

## 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:** Sole Source – Organic Rankine Cycle Equipment Service Contract

**Date:** February 1, 2022

## Recommendation

That, on the recommendation of the Deputy City Manager, Environment and Infrastructure, the following actions **BE TAKEN** with respect to the award of a service contract for the maintenance of the Organic Rankine Cycle Equipment package at Greenway Wastewater Treatment Plant:

- a) Turboden S.p.A., **BE AWARDED** a sole source service contract for the Greenway Organic Rankine Cycle system, in the amount of €39,000.00 per year, excluding HST, plus allowance for inflation as described, for a five year term, in accordance with Section 14.3 c) and 14.5 a) ii of the Procurement of Goods and Services Policy;
- b) the Civic Administration **BE AUTHORIZED** to undertake all the administrative acts that are necessary in connection with this project;
- c) the approvals given herein **BE CONDITIONAL** upon the Corporation entering into a formal contract; and,
- d) the Mayor and City Clerk **BE AUTHORIZED** to execute any contract or other documents, if required, to give effect to these recommendations.

## Executive Summary

### Purpose

The purpose of this report is to seek approval of Council to award a sole source annual contract to Turboden S.p.A. for the maintenance and monitoring of the City's Organic Rankine Cycle power generation equipment at Greenway Wastewater Treatment Plant.

### Context

The Organic Rankine Cycle equipment installed at Greenway is a complex piece of equipment and forms a critical component of the City's goals for energy and greenhouse gas reduction. A service contract will ensure that the equipment is maintained as required to ensure long life and optimized operation. Turboden is the supplier of this equipment and is the only source of this expertise in the world.

## Linkage to the Corporate Strategic Plan

This recommendation supports the 2019 – 2023 Strategic Plan through the strategic focus area of Building a Sustainable City: London's infrastructure is built, maintained, and operated to meet the long-term needs of our community by replacing aged and failing infrastructure with new materials and sizing new infrastructure to accommodate future development.

# Analysis

## 1.0 Background Information

### 1.1 Previous Reports Related to this Matter

Civic Works Committee, January 7, 2020, Item 2.7 – Appointment of Consulting Engineer, RFP 19-56: Supervisory Control and Data Acquisition System Integration for the Greenway Organic Rankine Cycle Engine System.

Civic Works Committee, August 12, 2019, Item 2.7 – Contract Award: Tender T19-36 Greenway Organic Rankine Cycle Engine Installation

Civic Works Committee, May 14, 2019, Item 2.10 – Greenway Wastewater Treatment Plant Organic Rankine Cycle Equipment Installation Budget Allocation.

Civic Works Committee, July 17, 2018, Item 2.6 – Clean Water and Wastewater Fund Project Budget Adjustments.

Civic Works Committee, June 7, 2017, Item 11 – Clean Water and Wastewater Fund – Purchase of Major Organic Rankine Cycle System Components for Power Generations at the Greenway Wastewater Treatment Plant.

Civic Works Committee, November 29, 2016, Item 11 – Appointment of Consultants – Clean Water and Wastewater Fund Projects.

Civic Works Committee, October 4, 2016, Item 8 – Infrastructure Canada Phase 1 Project Requests – Clean Water and Wastewater Fund Projects.

Civic Works Committee, July 18, 2016, Item 5 – Electricity Generation from Waste Heat at the Greenway Wastewater Treatment Plant-Update.

Civic Works Committee, September 9, 2013, Item 11 – Biosolids Disposal Assessment.

Civic Works Committee, February 25, 2013 – Timeline for major Environmental and Engineering Reports.

Civic Works Committee, May 14, 2012 – Renewable Energy Production from the Greenway Fluidized Bed Incinerator.

## 2.0 Discussion and Considerations

Previous reports to Council have requested and received approval to purchase and install technology that can convert waste heat from the Greenway Incinerator into electrical energy. That technology, in the form of an Organic Rankine Cycle engine equipment package, has been installed and commissioned.

However, the maintenance of this complex and specialized equipment package requires ongoing maintenance with unique parts, tools, and knowledge. In addition, the operation of the power generation equipment can be optimized using remote and on-site troubleshooting to minimize down time and by leveraging operational experience derived from hundreds of other installations around the globe.

Turboden S.p.A. is uniquely qualified for the services described by virtue of their role as manufacturer and supplier of the equipment package. Turboden has over 360 installations worldwide and has provided support to the City throughout the design and construction of the system at Greenway

## 3.0 Financial Impact/Considerations

Turboden initially provided a proposal for a service contract at the time of submitting their ultimately successful proposal for supply and delivery of the Organic Rankine Cycle equipment package in 2017. At the time, the decision to proceed with the

procurement of those services was deferred until the scale of operational requirements was clearer.

Recent experience has demonstrated that specialized support will be invaluable in effectively operating and maintaining the equipment. Through negotiations with Turboden, they have agreed to hold the pricing structure originally proposed in 2017, plus have added certain key support services. The value of the service contract is €39,000.00 per year for five years, with an allowance for set inflationary increases of 2% per year commencing after Year Two. The service contract includes the cost of most spare parts, and a review of the supply costs of those replacement parts further supports the value that this agreement and the negotiated pricing provides for the Corporation.

Sufficient budget to fund this service contract is included in an existing annual capital account for solids management at Greenway Wastewater Treatment Plant. The Organic Rankine Cycle equipment is now an integral part of Greenway's solids management system.

## **Conclusion**

The value of a service contract with the supplier of the complex Organic Rankine Cycle power generation equipment has been demonstrated through the design, construction and now operation of the system at Greenway. Through negotiation with the supplier, Turboden, City staff have obtained favourable pricing to ensure long-term optimized power generation at Greenway, which contributes to corporate goals of energy and greenhouse gas reduction. Turboden is uniquely qualified to provide the services required, so it is recommended that a service contract for the maintenance and optimization of the Organic Rankine Cycle equipment package at Greenway Wastewater Treatment Plant be awarded to Turboden S.p.A.

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**Submitted by:** Scott Mathers, MPA, P. Eng., Director, Water,  
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Deputy City Manager, Engineering and Infrastructure

**CC:** John Freeman