

Subject: Town of Pelham Wastewater Model and GIS Update

Recommendation:

BE IT RESOLVED THAT Council receive Report #2021-0157 – Town of Pelham Wastewater Model and GIS Update;

AND THAT Council APPROVE the award of the engineering assignment to GM Blue Plan Engineering in the amount of \$75,500 plus HST to complete the update.

AND THAT the Town of Pelham Wastewater Model and GIS Update be funded through capital accounts WST 01-20 (Sanitary I&I Study) and WST 03-21 (Sanitary I&I Study Program – Planned Replacements and Rehabilitation).

Background:

In 2017, staff retained GM Blue Plan through a competitive Request for Proposal (RFP) process to complete an engineering assignment to build a hydraulic model of the Pelham wastewater system and use the model to conduct a baseline system characterization analysis.

The model developed by GM Blue Plan is used to identify deficiencies in the wastewater system and assist staff in forecasting wastewater flows and impacts to the Town's system with respect to proposed developments.

The original assignment completed in 2017 included the following scope of work:

- 1) Update of the wastewater system GIS Flow monitoring of the system.
- 2) Flow monitoring of the Town's wastewater system.
- 3) Update of the wastewater system model.
- 4) Review of Town Closed Circuit Television (CCTV) inspection data and development of work plan to address defects in the system, and
- 5) Development of a rehabilitation plan for the wastewater system aimed at reducing wet weather flows.

The cost to complete the 2017 assignment was \$78,440 plus HST.

The work completed in 2017 requires an update in order for staff to identify deficiencies in the waste water system, forecast future flows and identify capacity issues for new developments, plan and prepare capital works repairs and replacements, and to provide meaningful data on the condition of the wastewater system in accordance with the Town's Asset Management Plan (AMP).

Analysis:

In July, staff requested a proposal from GM Blue Plan Engineering to undertake a Wastewater Model and GIS update for the Town's wastewater collection system. (See Appendix A – GM BluePlan Engineering Wastewater Model and GIS Update Proposal).

It has been almost five (5) years since the model was developed and the previous engineering assignment was completed. Since that time, there has been considerable growth in the Town including new developments in East Fonthill as well as many infill projects in established neighborhoods. Staff are of the opinion that an update to the wastewater collection model and GIS mapping is now required in order to get an accurate inventory of the wastewater assets; determine the condition of the existing assets; and to prepare a model that will be used to evaluate future developments and the impacts that these developments have on the Town's wastewater collection system.

In terms of the project drivers and components the assignment scope is intended to:

- Update the town's mapping of the wastewater system to allow operations and engineering staff to respond to plan maintenance of the system effectively and address emergency outages in a timely and effective manner. This will include the provision of both digital and paper based map books to staff, which are essential in their day-to-day activities. This will also support tangible capital asset reporting.
- Fulfill the requirements of ONTARIO REGULATION 588/17 - ASSET MANAGEMENT PLANNING FOR MUNICIPAL INFRASTRUCTURE . The town is required to report on the condition of its core infrastructure systems by July 2022 to the Provincial Government. More specifically this project will address the requirement for the Town to report on the condition of its wastewater collection system and address any data gaps in future years.

- Examination of the condition information will allow the Town to mitigate potential structural failures in the system via the development of a rehabilitation plan based on the condition (CCTV) information. This will provide the basis for subsequent budgets.
- The modelling and flow monitoring components of the study will ensure that the Town can effectively manage the capacity of the system and accommodate development as it occurs and avoid the potential for impacts to existing customers, basement flooding, and or the environment, overflows. This will also provide the basis for expansion of the system and/or reduction in wet weather flows to ensure that the Town can accommodate development and intensification both now and in the future.
- The corridor capital planning deliverables will aggregate all condition information for core infrastructure in the right of way to ensure that coordinated and appropriately sequenced replacements and or rehabilitation can be performed. This avoids the common issue of roads being reconstructed over mediocre or failing underground storm, sanitary and water infrastructure. This ensures that Town budget dollars are used effectively for the best possible benefit.

GM BluePlan has the experience and the specific knowledge to be able to deliver this assignment successfully. GM BluePlan brings significant efficiencies and cost savings to this project given:

- GMBP's in-depth knowledge of the Town's wastewater system; they are the original authors of the Town's existing WW model. GM BluePlan have no learning curve associated with this assignment.
- GMBP is currently delivering the Region of Niagara Water Wastewater Master Plan Update, and can therefore leverage works under that project to bring efficiencies and cost savings to this project.
- The staff team proposed for this project is the same team that delivered on the 2017 project for the Town.
- Wastewater modelling and system state of good repair management are GM BluePlan's core services.

Based on GM BluePlan's previous experience with the Town and considering they have developed and completed the current wastewater model it is staff's recommendation that the update assignment be awarded to GM BluePlan in the amount of \$75,500 plus HST. This is intended to be a project upset limit and actual

costs will be in accordance with the Town's standard engineering agreement on a time and material basis.

Financial Considerations:

Council approved two capital sanitary sewer projects (WST 01-20 and WST 03-21) in 2020 and 2021, respectively. The purpose of these capital projects are to identify deficiencies in the wastewater collection system and to complete necessary repairs and replacements to ensure that the sanitary sewer collection system remains efficient while reducing the amount of unwanted inflow and infiltration (I&I). The approved budget for the Sanitary I&I projects is as follows:

1) WST 01-20	\$100,000
2) WST 03-21	<u>\$100,000</u>
Total Budget	\$200,000

To date, the above capital projects have not had any actual costs charged to them and have the full budget allotment remaining in each.

Town staff are currently completing two capital projects (Pelham Street North Reconstruction and Pelham Street South Phase 2 Reconstruction) in which the above sanitary wastewater accounts will be used to install concrete isolation rings around manholes located within the roadway. In doing so, these manholes will become more structurally sound and watertight and will be less prone to premature failure, which eventually allows unwanted storm water to enter the wastewater collection system. The committed costs associated with completing the concrete isolation manholes is \$104,700 plus HST for both capital projects. As a result, there is \$95,300 of available funds from WST 01-20 and WST 03-21 to undertake the Wastewater Model and GIS Update assignment.

As this engineering assignment relates directly to the operation of the Town's wastewater collection system staff's recommendation is that the Wastewater Model and GIS Update project be funded from the above sanitary capital accounts.

Alternatives Reviewed:

Council may direct staff to complete the assignment under the Town's procurement policy with respect to the issuance of a Request for Proposal. In this particular instance, staff do not recommend this approach because GM BluePlan has the specific experience and knowledge to complete this assignment in an efficient cost effective manner. GM BluePlan completed the initial wastewater model and GIS

mapping for the Town in 2017. As a result, they have a firsthand knowledge of the Town's wastewater collection system. In addition, GM BluePlan is currently delivering the Water and Wastewater Master Plan Update for Niagara Region and therefore can leverage works under that project to bring efficiencies and cost savings to this project.

Strategic Plan Relationship: Strong Organization

Completing this assignment will provide staff with a reliable tool to determine deficiencies with the wastewater collection system, provide opportunities to identify and repair damaged areas within the system, assist in making informed decisions with respect to growth and development in the Town and provide valuable information critical to a robust asset management plan.

Consultation:

There was consultation with Corporate Services and the Asset Management Analyst in the preparation of this report.

Other Pertinent Reports/Attachments:

Appendix A – GM BluePlan Engineering Proposal for the Wastewater Model and GIS Update.

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