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**TO:** GENERAL COMMITTEE

**SUBJECT:** PROJECT FUNDING REQUEST - MAPLEVIEW WATER TOWER  
INTERNAL REPAIRS

**WARD:** 7

**PREPARED BY AND KEY CONTACT:** S. DIEMERT, MANAGER OF VERTICAL INFRASTRUCTURE  
PROJECTS, EXT. 5150

**SUBMITTED BY:** B. ARANIYASUNDARAN, P. ENG., DIRECTOR OF INFRASTRUCTURE

**GENERAL MANAGER APPROVAL:** A. MILLER, RPP, GENERAL MANAGER OF INFRASTRUCTURE AND  
GROWTH MANAGEMENT

**CHIEF ADMINISTRATIVE OFFICER APPROVAL:** M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

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#### **RECOMMENDED MOTION**

1. That the project entitled "Mapleview Water Tower Internal Repairs" be added to the 2021 Capital Plan with a total budget of \$1,271,000 and that funding be derived from the Water Capital Reserve.
2. That the contract be awarded to Landmark Municipal Services for the interior repairs to the Mapleview Water Tower, to expedite this work to perform preventative maintenance, prevent storage tank degradation, and prevent the disruption of an essential component in the City's water distribution service in accordance with Section 13 of the Emergency Purchases of Procurement By-law 2019-015.

#### **PURPOSE & BACKGROUND**

3. The purpose of this Staff Report is to secure sufficient funds to complete internal repairs to the Mapleview Water Tower and seek Council approval of an emergency purchase.
4. Landmark Municipal Services was retained in the summer of 2019 to inspect and assess the condition of the internal steel protective lining of the Mapleview Water Tower using a remotely operated vehicle. Inspections and condition assessments of water towers are typically undertaken every 10 to 15 years using specialized contractors.
5. During the inspection, the internal paint rail was assessed to be in acceptable condition based on the limitations of the inspection conducted by the remotely operated vehicle. However, several deficiencies and failures were present in the interior lining of the tank.
6. Based on the condition assessment, it was recommended that the tank be rehabilitated in 2020 to ensure asset value is retained and future service levels are maintained.
7. In October 2020, Landmark Municipal Services mobilized and began internal coating repairs. The scope of work involved all internal surfaces (floor, cone, shell and roof). All floor and reachable areas on the cone were completed, however, areas requiring access via the internal painter's rail were not completed.

8. During the 2020 repairs, and upon a closer review of the rail (which was only feasible and fully accessible with the tank offline), it was noted that the back side of the painter's rail (side closest to the tank shell) was severely corroded with steel loss beyond repair. As such, it was deemed unsafe to continue with the coating repairs utilizing the swing stage as originally proposed. Based on the overall condition of the internal lining system and the time of year, it did not make economic sense to continue with the repairs on the shell and roof and as such, all equipment was down rigged, the tank disinfected, sealed, filled, and put back into service by the City.
9. Landmark Municipal Services provided a full report indicating that the painter's rail was severely corroded and beyond repair. In addition, Avid Protective Products, LTD./Tnemec Company, Inc. completed a condition assessment of the lining system. Overall, multiple deficiencies and failures were noted in the interior lining of the tank with major coating failure and severe degradation of the asset noted as imminent.
10. It is recommended to rehabilitate the tank soon to ensure asset value is retained and required service levels can be maintained. Deferring this work, could result in accelerated corrosion and metal loss.

#### **ANALYSIS**

11. The existing coating system was completed approximately fifteen (15) years ago. The polyurethane coating systems are documented to achieve an average life span of 16 years in water storage tanks.
12. To complete the repairs to the coating system throughout the interior of the tank and renew the tank for the next life cycle of 15 to 20 years, the painter's rail system that is required to complete the work must first be replaced. This work will include removal and replacement of the two interior paint rail systems with new galvanized rail.
13. Once the paint rails are installed, the upper portion of the interior of the tank along with the rails will be brush blasted and coated with the new interior lining. Finally, the remaining interior lining system will be removed and replaced with a new liner.
14. Mapleview Water Tower is a vital component of the Drinking Water System as it is the only storage facility for Water Pressure Zone 3S, providing up to 5,455 m<sup>3</sup> of storage to meet the pressure zones drinking water and fire flow demands. The Water Pressure Zone 3S supplies drinking water to 39,000 residential and ICI users. As such, this work needs to be completed during a time of low water usage. It has been determined that the appropriate time to complete the work would be from mid-July to November.
15. Under normal circumstances, when this maintenance work is undertaken on a planned basis, staff would develop contract documents and procure the contractor in accordance with the purchasing by-law using a competitive process. Given the time constraints to complete this work, and the limited number of contractors that are available to complete this work, it is proposed to retain Landmark Municipal Services and associated sub-contractors to complete this work using non-standard procurement for the reasons provided below.
16. Landmark Municipal Services (the Contractor) was the successful bidder under FIN# 2020-047Q for the work completed at the Bayfield Water Tower. As the Contractor was retained for the Bayfield Water Tower project as part of a competitive process, it is proposed to retain the same contractor team to complete the emergency repairs to the Mapleview Water Tower using the non-standard procurement process. The pricing for the work would be based on the Tender for the Bayfield Water Tower with adjustments to account for the different dimensions of the Mapleview Water Tower.

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17. This approach would ensure we can complete the work within the seasonal time constraints associated with water demands and weather.
  18. Considering that this contractor has been successful on several City projects, the contractor has established a track record of providing a competitive market value in accordance with industry standards.
  19. Without the non-standard procurement process to retain the same contractor, the work would be deferred to future years with the risk of lower service levels and additional expenses. As the internal coating systems are near the end of their useful life, this work is considered urgent and critical to ensuring adequate pressures and fire protection without any disruptions.
  20. The contract inspection team procured for the Bayfield Water Tower would also be used for this project.
  21. The total project cost estimate to complete the work includes contingencies to allow for additional repairs or unanticipated work that may be needed when the contractor is onsite.

#### **ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS**

22. The following environmental and climate change impact matters have been considered in the development of the recommendation:
  - a) Should the internal coating fail, the tower would be taken out of service for an extended unplanned period. This would impact the level of service provided with respect to system pressures and fire protection.
  - b) During an extended unplanned period of service interruption to Mapleview Tower, Water Pressure Zone 3S would only be supplied through Big Bay Booster Pumping Station and Harvie Booster Pumping Station. During periods of higher demand, water users may experience pressure fluctuations.
  - c) During an extended unplanned period of service interruption to Mapleview Water Tower, Water Pressure Zone 3S would require additional watermain flushing to maintain chlorine residuals within the water distribution system. If chlorine residuals were not maintained to acceptable levels within the water distribution system, the City would not be meeting its drinking water compliance requirements.

## **ALTERNATIVES**

23. The following alternatives are available for consideration by General Committee:

**Alternative #1**

General Committee could choose to not approve the requested funding at this time.

This alternative is not recommended as the delay will further the corrosion of the metal substrate and create additional blister formation which will impact the storage tank integrity. This could lead to the tank being taken out of service for an extended period which would impact the level of service provided for high water users in the south end of the City, potentially during times of high-water demand.

**Alternative #2**

General Committee could choose to direct staff to retain contractors through a competitive Tender.

This alternative is not recommended because proceeding with a competitive bid process will not allow the work to be completed in 2021 and within the seasonal time constraints for this work. This would result in delaying the work to 2022 and expose the City to undue service risks as a result of the delay.

## **FINANCIAL**

24. The total estimated funds required to complete the work are summarized in the table below. Staff are not aware of any external funding opportunities that this project would be eligible for. The budget is based on the known project scope at the time of writing of this report. Due to the urgent nature of the work, as the project proceeds, the scope will be refined, and contingencies have been included to address any unanticipated work.

Funding Source	Proposed addition to 2021 capital plan
Water Capital Reserve	1,271,000
<b>Total</b>	<b>\$1,271,000</b>

25. The Water Capital Reserve balance is currently \$19.2M. However, commitments for existing projects as well as those approved and forecast in the 2021 Capital Plan show an unsustainable trend as seen in the following table. Including the addition of the proposed project, the Water Capital Reserve will be overcommitted beginning in 2023. This will need to be addressed by deferring or removing projects that are currently included in the capital plan, or significantly increasing the contributions to the reserve via increased water rates in future years. Under the Safe Drinking Water Act, every 5 years municipalities are required to approve a Financial Plan that demonstrates a financially sustainable water system. Staff in Infrastructure and Growth Management, and Finance Departments will be bringing forward an updated financial plan to Council this spring or fall.



Water Capital Reserve	2021	2022	2023	2024	2025
Beginning Balance	\$ 19,180,299	\$ 7,159,956	\$ 1,397,849	\$ (8,718,114)	\$ (10,216,674)
Draws: Previous Commitments	\$ (9,487,807)	\$ -	\$ -	\$ -	\$ -
Draws: 2021 Business Plan	\$ (9,455,200)	\$ (12,417,854)	\$ (16,638,163)	\$ (8,035,187)	\$ (4,927,842)
Contributions: 2021 Business Plan	\$ 6,922,664	\$ 6,655,747	\$ 6,522,200	\$ 6,536,627	\$ 6,667,360
<b>Uncommitted / (Overcommitted) Reserve Balance</b>	<b>\$ 7,159,956</b>	<b>\$ 1,397,849</b>	<b>\$ (8,718,114)</b>	<b>\$ (10,216,674)</b>	<b>\$ (8,477,156)</b>
<b>Additional Funding Request:</b> <i>Mapleview Water Tower Internal Repairs</i>	\$ (1,271,000)				
<b>Reserve Balance with Additional Funding Request</b>	<b>\$ 5,888,956</b>	<b>\$ 126,849</b>	<b>\$ (9,989,114)</b>	<b>\$ (11,487,674)</b>	<b>\$ (9,748,156)</b>

#### **LINKAGE TO 2018–2022 STRATEGIC PLAN**

26. The recommendations included in this Staff Report support the following goal identified in the 2018-2022 Strategic Plan:
- ☒ Fostering a Safe and Healthy City
27. The recommendations included in this Staff Report support fostering a Safe and Healthy City as it ensures that the City will provide safe drinking water.