



**STAFF REPORT
INFORMATION ONLY**

**Update on the Engineering Analysis for the Basement
Flooding Work Plan – Study Area 3**

Date:	December 19, 2007	
To:	Public Works and Infrastructure Committee	
From:	Lou Di Gironimo, General Manager, Toronto Water Gary Welsh, General Manager, Transportation Services	
Wards:	Ward 17, 15, 12	
Reference Number:	P:\2007\Cluster B\TW\pw07050	(AFS# 6616)

SUMMARY

An update on the engineering analysis being undertaken to address surface and basement flooding issues, within Study Area 3 of the Council approved Basement Flooding Work Plan is presented in this report.

FINANCIAL IMPACT

There are no financial implications arising from this report.

DECISION HISTORY

City Council, at its meeting of April 25, 26 and 27, 2006, in adopting a report from the General Manager of Toronto Water titled “Work Plan for the Engineering Review Addressing Basement Flooding”, approved a work plan to undertake the necessary engineering investigations and develop remedial options to address basement flooding problems in the chronic basement flooding areas across the City. The noted staff report can be viewed at: <http://www.toronto.ca/legdocs/2006/agendas/council/cc060425/wks2rpt/cl016.pdf>

City Council, at its meeting of November 19 and 20, 2007, requested that the General Manager, Transportation Services, in consultation with the General Manager, Toronto Water, develop a comprehensive engineering analysis to determine what improvements must take place to eliminate the excessive flooding where significant ponding occurs on the street, overtopping the curb and flooding onto private properties, as it relates to the Works Committee Report 2, Clause 16 (adopted, as amended, by City Council on April 25, 26 and 27, 2006), Appendix 3, Study Area 3, and that an action report be brought to the January 2008 Public Works and Infrastructure Committee. The Council Decision Document associated with this request can be viewed at: <http://www.toronto.ca/legdocs/mmis/2007/cc/decisions/2007-11-19-cc14-dd.pdf>

ISSUE BACKGROUND

Current design standards for storm drainage which were developed in the mid 1970s include a design for the storm sewer system to intercept and convey the stormwater runoff from a two to five-year return storm event. For larger storms, stormwater that can't be intercepted by the storm sewer (pipelined) system remains on the road surface and flows along the streets, typically to a low point where it outlets via an overland flow route to the nearest watercourse.

However, in many of the older areas of the City developed prior to 1970, many of the streets do not provide a continuous flow route, are very flat or have low points with no place for the water to outlet and therefore significant ponding can occur on the street, particularly during heavy rain conditions that exceed the sewer design capacity. During extreme storm conditions, significant ponding of water can occur on the streets, overtopping the curb and flowing onto private property. Further, in many of these areas, the lots are poorly graded (in many cases toward the house) and, in some cases, homes have reverse sloped driveways in which stormwater is conveyed directly to the house – particularly problematic during extreme storm conditions. This results in water ponding around the basement walls where it can enter through windows, doors, cracked walls, etc. Once the water is in the basement, it enters the floor drain and overloads the sanitary system.

COMMENTS

In April 2006, City Council authorized Toronto Water to implement an aggressive work plan to address chronic basement flooding problems in thirty-one separate study areas located across the City. One of the key features of this plan is that Council has approved an enhancement to both sewer capacity and overland flow design standards in areas experiencing chronic basement flooding in recognition of the change in frequency and intensity of storm events.

In accordance with the approved work plan, Toronto Water has initiated a comprehensive engineering analysis to address surface and basement flooding issues in Study Area 3. The engineering analysis focuses on the assessment of the storm sewer and sanitary sewer systems to reduce stormwater inputs and investigate options to reduce or eliminate hydraulic bottlenecks; and severe ponding on streets during extreme storm conditions.

In accordance with the requirements of the Province of Ontario's Environmental Assessment Act, an Environmental Assessment must be undertaken to explore and consider various solutions to address the flooding problems and to consult with the local community to develop the preferred strategy. While Toronto Water staff are leading this project, staff from the affected divisions including Transportation Services, Technical Services and Parks, Forestry and Recreation are engaged in the development and assessment of options.

In accordance with the Environmental Assessment Act, a "Notice of Commencement" has been issued, formally advising the public of the initiation of the project. The notification has been provided to the local Councillors and has been posted in the local newspaper. A newsletter will also be published early in 2008 and sent to all affected residents to inform them of the study and the steps required to undertake the Environmental Assessment. A copy of the newsletter will be

sent to the local Councillors prior to it being issued to the community. The initial components of the study including flow monitoring and the development of a computer simulation model of the sewer system and overland flow system are already underway. A public meeting will be held to present alternative options and to gather input from the local community. The implementation of improvements to the existing sewer system and/or overland flow system will require the completion of the Environmental Assessment which is expected to be completed by the end of 2008.

In terms of short term problems and solutions, staff of Transportation Services have advised that they have received a number of flooding related complaints during the last year from area residents. During detailed inspections, it was established that catch basins in the vicinity appeared to be draining properly. However, as they were located in a low lying area, lids have been frequently blocked by the accumulation of debris and soil on account of construction in the vicinity. These are monitored on a regular basis and cleared as required.

The road surface facilities on Nairn Avenue are in generally good condition, but some rehabilitation will be required within the next 7-10 year time frame. As noted previously, Transportation and Toronto Water staff will be working together in the development of medium and long term solutions and any planned work will be advanced and/or consolidated as required.

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