



MANAGEMENT REPORT

Date: November 27, 2024
To: Infrastructure, Transportation and Safety Sub-Committee
From: Sean Beech, Manager of Environmental Services
Report Number: ITS24-023
Attachments: None

Title: Stratford Water Pollution Control Plant (WPCP)-Primary Digester Roof Failure-Update Report

Objective: To present an update to Council regarding the Primary Digester Roof Failure at the Stratford Water Pollution Control Plant and respective Emergency Purchases.

Background: The WPCP digesters has long been recognized as undersized for handling the current volumes of waste processed, and recommendations for capacity upgrades have been in consideration for several years. This is one contributing factor that led to an overpressure event that occurred in the Primary Digester at the Stratford Water Pollution Control Plant in May of this year. As a result of the overpressure, the existing roof on the primary digester lifted. Ontario Clean Water Agency (OCWA) retained CIMA+ to assess the roof and concrete to determine damage and options for repair.

Analysis: This situation met the criteria of an emergency purchase under the City's Purchasing Policy P.5.1, Section 39.1.b. The WPCP is considered core City infrastructure, and having the digester out of commission for a prolonged period jeopardizes the effective operations of wastewater treatment within the City. At the May, ITS Sub-committee meeting Council was advised of the situation. This report provides additional details of the City's response and concludes the required communication with Council regarding the incident as per the City's Procurement Policy.

The goal of the emergency response from OCWA and the City was to expedite the incident investigation and corresponding report that provides recommended courses of action. The longer the plant operates without the digester, the more costly the alternative treatment options become and the more difficult it is for the plant to operate within legislated parameters.

According to the CIMA+ report, the digester roof showed no visual signs of warping, deflection, or weld cracking, except for one localized area. However, the roof coating has failed extensively across the entire surface, including on equipment supports. This coating failure has resulted in significant corrosion in several areas of the roof. There is also significant concrete damage where the lagging bolts for the roof lifted out of the concrete. The unfortunate result is that there will be significant costs going forward to either refurbish or replace the Primary Digester.

The CIMA+ Report estimates refurbishing and repairing the roof and concrete will be approximately \$1,545,000. This repair option is expected to only last a maximum of 15 years, which would then require a new roof and other associated costs. The full replacement of the roof and repairing of the concrete is estimated to cost \$2,676,000 according to the CIMA+ Report. Staff are still assessing the incident and determining a recommended course of action that will require a Council decision soon.

As part of the 2024 budget deliberations, Council approved \$380,000 for Planned Capital maintenance and upgrades at the WPCP. This maintenance and upgrades are based on an 8-year recommended project forecast provided by OCWA based on age and condition of needed repairs. This account is funded through the wastewater reserve. Many of the planned projects were put on hold, to fund approximately \$200,000 in investigative services required to respond to this event.

With the report now finalized and recommended alternatives identified, staff will collaborate with OCWA to determine the optimal course of action for the City. The proposed 2025 budget presented to Council will require adjustments to allocate the necessary resources and capacity for the urgent Primary Digester repairs, but this work has been factored into the current Water and Wastewater Rate Study. Staff will proceed with preparing a proposal for a competitive procurement process to engage an engineering consultant for detailed design work. Additionally, a third-party assessment is underway to investigate the root cause of the issue and identify any potential lessons learned.

Before the investigation conducted by CIMA+, the costs associated with biosolids removal, scaffolding setup, and industrial cleaning amounted to approximately \$135,000. The estimated cost for the investigation and assessment performed by CIMA+ was \$65,900. The total costs to date for work on preparing the roof for inspection and the report by CIMA+ are \$135,000 and \$65,900 respectively, for a total of \$200,900.

Many maintenance projects were put on hold at the WPCP, to ensure sufficient funds to complete the investigation.

While this work was unbudgeted, there are sufficient funds in the Wastewater Reserve to cover the expenses with no immediate impact on the current year operating budget.

This timing offers one advantage: the Water and Wastewater Rate Study and Financial Plan, scheduled for Council review before year-end, can incorporate this significant project, allowing for appropriate adjustments in user rates to ensure adequate funding.

Financial Implications:

Financial impact to current year operating budget:

Expenditures to be managed with current Wastewater reserve fund balances.

Financial impact on future year operating budget:

The subsequent project will have a more substantial impact on future operating budgets, as it was not initially anticipated and may require borrowing to accommodate the timing in advance of sufficient rates being collected.

Link to asset management plan and strategy:

The completion of this project will result in the replacement of the roof, concrete repairs, and a new mixing system for the Primary Digester. Enhancing the long-term performance and life cycle of this asset aligns with our strategic priorities as a City.

CIMA+ recommends the installation of a new digester roof, citing that the lifecycle cost of a new roof will be lower than the ongoing expenses associated with repairing the existing roof. Repairs to the current roof would last no more than 15 years and may incur unforeseen costs. In contrast, a new roof will improve the overall reliability and efficiency of the biosolids digestion process for the City, and also meet the latest industry standards, further enhancing the reliability and long-term performance of the biosolids management system.

Alignment with Strategic Priorities:

Enhance our Infrastructure

This project advances key infrastructure maintenance and new growth-related projects in the 10-year capital forecast and beyond.

Alignment with One Planet Principles:

Equity and Local Economy

Creating safe, equitable places to live and work which support local prosperity and international fair trade.

Land and Nature

Protecting and restoring land for the benefit of people and wildlife.

Sustainable Water

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

Material and Products

Using materials from sustainable sources and promoting products which help people reduce consumption.

Zero Carbon Energy

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

Staff Recommendation: THAT the report titled, "Stratford Water Pollution Control Plant (WPCP) - Primary Digester Roof Failure - Update Report" (ITS24-023), be received per Section 39.1.b. of the City of Stratford's Purchasing Policy P.5.1.

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