TORONTO STAFF REPORT

June 14, 2005

To: Works Committee

From: William G. Crowther, Executive Director, Technical Services

Subject: Hogg's Hollow Stormwater Management and Road Improvement Study - Class Environmental Assessment
(Ward 25 – Don Valley West)

Purpose:

To report on the findings and recommendations of the Class Environmental Assessment Study for the Hogg's Hollow Stormwater Management and Road Improvement Study and to request authorization to file the Study Report in the public record in accordance with the requirements of the Municipal Class Environmental Assessment process.

Financial Implications:

There are no immediate financial implications arising from the adoption of this report. However, since the majority of the roads and the associated roadside drainage systems in the Hogg's Hollow area are in a state of disrepair, and should be reconstructed with a new storm drainage system within the next five to ten years, reconstruction of these roads, along with the installation of new storm water drainage infrastructure, will have to be programmed for implementation within the context of city-wide needs and priorities in the Transportation Services and Toronto Water Capital Works Programs from 2006 onwards. The estimated construction cost based on preliminary designs is approximately $15,000,000.00.

Recommendations:

It is recommended that:

(1) the preferred solution identified through the Hogg's Hollow Stormwater Management and Road Improvement Class Environmental Assessment study process, the principal elements of which are as follows, be endorsed;

- implementation of a series of source control measures on private property as documented in the Hogg's Hollow Stormwater Management and Road Improvement Study Report, through a public education campaign.

- implementation of a long term road and stormwater drainage improvement program, which involves reconstruction of the road network in conjunction with the installation of a storm sewer system capable of conveying the 100 year storm and a storm infiltration system for water quality purposes, as documented in the Hogg's Hollow Stormwater Management and Road Improvement Study Report.

- enhancing the municipal operations and maintenance program for the area.

(2) authority be granted to the Executive Director, Technical Services to file the Environmental Project File for the Hogg's Hollow Stormwater Management and Road Improvement Study, which is in the form of a Project Study Report, with the City Clerk, and to give public notification of such filing in accordance with the requirements of the Municipal Class Environmental Assessment process; and

(3) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

Hogg's Hollow is a unique area located within the West Don River watershed. The approximate boundaries are Yonge Street to the west, York Mills Road to the north, Highland Crescent/ Bayview Ridge Crescent to the east and Doncliffe Drive/Rosedale Golf Course lands to the south (see Figure 1). The study area is largely located within the valley land of, and straddles the West Don River. The area was originally developed in the 1950's and early 1960's.

The original road and drainage system within the area has been upgraded only to a limited degree over the years. In general, the public roads within this community remain unimproved and are in a state of disrepair. There are approximately 7 km of public roads within this area. Less than 1 km has been paved with hot laid asphalt. The remaining roads have rural cross-section consisting of surface treated pavements with some ditches to convey stormwater.

On most of the unimproved roads the existing roadside drainage systems are poor to non-existent. There are, in a number of areas, no continuous paths for stormwater to flow during rainfall events. Some parts of the area have storm sewers, which were built over the years but incompletely address local problems while the rest of the area is served either by ditches which are often plugged or by no ditch system at all. As a result, a significant number of homes in the area experience flooding problems. Furthermore, a number of properties are located within the floodplain of the West Don River. Therefore the potential exists for water to back up from the river into the existing storm sewer outfalls, thus aggravating flooding conditions.

Flooding problems have been reported from the Hogg's Hollow area since the early 1980's. There have been a number of complaints from residents living across the Hogg's Hollow area

since that time. Based on a survey carried out in 2002 for this study, approximately 25 percent of the residences in the area have experienced some form of flooding. Past attempts to solve these problems through local remedial work were only partially successful, largely due to the dispersion of the problem over the entire Hogg's Hollow area.

A proper stormwater drainage system for the entire area had been contemplated by staff for some time. The impetus for the Hogg's Hollow Stormwater Management and Road Improvement Study originated in early 2001 with a motion by the local ward Councillor. In the motion to the Works Committee the following points were noted:

- Drainage systems are in a state of disrepair
- Residents are experiencing severe flooding problems
- Issues of potential liability have been identified
- It is expensive and poor planning to continue with patchwork/piecemeal repairs
- Problems relating to drainage, flooding, road improvements, sewer capacities and outlets and natural water courses need to be identified throughout the entire valley area and solutions proposed

As a result of this motion, in February 2002, Technical Services initiated the Hogg's Hollow Stormwater Management and Roads Improvements Study, a Class Environmental Assessment (EA) Study, with the purpose defined as: "To determine the extent and causes of flooding within the Hogg's Hollow area, and to define a program consisting of stormwater management, drainage and road improvement works to alleviate flooding."

This study falls under Schedule B of the Class Environmental Assessment process and was jointly undertaken by Toronto Water and Transportation Services, with Technical Services managing the study.

Comments:

Study Process:

The Hogg's Hollow Stormwater Management and Roads Improvement Study has fulfilled the requirements of a Schedule 'B' project under the Municipal Class Environmental Assessment (Class EA). Due to considerable public interest and involvement in the project, a consultation process that exceeds the Class EA requirements for a Schedule 'B' project (2 mandatory points of public contact) was carried out. The resulting level of detail covered in the study also exceeds the requirements of the Class EA for a Schedule 'B' project. As a result, a detailed report has been prepared instead of the required maintenance of a Class EA project file. Therefore it is intended that if the City of Toronto Council endorses this study, the Study Report (SR) will be filed in the public record for a minimum 30-day review period, as required under the Class EA process. Since this 30-day review period would fall over the summer months, a 60-day public review period will be used by the City to allow residents adequate time for review.

The phases of the process set out by the Class EA for a Schedule B project are:

- Phase 1 – identification of the problem or opportunity;

- Phase 2 – identification and evaluation of alternative solutions; and selection of preferred solution.

- Notice of Completion, Study Report placed on Public Record, and Finalization of Class EA Process.

- Implementation Phase, which involves detailed design, construction and operation of the project, and monitoring of impacts, in accordance with the terms of finalizing EA study process.

Phase 2 of the process has been completed. Subject to authorization by City Council through this staff report, the Study Report will be filed for a 60-day public review period and the Class EA process completed, prior to proceeding to detailed design and construction.

The Class EA study was carried out with the assistance of technical consultants Aquafor Beech Limited, and supported by a Technical Advisory Committee comprised of staff from Technical Services, Toronto Water, Transportation Services and Urban Forestry. Toronto Fire Services and Urban Development Services staff have also been involved in the process.

Public Consultation Process:

Public involvement and consultation is an integral and ongoing part of the study process. The requirement for one optional point of public contact and one mandatory point of public contact after the initial problem has been identified and solutions have been considered, as required in the Class EA, were not only met but significantly surpassed. Four Public Meetings and Open Houses were held. Several additional meetings were also held with local residents, the York Mills Valley Association and the local ward Councillor. The second mandatory point of public contact, through the "Notice of Completion" and placing the study on the Public Record, has not yet occurred, and will occur, after the City Council endorses the recommendations of this Staff Report.

The first Public Meeting and Open House was held on December 5, 2002, to review the problem statement, define the the study area and discuss study purpose. Approximately 70 residents attended this meeting. Residents were generally supportive of the project. Questions related to the timing of the study, the solutions that would be looked at and the reasons for the flooding problems were addressed.

At the second Public Meeting and Open House, which was held on September 25, 2003, a long list of alternative solutions and evaluation factors for the analysis of the alternatives were presented. The results of field investigations and flooding analysis were also presented. Residents were asked to rank a number of criteria that would be used for evaluating potential solutions.

The third Public Meeting and Open House was held on December 10, 2003. A short list of three alternative solutions for each of the six drainage areas within the study were presented. This meeting was attended by approximately 45 members of the public. The public response at this Open House indicated no clear consensus as to the preferred alternative for the study area as a whole, as outlined in sub-section 3 of the next section, Environmental Assessment Process and Findings.

A scheduled and advertised fourth public meeting on June 29, 2004 was turned into an informal meeting with residents, because logistics precluded gaining access to the scheduled venue at the designated time.

The evaluation of alternatives and the preliminary preferred design were presented at the fourth and final Public Meeting and Open House, held on October 20, 2004. This meeting was attended by approximately 86 members of the public.

A full description of the public consultation program can be found in Sections 4.6, 5.4, 7.6 and 7.9 of the Study Report.

Environmental Assessment Process And Findings:

The environmental study process required as a part of the Municiapl Class Environmental Assessment Guidelines and the study findings are outlined below in three sections: (1) Identification of the Problem or Opportunity, (2) Identification and Evaluation of Alternative Solutions and Selection of Preferred Solution, and (3) The Preferred Solution.

(1) Identification of the Problem or Opportunity:

A brief description of the nature of the study area, the conditions of the roads and storm drainage system and the historical practices and problems are provided in the background section of this report. For the purpose of the study, the area was broken into six drainage areas.

In summary, the primary problems within the context of this study include:

- Historical flooding of private property. Types of flooding include:
    - Basement flooding due to surcharged storm sewer
    - Basement flooding due to surcharged sanitary sewer
    - Overland runoff entering the property or dwelling
    - Run off from ravine entering the property
    - Backwater from the West Don River
- Substandard road conditions
- Drainage/road systems that are not capable of conveying stormwater to the streams and result in discharge of untreated stormwater to the Don River

The standards for design and construction of our road and drainage system has changed significantly since urban development occurred in the study area. Present standards have been improved and the design of road and drainage systems are more integrated.

Therefore, the opportunities include:

- Development of an integrated drainage and road system to current standards, which also meets the requirements of the residents within the study area.

This information was presented at the first open house held on December 5, 2002. Residents were generally supportive of the project. Questions related to the timing of the study, the solutions that would be looked at and the reasons for the flooding problems were addressed.

(2) Identification and Evaluation of Alternative Solutions and Selection of Preferred Solution:

I. Development of an initial set of solutions and evaluation:

The following five broadly categorized measures were initially developed to address the problem and associated issues:

1. Residential source control measures that include:

    - Non-structural measures, which focus on improving storm water quality and reducing stormwater runoff. (eg. disconnection of directly connected downspouts, installation of rain barrels; most homeowners are willing to implement a number of such measures)

    - Structural measures, which are intended to reduce or prevent problems associated with basement or surface flooding (eg. routing foundation drains to a sump pump; some homeowners have already undertaken a variety of such measures)

2. Alternative conveyance measures that include:

    - Installing/upsizing conventional storm sewer;
    - Installing storm storage tanks;
    - Installing infiltration pipes/tanks;
    - Altering the roadway cross-section; and
    - Upsizing the existing sanitary sewers

3. A Public education program that focuses on the implementation of a variety of non-structural source control measures indicated in (1) above by individual property owners based on mutual interest of the owners and the City.

4. Enhancement to the municipal operations and maintenance measures for the area; a review of the present water infrastructure and current level of operations and maintenance is needed.

5. End of pipe measures, typically installed at the end of the conveyance system; not found feasible for this study area due to lack of available space and proximity to the flood plain.

This information was presented at the second Open House held on September 25, 2003. The results of field investigations and flooding analysis were also presented. Through a survey, residents ranked a number of criteria that were used for evaluating potential solutions in the next stage of the study.

II. Development of a set of alternatives for road right-of-way based conveyance control measures and evaluation:

After the initial assessment, a refined set of alternatives were developed and evaluated for conveyance control measures that the City would undertake utilizing capital funds.

The following seven alternative roadway cross-sections were established:

Alternative 1 – Conventional Curb and gutter
Alternative 2 – Shallow Curb and gutter
Alternative 3 – Reverse Crown with No Curb
Alternative 4 – Reverse Crown with Shallow Curb
Alternative 5 – Rural Section with Deep Ditch
Alternative 6 - Rural Section with Shallow Ditch
Alternative 7 - Rural Section with Shallow Swale

The alternative solutions were evaluated based on public input received and the following factors:

- their ability to address the concerns identified (i.e. the problem);
- the impact each solution would have on the socio-economic environment;
- the impact each alternative would have on the natural environment; and
- cost.

Detailed descriptions of the alternative solutions and relevant analyses are provided in Chapter 7 of the Study Report.

From the seven alternative road cross-sections above, the following alternative road cross sections were selected in combination with a storm drainage system that would provide a 100 year level of protection against surface and basement flooding:

Alternative 1 – Conventional Curb and gutter
Alternative 2 – Shallow Curb and gutter
Alternative 4 – Reverse Crown with Shallow Curb

Rural cross-sections with ditches or swales, though preferred by some residents, were not selected due to the required large overall road widths.

The "Do Nothing" Alternative was also considered for each drainage area. This alternative is required to be assessed in all Class EA studies.

These alternatives were presented to the public at the third Public Open House on December 10, 2003. Public response at this Open House indicated no clear consensus as to the preferred alternative for the study area as a whole. They were supportive of the short list of alternative solutions, but were divided in their opinion on some aspects of the solutions for individual streets. The road cross-section that received the largest degree of support was Alternative No. 2, Shallow Curb and Gutter. Important themes raised by residents included the desire to preserve all trees, use a narrow roadway and small curb (if any). Residents were opposed to the inclusion of sidewalks in the design. As a result, sidewalks were no longer considered within the study.

At the informal meeting with residents in June 2004, key issues that were raised included: a tailor made solution needed for each street; the existing rural character must be maintained; tree loss and damage should be minimized; roads should not be widened. These points were incorporated as far as possible into the preferred solution.

The consequence of public input in the Environmental assessment process, was the recognization that [i] there are technical issues that require the roads to be of a minimum width, which is 'too wide' from a community perspective; and [ii] there are community issues that require the street to be narrow which is 'too narrow' from a technical perspective. Subsequent to the informal public meeting, staff met several times and initiated a field investigation to find a solution/ compromise that addresses the desires of the residents, respects the City's standards and policies for road design, and provides for the community's emergency and servicing needs.

The principle adopted was to maintain essentially the existing foot-print of the existing pavement. Following this principle, a paved road width of 7.2 metres is attained throughout most of the streets of Hogg's Hollow and this meets the City's policies for road design. On some streets, a lesser street width of 6 m or 6.8 m has been adopted which is sufficient to address road design considerations because these are generally on short dead-end streets; these widths maintain essentially the same foot-print of the existing street. On one street, St. Margarets drive, a width of 6 m pinching down to 4.5 metres is selected to preserve trees, and is proposed to become a one way street to permit emergency and service vehicle access.

This principle serves to maintain the urban character of the area, meets the principle of protecting the tree canopy, and addresses the priorities for the project identified through the public consultation process.

<u>The Preferred Solution</u>:

Based on technical evaluation and comments received through an extensive consultation process, an integrated approach of implementing a series of source control measures on private property (through a public campaign), implementing a long term Road and Stormwater drainage improvement program, and enhancing the municipal operations and maintenance program for the study area was determined to be the best solution to address the identified problems.

The preferred alternative is the combination of A, B and C below:

A) Implementation of a series of source control measures on private property (through public campaign):

A.1. Non-structural source control measures:

- Disconnecting roof downspouts which are presently connected to the storm sewer;
- Redirecting roof downspout leaders (to ground areas) which presently discharge flows to paved areas;
- Installing rain barrels to allow stormwater to be detained and re-used;
- Constructing soakaway pits to reduce stormwater runoff and increase groundwater infiltratration;
- Replacing impermeable materials (asphalt, concrete) with materials that allow runoff to infiltrate into the ground (ie., granular material, interlocking stone); and
- Landscaping properties to promote infiltration or treatment of runoff.

A.2. Structural source control measures include:

- Improving existing lot grading;
- Routing foundation drains to a sump pump; and
- Installing sanitary sewer backflow preventer valves

B) Implementation of a long term road and stormwater drainage improvement program which will also include construction of a perforated pipe storm sewer system for water quality purposes.

The preferred solution involves reconstruction of the road network in conjunction with the installation of a storm sewer system capable of conveying the 100 year storm. Incorporated within this large sewer system will be a storm infiltration system where the ground soil types and conditions permit.

The road system will consist of roads of regular cross sections with shallow curb and gutter and pavement widths of 7.2 metres in general, except for the following streets where the pavement width will be less than 7.2 metres in order to avoid physical removal of mature trees and/or due to certain physical constraints:

6 metres with localized reduction to 4.5 metres for St. Margarets Drive;
6 metres for Donino Court and Brookefield Road, east of Plymbridge;
5.9 to 6.4 metres for Donwoods Drive between Yonge and Donino;
6.1 to 6.7 metres for Old Yonge Street;
6.8 metres for Donino Avenue south of Donwoods, and parts of Plymbridge Crescent and Donwoods Grove; and
6.8 to 7.2 metres for a part of Plymbridge Road near the bridge across Don River

C) Enhancing the municipal operations and maintenance program for the area.

The existing sanitary sewers and and watermains in the area would remain in place except where conflicts occur. Where there are no conflicts these sewers and watermains would be relined. Where there are conflicts they will be replaced.

Based on preliminary designs, there would be no physical removal of trees. However, a certain number of trees would be within 2 or 4 times the tree diameter from the edge of the proposed construction. These trees will be fertilized in advance and careful construction techniques utilized to prevent tree damage or loss.

It should be noted that Toronto Fire Services and Transportation Services staff have raised concerns that narrow road widths will inhibit effective operations within the neighbourhood. The recommended road widths represent a compromise scenario and represent the minimum acceptable road widths from these perspectives. Further, this position is predicated on the investigation of parking restrictions within the area, once the roads have been built. Transportation Services will be seeking enactment of by-law for "prohibition of on-street parking" when the streets are reconstructed in Hogg's Hollow during the implementation phase.

The preferred solution was presented to the public at the fourth Public Open House on October 20, 2004. The Toronto Fire Services Chief was also present to illustrate and discuss fire safety issues associated with narrow roadways with residents. Some members of the public were supportive of the overall study approach and the recommendations. Others were dissatisfied with the perceived lack of rationale for the road widths presented. The possibility of parking restrictions was met with significant opposition. Traffic speed issues that may result if the road pavements were wider than at present was another concern. The advantages of the preferred solution and concerns expressed with respect to the widths and associated parking restrictions are fully documented in the Study Report.

City staff subsequently had several internal meetings among representatives of Technical Services, Transportation, Fire Services, City Forestry, and Toronto Water at which it was confirmed that, from a technical perspective, parking restrictions will be sought at the stage of roadway reconstruction, due to the narrow street widths of the preferred solution. As is pointed in the Project Study report, parking restrictions are subject to the City Council approval at the implementation stage of the project after the project study report is approved to fulfil provincial Environmental Assessment Act requirements. As well, the implementation schedule will be subject to Council approval through the Capital Funding program process.

Next Steps:

Pending approval of this report by City Council, this Study Report will be filed in the public record for a minimum 30-day period. Due to impending summer holiday season, it is recommended that the review period be extended to a 60-day period.

During this review period, members of the public and any other interested individual, interest group, or government agency may review the contents of the report and, if they so desire, request

that a Part II order be issued. A Part II order, if granted by the Minister of the Environment, elevates the status of the project from a Class EA Study to an Individual Environmental Assessment depending on the decision of the Minister. If this occurs, the project cannot proceed until the proponent completes an Individual Environmental Assessment and receives approval from the Minister. If a Part II order is not granted or if no requests or objections are received during the filing period, the project is approved under the Environmental Assessment Act and may proceed.

Once EA approval is received, design and construction may proceed as soon as funding is available. Public Consultation will continue through the implementation stage when detailed designs are prepared for each street or groups of streets considered for construction every year until all recommended work have been completed.

Conclusions:

A Municipal Class Environmental Study (Schedule B) was undertaken to identify and evaluate alternative solutions to the flooding problems in the Hogg's Hollow area. Recognizing the level of interest in the study, an extensive public consultation program was carried out, beyond the requirements of the Class EA.

The preferred solution :

- balances the wishes of the public with the City's obligations;
- allows Fire Services, other City operations and various service providers to effectively work in the area;
- solves the existing flood related issues through an improved drainage system;
- brings area roads up to current standards.

The process for completion of the Environmental Assessment Study and the implementation process are two independent processes. Approval is sought, through this staff report from City Council to both endorse the study report findings and to provide authority for filing the study report to fulfil Provincial Environmental Assessment Act requirements. The provincial process must be completed, before any implementation projects can be designed and constructed. Due to the historical flooding problems, it is absolutely essential that the environmental study phase of the project be completed with due deliberate diligence. Approval for specific components of the implementation phase, including capital funding and possible parking restrictions etc., will be addressed in future staff reports.

The second mandatory point of public contact, through the ‘ Notice of Completion’ and placing the study on the “Public Record’, has not yet occurred, and will occur, after Toronto City Council endorses this Staff Report.

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List of Attachments:

Attach.1-98WC
Attach.2-98WC
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