

REGION OF OTTAWA-CARLETON  
RÉGION D'OTTAWA-CARLETON

REPORT  
RAPPORT

Our File/N/Réf.                    **50 18-99-0018V**  
Your File/V/Réf.

DATE                                14 June 2000

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

FROM/EXP.                        Environment and Transportation Commissioner

SUBJECT/OBJET                 **SCADA UPGRADE PROJECT**  
**CONTRACT CA9616**

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**DEPARTMENTAL RECOMMENDATION**

**That the Corporate Services and Economic Development Committee approve a contract modification to Contract CA9616 with Acres & Associated Environmental Limited, Etobicoke, for the technical project management services for the SCADA Upgrade Programme in the amount of \$110,576, for a total contract provision of \$1,795,460.**

**BACKGROUND**

The programme budget for the Supervisory Control and Data Acquisition System (SCADA) Upgrade Programme for the water system was established at \$15.745 million. The programme is now 95%+ complete with a projected final completion of under \$15.5 million, a net savings of \$250,000+ for the programme. A project status report was submitted to Members of Corporate Services and Economic Development Committee in June on this project.

The request in this report is offset by downward adjustment in other elements of the programme.

The “Management Design Build” adopted for this project’s delivery differs from the traditional design-build approach by removing the owner’s agent responsibilities from the design-builder and assigning it to a separate Consultant. Acres & Associated perform two very important functions within the SCADA Programme, firstly as technical Consultant to the Region and secondly as the owner’s agent in the administration of the design-build contracts. Thorburn Penny (now Azurix North America) and CRA Contracting were awarded the design-build contracts for the Water Purification Plants and Remote Facilities respectively in January 1999. The Region supplied all major equipment required for the SCADA system, a significant departure from projects involving general contractors. Separate

purchasing contracts were awarded for the purchase of Programmable Logic Controllers (PLC's) and associated hardware, radio telemetry equipment, control room equipment, SCADA software and uninterrupted power supplies. The computer equipment was purchased under an existing agreement.

To utilize resources efficiently, the SCADA Programme combined the funding of three capital programmes, the SCADA Update Programme, the Water Purification Plants Turbidity Control and the Water Facilities Master Drawings Programme; plus a contribution from the Y2K project budget, for a total programme budget of \$15.745 million. The programme is now 95%+ complete with a projected final completion of under \$15.5 million, a net savings of more than \$250,000.

The SCADA Upgrade Programme is in the final stage of its implementation (Phase 2) with both design-build contracts substantially completed and working on project closure. Over the next four months work will continue on completing identified deficiencies (primarily in software programming), work items that must be co-ordinated between the two design-build contracts and completing required operational and maintenance documents. Acres & Associated will continue to provide contract administration and professional services during this closure period and assist the Region with testing of the modified SCADA system programming and to review submissions during the closure period.

Acres & Associated will also be requested to provide technical support for items not covered under the design-build contracts but are required to complete the SCADA systems to meet the needs of the Water Division.

## RATIONALE

This is the Department's first experience with multiple "management" design-build contracts for the delivery of a complex information technology project. This unique delivery method has resulted in a very successful project that recently attracted the attention of municipal officials attending the international AWWA Information Management Technology Conference in April where the Region's Project Manager made a presentation addressing the project delivery method and its partnerships. The project was also displayed at the Ontario Water Works Association's annual conference held in Windsor in May 2000.

In late 1998, staff planning for Y2K identified the SCADA Programme as a key component of the Region's water supply system and the schedule was accelerated to ensure Y2K readiness. During contract execution, as Y2K audits progressed in 1999, scope and contract schedules were changed to allow for contingency planning and testing. These changes had a negative impact on the aggressive schedule of the two design build contracts.

Both design-build contracts were extended beyond the original completion date of December 1999 through contract change orders. In addition to Y2K readiness planning, it was necessary to extend the contract completion date for several other reasons. With multiple management design-build contracts and owner supplied equipment purchasing, additional co-ordination of activities between the design-builder's and the owner was required especially in the latter half of the contracts. The complexity of

several contact change orders required additional contract time, and implementation of the telemetry system could only be completed when pre-requisite work under both contracts had been completed.

Based on the rationale stated above, change orders were issued extending the contract time for completion to 31 March 2000. Both Contractors achieved substantial completion on 31 March 2000 and it should be noted that there have been no unresolved contract disputes.

Acres & Associated's involvement in the SCADA Upgrade Programme has ensured that the highest quality system will be delivered to the Water Division. The Consultant's budget control was well maintained and with minor scope modifications the original budget allocation has carried this professional services contract five months past the original project completion date.

Project closure has taken longer than anticipated one year ago and is expected in August 2000. Acres & Associated will continue to provide contract administration while the design-builders complete the remaining work and correct outstanding deficiencies and provide professional services for out of scope contract work such as network security implementation, record drawing and document management. An extension to Acres & Associated's contract will ensure proper closure of this complex project.

To bring closure to the SCADA Upgrade Programme as identified above, the Department recommends that the additional funds be provided under Contract CA9616 with Acres and Associated in the amount of \$103,342 plus \$7,234 for the G.S.T., resulting in a total for this request of \$110,576 and a total contract provision of \$1,795,460.

### CONSULTATION

The public consultation process is not applicable.

### EXPENDITURE JUSTIFICATION

Modifications to the existing SCADA systems are required to replace aged communication and control equipment and provide additional automation at the Britannia Water Purification Plant filters. This contract increase is required to ensure that the new SCADA system is completed without unfinished items that are important to the system's functionality and reliability.

FINANCIAL STATEMENT AND APPROVAL

	900163
	\$
Approved Budget to Date	864,668
Total Paid and Committed	<u>(552,124)</u>
Balance Available	312,544
THIS REQUEST	<u>(110,576)</u>
Balance Remaining	<u><u>201,968</u></u>

Funds are available in the 2000 Capital Budget, Order No. 900163, Water Facilities - Master Drawings Programme (Reference page 328), Purchase Requisition No. 10061152.

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

MS/jw