

To: Warden and Members of County Council

From: Director of Public Works

Design Funding – Phase 4 Capacity Expansion of the Mount Elgin Wastewater Treatment Plant

RECOMMENDATION

1. That Oxford County Council authorize additional funding in the amount of \$69,500, to be funded by debenture at the completion of the project, for expanded project scope related to professional engineering services for detailed design of the Phase 4 capacity expansion of the Mount Elgin Wastewater Treatment Plant (WWTP).

REPORT HIGHLIGHTS

- The purpose of this report is to obtain funding to proceed with design for the Phase 4 capacity expansion of the Mount Elgin WWTP.
- Design of the Phase 3 WWTP capacity expansion was approved as part of the 2022 *Business Plan and Budget*; however, additional development interest has triggered the need for additional WWTP treatment servicing capacity.
- Staff are proposing that the design of the Phase 4 WWTP capacity expansion be undertaken in conjunction with the Phase 3 design to allow for greater cost efficiencies and more timely accommodation of the increased need for wastewater servicing capacity.
- The combined Phase 3/4 detailed design is anticipated to be completed in 2022. Construction is planned to commence in 2023 and will be considered through the 2023 Business Plan and Budget process.

Implementation Points

Upon approval of the recommendations contained in this report, a consultant agreement will be executed with K. Smart Associates Limited (K. Smart) to reflect the revised scope of work and revised engineering fees.

Upon completion of Phase 3 and 4 detailed design, the proposed scope of the construction will be refined and the associated WWTP capacity expansions will be undertaken in a single contract.

Given a large residential development is triggering the need for additional WWTP servicing capacity, the developer will be requested to enter into a front-ending funding agreement, in accordance with the provisions of the Development Charges Act.

Financial Impact

The Phase 3 design work was planned and approved as part of the *2022 Business Plan and Budget*; however, discussions with Community Planning and local developers early in 2022 has indicated an increased need for wastewater treatment capacity within the community. The received quotation from K. Smart for design services for the Phase 3 expansion was within the approved budget; however, with the scope increase to include the design of the Phase 4 expansion, additional funding will be required.

The design costs and funding source for the project are summarized in Table 1 below.

Table 1: Funding Summary for Mount Elgin WWTP Phase 3 and 4 Capacity Expansion

Budget Summary Account / Description	Bid Amount (excluding HST)
950905 Mount Elgin - WWTP Capacity Expansion (Design Phase 3 and 4)	\$185,700
Project Management (GM BluePlan)	30,000
Non-Refundable HST (1.76%)	3,796
TOTAL ESTIMATED EXPENDITURES	\$219,500
Available 2022 Budget (Phase 3)	150,000
BUDGET SHORTFALL	\$69,500

The anticipated project costs exceed the approved budget by approximately \$69,500. The budgeted 2022 closing balance of the Wastewater Mount Elgin Reserve is \$474,406. This balance is anticipated to be used to fund the cost of Phase 3 construction only and is therefore not available to be applied to the Phase 4 design and construction costs.

The Phase 3 and Phase 4 projects were not included within the 2019 Development Charges (DC) background study. As phase 3 and 4 are development driven, staff propose to include these projects in the County's 2024 DC Background Study to determine their eligibility for DC funding. It is anticipated that a significant portion of the construction costs related to Phase 3 and all Phase 4 costs (design and construction) will be debenture funded (reduced by the amount negotiated within the front-ending agreement).

Communications

The communications strategy is similar to other County engineering design projects. K. Smart’s project manager and the County’s project manager will form an open channel of communication and will include other members of the project teams as needed. These communications will commence upon approval of this report and will continue for the duration of the project.

Given both the Phase 3 and 4 capacity expansions of the WWTP are already permitted within the existing WWTPs Environmental Compliance Approval (ECA), there is no need for additional public consultation as the regulatory requirements have all been satisfied with the original Class Environmental Assessment Study.

Project milestones will be shared with the community through regular communication channels so that the community is aware of the work and of its purpose. Additionally, project notification will be posted on the County website during the construction stages: <https://www.oxfordcounty.ca/en/services-for-you/studies-and-construction.aspx>. Any significant noise or traffic interruptions to residents living in the area from construction will be communicated to residents through direct notices and to the public through social media.

Staff will continue to work with key internal stakeholders (County Management staff, Water/Wastewater staff) and external stakeholders during the execution of this project as required to ensure the appropriate level of communication and outreach is maintained, and further ensuring all parties involved are updated on project status and outcomes as needed.

Report No. PW 2022-39 will be circulated to the Township of South-West Oxford following Oxford County Council consideration.

Strategic Plan (2020-2022)

 WORKS WELL TOGETHER	 WELL CONNECTED	 SHAPES THE FUTURE	 INFORMS & ENGAGES	 PERFORMS & DELIVERS	 POSITIVE IMPACT
		3.iii.	4.ii.	5.ii.	

DISCUSSION

Background

The Mount Elgin wastewater collection system includes two sewage pumping stations, 5.7 kilometers of sanitary gravity sewers, 0.2 kilometers of sanitary forcemain sewers and 1.3 kilometers of sanitary low pressure sewers. Within the wastewater collection system, individual properties are serviced by septic tanks where sewage is pretreated to remove solids and grease

before discharge to a small diameter variable grade sewer. The septic tanks are regularly cleaned of accumulations on a five year schedule (or as needed) while the individual screens on the septic tanks are cleaned annually. The small diameter collection sewers direct the primary treated effluent to a sewage pumping station.

Wastewater collected in the system is treated at the Mount Elgin WWTP. The existing Mount Elgin WWTP consists of two separate treatment trains (Phase 1 and 2), each containing a Recirculating Sand Filter and subsurface discharge through a drainage field. The existing WWTP ECA regulates the operation and maintenance of the existing Phase 1 and 2 treatment cells as well as potential build-out of future Phase 3 and 4 treatment trains (overall combined rated capacity of 381 m³/d or approximately 950 units).

To assist with capital delivery, the County retained GM BluePlan to undertake overall project management of the Phase 3 WWTP capacity expansion. K. Smart has been retained by the County to complete the detailed design for the Phase 3 WWTP capacity expansion. Once the expansion is complete, Phase 3 would provide approximately 240 additional units of servicing capacity. When combined with existing Phase 1 and 2 uncommitted wastewater servicing capacity, approximately 390 units of servicing capacity will be available to support new development.

The majority of this available servicing capacity will be required to service a large residential development (estimated around 250 units), several other recently submitted development applications and potential future residential and industrial/commercial/institutional (ICI) development/intensification within the existing village boundary.

Comments

In 2022, staff received additional near term ICI development interest for various lands within the existing village boundary. The capacity required to service these additional development requests, together with the other planned development for the Village, would exceed the available servicing capacity noted above (including the additional capacity to be derived from the planned Phase 3 WWTP expansion).

A Phase 4 WWTP expansion would now also be required in order to derive sufficient servicing capacity to accommodate all of the planned/proposed development noted above. Accordingly, staff solicited a quotation from K. Smart to undertake both Phase 3 and Phase 4 design work for the WWTP expansion. Staff have reviewed the quotation (in the amount of \$185,700 excluding non-refundable HST) and confirmed it represents good value for the work. This recent quotation favorably compares to previous design costs for the Phase 2 capacity expansion of the WWTP in 2012 of \$94,633 (excluding non-refundable HST).

This revised work plan approach serves to combine the Phase 3 and Phase 4 WWTP capacity expansions into a single phase. This approach will afford greater cost efficiencies due to economies of scale, reduce potential disruption to the community during construction, and afford sufficient capacity to timely service planned residential and employment growth in Mount Elgin.

Should the Phase 4 design work not be undertaken at this time, some of the planned/proposed noted development may be delayed due to lack of available wastewater servicing capacity and consolidated WWTP expansion economies of scale (cost) will be lost.

Conclusions

It is recommended that Council approve the above-noted funding allocation in order to advance the design of the Phase 4 expansion of the Mount Elgin WWTP to service the current planned/proposed growth in the community.

SIGNATURES

Report Author:

Original signed by

Don Ford BA, CMM III, C.Tech.
Manager of Water and Wastewater Services

Departmental Approval:

Original signed by

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

Approved for submission:

Original signed by

Michael Duben, B.A., LL.B.
Chief Administrative Officer