



MANAGEMENT REPORT

Date: April 29, 2026
To: Infrastructure, Transportation and Safety Sub-Committee
From: Sean Beech, Manager of Environmental Services
Report Number: ITS26-009
Attachments: None

Title: WPCP Digester Roof and Mixing System Replacement Update

Objective: To inform Council of CIMA's recommendations for the replacement of the Wastewater Pollution Control Plant (WPCP) digester roof material and mixing system, including updated cost estimates.

Background: The City of Stratford awarded the Engineering Consulting Services for The Digester Roof and Mixing System Replacement Project to CIMA. In their first phase of design, CIMA was tasked with identifying and evaluating various options for the replacement roof and mixing system, while also considering opportunities for Renewable Natural Gas (RNG) integration. The analysis and recommendations were documented in a technical memorandum, and the resulting findings and key considerations are presented in this report.

Analysis: The Technical Memo provided a comprehensive review of system processes, historical performance, scope considerations, and recommendations. Replacement options for both the digester roof and mixing system were evaluated and scored against a range of performance, operational, and cost criteria.

In evaluating digester roof options, key consideration was given to asset lifecycle and potential RNG integration, leading CIMA to recommend a 316 stainless steel fixed roof. 316 stainless steel is a premium, molybdenum-alloyed austenitic steel (marine grade) known for superior corrosion resistance.

Anaerobic Digesters with stainless-steel roofs are corrosion resistant, can withstand exposure to headspace gases without the need for an interior gasproof coating and would not require an exterior protective coating below the insulation. Carbon steel was considered and offers lower upfront capital cost; however, over the life of the asset, those savings are reduced, and the increased operational risk associated with premature failure and higher maintenance requirements offsets this benefit. Other roof

options, including concrete, and glass-fused steel, were also evaluated; however, they are less favourable due to lifecycle durability concerns and limited compatibility with the preferred mixing systems.

The recommended mixing system is a Linear Motion Mixing system, which offers significantly lower energy requirements than other options, demonstrated mixing effectiveness, it has been implemented in several neighbouring municipalities over the past decade and came in with the lowest estimated capital costs. The most significant limiting consideration for using this technology is that there is only one supplier. A mitigating factor for this potential risk is that the technology is centrally mounted on the digester roof, like alternative systems such as draft tube mixing, which could allow for a suitable alternative replacement if required.

The 2026 budget was approved at an expenditure of \$2,500,000 for this project, funded by the R-R11-WWTR Wastewater Reserve. The Water and Wastewater Rate Study and Financial Plan incorporated this significant project, allowing for appropriate adjustments in user rates to ensure adequate funding. Updated costing in the Technical Memo estimates the total Capital Costs for the digester roof to be \$2,963,000. The estimate of the Mixing System is estimated to be \$762,000, bringing the total cost of the Capital Project to \$3,663,000. There are sufficient funds in the Wastewater Reserve R-R11-WWTR to accommodate the increases in the cost of this project over the current and subsequent fiscal period.

Financial Implications:

Financial impact to current year operating budget:

The financial impact of the \$1,163,000 cost overage is not fully known as negotiations are still underway with Ontario Clean Water Agency and their insurer for coverage of part of this cost. Council will be provided updated information regarding this when it is available. Once this insurance recovery is considered, staff are not expecting that the impact will be material over the 6 year rate study forecast but could result in having to prioritize projects until the next rate study is completed (2029).

Financial impact on future year operating budget:

None expected.

Link to asset management plan and strategy:

This project reflects core themes identified in City's 2026 Asset Management Plan (AMP). The project prioritizes lifecycle-based decision-making, and service reliability. Multiple options for the digester roof and mixing system were evaluated using risk, operational, and future adaptability criteria while ensuring the preferred solution delivers long-term value.

As a major investment in the wastewater asset category, the digester project updates an asset that has exceeded its expected useful life. The proposed solution will reduce maintenance needs, improve reliability, and stabilize operating costs. This investment

has also been anticipated through the City's wastewater rate study, supporting a planned and sustainable funding approach which is a main theme of the AMP.

Insurance considerations:

No insurance considerations because of this report.

Alignment with Strategic Priorities:

Enhance our Infrastructure

This report aligns with this priority as this project will enhance digestion of biosolids at the WPCP, while providing operational efficiencies and dependability of this process.

Alignment with One Planet Principles:

Sustainable Water

Using water efficiently, protecting local water resources and reducing flooding and drought.

Zero Carbon Energy

Making buildings and manufacturing energy efficient and supplying all energy with renewables.

Staff Recommendation: THAT the report titled, "WPCP Digester Roof and Mixing System Replacement Recommendation" (ITS26-009), be received for information.

Prepared by: Sean Beech, Manager of Environmental Services
Recommended by: Taylor Crinklaw, Director of Infrastructure Services
André Morin, CPA, Chief Administrative Officer