



Report to: General Committee

Meeting Date: May 28, 2024

SUBJECT: 067-T-24 Pavement Markings
PREPARED BY: Melita Lee, Senior Buyer, Ext. 2239
Steven Dollmaier, Sr. Manager Roads & Fleet, Ext. 2748

RECOMMENDATION:

1. That the report entitled “067-T-24 Pavement Markings” be received; and,
2. That the contract for Pavement Markings be awarded to the lowest priced bidder, Guild Electric Limited, for one term (from the date of award to December 31, 2024), in the estimated amount of \$650,246.52 (inclusive of HST) with the option to renew for three additional, separate one-year periods (from January 1 to December 31 of the applicable renewal year) for a total estimated contract amount of \$2,600,986.08, inclusive of HST; and,
3. That the estimated 2024 cost in the amount of \$650,246.52 (inclusive of HST) be funded from the following accounts:
 - a. 700-505-5307 (Pavement Marking) with a budget available of \$468,631.00; and,
 - b. 640-101-5399-24058 (Traffic Operational Improvements) with budget available of \$15,000.00; and,
4. That the estimated budget shortfall in 2024 of \$166,615.52 be reported as part of the 2024 year-end results of operations; and further,
5. That Staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to award the contract for Citywide pavement markings for a one-year term (2024), with the option to renew for three additional one-year periods. These pavement markings include all roadway traffic lines and symbols (e.g., bicycles, arrows, railway crossings, stop bars).

BACKGROUND:

Pavement markings and delineation are intended to provide guidance to road users and also may supplement regulatory traffic controls, such as stop signs or traffic signals. They also serve as an advisory or warning function for potential safety hazards. At night, they assist with driver visibility, given their ability to refract light from streetlights and vehicle headlights.

The Operations department oversees pavement markings maintenance annually for City wide roadways and City owned facilities (i.e., parking lots). Also, new applications of pavement markings may be applied to improve road safety. Pavement markings are subjected to weathering and deterioration especially in the areas where traffic volumes are higher.

OPTIONS/ DISCUSSION:

Tender Information (067-T-24)

Bid closed on	March 20, 2024
Number picking up bid document	7
Number responding to bid	4

Bids received in response to this Request for Tender exceeded the City’s budget. Consequently, Staff attempted to enter into negotiations with the low bidder, however, they were unable to reduce their pricing.

Budget Shortfall

The contract identified estimated annual quantities of various services required. In comparison to the previous contract pricing for comparable items for 2023, the price under this contract represents a 32.41% increase.

The budget shortfall is due to the pavement marking industry experiencing:

- Significant increase in material prices, such as water-based paint, which has doubled since 2018; and
- Increase in fuel and labour costs.

Prices for some of the items under this Tender included a change of material from water-based paint (symbols) to thermoplastics (symbols) while maintaining lines with the use of water-based paint. The rationale for choosing thermoplastic material over other material includes several factors:

Durability: Thermoplastic markings are typically more durable than water-based markings, with greater resistance to wear and tear from traffic and weather conditions. This durability ensures that road markings remain visible for longer periods, reducing the frequency of maintenance and repainting. On average, thermoplastic lasts approximately seven years before needing to be fully replaced.

Reflectivity: Thermoplastic markings often have superior reflectivity compared to water-based paint markings, especially when embedded with glass beads or reflective materials. This enhances visibility during nighttime and adverse weather conditions, improving overall road safety.

Adhesion: Thermoplastic markings typically adhere more strongly to road surfaces compared to water-based paint markings. This strong bond helps prevent premature peeling or lifting of markings, ensuring long-lasting visibility and reducing the need for frequent maintenance.

Cost-Effectiveness: Although thermoplastic markings may have higher upfront material costs compared to water-based paint markings, their longer lifespan and reduced maintenance requirements often result in overall cost savings over time.

Overall, the rationale for choosing thermoplastic over water-based paint markings revolves around durability, application speed, reflectivity, adhesion, and cost-effectiveness. These factors contribute to safer and more cost effective and sustainable road marking solutions.

FINANCIAL CONSIDERATIONS

Account Name	Account #	Budget Allocated for this Purchase	Cost of Award	Budget Shortfall
Pavement Markings - Roads	700-505-5307	\$ 468,631.00	\$ 635,246.52	\$ (166,615.52)
Traffic Operational Improvements	640-101-5399-24058	\$ 15,000.00	\$ 15,000.00	\$ -
Totals:		\$ 483,631.00	\$ 650,246.52	\$ (166,615.52)

For 2024, Staff recommend that the budget shortfall in the amount of \$166,615.52 (\$650,246.52 - \$468,631.00 - \$15,000) be reported as part of the 2024-year end results of operations. The change in the pavement markings program includes switching to thermoplastic markings (symbols) from water-based paint (symbols) markings which will only require painting once every seven years instead of twice per year. The road centerlines will still continue to be painted utilizing water-based products.

The proposed new thermoplastics program is a new innovative process for the City, which has been thoroughly studied by Operations staff. The City will be divided into seven quadrants and the water-based symbols will be reduced by 14% on an annual basis and replaced with thermoplastics. Over the next seven (7) years (one full implementation cycle), this new process will support cost avoidance of approximately \$322,320 over a seven-year period (see Table 1).

**Table 1: First Seven-Year Implementation Cycle:
Annual Cost – Water-based vs. Mix of Water-based & Thermoplastics**

		Existing Program Water-based Only	Proposed Program Mixed Use of Water- based & Thermoplastics
Current Annual Budget	A	\$ 483,631	\$ 483,631
Annual Cost:			
Water Based		\$ 671,421	\$ 571,438
Thermoplastics		\$ -	\$ 105,304
Total Annual Cost (Expected to decrease every year under Proposed Program)	B	\$ 671,421	\$ 676,742
Annual Budget Shortfall (Expected to decrease every year under Proposed Program)	C = (A - B)	\$ (187,790)	\$ (193,111)
Total Cost over next 7 yrs (2024 - 2030)	D	\$ 4,498,477	
	E		\$ 4,176,156
Cost avoidance over 7 yrs (2024 -2030)	F = (D - E)	\$ 322,320	

After the first seven-year implementation cycle, the estimated future annual cost is \$520,863, in comparison to the current water-based program at \$671,421 (see Table 2). The introduction of this seven-year plan mitigates the need for a significant operating budget increase, and brings the estimated program cost closer to the current budget amount. Staff will monitor actual expenses and will recommend future budget adjustments as part of future budget processes, subject to budget adoption.

Table 2: Estimated Future Annual Cost after Full Implementation of Thermoplastics

	Annual Estimated Future Cost After 7 year Implementation Plan
Current Annual Budget	\$ 483,631
Annual Cost:	
Water Based	\$ 415,559
Thermoplastics	\$ 105,304
Total Annual Cost	\$ 520,863
Annual Budget Shortfall	\$ (37,232)

OPERATING BUDGET IMPACT

Last year, the overspend for Pavement Markings as reported as part of the 2023-year end results of operations was \$103,369 (\$572,000 actual expense less \$468,631 budget)

equivalent to an overspend of 22%. The 2024 quantities are in line with the 2023 actuals, but the unit prices have increased, for the majority of reasons as described above.

The 2024 projected over expenditure will be reported as part of the 2024 year-end results of operations. Over the seven-year first implementation cycle, it is expected that there will be a diminishing budget shortfall year-over-year. Year 8 will be the first complete year following full implementation where it is anticipated the estimated annual cost will be closer to the current annual budget.

Actual expenditures will be monitored, and any required adjustments to address incremental financial requirements will be included as part of future budget processes, subject to budget adoption.

PEOPLE SERVICES CONSIDERATIONS

Not applicable

ALIGNMENT WITH STRATEGIC PRIORITIES:

Not applicable

BUSINESS UNITS CONSULTED AND AFFECTED:

Financial Services Department and Engineering Department have been consulted in preparation of this report.

RECOMMENDED BY:

Alice Lam
Director, Operations

Morgan Jones
Commissioner, Community Services

ATTACHMENTS:

Not applicable