
REPORT TITLE: **Contract Increase for West Trunk Sewer Repairs, City of Mississauga, Wards 2, 8 and 11**

FROM: Kealy Dedman, Commissioner of Public Works

RECOMMENDATION

- 1. That the Contract (Document 2021-247T) for the Concrete Protective Lining of the West Trunk Sewer, awarded to Technicore Underground Inc. (TUI), be extended in the amount of \$20,000,000.00, for a total commitment of \$59,425,410.40 (excluding applicable taxes), pursuant to Procurement By-law 30-2018, as amended; and**
- 2. That the Contract (Document 2022-222vPC08-2c-001) for the Inspection and Contract Administration for the Concrete Protective Lining of the West Trunk Sewer, awarded to Robinson Consulting Inc. (RCI), be extended in the amount of \$3,000,000.00, for a total commitment of \$3,825,619.20 (excluding applicable taxes), pursuant to Procurement By-law 30-2018, as amended, and**
- 3. That the Director of Procurement be authorized to approve any further increase to the contracts with TUI and RCI, to address necessary repairs that exceed current estimates, subject to satisfactory performance, price and approved budget, all pursuant to Procurement By-law 30-2018, as amended; and**
- 4. That the budget for Capital Project 19-2205 for the Concrete Protective Lining of the West Trunk Sewer be increased from \$55,000,000 to \$78,000,000, financed from Wastewater Development Charge Reserve R3515 in order to complete additional scope of work.**

REPORT HIGHLIGHTS

- West Trunk Sewer is the largest of the Region's wastewater collection system, providing wastewater conveyance for approximately 650,000 people. The pipeline is 14km in length.
- The sewer was constructed in 2013 using methodologies which are no longer supported by the Region's capital standards.
- A contract was initiated for the lining of the sewer and anticipated structural deficiency repairs. Structural repair requirements were not able to be assessed prior to design due to the pipeline being in active service.
- Significant challenges occurred during construction which necessitate additional effort and funding. A peer review was completed post construction.
- The timing of the repairs is urgent as the other West Trunk Sewer; the existing Credit Valley Trunk system is reaching capacity due to growth. Remaining sections of the pipe will be cleaned and inspected to determine the repairs necessary.

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- In accordance with Procurement By-law 30-2018, as amended, approved authorities outlined in Purchasing Procedure F35-33 Purchase Order and Vendor Contract Financial Increases, the process to increase this contract requires Regional Council approval.
 - Total additional funding of \$23 million is required for critical work needed to be done by December 31, 2023. Additional funding to complete the project will be requested through the 2024 Capital Budget process.
 - That the Director of Procurement be authorized to approve any further increase to the contracts with TUI and RCI, to address necessary repairs that exceed current estimates, subject to satisfactory performance, price and approved budget, all pursuant to Procurement By-law 30-2018, as amended.
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DISCUSSION

1. Project Background

The Region of Peel's wastewater collection system includes two major sewer sheds. One on the east-side which flows down to GE Booth Water Resource Recovery Facility (WRRF), and the one on the west-side flows to Clarkson WRRF. The West Trunk Sewer Twinning was constructed to service the increased capacity of the Region's western trunk sanitary system, specifically to accommodate the projected population growth. The West Trunk Sewer is the largest of the Region's wastewater collection system, providing wastewater conveyance for approximately 650,000 persons. The pipeline is 14km in length. The original Credit Valley Trunk system is reaching capacity and cannot service the sewer shed without the West Trunk Sewer.

In order to achieve the objectives of Region's growth plan and as part of the 2020 Master Servicing strategy the East to West Diversion sewer will divert a portion of flows from G.E. Booth to Clarkson to the West Trunk Sewer. The overall strategy allows for the balancing of wastewater flows across the Region. The West Trunk Sewer is an important link in this strategy (Appendix I).

The original Credit Valley Trunk was constructed in 1970, and the new West Trunk Sewer was built in 2013 at a cost of \$166,453,290. The sewer was constructed in 2013 using methodologies which are no longer supported by the Region's capital standards. In 2021, it was discovered that a portion of the West Trunk Sewer had evidence of structural cracking and that repairs would be needed to prevent premature pipe degradation.

Construction of the West Trunk Sewer was completed under two separate contracts with construction within Reach #1 constructed using pre-fabricated pipe segments rather than Cast-In-Place (CIP) lining. Fortunately, the pipe within Reach #1 is in acceptable condition and no repairs or rehabilitation is required. In addition, reaches south of Dundas Street were also constructed with pre-fabricated pipe segments, and is also in acceptable condition.

Document 2021-247T was awarded in June 2021 at \$22,854,509, for the lining of about 5,000m of the 14,000m West Trunk Sewer. Included within this project is the cleaning and inspection of the sewer to determine if any repairs are necessary. At the time of bidding, the extent of repairs was unknown, so assumptions were made to quantify them with prices obtained on a per-metre basis. The intent of the contract was to complete lining and any necessary repairs within Reach #1, Reach #2 and Reach #5 (Appendix II) and additional contingency in the amount of

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\$10,000,000 was secured so that Reach #3 and Reach #4 would be completed if time permitted. However, the number of repairs that were discovered during inspection far exceeded estimates and the contingency allowance was needed to complete necessary repairs with Reach #2 and Reach #5.

This project is time sensitive in that growth on the western side of the Region is advancing and the existing Credit Valley Trunk system is surcharging under wet weather events. As part of the original contract, work was expected to be performed from October 1st to April 1st but given the lack of snow in Winter 2022/2023, the Region was able to extend the working window into the Spring of 2023 and given the favourable flow conditions extend again into the Summer of 2023.

2. Impacts Discovered during Repairs

Construction of the Concrete Protective Lining of the West Trunk Sewer (Document 2021-247T) included condition assessment inspections of the West Trunk Sewer to identify any repairs needed prior to completing the protective lining of the sewer. The number of repairs needed far exceeded the estimates provided within the initial tender, before an inspection was possible.

The site inspection of the West Trunk Sewer within Reach #2 and Reach #5 has shown that the Cast in Place (CIP) concrete pipe exhibits structural cracking. Staff and their consultants believe that structural cracks are the result the squeezing effect of the shale rock and fluctuation in the underground water pressure. The squeezing effect of the shale rock is time-dependent and may continue over a long time. Hence, the structural cracks are active and require strengthening/repair. Staff recommend strengthening/repairing the structural cracks in the reported areas to protect and extend the service life of the pipe. Given the anticipated flow rate in the pipeline and the risk assessment of the pipeline once flows resume, a failure could significantly compromise the ability to convey wastewater and could result in environmental discharge and be cost and technically prohibitive to repair.

Repairs have been made for approximately 2,600m of pipe. However, the necessary repairs that remain exceed the allocations included within the contract. There are approximately 8,000m of pipe that is scheduled to be cleaned, inspected, repaired (where inspection deems it required) and then protected (total length of the West Trunk Sewer is approximately 14,000m). Extending the Contract will ensure that any necessary repairs are completed while time is available and will also extend the lifespan of one of most critical wastewater trunk sewers.

Repairs are currently possible because staff are able to divert flows to the Credit Valley Trunk sewer (Appendix I). However, the Credit Valley Trunk Sewer has limited capacity and cannot accommodate flows during peak periods of flow. As growth intensifies, additional wastewater flows will be generated, restricting the ability to strengthen/repair the West Trunk Sewer. Flow diversion can continue until spring of 2025, at that point in time, the volume of flow expected will exceed what can be safely by-passed. Therefore staff recommend extending the existing contract to maximize available time.

Document 2021-247T for the Concrete Protective Lining of the West Trunk Sewer was awarded to the lowest bidder using a competitive process in 2021. The costs for the additional repairs are being maintained at 2021 rates for works through the duration of the repairs with the exception of increases for materials in line with inflation. Work commenced in June 2021 and was discontinued due to high flows at the end of March 2022. Work recommenced in Fall 2022 and will continue until Spring of 2025 pending budget.

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Document 2022-222vPC08-2c-001 for the support services during construction of the West Trunk Sewer repairs should also be extended to permit the continuity of contract oversight. Having the same team deliver the project administration will ensure that all works completed are done according to contract specifications, can continue to build on the project understanding already developed and ensure seamless project delivery.

3. Proposed Direction

Repairs are currently ongoing with the contractor, TUI. Staff propose to continue to work to get repairs done, anticipated by Spring 2025. The additional work will include addressing the structural repairs to mitigate risk of failure in the future and lining the West Trunk at the same time to protect and extend its service life. Therefore, staff recommend extending the existing contract (Document 2021-247T) with Technicore Underground Inc. by \$20,000,000. Also, staff recommend extending the contract (Document 2022-222vPC08-2c-001) with Robinson Consulting Inc. by \$3,000,000.

Additional funds will be included in the 2024 Capital Budget to address budget requirements for the balance of the project.

Pending approval of the 2024 capital budget staff propose that subsequent to the completion of the inspection of the balance of the pipeline, that the Director of Procurement be authorized to approve any further increase to the contracts with TUI and RCI, to address necessary repairs that exceed current estimates, subject to satisfactory performance, price and approved budget, all pursuant to Procurement By-law 30-2018, as amended.

RISK CONSIDERATIONS

Failure to complete the repairs now may increase the risk of pipe failure in future. Staff and their consultants are unable to determine if structural cracking will continue. If degradation continues, it will be very challenging to undertake inspection while the sewer is in service. If repairs are needed in future, flows in the West Trunk Sewer will preclude removing the pipeline from service and would require costly bypassing of the sewer. Staff recommend approval of the contract extensions due to the unacceptable risk.

If the contractor does not complete the trunk sewer repairs at this time, future opportunities to do so will be very limited and expensive due to the large flows involved.

The amount of repairs are significant and time remaining to do the work is limited. The focus will be on keys areas of structural cracking prior to required in service date.

Making the necessary repairs now represents the best economic value to the Region, while reducing the impact to the community, goods movement and traveling public.

BILL 112 RISKS AND IMPLICATIONS

On May 18, 2023, the Province of Ontario introduced Bill 112, *the Hazel McCallion Act (Peel Dissolution), 2023*, that will dissolve the Region of Peel and make the Cities of Brampton and Mississauga and the Town of Caledon single-tier municipalities, effective January 1, 2025.

The legislation provides for the establishment of a Transition Board to make recommendations on implementing the restructuring. Details of the transition, including matters as they relate to Regional roles and responsibilities are not known at this time. Until such time as the transition

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role and responsibility details are made clear, recommendation to award is being made in accordance with the approved Principles to Maintain Regional Service through the Transition Period (Council Resolution 2023-455). The proposed award aligns with the following applicable principles:

- Principle 8 - Investments in essential services consistent with master plans
- Principle 12 - The procurement of goods and services as required to deliver and support the uninterrupted delivery of Regional services.

FINANCIAL IMPLICATIONS

Additional budget of \$23,000,000, funded by the Wastewater Development Charge reserve (R3515), is required under Capital Project 19-2205 to carry out the report direction. The overall repair needs (based on current repair rates for other sections) is estimated at \$60,000,000. The balance will be requested through the 2024 Capital Budget process.

CONCLUSION

Staff are seeking approval to increase the current contract for Contract Protective Lining of the West Trunk Sewer to ensure funds will be available to proceed with this critical work.

APPENDICES

Appendix I – Map of West Trunk Sewer
Appendix II – Map of Project Area



Kealy Dedman, Commissioner of Public Works

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