STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO:	**Infrastructure & Recreation Committee**
MEETING DATE:	**Mach 19, 2013**
REPORT NO.:	**EPW.13.033**
SUBJECT:	**Additional Consulting Fees for Townwide Hydraulic Water Model**
PREPARED BY:	**John Caswell, Manager of Water & Wastewater Services**

A. Recommendations

THAT Council receive Staff Report EPW.13.033 entitled “Additional Consulting Fees for Townwide Hydraulic Water Model”;

AND THAT Council approve increasing the upset fee estimate for GHD Incorporated to provide engineering services for the Townwide Hydraulic Water Model by $15,500 from $190,400 to $205,900 (excluding HST).

B. Background

In Staff Report EPW.10.023, Council authorized the execution of an Engineering Agreement with GHD Incorporated for the development of a Townwide Hydraulic Water Model (Attachment 1). Council approved the award on March 8, 2010 to GHD Inc. in the amount of $197,900, which consisted of a $190,400 upset fee estimate plus a $7,500 fee contingency. Once completed, a Townwide Hydraulic Water Model will allow the Town to identify the necessary infrastructure needed to correct deficiencies within the system as well as respond to system growth.

GHD Inc. recently completed a calibrated hydraulic water model and will start identifying infrastructure upgrade alternatives under current and future demands. Recently, the Town has started to evaluate the implications of modifying the Collingwood Water Agreement. To understand if there are any upgrade requirements, Staff identified two water supply scenarios that will require additional fees in order for GHD Inc. to complete:

1) No Collingwood source is available
2) An intermediate amount of water (between 0 and 4,000 m^3/day) will be available from Collingwood.

After prolonged negotiations between Staff and GHD Inc., an agreement was reached that $15,500 in additional fees was appropriate for the additional work required. Staff recommend an increase in budget in order for GHD Inc. to complete these additional scenarios.

C. The Blue Mountains' Strategic Plan

The completion of a Townwide Hydraulic Water Model for the Town of The Blue Mountains furthers the Strategic Plan Goal #2. – *Addressing the Town's Municipal Infrastructure needs.*

D. Environmental Impacts

None.

E. Financial Impact

The upset fee estimate for the Hydraulic Water Model will be increased from $190,400 to $205,900 and will be taken from water reserves. This will increase the 2013 capital Budget for the Hydraulic Water Model from $75,000 to $90,500.

F. In Consultation With

Darcy Chapman – Capital Accountant

G. Attached

Attachment 1 EPW.10.023 "Award of Townwide Hydraulic Water Model to GHD Inc. TBM-2009-02"

Respectfully submitted,

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Reg Russwurm
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EPW.13.033
Attachment #1

STAFF REPORT: ENGINEERING AND PUBLIC WORKS DEPARTMENT

REPORT TO:	**Infrastructure & Recreation Committee**
MEETING DATE:	**February 23, 2010**
REPORT NO.:	**EPW.10.023**
SUBJECT:	**Award of Townwide Hydraulic Water Model to GHD Inc TBM-2009-02**
PREPARED BY:	**John Caswell, Manager of Water & Wastewater Services/Asst. Director**

A. Recommendation

THAT Council receive Report EPW.10.023 entitled "Award of Townwide Hydraulic Water Model to GHD Inc" TBM-2009-02; and

THAT Council approve the award of the Townwide Hydraulic Water Model (TBM-2009-02) to GHD Inc., in the amount of $197,900 consisting of $190,400 upset fee estimate plus $7,500 fee contingency; and

THAT Council approve increasing the Capital Water Budget by $17,900 from $200,000 to $217,900; and

FURTHER THAT the Mayor and Clerk be authorized to execute the Engineering Agreement Documents for TBM-2009-02.

B. Background

The Town's water system is supplied by the Thornbury Water Treatment Plant (WTP) and by the Town of Collingwood through a water purchase agreement. The Town's Engineering and Public Works Department is responsible for operating and maintaining the Thornbury WTP and water distribution system.

The majority of the Town in the developed areas is currently serviced by municipal watermains; however several areas are still utilizing private wells or communal systems. The Town is continuing the process of extending municipal servicing to a number of unserviced areas of Town and to development projects.

The Town has not previously developed a Town wide integrated hydraulic model of the entire water distribution system. To date, ad hoc models have been prepared for various projects and development proposals by various consultants however a comprehensive calibrated model has not yet been developed. By developing one town wide model, the Town will have a powerful tool to efficiently and effectively size infrastructure needed to correct deficiencies and to respond to system growth.

1. BACKGROUND

The Town's water distribution system is unique in that it is a very long, narrow system stretching more than 19 km along Georgian Bay. This, together with the varying topography within the Town, has resulted in the creation of a system that is relatively complex for its serviced population. Refer to the Water Pressure Zone map that is attached in Attachment 1.

As a general description of the Town's water distribution system, the following table is provided.

Characteristics of Existing Water Distribution System	
Feature	**Number**
Total Length of Watermain in Town system (approximate)	97 kms
Total number of watermain pipes from Town GIS system (approximate)	1,755
Total number of watermain junctions from Town GIS system (approximate)	2,774
Water Sources	2
Booster Pump Stations	8
Pressure Reducing Valves (main line)	10
Reservoirs	5
Pressure Zones	6

Scope of Work

The scope of this assignment will be to develop a comprehensive computer model of the Town's entire water distribution system and will involve gathering and reviewing relevant information; selecting the modeling software, collecting detailed data, establishing existing and future (20-year) demands, constructing the model, calibrating the model, modeling of various demand scenarios (steady state and extended period 24hr simulations), analyzing results and identifying system deficiencies, analyzing system upgrade alternatives to address the deficiencies, developing a 20 year implementation plan and training of municipal staff on use of the modeling software.

Water operators will provide assistance with data collection and installation of field water meters where required. Since there are legislative requirements that water operators operate valves and hydrants in the distribution system any time work is being performed on the system, water operators will be involved during most field measurement activities. It is expected operator assistance will be required for up to fourteen days at a cost of approximately $5000.

Prior to initiating any field work that may affect the water service to residents, there will be public notification. Notices will be also be placed in local newspapers, on the Town's website,

and by way of door to door notification advising ratepayers of possible interruptions or discolored water during any flushing requirements.

The assignment will include, but will not be limited to, the following tasks:

Develop Calibrated Model

Task 1: Gather and Review Background Information
Task 2: Select Modeling Software
Task 3: Collect Data Needed to Construct the Existing Conditions Model
Task 4: Determine Existing and Projected (20 Year) Demands
Task 5: Construct Existing Conditions Model
Task 6: Calibrate Existing Conditions Model

Deficiency Analysis & Long Term Capital Improvements (Town will determine if Tasks 7 through 11 will be completed)

Task 7: Pressure Zone Boundary Analysis
Task 8: Storage Analysis
Task 9: Model Distribution System with Existing and Projected Future Demands
Task 10: Identify System Deficiencies
Task 11: Infrastructure Upgrade Analysis

Training

Task 12: Training Work shop

Consultant Selection

The Town prepared a Request for Proposal and issued it on November 18, 2009. The Consultant selection was a two stage process. Stage One Submissions required Consultants to submit proposals consisting of Letters of Interest including the attached Form of Proposal. A total of seven Consultants submitted Letters of Interest and there were four consultants short listed.

The Stage Two Submissions required the four short listed Consultants to submit Detailed Work Plans and Upset Fee Estimates (separate sealed envelope).

The Consultant Selection Team, consisting of Reg Russwurm, Mike Campbell, Tom Gray and John Caswell satisfied them that the proposals were complete.

Consultants were evaluated based on the following weighted evaluation factors:

Quality Factors	
Firm's Qualifications and Experience on Similar Projects	10%
Project Team's Experience	20%
Project Understanding and Approach	15%
Work Plan, Methodology and Quality Assurance Plan	20%
Project Schedule	10%
Fee Factor	25%
Total	**100%**

The Consultant achieving the highest combined weighted quality and fee factors was GHD Inc. and therefore the Selection Team recommends retaining this firm in the amount of in the amount of $197,900 consisting of $190,400 upset fee estimate plus $7,500 fee contingency

C. The Blue Mountains' Strategic Plan

Completing this project will assist in the Town's Strategic Plan Goal #2 "Addressing the Town's Municipal Infrastructure needs".

D. Environmental Impacts

There is a requirement to install a number of water meters in the distribution system that may require excavations in various locations. A regard for drainage courses, swales and ditches in regards to pumping ground water needs to be considered. The use of straw bale check dams and silt fences will be required where applicable.

E. Budget Impact

The 2010 Capital water budget provides $125,000 for hydraulic water modeling and analysis of the distribution system and $75,000 in the 2011 for a total project cost of $200,000. This will be funded from Development Charges.

The Hydraulic Water Model budget is summarized in the table below:

Develop Calibrated Model Deficiency Analysis & Long.term Capital Improvements Training	$ 115,040 $ 59,195 $ 16,165
Contingency Fee	$ 7,500
Sub-total Fee	**$ 197,900**
Software Purchase costs	$ 15,000
Miscellaneous (Ads, etc.)	$ 5,000
Total Project Budget	**$ 217,900**
2010 & 2011 Capital Budget	$ 200,000
Budget Increase	**$ 17,900**

The Consultant fees were higher than expected and when the software purchase and contingency fee are added the 2010 and 2011 budget is exceeded by $17,900. The 2011 Capital Budget for the works will be revised to reflect the expected fees. Financial Services have reviewed the budget increase and concurs that the budget increase be funded from Development Charges.

E. Attached

1. Water Pressure Zone Map- Attachment #1

Respectfully submitted

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EPW.10.023
Attachment #1