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Town of Aurora

General Committee Report

No. PDS23-017

Subject: Request for Increased Capital Budget Authority for Capital Project No. 31113 – Infrastructure Rehabilitation on Murray Drive

Prepared by: Garry Anggawinata, Municipal Engineer

Department: Planning and Development Services

Date: April 4, 2023

Recommendation

1. That Report No. PDS23-017 be received; and
2. That the total approved budget authority for Capital Project No. 31113 be increased to \$6,177,800, representing an increase of \$655,508; and
3. That \$48,168, \$180,050 and \$30,550 in previously approved capital budget authority for Project No. 31118, 31119 and 31202, respectively be transferred to Project No. 31113; and
4. That the remaining \$396,740 in additional requested budget authority for Project No. 31113 be funded from the Storm Water reserve.

Executive Summary

The intent of this report is to seek Council's approval for an increase to a previously approved capital budget authority for Capital Project No. 31113, the construction works for infrastructure rehabilitation on Murray Drive which includes replacement of a storm culvert, creek rehabilitation and channel restoration, replacement of a watermain section, and roadway surface rehabilitation (asphalt mill and overlay, curb and gutter repairs, and sidewalk repairs).

- The Town of Aurora 'Stream Management Master Plan' (SMMP) and 'Tannery Creek Flood Relief Study' (TCFRS) has identified the existing storm culvert on Murray Drive (near Nisbet Drive) as being undersized and requiring an upgrade, together with a section of the watermain.

- Various factors, including increased inflation rates, supply chain disruptions and increased material and labour prices have resulted in significant increases to construction costs.

Background

Capital Project No. 31113 for the roadway surface rehabilitation of Murray Drive, Kennedy Street West, Pinehurst Court, and Wiles Court was included in the Town's Ten-Year Capital Plan.

This project was intended to be delivered in two (2) phases:

- 1) Phase 1 – Roadway surface rehabilitation of Murray Drive (from Wellington Street West to Nisbet Drive), Kennedy Street West (from Bathurst Street to Murray Drive), Pinehurst Court, and Wiles Court.
- 2) Phase 2 – Roadway surface rehabilitation of Murray Drive (from Nisbet Drive to Yonge Street), replacement of storm culvert on Murray Drive (near Nisbet Drive), stream rehabilitation and channel restoration, and replacement of existing watermain on Murray Drive (from Nisbet Drive to Davis Road).

Phase 1 of this project was completed in 2021. The scope of work consisted of mill and overlay of the roadway asphalt, concrete curb and gutter repairs, and concrete sidewalk repairs.

The Town of Aurora 'Stream Management Master Plan' (SMMP) and 'Tannery Creek Flood Relief Study' (TCFRS) has identified the existing storm culvert on Murray Drive (near Nisbet Drive) as being undersized and requiring an upgrade, together with a section of the watermain.

Phase 2 is comprised of the following scope of work:

- Removal of an existing twin corrugated steel pipe (CSP) arch storm culvert (measuring 1.83m wide, 1.12m high, 36.5m long) and replace with a proposed single CSP arch storm culvert (measuring 6.0m wide, 2.0m high, 36.5m long), including all associated creek rehabilitation and channel restoration works.
- Removal of an existing asbestos-cement (AC) watermain section along Murray Drive (from Nisbet Drive to Davis Road) and replace with a proposed 300mm PVC watermain, including all associated roadway and boulevard restoration

- Roadway surface rehabilitation on Murray Drive (from Nisbet Drive to Yonge Street), including mill and overlay of the roadway asphalt, concrete curb and gutter repairs, and concrete sidewalk repairs.

The scope of work for Phase 2 was developed in accordance with the recommendations from the Town of Aurora's 'Stream Management Master Plan' (SMMP) and 'Tannery Creek Flood Relief Study' (TCFRS), which was completed in 2019. This Town-wide study identified the existing storm culvert on Murray Drive (near Nisbet Drive) as being undersized according to the Ontario Ministry of Transportation (MTO) standards, representing a flood risk to private property and public infrastructure. Site investigations also revealed that the Tannery Creek channel is experiencing active bank erosion, undermined trees with exposed roots, highly confined channel corridor upstream of the culvert, and accumulation of woody debris at the culvert inlets. Channel restoration works and installation of armour stone retaining walls are recommended as part of the culvert replacement to rehabilitate the creek and prevent the future occurrence of erosion.

In addition to upsizing the storm culvert to achieve compliance with MTO standards, Phase 2 also entails the replacement of an existing watermain section spanning approximately 130 meters in length along Murray Drive from Nisbet Drive to Davis Road. The Town's Water Operations Division have expressed concerns regarding the declining performance of this aging infrastructure, which was installed in 1958. They have experienced multiple main breaks and leaks in this area of Murray Drive. This existing AC watermain is proposed to be removed and replaced with a 300mm-diameter polyvinyl chloride (PVC) watermain. The newly replaced watermain aims to significantly extend the life of this infrastructure and continue servicing the area without issues.

Lastly, Phase 2 includes the roadway surface rehabilitation of Murray Drive from Nisbet Drive to Yonge Street. This involves mill and overlay of the roadway asphalt, curb and gutter repairs, and concrete sidewalk repairs upon completion of the culvert and watermain replacement. This will complete the road resurfacing work on Murray Drive as proposed in the Ten-Year Capital Plan.

A 'Request for Tender' (RFT) was issued on January 3rd, 2023 to deliver Phase 2 of this Capital Project (RFT no. 2023-02-PDS-ENG). Five (5) compliant bids were received, of which all exceeded the approved capital budget authority.

The completion of this Capital Project is critical in prolonging the longevity of the Town's infrastructure and reducing flood risk.

Analysis

Various factors, including increased inflation rates, supply chain disruptions and increased material and labour prices have resulted in significant increases to construction costs.

Significant increases in the cost of construction have been observed over the past several years due to numerous factors including higher inflation rates, supply chain disruptions, and increased prices of construction material and labour. Consequently, the tender bids submitted for this project have exceeded the projected market average. The lowest compliant bid is higher than originally estimated during the budget forecasting process. This project's updated estimated requirements, which include the lowest compliant bid submitted to the Town for the work to be performed are summarized in Table 1.

The period of validity (for which Bids are irrevocable) for RFT no. 2023-02-PDS-ENG, is ninety (90) days from the Bid Closing Date. The RFT closed on January 30, 2023, thus its period of validity ends on April 30th, 2023.

Table 1: Updated Estimated Requirements for Capital Project No. 31113

Description	Amount
Approved Capital Budget Authority	\$5,522,292.00
Less Previous Commitments	\$1,903,270.00
Total Funding Available	\$3,619,022.00
Remaining Planned Expenditures	
Subject Contract Award excluding HST	\$3,985,166.92
Contingency Amount (5% of the Contract Award Amount)	\$199,258.00
Other Planned Expenditures	\$20,000.00
Sub - Total	\$4,204,425.92
Non-refundable taxes (1.76% of the Contract Award Amount)	\$70,138.94
Total Remaining Project Requirement	\$4,274,564.86

Description	Amount
Total Approved Capital Budget Authority Short-Fall	(\$655,542.86)

Project Schedule

The Contract to complete Phase 2 construction work is anticipated to commence in early June of 2023 and be completed within one hundred (100) working days (weather permitting). Some lanes of Murray Drive may need to be closed for some duration of the project while construction is active. During this time, appropriate traffic control measures shall be implemented by the Contractor and closely monitored and enforced by Town Staff.

Legal Considerations

Pursuant to the Town's Procurement By-law, Town Staff is authorized to award and execute any related agreement with respect to any procurement, provided that the budget required for such Contract award has been approved by Council. The procurement process with respect to this project yielded bids that were all above the approved budget. Consequently, Council approval is required to increase the project budget for staff to be able to award the project to a compliant bidder.

Financial Implications

As outlined above in Table 1, it is anticipated that this project's total requirements will exceed its currently approved budget authority of \$5,522,292 by approximately \$655,500. It is recommended that this project's total budget authority be increased to \$6,177,800, representing an increase of \$655,508.

Further, it is recommended that this additional required budget authority be partially addressed through a transfer of previously approved capital budget authority as follows:

- 1) \$48,168 from Capital Project No. 31118
- 2) \$180,050. from Capital Project No. 31119
- 3) \$30,550 from Capital Project No. 31202

This identified previously approved budget authority is no longer required by these noted projects and is funded by sources consistent with Project No. 31113.

It is proposed that the remaining \$396,740 in additional required budget authority be funded through an equivalent draw from the storm water reserve.

Communications Considerations

The Town will inform the public of the information contained in this report by posting it to the Town's website. Moreover, Notice of Construction letters will be distributed to residents and all affected parties prior to the commencement of construction.

Additionally, construction notices will be published in the local paper and Town Notice Board. Construction signage will also be installed within the vicinity of the project site. Details shall be provided to re-route traffic accordingly when lane closures are required for construction activities. Information pertaining to construction progress will be updated regularly on the Town of Aurora's website and made accessible to the public. Engineering Division will coordinate these communication efforts with Access Aurora and the Communications Division.

Climate Change Considerations

The recommendations of this report will allow the Town to complete the remaining works (Phase 2) for this project as originally intended, which includes upgrading the storm culvert and watermain, repaving the roadway surface for the remaining section of Murray Drive, and repairing sections of curb and sidewalk.

Replacing the culvert to increase its conveyance capacity and reinforcing the channel with armour stone retaining walls will serve to prevent flood risk in the area, reduce active erosion from wearing away the channel banks, and allow the channel to carry additional stormwater flows during heavy rainfall events. This project supports the Town's efforts to adapt to climate change by improving critical infrastructure.

Upgrading the aging watermain will not only prolong the service life of this infrastructure, but it will prevent future issues such as main breaks and leaks. If left untreated, such occurrences will soften and erode the boulevard, accelerate freeze-thaw cycles, and will warrant frequent repairs which would result in an increased carbon footprint over the long term when equipment and vehicles need to be mobilized.

Furthermore, the roadway surface rehabilitation work (mill and overlay) will provide a newly installed top layer asphalt, as well as curb and sidewalk. The renewal of road conditions is a long-term solution which will reduce the need for the Town's Operations department to address complaints and go on-site to perform small repairs in localized areas.

The above considerations will result in improved infrastructure that will help mitigate and adapt to climate change, while at the same time improving the level of service it

provides to the public and reduces the number of resources that the Town's Operations will need to allocate to address occurrences of issues.

Link to Strategic Plan

This project supports the Strategic Plan goal of Supporting and Exceptional Quality of Life for All by Investing in Sustainable Infrastructure. Completion of this Capital Project will mitigate flood risk in this area thereby preventing damage to private property and the municipal right-of-way, prolong the service life of infrastructure required to distribute water supply to local residents, and promote longevity of the roadway infrastructure by replacing the top layer asphalt, repairing the curb and gutter, and rehabilitating damaged sidewalk for pedestrian use.

Alternative(s) to the Recommendation

1. That Council provide direction.

Conclusions

In order to complete Phase 2 of this critical project, staff recommend that the capital budget authority for Capital Project No. 31113 be increased by \$655,508 to total revised budget authority of \$6,177,800. Furthermore, it is recommended that this additional required budget authority be funded through a combination of a transfer of previously approved budget authority from other capital projects and an additional funding transfer from the Stormwater reserve.

Attachments

Attachment 1 – Proposed location of the culvert and watermain replacement, and roadway rehabilitation at Murray Drive

Previous Reports

N/A

Pre-submission Review

Agenda Management Team review on March 13, 2023

Approvals

Approved by Marco Ramunno, Director, Planning and Development Services

Approved by Doug Nadorozny, Chief Administrative Officer