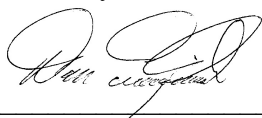


Item No. 11.1.2(i)
Halifax Regional Council
May 4, 2010

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY:



Dan English, Chief Administrative Officer



Wayne Anstey, Deputy Chief Administrative Officer - Operations

DATE: April 12, 2010

SUBJECT: **Contract Increase - Tender No. 09-289, Dartmouth Harbourfront Trail - East Region**

ORIGIN

This report originates from a need to increase the contract beyond 20% of its original value.

The following motion was passed at Harbour East Community Council on April 1, 2010:

Harbour East Community Council recommends that Regional Council authorize allocation of seventy five thousand dollars (\$75,000) from Capital Account Number CSE00397 - Harbour Solutions Dartmouth Community Integration Fund for the Parker Street Retaining Wall portion of the Dartmouth Harbourfront Trail as outlined in the Budget Implications section of the report dated February 20, 2010. This allocation of funding transfer and of the increase to Tender #09-289 as outlined in the discussion section of the report dated February 20, 2010 is pending Regional Council approval in April 2010.

RECOMMENDATION

It is recommended that Halifax Regional Council

1. Authorize a transfer of \$75,000 from Capital Account No. CSE00397 - Harbour Solutions Dartmouth Community Integration Fund (CIF) to Capital Account No. CPX01032 - Regional Trails Active Transportation;

RECOMMENDATIONS CONTINUED ON PAGE 2

2. Authorize an increase to the contract with CBCL Engineering Services for the Dartmouth Harbourfront Trail - Parker Street Retaining Wall (RFP 09-317), for the amount of \$28,287.83 (net HST included) with funding from Capital Account No.CPX01032 - Regional Trails Active Transportation;

3. Authorize an increase to the contract with Allterrain Contracting Inc. for the Dartmouth Harbourfront Trail - Parker Street Retaining Wall (Tender No. 09-289) for the amount of \$153,420.22 (net HST included) with funding from Capital Account No. CPX01032 - Regional Trails Active Transportation; as outlined in the Budget Implications section of this report.

BACKGROUND

One of the last remaining gaps in the Dartmouth Harbourfront Trail is under construction and nearing completion. The focus of this report is the section of trail under construction located between Parker Street and Tupper Street.

This section of the greenway is particularly challenging because of the restricted space between the Maplehurst Apartment complex, the Parker Street entrance and to the Department of Fisheries and Oceans Canada, Coast Guard Facility. The final engineered design solution involves placing the trail on top of a newly constructed concrete block wall. The wall is approximately two hundred metres long and varies from five to seven metres in height. The entire wall and trail structure is located on a six metre wide easement owned by Killam Properties and is contiguous to their harbour side property boundary.

This easement was donated by the private landowner, Killam Properties, in exchange for rebuilding the wall which was in a state of disrepair. This critical piece of active transportation trail will ultimately connect the existing trail through Dartmouth Cove which terminates at old Ferry Road and the Tupper Street to Cuisack Street section adjacent to the Dartmouth Waste Water Treatment Plant. The project definition under this current Municipal Rural Infrastructure Fund (MRIF) contract extends from Tupper St. to Parker Street.

Formal transfer and approval of the public ROW permitted construction of the wall to proceed. Regional Council awarded the tender to the contractor, All Terrain Contracting Inc. in November and construction began on December 9, 2009.

DISCUSSION

The structural aspects of this project are specialized with respect to geotechnical assessments and installation. The project was designed by Canadian British Consulting Limited (CBCL) and CBCL was hired to provide engineering services during construction, including contract administration, full time or part time inspection, shop drawing review, preparation of record drawings and project certification.

During construction it was discovered that the amount of suitable backfill gravels required to support the wall and thought to be already in place were substantially less than estimated. Dismantling of the existing structure had first taken place in the middle and tallest section of the retainer wall whereby excavation revealed that actual soils on site were deemed unsuitable for stabilising the wall structure. It was initially forecast by CBCL that 50% of the soil on site would be suitable during the design and cost estimation stage. However, only about 300 cubic metres of site material (less than 10%) was found suitable for use as backfill. This meant that much more of the site was opened up for select backfill.

In consultation with Design and Construction Services and CBCL, the following additional engineer and construction contract costs are associated:

The sub-total of additional costs for this project are:

\$148,333.85 (Imported structural fill, additional catchbasin, catchbasin lead & appurtenances)

\$27,350.00 (Engineering construction)

Total: \$175,683.85 sub total

Total increased amount requested: \$181,708.04 (including net HST).

Tender No. 09-289: \$673,476.90 (including net HST) - Original Allterrain Contract Amount.

Requested Increase Amount: \$153,420.22 (including net HST).

New Contract Value: \$826,897.11 (including net HST).

RFP 09-317: \$49,852.78 (including net HST) - Original CBCL Engineering Consultant Amount

Requested Increase Amount: \$28,287.83 (including net HST).

New Contract Value: \$78,140.61 (including net HST).

The Harbour East Community Council approved \$75,000 from Harbour Solutions Dartmouth Community Integration Fund in capital account CSE00397 on April 1, 2010. The Halifax Regional Trail Association approved \$75,000 in CPX01032, Reservation 1361, Chezzetcook - Musquodoboit Trail Association to be allocated to the Dartmouth Harbourfront Trail / MRIF project Reservation 1392.2.

The remaining amount available is from Regional Trails Capital and the unused portion of MRIF's Halifax Urban Greenway project.

As stated in the Budget Implications section of this report.

This is a **UNIT PRICE** contract and the cost will be dependent upon the actual quantities measured and approved by the HRM Project Manager. The requested increase results in a total increase of 20 percent to the original contract value.

There are no Local Improvement Charges associated with this work.

BUDGET IMPLICATIONS

Budget Summary: Account No. CSE00397- Harbour Solutions Dartmouth CIF

Cumulative Unspent Budget	\$179,000
Less: Transfer to CPX01032	\$ 75,000
Balance	\$104,000*

**Account No. CPX01032 - Regional Trails Active Transportation
Res. No. 1392.2**

Cumulative Unspent Budget	\$106,800.52
Add: Transfer from CSE00397	\$ 75,000.00
Less: Tender No. 09-289	\$153,420.22
Less: RFP 09-317	\$ 28,287.83
Balance	\$ 92.47

* Councillor Jackie Barkhouse of District 8 will allocate the remaining CIF funds.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN

This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ALTERNATIVES

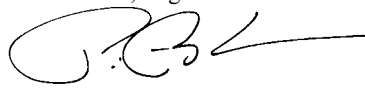
Not proceeding with this additional work to the contract would compromise the structural integrity of the retainer wall and has impact on the public use and stakeholders to complete this portion of trail. There would also be considerable more costs associated if this work were to be awarded in a separate contract tender at a later date.

ATTACHMENTS

Construction Summary Report by Bruce Higgins, P. Eng., Revised March 26, 2010.

A copy of this report can be obtained online at <http://www.halifax.ca/council/agendasc/cagenda.html> then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Dawn Neil, Trail Specialist, Real Property Planning at 490-6633
Paul Euloth, Regional Trails Coordinator, RPP at 490-4415



Report Approved by: _____
Peter Bigelow, Manager, Real Property Planning at 490-6047

Procurement Review:  _____
Anne Feist, Operations Manager, Procurement 490-4200



for

Report Approved by: _____
Phillip Townsend, Director, Infrastructure & Asset Management 490-7166

**CBCL LIMITED**

Consulting Engineers

26 March 2010

Earl Behan
Halifax Regional Municipality
Infrastructure and Asset Management
Design and Construction Services
21 Mount Hope Avenue
Dartmouth, NS

Dear Mr. Behan:

RE: 090222.01 – Parker Street Retaining Wall, Dartmouth Harbourfront Trail

This letter is in regard to Contemplated Change Order no.1, which was reissued on February 4, 2010. An initial quotation was received from the Contractor based on the estimated quantities. A follow-up quotation was submitted by the Contractor with the final quantities as agreed with CBCL Limited, and utilizing the quoted unit prices as previously submitted. (See copies attached.)

We have the following comments on the prices submitted:

Item 5, Mass Excavation, Unsuitable Material

The total quantity of unsuitable material is 3422 cubic metres, compared to the tender quantity of 2600 cubic metres; therefore, 3250 cubic metres (125% of 2600) have been paid at the tendered unit price of \$10.45/cubic metre and the remaining 172 cubic metres are proposed to be paid at the proposed unit price of \$14.50/ cubic metre under this change order. The tender unit price was seen to be low for the work required under site conditions encountered. The proposed unit price is considered reasonable for the relatively modest additional quantity.

Item 6, Replacement of Unsuitable Material with Type 2 Gravel

The total quantity of replacement of unsuitable material with type 2 gravel is 5050 cubic metres, compared to the tender quantity of 2600 cubic metres; therefore, 3250 cubic metres (125% of 2600) have been paid at the tendered unit price of \$25.80/cubic metre, and the remaining 1800 cubic metres are proposed to be paid at the proposed unit price of \$45.70/cubic metre under this change order. The original unit price tendered was considered low; the proposed unit price for the extra work is understood to be in the upper range of unit prices tendered for this project. HRM advised that \$35/cubic metre was typically used for estimating backfill costs with type 2 gravel.

The additional backfill on the project is considered to more difficult than a typical situation. When the project was tendered, it was reasonable to assume that about half of the original tender quantity, or about 1300 cubic metres would have been placed during "winter conditions". The actual construction schedule was considerably different. The award was delayed such that construction did not start until December. It had been hoped that much of the site material (in the order of 50% of excavated material) would be suitable for use as backfill. However, due to site conditions, this was not the case at all: only about 300 cubic metres of site material (less than 10%) was found suitable for use as backfill. This meant that much more of the site was opened up searching for select backfill, which extended the time for replacement with gravel backfill. This meant that nearly all of the gravel backfill, an increased quantity of close to 5000 cubic metres, was placed during "winter conditions."

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Work items which contributed to making this work more difficult than more "typical" site conditions include:

- Winter conditions having to deal with snow, frozen materials, wet conditions, etc. The large quantity of unsuitable materials is an indication of the high moisture conditions encountered, which affected access and placement of materials.
- Tight schedule required working on some weekends, and the period between Christmas and New Years.
- Backfilling had to be co-ordinated with placement of geogrids for the reinforced section of wall
- Congested site and limited access, especially when placing gravel from the bottom (DFO driveway).
- Stockpiling of gravel, double handling of material, temporary grading required during placement.
- Occasional overexcavation beyond the pay line (and replacement with gravel) was unavoidable due to high slopes. This was more of a problem towards the south end of the wall, where slopes were exposed for an extended time.

The actual quantity was near double the original quantity. We consider that the difficulties noted above justify the proposed unit price for the additional 1800 cubic metres of type 2 gravel used for replacement of unsuitable material.

Items 7 and 8 - Foundation Excavation of Unsuitable Material and Replacement of Unsuitable Foundation Material with Rock Fill

These items are new as there was no allowance for these items in the original tender. The affected area is approximately between STA 1+135 and 1+180. A test pit was dug by the Contractor in the vicinity of STA 1+140 which indicated that as much as 2m of unsuitable material could be expected below the founding elevation of the crushed stone bedding for the base wall unit. The quantity of unsuitable material was conservatively estimated to be 400 cubic metres; the quantity actually excavated and replaced was 135 cubic metres.

The work effectively fully tied up the Contractor's work force for nearly four days. NS Power crews were required to stabilize power poles #6 and #7, which were undermined during construction. This meant that the DFO parking area was unavailable for trucking away unsuitable material which had to be passed up the hill by excavators to the Killam parking area. The work was under continuous supervision by Strum Environmental to verify bearing capacity. The work also included one incident where hydrocarbons were excavated; it was determined that the quantity and type of material allowed for dilution and disposal of the material on site. Work adjacent and under the utility lines restricted operation of heavy equipment. The quantity of material was deceiving, as the work was very tedious, with quantity of material moved and work procedure in no way comparing to normal wall construction.

This work was below foundation level for the crushed stone under the bottom course of wall. Accordingly, it was not part of the normal pay items for wall construction, and is considered additional work. The unit prices proposed by the contractor were calculated based on the labour, material and equipment charges in accordance

The equipment used on site by the contractor was two large excavators, one mini excavator, one roller, one tamper, four tandem trucks (own forces and hired),

Earl Behan
 26 March 2010
 Page 3 of 3

a mini dump truck, and two pickup trucks. NS Power employed two trucks for the pole work. The contractor's labour force (excluding operators) was a crew of five including surveyor. Materials included the surge rock used to prepare the sub-grade.

Based on our observations, we estimate that the additional costs incurred for these two items are approximately as follows for a three and a half day period:

Equipment	12,500
Trucking	12,500
Labour	7,000
Materials	2,000
<u>NS Power (partial)</u>	<u>1,200</u>
Estimated Total	\$35,200

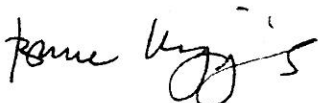
The total estimated cost is in close agreement with the total of the two extra work items for foundation excavation (Item 7, 17,431.20 + Item 8, \$17,548.65 = total of \$34,979.85), as calculated based on proposed unit prices. Accordingly, after consideration of the additional work required, and the measured quantities, we consider that the unit prices submitted for Foundation Excavation of Unsuitable Material and Replacement of Unsuitable Foundation Material with Rock Fill to be reasonable.

Summary

In summary, for the scope of work described under contemplated change order No. 1 we recommend payment of \$119, 733.85 plus HST. Please refer to the copy of the contemplated change order no. 1 with completed schedule of the for breakdown of pay items, agreed quantities and unit prices. Please call if there are any questions, or more information is required.

Yours very truly,

CBCL Limited



Bruce Higgins, P.Eng.
 Direct: 421-7241 ext 2425
 E-Mail: bruceh@cbcl.ca

Project No: 090222.01