



Local News

Climate change hits home: Western researcher projects grim flooding scenarios

What used to be called a 100-year-flood in London is now occurring every 30 years, says a Western University researcher who has just released the first flood-impact map of its kind in Canada.

Serena Marotta

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What used to be called a 100-year-flood in London is now occurring every 30 years, says a Western University researcher who has just released the first flood-impact map of its kind in Canada.

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And the outlook is even more grim, for London and many parts of Canada, said Slobodan Simonovic, an engineering professor and flood risk expert who developed the map that projects flooding in the next 80 years using different climate change scenarios caused by global warming.



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“Definitely, there is a potential for very large floods (in London),” he said.

Simonovic used 150,000 reference documents – including current and historical rainfall and snow-melt runoff data and a range of climate change projections – to create the interactive map that allows users to view predictions of the best, mid and worst-case scenario of flooding and inundation (water covering

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“The message is very clear: Up to 30 per cent more of Canada may be under water by 2100. And flood depth may increase by up to 60 per cent,” he said.

There are implications for homeowners, developers, municipal and provincial governments and conservation authorities, especially in cities such as London that straddle rivers and where heavy floods have damaged homes, submerged roads and killed people.

Based on current and historical data, a 100-year flood, defined as one that occurs once in 100 years, raises the water level of the Thames River at the forks by 6.2 metres.

With Simonovic’s projections, the new normal 100-year flood depth from 2060 to 2100 would be 7.6 metres.

“Serious, serious attention should be given to the impact of disasters like this,” he said.

As global leaders wrap the COP26 summit in Glasgow, both local and international efforts are needed to reduce the risk and formation of floods by reducing emissions, Simonovic said.

STORY CONTINUES BELOW

More important at a local level, he said, is “adaptation.”

One example is further floodproofing all five of the city’s wastewater management plants located in floodplains, he said.

“Moving the whole facility outside of the floodplain is difficult (and) very expensive, but doing smaller kinds of things,” like moving mechanical or electrical equipment to higher elevation, Simonovic said, “is something that needs to be considered.”

Weather events, like heavy rainfall on an already-saturated ground, can put anyone in London at risk of floods, said Teresa Hollingsworth of the Upper Thames River Conservation Authority, who cited flooding in the region following nearly 70 millimetres of rain that fell Sept. 22 on London – a record amount for that day.

In the past, large floods typically happened in the spring when snow melt was worsened by rainfall, Hollingsworth said. Now, due to warming climate, there are “more midwinter melt flood events due to melting snow in January and February,” she said, adding that big flood events can happen “right over Christmas.”

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said.

Going forward, Simonovic said regulations to restrict new development in high-risk areas are “essential for preventing future losses,” citing the catastrophic 2013 floods in Calgary that caused \$5 billion in damage.

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Though London doesn’t face snow melt from mountains or the same precipitation as Calgary – and there are protective measures in place here, like the Fanshawe Dam – Simonovic warned, “the level of protection is not sufficient.

“Definitely, there is a potential for very large floods (in London),” he said.

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FACT BOX

- A “100-year-flood” is a flood that statistically has a one per cent chance of occurring in any given year
- A flood plain is an area of land, generally flat and next to a river or stream, that is prone to flooding. This area gets covered in water when the river floods.
- Simonovic’s map offers detailed information, like surface elevation and water depth. It can be accessed here: <https://www.floodmapviewer.com/>



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