniture to walls.
- Bracing TV stands, televisions and refrigerators with appliance straps.
- Outfitting the washing machine with armoured water supply hoses.
- Anchoring the hot water heater.
- Securing pictures to the walls.
- Applying safety and security film to windows.
- Installing a gas shut-off valve at the gas meter outside the house, and encasing the meter in a cage to protect it.
- Insulating pipes to prevent them from freezing.
- Installing snowmelt cables on roof edges and gutters to prevent ice dam formation.
- Installing carbon monoxide and smoke detectors and a fire extinguisher.
- Reinforcing the front and rear doors.

The Ottawa home marked the fourth year ICLR retrofitted an existing home as part of Emergency Preparedness Week. In 2005, a Vancouver home was made more resilient to earthquakes. In 2004, a Halifax home was protected against hurricanes. In 2003, a London, ON home was made more resilient to tornadoes. Several childcare centres were also retrofitted as part of the *Protecting our Kids from Disasters* program.

Future home retrofits will take place in Edmonton (2007, to mark the 20th anniversary of the Edmonton Tornado of July 31, 1987) and Montréal (2008, to mark the 10th anniversary of the Great Ice Storm of January 1998).

Disaster losses have doubled every five to 10 years since the 1950s. In 2005, losses approached US\$100 billion worldwide. If this trend continues, insurers around the world will face US\$1 trillion in damage claims over the next 15 years. This alarming trend is not sustainable, and needs to be confronted. Given this scenario, the question must be asked: Will homes be more resilient to damage from the hazards expected over the next 50 years?

The answer needs to be yes.



### SMALL BUSINESS

Medium- and large-sized businesses generally do not require the assistance of an entity such as ICLR to formulate business continuity and other safety/emergency and disaster plans. Such enterprises are able either to hire their own business continuity management professional(s), pay a third-party consultant or do both.

However, small businesses (often defined as those with less than 100 employees) – and in particular, the smallest of the small – do not have the ability to hire their own business continuity experts. What's more, owners of small businesses may not know to whom they can turn for assistance. This is key: at least one in four businesses that close because of a disaster never reopen, chiefly because they weren't prepared. Enter ICLR.

ICLR has identified actions that entre-

preneurs can take to reduce the risk of injury, damage and business downtime caused by severe wind, hail, earthquake, flood, wildfire and other hazards. In early 2007, we will help owners of small business address these threats when we roll out our *Open...for Business* program.

The program consists of three main components: a disaster planning folder, a guide and a planning toolkit.

- The *Open...for Business* Disaster Plan Folder contains planning advice inside and out; it can hold important papers such as leases, insurance policies, contact lists and more.

- The *Open...for Business* 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.
- The *Open...for Business* Toolkit contains information, checklists and forms that can be used to help business owners reduce the potential for loss should disaster strike, and reopen quickly should they be forced to close.

Initially, the program components will be made available on ICLR's Web site ([www.iclr.org](http://www.iclr.org)). However, ICLR will also take the program to small businesses across the country, by entering into partnerships with government, national and provincial business groups, and local business improvement areas, among others.

Mindful that children represent our most precious asset, ICLR has initiated a retrofit program to ensure that childcare centres throughout Canada are safer from disasters. The *Protecting Our Kids From Disasters* program advocates for simple, non-structural modifications that would better protect children in childcare centres from earthquakes, floods, hurricanes and winter storms. The basic preventative measures recommended by the program reduce vulnerability during a disaster and help mitigate the loss experienced by the childcare facility.

### CITIES

ICLR's *RSVP...for Cities* program provides a framework to develop a coordinated strategy to protect people and property from the devastating human and financial impacts of natural hazard events. The program will promote resilient, sustainable,

vibrant and prosperous cities.

Frequently, the most effective activity necessary to protect people and property takes place at the community level. The program is designed to create an environment that makes disaster safety and loss reduction activities desirable, effective, and affordable for communities, businesses, and residents.

ICLR is promoting use of its *RSVP...for Cities* program to:

- Prevent injuries and deaths caused by natural catastrophe events.
- Protect public and private property from the impact of such events.
- Create a disaster-resilient economy.

We are building a program that will help communities establish partnerships around a framework of 10 interconnected elements. These 10 elements reflect the interconnectedness of the following four major systems.

- Nature – the physical environment
- People – population characteristics
- Economy – jobs/business recovery
- Built environment – homes, businesses, public infrastructure and utilities

It is possible to view disaster losses as the predictable result of the interactions among these four major systems. The 10 elements based on the above systems include measurable activities that serve to institutionalize disaster protection into long-range policies, procedures, programs, designs and plans and to take immediate action to begin to protect people and property and to reduce costs associated with disasters.

An *RSVP...for Cities* community requires a formal commitment from the highest levels of local government. It calls for a partnership among all levels of government and insurers as well as other entities to accomplish activities within the 10 elements. It will provide tools to help communities to engage in reducing their vulnerability to disasters.

Public and private partners in a *RSVP...for Cities* initiative are encouraged to examine their organizational missions and business practices in order to isolate areas in which they can reduce vulnerability to disaster impacts for themselves, their constituents, their employees and their customers. The program asks these organizations, agencies and companies to work together for the benefit of all involved.

The *RSVP...for Cities* program for disaster resilience can help sustain, enhance,

and protect life, property, the economy, and the environment for ourselves and for future generations.

### ICLR'S ROLE

All three of the above research areas fit into ICLR's broader mandate to help reduce disaster losses.

Classically, there are four components to disaster management: Preparedness, Response, Recovery and Mitigation/Prevention. To maximize its effectiveness, ICLR focuses on gaps in the research and knowledge base. Response and recovery, for instance, are generally handled well by first responders, government agencies, non-governmental organizations and others, so we leave that job to them.

Instead, ICLR works to fill gaps. The Institute does some work in the area of preparedness – for example, it promotes the idea that homeowners and others should assemble a disaster safety kit – but the bulk of its work focuses on mitigation and prevention (or, in the language of the insurance industry, loss prevention and loss reduction.)

When dealing with climate change, however, the terminology changes and the number of components goes from four to two: adaptation and mitigation.

Adaptation refers to the adjustments made in natural or human systems in response to actual or expected climatic stimuli or their effects. The purpose is to lessen the negative impacts of such stimuli, and to exploit any opportunities that are made available.

Mitigation can simply be described as the human intervention to reduce the sources or enhance the sinks of greenhouse gases.

As with response and recovery, ICLR does little work on the mitigation side of climate change. Furthermore, we have no plans to become involved in this discussion, as there is already a good scientific foundation in place to support this important debate. ICLR, however, does have much to contribute to the debate about adapting to climate extremes.

On Nov. 17, 2005, a group of more than 20 corporate leaders – representing a broad cross-section of the Canadian economy – released a call-to-action on climate change and energy. At the request of then-prime minister Paul Martin Jr., the group developed a statement to inform negotia-

tions at the UN Conference on Climate Change in Montréal [a.k.a. the 'Conference of the Parties' [COP 11], Nov. 28 to Dec. 9, 2005) with actionable business perspectives and recommendations. David Wilmot, George Cooke and Gregg Hanson participated in this process, while ICLR's executive director Paul Kovacs and Prof. Gordon McBean were also involved in the Montréal meeting. The Prime Minister demonstrated a keen interest in learning about the insurance perspective on climate extremes.

Additionally, earlier in 2005, Paul Kovacs sent Prime Minister Martin a letter on behalf of the Canadian property and casualty insurance industry, urging his government to establish a comprehensive strategy to address adaptation to the growing frequency and severity of extreme weather.

ICLR's new five-year strategy with regard to both weather-induced events and seismic events focuses on the broad theme of converting science to action to build disaster resilient communities. The Institute's three program areas include:

- Disaster-resilient communities.
- Safer building design and construction.
- Disaster risk reduction for small business.

ICLR seeks to address each of the three areas by achieving its objectives in four key result areas:

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

ICLR's mission is to tie together the four main components of disaster management, two main components of climate change, three main strategic themes, and objectives in four key result areas to combat the ill effects of weather-related disasters. ■

