A. **Recommendations**

THAT Council receive Staff Report CSOPS.20.016, entitled “Value Engineering Exercise - Thornbury Wastewater Treatment Plant Headworks Upgrade Project”

AND THAT Council endorse the Value Engineering Exercise as presented.

B. **Overview**

The purpose of this report is to update Council on the Value Engineering Exercise that was undertaken by staff to potentially reduce the construction costs of the headworks at the Thornbury Wastewater Treatment Plant.

C. **Background**

The Town is undertaking required upgrades to the Thornbury Wastewater Treatment Plant Headworks (the “Project”) to ensure grit, rags and detritus debris is removed from the influent sewage before it reaches the treatment process. The current headworks equipment is at the end of its life and is now non-operational. The failed headworks is now causing additional operational problems in the plant. This poses both a health and safety concern for the wastewater operators and the natural environment.

The Project was tendered and all bids received exceeded the approved budget. Staff prepared Staff Report CSOPS.20.002, “Request for Budget Increase – Thornbury Wastewater Treatment Plant Headworks Upgrade” and requested an additional budget increase of $997,700 from $3,047,500 to $4,045,200 to complete the works. Council required Staff to undertake a Value Engineering Exercise with the lowest bidder to identify any possible reduction in the costs to complete the work.

On Tuesday February 18th, Staff met with the Town’s consultant, J.L. Richards, and the lowest bidder, H2Ontario. All facets of the tender document were reviewed to identify any potential cost savings.
D. Analysis

The Value Engineering Exercise was undertaken by Staff to look for potential project optimization. The exercise was attended by Staff, the Town’s Consultant, J.L. Richards and the lowest bidder from the construction tender, H2Ontario.

The following areas were considered for potential cost savings:

1. **Optimizing Instrumentation** including review of the following:
   a. Pull-cable switches;
   b. Emergency rope switches;
   c. SCADA programming; and,
   d. Control panel.

   Staff are in agreement there is opportunity for further investigation and cost reduction.

2. **Pile Foundations**
   The tender provided the opportunity for the alternate use of helical piles in place of micropiles, however there is potential project risk to this design change. The geotechnical work completed on this site indicated there were obstructions during the drilling of the boreholes making this location potentially unsuitable for helical piles.

   There is potential for significant cost and time savings if we were able to utilize helical piles. There would be no spoils to handle and dispose of as well no grouting required. However, the risk associated with replacing micropiles with helical piles is significant. The contractor may have to pre-drill pile locations any way to ensure proper installation of piles. If obstructions were found, the helical piles may have to be abandoned and micropiles installed. There would be additional costs of the demobilization and mobilization. In addition, if changing pile locations became necessary due to obstructions, this could lead to design change for the grade beams and/or foundation walls resulting in construction delays.

   Staff have concerns about the fill material used at this site, however are in agreement there is opportunity for further investigation.

3. **Disposal of Excess Fill Material**
   There is the review of moving the risk of the excavated material from the contractor scope to the owner responsibility. There is low risk that this soil will be contaminated which represents a cost opportunity.

   Staff are in agreement there is opportunity for further investigation.

4. **Electrical Junction Boxes**
   There is a potential to remove eleven electrical junction boxes in the headworks project. These junction boxes have been included with this project to allow an easier execution
of an addition to the headworks facility as the plant is expanded. This could represent some minimal short-term savings but required to be added back into the design for the facility expansion. The cost savings is not significant.

Staff have reviewed this opportunity and believe there is no savings since these would have to be added back into the plant expansion.

E. The Blue Mountains Strategic Plan

Goal #5: Ensure Our Infrastructure is Sustainable
Objective #1 Develop a Long-Term Asset Management Plan for the Maintenance, Renewal and Replacement of Existing Infrastructure
Objective #2 Avoid Unexpected Infrastructure Failure and Associated Costs and Liability
Objective #3 Implement Best Practices in Sustainable Infrastructure
Objective #4 Ensure that Infrastructure is Available to Support Development

F. Environmental Impacts

Efficient and effective headworks are a critical component of the treatment process. Upgrades to the headworks are critical to maintaining an effect treatment system to protect the natural environment and public health.

G. Financial Impact

It is recommended that Council authorize Staff to award the contract in the amount of $3,735,200. Staff will continue to work with the Consultant and the Contractor to identify cost savings. Any cost saving measure will be addressed through a Change Order. It is estimated that the Value Engineering Exercise may yield up to $200,000 in savings on this project.

The Town’s Purchasing Policy with respect to Request for Tenders and Requests for Quotations, permits the Town to enter into negotiations with the lowest compliant bidder if the price bid is over the budgeted amount for the project. Should the Town be unable to reach an agreement with the lowest compliant bidder, the Town reserves the right to enter into negotiations with the next lowest compliant bidder, to cancel the bid opportunity or to present a report to Council whichever is deemed to be in the best interest of the Town.

H. In Consultation With

Shawn Everitt, CAO

Allison Kershaw, Manager Water and Wastewater Services

Brent Rolufs, Senior Infrastructure Capital Project Coordinator

Maurice Dempster, Wastewater Supervisor

Serena Wilgress, Manager of Purchasing and Risk Management
I. Public Engagement

The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. Comments regarding this report should be submitted to Shawn Carey, directorops@thebluemountains.ca.

Respectfully submitted,

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Shawn Carey,
Director of Operations

For more information, please contact:
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