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**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER LOCAL SERVICES
COMMITTEE
MEETING OF TUESDAY APRIL 8, 2014**

SUBJECT ADDITIONAL ENGINEERING FEES - AECOM CANADA LTD. CONTRACT

ISSUE

AECOM Canada Ltd. (AECOM) has indicated that they require additional engineering fees in order to continue to provide service for the Magic Lake Estates Water System (MLEWS) improvement project.

BACKGROUND

In 2010, an engineering consultant, AECOM, was hired under a contract to complete the engineering tasks from the start to the finish for the MLEWS improvement project, starting with a comprehensive review of the water system to identify any deficiencies and confirm the scope of the works to be constructed. Further, AECOM's assignment included engineering design, contract administration and construction inspection and close-out tasks. AECOM's original contract amount was \$679,208.

The construction work generally includes a new water treatment plant (WTP), two pump stations, one control valve station upgrade and a new Frigate Road storage reservoir. In 2012, a construction contract was awarded to Rohl Enterprises Ltd. in the amount of \$6,061,500.25 with a completion date of July 15, 2013.

To date the following work has been completed by the Contractor or is scheduled for completion:

1. Water Mains – a total of 2,758m of water mains were installed in the fall/winter of 2012. These mains include raw water supply mains to the WTP as well as distribution mains to customers. It is proposed to install additional distribution mains once the major work is completed and residual budget determined.
2. Bosun Control Valve Station – the new work at the Bosun station to install pressure reducing valves has been completed and is ready for use. The function of this facility is critical during the Frigate reservoir replacement work and provides a connection between the upper Captains pressure zone and the lower Frigate pressure zone.
3. Water Treatment Plant – The building and treatment process equipment have been constructed and the works are currently in a commissioning phase, whereby, all of the equipment is tested and confirmed ready for use. The plant is expected to be commissioned and turned over to CRD ownership in the first week of April.
4. New Magic Lake Pump Station – This pump station is one of two new stations that will supply raw water to the new WTP. This work has been completed and the new station is currently in use to assist with the testing and commissioning of the WTP.

5. New Buck Lake Pump Station – Once the treatment plant is commissioned, the Buck Lake Pump Station work can commence. During this time the Magic Lake pump station will be supplying water to all customers. Estimated time period for this work from the contractor is during the month of April. Customers will be asked to conserve water during this time.
6. Frigate Reservoir – Once the Buck Lake Pump Station is commissioned, the Frigate reservoir work can commence (demolition of the old reservoir and erection of a new reservoir on the same site). The Contractor was hoping to complete the Frigate reservoir work by this summer, but it is now apparent that the reservoir subcontractor will be not be available until mid-July. Due to the additional risks of constructing the reservoir during peak summer months when water demand is highest, the reservoir replacement will be deferred until November/December, as recommended by AECOM. During this work, the new plant will be operating from both the Buck Lake and Magic Lake Water sources.

With regard to the works that are not yet complete, the Contractor has extended the construction schedule for a number of reasons. As a result of the extensions, AECOM has made multiple requests for additional fees in order to continue to provide service to the project. The more significant schedule extension issues are noted as follows:

1. Electrical Equipment Control/Communication – In late 2013, the Contractor, including subcontractors, had significant difficulty getting the electrical equipment to communicate with the control equipment. Considerable effort was expended trying to diagnose and resolve the issues. This took several months and has since been resolved.
2. Magic Lake Pump Performance – upon completion of the construction of the pump station, the new pumps failed to perform as expected. Considerable effort was expended to diagnose and resolve the issue. This took several months and has since been resolved by installation of different pump impellers.
3. Frigate Reservoir Construction – although the Frigate reservoir work has not been started, the schedule for the reservoir work has been delayed due to the previous two issues. The start of the Frigate reservoir work was dependent on resolution of the above issues.

Last summer AECOM negotiated an increase in their engineering fee budget to total \$992,853 to complete all of the engineering tasks based on the contractor completing all work by the end of December 2013. In addition, a \$5,000 increase was approved to compensate AECOM for their urgent effort related to suspected issues related to the existing intake pipe/Magic Lake Pump Station issues. The additional fees have been funded within the overall project as reported at the recent MLE Committee meetings.

Recently the Contractor proposed to delay the frigate reservoir construction to the early summer of 2014, but many risks exist with such a proposal due the high water demand at that time of year (as identified in AECOM's correspondence of March 26, 2014). Further, the Contractor has now identified that the reservoir subcontractor is not available until the fall of 2014. Therefore, the Frigate reservoir work will be rescheduled for November/December 2014. Because of this latest schedule extension, AECOM has requested additional engineering fees in the amount of \$110,000.

As the Contract Administrator, AECOM have identified that should the contractor fail to perform the work by the approved completion date then Liquidated Damages (LD) can be imposed on the Contractor. The contract says that for every day the Contractor exceeds the approved contract completion date, the CRD is eligible to collect \$500. AECOM have notified the Contractor and have invoked LD on the latest Progress Payment Certificate.

AECOM suggests that the LD be used to compensate AECOM for their effort. Note that the actual amount of LD is somewhat dynamic and will only be determined once the work is finally completed. Therefore, it is proposed to increase AECOM's budget by an additional \$110,000, with the intent of invoking Liquidated Damages. The Contractor's approved contractual completion date is currently December 31, 2013. It is important to understand however, that the Contractor could request a change to this approved date before the work is finished. This would lessen the amount of LD that is collected.

Summary of AECOM's contract and changes:

	Description	Amount (plus applic. taxes)
1.	Original Contract Amount (fees and disbursements)	\$679,208
2.	Approved Scope Change #1 – Watermain Alignment	\$15,666
3.	Approved Scope Change #5 – Bosun PRV Upgrade	\$3,162
4.	Additional Fees to complete the project (August 2013) includes scope changes #2, 3 and 4.	\$294,817
5.	Magic Lake Intake Troubleshooting	\$5,000
	Current additional fees request	\$110,000
	Add 1.75% HST for invoices Prior to April 2013 – Estimate	\$15,000
	Consultant Total	\$1,122,853
	Estimated* Contractor Total	\$5,939,203
	Estimated* Other Total	\$1,750,444
	Grand Total, As Originally Approved in Budget Documents	\$8,812,500

*as estimated Mar 10/14

ALTERNATIVES

1. That the Magic Lake Estates Water and Sewer Local Services Committee approve a revised engineering budget to increase the total AECOM Canada Ltd. contract to total \$1,122,853 with the intent of mitigating the additional fees by invoking liquidated damages against the Contractor;
2. That the Magic Lake Estates Water and Sewer Local Services Committee approve a revised engineering budget to increase the total AECOM Canada Ltd. contract to total \$1,122,853; or
3. That the Magic Lake Estates Water and Sewer Local Services Committee not increase AECOM's budget.

IMPLICATIONS

Alternative 1 – By increasing the budget for AECOM, they would continue to provide service although the project budget would have to be revised by allocating more for AECOM and less for other work, with the intent of not exceeding the overall budget. The amount of Liquidated Damages can only be determined upon the completion of the Contractor's work.

Alternative 2 – Again, by increasing the budget for AECOM, they would continue to provide service although the project budget would have to be revised by allocating more for AECOM and less for other work. This alternative does not consider invoking Liquidated Damages.

Alternative 3 – If AECOM's budget is not increased they intend to stop work on the project, most likely when their approved budget is expended, possibly at the end of April. This would mean that the contract administration, inspection, engineer-of-record responsibilities, preparation of records including drawings, operation and maintenance manuals would not be realized.

CONCLUSION

AECOM Canada Ltd. has indicated that they require additional engineering fees in order to continue to provide service for the Magic Lake Estates water system improvement project and therefore the engineering budget has to be increased to keep AECOM working on the project.

RECOMMENDATION

That the Magic Lake Estates Water and Sewer Local Services Committee approve a revised engineering budget to increase the total AECOM Canada Ltd. contract to a total of \$1,122,853 with the intent of mitigating the additional fees by invoking liquidate damages against the contractor.

Scott Mason, P.Eng
Manager, Regional Water

Tim Tanton, MPA, P.Eng.
Senior Manager, Infrastructure Engineering

Ted Robbins, B.Sc., C. Tech.
General Manager, Integrated Water Services
Concurrence

Attachments: Correspondence (AECOM Canada Ltd. of March 6, 2014)

From: Brady, Mike <Mike.Brady@aecom.com>
Sent: Wednesday, March 26, 2014 4:31 PM
To: Scott Mason
Cc: Tim Tanton; Joseph Marr; Henry, Daryl
Subject: CRD MLE - frigate tank construction timing and contract administration fees
Attachments: L_CRD_SM_AdditionalFees_beyondMay2014_MB_6March2014.pdf

Scott,

Following yesterday's conference call, we have not yet received any information from Rohl related to confirmation of costs associated with Frigate Tank re-scheduling and their discussions with the Fire Chief on Pender Island, as had been hoped for.

The following is prepared to provide AECOM comments on timing of construction for Frigate Tank and additional fees for continued contract administration, assuming that the tank will be constructed in the Fall of 2014.

Work on Frigate Tank in July / August

Performing the work on Frigate Tank during July and August would result in the following conditions for the Magic Lake Estates system:

- Based upon data provided by CRD for 2010, 2011, and 2012, more than 50% of July and August days have had demands greater than the daily capacity of one treatment train at the WTP (750 m3/day); none of the days exceeded the total daily capacity (1,500 m3/day)
- Maximum day demand, during 2010, 2011, and 2012 is estimated at between 11 and 12 Lps
- Allowing a peaking factor of only 2.0 would result in peak hour flow of 24 Lps, which exceeds the (instantaneous) 20.8 Lps capacity of the WTP; using a peaking factor of 2.5 would result in a peak hour flow of 30 Lps, over 40% greater than instantaneous plant capacity
- Demands in excess of plant capacity would need to come from storage – Captain's Tank – via the Bosun PRV and the new small PRVs at the WTP from Z570 to Z375
- The Captain's tank has a total storage of 341m3, which is only 45% of the total system storage need, based upon the "current" 12 Lps maximum day flow

For the above reasons, we foresee significant risks attached to operating the system without Frigate Tank during the high demand period of July and August, and would not recommend it.

Additional AECOM Fees for Continued Contract Administration

Our March 6, 2014 letter related to additional fees for Substantial Completion beyond May, 2014 included a total budget for additional contract administration fees of \$101,816 if the work for Frigate Tank was re-scheduled for Fall and completed by mid-November, 2014. Rohl has now proposed that substantial completion be achieved by December 20, 2014, adding a further 5 weeks to the schedule. Assuming that those additional weeks only require nominal effort of 8 hours or \$1,200 per week, similar to the period between late April and October, the additional amount above should be increased by \$6,000, to \$107,816. In addition, our budget estimate in December 2013, based on substantial completion in May 2014, was developed using 2013 labour rates. We are willing to hold these labour rates through mid-July 2014, as estimated, but will need to increase our rates for continued effort beyond that point, with a possible further adjustment for any work that continues into 2015. While we do not expect the rate adjustment(s) will have a significant impact on total fees, we would suggest a further allowance be included, bringing the total increase above the currently approved budget to \$110,000.

As noted on yesterday's conference call, there will be additional contract administration effort to deal with Partial Substantial Completion, multiple Lien Holdback Releases, multiple Completion inspections, etc, but we would anticipate that this effort can be accommodated within the 8 hours of total effort per week that we have allowed during the period where there will be no construction activity but there will still be a need for nominal effort on the part of AECOM. As work progresses, we will keep CRD informed as to whether this is becoming a more significant item and cost.

Mike Brady, P.Eng.



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6 March, 2014

Project No:60162023 Task 2.1

Scott Mason, P.Eng.
Manager, Regional Infrastructure
Capital Regional District Integrated Water Services
479 Island Highway
Victoria, BC V9B 1H7

Dear Scott:

**Re: Capital Regional District – Magic Lake Estates Water System Upgrading
Additional AECOM Fees for Project Substantial Completion Beyond May 2014**

In December, 2013 AECOM provided CRD with a revised not-to-exceed budget for engineering fees based upon the Contractor's scheduled completion of May 23, 2014, compared with the previous completion date of November 15, 2013. The budget totalled an additional \$60,416 to provide continued contract administration services during the approximate six-month extension from mid-November 2013 to May 23, 2014. The budget was based upon a month-by-month estimate of engineering fees based upon the type and level of work activity that the Contractor forecast would be occurring on the site.

On March 3, 2014 the Contractor informed CRD and AECOM that his earliest substantial completion date would now be June 30, 2014, and requested CRD's permission to construct the Frigate Tank in May and June of 2014. This schedule represents a significant issue to be discussed between CRD, the Contractor, and AECOM since it will mean the Magic Lake Estate's system will not have use of its larger water storage tank and will have reduced firefighting capacity during a normally drier and higher water demand month. If this is not acceptable to CRD, then the Contractor will need to re-schedule the work on Frigate Tank until later this year in the fall, which will further extend the contract completion date until mid- to late-November, 2014.

Although neither version of the extended schedule would result in more construction work being performed on site, it does mean extending the duration of some work and shifting the timing of other work. As a result, there will still be a further need for additional engineering fees to provide ongoing construction contract administration services through a prolonged construction schedule.

Under the first scenario – completion by June 30, 2014 – there will be an additional five weeks of contract administration at an effort that we estimate would be consistent with recent months during the time that the Contractor was not achieving significant construction progress because he had encountered difficulties with the Magic Lake raw water pumps and communication issues at the water treatment plant. During the period between mid-August and mid-December 2013 our effort was an average of approximately 20 hours per week for all staff, and equivalent to approximately \$3,000 per week. For the additional five weeks between May 23 and June 30, 2014, this would amount to an increase in the engineering budget of \$15,000, for a total not-to-exceed increase of \$75,416 above the currently approved budget.

Under the second scenario, the Contractor would likely leave the site following completion of the Buck Lake raw water pump station (approximately April 23rd), and return in the fall (say October 1st) to perform the Frigate Tank Replacement work. During the ensuing 22-week period there would still be some nominal effort on the part of AECOM to address ongoing contract administration and scheduling issues, however, this is difficult to estimate. For budgeting purposes we would suggest an effort of approximately 8 hours or \$1,200 per week that would be in addition to the amount estimated above. The 22-week period would require an increase of \$26,400 beyond the \$15,000 identified above, so that the total increase to the currently approved budget would be \$101,816.

Regardless of which scenario is implemented, AECOM will require a scope change to continue to provide service to the project due to the Contractor's schedule extending beyond the mid-November, 2013 substantial completion date that the current budget is based upon.

Please contact me if you have any questions regarding the above.

Sincerely,
AECOM Canada Ltd.



Mike Brady, P.Eng.
Manager, Victoria
mike.brady@aecom.com

MB

c: T. Tanton, CRD
T. Robbins, CRD
A. English, AECOM

2606 Dory Way, Fender
Island, B.C.
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March 10, 2014

B.C. Ministry of Health,
Room 337, Parliament Buildings,
Victoria, B.C. V8V 1X4

ATTN; Honourable Terry Lake

WITHOUT PREJUDICE

Subject: Capital Regional District and Magic Lake Estates Water & Sewer,
Fender Island, B.C.

Dear Sir:

C.R.D. took over the Victoria Water about 1997, every year after that water rates have increased. Having worked in all provinces of Canada (erecting boilers which require water), why is water in B.C. not a utility? If it was, then the C.R.D. would have to apply to the B.C. Utilities Commission to review rates, costs of maintenance, etc. and then get approved or not. Which brings us to Fender Island and Magic Lake Estates Water & Sewer?

1. Plumbing Contractor goes bankrupt. Has pumps required for project in his storage, which is now in receivership. These should have been in C.R.D. storage.

DELAY

2. Electrical (see article below by chairperson)

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Magic Lake Estates Water and Sewer Local Services Committee

Due to continuing issues with the electronic controllers for the pumps at the new water treatment plant and the unavailability of the equipment manufacturers representative, the commissioning of the equipment has been further delayed and has been rescheduled to February. In the interim, work will commence on the new raw water pumping station at Buck Lake. When this is completed, the Frigate Road water storage tank will be removed and the replacement tank and associated equipment installed. This is scheduled to commence mid April and be completed by the end of May. During this time, consumers will be asked to monitor/modify their usage to ensure there is adequate supply for fire fighting if/when required.

At the budget meeting on November 19, budgets for both water and sewer were approved with no tax or user fee increases for 2014.

Jim Petrie was re-elected Committee

Chair and Pat Watson Vice- Chair for a year term.

The Open House we were originally contemplating for May 2014, will be rescheduled to later in the year, when the plant is in sendee and construction has been completed. *Jim Petrie, Chairperson*

ANOTHER DELAY

3. Daily Work Form:

- i. How many Contractors on site?
- ii. Equipment on jobsite?
- iii. Equipment being used? Not being used?
- iv. Hours of all manpower and equipment used?

So how many DELAYS?

What did they cost us?

Delays cost money, the words of a C.R.D, Director.

What do we want? Someone from your department to ensure us we are getting our monies worth. Do an investigation.

With Ferry rates going up April 1,2014, it is time to hold all meetings on Fender Island, so the Public can attend, at no cost to them.

Volunteer Committee Members (elections)

A background of each Candidate should be given, so you know who you're voting for. Those elected should be at all meetings. The Chairperson sets the example.

Closing:

Are your people keeping up to the times. Due to changes in cold months, people installing new systems are going deeper or using additional materials to keep from freezing.

Thanking you in advance.



John E.Boos

C.C.

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