

**To: Warden and Members of County Council**

**From: Director of Public Works**

## **Contract Award – Tillsonburg Wastewater Treatment Plant Phase 1 Upgrades**

### **RECOMMENDATIONS**

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- 1. That County Council award a three-year contract to the low bidder, Stone Town Construction Limited, in the amount of \$16,433,121 (excluding HST) for the construction of the Tillsonburg Wastewater Treatment Plant (WWTP) Phase 1 Upgrades in the Town of Tillsonburg;**
- 2. And further, that County Council approve additional costs required for scope changes in the amount of \$286,830 for the detailed design and construction administration of the Tillsonburg WWTP Phase 1 Upgrades to AECOM Canada Ltd., for an amended contract price of \$1,412,990 (excluding HST);**
- 3. And further, that Council authorize the transfer of \$1,168,704 from the Tillsonburg Wastewater reserve to cover the budget shortfall related to the foregoing approvals required for 2021 work;**
- 4. And further, that as part of the multi-year contract award, County Council approve the budgetary commitments of \$7,355,048 in 2022 and \$3,414,519 in 2023, included in the total contract price cited in Recommendation No. 1 and Recommendation No. 2 of this report, in advance of the 2022 and 2023 budget process;**
- 5. And further, that Council authorize the Chief Administrative Officer and Director of Public Works to sign all documents related hereto.**

### **REPORT HIGHLIGHTS**

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- The purpose of this report is to obtain County Council approval to award the above-noted construction project to Stone Town Construction Ltd. in accordance with the County's Purchasing Policy and revise the consulting agreement with AECOM Canada Ltd. (AECOM) which reflects expanded scope to undertake additional plant engineering design work including; groundwater impact mitigation features, asset identification / updating, construction risk management and increased construction administration support.
- The proposed WWTP Phase 1 upgrades will improve wastewater treatment processes, effluent quality and overall servicing reliability and prepare the plant for future capacity expansions (Phase 2) which are planned beyond the current 10 year capital forecast.
- This project will begin in July 2021 and be substantially completed by October 2023.

## **Implementation Points**

Upon Council approval, a contract will be executed with the low bidder, Stone Town Construction Ltd., prior to proceeding with the work. Additionally, an amended consulting agreement will be executed with AECOM to reflect their revised scope of work.

During phased construction, WWTP operations will be maintained in order to continue to provide wastewater treatment servicing to Tillsonburg.

Not moving forward with the enhanced Phase 1 scope of work will prevent capital and operational cost savings from being realized, necessitate Phase 2 works to be constructed sooner, limit WWTP operational flexibility, under-utilize existing plant equipment, increase plant vulnerability during storm events and result in WWTP performance limitations and lower quality effluent.

## **Financial Impact**

The construction costs and funding sources for this project are summarized in Table 1. The fee of \$16,433,121 (excluding HST and applicable taxes) by the low bidder (Stone Town Construction Ltd) to complete the Phase 1 construction works includes the cost of construction over a three year period (2021-2023). As such, award of this contract will require a multi-year funding commitment. Table 1 also shows the design and contract administration fees (AECOM) over the same three year period.

Through Report No. [PW 2020-54](#), AECOM was previously awarded a revised consulting fee of \$1,126,160. However, through the detailed design of Phase 1 upgrades and onsite geotechnical investigations, it was determined by staff and AECOM that due to high groundwater levels in the vicinity of plant upgrades, mitigation measures should be designed for and constructed to reduce risk of groundwater impact during and after construction of Phase 1 upgrades. The cost of this additional design work, increased contract administration / risk management assistance and asset identification / updating of new WWTP components by AECOM is \$286,830, which brings the total consulting fee to \$1,412,990. AECOM's engineering fees are approximately 8.6% of this construction cost which represents good value to the County as engineering fees.

Based on the above design, AECOM derived a pre-tender Phase 1 construction estimate of \$15,900,000 to \$19,200,000. As shown in Table 1, the low bid for Phase 1 capital works was \$16,433,121 which demonstrates good value for money. When compared to the approved 2021 capital budget forecast of ~ \$13.65 M (based on a 60% detailed design estimate), additional funding is required to cover the budget shortfall for Phase 1 construction (2021-2023).

As previously presented to Council through Report No. [PW 2020-54](#), the original 2014 planned scope of the Phase 1 construction was revised to enhance WWTP performance, lower WWTP operational costs and realize significant capital cost savings over the span of the Phase 1 and Phase 2 construction projects. Through a value engineering consulting exercise, this revised construction approach for Phase 1 and 2 works will serve to achieve at least \$3.1 M of capital cost savings for the overall combined project.

Table 1: Funding Summary for *Tillsonburg WWTP Phase 1 Upgrades Construction*

<b>Budget Summary Account / Description</b>	<b>2021 Budget</b>	<b>2022 Budget</b>	<b>2023 Budget</b>	<b>Total Amount</b>
<b>950200 – Tillsonburg WWTP Phase 1 Upgrades, Construction Fees</b>	\$6,300,000	\$6,975,000	\$3,158,121	\$16,433,121
<b>950200 – Tillsonburg WWTP Phase 1 Upgrades, Consulting Fees</b>	\$361,125	\$130,000	\$140,345	\$631,470 *
<b>Sub Total</b>	<b>\$6,661,125</b>	<b>\$7,105,000</b>	<b>\$3,298,466</b>	<b>\$17,064,591</b>
<b>Non Refundable HST</b>	\$117,236	\$125,048	\$58,053	\$300,337
<b>Estimated Contract Admin and Inspection (1.8 %)</b>	\$117,000	\$125,000	\$58,000	\$300,000
<b>Total</b>	<b>\$6,895,361</b>	<b>\$7,355,048</b>	<b>\$3,414,519</b>	<b>\$17,664,928</b>
<b>2021 Capital Plan</b>	<b>\$5,954,141</b>	<b>\$6,000,000</b>	<b>\$1,700,000</b>	<b>\$13,654,141</b>
<b>Estimated Shortfall</b>	<b>\$941,220</b>	<b>\$1,355,048</b>	<b>\$1,714,519</b>	<b>\$4,010,787</b>
<b>Estimated change in DC funding required</b>	<b>(\$227,484)</b>	<b>(\$149,262)</b>	<b>\$219,436</b>	<b>(\$157,310)</b>
<b>Estimated change in Reserve funding required</b>	<b>\$1,168,704</b>	<b>\$1,504,310</b>	<b>\$1,495,083</b>	<b>\$4,168,097</b>

\* \$1,412,990 less \$781,520 incurred prior to 2021.

A portion of the Phase 1 upgrades project is to accommodate future growth requirements and is eligible to be funded by Development Charges. Current cost estimates has the Phase 1 project allocated at 28.1% to accommodate future growth and 71.9% benefit to existing service. Based on current project cost allocations, a reduction in the overall development charge funding was required for 2021 by \$227,484, which is now required to be funded by the Tillsonburg Wastewater Reserve, in addition to the \$941,220 estimated 2021 shortfall. The 2021 budgeted closing balance of the Tillsonburg Wastewater reserve is \$17,785,145, which is sufficient to fund the 2021 requirement.

The annual cost estimates and funding sources for 2022 and 2023 will be updated with each annual business plan and budget cycle. There is currently sufficient funds in the Tillsonburg Wastewater Reserve and Tillsonburg Wastewater Development Charges reserve to fund the anticipated 2022 and 2023 changes identified above in Table 1.

## Communications







Oxford County staff has communicated with Town of Tillsonburg staff with respect to the scope of work and planned schedule, and further communication is planned prior to and throughout construction.

Through the Municipal Class Environmental Assessment Study (finalized in 2013), the community and stakeholders were engaged through Public Information Centers and project status updates. Staff are also in frequent contact with large wastewater producers in Tillsonburg to ensure that their wastewater effluent remains in compliance with the County’s Sewer Use By-law and applicable over-strength agreements.

Town of Tillsonburg Engineering and Parks staff have been consulted through the detailed design of the WWTP upgrades. Additionally, staff are in contact with Tillsonburg wastewater operations staff to ensure that their planned maintenance work in the wastewater collection system will not negatively impact the construction that will be taking place.

A Notice of Construction letter will be delivered to nearby property owners.

## Strategic Plan (2015-2018)

					
<i>WORKS WELL TOGETHER</i>	<i>WELL CONNECTED</i>	<i>SHAPES THE FUTURE</i>	<i>INFORMS &amp; ENGAGES</i>	<i>PERFORMS &amp; DELIVERS</i>	<i>POSITIVE IMPACT</i>
1.i.	2.i.	3.iii.			

## DISCUSSION

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### Background

#### Existing Design and Construction Administration Contract

AECOM was previously awarded a revised scope of work through Report No. PW 2020-54, which pertained to enhancing the scope of work for Phase 1 construction in order to enhance WWTP performance, lower WWTP operational costs and realize significant capital cost savings over the span of the Phase 1 and Phase 2 construction projects. Of note, the expanded scope of the engineering design and Phase 1 upgrades will serve to delay the future timing of plant expansion (Phase 2) beyond the current 10 year capital forecast.

Through the detailed design of Phase 1 upgrades, it was later determined by staff and AECOM that due to high groundwater levels in the vicinity of plant upgrades, additional risk mitigation measures should be designed for and constructed to reduce risk of groundwater impact both during and after construction of Phase 1 upgrades.

## Construction Tender

Staff issued a tender to seek a contractor for the construction of Phase 1 upgrades. The general scope of work includes:

- Construction of two new primary clarifiers to completely replace existing tanks;
- Construction of an oversized secondary clarifier;
- Complete replacement of existing headworks screening facilities;
- Replacement of the existing aerated grit chamber;
- Addition of sludge-thickening facilities to reduce the sludge-loading rate to the existing digester tanks;
- Upgrade the standby generator at the John Pound lift station;
- Blower and return activated sludge pumping capacity upgrades; and
- Yard piping, new facility fencing, and instrumentation upgrades.

## Comments

### Design and Construction Administration Additional Scope

The following additional risk mitigation measures will serve to increase AECOM's scope of work and address the above mentioned concerns posed by an elevated groundwater level at the Tillsonburg WWTP site:

- Raise elevations of new plant processes while maintaining an adequate hydraulic plant profile;
- Design and construct helical piles to anchor new primary and secondary clarifier tanks; and
- Complete a risk register.

The cost of additional design work, increased construction administration / risk management assistance and asset identification / updating of new WWTP components by AECOM is \$286,830, which will bring AECOM's total consulting fee to \$1,412,990. The scheduled construction period is slightly longer than initially anticipated as a result of expanded de-watering processes, which will aid in enhancing risk mitigation during construction along with additional construction administration assistance from AECOM. The schedule submitted by Stone Town Construction Ltd. takes into account this expanded de-water requirement.

AECOM was awarded the original engineering design work in 2018 through a competitive bidding process as their proposal represented the best overall value to the County. AECOM remained the preferred vendor for this additional engineering design work given their existing expertise and in-depth knowledge of the project that will allow them to complete this work more efficiently and cost effectively compared to starting new with a different engineering consultant. Staff have reviewed and negotiated AECOM's proposed fees and have determined that AECOM's fees represent good value for the proposed additional design work.

## Construction Tender

Prior to tender, Public Works advertised for the pre-qualification of General Contractors. Fifteen Contractors expressed interest and 15 were pre-qualified. County staff solicited bids from the pre-qualified Contractors and received the following seven bids at tender close on Thursday, May 27, 2021.

Table 2: Summary of Bid Submissions

Contractor	Bid Amount (HST Excluded)
1. Stone Town Construction Limited	\$16,433,121.00
2. Baseline Constructors Inc.	\$17,986,000.00
3. H.I.R.A. LTD.	\$18,496,950.00
4. Reid & Deleye Contractors Ltd	\$18,524,857.00
5. BGL Contractors Corp	\$19,803,400.00
6. ASCO Construction (Toronto) Ltd.	\$21,182,198.00
7. Torbear Contracting Inc.	\$24,336,283.00

Public Works staff and AECOM have reviewed the submissions and confirmed that the low bid received from Stone Town Construction Ltd. in the amount of \$16,433,121.00 (excluding HST) represents good value for the work and is within the most recent cost estimate provided by AECOM.

This project is anticipated to begin in July 2021 and be substantially completed by October 2023.

As this project has the possible risks that would be associated with any construction project of this scale and scope, the successful contractor is also required to secure construction Bonds and Insurance to mitigate risks related to the exposure of financial loss.

## **Conclusions**

Review of the competitive bid submissions confirms that it is appropriate to award the proposed Construction Works at the Tillsonburg WWTP to the low bidder, Stone Town Construction Ltd. of St. Marys, Ontario. In order to proceed with this contract award, approval from County Council is required.

Additionally, in order to minimize construction and long-term risks posed by an elevated groundwater level at the Tillsonburg WWTP site, it is appropriate to award additional engineering design work. The tender specifications and schedule took into account this additional design work which will be completed prior to construction commencing, therefore this work will have no impact to the construction cost or schedule submitted by Stone Town Construction Ltd.

## **SIGNATURES**

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### **Report Author:**

Original signed by

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Mitchell Heighway, MBA, P.Eng., PMP  
Project Engineer

### **Departmental Approval:**

Original signed by

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David Simpson, P.Eng., PMP  
Director of Public Works

### **Approved for submission:**

Original signed by

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Michael Duben, B.A., LL.B.  
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