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Report 2022-113

Report Title: 2022 Transportation Capital Budget Update and Award of RFQ 22-23 – Campbellford Bridge Expansion Joint Replacement

Prepared by: Chad McCormick
Engineering Technician
Public Works

Dan Campbell
Manager of Infrastructure
Public Works

Reviewed by: Denise Marshall
Director
Public Works

Glenn Dees
Director of Finance/Treasurer
Finance

Approved by: Jennifer Moore, CAO

Council Meeting Date: July 20, 2022

**Report Not Considered by
Standing Committee Because:**

- ☒ Time-Sensitive Issue (information received too late for Committee consideration)
- ☐ Urgent Matter (issue arose after this month's Committee meeting)
- ☐ Other

Strategic Plan Priorities: ☐ Economic Prosperity and Innovation
☒ Sustainable Growth
☐ Thriving and Inclusive Communities
☐ Leadership in Change

Recommendation

That County Council, having considered Report 2022-113 '2022 Transportation Capital Budget Update and Award of RFQ 22-23 – Campbellford Bridge Expansion Joint Replacement', receive

this report for information, noting the status of key projects and funding sources within the 2022 Transportation Capital Budget; and

Further That County Council Approve the allocation of \$200,000 in savings from the County Road 42 Rehabilitation project (carried-out jointly with Peterborough County) to increase the contingency amount for Contract 22-02 Paving of Various County Roads and approve allocation of \$25,000 of the same savings to increase the contingency amount for the County Road 42 Rehabilitation project to address forecasted overages on both projects due to the substantial increase in the Asphalt Cement Price Index; and

Further That having considered Report 2022-113 '2022 Transportation Capital Budget Update and Award of RFQ 22-23 – Campbellford Bridge Expansion Joint Replacement', receive this report for information, noting that the bid received from Bob Hendricksen Construction Ltd., in the amount of \$678,295.00 plus HST is the lowest bid meeting all specifications and that this bid combined with other project costs will total \$807,847.99, which can be accommodated using available funds in the 2022 Transportation Budget resultant from receipt of the County's 2022 OCIF formula-based funding and the remaining savings from the County Road 42 Rehabilitation project; and

Further That County Council Award Tender 22-23 - Campbellford Bridge Expansion Joint Replacement to Bob Hendricksen Construction Ltd. in the amount of \$678,295.00 plus HST, all in accordance with their bid submitted on June 30, 2022; and

Further That remaining available funds in the 2022 Transportation Capital Budget resultant from receipt of the County's 2022 OCIF formula-based funding in the amount of \$498,744.75 be retained within the 2022 Transportation Capital Budget to fund other 2022 capital works projects as necessary."

Purpose

The purpose of this report is to:

1. Provide County Council with an update on the status of the 2022 Transportation Capital Budget with respect to Ontario Community Infrastructure Fund funding and savings/overages on projects to date as it relates to the additional items below.
2. Seek County Council approval to utilize available funds in the 2022 Transportation Capital Budget to award RFQ 22-23 - Campbellford Bridge Expansion Joint Replacement to the lowest compliant bidder, which is Bob Hendricksen Construction Ltd.
3. Seek County Council approval to allocate available funds in the 2022 Transportation Capital Budget to fund anticipated overages on 2022 Paving of Various County Roads projects due to the significant escalation of the Asphalt Cement Price Index.

Background

Ontario Community Infrastructure Fund (OCIF) Formula-Based Funding

When the 2022 Capital Budget was approved the County's 2022 allocation of OCIF formula-based funding from the Province had not been confirmed. As such, only \$751,217 of OCIF funds carried-forward from 2021 were included as part of the funding amounts for 2022 Transportation Capital Budget, which totaled \$13,810,366. After approval of the 2022 Capital Budget the Province confirmed that the County was eligible for \$1,532,597 of 2022 OCIF funding and recognized interest of \$3,386 on 2021 carry-over, which increases total available funding for the 2022 Capital Budget to \$15,346,349.

In April of 2022 the County was required to indicate to the Province how OCIF funds would be utilized. Relative to future potential funding opportunities, staff considered it prudent to allocate nearly all available OCIF funds (\$2,287,200) to approved projects that formed part of the 2022 contract for Paving Various County Roads. OCIF Funds were allocated as follows:

Project	OCIF Amount	% of Project Cost
County Road 2 Rehabilitation	\$1,325,000	99%
County Road 18 Rehabilitation	\$620,000	96%
County Road 42 Rehabilitation	\$342,000	50%
Total OCIF Allocated	\$2,287,000.00	
OCIF Carry Over to 2023	\$200	

Available Funds in the 2022 Capital Budget

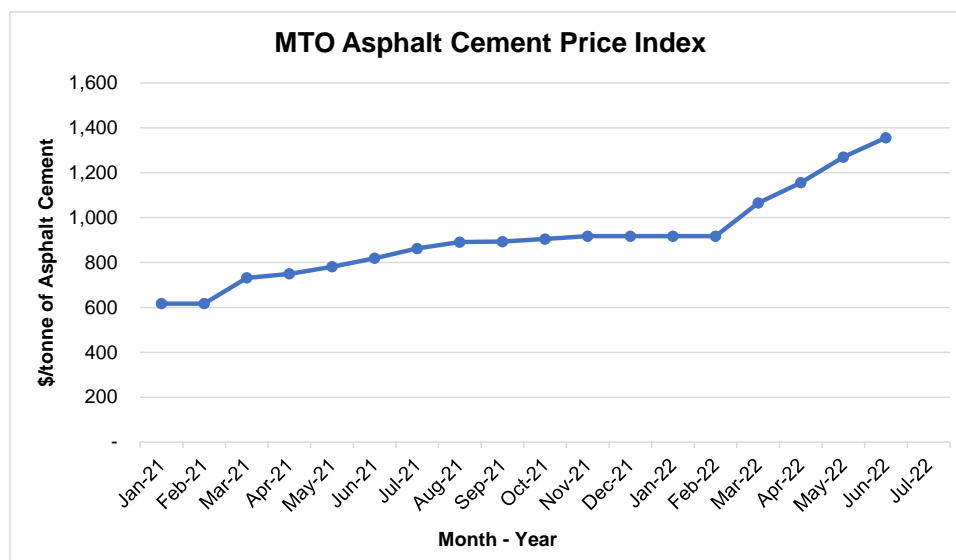
With the additional 2022 OCIF funds included and allocated as noted above this "frees-up" approximately \$1.53M of tax-levy funding within the 2022 Transportation Capital Budget. Council recently approved allocation of \$315,490.41 of this amount as a portion of the funding for the Loomis Bridge Replacement project. Additionally, the rehabilitation of County Road 42 came-in \$681,772.68 underbudget. Council has approved the allocation of approximately 55% of the County Road 42 savings to provide funding for the 2022 Micro Surfacing Program, 2022 Minor Culvert Repairs and County Road 18 Improvements at Danforth/Telephone Road. Based on the foregoing, the currently available funds in the 2022 Transportation Capital Budget are summarized as follows:

Source	Amount
Remaining Freed-Up Tax-Levy due to 2022 OCIF	\$1,220,492.59
Remaining Savings from County Road 42 Rehab	\$311,100.15
Total	\$1,531,592.74

Asphalt Cement Price Index and Impacts to Major Paving Projects

Asphalt Cement (AC) is derived from crude petroleum and forms the liquid portion of an asphalt mixture, typically representing $\pm 5\%$ of the mix. The Ontario Ministry of Transportation AC Price Index tracks the price per tonne of AC. Based on Ontario Provincial Standard Specification (OPSS) 310 the AC Index is used to calculate an adjustment applied to payment amounts for asphalt material. The adjustment is based on the difference between the AC Index value in the month prior to tender closing vs. the month the asphalt is placed. When the AC Index rises, the owner makes increased payment to the contractor and conversely when the AC Index falls, the contractor provides a credit to the owner.

Tender 22-02 for 2022 Paving of Various County Roads closed in March when the AC Index value for February was \$917.50. Reflective of global events influencing the price of petroleum products since March 2022 the AC Index value increased by 38% to \$1,270.00 for asphalt placed in May and 48% to \$1,356.00 for asphalt placed in June. The graph below illustrates the AC Index trend from the beginning of 2021 up to June 2022.



This significant AC Index increase in the spring/summer of 2022 resulted in an AC adjustment payment of \$30,408.57 on 2,066 tonnes of asphalt placed as part of the 2022 Paving of Various Roads project in May of 2022. If the AC Index value stabilizes at the June 2022 level (based on declining oil prices in late June) the total amount payable for AC Adjustments Across the County's major paving projects is estimated as follows:

Project	Asphalt Quantity	AC Adjustment Amount
2022 Paving of Various Roads (excl. Halcyon Place Parking Lot and County Road, funded by others)	22,450 tonnes	\$405,000.00
County Road 42 Rehab (Northumberland Portion)	2,400 tonnes	\$46,870.00
Total		\$451,870.00

Award of the contract for 2022 Paving of Various County Roads allocated a \$250,000 contingency. This allowance that would normally be utilized to accommodate minor AC price adjustment amounts along with other incidental unexpected items. Similarly, the County Road 42 Rehabilitation project included a contingency allowance of \$84,000. Given the significant escalation of AC Index, it is forecasted that these contingencies will not be sufficient to cover all increased project costs.

Campbellford Bridge Expansion Joint Replacement

Expansion joints allow longer-span bridges to expand/contract with changes in temperature and experience fatigue due to this movement as well as moisture exposure and traffic impact. Over the winter of 2021/2022 the condition of expansion joints on the existing Campbellford Bridge that carries Bridge Street (County Road 8) over the Trent River/Trent Severn Waterway experienced significant deterioration. An assessment of the expansion joints was completed by Jewell Engineering and recommendations were provided to replace the joints as soon as practical due to:

1. deterioration of the joint anchorage, which is resulting in increased noise when vehicles cross the joints;
2. failing seals, which are allowing water to penetrate along the deck ends and flow over the bearings and abutments located below where it can cause accelerated deterioration.

The Campbellford Bridge Expansion Joint project was not included in the 2022 Transportation Capital Budget and thus is currently unfunded. Given the need to undertake repairs expeditiously, a design and tender package was prepared by Jewell Engineering and was issued by the County to retain a construction firm with relevant experience to enter into a contractual arrangement to complete the work for the Campbellford Bridge Expansion Joint Replacements.

Under this contract, the Contractor will provide all labour, equipment, materials, and supervision necessary to complete the joint replacement and associated work.

Jewell Engineering and County staff report that Bob Hendricksen Construction Ltd., who submitted the lowest compliant bid, has sufficient experience in bridge rehabilitation work to complete a project of this magnitude.

Consultations

In consultation with Municipality of Trent Hills Staff and emergency services, County Staff explored three options for staging the joint replacement work and managing traffic during construction:

1. **Complete Closure:** Closing the bridge completely to traffic for a period of approximately 2-weeks to allow the joint replacement work to be undertaken during the day was considered. While this would be the most cost-effective option it would have significant impact on the community with a formal detour of 24.6 km through Healey Falls and increased traffic attempting to use the single lane swing bridge on Trent Drive.
2. **Single Lane:** Reducing the bridge to a single lane and completing the expansion joint replacement in two stages was considered. This option was not considered feasible due to the long length of the bridge, traffic signals located at both ends of the bridge and short downtown blocks. These factors, combined with existing peak-hour congestion, would result in significant queuing of traffic and major traffic operations issues for an extended period of time (3-4 weeks)
3. **Nightly Closures:** Closing the bridge at night to allow the joint replacement work to occur between 7pm and 6am every night for a period of 3-weeks with ramps and plates installed each morning to allow traffic to use the bridge during the day. While this option involves logistical complexities for the Contractor and thus higher costs it is significantly reduces disruption to the community by eliminating the need for detours during peak hours.

It was determined that the **Nightly Closures** options was the most appropriate solution and the provisions of the tender package for the work was issued based on this approach.

In anticipation of this Expansion Joint Replacement project potentially occurring in the fall of 2022 the County has also developed and released an FAQ to provide information and advanced notice to the community through social media and direct outreach to key stakeholder groups/agencies.

If the project proceeds to construction in 2022 pending Council approval of funding, the County will commence a second phase of community engagement that will involve signage, newspaper and radio advertisements in addition to continued social media.

Legislative Authority / Risk Considerations

Ontario Regulation 104/97 requires that structural integrity, safety and condition of every bridge be assessed by regular inspections and that every bridge shall be kept safe and in good repair.

The condition of the expansion joints does not represent an immediate safety risk. However, if the expansion joints are not replaced water will continue to infiltrate through the failed joint seals.

Water infiltrating through the joints exposes the deck-ends to moisture along with the upper portion of the abutments and the bridge bearings, which are below the deck-ends. Increased moisture exposure will accelerate the deterioration of these components potentially leading to the need for a more significant rehabilitation of the existing Campbellford Bridge, which will be

problematic to undertake prior to completion of the new Campbellford Bridge to provide a functional detour route.

Additionally, while the expansion joints will never be entirely silent, if the joints are not repaired the noise level will remain elevated likely leading to continued concerns and complaints being raised by near-by residents and businesses.

Discussion / Options

Two (2) electronic bids were received by the submission deadline. The tenders have been checked and verified for accuracy with no discrepancies to report. The two (2) bids received are as follows:

Company	Bid Results Excluding HST	Non- Recoverable Portion of HST	Bid Results (including the non- recoverable portion of the HST)
Bob Hendricksen Construction Ltd.	\$678,295.00	\$11,937.99	\$690,232.99
Fidelity Engineering & Construction Inc.	\$1,044,000.00	\$18,374.40	\$1,062,374.40

The bids received for RFQ 22-23 - Campbellford Bridge Expansion Joint Replacement include unit prices that are higher than the typical cost for this type of project. The higher costs can be likely be attributed to:

1. Costs associated with daily setup/tear-down routine to close the bridge each night and re-open it to traffic each morning.
2. The requirement for night work typically results in premium labour rates for contractors.
3. The requirement for night work increases the cost of sub-contracted services such as asphalt and concrete supply as sub-contractors that normally do not operate over night need to run production plants outside normal hours to produce small volumes resulting in premium prices.
4. The turn-around time for expansion joint materials is reported to be substantial at this time, which limits the options for sourcing the materials and increase costs.
5. General price inflation in the construction industry, which has been substantial in 2022 similar to the general inflation across the broader economy.

Financial Impact

Allocation of County Road 42 Rehabilitation Savings Asphalt Cement Price Index Increases

It is forecasted that the costs resultant from with the AC Price Index increases cannot be accommodated within the currently available contingency amounts for the County's major 2022 paving projects and as such the allocation of additional funds from elsewhere within the 2022 Transportation Capital Budget is required to address forecasted overages.

Remaining Savings from County Road 42 Rehabilitation	\$ 311,100.15
Transfer of Savings to Contingency for Paving of Various Roads	\$ 200,000.00
Transfer of Savings to Contingency for County Road 42 Rehabilitation	\$ 25,000.00

Total Transfer of Savings	\$ 225,000.00
Remaining Savings from County Road 42 Rehabilitation (After Transfers as Shown)	\$ 86,100.15

Award of Campbellford Bridge Expansion Joint Replacement

The Campbellford Bridge Expansion Joint Replacement project was not included in the 2022 Transportation Capital Budget and thus to proceed with the award of the project funding must be allocated from other sources.

As outlined in the background section of this report a total of \$1,532,597.00 in OCIF formula-based funding was received by Northumberland County in 2022 after the Capital Budget was approved. The receipt of this OCIF funding and its allocation to various road projects “frees-up” tax-levy funding. Some of the freed-up funding was used to fund the Loomis Bridge Replacement project and \$1,220,492.59.59 of that funding remains available for potential allocation Campbellford Bridge Expansion Joint Replacement project along with unused savings from County Road 42 Rehabilitation project.

The total estimated cost for the Campbellford Bridge Expansion Joint Replacement project is \$807,615.00 (including contract administration, contingency and non-recoverable HST). A breakdown of the total estimated cost is provided below:

Remaining Freed-Up Tax-Levy due to 2022 OCIF	\$ 1,220,492.59
Transfer of Savings from County Road 42	\$ 86,100.15

Total Potentially Available 2022 Transportation Budget	\$ 1,306,592.74
Low Bid Tender Amount	\$ 678,295.00
Non-recoverable HST	\$ 11,937.99

Total Estimated Construction Cost	\$ 690,232.99
Other Project Costs & Allowances	
Contract Administration & Inspection (by Jewell Engineering)	\$ 27,615.00
Engagement and Advertising	\$ 5,000.00
Contingency (Approximately 12.5%)	\$ 85,000.00
Total Contingency & Administration	\$ 117,615.00
Estimated Total Project Cost	\$ 807,847.99
Total 2022 Transportation Savings/Surplus Remaining	\$ 498,744.75

This report has been reviewed by the Finance Department.

Member Municipality Impacts

The Contractor will be permitted to close the bridge to all vehicular traffic at 7:00 PM each evening and must have the bridge open to two lanes of traffic by 6:00 AM each morning with a provision to open a lane for emergency services if required. The installation of steel plates and temporary asphalt ramps will be completed as required to allow for the reopening of the bridge of traffic each day.

A noise by law exemptions to allow for night work over a three week period has been requested and received from the Municipality of Trent Hills Council.

There will be a detour route in place with the necessary signage to assist drivers who need to cross the Trent River while the bridge is closed. The formal detour route was developed in consultation with Trent Hills staff and will include the use of some Trent Hill roads to take traffic north to cross the Trent River/Trent Severn Waterway at Healey Falls and then return to Campbellford opposite side of the Trent River. A detour route map is attached.

Conclusion / Outcomes

Staff recommend the following

1. That Council approve the allocation of savings realized at the time of tender award for the County Road 42 Rehabilitation project to cover anticipated overages on major paving projects due to substantial increases in the Asphalt Cement Price Index.
2. That County Council award RFQ 22-23 - Campbellford Bridge Expansion Joint Replacement to Bob Hendricksen Construction Ltd., all in accordance with their bid dated June 30, 2022, in the amount of \$678,295.00 plus HST utilizing the balance of the savings from the County Road 42 Rehabilitation project and taxy-levy funds that are “freed-up” by the County’s receipt of 2022 OCIF formula-based funding

Attachments

Campbellford Bridge: Replacement of Expansion Joints Frequently Asked Questions
Campbellford Bridge Repairs Detour Route Map