

August 29, 2010

The Honourable John Wilkinson
Minister of the Environment
77 Wellesley Street West
Ferguson Block,
11th Floor
Toronto, ON M7A 2T5

BY E-MAIL to minister.moe@ontario.ca

Dear Minister:

Re: Kanata West & Carp River Class EA Notices of Completion
City of Ottawa – Request for Order under Section 16 of EAA

I have prepared this submission in response to the Notice of Completion posted on July 30, 2010 by the City of Ottawa (the 'City') and Kanata West Land Owners Group ('KWOG') for the seven Class Environmental Assessment ('Class EAs') projects subject to the July 21, 2008 Order of former MOE Minister John Gerretsen that include the Carp River Restoration Plan (the 'CRRP') and six other Class EAs in the Transportation Master Plan (the 'TMP') and Master Servicing Study (the 'MSS').

Based on more than 20 years of professional engineering experience, and in consideration of the history of flooding problems in the Carp River watershed, and the egregious nature of the problems with the 2006 Class EAs that prompted Minister Gerretsen to issue his Order, I am very concerned about the basis on which the Notices of Completion for these projects has proceeded.

Despite the complex and interrelated nature of 22 engineering projects in the supporting documentation involving the design of water, wastewater, stormwater, and transportation infrastructure, neither of the project managers are licensed professional engineers, and no professional engineer has signed or sealed the 2010 updated MSS, TMP, or CRRP. As a licensed professional engineer, I will be acting on my obligation to bring this matter to the attention of Professional Engineers Ontario for their review / investigation.

As is explained in my attached detailed review and comments on the subject Class EAs, it is evident that the proponents have failed to consider the change in environmental setting precipitated by the July 24, 2009 flood that impacted nearly 1500 homes in the Carp River watershed and prompted the City to initiate the West End Flood Investigation Class EA (the 'WEFI'). Further is the fact that on July 14, 2010 - just 16 days before the Kanata West Notices of Completion were posted - Ottawa City Council approved a Holding Zone for the entire catchment area of the Hazeldean wastewater pump station, while the City investigates alternative solutions, and implements measures to expand its capacity (the Hazeldean PS is supposed to service much of the southern portion of the Kanata West development area on an interim basis according to recommendations from a 2005 memo included in the 2010 MSS update).

The Province has long recognized the importance of planning on a watershed basis, and given the nature of persistent flooding problems in the Carp River watershed affecting thousands of its

residents, such an approach to implementation of the WEFI, CRRP and Kanata West Class EAs should be compulsory. Despite this, the City has elected to move forward with the CRRP and KW Class EAs for a future development area downstream from the existing flood prone community of Glen Cairn, before the public has had an opportunity to participate in the decision-making of the WEFI recommendations.

When MOE is considering the Part II Order Requests it receives for the CRRP and KW Class EAs it should be weighing heavily the interests of the people of Glen Cairn, hundreds of whom have been flooded three times since 1996, and ensure its decision is consistent with the purpose of the EAA (the betterment of the people of Ontario). When considering these requests, the MOE will be directed towards the proper outcome by acting consistently with its Statement of Environmental Values, in particular:

- adopting an ecosystem approach to environmental protection and resource management;
- considering the effects of its decisions on current and future generations, consistent with sustainable development principles; and
- using a precautionary, science-based approach in its decision-making to protect human health and the environment.

Despite the overriding issues stated above, some pragmatism is also warranted in the decision-making while considering the requests. Despite the many serious problems that exist with the current state of the supporting documentation for the Class EAs and the unresolved flooding problems affecting existing neighborhoods, I have not lost sight of the fact that development in the Kanata West area has been held up for a very long time, and a solution must be found to allow some development to move forward, without compromising the health and safety of existing and future residents, and without making any decisions that could prove irreversible and/or unsustainable – all while upholding the purpose and requirements of the environmental assessment process.

While the proponents of the updated 2010 Class EAs have attempted to formulate a process to allow development to move forward on an interim basis, it is based on a plan that quite literally turns back the clock nearly 30 years on watershed planning, stormwater and floodplain management, and perhaps most importantly, decisions of the Ontario Court of Appeal concerning riparian rights and the reasonable use of drainage systems to be respected by conservation authorities and the Ministry of Environment while issuing permits under statute authority.

Simply put, there is factual evidence that the hydraulic modeling prepared by the "Modelkeeper" is flawed. Results of the hydraulic modeling provided to me in an email from the City on August 23, 2010 show that the model used to calculate flood levels in-places has calculated / been based on negative flows. This is not the type of result that is corrected with model calibration. This is an indication of model instability, and of an error that would normally have been corrected had the model been subject to the required level of review and approval by professional engineers prior to giving the green light for Notices of Completion for the Class EAs being posted. In the same email which accompanied the hydraulic modeling results, the City's project manager commented:

"I can confirm Professional staff at the MVC, including P. Eng's (John Price & Paul Lehman) and the City (PGM and ISD) were provided with and have reviewed the updated modelling and the Widening Report. In addition, the actual updates were prepared by the City's Model Keeper (also a P.Eng). City and Conservation Authority, MOE and MTO Staff concur with the reposting of the EAs."

Last October, the City's Modelkeeper assured City Council that it "followed a rigorous Quality Assurance and Control process that requires an internal review of results". Given the fact the July 2008 Order, and subsequent Third Party Review (TPR) were intended to get to the bottom of the problems with the model to avoid such errors, and that somehow another glaring error escaped the review of the City, MVC, MOE and MTO professional engineers is completely unacceptable. I also intend to bring this matter to Professional Engineers Ontario for investigation.

Beyond the obvious errors contained in the modeling (impossible negative flow conditions), there are, I submit, unreasonable impacts on flow conditions to rural riparian landowners downstream of the urban boundary of the City as a result of the relaxed stormwater management criteria proposed for much of the Kanata West development area in the MSS, in addition to flow efficiencies introduced into the CRRP corridor by the Modelkeeper since the TPR was approved by Council in May 2009. While Table 3-6 of the Third Party Review documented future flood level increases of up to 0.28m in the reach of the Carp River through Kanata West, and up to 0.11m in the rural area downstream from Kanata West, Table 4-1 of the 2010 CRRP Alternative Widening Report documents the effect of proposed changes made to the river corridor plan over the last year. According to the latest findings of the Modelkeeper, all increases in flood levels through Kanata West have been eliminated, and downstream increases in flood levels have been kept to 0.10m or less - a level increase that the Modelkeeper can accept because it is "within the accuracy of the model". (In my Professional Opinion, such a rationale should be rejected because the real intent of such modeling exercises is to show the comparative difference between future and existing conditions.)

While any increase in flood levels impacting riparian landowners should be of concern (a 5cm or less increase has been of concern to the Mining and Lands Commissioner in her consideration of appeals under Section 28 of the Conservation Authorities Act), what is particularly concerning to me are the impacts of changes introduced to the CRRP river corridor by the Modelkeeper to reduce flood level increases documented in the TPR. These impacts are not clearly documented in any of the 2010 Class EA documents - the evidence of impacts is buried in the model printouts and summaries provided by the City on August 23, 2010.

According to the modeling results released by the City, future flood flows discharging from the urban area of the City into the rural Carp River watershed will be increased by 60%. Furthermore, the proposed changes in the CRRP will reduce the travel time of the flood wave through Kanata West by 1.88 hours, or nearly 25%. Such changes are not consistent with longstanding criteria for channelization projects once requiring approval under the *Lakes and River Improvement Act*, that according to EBR Registry No.PB06E6012, are expected to be enforced by conservation authorities through the Fill Permit process under Section 28 Regulations of the *Conservation Authorities Act*.

While the Modelkeeper claims that the selection of Manning's n parameters (the channel roughness parameter that has been adjusted by the Modelkeeper) is a matter of debate between professionals, there is no debating the criteria of the technical guidelines of the *Lakes and Rivers Improvement Act*, which state:

The guidelines and criteria in this section have been established to provide for the adequate protection of natural resources, interests of riparian landowners, other uses, and natural amenities where a ... channelization is proposed on a ... river.

The following hydraulic characteristics of the natural river channel shall remain the same in the proposed channel:

- 1) travel time (not to be decreased); and
- 2) the stage storage and stage discharge relationships of the natural river and its flood plain are to be maintained (evaluated in 0.3 m elevation increments from the channel bed to the flood level per Provincial Natural Hazards Technical Guide, 2002).

These criteria maintain a flood plain area in the channelized reach identical to that of the original watercourse. The strength of these criteria is that they are straightforward to apply and easily verified by the approving agency. [emphasis added]

The guidelines continue:

However, their strict application may be inhibiting. Exceptions may be considered where the following objectives of the criteria are met:

- 4) routing calculations are provided which conclusively demonstrate that there would be no increase in downstream peak flows and total storage has been maintained or increased.

The evidence is very clear, the CRRP and MSS stormwater management criteria for SWM ponds #1, #2, and #5, in combination with other SWM ponds in the MSS not subject to the July 2008 Order, do not provide for the adequate protection of natural resources, interests of riparian landowners, other uses, and natural amenities.

In my detailed submission, attached, I have also documented other shortcomings in the 2010 MSS update as they relate to vulnerabilities in the trunk storm and sanitary sewers proposed in the MSS, that if not corrected, would eventually result in unacceptable surcharging and risk of flooding in the future Kanata West development area, as well as the existing Terry Fox Business Park.

As stated above, I have not lost sight of the fact that development in the Kanata West area has been held up for a very long time, and a solution must be found to allow some development to move forward, without compromising the health and safety of existing and future residents, and without making any decisions that could prove irreversible and/or unsustainable – all while upholding the purpose and requirements of the environmental assessment process. As a professional engineer, I would advise against approval of the implementation plan included in the Class EA documentation. No amount of data collection for model calibration can possibly reverse the serious problems inherent in a stormwater management system and channelization project that increases downstream peak flows by 60% and reduces travel times by 25%. I also

have serious concerns with the proposal to construct the CRRP, as a natural channel, but one that requires regular maintenance of vegetation cover in perpetuity to avoid conditions that could aggravate flood levels. Such a system is not robust and relies on a maintenance program that is not currently funded by the City of Ottawa, nor anticipated in the Implementation Plan.

In the alternative, I would support the following implementation plan that could form the basis of conditions you could include in an Order under Section 16 of the EAA for the CRRP and all Kanata West Class EAs:

Fall 2010

Kanata West Class EAs

1. Withdrawal of Notice of Completion of CRRP and all Kanata West Class EAs;
2. Documentation of anticipated development in a 5-year horizon;
3. Preparation of stormwater management plan required to service 5-year development plan based on cumulative impact assessment on a watershed basis and identification of SWM criteria to maintain in-stream flows at pre-development rates; required SWM ponds are to be located outside of the Regulatory floodplain;
4. Preparation of interim water master plan required to service the 5-year development plan;
5. Preparation of interim transportation plan that identifies road and transit requirements to provide the level of service required by the 5-year development plan;

Kanata West Class EAs in conjunction other Class EAs underway

6. Preparation of interim wastewater plan whereby 5-year development plan is serviced by upgrades to the Signature Ridge PS and construction of emergency overflow(s); and upgrades to the Fairwinds PS in combination with improvements (emergency overflow) / upgrades to the Hazeldean PS that are identified / coordinated with the WEFI Class EA;
7. Coordination of CRRP with flood remediation requirements of WEFI;

Year-end 2010

8. Post Notices of Completion for Kanata West undertakings required to support 5-year development plan [KWOG and City as proponents]; and
9. Post Notices of Completion for CRRP and WEFI [City proponent].

The current separation of the Class EA planning processes for the Kanata West / CRRP and WEFI is not in the public's interest, runs counter to the principle of ecosystem/watershed planning, and is bound to result in a repeat of the flooding problems that have long affected the

Carp River watershed. I have come to know many of the members of the public who have been active in Carp River watershed issues in recent years and know that they are not anti-development. Their concerns are with the obvious lack of technical justification and apparent lack of policy that has been advanced in support of what appears to be non-sustainable development in portions of the Kanata West area.

Just like it makes no sense for all potential development in Kanata West to be put on-hold because of risk of flooding to a fraction of the development area, so too does it not make sense to avoid using a watershed approach to resolve flooding issues in the Carp River by proceeding with the WEFI following a separate schedule / process from the present CRRP schedule / process. It appears that a concern exists that Part II Order Requests might be filed because of the apparent non-sustainable development component of the CRRP that would hold-up implementing solutions to Glen Cairn flooding problems. What makes sense is moving forward with a flood remediation project and implementation plan that meets the requirements of all stakeholders in the watershed - that would be supported by the public. Unfortunately the public was never consulted about this.

To respect the desire of the proponents of the original CRRP to improve the functioning of the Carp River, with the possibility of yielding additional development potential, I would support use of the Addendum process of the Municipal Class EA if it can be subsequently determined that there is a means to safely develop lands that are presently at risk of flooding. In my 7+ years of examining the hydrology and hydraulics of the Carp River, I am certain this would require expanding the scope of the restoration plan further downstream than is presently proposed.

2011 -2015

The City is moving forward with a study examining wastewater servicing in the entire Kanata-Stittsville area that is to result in an update to its wastewater master plan in the first quarter of 2011. This study would inform the long-term wastewater servicing requirements of the Kanata West development area.

During this time period the City would implement the necessary stormwater, wastewater and drainage improvements to lower the risk of flooding in Glen Cairn. At the same time the City and KWOG would continue flow monitoring and calibration of its modeling of the Carp River. Opportunities for improving the CRRP that would enable / facilitate additional development could be pursued, and brought forward in an Addendum to the original Class EA.

2015

10. Prepare a monitoring report and documentation of 5-20 year development plan;
11. Prepare Addenda to CRRP and MSS based on flow monitoring and model calibration, and results of wastewater master plan update;

The Addenda to 5-year development plan Class EAs would implement changes to infrastructure required to support mid-term to long-term development.

Proceeding with the implementation plan as set-out above, would be

- consistent with an ecosystem approach to environmental protection and resource management;
- implement infrastructure for growth and remedial measures to resolve existing servicing problems thereby considering the effects of decisions on current and future generations, consistent with sustainable development principles; and
- would proceed in a cautionary, science-based approach that meets the demands of immediate development pressure, while ensuring decision-making protects public health and safety, and the environment.

Proceeding in this fashion commits to an implementation plan consistent with the requirements of the Class EA process, rather than implementation of a plan where the impacts are yet to be defined and the implementation of the long-term plans requires piecemealing of solutions because of current uncertainty.

Respectfully submitted,



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Attachment Distribution (by email):

Minister Wilkinson - Detailed Submission - text only
Don Herweyer - Detailed Submission - Text + Files 1 to 5 containing 45 Attachments (total)
Michael Green - Detailed Submission - Text + Files 1 to 5 containing 45 Attachments (total)
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