

## Worksheet for Module 3 – Initial Assessment of Vulnerabilities

### Exercise – Generating a Local Climate Impacts Profile

**Table 1: LCLIP Spreadsheet**

Referring to the guide on page 5 of the backgrounder for this Module, analyze the media reports provided by the facilitators describing weather events in your region. This will help provide a scan of your vulnerabilities to the potential impacts of climate change. (This table can be developed in spreadsheet form, so that dozens of news stories can be analyzed and patterns emerge.)

Descriptions				
	News Story 1	News Story 2	News Story 3	News Story 4
1. Source				
2. Headline				
3. Date of Story				
4. Summary of news story (1 sentence)				
5. Date of event				
6. Weather type				

	<b>News Story 1</b>	<b>News Story 2</b>	<b>News Story 3</b>	<b>News Story 4</b>
7. Weather detail, if provided				
8. Impacts				
9. Consequence details				
10. Responsible organization or department				
11. 2 <sup>nd</sup> Responsible organization				
12. Other responsible agencies				
13. Significance indicator (H – M – L)				

14. Supplementary information				
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**Table 2: Analysis of Impact**

Analysis of Impact (Information from news stories supplemented by interviews with responsible agencies)				
	News Story 1	News Story 2	News Story 3	News Story 4
1. Cost				
2. Reputation				
3. Staff time / resources expended				
4. Disruption to service or operations				
5. Other relevant information and comments				

**After filling in the tables, please discuss the following questions:**

1. Where would you go to find information to fill in these fields?

2. How much time do you think it would take?

3. Who could conduct such research?

4. How could you use the results?

5. What would be the strengths of this approach?

6. The drawbacks?

# Rain wreaks havoc

By ELLIOT FERGUSON CLARE CLANCY SAMANTHA BUTLER, The Kingston Whig-Standard (<http://www.thewhig.com/ArticleDisplay.aspx?e=3237568>)

Updated 2 months ago (July 29, 2011)

Kingston was among the cities hit hardest by Friday morning's thunderstorm.

Heavy rain caused flooding throughout the city as storm sewers struggled to drain the deluge.

A system that came out of Michigan across Lake Huron overnight dumped heavy rain across much of Ontario's cottage country.

"From Orillia to Peterborough people were getting huge amounts of rain," said Environment Canada meteorologist David Phillips.

In all Kingston received 71 millimetres of rain in a four-hour period.

"Seventy-one millimetres in four hours is very intense," said Peter Kimbell of Environment Canada's Ottawa office.

Only Coldwater, north of Barrie, where 74 mm fell, received more rain than Kingston.

At 11 a.m., Kingston Fire and Rescue responded to a call at Extendicare, a long-term care home on Queen Mary Road.

"The actual problem is that the sewers are blocked up in the City of Kingston," said administrator for the centre Tanya Pilgrim. "We had a chair floating down our parking lot."

"We're trying to keep up," Pilgrim said. "(Water is) coming in from the floor where the water mains are."

Several residents were moved to a different room inside the building because of the water.

"We moved them to the dining room for lunch service as usual," she said.

Gordon Ball, assistant deputy chief for Kingston Fire and Rescue, said firefighters responded to several calls.

"We've been kind of non-stop going in the last hour," Ball said at 12:30 p.m. "When you get major downpour, you get roofs leaking."

Having water on any electrical systems can be dangerous and activates fire alarms, accounting for the number of calls, he said.

Perhaps, ironically, the city closed wading pools at McBurney and Victoria parks Friday, as well as the new outdoor aquatic centre at the Memorial Centre, though it was expected to reopen by the end of the day.

Businesses specializing in flood damage restoration were quickly booked solid. Local contractor Firstonsite Restoration had to transfer calls to an office in Belleville because of the number of requests which related to flood damage.

Eric Dinell, general manager for Environmental Contracting Services, said Friday's storm resulted in a busy day for many local businesses.

"It's like being pulled in 10 different directions," he said.

At one site on King Street a manhole lid was lifted off the ground due to an uncontrollable outpouring of water.

"It had nowhere to go," Dinell said.

Crews were called to places like the Kingston Yacht Club and Wellington Street Theatre to pump out mounting basement water, sometimes a metre deep.

"It's not until the rain stops that you can take control of it," Dinell said.

Flooding was a common story Friday afternoon.

Tim Pater owns restaurants Le Chien Noir Bistro, Atomica Gourmet Pizza and Harper's Burger Bar downtown. He said Harper's had to be closed down for lunch due to flooding.

"We had flooding coming through the rear ceiling," he said. "It was a pretty severe water accumulation."

Staff at the restaurant used buckets and garbage pails to keep the water at bay.

"The staff was great, right on top of it with mops."

Harper's was able to reopen for dinner service last night.

President and CEO of Utilities Kingston Jim Keech said rainfall between noon and 1 p.m. yesterday was extreme.

"I don't think we've ever seen that before," Keech said. "It's an incredible amount of rain in a short period of time."

Both the city's sewer system and storm water system were overflowing.

"That much rain, they're not designed to handle," Keech said.

City infrastructure was damaged in the storm.

"We've had some of our electrical vaults flood downtown ... so we shut the power out to the area," Keech said. Power was restored by late afternoon.

Several roads were closed throughout the city. At one point mid-day Kingston police reported road closures at Ordnance and Wellington streets, Union and King streets, Bath Road at Queen Mary, Bath Road between Portsmouth Avenue and Sir John A. Macdonald Boulevard, King and Centre streets, numerous stretches of Ontario Street and Gardiners Road just north of Bath Road, under the CN overpass.

The unprecedented rainfall encompassed most of the city, Keech said.

"Unfortunately there have been a number of heavy rain events over the last few years," he said. "What we've seen to this point, this is probably the largest one-hour event."

Keech said the city collects a database of information for calls relating to flooding, so residents should report damage to the city.

Marcel Philippe is a resident of one of several apartments at the corner of Bath Road and Portsmouth Avenue, an intersection completely inundated during Friday's massive midday storm.

"My apartment faces (Bath Road)," Philippe said from the flooded parking lot of his building Friday afternoon, where he and his neighbours waded around to survey damage and watch the storm.

"Cars were trying to drive down the road, smaller cars, and their exhaust would get drowned out so they'd stall. Then (the drivers) would go to open their doors and water would pour into their cars."

Philippe, 23, said the underground parking garage of the building where he lives had also flooded, with water up to his knees. The building's outdoor swimming pool was just inches away from being filled by rising flood water as well.

"I've lived in the building just about a year," he said, and had never experienced a flood like this before.

"The building is six years old and the building manager said it's never happened this bad."

At the adjacent building, which sits even lower, he said, water had nearly reached the patio doors of ground-level units.

Phil Deslauriers, 24, also lives at Bath and Portsmouth. He said he was surprised to see police directing traffic off Bath Road through his building's parking lot, in an effort to divert them from the flood.

He pulled in a large, borrowed black truck, relieved, he said, that he'd taken his own car to the mechanic the day before for service -- and removed it from the parking garage.

Other municipalities were also hit as Friday's storm rolled through the central part of the province.

Collingwood received 55 mm, Barrie got 62 mm, Orillia saw 67 mm fall and Peterborough received 55 mm.

The storm was intense but not as bad as some systems that hit other parts of Ontario earlier this summer.

On Wednesday a storm dumped 83 mm on Harrow, near Windsor, in southwestern Ontario. In June about 90 mm fell on Ottawa.

# The big dig: Monster storm a record-breaker

**Ottawa's 'snowiest December day' brings on a flurry of headaches**

By David Hutton with files from Laura Drake, The Ottawa Citizen November 10, 2008

<http://www.ottawacitizen.com/Monster+storm+record+breaker/946352/story.html#ixzz1bKy5hjeA>

Ottawa will continue to crawl out from a record-breaking snowfall today as crews tackle one of the biggest snow removal operations in the city's history.

"It's no Academy Award, but it was the snowiest December day ever in the capital," said Environment Canada meteorologist David Phillips.

In total, 37 centimetres fell in Sunday's storm, setting a record for the most snow in a single December day since Environment Canada started keeping records in 1938. The previous record was 30.4 centimetres, which fell Dec. 21, 1977.

However, the record for most snowfall in a 24-hour period remains 40.4 centimetres, which fell March 2, 1947. In that monster storm, considered the biggest in Ottawa's history, around 80 centimetres of snow fell over a 48-hour period, paralysing the city. Eight people died in accidents, a woman delivered a baby while en route to the hospital in a toboggan, and children skied to school.

This most recent storm has caused some headaches as well. While Ottawa-area schools were open yesterday, all school bus service was cancelled.

There is now a 75-centimetre blanket of snow on the ground in Ottawa. That's the most snow that has been on the ground at one time since Environment Canada started keeping track in 1955, said Mr. Phillips. The previous record was 68 centimetres in 1977.

This should come as no shock to the thousands of Ottawa residents who were forced to dig their cars out from massive snow piles on Sunday and yesterday.

Ben Willis, 24, relocated to Ottawa from New Jersey only a month ago, and said he was shocked when he looked outside Sunday.

"I knew it was going to be a little bit colder, but I didn't expect the snow to be like it was. It's unbelievable."

Mr. Willis managed to dig his car out and get to work on Sunday, only to have his car snowed in again by the plow that came to clear the lot. He said it took him and his co-workers an hour and a half just to go to a nearby grocery store and grab some dinner.

Mr. Willis said he doesn't know how long he plans to stick around Ottawa -- it depends on whether the weather gets any worse.

The total cumulative snowfall so far this year is 148 centimetres, including almost 90 centimetres in December. At this time last year, only 18 centimetres had fallen.

"Unless there's a monsoon, you're now guaranteed to have a white Christmas," Mr. Phillips said. "Even the biggest grinch should like that."

Of course, Christmas shopping was delayed for many people, stuck inside their houses on Sunday -- usually one of the busiest shopping days in the season.

"It was not like a normal Sunday at all. In the morning we had a few people, but by noon it was empty," said Joy Roberts, who works at a ladies clothing store in the Bayshore Shopping Centre.

Lara Vaarre, the owner of Truffle Treasures in Westboro and the Glebe, said she crunched the numbers to see just how dead it was on Sunday and figures there was about 75 per cent fewer customers than the same time last year.

Which isn't to say it was all bad news -- at Truffle Treasures' Glebe location, free hot chocolate was handed out to people who came into the shop to warm up.

"They couldn't drive anywhere, so they had nothing better to do but drink hot chocolate," Ms. Vaarre said.

"Then they'd run and tell their friends and come back for more."

Ms. Vaarre said she's not worried, though, since Christmas shopping still has to get done and everything should catch up by Dec. 25.

The weather should be better for those who do have shopping left. Some light flurries are expected today, tomorrow and Thursday.

Today, city work crews -- 500 people and 400 pieces of equipment -- will continue to work on plowing roads, sidewalks and bus lanes and all routes are expected to be clear by this afternoon, said John Manconi, director of surface operations for the city.

All residential streets should be clear by late morning, unless more snow hinders the workers' progress, he said.

The biggest challenge is directing plows around parked or stranded cars. The city's winter parking ban remains in effect, Mr. Manconi said.

"They've been working around the clock," Mr. Manconi said of snow removal crews.

"This was a major event and we ask people to be patient," he said.

"We've made more progress than we thought we would on residential streets."

The cost of the cleanup from this storm will be more than \$5 million, he said. The city expects to continue snow removal operations into early next week.

One of the major problems was at transit stops, where huge banks of snow forced people out into the street while they waited for buses.

"There are constraints and those constraints will be resolved as snow clearing continues," said Alain Mercier, director of transit services for the city. "It's just one of those things."

During the morning commute, an articulated city bus reportedly skidded into a snowbank downtown, forcing long delays and creating a line 70 buses long.

"If you have one individual vehicle stuck it causes some isolated delays," Mr. Mercier said. "It doesn't matter whether it's an articulated bus or a 40-foot bus."

Garbage and recycling service will be delayed by a day everywhere in the city.

The Ottawa International Airport was back to normal by yesterday afternoon after a day of cancellations and chaos.

"The system is back on its feet," said Krista Kealey, a spokeswoman for the airport.

City-run and private snow removal companies worked long hours to try play catchup to clear roads, sidewalks, and parking lots.

"It's been absolutely the craziest day I've ever had behind a plow," said Stephane Beaudoin, the owner of Snow-X, an Ottawa-based plowing company.

Mr. Beaudoin and his crew, who clear mainly commercial parking lots, worked for more than 36 hours straight starting early Sunday.

The only major accident reported in the region occurred when two tractor trailers collided with four other vehicles near Kingston. One of the transport trucks leaked 300 litres of fuel into a nearby creek, and the Ministry of Environment has been called in to investigate. One person was sent to hospital with non-life threatening injuries.

Over the weekend, the Ottawa OPP detachment responded to 172 calls for service, including 16 accidents, two of which involved injuries.

37: Number of centimetres of snow that fell in a single day

-- a new record for December

75: Number of centimetres of snow now on the ground -- also a record for Ottawa

\$5M: Anticipated cost of the cleanup -- and it's not in the city's budget

# Belleville declares state of emergency amid floods

(<http://www.cbc.ca/news/canada/ottawa/story/2008/04/14/ot-floods-080414.html>)

Last Updated: Monday, April 14, 2008 | 5:39 PM ET [CBC News](#)

Belleville, Ont., remained in a state of emergency Monday as the Moira River continued to rise and overflow, forcing families to flee their homes.

"It could go up another foot. If that's the case, probably look at 50 homes to be evacuated and 150 more that shouldn't drink their water," Mayor Neil Ellis said Tuesday.

This is the first time in 25 years that the river has breached its banks, Ellis said, blaming the situation on unusually large amounts of snow melt feeding the three rivers that flow into the Moira.

Terry Murphy, general manager of Quinte Conservation, the Belleville-area conservation authority, said about 60 homes in Belleville, north of Highway 401, are affected by flooding. Of those, about a dozen families have been forced from their homes, but many families have also left voluntarily, Murphy said.

Another 60 to 90 homes in the Tweed, about 30 kilometres to the north, face rising waters as well.

"A lot of people up there have evacuated their houses also," Murphy said.

Officials predict the rushing waters won't reach their peak flows until Wednesday, but the river is not rising as fast as it had been earlier.

The city has closed roads in the areas with the worst flooding:

- Harmony Road from Highway 37 to Ashley Street.
- Ashley Street from Highway 62 to Foxboro-Stirling Road.
- River Road from Pumpton Road to the north limit of River Road.

Residents in flooded areas have been urged not to drink water from nearby wells, which may be contaminated.

Local businesses and chain stores have donated water and pumps to those who need it, Ellis said, and neighbouring communities have been helping also.

Murphy estimated that volunteers would continue filling and placing sandbags around homes until 11 p.m. Monday.

Heather Mallison, who moved a year ago into one of the neighbourhoods that is now flooded, said she had been told the river hadn't flooded since 1982.

"So it came as a shock to everyone," she said. "I think I'm just in awe. I feel like a deer in the headlights.... It's pretty scary."

Meanwhile, in Ottawa, the worst flooding is believed to be over along the Rideau River, which crested over the weekend, the Rideau Valley Conservation Authority reported.

A spokesperson said streets near the Rideau River closed because of flooding should be open and relatively dry by mid-week.

Renata Mohr's house on the riverbank has been practically surrounded by water for days, but that hasn't dampened her spirits.

"It's part of the beauty of being on the river," she said. "We're so privileged to live with nature right beside us like this and so when a flood comes, we're pretty prepared and it's not a big deal."

She said sump pumps and sound construction prevented damage to her house.

Some Ottawa parks have been affected by the flooding.

The city has closed Claudette Cain Park in the city's south end after the Rideau River's high water levels caused some rapid soil erosion.

The city is also warning parents to keep children away from overflowing wading pools in:

- Dutchie's Hole.
- Strathcona Park.
- Windsor Park.
- Brantwood Park.

The waters in those pools are deep enough to reach the chest of an adult standing in them, but they can't be drained because of high water levels, the city said.

Meanwhile, the Ottawa River continues to rise, and could crest in two weeks, authorities said. However, the local conservation authority said as long as the peak in Ottawa and the melt upriver don't occur at the same time, residents along the Ottawa River should be safe from floods.

Barbara Sauter, whose row house on Kehoe Street in Britannia Village is separated from the Ottawa River by a low concrete wall, said she isn't worried.

"Actually I never had any water since '72, and I hope it's still the same," she said.

The city has left piles of sand and sandbags at the end of every street in Britannia Village as a precaution.

# No heat relief for Ontario, Quebec

High temperatures move into western New Brunswick

Last Updated: Wednesday, July 7, 2010 | 10:15 PM ET [CBC News](#)

<http://www.cbc.ca/news/canada/story/2010/07/07/heat-wave-ontario-quebec.html>

Public health officials in parts of Ontario and Quebec are urging people to keep cool as scorching temperatures continue, with no relief expected until the end of the week.

Temperatures in Ottawa, Toronto and Montreal inched up slightly Wednesday from the day before, according to Environment Canada.

In Ottawa, the mercury rose to 34 C by mid-afternoon, though with the humidity it felt more like 44 degrees. In Toronto, the temperature dropped to 32 C, one degree lower than Tuesday's high of 33 C, but the humidex was 43. And in Montreal, the humidex was 42 C, eight degrees higher than the actual temperature of 34.

Dr. Vera Etches, Ottawa's associate medical officer of health, said teams of nurses headed out Tuesday to check on residents in local buildings three storeys or taller that do not have air conditioning.

She said the teams targeted buildings occupied by seniors and made sure people knew how to handle the extreme heat.

"If people are alone, if there's nobody checking in on them, that can lead to more serious outcomes."

For the most part, people are aware that "heat can be deadly," but Etches said people should look for signs the body is too hot, such as nausea, thirst, dry skin and mouth and dizziness.

She urged people to check on neighbours and friends — particularly seniors — to make sure they are not dehydrated or suffering from heat stroke.

The heat wave is causing a spike in emergency room visits at some Ottawa hospitals. Officials said 158 people visited the ER at Montfort Hospital on Monday. Hospital administrators said this was the highest number of people it has ever seen in one day.

At the Children's Hospital of Eastern Ontario, doctors are seeing more cases of asthma attacks triggered by the heat.

The smog accompanying the heat prompted health officials to warn people with cardiac or respiratory problems to take special care.