



Great Lakes and St. Lawrence Cities Initiative Municipal Adaptation and Resiliency Service (MARS)

Extreme Weather Event Fact Sheet

Event : Flood

Location : Toronto, Ontario

Date : July 2013

RECENT EXTREME WEATHER EVENT

On July 8th 2013, thunderstorms formed to the west and north of Toronto and converged around the city at approximately 5:00pm. Intense rainfall over several hours triggered urban flooding, affecting streets, basements and other low lying areas. Urban rivers overflowed. The average rainfall in Toronto for the entire month of July is 74 mm (2.9 in). During the July 8th storm, Environment Canada reported 126 mm (4.9 in) of rainfall, far exceeding the average monthly rainfall for July of 74 mm and the previous single-day rainfall record for Toronto of 121 mm (4.7 in), set in October 1954 by hurricane Hazel.

IMPACTS OF EXTREME WEATHER EVENT

Public and private property: Flooding caused significant damage to both public and private property throughout the city. Municipal facilities around the city sustained flood related damage, while significant flood related erosion throughout the parks system was also recorded. Basement flooding was also widely reported, resulting in damage to both public and private property.

Economic Cost of the Weather Event: The City of Toronto's estimate for storm costs is \$70.1 million CAD. The City of Toronto has received a significant number of liability claims from residents and businesses as result of the storm. As of September 10, 2013 this included 454 claims against the City made directly by private property owners and 5,330 claims made by private insurance companies on behalf of their insured.



Critical Infrastructure: Damage was reported among various electrical systems located at pumping stations. At the peak of the storm, around 300 000 Toronto Hydro customers were without power. There were numerous incidences of sink holes, damage to overwhelmed sanitary sewers, storm sewers, outfall pipes and storm inlets, and damage to major low lying roadways, underpasses and transit infrastructure. The storm interrupted public transportation services; flooding the subway system and leaving one GO Transit train stranded with 1,400 people on board.



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WHAT CHANGES IN CLIMATE CAN TORONTO EXPECT?

The City of Toronto is expected to experience more frequent and intense precipitation, more extreme weather events as a result of climate change. Toronto is also likely to experience hotter summers and milder winters, with the number of days with a recorded temperature of more than 30 degrees already on the rise and expected to further increase.

MUNICIPAL RESPONSE AND LESSONS LEARNED

Power was restored to most affected residents in the early morning of July 9th, however a significant number of residents in the west end were without power for approximately two days. Showering centres were opened for residents without power and the Red Cross conducted wellness checks in high rise buildings in the power out zones.

The City's Emergency Operations Centre activated on July 8th, 8 p.m. to manage the incident and was operational until 7:00 a.m. on July 12th. The Office of Emergency Management follows a severe Weather Notification protocol, which provides staff with a framework for notification in the event of severe weather for the City.

For more information on the City of Toronto's emergency protocol, visit : <http://goo.gl/caicIB> .

According to Jennifer Drake, Assistant professor of civil engineering at University of Toronto, long standing floodplain regulations that restrict and prevent building in floodplains contributed to the rapid recovery following the flood.



The Emergency Level Notification Operational Support Function, outlines the City's scalable response based on the magnitude of the event or impending situation and provides guidance on emergency notification protocols. The Operational Support Function is part of the City's Emergency Plan.

For more information on the Municipal Adaptation and Resiliency Service, visit <http://www.glslcities.org/initiatives/greencities/climateadaptation.cfm> or contact Nicola Crawhall, at nicola.crawhall@rogers.com.

Photos: Toronto Star (p.1), CTV News (p.2)

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