REGION OF OTTAWA CARLETON — REPORT
RÉGION D'OTTAWA CARLETON — RAPPORT

Our File/N/Réf. **50** 49-99-3039-B
Your File/V/Réf.

DATE 27 January 1999

TO/DEST. Co-ordinator
Corporate Services and Economic Development Committee

FROM/EXP. Environment and Transportation Commissioner

SUBJECT/OBJET **WASTEWATER FLOW MONITORING STUDIES**
CONSULTANT APPOINTMENTS
CONTRACT NUMBERS CA9619, CA9620, CA9621

DEPARTMENTAL RECOMMENDATIONS

That the Corporate Services and Economic Development Committee and Council approve:

1. **The award of contract CA9619 for the Vanier Wastewater Collection System Flow Monitoring Study to Ainley Graham and Associates Limited, Gloucester, for a total contract provision of $79,500, of which 50% will be recovered from the City of Vanier;**

2. **The award of contract CA9620 for the Cathcart Square Flow Monitoring Study to Ainley Graham and Associates Limited, Gloucester, for a total contract provision of $94,500;**

3. **The award of contract CA9621 for the Stittsville Trunk Sewer and the Conroy Road Trunk Sewer Flow Monitoring Study to Stantec Consulting Limited, Ottawa, for a total contract provision of $47,000.**

BACKGROUND

There are three types of sanitary sewer systems in Ottawa-Carleton. Combined sewer systems convey both sanitary wastewater and storm runoff in a common conduit. In dry weather, all flow is diverted to the Region's Sewage Treatment Plant. In wet weather, however, flows in excess of system capacity overflow into the Rideau or Ottawa River. Partially separated sanitary sewer systems (built from approximately 1950 to 1961) are defined as systems with separate storm and sanitary conduits, but with foundation drains (weeping tiles), and in some cases rear yard catchbasins, directly connected to the sanitary sewer rather than the storm sewer. A modern

separated sewer system has no foundation drain or rear yard catchbasin connections to the sanitary system.

During heavy rain or snowmelt events, both combined and partially separated systems can become overloaded, resulting in overflows or basement flooding. Future urban development projects could exarcerbate problems in downstream areas if not carefully designed, and if wastewater collection systems are not well managed.

The Region's Wastewater Master Plan identifies the need to work with local municipalities in developing a Flow Management Program to address existing and growth related capacity and overflow issues on the wastewater collection system. The Flow Management Program will explore alternatives to address excessive extraneous and drainage flow contributions to the system. Furthermore, the Flow Management Program is critical for ensuring compliance with the Ministry Of Environment's (MOE) Combined Sewer Overflow Policy (Procedure F-5-5) regulating the frequency of sewage overflows to the environment. To properly identify and evaluate flow management alternatives, accurate flow data is essential at a number of locations.

The Region maintains a core network of permanent flow monitoring stations on its wastewater collection system, but additional temporary stations are needed to address specific prioirity issues as described by the monitoring objectives listed below.

The proposed temporary monitoring station priorities for 1999 are as follows:

1. Conroy Road Collector and the Stittsville Trunk Sewer

   The specific monitoring objectives for this study can be summarized as follows:
   - to characterize flow contributions to the Region's collector sewers in critical areas and during the snowmelt period and a wide range of rainfall events; and
   - to accurately define baseline conditions and evaluate residual sewer and pumping station capacities in advance of anticipated development.

   A total of three temporary monitoring locations will be established as part of this study.

2. Cathcart Combined Sewer Area

   The specific monitoring objectives for this study can be summarized as follows:
   - to characterize flow contributions to the Region's collector sewers in critical areas and during the snowmelt period and a wide range of rainfall events;
   - evaluate drainage areas in terms of the degree to which they contribute to system overflows, and the risk of not complying with the associated MOE policy;
   - evaluate areas in terms of their contributions of direct stormwater inputs, and extraneous ground and surface water inputs; and
   - determine if any adjustments are required to the Cathcart combined sewer flow regulator in light of recent sewer separation work undertaken by the City of Ottawa.

   A total of eight temporary monitoring locations will be established as part of this study.

3. Vanier Sanitary Sewer System

The specific monitoring objectives for this study can be summarized as follows:

- to characterize flow contributions to the Region's collector sewers in critical areas and during the snowmelt period and a wide range of rainfall events;
- evaluate drainage areas in terms of the degree to which they contribute to system overflows, and the risk of not complying with the associated MOE policy;
- evaluate areas in terms of their contributions of direct stormwater inputs, and extraneous ground and surface water inputs; and
- evaluate contributing areas in terms of the risk of basement flooding.

The City of Vanier has a need for temporary flow monitoring on local sewers due to basement flooding concerns. Three temporary monitoring locations have been identified in Vanier's sewer system, and three more on Regional collector sewers, for a total of six monitoring locations. The City of Vanier is contributing 50% to the cost of the study.

To ensure a high degree of data accuracy, the successful consultants are required to carefully field calibrate state-of-the-art equipment, and to ensure a suitable level of data redundancy.

The proposed monitoring period varies from a minimum of three months, to a maximum of six months. In most instances, it is critical that both the spring melt and a range of summer storm events are captured in the monitoring programs.

DISCUSSION

Requests for proposals were forwarded to the following four local consulting firms: Stantec Consulting, Ottawa, G.A. Clark & Associates, Nepean, Ainley Graham & Associates, Gloucester, and J.L. Richards & Associates Ltd., Ottawa. J.L. Richards declined to submit proposals for any of the proposals due to staff resource constraints.

The selection criteria outlined in the Request for Proposal included:

- company experience and specialization
- understanding of objectives
- approach and methodology
- ability to deliver
- completeness of the proposal submission
- value for proposed service

Based on the above evaluation criteria, it is recommended that the Vanier Wastewater Collection System Flow Monitoring Study and the Cathcart Square Flow Monitoring Study be awarded to Ainley Graham and Associates Limited. This company submitted proposals for these two studies which meet all of the study requirements, and which presented the most efficient and cost-effective methodology for accurately monitoring sewage flows and reporting results. Ainley

Graham has a proven track record, and staff on the study team have conducted a significant number of similar flow monitoring projects for both the Region and local municipalities.

Based on the above evaluation criteria, it is further recommended that the Stittsville Trunk Sewer and the Conroy Road Trunk Sewer Flow Monitoring Study be awarded to Stantec Consulting Limited. This company submitted a proposal for this study which meets all of the study requirements, and which presented the most efficient and cost-effective methodology for accurately monitoring sewage flows and reporting results. The Stantec team has a proven track record, and staff on the study team have conducted a significant number of similar flow monitoring projects.

CONSULTATION

The scope of work for monitoring in the Vanier area was established in consultation with staff at the City of Vanier. The selected monitoring locations will meet the needs of both the City and the Region. Monitoring of flow in City of Ottawa sewers is needed to quantify flow contributions to the Region's main interceptor sewer in the Cathcart Square area. The monitoring locations in this area were selected in consultation with City of Ottawa staff. Operations and maintenance staff at the Region, the City of Ottawa, and the City of Vanier have also been consulted in relation to these studies.

EXPENDITURE JUSTIFICATION

Accurate wastewater flow monitoring information in critical areas is needed in order to develop a comprehensive Flow Management Program and to ensure that the MOE Combined Sewer Overflow Policy (Procedure F-5-5) is met. The Flow Management Program will explore alternatives to address excessive extraneous and drainage flow contributions to the Region's wastewater collection system, and identify priorities for optimizing the system.

COMPLIANCE WITH REGIONAL OFFICIAL PLAN

This study is consistent with the objectives of the Regional Official Plan in that it will implement specific requirements identified in the Region's Wastewater Master Plan, and will provide information that will allow the Region to minimize future capital, operation and maintenance costs.

FINANCIAL STATEMENT

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Approved Budget to Date	1,783,000
Total Paid and Committed	(1,367,101)
Balance Available	415,898
THIS REQUEST	(221,000)
Balance Remaining	194,898

Funds have been provided in the 1998 Capital Budget, Account No. 932-43413-3603, Flow Monitoring Program (Reference page 291). This amount includes contingencies and G.S.T.

Approved by
M.J.E. Sheflin, P.Eng.

CR/

FINANCE DEPARTMENT COMMENT

Funds are available as indicated.

T. Fedec on behalf of the
Finance Commissioner