



Staff Report

Operations – Water & Wastewater Services

Report To: COW-Operations, Planning and Development Services
Meeting Date: August 15, 2023
Report Number: CSOPS.23.044
Title: Addition of Engineering for Bay Street Reconstruction and Construction Administration for Thornbury WWTP Outfall
Prepared by: Allison Kershaw, Manager of Water & Wastewater Services

A. Recommendations

THAT Council receive Staff Report CSOPS.23.044, entitled “Addition of Engineering for Bay Street Reconstruction and Construction Administration for Thornbury WWTP Outfall”;

AND THAT Council approve the addition of the engineering for the full reconstruction of Bay Street from Mill Street to Grey Street to a full urban cross section;

AND THAT Council approve increasing the project budget for Engineering Services for the Craikleith Sewage Lift Station (SLS), Mill Street Sewage Pumping Station (SPS) and the Mill Street Forcemain from \$2,200,000 to a total budget of \$2,550,000, to be funded as per the financial impact section of this report;

AND THAT Council approve increasing the project budget for Engineering Services for the Thornbury Wastewater Treatment Plant Outfall from \$1,600,000 to a total budget of \$2,200,000 to be funded from the Wastewater Asset Replacement Reserve Fund, and the Wastewater Development Charges;

AND THAT Council approve negotiating with WT Infrastructure to complete the engineering for the full reconstruction of Bay Street from Mill Street to Grey Street to a full urban cross-section, including preliminary design, final design, public consultation, tendering, contract administration, construction inspection and warranty;

AND THAT Council approve negotiating with IBI Arcadis to complete the engineering for the tendering, contract administration and warranty for the in-water works for the Thornbury Wastewater Treatment Plant Outfall.

B. Overview

Staff have identified an opportunity to align and integrate a number of capital projects to address growth and aging infrastructure. This report seeks Council approval to procure the services of WT Infrastructure to proceed with the engineering, including preliminary design, final design, public consultation, tendering, contract administration and warranty for the full reconstruction of Bay Street, between Mill Street and Grey Street in the Town of Thornbury. A map of the proposed reconstruction area can be found in Attachment #1.

This report also seeks Council's approval to procure the services of IBI Arcadis for the tendering, contract administration, construction inspection and warranty of the Thornbury Wastewater Treatment Plant (TWWTP) outfall. A map of the outfall can be found in Attachment #2.

C. Background

The Town awarded the Engineering for the rebuild of the Craigleith SLS, Mill Street SPS and an additional sanitary forcemain from Mill Street SPS to the TWWTP to WT Infrastructure in May 2023. [Staff Report CSOPS.23.019 Engineering Services for Craigleith SLS, Mill St SPS and Mill St FM Upgrades Budget Increase](#) outlines the budget increase and scope of work. The new sanitary forcemain from the Mill Street SPS to the TWWTP will travel east on Bay Street from Mill Street to Grey Street, then south along Grey Street to the TWWTP. The Town's Asset Management Plan indicates that this section of Bay Street and the infrastructure below the asphalt is in poor to very poor condition and is approaching the end of its useful life. The existing sanitary collection system is constructed of asbestos cement, with significant inflow and infiltration issues. The 150mm asbestos cement watermain has had considerable services leaks. The storm water management system requires a rebuild, although there are several outlets to the bay, the Consultant will need to review and consider the opportunities to transport stormwater. Bay Street will need to be disturbed to install the new forcemain. Staff took this as an opportunity to rebuild the entire street and infrastructure while installing the forcemain.

In November of 2021, The Town awarded IBI Arcadis with the engineering, including design, tendering, contract administration and warranty for the Thornbury WWTP Phase 1A expansion. During their background confirmations, the outfall was identified as not being sized appropriately for the plant expansion. At that time, Staff sought approval to increase IBI Arcadis's scope of work to include the design of the new outfall. [Staff Report CSOPS.22.025 Thornbury WWTP Expansion Update](#) outlines the need for the new outfall and request for additional budget. This work only included the design and did not include the work to tender, contract administration or the warranty for the construction. As this work involves in-water work and requires complex and intensive measures to ensure the protection of sensitive lands and shoreline on Georgian Bay, Staff believe it is vital to maintain the services of IBI Arcadis for the construction tendering, contract administration, construction inspection, and warranty of the in-water section of the outfall installation. By continuing with IBI Arcadis through the construction phase, it will eliminate opportunities for missed communications and conflicts between two engineering firms. The full capacity of the Phase 1A plant expansion cannot be realized without the construction of the new outfall.

D. Analysis

Addition of Bay Street Reconstruction

The installation of a forcemain on Bay Street between Mill Street and Grey Street will involve, at the very minimum, a road excavation large enough to install the new forcemain, and then restoration over the trench. Bay Street is currently not centered in the road allowance, pushing infrastructure into locations that aren't corresponding to the Town's Engineering Standards. The existing infrastructure in Bay Street, namely the watermain and the gravity sewer are approaching end of life. The watermain was installed around 1954 and is asbestos cement. The Town has identified and repaired many leaks to service laterals in this section of watermain. Many of the service laterals along Bay Street are ½ to 5/8 inch, the Town's current Engineering Standards provide a 1inch service lateral. This will also allow for the installation of a larger diameter watermain. The sewer, also asbestos cement, is a significant source of inflow and infiltration, adding additional flow to the Mill Street SPS and to the TWWTP.

If the Town were to only install the forcemain along this section of road and complete reconstruction over trench, considering the disturbance to the residents, the Town would not be in a position to undertake a full reconstruction for an additional 5 to 10 years. This is a long time to push infrastructure that is reaching or has reached the end of its life. The disturbances to the existing infrastructure to thread an additional forcemain through what is already there will result in many more leaks to the existing water and sewer mains.

In consideration that Bay Street from Mill Street to Grey Street will need to be significantly disturbed for the installation of the forcemain, this provides a great opportunity to reconstruct the entire road. This will ensure that the watermain, sewers and stormwater systems are good for the next 60 years. Addressing leaking watermains and sewers reduces the burden on both the water and wastewater systems, freeing up needed capacity and allowing more connections to current infrastructure.

Given that WT Infrastructure is currently designing the installation of the new forcemain, along Bay St. East, from Mill St SPS to the TWWTP, Staff are recommending that the reconstruction of Bay St from Mill Street to Grey St be added to their scope of work. WT Infrastructure will also provide tendering, contract administration, construction inspection, and warranty for the outfall along Grey Street, from the Bay to TWWTP.

Addition of Engineering Services for tendering, contract administration and warranty for in-water works for Outfall

IBI Arcadis is only undertaking the engineering design for the new TWWTP Outfall. Staff recommend that IBI Arcadis be single sourced for the tendering, contract administration, construction inspection, and warranty for the construction of the in-water works of the TWWTP Outfall. This will allow the work to continue without interruption and remove any challenges with the design that may arise from having a second consulting firm take over halfway through the project. Staff believe this is the most cost effective and timely method of getting the infrastructure needed to meet the needs of a rapidly growing community.

The installation of the in-water works for the Outfall includes welding 1.5km of 900mm HDPE pipe together, floating it to an area that it can be stored safely. When the weather is favourable, the 1.5km pipe will be floated to the end of Grey Street, where the first 500 meters can be installed roughly 1.8m below the lakebed. The pipe will be installed by an open cut method. The geotechnical work did not support directional boring for the installation. The remaining 1km will be weighted to the lake bottom with concrete ballasts. A cofferdam will be required to allow for the open cut work. The area within the cofferdam will be dewatered, to provide a dry working area for the construction. This work requires a number of local, provincial and federal approvals and the Town, along with IBI Arcadis is currently working with the various regulatory authorities.

IBI Arcadis are a large consulting firm, with many engineering disciplines available to the Town to safeguard the most practical with the least amount of impact the sensitive shoreline. IBI Arcadis have had previous experience with similar types of projects.

The Town currently has the 30% engineering drawings for the outfall. There are few needs ahead, including engaging indigenous communities. Although all required indigenous communities have been sent notices of the impending work, we have yet to hear back from them. Additionally, the Town will be applying for a Ministry of Environment, Conservation and Parks Environmental Compliance Approval for the installation of the outfall. The Town also requires an approval from Ministry of Natural Resources and Forestry, for an easement of the lake bottom, which is considered Crown Land. As IBI Arcadis designed the outfall, they are best suited to help navigate the Town through the consultation and engagement process and the regulatory approvals to get to the point where the installation can be tendered.

The installation of forcemain from the Mill Street SPS to the TWWTP, reconstruction of the Bay Street from Mill Street to Grey Street and the construction of the outfall from the TWWTP to 1.5km offshore in Georgian Bay will all be tendered as one large contract. WT Infrastructure will have contract administration and warranty work for all works on land, and IBI Arcadis will be responsible for the Contract administration and warranty work for the in-water works.

Purchasing Policy POL.COR.07.05 notes:

Single Sourcing is a method of procurement whereby there is more than one vendor able to supply and a purchase order is issued, or contract awarded without a competitive bidding process. Single Sourcing will be permitted if one or more of the following circumstances apply:

- The compatibility of a purchase with exiting equipment, product standards, facilities or service is a paramount consideration.

The use of Sole and Single Sourcing with a particular vendor exceeding \$25,000 must be approved by Council. Any single or sole sourcing with an amount between \$5,001 and \$24,999 must be reported by the applicable Department Head and approved by the Manager of Purchasing and Director of Finance. In order for a division to sole or single source for goods or services exceeding \$25,000, an operating strategy must be presented with Purchasing input and approved by Council, outlining the rationale. Input must be sought from the Manager of

Purchasing to ensure the purchasing principles in the Town's Procedures are taken into consideration and risk to the Town is minimized.

The completion of these projects are critical to the future development and servicing of 125 Peel Street Campus of Care.

E. Strategic Priorities

1. Communication and Engagement

We will enhance communications and engagement between Town Staff, Town residents and stakeholders

2. Organizational Excellence

We will continually seek out ways to improve the internal organization of Town Staff and the management of Town assets.

3. Community

We will protect and enhance the community feel and the character of the Town, while ensuring the responsible use of resources and restoration of nature.

4. Quality of Life

We will foster a high quality of life for full-time and part-time residents of all ages and stages, while welcoming visitors.

F. Environmental Impacts

Reconstructing Bay Street while installing the forcemain allows for the replacement of the water, and sewer systems that have reached the end of their useful life. The alternative of only installing the forcemain, and reconstructing over the trench, knowing that the existing road is approaching the end of its life will result in excess construction in a sensitive area, next to the shore.

Allowing IBI Arcadis to continue with the tendering, contract administration and warranty for the in-water works will reduce any potential errors from miscommunications between two consulting firms. The work can maintain the timely pace this project has seen up to this date.

G. Financial Impacts

Staff are requesting the budget to the Craigeith SLS, Mill Street Pumping Station and Forcemain engineering budget be increased from \$2,200,000 to \$2,550,000, and the budget for the TWWTP Outfall Engineering budget be increased from \$1,600,000 to \$2,200,000.

Addition of Bay Street Reconstruction

Staff Report CSOPS.23.019 Engineering Services for Craigleith SLS, Mill St SLS, and Mill St Forcemain Upgrades Budget Increase set the engineering budget for this works at \$2,200,000. While working on the design with the consultant, staff have determined that Bay Street is due for a full reconstruction. Staff are recommending that the scope of work for WT be expanded to include the engineering design, and contract administration for a full reconstruction versus only installing a forcemain.

The funding of a full reconstruction is more complex as it will include Infrastructure and Public Works, Water, and Wastewater Asset Replacement Reserve Funds for the replacement costs and Roads and Related, Water, and Wastewater Development Charges for the growth-related costs.

Staff are recommending that for the additional costs each of the six noted funding sources listed above each fund 1/6th of the cost, once detailed design is finished, and a tender is award staff will have a much better understanding of the specific costs of the asset replacements and growth assets.

Addition of Engineering Services for tendering, contract administration and warranty for in-water works for Outfall

Staff Report CSOPS.22.025 Thornbury WWTP Expansion Update established a budget for the design of the outfall work at \$1,600,000. Staff are recommending that the scope of IBI's work being increased to include in-water works, this scope increase has led to the recommendation of increase the engineering budget to \$2,200,000, an increase of \$600,000.

The additional scope costs will be funded from Wastewater Development Charges.

H. In Consultation With

Shawn Carey, Director of Operations

Jason Petznick, Communications Coordinator

Sam Dinsmore, Deputy Treasurer/Manager of Accounting and Budgets

Serena Wilgress, Manager of Purchasing & Risk Management

Jim McCannell, Roads and Drainage Manager

Mike Humphries, Capital Project Coordinator

Rob Gilchrist, Water Supervisor

Mark Service, Wastewater Supervisor

I. Public Engagement

The topic of this Staff Report has not been the subject of a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. However, any comments regarding this report should be submitted to Allison Kershaw, Manager of Water & Wastewater Services managerwww@thebluemountains.ca.

J. Attached

1. Attachment 1 – Map of Bay Street Reconstruction area
2. Attachment 2 – Map of the Outfall

Respectfully submitted,

Allison Kershaw,
Manager of Water & Wastewater Services

For more information, please contact:
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519-599-3131 extension 226

Report Approval Details

Document Title:	CSOPS.23.044 Addition of Engineering for Bay Street Reconstruction and Construction Administration for Outfall.docx
Attachments:	- Attachment 1 - Map of Bay Street Reconstruction area.pdf - Attachment 2 - Map of Outfall.pdf
Final Approval Date:	Jul 26, 2023

This report and all of its attachments were approved and signed as outlined below:

Allison Kershaw - Jul 25, 2023 - 3:32 PM

No Signature - Task assigned to Shawn Carey was completed by delegate Jeff Fletcher

Shawn Carey - Jul 25, 2023 - 3:39 PM

No Signature found

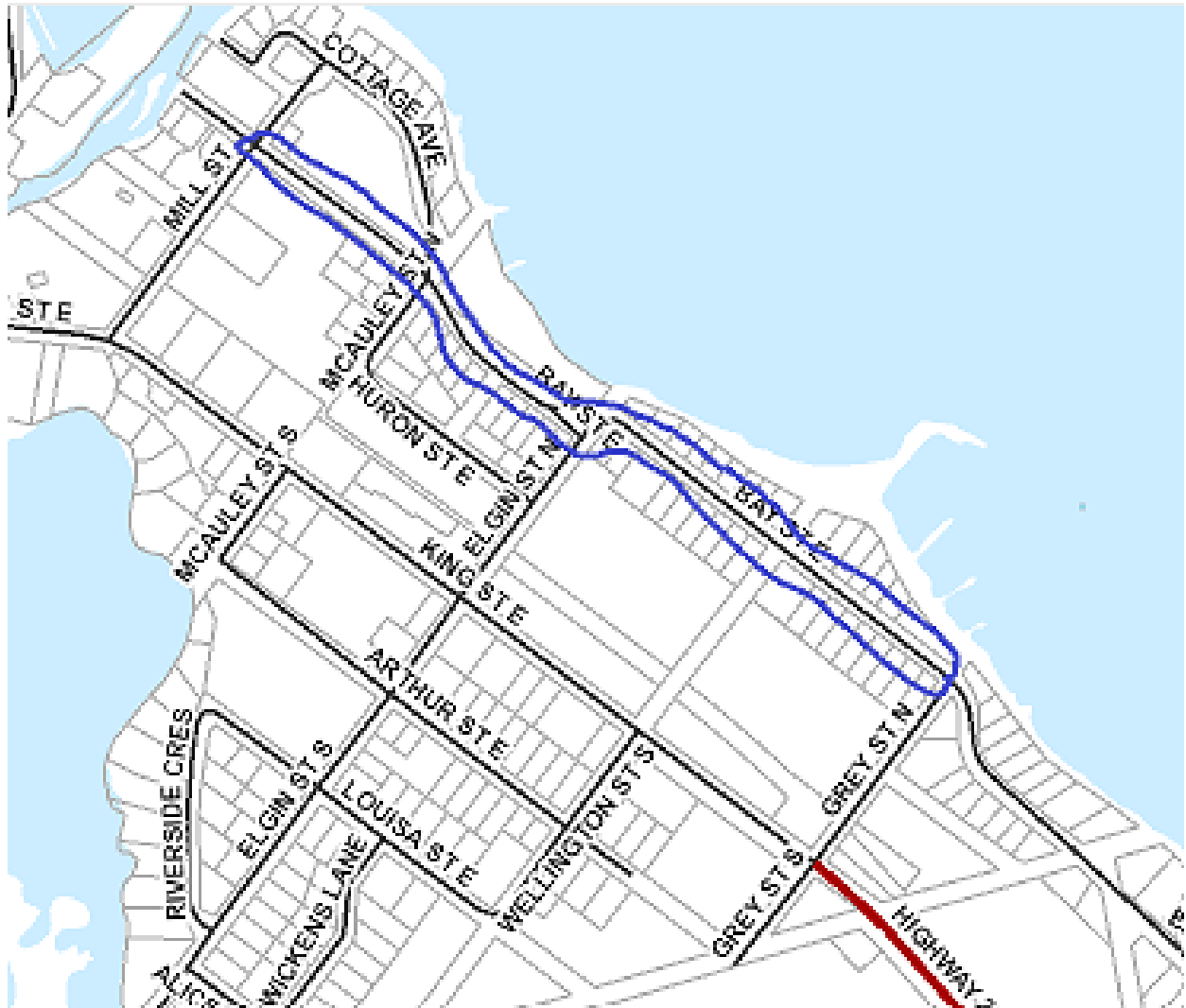
Shawn Everitt - Jul 26, 2023 - 8:40 AM

Attachment #1

Map indicating the route of the sanitary forcemain, from Mill Street SPS to the Thornbury WWTP.



Map indicating the section of Bay Street East proposed to be reconstructed



Photographs of the section of Bay Street East proposed to be reconstructed



Bay Street East, looking east of Mill Street



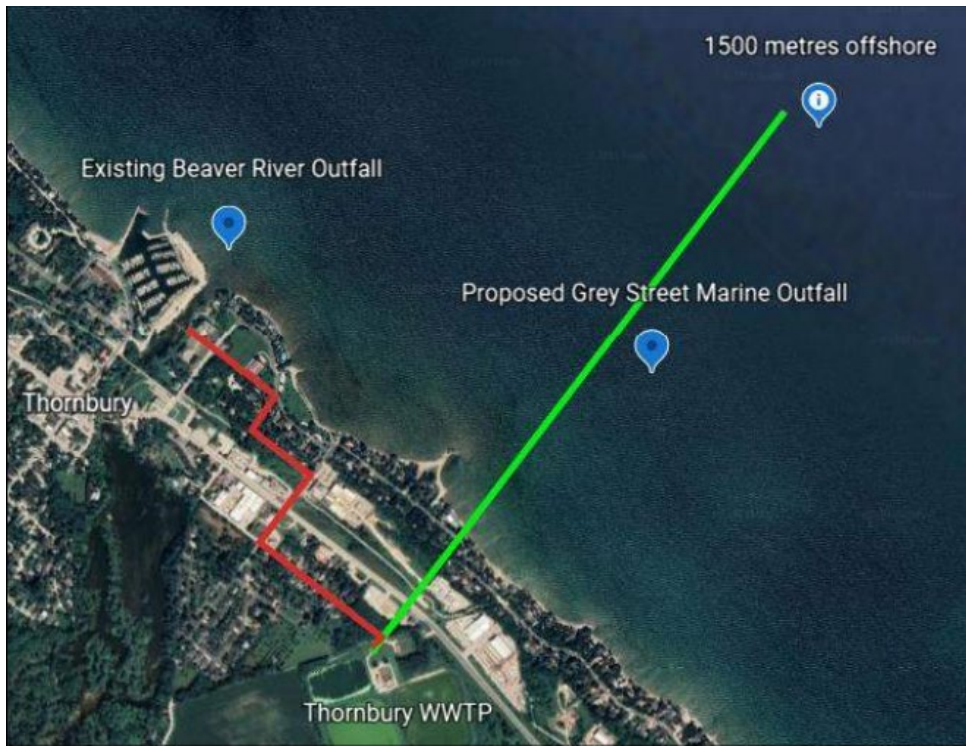
Bay Street East, at Elgin Street, looking east to Grey Street



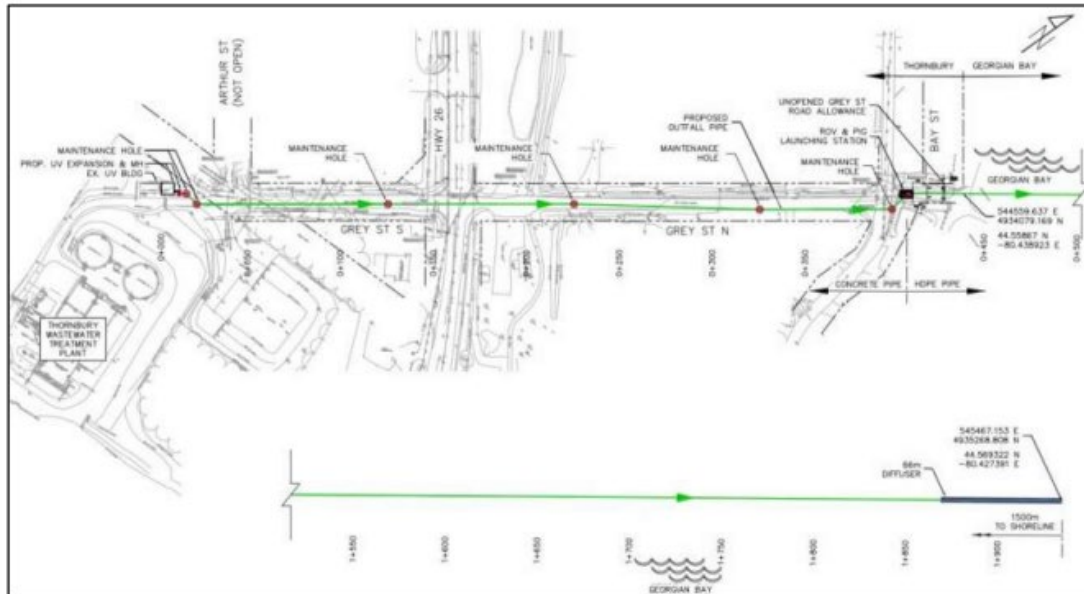
Bay Street East, at Grey Street, looking west to Elgin Street.

Attachment #2

Image of the Proposed Outfall for the Thornbury Wastewater Treatment Plant



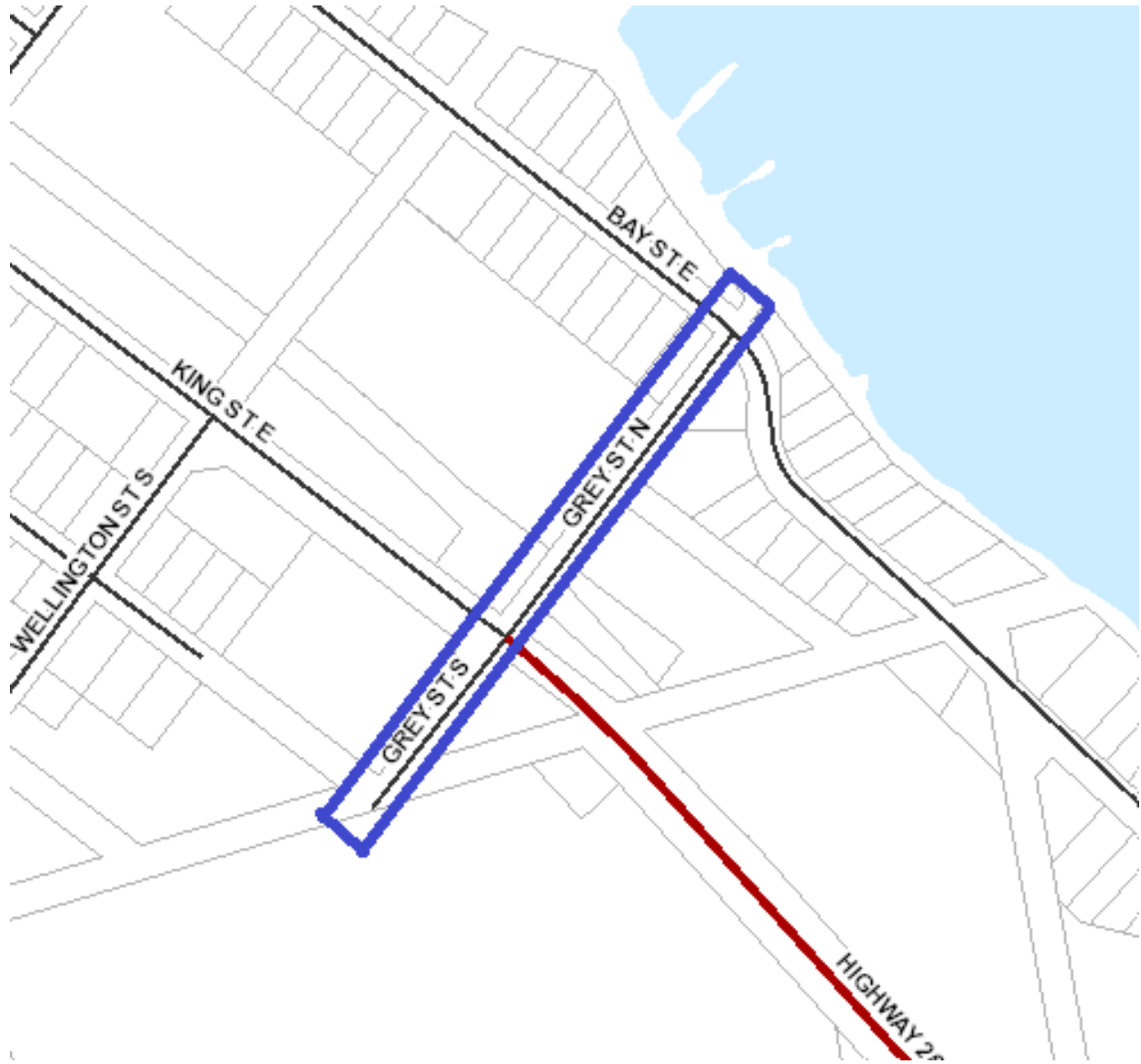
Red is the existing outfall, that discharges into the Beaver River. Green is the proposed outfall



Plan Alignment of the Proposed Outfall, from the Thornbury WWTP along Grey Street, extending 1.5km into Georgian Bay.



Map of the outfall route through Thornbury



Section of Grey Street, where both the Outfall and the Forcemain will be located.

Photographs of Thornbury Wastewater Treatment Plant proposed Outfall installation location



Corner of Bay Street East and Grey Street, looking south to Hwy 26 and TWWTP.



Bay Street East and Grey Street, looking north, to the unopened Grey Street Road Allowance



Georgian Bay Shoreline, at Grey Street Unopened Road Allowance