

CATtales

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New ICLR report examines legal tools to mandate stormwater management on the part of homeowners

The Institute for Catastrophic Loss Reduction released a new report May 23 intended as an “initial discussion paper” on the issue of mandating flood risk reduction measures on the part of private property owners.

The report – *Assessing local mandatory measures to reduce flood risk and Inflow & Infiltration in existing homes* – was written by Joanna Kyriazis and Laura Zizzo of Zizzo Strategy Inc. as well as Dan Sandink, director of research for ICLR.

The report “explores legal tools that could be used to require private property owners in existing developments to better manage stormwater and protect against flood risk, and it examines the legal implications of applying these tools in the Canadian municipal context.”

“Typically when you have a basement flood event or you have a city that is prone to a lot of basement flooding, the first measure that is implemented is to engage homeowners,” says Sandink. “A lot of the risk typically originates from the private property side of the property line.”

In the report, the authors

discuss, among other things, mandatory measures to disconnect improper connections to sanitary systems, including downspouts and foundation drains. They also discuss requirements for private property owners to properly maintain private sewer laterals and fix defects in those laterals.

“The typical initial approach” on the part of municipalities is education, says Sandink, adding this could include public meetings, mailing brochures and knocking on people’s doors in order to inform homeowners about the risk of basement flooding.

Some municipalities also provide subsidies to homeowners to fix problems such as disconnecting foundation drains and downspouts from the sanitary systems, says Sandink.

“What we found, working with municipalities, was that despite the generosity of these programs, and in many cases very ►



New ICLR report examines legal tools *cont...*

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aggressive education and subsidy programs – still, very large proportions of at risk homeowners do not engage in these programs,” he said.

The report is based on literature review and interviews with representatives from 13 North American jurisdictions “to assess measures that have been considered and implemented to reduce basement flood risk on private property and/or limit inflow and infiltration rates in municipal wastewater systems through application of measures on private properties,” ICLR stated.

“Connection of foundation drainage to sanitary systems presents a particular challenge, however, as expensive and potentially technically complex retrofits in the form of foundation drain disconnection and sump system installation are often required,” ICLR states in the report. “This cost and complexity serves to reduce the likelihood that

homeowners will engage in this often critical approach to private-side [inflow and infiltration] reduction.”

With the disconnections of foundation drains and downspouts, “you are dealing with buried components of your sewer infrastructure,” Sandink said. “Stuff is literally under the floor slab and you have to dig up your floor to disconnect these things but they are an important part of the overall protection of homes from basement flooding, so important in fact that it is worthwhile pursuing legal measures to disconnect these critical sources of excess water in sewer systems.” **CT**

This article first appeared in Canadian Underwriter (Online edition, May 24, 2017).



UWO/ICLR's Simonovic celebrates Chinese text launch



A ceremony held in Beijing in late June marked the release of the Chinese edition of *Floods in a Changing Climate: Risk Management*, a textbook written by Dr. Slobodan Simonovic.

Dr. Simonovic is a Professor with the Department of Civil and Environmental Engineering at Western University and ICLR's Director of Engineering Studies.

The text, translated by the

China Institute for Water Resources and Hydropower Research and published by Tsinghua University Press, marks the second textbook written by Simonovic that has been translated and made available in China. **CT**

Simonovic, S.P., *Floods in a Changing Climate: Risk Management*, Chinese edition (translated by X. Cheng et al.), Tsinghua University Press, Beijing, China, pp.473, ISBN:978-7-302-44194-6, 2017 (bilingual edition).

UWO/ICLR's Gordon McBean honoured for work in meteorology and climatology

The World Meteorological Organization honoured Gordon McBean of Western University Ontario, Canada, and President, International Council for Science, with the sixty-second IMO Prize on May 16, 2017 for his outstanding work in meteorology and climatology and his leadership as a scientific researcher.

The IMO Prize is the most important award in meteorology. Established in 1955 and named after the predecessor of the WMO, the International Meteorological Organization (IMO), it is awarded every year by WMO Executive Council to individuals in recognition of outstanding contributions to the field of meteorology, hydrology, climatology or related fields.

Dr. McBean received the IMO Prize for his outstanding contributions to meteorology as an atmospheric and climate scientist and a leader of international and national scientific research programs, most notably the World Climate Research Programme from 1988 to 1994. Mr McBean, a former Assistant Deputy Minister of Environment Canada, led global efforts to raise awareness about climate change impacts and played a key role in the development of the Intergovernmental Panel on Climate Change (IPCC). He was awarded the Nobel Peace Prize as an IPCC contributor in 1997.

He made many breakthroughs and discoveries on the atmospheric boundary layer, his original field of research. He was the first to identify and examine the roles of active-passive scalars in turbulent transfers, to quantify the pressure-turbulence relationships in the turbulent energy budget and to evaluate the Obukhov-Corrsin constant for micro-scale temperature. As part of his

research on larger scale phenomena in the atmosphere and oceans, Dr. McBean examined the structure of frontal systems over the North Pacific, estimated the Pacific Ocean meridional heat flux at 35° North and studied the principal North Pacific heating anomaly patterns and their relation to atmospheric circulation.

More recently, his work has been cross-disciplinary, addressing the challenges of integrated research on disaster risk, weather and climate, and the relationships between climate extremes and housing rights in communities in Africa. He has also completed a five-year study of coastal cities at risk due to weather, climate and flooding – with teams in Bangkok, Manila, Lagos and Vancouver – in order to develop urban resilience models.

He has published in 72 peer-reviewed journals and contributed to 42 books and 65 other publications. In addition, he has made 328 presentations at international and national scientific and professional events.

Dr. McBean serves as Director, Policy Studies, for the Institute for Catastrophic Loss Reduction. **CT**



Disclosing flood risk at time of sale

By Glenn McGillivray, Managing Director, ICLR

The recent flooding in Ottawa, Gatineau, Laval and other places brought four main issues to the fore.

First, is the matter of buying out homeowners located in the floodway, the 1 in 20 flood plain.

Second, is the need to have a centralized federal or, at the very least, respective senior provincial bodies to coordinate flood management in a holistic manner.

maps being created with no standard methodology, being of various vintages and having differing degrees of accessibility ranging from easy to obtain to almost impossible.

On top of this, even if an individual does manage to get their hands on a flood map, the question would then be whether they could read and understand it.

Second, there is 'conventional wisdom' – largely

save the property in future – which means that it won't lose a large portion of its value when the flood actually hits."

According to the overview, "Results of studies comparing the effects of floods and flood hazard disclosures on property values are contradictory, ranging from negative to positive effects on property values." The author cautions that the magnitude, physical extent and timing of the effects very greatly



Third, involves the production of up-to-date flood maps that are easily accessible by private property owners, the insurance industry, land developers and others.

And fourth is the need to create a formal mechanism through which homeowners and potential home buyers can be informed of their level of flood risk.

In the following, I will deal only with the latter.

In Canada there is currently no mechanism through which homeowners or potential home buyers can determine whether their properties have flooded in the past or are at risk of flooding in the future.

First, as has been discussed many times, both in my blogs and in other places, there exists a real dog's breakfast of flood maps in Canada, with

held by local politicians – that designating a property or neighbourhood as at-risk of flooding causes property values to plummet. Hence, many politicians view flood maps and disclosure of flood risk as political nitroglycerine.

In reality, the research connecting flood risk disclosure to property value is not all that clear.

In an overview of the subject, Vancouver's Ebbwater Consulting concluded that "Acknowledging the hazard, by preparing a flood map for example, may decrease the real estate value marginally. But surely, this is far outweighed by the value that the map brings by creating a tool for smart flood management decisions. This in turn can bring flood mitigation (i.e. reduced damages and losses in future). In fact, it may

depending on the way that individual studies are structured and a host of factors that contribute to how property values are calculated, among other issues.

Ebbwater does note, however, that "it is generally recognized that an actual flood event, rather than a flood hazard disclosure on a floodplain map, has a greater effect on property values. For instance, in Oregon, several flood events contributed to significant decreases in property value (-19% to -26% for flood affected houses), whereas the introduction of a floodplain regulation enforcement did not show effects on residential land value."

"Actual flood occurrence shows...in almost all cases negative impacts on the property value. It depends on the degree of flooding and ranges from ►

an average of -15% up to -60% for severe property damage. Often, nearby property that is not affected by the flood, also sees decreases in property value.”

I believe if we are to get anywhere on this file, we first have to convince politicians, property owners and others that disclosing flood risk likely would have little to no negative impact on property values, while experiencing a flood would likely have a significant negative impact.

One solution: Disclosure at time of sale

One possible solution to the issue of transparency is to require mandatory disclosure of flood risk when a home is changing hands (i.e. at time of sale).

At present, no jurisdiction in Canada requires such disclosure prior to the transfer of a residential property, but some argue that a potential framework to make this happen is already in place.

In Ontario, sellers of a home may choose to make available to a buyer a voluntary Seller Property Information Statement (SPIS). Alternatively, a buyer can make his or her offer conditional on a favourable SPIS (though in today's hot real estate markets buyers are often not even able to make a deal conditional on a basic home inspection let alone a SPIS).

The SPIS, however, has been roundly criticized by real estate lawyers and others as being too unwieldy and complicated for typical home sellers to fill out without the help of several experts, and too open-ended, exposing the seller to unreasonable amounts of liability long after the deal has been closed.

At present, the SPIS (Form 220 from the Ontario Real Estate Association) is made up of 22 'General' questions (asking

such things as the date of the property survey and whether there are any pending developments, projects or applications for rezoning in the neighbourhood); nine 'Environmental' questions, and 18 'Improvements and Structural' questions.

But some experts maintain the SPIS causes more problems than it prevents.

According to real estate lawyer Bob Aaron, who writes a real estate column in *The Toronto Star*, the SPIS continues “to be a source of never-ending business for litigation lawyers and endless grief for unlucky buyers and sellers who are being swept into the bottomless pit of lawsuits because they used it.”

According to Aaron, while it appears that very few real estate agents and their clients use the SPIS, “they are the ones who seem to be the source of the never-ending stream of new SPIS court decisions.”

When looking at the SPIS specifically in relation to flood risk, there are a few problem areas or weaknesses which indicate that it wouldn't be the best tool to use to require mandatory disclosure of flood risk.

First, in its current form, the SPIS simply asks if the property is “subject to flooding” with possible answers including ‘Yes’, ‘No’, ‘Unknown’ or ‘Not applicable’. The form does not differentiate between the different causes of flooding and does not ask if a home's basement has ever flooded or if the sewer has ever backed up. Further, nowhere does the form ask if the home is on a regulatory flood plain.

Second, because of the large number of questions on various topics, any focus on flooding gets lost in the shuffle.

Perhaps a better alternative is to require that exposure to risk be disclosed in a

simple document that deals with nothing but natural perils.

This is done in California. Under the state's Natural Hazard Disclosure Law, the seller or transferor of a residential property or his/her agent must disclose whether a property is within a flood, wildfire or earthquake/seismic hazard zone. The law applies whether the seller/transferor has personal knowledge of the risk or whether the local jurisdiction has deemed a property to be at particular risk. Disclosure requires that a formal document be filled out and made available to the buyer “as soon as practicable before transfer of title”.

Similar legislation in Canada could be reinforced if lending institutions required a formal natural hazard disclosure before issuing a mortgage, and insurers could require such a disclosure before providing coverage. What's more, such legislation could work to motivate governments to ensure that flood and other hazard maps and information are up-to-date and easily accessible to the public.

If a government can implement such a disclosure law in California there is no reason we can't do it here.

We can – and must – get beyond the ‘conventional wisdom’ on flood risk and move towards greater transparency. **CT**

Insurance industry should look ahead to even larger losses than Fort McMurray, ICLR chair suggests

The insurance industry should start thinking about what “could have been” if the Fort McMurray wildfire had been an even larger loss, the chair of the Institute for Catastrophic Loss Reduction (ICLR) said May 5 at the institute’s annual general meeting.

“First, the grief experienced in Fort McMurray is due to the loss of 10% of the city of 90,000,” ICLR chair Barbara Bellissimo said in a statement of remarks from the meeting, which marked the ICLR’s 20th year in operation. “The Canadian insurance industry must really ask the question: What would it have had to deal with if one-quarter, one-half, three-quarters or all of the city was lost? Fort McMurray had the capacity to be a much, much larger loss than it was and it should have the industry thinking a lot more about what could have been.”

Bellissimo also noted that “somewhere around 200 or more residences have already been rebuilt in Fort McMurray and judging by photographs, many (perhaps all) have been put back exactly as they were, with vinyl siding and the like. One day, the city may be hit with another wildfire disaster and the actions being made now may surely come back to haunt.”

In addition to the Fort McMurray wildfire – which cost an estimated \$3.7 billion in insured losses from more than 45,000 claims – 12 other

catastrophes were recorded in Canada last year, costing insurers approximately \$5.3 billion. “It wasn’t the busiest year for frequency – there were 14 in 2011 – but it was the costliest by far,” Bellissimo said in the statement.

She also noted that nine of the 13 events in 2016 involved hail and six affected the province of Alberta. Fort McMurray excluded, there was still more than \$500 million in insured losses in Alberta from severe weather last year – about the total for the entire country in 2015.

From the period 2009 to 2016 inclusive, Canadian insurers and reinsurers have paid out more than \$14.2 billion in claims for severe weather events of \$25 million insured or higher, Bellissimo said. “A staggering figure to be sure.”

Looking ahead to 2017 through 2021, the ICLR’s five-year strategic plan sets out specific actions for reducing the risk of loss from water, wind, hail, earthquake and wildfire. The four priority issues for the period are:

- Guide actions to reduce the risk of basement flooding;
- Champion the construction of disaster resilient homes;
- Support efforts to enhance the resilience of existing homes; and
- Identify options to expand the role of insurance. **CT**



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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.

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