

Report to Civic Works Committee

To: Chair and Members
Civic Works Committee
From: Kelly Scherr, P.Eng., MBA, FEC
Deputy City Manager, Environment & Infrastructure
Subject: Emergency Repair of Incinerator Systems at Greenway
Wastewater Treatment Plant
Date: October 4, 2022

Recommendation

That, on the recommendation of the Deputy City Manager, Environment & Infrastructure, the following actions **BE TAKEN** with respect to the emergency repair of the incinerator at the Greenway Wastewater Treatment Plant:

- a) The purchase orders issued for emergency repairs to the incinerator and related systems at Greenway Wastewater Treatment Plant under Section 14.2 of the Procurement of Goods and Services Policy at a projected total price of \$178,483.91 (HST excluded), **BE CONFIRMED**;
- b) The financing for this project **BE APPROVED** as set out in the Sources of Financing Report attached hereto as Appendix 'A'; and
- c) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.
- d) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project.

Executive Summary

Purpose

This report informs Council of multiple purchase orders that were issued to undertake emergency repairs on the sludge incinerator at Greenway Wastewater Treatment Plant and related systems in August of 2022.

Context

Incineration is the final process in the solids handling facility at Greenway. Incineration is utilized for disposal of the waste solids generated at London's five wastewater treatment plants. When incineration is unavailable, alternative solids disposal strategies are employed, costing approximately \$60,000 per week. Restoring operation quickly is therefore critical, and must be undertaken with the best resources available as soon as possible.

Linkage to the Corporate Strategic Plan

This project supports the 2019-2023 Strategic Plan through:

- Building a Sustainable City: build infrastructure to support future development and protect the environment; and manage the infrastructure gap for all assets.

Analysis

1.0 Background Information

1.1 Purpose

The purpose of this report is to inform Council of a decision by administration to award multiple purchase orders for tasks related to the emergency repair of the sludge

incinerator at the Greenway Wastewater Treatment Plant. The essential role of incineration in the wastewater treatment process is described in this report, as is the nature of the procurements undertaken.

2.0 Discussion and Considerations

2.1 Greenway WWTP Sludge Incineration

The Greenway Wastewater Treatment Plant is the City's largest treatment plant. It is also the location of a centralized solids handling facility that processes the waste sludge removed from wastewater at all five City wastewater treatment plants in preparation for disposal. This final stage of the treatment process is essential for the safe and effective operation of the treatment facilities to ensure the protection of public health and the environment.

Incineration takes the solids removed from wastewater through the treatment process and burns them at temperatures approaching 900 degrees Celsius. This reduces the solids to an inert ash that is ready for safe disposal. In this manner, the City safely treated over 4,800 dry tons of waste solids in 2021.

There is no standby or spare incinerator at Greenway. If the incinerator is out of service it requires Greenway Operations to utilize a lime stabilization process that neutralizes contaminants in the dewatered sludge and allows for transportation to disposal. This process is costly; supply of lime, trucking costs and disposal fees can total \$60,000 per week or more. It is also not always possible to continuously haul stabilized solids, as compared with incineration that can run regularly, meaning that hauling may not always be able to keep up with process demands. This leads to increased and extended sludge storage and can result in plant upsets.

Given the essential nature of the incinerator, a full re-build was previously planned for 2024, which would allow the incinerator to remain in service for an estimated 10-15 years, by which time the next strategy for solids management would be implemented. Unfortunately, expansion joint failures in the incinerator exhaust ducting were noticed in late July of this year. Temporary repairs were undertaken in an attempt to allow for a measured approach to a more permanent repair, but by August 4th it was clear that the temporary measures would not be sufficient and the incinerator was shut down to allow for full inspection and repair.

2.3 Purchasing Process – Justification for Emergency Status

A significant portion of the goods and services purchased by the Wastewater Treatment Operations Division exceeded the dollar thresholds in the Procurement of Goods and Services Policy that could permit single source or rapid procurement. The risk to plant processes and high cost of the lime stabilization strategy means that every incinerator failure is approached as a top repair priority with timing as the primary driver. At \$100,000 per week, a typical procurement process that takes 4-6 weeks to conduct and award would increase the overall cost of the shutdown to the City by \$600,000 or more. For these reasons, it was decided that it was appropriate in this instance to invoke the emergency procurement procedures available under Section 14.2 of the Procurement of Goods and Services Policy and to issue purchase orders immediately, informing the Purchasing Division at the time and reporting to Council afterwards to explain the decision and reasons for it.

It was recognized that the supply and installation of the damaged components would take multiple weeks, so the Wastewater Treatment Operations Division took advantage of the forced shutdown to conduct an inspection of the incinerator. This allowed staff to establish immediate needs for repair and to begin preparations for the planned re-build. The inspection established some critical areas for repair which were also completed during this shutdown.

A summary of the purchases that were made that exceeded the limits established by the Procurement of Goods and Services Policy follows. The values shown are

considered accurate, but final invoices have not yet been approved. Some minor variation may be possible but within +/- 10%:

Procurement	Vendor	Value	Justification
Expansion Joint Supply and Delivery	Sudbury International Inc. Engineered Products Limited	\$30,095.00	Sudbury International was the original expansion joint supplier and was therefore uniquely positioned to supply replacements in the shortest time possible.
Duct Repair and Expansion Joint Installation	Lordon Limited	\$34,920.00	Lordon is a local company that has completed multiple duct-related projects for the City and was able to mobilize quickly.
Refractory Lining and Dome Repairs	Reftech International Inc.	\$81,117.11	Reftech has provided previous high-quality refractory repair work and was able to mobilize quickly to address issues identified during inspection.
Main Burner Repair and Installation	Lakeside Process Controls Ltd.	\$32,351.80	Arctic Combustion completed all supply and install work on the current burner and gas train, and was able to mobilize quickly.
	Total	\$178,483.91	

All other work required to restore the operation of the incinerator and manage sludge disposal was conducted either in accordance with the Procurement Policy or under the terms of existing contracts.

Engineering work at this time was approved within the limits of the Procurement Policy. However, the engineering team that completed the work (Jacobs) will be the subject of a future report to Council requesting approval to award the detailed design and contract administration for the rebuild. The Jacobs team has unique multi-project familiarity with the Greenway incinerator and is uniquely qualified to complete this work. Design and pre-purchase of equipment is expected to occur over 2023, with construction of the re-build in 2024. This work is planned and included in existing capital budgets.

3.0 Financial Impact/Considerations

While the unexpected nature of the work and the costs incurred to operate without incineration warranted treating this situation as an emergency procurement, this type of work is accounted for and funding is available in the current multi-year budget.

Work directed toward preparing for the planned future incinerator re-build is also

previously planned and available within the current multi-year budget.

Conclusion

Sludge incineration is an essential part of the City's wastewater solids disposal strategy. Incinerator shut-downs are costly occurrences. When those shut-downs are unplanned the level of operational risk to wastewater treatment processes is greatly increased. By invoking the emergency procurement measures available under the Procurement of Goods and Services Policy, Wastewater Treatment Operations was able to return to operation in less time overall than the procurement processes required under the Policy would have required simply to procure the goods and services.

Prepared by: Kirby Oudekerk, MPA, P.Eng.
Division Manager, Wastewater Treatment Operations

Submitted by: Ashley Rammeloo, MMSc., P. Eng.
Director, Water, Wastewater and Stormwater

Recommended by: Kelly Scherr, P. Eng., MBA, FEC
Deputy City Manager, Environment & Infrastructure

Appendix 'A' Source of Financing

cc: Steve Mollon, Senior Manager, Procurement and Supply
 Alan Dunbar, Manager III, Financial Planning and Policy
 Zeina Nsair, Financial Business Administrator, Finance and Corporate Services

Appendix "A"

#22139
October 4, 2022
(Emergency Repairs)

Chair and Members
Civic Works Committee

RE: Emergency Repair of Incinerator Systems at Greenway Wastewater Treatment Plant
(Subledger FS22GW02)
Capital Project ES3080 - Greenway Incinerator Refurbishment

Finance Supports Report on the Sources of Financing:

Finance Supports confirms that the cost of this project can be accommodated within the financing available for it in the Capital Budget and that the detailed source of financing be received:

Estimated Expenditures	Approved Budget	Committed To Date	This Submission	Balance for Future Work
Engineering	1,086,458	1,086,458	0	0
Construction	7,099,065	6,046,805	151,000	901,260
City Related Expenses	604,259	604,259	0	0
Vehicles & Equipment	1,079,151	750,895	30,625	297,631
Total Expenditures	\$9,868,933	\$8,488,417	\$181,625	\$1,198,891

Sources of Financing

Capital Sewer Rates	2,693,803	2,693,803	0	0
Debenture By-law No. W.-5590-307	1,812,530	432,014	181,625	1,198,891
Drawdown from Sewage Works Renewal Reserve Fund	5,362,600	5,362,600	0	0
Total Financing	\$9,868,933	\$8,488,417	\$181,625	\$1,198,891

Financial Note:

Contract Price	\$178,484
Add: HST @13%	23,203
Total Contract Price Including Taxes	201,687
Less: HST Rebate	-20,062
Net Contract Price	\$181,625


Jason Davies
Manager of Financial Planning & Policy