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

Our File/N/Réf. **50** 49-99-2015-B
Your File/V/Réf.

DATE 01 September 1999

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

FROM/EXP. Acting Deputy Commissioner
Environment and Transportation Department

SUBJECT/OBJET **PRESSURE ZONE 2C/1E WATER SYSTEM RELIABILITY FUNCTIONAL DESIGN STUDY - CONSULTANT AWARD - CONTRACT NO. ETL 99-3038**

DEPARTMENTAL RECOMMENDATION

That the Corporate Services and Economic Development Committee approve the award of the Pressure Zone 2C/1E Water System Reliability Functional Design Study to Ainley Graham and Associates Ltd., Gloucester, for a total contract provision of $170,000.

INTRODUCTION

The Region's 1997 Water Master Plan (WMP) recognizes that providing facilities to alleviate the impacts of major water distribution system failures is an important component in providing an adequate level of service.

An adequate level of service, as defined in the Water Master Plan, considers the provision of secondary source facilities to maintain a minimum of 90% of average day demand requirements in the event of a major system failure. The need for these facilities considers that, although the frequency of major failures is expected to be low, the impacts on the consumer can be high and that, under emergency conditions, the system should still be capable of meeting basic needs.

The primary objective of this functional design study is to address the issue of increased reliability for Pressure Zones 2C and 1E (Fig. 1).

It must be noted that any additional reliability based facilities have the potential to impact normal day-to-day operations of a given system. In addition to investigating various means of providing

added system reliability, the study will investigate the impacts of the proposed measures on the existing system as well as other planned system improvements.

DISCUSSION

1997 Water Master Plan Recommendations

The 1997 Water Master Plan undertook an assessment of system reliability which considered the costs of constructing secondary infrastructure, the benefitting populations, the customer types (i.e. hospitals, industry) and the age of the existing infrastructure (older infrastructure has higher risk of failure). The analysis, which was designed to maximize the overall benefits to the customer, provided a basis for prioritizing these infrastructure needs.

The 2C and 1E Pressure Zones are currently supplied with water by singular feeds across the Rideau River. Should a break occur on these main feeds, especially along the river crossings, water supply could be disrupted for a prolonged period of time. Added reliability to these zones is deemed essential since they have high populations and service major medical facilities.

A watermain link between the Billings Bridge and Hurdman Bridge Pumping Stations (hereafter referred to as the Billings-Hurdman Link) was identified, in the Water Master Plan, as a requirement for enhancing the reliability of water supply to Gloucester and southeast Ottawa (Pressure Zones 2C and 1E).

The Master Plan also identified a need to upgrade the Hurdman Bridge Pumping Station in order to provide the necessary reliability to Zone 2C via the proposed link. An upgrade to the Billings Bridge Pumping Station has also been identified and was included in the 1996 Capital Budget (Project #922-41758).

Basis for Further Analysis

While the 1997 Water Master Plan provided a high level review of the system needs, a more in-depth evaluation is warranted to identify and evaluate a wide enough range of alternatives and their operational impacts. As an example, issues related to the impacts of the proposed link on the operation of both the Billings Bridge and Hurdman Bridge Pumping Stations (discharge rates, operating pressures, water quality impacts), as well as their future upgrade requirements, were not examined. Furthermore, opportunities for increased reliability stemming from the replacement of the Alta Vista Tank and recent approval of the larger Conroy Road Tank need to be factored into the analysis. Similarly, proposed solutions must be examined closely in terms of operational impacts on other pressure zones within the Regional water distribution system to ensure that the impacts are beneficial rather than detrimental.

Consultant Selection

A Request For Qualifications was issued, by the Supply Management Divsion, on the MERX system. Qualification documents were received from four proponents and evaluated on the basis of the firm's and key team members' qualifications and previous experience in similar studies.

Following the evaluation by the Study Steering Committee, which consisted of representatives from ETD's Engineering and Water Divisions, as well as a representative from the Planning and Development Approvals Department, proposals were requested from three of the four firms, namely; Totten Sims Hubicki Associates, Ainley Graham and Associates Ltd., and R.V. Anderson Associates Ltd.

With the support of the Supply Management Division, each proposal received was evaluated on the basis of company experience, their overall approach to the project, their understanding of the objectives of the study, as well as their proposed schedule and level of effort. The firm of Ainley Graham and Associates Ltd. is recommended on the basis of having obtained the highest ranking in this evaluation.

CONSULTATION

The study will be carried out in accordance with the Class Environmental Assessment Process for Municipal Water and Wastewater Projects. This will be done with the anticipation that some of the recommended works may be different than the solution presented in the 1997 Water Master Plan and that they may fall under at least a Schedule 'B' classification.

An appropriate methodology for evaluating viable alternatives will be developed. The proposed evaluation methodology, criteria, indicators, and weighting factors will be proposed and reviewed by the stakeholders.

An open house will be organized to confirm the recommended alternative.

EXPENDITURE CONTROL ANALYSIS

The study will identify, evaluate and recommend alternatives which will improve system reliability without compromising day to day operations. The evaluation of alternatives will incorporate a Value Engineering component with the objective of maximizing functionality while minimizing life cycle costs.

COMPLIANCE WITH REGIONAL PLAN

The Study is consistent with the strategies outlined in the Water Master Plan and the objectives of the Regional Official Plan in that it is required to meet the desired level of service while supporting the Regional Development Strategy. The study is required to improve the reliability of service to a large population with critical water users (i.e. major medical facilities) and ensure that on-going operational issues are addressed.

FINANCIAL STATEMENT

	922-41819 $	922-41763 $
Approved Budget to Date	150,000	150,000
Total Paid and Committed	(2,589)	(0)
Balance Available	147,411	150,000
THIS REQUEST	(140,000)	(30,000)
Balance Remaining	7,411	120,000

Funds have been provided in the 1999 Capital Budget, Account Nos. 922-41819 and 922-41763 (Order Nos. 900185 and 900175), Hurdman Bridge P.S. to Billings Bridge P.S. Feedermain and Hurdman Bridge Pumping Station, (Reference pages 398-399 and 386-387 respectively), Purchase Requisition No. 10018810.

Approved by
Nancy B. Schepers, P.Eng.

AC/gc

SUPPLY MANAGEMENT DIVISION

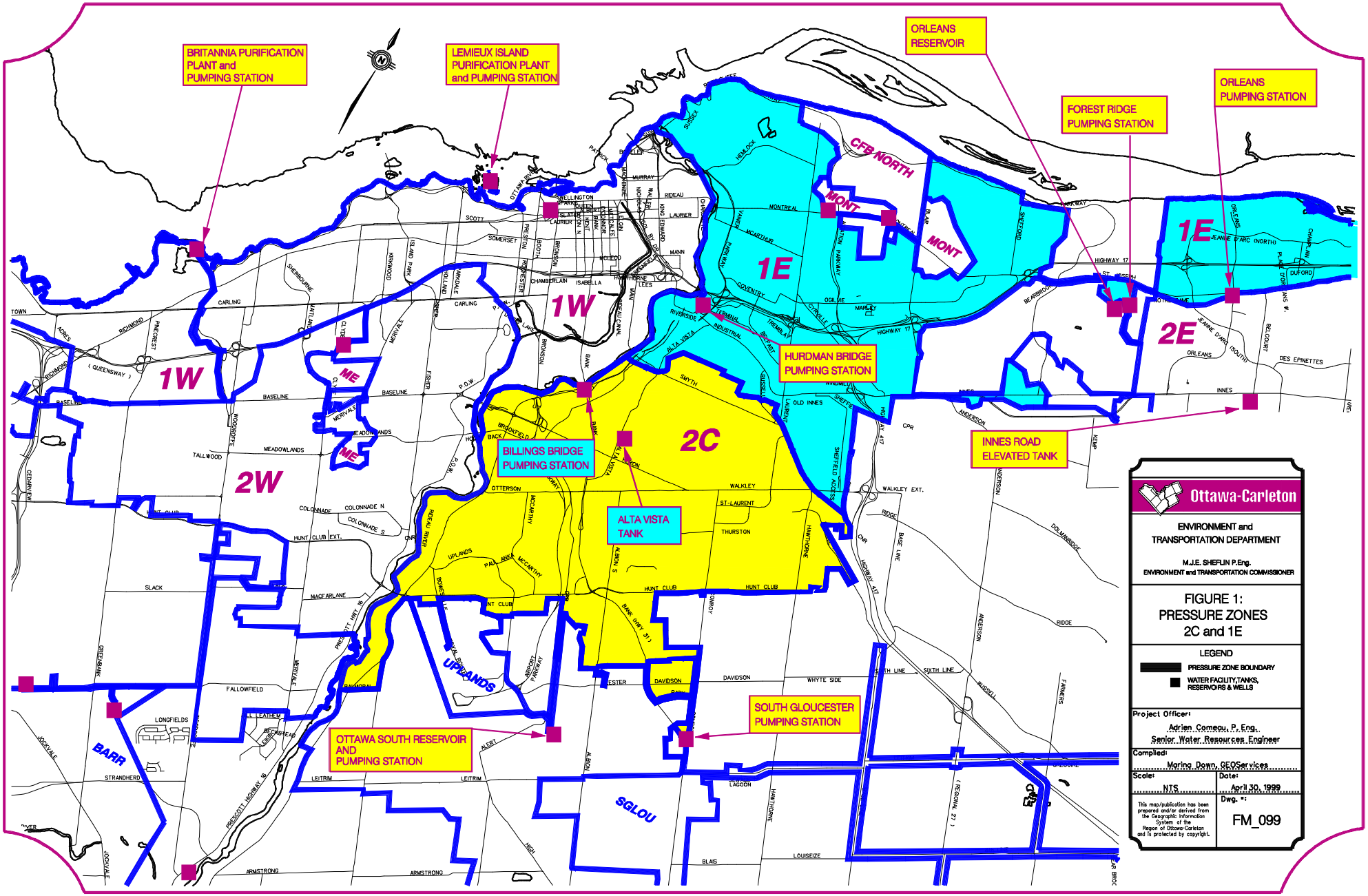
I concur,

G. Ford on behalf of
the Finance Commissioner

FINANCE DEPARTMENT COMMENT

Funds are available as indicated.

Approved by T. Fedec
on behalf of the Finance Commissioner


BRITANNIA PURIFICATION PLANT and PUMPING STATION
LEMIEUX ISLAND PURIFICATION PLANT and PUMPING STATION
ORLEANS RESERVOIR
FOREST RIDGE PUMPING STATION
ORLEANS PUMPING STATION
HURDMAN BRIDGE PUMPING STATION
BILLINGS BRIDGE PUMPING STATION
ALTA VISTA TANK
INNES ROAD ELEVATED TANK
OTTAWA SOUTH RESERVOIR AND PUMPING STATION
SOUTH GLOUCESTER PUMPING STATION
1W
1E
2W
2C
2E
ME
CFB NORTH
MONT
UPLANDS
SGLOU
BARR
Ottawa-Carleton
ENVIRONMENT and TRANSPORTATION DEPARTMENT
M.J.E. SHEFLIN P.Eng.
ENVIRONMENT and TRANSPORTATION COMMISSIONER
FIGURE 1:
PRESSURE ZONES
2C and 1E
LEGEND
PRESSURE ZONE BOUNDARY
WATER FACILITY,TANKS, RESERVOIRS & WELLS
Project Officer:
Adrien Comeau, P. Eng.
Senior Water Resources Engineer
Compiled:
Moring Down, GEOServices
Scale:
NTS
Date:
April 30, 1999
Dwg. #:
FM_099
This map/publication has been prepared and/or derived from the Geographic Information System of the Region of Ottawa-Carleton and is protected by copyright.