

COMMITTEE OF THE WHOLE – FEBRUARY 18, 2002

CLARENCE STREET SANITARY TRUNK RELIEF SEWER WOODBIDGE EXPANSION AREA GROUP RELEASE OF LETTER OF CREDIT

Recommendation

The Commissioner of Development Services and Public Works recommends:

That the Letter of Credit for \$1.5 million posted by the Woodbridge Expansion Area Group, pursuant to Subsection 16.22 of the Woodbridge Expansion Area Skeleton Servicing Agreement, dated October 8, 1998, as security for their contribution to the potential construction of the Clarence Street Sanitary Trunk Relief Sewer and downstream twinning works, be released.

Purpose

The purpose of this report is to inform Council on the status of the Clarence Street Sanitary Trunk Sewer, and to seek Council's concurrence with respect to the release the Letter of Credit posted by the Woodbridge Expansion Area Group as security for their contribution to the potential construction of the Clarence Street Trunk Relief Sewer.

Background

The Clarence Street Sanitary Trunk Sewer is part of the Woodbridge wastewater collection system and was constructed in the early 1990's to primarily service Woodbridge Neighbourhood Four of OPA 240 plus a future population of about 7,400 people north of Rutherford Road in Block 53 (now the Woodbridge Expansion Area). The capital cost required to construct the Clarence Trunk Sewer was funded by the developments that are serviced by the sewer through an area based Special Area Development Charge.

With the adoption of OPA 400 in 1995, the lands in Block 53 were designated as the new Woodbridge Expansion Area (WEA) residential community. The WEA was planned to house a population of about 15,500 (4,450 units). The Master Environmental Servicing Plan (MESP) for the WEA proposed using the existing Clarence Street Sanitary Trunk Sewer to service the entire development area. However, given the increased planned population in the WEA, the MESP identified a theoretical capacity constraint within several sections of the Clarence Trunk Sewer system. Past experience in sewage flow monitoring indicate that actual sewage flow rates are generally much lower than theoretical rates. Accordingly, it was anticipated that the Clarence Trunk Sewer had sufficient conveyance capacity to accommodate the sewage flow from the entire WEA. As a safeguard, however, allowances were made for a relief sewer along Clarence Street from Rutherford Road to about Wycliffe Avenue as shown on Attachment 1. The WEA Landowners Group consequently provided the City with a Letter of Credit, pursuant to Subsection 16.22 of the WEA Skeleton Servicing Agreement, for \$1.5 million to secure its contribution to the cost of potentially constructing the Clarence Street Trunk Relief Sewer and downstream twinning works. It was anticipated that future sewage flow monitoring would confirm the relief sewer was unnecessary.

The development in the WEA is quickly approaching full build-out and the road design for the urbanization of Clarence Street between Rutherford Road and Modesto Gardens is underway. In view of this, it was considered timely to confirm the adequacy of the Clarence Trunk Sewer to service the full development within the catchment area. Accordingly, the engineering consulting firm of Greenland International Inc. was commissioned to undertake a comprehensive sewage flow monitoring study and capacity analysis of the existing Clarence Street Trunk Sewer. The flow monitoring component of the study was carried out over the period between March 5, 2001 and October 14, 2001.

As predicted, the Greenland report concluded that the actual monitored sewage flows in the Clarence Trunk Sewer are significantly lower than theoretical design rates. For example, the flow monitoring revealed that the actual per capita sewage generation rate in the sewer shed is about 240 litres/person/day whereas the City's design allowance for trunk sewers is typically 368 litres/person/day. In addition, the infiltration of ground water into the sewer system was observed to be at a rate of 0.08 litres/second/hectare, which is very low when compared to a design rate of 0.23 litres/second/hectare. Inflow into the sewer system from extraneous sources was not detected during the monitoring period.

With this measured flow data, Greenland undertook a capacity analysis of the Clarence Trunk Sewer system using a variety of measured and design rate combinations to determine the sewers adequacy to service the full development in the sewer shed. The results of this analysis indicated that the Clarence Street Trunk Sewer has sufficient surplus capacity for flow from the entire Woodbridge Expansion Area plus an additional 56 hectares of residential development comprising a serviced population of 2,650 persons. Further, that there is no need for any improvements to the Clarence Street Trunk Sewer to accommodate the planned and potential development within the sewer shed, and that the Clarence Trunk Relief Sewer is not required to service the WEA.

Staff subsequently carried out a supplementary sensitivity analysis of the Clarence Street Trunk Sewer system, including a hydraulic grade line (HGL) calculation, to assess the operation of the sewer system under various theoretical loading conditions. The results of this analysis indicated that there is a potential for surcharging to occur in the Clarence Street Trunk, but the level of surcharge would not cause house basements to flood nor adversely affect the operation of the sewer system.

Accordingly, based on the conclusions of the Greenland report and the supplementary analysis, the Clarence Street Sanitary Trunk Relief Sewer is not required. Since Subsection 16.22 the Woodbridge Expansion Area Skeleton Servicing Agreement doesn't specifically speak to the release of the Letter of Credit in the event that the relief sewer and downstream twinning works are not required, Staff are seeking Council's concurrence to the release of the Letter of Credit.

Conclusion

Based on the conclusions of the Greenland International Inc. Sanitary Flow Monitoring report, it can be concluded that the Clarence Street Sanitary Trunk Sewer has sufficient conveyance capacity to service the full build-out within the sewer shed including the Woodbridge Expansion Area. It is, therefore, recommended that the Letter of Credit for \$1.5 million posted by the Woodbridge Expansion Area Group as security towards their contribution to the possible construction of the Clarence Street Sanitary Trunk Relief Sewer and downstream twinning works, be released.

Attachments

1. Location Plan - Clarence Street Sanitary Trunk Sewer

Report prepared by

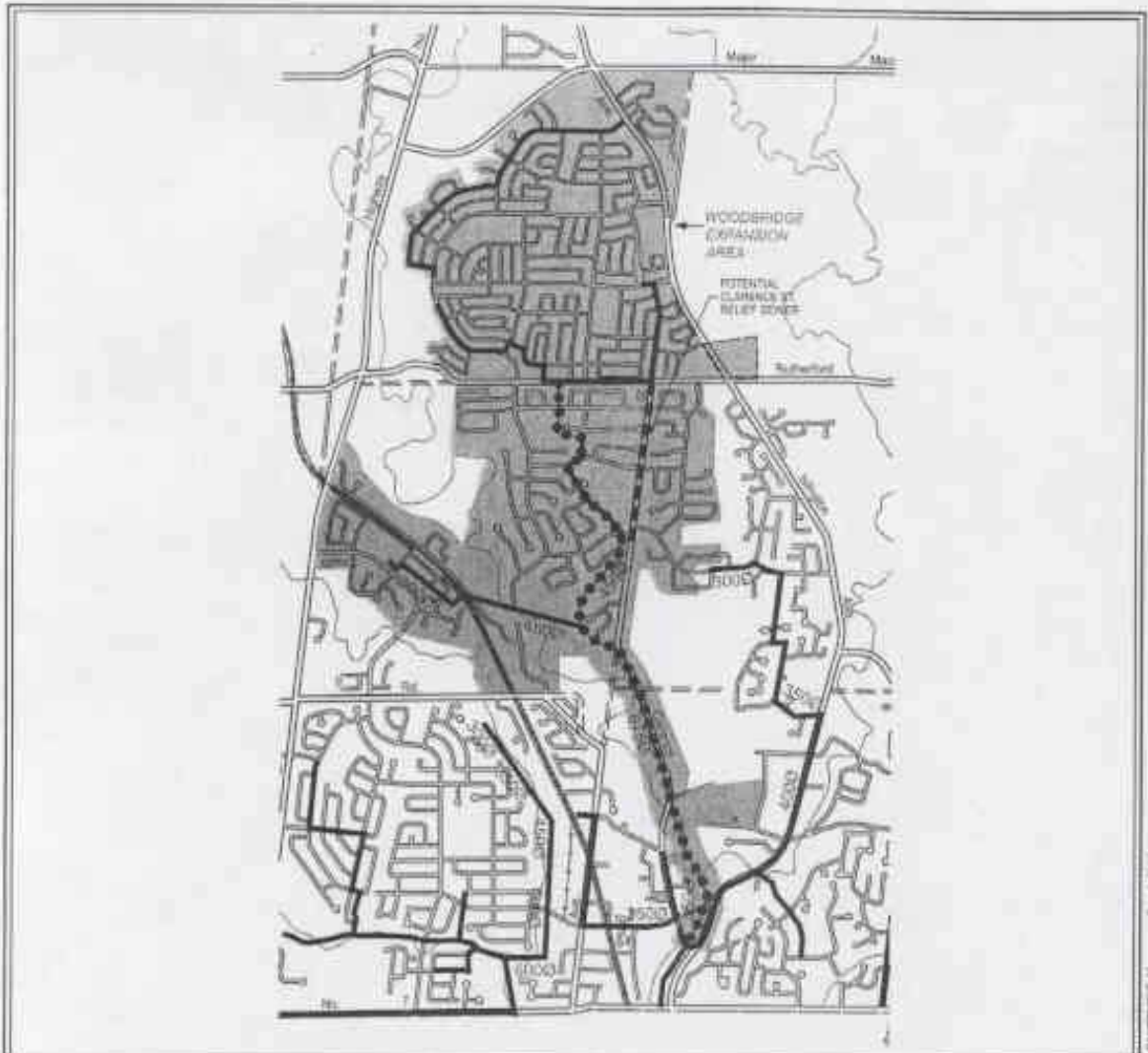
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Respectfully submitted,

FRANK MIELE
Commissioner of Development Services
and Public Works




Bill Robinson, P. Eng.
Executive Director of City Engineering
and Public Works

ATTACHMENT No. 1



CLARENCE STREET SANITARY TRUNK SEWER

LEGEND

-  TRUNK SEWERS
-  CLARENCE STREET TRUNK SEWER
-  CLARENCE STREET TRUNK SEWER SHED



CITY OF VUGHAM - ENGINEERING DEPARTMENT

NOT TO SCALE

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