

Hot In-Place Recycling Pilot Project – Construction Contract

Background

At the Council meeting of July 7, 2020, Council authorized staff to proceed with the tender of the Hot In-place Recycling (HIR) Pilot Project. The HIR Pilot Project has two main goals:

- 1) Determine the commercial viability of HIR through a competitively bid procurement process.
- 2) Confirm the quality of the HIR product.

With the results of these two goals, the City can determine if HIR treatment can become a cost effective strategy in our community and review the potential for adding HIR to the City's pavement asset management planning process. The Council Resolution states that Staff is to summarize the results of the HIR Pilot Project in Q4 2020, therefore construction is required to be completed in 2020.

The tender closed with three bidders, which demonstrates a high level of interest in this Pilot Project in the construction community. As this contract was a pilot project, the contract document included a simplified prequalification process. All bids received were prequalified for the contract. The bid results are summarized below:

Company	Bid Results
Pioneer Construction Inc.	\$2,100,008.20
Belanger Construction (1981) Inc.	\$2,352,450.00
Interpaving Limited	\$2,457,452.00

The low bid is approximately \$550,000 higher than estimated. The HIR item represents approximately 75% to 80% of the contract value. The unit price for this item was higher than estimated and represents the majority of the difference between the estimate and bid results. As this treatment is new to the City, Staff consulted with industry and engineering consultants to determine the estimated price. There are many factors that influence unit prices, including; traffic control for the roads selected, mobilization to Sudbury, volume of the work, number of locations, scheduling of the work, overhead, and profit. There are only two contractors that perform HIR in Ontario and that both were included as part of the bids received, it is Staff's opinion that this is a successful tender and that there was sufficient competition in the procurement process.

While the HIR unit rate is higher than estimated, it still represents value for money as the unit rate represents a savings of at least 30% in comparison to a grind and asphalt overlay treatment, which has a similar typical service life.

The following table summarizes the proposed HIR areas within the indicated road sections included in the tender:

Road	From	To	HIR Area (sq.m)
MR 35	Clarabelle Road	Big Nickel Road (MR 34)	25,000
Kingsway	Falconbridge Road	Levesque Street	26,000
Radar Road (MR 85)	Skead Road	Pine Ridge Street	20,000
Bancroft Drive	Kingsway	Bellevue Avenue	9,000
		Total Area	80,000

The October 21, 2019, Operations Committee report stated that the “scope of the contract will also be reviewed. Council set aside \$700,000 of the Additional Federal Gas Tax Funding for the pilot project, the need to add ancillary items to any contract, such as culvert replacement, curb repair, or guide rails, will mean that the suggested minimum square metres of HIR will not be met. HIR will not be considered at a location where underground infrastructure (ie. water main) requires replacement.” As noted above the budget was increased, and locations were chosen where underground infrastructure did not require replacement. As well, ancillary items were included in the contract and they did not represent a significant impact on the additional cost. It is best practice to undertake this work at the same time to improve coordination of the work, for Ontario Health and Safety Act considerations, enforcement of warranty work, and to minimize the disruption to adjacent residents and the traveling public.

As the low bid is above the estimate, Staff analyzed the following three options for Council's consideration to move forward:

Option 1: Award the contract at a reduced scope to meet the allocated budgets.

Option 2: Award the contract and increase the allocated budgets.

Option 3: Cancel the contract.

Analysis

As a result of the tender for this project closing above the approved budget, staff has analysed three options:

Option 1

Reduce the tendered project scope as required to complete the work within the approved HIR budget (\$1,390,000) plus the culvert work (\$160,000 funded separately) and proceed with the project in 2020. Reduction of the tendered scope includes removal of one of the proposed road section locations (Bancroft Drive) and some revisions to the proposed limits at one or two of the remaining locations (approximately 4 lane km). Removal of Bancroft Drive will reduce the construction schedule by reducing the

coordination and time required for concrete curb removal and replacement. As a result of the proposed scope reduction, approximately 90% of the HIR funds will be used directly for the HIR process.

Advantages

- Work will be completed in 2020 to permit construction review, data collection and report back to council with recommendations for the 2021 construction season;
- Staff is confident the work proposed in the reduced scope can be completed in 2020;
- The proposed reduction in scope which includes the removal of Bancroft Drive does not alter which contractor is the low bidder.

Disadvantages

- The full scope of work will not be completed;
- A September construction start increases the risk of the proposed work not being completed if there is a wet fall or early winter.

Option 2

Maintain the tendered project scope and proceed with three road sections (MR35, Kingsway and Radar Road) in 2020 and proceed with Bancroft Drive in 2021.

Advantages

- Work identified in the original scope will be completed.
- Work will be completed on three of the four road sections in 2020 to permit construction review, data collection and report back to council with recommendations for 2021 construction season;
- Staff is confident the work proposed for 2020 will be completed as outlined in the tender schedule;

Disadvantages

- Additional funds from the Capital Holding Account will be required for costs exceeding the project construction budget in the amount of \$550,000.
- Due to delay in award of the contract and the time required for concrete and asphalt work associated with curb removal and replacement, Bancroft Drive cannot be completed in 2020.
- A September construction start increases the risk of the proposed work not being completed if there is a wet fall or early winter.
- Risk of additional mobilization charges for completing the work in two phases.

Option 3

Cancel the contract and tender a new contract in 2021.

Advantage

- Construction work can begin earlier in the season in 2021.

Disadvantages

- Required to make a substantive change to the contract in order to tender a new contract.
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- HIR project is not completed in 2020, data is not collected and staff will be unable to provide recommendations for 2021.
- Additional City resources will be required to issue a new tender.

Options 1 and 2 will provide Council with an opportunity to review the HIR construction contract in 2020 and move forward with decisions on proceeding with further implementation of this treatment as an additional option for staff to use in the City's pavement strategy. Both of these Options may experience delays and could potentially remain incomplete due to inclement fall and early winter weather. This is typical of projects that commence in September in our community.

Option 2 will require additional funding from the Capital Holding Account in the amount of \$550,000.

Option 3 will delay the staff report on HIR construction review. An earlier tender in 2021 may provide the Contractor the benefit of making improvements to scheduling work for the 2021 construction season.

Based on the analysis above, staff recommends proceeding with Option 1. The reduced scope of Option 1 enables staff to complete the project within the approved budget and permits staff to report back to Council in Q4 2020 to summarize the results of the pilot project and provide recommendations for consideration of HIR in 2021 budget deliberations.

Any road sections removed from the Pilot Project will be included in future requests for HIR capital funding. Future proposed HIR capital projects will be reviewed and prioritized with all other City capital projects through the Capital project prioritization process.

Conclusion

The tender for the Hot In-place Recycling Pilot Project meets the goal of determining the actual costs for HIR and demonstrates its commercial viability. The prices received from three competitive bids from prequalified contractors represent good value and demonstrate interest from the construction community. Prices received for the HIR treatment are at least 30% lower than prices received for mill and pave projects. By awarding the contract, construction can occur in 2020 allowing the second goal of determining the quality of HIR to be completed. Pending construction and testing results, there will be an opportunity to incorporate this treatment into the City's pavement management asset strategy in future year.

Resources Cited

City Council Meeting, July 7, 2020, Hot in Place Asphalt Recycling Pilot Project, Accessed online:

<https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&agenda=report&itemid=13&id=1473>

City Council Meeting, July 7, 2020, Hot in Place Asphalt Recycling Pilot Project Presentation, Accessed online:

<https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&attachment=30687.pdf>

Operations Committee Meeting, October 21, 2019, Hot In-Place Recycling Asphalt Pilot Project, Accessed online:

<https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&agenda=report&itemid=2&id=1346>

Operations Committee Meeting, October 21, 2019, Hot In-Place Recycling Asphalt Pilot Project Presentation, Accessed online:

<https://agendasonline.greatersudbury.ca/index.cfm?pg=feed&action=file&attachment=27808.pdf>

City Council Meeting, June 11, 2019, Federal Gas Tax Additional Funding, Accessed online:

<https://agendasonline.greatersudbury.ca/index.cfm?pg=agenda&action=navigator&id=1324&itemid=17075&lang=en>