

Floodplain policies ignored: engineer

Carp River risk underestimated, city expert tells province

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By Kate Jaimet, The Ottawa Citizen January 25, 2010

The computer model the city is using to approve new developments along the Carp River seriously underestimates the risk of flooding on downstream properties, warns a senior project engineer working for the city.

Darlene Conway's previous discovery of flaws in an earlier model of the river has already led to a freeze on the massive Kanata West suburban development.

Now, in a Jan. 18 letter she sent as a private citizen and not a city employee, Darlene Conway writes to Environment Minister John Gerretsen, as well as municipal and provincial officials, stating:

"Based upon 20 years of professional practice, in eastern and southern Ontario, I would have to characterize this project as unprecedented in its apparent casual disregard for long-established provincial floodplain policies, technical guidelines, and basic riparian rights."

An engineer with Greenland International, the firm asked to review the model after Conway's original discovery, disagrees. And he says the argument is irrelevant in any case because the existing model of the river will soon be replaced by a new one.

"The argument Darlene is presenting may hold some validity in 20 per cent of the (river) corridor," said Don Moss. But "all of this is going to be a moot exercise, because there is going to be a new version of the model that is going to be unveiled in the next four to six weeks."

The potential for flooding in the Carp River is a critical question, as developers are planning massive new subdivisions in the Carp watershed. The Fernbank development, next to the flood-prone neighbourhood of Glen Cairn, is to have as many as 11,000 houses on 674 hectares of land, although only a third of that land drains into the Carp.

Further downstream, the Kanata West development near Scotiabank Place will contain an anticipated 7,200 houses plus office and retail buildings.

Construction will send more stormwater into the river, as the absorbent soil of rural fields is replaced by asphalt streets and sidewalks. It's important to get the computer modelling right to show how much water the river can handle, and what sorts of extra measures, such as stormwater management ponds, need to be built, to avoid flooding of the river and backing-up of storm sewers that drain into it.

Overfilled storm sewers can also lead to a chain reaction that causes sanitary sewers to back up, as happened in the Glen Cairn neighbourhood after the storm of July 24 last year.

Conway has long experience with the computer modelling of the Carp River: In 2008, she discovered an error in the model then being used, which meant that the runoff from 700 hectares of development in Kanata West did not appear in the calculations. Her discovery -- which was championed by another city engineer who challenged the city as a private citizen, Ted Cooper -- led to an investigation by the municipal auditor general, and a halt to the Kanata West development until the model could be corrected and reviewed by Greenland International.

In her Jan. 18 letter, Conway argues the revised model of the river is still wrong, because the modellers have assumed bridges upstream along the Carp will hold back more water than they actually will. If Conway is right, water will gush downstream faster, increasing the potential for flooding.

At the same time, she argues, the model underestimates the extent to which vegetation will hold back water in the downstream reach of the Carp, through Kanata West. If so, more water will stick around on flood-prone land than the model predicts.

In re-running the model with values that reflect current conditions, Conway states that she found that downstream of Hazeldean Road, "flood levels rise at every location within the study reach ... in many locations more than 30 centimetres and in most locations more than 15 centimetres."

Moss said he accepts Conway's criticism of the way the model treats the upstream bridges, and that those calculations will be fixed in the revised model of the river. As to the rest, he disagrees with her analysis and the numbers Conway would assign to the flow rates of the river, but said it's a matter of legitimate professional debate.

"The number tends to be a little bit subjective in certain types of work," he said. "I've discovered that if you take 10 modellers and put them in a room, you'll get 11 numbers."

Moss said that, in any case, when developers come to the point of having specific plans for subdivisions approved, they will have to build in extra stormwater management measures and have their plans approved by the Ministry of the Environment and the city.

"The checks and balances are in place to ensure there's going to be no funny stuff going on," he said.

Moss added that new developments will be judged against a revised model of the Carp River, which his company is currently developing, and which will include planned changes to the river, such as the widening of the channel in certain areas.

However, in her letter, Conway raises concerns applications for development may still be approved in the interim, based on modelling that she considers seriously flawed.

The city plan that allows the Fernbank lands to be developed is under appeal at the Ontario Municipal Board over flooding concerns raised by the environmental group Friends of the Greenspace Alliance. Conway is acting as an expert witness for the group.

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