Report to Civic Works Committee

To: **Chair and Members**
Civic Works Committee
From: **Kelly Scherr, P.Eng., MBA, FEC**
Managing Director, Environmental and Engineering Services and City Engineer
Subject: **Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Class Environmental Assessment Consultant Award**
Date: **March 2, 2021**

Recommendation

That, on the recommendation of the Managing Director, Environmental and Engineering Services and City Engineer, the following actions BE TAKEN with respect to the Disaster Mitigation and Adaptation Fund and the assignment of consulting services for the completion of the Climate Change Resiliency Class Environmental Assessments for the Greenway and Adelaide Wastewater Treatment Plants:

a) Matrix Solutions Inc. BE APPOINTED Consulting Engineers in the amount of $304,543.00, including 10% contingency, excluding HST, in accordance with Section 15.2 (e) of the City of London's Procurement of Goods and Services Policy;
b) the financing for the project BE APPROVED in accordance with the "Sources of Financing Report" attached hereto as Appendix 'A';
c) the Civic Administration BE AUTHORIZED to undertake all the administrative acts that are necessary in connection with this project;
d) the approvals given herein BE CONDITIONAL upon the Corporation entering into a formal contract; and,
e) 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

This report recommends that Matrix Solutions Inc. be appointed to carry out the Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Class Environmental Assessment.

Context

The City of London secured the opportunity for federal funding through the Disaster Mitigation and Adaptation Fund for improvements to the Greenway and Adelaide Wastewater Treatment Plants. This report provides the consultant award recommendation for the completion of Municipal Class Environmental Assessments, which is the first phase of the larger projects. The Environmental Assessments will identify the preferred flood protection measures for these two sites to improve asset resilience, enhance treatment capabilities, and enhance the safety of plant staff during extreme wet weather events.

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
- conserve energy and increase actions to respond to climate change and severe weather.

Analysis

1.0 Background Information

1.1 Previous Reports Related to this Matter

Climate Emergency Action Plan – Update. Civic Works Committee. August 11, 2020.

London Pollution Prevention and Control Plan Final Master Plan. Civic Works Committee. April 17, 2018.

Vauxhall Wastewater Treatment Plant Flood Protection Construction Tender Award. Civic Works Committee. October 24, 2017.

Domestic Action Plan: London – Proposal Update. Civic Works Committee. September 26 2017.

Contract Award Pottersburg Pollution Control Plant Effluent Pumping Station Project No. ES5164. Civic Works Committee. June 13, 2011.

1.2 Context

Council declared a climate emergency in the City of London on April 24, 2019. The Climate Emergency Action Plan addresses the City's responsibility to reduce greenhouse gas emissions and increase resiliency in the face of climate change.

In December 2020 the City of London secured federal funding through the Disaster Mitigation and Adaptation Fund for upgrades to the Greenway and Adelaide Wastewater Treatment Plants. Potential improvement works at each plant site include a flood barrier, a pumping station and other upgrades to protect these critical infrastructure assets and reduce environmental impacts of flooding events. The federal funding will support the public consultation, design and construction of these works for the Greenway and Adelaide Wastewater Treatment Plants.

A Class Environmental Assessment for each plant will consider various flood mitigation alternatives and identify the preferred solution through consultation with the public, First Nations, and stakeholders, in accordance with the most recent revisions to the Municipal Class Environmental Assessment (Municipal Engineers Association).

2.0 Discussion and Considerations

2.1 Climate Change Resiliency for Wastewater Treatment Plants

The City of London owns and operates five wastewater treatment plants in the City. All five plants provide a minimum of secondary-level treatment. Wastewater generally flows by gravity to these plants for treatment prior to discharge to the Thames River, and as a result these plants are situated immediately adjacent to the river in low-lying areas. Many of the essential treatment plant components are located within the floodplain.

The Greenway Wastewater Treatment Plant, located at 109 Greenside Avenue, is the City's largest plant and treats approximately 60% of the wastewater produced in London. The Adelaide Wastewater Treatment Plant, located at 1157 Adelaide Street North, treats approximately 15% of the wastewater produced in London.

With climate change, the City of London and other communities are experiencing more frequent and intense wet weather events, which increases the potential for flooding. Flooding is a concern at the City's wastewater treatment plants for two main reasons:

- Damage of treatment plant components, including equipment and tanks, due to inundation of rising river levels at these sites and
- Environmental impacts associated with the bypass of untreated or partially treated wastewater for several days following an intense wet weather event.

A physical barrier, such as a berm or wall, would protect the plants from river flooding. A similar strategy was recently constructed at the Vauxhall Wastewater Treatment Plant.

Wastewater treatment plants either discharge water to an adjacent watercourse by gravity or by pumping. Wastewater treatment plants that only discharge water by gravity cannot function when the water level in the receiving watercourse is too high. When the river level is too high due to flooding, it impacts the ability of plant to fully treat wastewater.

An effluent pumping station allows treated flows to be discharged to the Thames River during a flooding event. Wastewater can then be fully treated through the various plant stages. Effluent pumping stations have been constructed for both the Pottersburg and Vauxhall Wastewater Treatment Plants.

The construction of flood mitigation improvements requires a Schedule 'B' Municipal Class Environmental Assessment to be completed, so separate studies are planned for both the Greenway and Adelaide Wastewater Treatment Plants.

Flood protection measures at the City's wastewater treatment plant will improve the resilience of these facilities and enhance staff safety during extreme wet weather events. Improving the resilience of the City's wastewater treatment plants to extreme wet weather events also improves treatment capabilities and supports the City's commitment to the Lake Erie Domestic Action Plan by reducing phosphorus discharged to the Thames River.

2.2 Disaster Mitigation and Adaptation Fund

The Government of Canada created a $2 billion fund intended to support large infrastructure projects that, among other things, contribute to the resilience of critical infrastructure in the face of increased risks of damage due to climate change. The City proposed the construction of flood protection at Greenway and Adelaide Wastewater Treatment Plants as major projects that fit this description, and the City's proposal was accepted.

The overall project cost is estimated at $49.5 million, with the maximum federal share of all project related expenses totalling $19.8 million (40%). The Contribution Agreement required to access this funding is currently being negotiated, and the final version will be presented to Council for approval in a future report. All expenditures considered in this contract award are eligible for funding retroactively under the terms of the Government of Canada's acceptance of the City's application for funding.

2.3 Procurement Process

In order to proceed with the required Class Environmental Assessments involving public

engagement and technical analysis, the City undertook an open procurement process to retain a qualified consulting engineering firm. Due to the expected budget, a two-stage procurement process was undertaken in accordance with the City of London's Procurement of Goods and Services Policy, Section 15.2 (e).

Through the City's Purchasing Division and in compliance with CETA, and CFTA requirements, a Request for Qualifications (RFQUAL 20-20) was issued to evaluate the capability of interested firms to complete the required scope of work. Three firms were selected through that process to proceed to the RFP stage and were invited to submit bids in response to the subsequent Request for Proposals (RFP 20-77). All three firms submitted proposals including:

- AECOM Canada Ltd.;
- Matrix Solutions Inc.; and
- Wood Canada Limited.

The submissions were reviewed by staff from Wastewater Treatment Operations and Purchasing and Supply to ensure compliance with the City's Procurement of Goods and Services Policy. The City's evaluation team determined that the proposal provided by Matrix Solutions Inc. provided the best overall value to the City. The project team proposed by Matrix Solutions Inc. has extensive experience with climate change resiliency projects involving hydraulic and hydrologic modelling of rivers, Class Environmental Assessment consultation and engagement and wastewater treatment plant planning and design. Overall, their proposal met all of the key project requirements and their staff are qualified to undertake the required consulting engineering services.

2.4 Schedule and Budget Implications

These two Class Environmental Assessments are scheduled to be complete by the middle of 2022, although the final timing may be dependent on the level of interest from First Nations, review agencies and the public at large to be determined through the engagement process. Because of the importance of these Class Environmental Assessments and the projects that will be planned as a result, full engagement of all parties is the primary goal and the schedule will be modified, as required, to ensure that this goal is reached.

The upset limit proposed by Matrix Solutions Inc. aligns with budget expectations prior to issuing the Request for Proposals, and the funds required for this study are available in the City's approved capital budget.

Conclusion

The Disaster Mitigation and Adaptation Fund represents a significant opportunity to reduce the cost of incorporating flood protection into the Greenway and Adelaide Wastewater Treatment Plants. Public engagement through Class Environmental Assessments is the first step to completing these climate change resilience projects.

Matrix Solutions Inc. (Matrix) was found to provide the best value to the City through the two phase RFQUAL and RFP selection process for consulting services for the Greenway and Adelaide Wastewater Treatment Plants Climate Resiliency Class Environmental Assessments. The Matrix team has a demonstrated ability to complete flood mitigation studies, as well as successful consultation and engagement, and demonstrated a solid understanding of this project in their proposal. It is recommended that Matrix be awarded this assignment.

Prepared by:	**Kirby Oudekerk, P.Eng.** **Division Manager, Wastewater Treatment Operations**
Submitted by:	**Scott Mathers, MPA, P.Eng., Director, Water and Wastewater**
Recommended by:	**Kelly Scherr, P.Eng., MBA, FEC** **Managing Director, Environmental and Engineering Services and City Engineer**
cc:	**John Freeman** **Steve Braun, Matrix Solutions Inc.** **Chris Ginty** **Gary McDonald** **Alan Dunbar** **Jason Davies**
Appendix ‘A’	**Sources of Financing**

Appendix "A"

#21021
March 2, 2021
(Appoint Consulting Engineer)

Chair and Members
Civic Works Committee

RE: Greenway and Adelaide Wastewater Treatment Plants Climate Change Resiliency Class Environmental Assessment
(Subledger FS210001)
Capital Project ES3230 - DMAF Greenway WWTP Flood Protection
Capital Project ES3231 - DMAF Adelaide WWTP Flood Protection
Matrix Solutions Inc. - $304,543.00 (excluding HST)

Finance and Corporate Services Report on the Sources of Financing:

Finance and Corporate Services confirms that a portion of the cost of this project cannot be accommodated within the financing available for it in the Capital Budget but can be accommodated with a transfer of funding from Sewage Works Reserve Fund and with Federal funding applied to this project, and that, subject to the adoption of the recommendations of the Managing Director of Environmental and Engineering Services and City Engineer, the detailed source of financing for this project is:

Estimated Expenditures	**Approved Budget**	**Revised Budget**	**This Submission**
ES3230 - DMAF Greenway WWTP Flood Protection			
Engineering	0	185,942	185,942
ES3231 - DMAF Adelaide WWTP Flood Protection			
Engineering	0	123,961	123,961
Total Expenditures	$0	$309,903	$309,903
Sources of Financing			
ES3230 - DMAF Greenway WWTP Flood Protection			
Drawdown from Sewage Works Reserve Fund - Transfer from ES3098 - Greenway WWTP Capacity Improvements for Bypass Reduction and Flood Protection (Note 1)	0	111,565	111,565
Federal DMAF Funding (Note 2)	0	74,377	74,377
ES3230 Total	0	185,942	185,942
ES3231 - DMAF Adelaide WWTP Flood Protection			
Drawdown from Sewage Works Reserve Fund - Transfer from ES5234 - Adelaide WWTP Flood Protection & Capacity Improvements to reduce Sewage Bypasses (Note 1)	0	74,377	74,377
Federal DMAF Funding (Note 2)	0	49,584	49,584
ES3231 Total	0	123,961	123,961
Total Financing	$0	$309,903	$309,903

Financial Note:	**ES3230**	**ES3231**	**Total**
Contract Price	$182,726	$121,817	$304,543
Add: HST @13%	23,754	15,836	39,590
Total Contract Price Including Taxes	206,480	137,653	344,133
Less: HST Rebate	-20,538	-13,692	-34,230
Net Contract Price	$185,942	$123,961	$309,903

Appendix "A"

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Note 1: The City's funding portion (60%) is available as a drawdown from Sewage Works Reserve Fund with a transfer from Capital Projects ES3098 - Greenway WWTP Capacity Improvements for Bypass Reduction and Flood Protection in the amount of $111,565 and ES5234 - Adelaide WWTP Flood Protection & Capacity Improvements to Reduce Sewage Bypasses in the amount of $74,377.

Note 2: The City's proposal for federal funding through the Disaster Mitigation and Adaption Fund (DMAF) has been accepted for upgrades to the Greenway and Adelaide Wastewater Treatment Plants. The overall project cost is estimated at $49.5 million, with the maximum federal share of all project related expenses totaling $19.8 million (40%).

Kyle Murray
Director, Financial Planning & Business Support

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