

Agenda Item # Page #

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TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JANUARY 23, 2012
FROM:	RON STANDISH, P. Eng. DIRECTOR, WASTEWATER AND TREATMENT PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES
SUBJECT:	STONEY CREEK EROSION CONTROL WETLAND STORMWATER MANAGEMENT FACILITY CONSTRUCTION (ES2477)

RECOMMENDATION

That, on the recommendation of the Director, Wastewater and Treatment, Planning, Environmental and Engineering Services, the following action **BE TAKEN** with respect to the Stoney Creek Erosion Control Wetland Stormwater Management Facility:

- (a) the Mayor and the City Clerk **BE AUTHORIZED** to execute an updated agreement with the Consultant - Delcan Integrated Systems and Infrastructure Solutions (Consultant) 1223 Michael Street Suite 100 Ottawa, Ontario, Canada, K1J 7T2, to increase the previously approved fees by \$49,175 for work associated with design changes resulting from unsuccessful negotiations with the adjacent landowner and by \$53,000 for work associated with Stoney Creek breach repairs (under extreme conditions) and mussels relocation/rescue, as well as future monitoring cost in the total of \$102,175 excluding HST, bringing the upset amount from \$652,000 to \$754,175, excluding HST for the said project in accordance with Section 15.2 (g) of the Procurement of Goods and Services Policy;
- (b) the financing for this work **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix "A";
- (c) the consulting fees for the project identified in (a) above, **BE IN ACCORDANCE** with the estimate on file, which are based upon the Fee Guideline for Professional Engineering Services, 2006, recommended by the Ontario Society of Professional Engineers;
- (d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this work;
- (e) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract with the consultant for the work; and
- (f) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

ETC – February 27, 2006 – Approval of the Appointment of the Consulting Engineer for the Municipal Class Environmental Assessment (EA), Schedule 'B' for the storm/drainage and SWM servicing works for Stoney Creek Undeveloped Lands.

ETC – February 26, 2007 – Approval of the Municipal Class EA Study Progress Report for storm/drainage and SWM servicing works for Stoney Creek Undeveloped Lands.

PC – June 18, 2007 – Stoney Creek Area Update

ETC – September 24, 2007 – Acceptance of the study report of the Municipal Class EA for the proposed storm/drainage and SWM servicing works for Stoney Creek Undeveloped Land.

PC – December 10, 2007 – Implementation Strategy for the recommended erosion control remediation and servicing works for the Stoney Creek Drainage Area

ETC – January 28, 2008 - Approval of the Appointment of the Consulting Engineer for the erosion control remediation and servicing works for the Stoney Creek system.

Agenda Item #	Page #

PC – June 16, 2008 – Approval of the Funding Implementation Strategy for the Stoney Creek System Erosion Remediation/Reclamation and Servicing Works

PC – July 14, 2008 – Erosion Remediation/Reclamation Works for the Stoney Creek System Subdivision Agreement – Z Group Inc. (39T-05510)

City Council – December 1, 2008 – Erosion Remediation/Reclamation Works for the Stoney Creek System Under Subdivision Agreement with 2047790 Ontario Incorporated (39T-05510)

ETC – May 11, 2009 – Appointment of Consulting Engineer for Engineering Services Related to the Stormwater Management Erosion Control Wetland for the Stoney Creek System Phase 3 Project

BNEC – August 15, 2011 – Contract Award – Tender No. T11-12 Stoney Creek Erosion Control Wetland Stormwater Management Facility Construction (ES2477)

BACKGROUND

Purpose:

To recommend that an increase in the consulting fees be authorized to the Consultant for prior and future efforts related to the requested changes and additional detailed design due to the negotiation with the landowner, as well as the design repairs measures dealing with breach of Stoney Creek along the northern interface of the Stoney Creek Erosion Control Wetland Stormwater Management Facility (SWM) Facility and relocation/rescue of river mussels as well as the post constructed ecological monitoring.

Context:

The construction objective of the Stoney Creek Erosion Control Wetland SWM Facility project (Phase 3) of the Stoney Creek remediation/reclamation erosion works is to minimize or eliminate erosion control deficiencies within the Stoney Creek System and provide sustainable conditions for the post-development flows. Following the construction of this project, an additional 1,600 to 1,900 lots or equivalent can be released for land development.

The Stoney Creek Erosion Control Wetland SWM facility consists of 4 cells adjacent to Stoney Creek (see attached map). Construction commenced in September 2011 and was ahead of schedule by the latter part of November as the contractor took advantage of dry weather conditions in late September and October. By the end of November Cells 2 and 3 of the wetland were substantially complete, the bulk excavation of Cell 1 was approximately 75% complete and the bulk excavation of Cell 4 was scheduled to be undertaken in early winter with improved constructability associated with frozen ground conditions. Ultimately, construction would be completed in early 2012 in accordance with the schedule.

A significant rain event occurred on November 27 and 28, 2011 with over 70 mm of rain recorded at a City rain gauge near the construction site. The rain event (compounded by previously saturated conditions) generated elevated water levels and resulted in significant flow from Stoney Creek into the construction site located in the floodplain. Due to these conditions on December 1, 2011 a section of Stoney Creek immediately west of Highbury Avenue breached at the location of a sharp meander. The breach was discovered at approximately 3:30 PM and the contractor under the direction of the City's consultant was able to repair the breach by 8:00 PM that night. On December 5, 2011 another breach adjacent to the restored area occurred and was also subsequently repaired. Upon review of the conditions the geotechnical engineer considered the breaches to be attributed to the overtopping of the cell slopes resulting in progressive slope failures both on the creek side and the side of the constructed wetland.

The breach resulted in aquatic life including fish and several species of mussels (including the discovery of one endangered species of mussel not previously known to be in the area through study or local knowledge) to be displaced from Stoney Creek and into the construction site. In consultation with the Ministry of Natural Resources, Department of Fisheries and Oceans and the Upper Thames River Conservation Authority and in accordance with provincial protocols and permits qualified persons from the City's consulting team rescued the mussels and fish species and reintroduced them to the Stoney Creek ecosystem.

Agenda Item #	Page #

Discussion:

Due to adverse and extreme conditions City staff authorized Delcan and the contractor to proceed with these additional works noting that the consultant, and the City, were unable to estimate the final costs in advance of this work being done. The total engineering fees associated with the additional design work to repair the breach and activities pertaining to mussel rescue are estimated to be \$53,000 excluding HST. It is anticipated that the construction costs associated with the design modifications and mussel recovery operation will be covered by the contingency of the approved contract award for the construction of the works.

Delcan undertook additional design work in assisting the City in the attempt to resolve difficult negotiations with the adjacent landowner by accommodating several iterations of expectations that were ultimately deemed unreasonable (\$27,300). Also, to obtain from the MOE a Category 3 permit to take water application (\$12,875) required for the project. In addition staff authorized Delcan to expand the scope of the EIS (\$3,000), undertake additional soil sampling (\$4,000) and complete a forestry assessment (\$2,000). At the time the previous report was issued the final estimates associated with completing these additional tasks were unknown it being noted that contingency was not included in the previously awarded engineering fees that may have allowed staff to administratively authorize this additional work. The additional engineering fees associated with this work are \$49,175 excluding HST.

Conclusions:

It is recommended that an increase in design fees in the amount of \$102,175 excluding HST be authorized to the Consultant for additional effort related to the design of the Stoney Creek Erosion Control Wetland Facility and breach of Stoney Creek along the northern interface of the facility.

Acknowledgements:

This report was prepared within the Planning, Environmental Engineering Services Department, Stormwater Management Unit by Billy Haklander, P.Eng., Environmental Services Engineer.

SUBMITTED BY:	RECOMMENDED BY:
BERTA KRICKER, M.Eng., F.E.C., P. Eng. MANAGER OF STORMWATER STORMWATER MANAGEMENT UNIT	RON STANDISH, P.ENG. DIRECTOR, WASTEWATER AND TREATMENT – PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES
REVIEWED & CONCURRED BY:	
PAT MCNALLY, P.ENG. EXECUTIVE DIRECTOR OF PLANNING, ENVIRONMENTAL AND ENGINEERING SERVICES	

January 25, 2012

Attach: Appendix "A" – Sources of Financing
Appendix "B" – Location Map

c.c. John Braam – City Engineer
Mary Goss – Budget Analyst
John Freeman – Manager, Purchasing and Supply
Delcan