

Accelerating Rehabilitation of the Cross Harbour Tunnel

Date: November 12, 2025

To: City Council

From: General Manager, Toronto Water

Wards: Ward 10 - Spadina-Fort York

SUMMARY

The 1.4-kilometre Crosstown Harbour Tunnel (CHT) connects the Toronto Island Water Treatment Plant (WTP) with the John Street Pumping Station (PS). Originally built in 1908, the CHT is a critical asset, facilitating the distribution of 20% of Toronto's drinking water and the treated source for Enwave's Deep Lake Water Cooling system. The northern 800 metres of the CHT was relined in 2020-2021, and it was determined that the remaining 600 metres would need to be relined in the future.

An opportunity has arisen for Toronto Water to accelerate rehabilitation of the remaining 600 metre section in partnership with the Toronto Port Authority (operating as PortsToronto). To take advantage of this opportunity, the work must be initiated urgently to secure required materials and coordinate with PortsToronto (including the winter shut down period for the CHT).

It is recommended that City Council authorize the General Manager of Toronto Water to enter into an agreement with PortsToronto for the rehabilitation of this critical City asset.

RECOMMENDATIONS

The General Manager, Toronto Water recommends that:

1. City Council authorize the General Manager, Toronto Water, in consultation with the Director, Waterfront Secretariat, to negotiate and enter into an agreement with PortsToronto with respect to the rehabilitation of the City's Cross Harbour Tunnel infrastructure, on the following terms and conditions:

- a. PortsToronto will contribute 45% of the total costs of the rehabilitation, and
- b. such other terms and conditions that are satisfactory to the General Manager, Toronto Water, and in a form satisfactory to the City Solicitor.

FINANCIAL IMPACT

Rehabilitation of 600 metres of the 117-year-old CHT has a high-level order of magnitude cost of \$25 to 30 million. PortsToronto will be providing 45% of total costs with the remainder to be funded by Toronto Water. Final costs will be determined as design is finalized. Toronto Water's 2026-2035 Capital Budget and Plan submission allocates funding that can accommodate up to 55% of the lower cost range of \$25 million. Any incremental costs will need to be considered with other priorities in future year budget processes.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On October 9 and 10, 2024, City Council considered Billy Bishop Toronto City Airport - Runway End Safety Areas (RESA) and directed staff to consider the detailed Runway End Safety Areas designs and to negotiate and execute an amendment to the Tripartite Agreement to permit a landmass extension consistent with Runway End Safety Areas Option 1.

<https://secure.toronto.ca/council/agenda-item.do?item=2024.EX17.5>

On July 8, 2020, the Bid Award Panel granted authority to award a contract for Rehabilitation of 800 metres of the Cross Harbour Tunnel Treated Water Main between Island Water Treatment Plant and John Street Pumping Station.

<https://secure.toronto.ca/council/agenda-item.do?item=2020.BA89.2>

BACKGROUND

The 1.4-kilometre Cross Harbour Tunnel (CHT) is under Lake Ontario and is approximately 30 metres below the lake surface in shale bedrock. It sits underneath a waterlot that is owned by PortsToronto.

The CHT provides treated water to 20% of Toronto, conveying drinking water from the Island Water Treatment Plant (WTP) to the John Street Pumping Station (PS). At the John Street PS, cold drinking water passes through Enwave's Energy Transfer Station (ETS) as part of its Deep Lake Water Cooling system. There, heat exchangers transfer thermal energy from the district cooling water loop to the cold drinking water. The recharged cooling water is circulated through a closed loop running throughout downtown to provide cooling to buildings, and then Enwave recycles the heat, returning the warm water to the ETS to repeat the process.

The CHT was originally constructed in 1908 as a 2.2 metre horseshoe-shaped, double brick-lined tunnel with a cast-in-place concrete bottom. Following a condition assessment, Toronto Water undertook a relining of the northern 800 metres in 2020-2021. At that time, it was determined that the remaining 600 metres was to be

monitored with a rehabilitation to occur sometime in the future. A map is provided below (Figure 1).

Work on the CHT is a complex endeavour with limited access at the John Street PS, Rees Street shaft, or Muggs Island surge shaft. With restricted accessibility and a narrow tunnel, the work area requires unique methods of rehabilitation.

Figure 1 - Map of CHT



COMMENTS

Acceleration Opportunity

Ongoing dialogue between Toronto Water and PortsToronto has identified that there is an opportunity to accelerate rehabilitation of the remaining 600 metres of CHT through PortsToronto's work on Runway End Safety Areas at the Billy Bishop Toronto City Airport, utilizing the limited winter ability to take the Island WTP out of service by shifting Enwave's cooling load to the R.C. Harris WTP.

Undertaking rehabilitation now would mean increased protection for this critical asset and an improvement to the resilience of both Enwave's Deep Lake Water Cooling system and Toronto's drinking water systems. It also reflects a financially prudent approach, as this work is being coordinated with other capital works and in partnership with PortsToronto.

The acceleration opportunity is similar to the approach taken during construction of the Pedestrian Tunnel in 2010. At that time, the City and PortsToronto agreed to include the design, construction and installation of watermain and sewer force mains to service the Toronto Islands as a part of the PortsToronto project. This resulted in improved critical infrastructure while providing the City with an estimated savings of \$10 million (future value).

Collaborative Rehabilitation Plan

Staff from both parties have agreed that rehabilitation of the remaining 600 metres of the CHT should occur urgently. This represents an efficient and predictable project delivery method to complete necessary work in a timely manner during the winter shut down period.

PortsToronto and Toronto Water would collaborate on project delivery, using methods and contractors as approved by Toronto Water. PortsToronto will be providing 45% of the total cost to rehabilitate this City asset with Toronto Water providing the remaining portion. This is a fair approach, reflecting the portion of the tunnel asset lying below the airport's RESA. Ultimately, PortsToronto's contribution reduces the City's planned future expense related to the rehabilitation of this asset.

Conclusion

It is recommended that City Council authorize the General Manager of Toronto Water to negotiate and execute an agreement with PortsToronto. Proceeding with the accelerated rehabilitation of the CHT, with a financial contribution from PortsToronto, would represent an efficient and collaborative City building effort that will ensure long-term protection of critical City infrastructure.

CONTACT

William Fernandes, Deputy General Manager, Toronto Water
William.Fernandes@toronto.ca, 416-392-8220

David Stonehouse, Director, Waterfront Secretariat
David.Stonehouse@toronto.ca, 416-392-8113

SIGNATURE

Lou Di Gironimo
General Manager, Toronto Water