

Municipality of Chatham-Kent

Infrastructure and Engineering Services

Engineering and Transportation Division

To: Mayor and Members of Council

From: Jason Cikatricis, C.E.T.,
Engineering Technologist - Engineering & Transportation Division

Date: July 22, 2019

Subject: Tender Award: Contract T19-208 - Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of Gleeson Line Bridge over Government Drain #1, Community of Tilbury East

Recommendations

It is recommended that:

1. The tender in the amount of \$1,364,701.00 (including HST) for the work associated with Contract T19-208; Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of Gleeson Line Bridge over Government Drain #1, Community of Tilbury East, be awarded to Clarke Construction Inc. of Blenheim, Ontario.
2. The Mayor and Clerk be authorized to enter into the recommended agreements.

Background

The Gleeson Line Bridge over McDougall Drain was built in 1949. The structure has an east-west orientation and is located on Gleeson Line 0.01 km west of Cooper Road in the Community of Tilbury East. This concrete slab on steel I girder bridge carries 2 lanes of predominantly vehicular traffic across the McDougall Drain in 1 continuous span with a crossing length of 8.25 m and a maximum clearance of 3.0 m. The deck has a travel width of 7.35 m and an overall width of 7.95 m.

This Gleeson Line Bridge over McDougall Drain currently has a triple load posting of 21 / 38 / 53 tonnes.

With an Average Annual Daily Traffic volume (AADT) of 200, the crossing is lightly used with truck volumes accounting for less than 10 percent of the total traffic. The speed limit at the bridge location is 80 km/hr.

The Gleeson Line Bridge over Government Drain #1 was built in 1961. The structure has an east-west orientation and is located on Gleeson Line 0.01 km west of Merlin

Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of Gleeson Line Bridge over Government Drain #1

Road in the Community of Tilbury East. This concrete slab on steel I-girder bridge carries 2 lanes of predominantly vehicular traffic across the Government Drain #1 in 1 continuous span with a crossing length of 15.72 m and a maximum clearance of 4.0 m. The deck has a travel width of 8.8 m and an overall width of 10.6 m.

With an AADT of 200, the crossing is lightly used with truck volumes accounting for less than 10 percent of the total traffic. The speed limit at the bridge location is 80 km/hr.

Bi-annual inspections have been conducted by the Municipality of Chatham-Kent (as legislated under the *Public Transportation and Highway Improvement Act*) to continually monitor the condition of the structures and to ensure public safety. All structures form part of the comprehensive 20 year Plan managed by the Engineering and Transportation Division.

As per the 2018 Ontario Structure Inspection Manual (OSIM) inspection, and the 2018 inspection completed by Stantec Consulting Ltd, the Gleeson Line Bridge over McDougall Drain was documented as having:

- Severe corrosion of the abutment bearings and the girder bearing seats are exhibiting very severe corrosion.
- Corrosion and pitting on the steel I girders.
- The west abutment and the east ballast wall is exhibiting movement cracking and the retaining walls have settled.
- The concrete deck is severely spalled, delaminated and cracked with a large portion having efflorescence and moisture penetration.
- Exposed and corroded reinforcing steel at the exterior soffit and overhang.
- Leaking expansion joints.
- Exposed footings with heavy erosion and loss of concrete.

As per the 2018 Ontario Structure Inspection Manual (OSIM) inspection, and the 2018 inspection completed by Stantec Consulting Ltd, the Gleeson Line Bridge over Government Drain #1 was documented as having:

- Severe corrosion of the abutment bearings and the girder bearing seats are exhibiting very severe corrosion.
- Corrosion and pitting on the steel I girders.
- The east abutment is exhibiting slight movement cracking.
- The concrete deck is severely spalled, delaminated and cracked with a large portion having efflorescence and moisture penetration.
- Exposed and corroded reinforcing steel at the exterior soffit and overhang.
- Slightly leaking expansion joints.



Figure 1. Gleeson Line over McDougall Drain



Figure 2. Gleeson Line over Government Drain #1

Comments

This contract consists of the following work at the Gleeson Line structure over McDougall Drain:

Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of Gleeson Line Bridge over Government Drain #1

- Complete removal of the existing structure including deck, abutments, footings and wingwalls.
- Installation of new open footing concrete rigid frame structure and concrete wingwalls with additional width to allow for improved turning movements at this T intersection as well as removal of the load posting.
- Installation of new steel tube railing barriers and steel beam guiderail installed on the approaches to the bridge.
- Rip-rap erosion protection on the drain banks and corners of the new structure.

This replacement will provide approximately 75 years of service.

This contract consists of the following work at the Gleeson Line structure over Government Drain #1:

- Rehabilitation of existing concrete abutments, bearing seats, and concrete wingwalls.
- Installation of new galvanized steel girders
- Installation of new cast-in-place reinforced concrete deck with drains.
- Conversion to semi-integral abutments eliminating expansion joints
- Installation of new steel tube railing barriers and steel beam guiderail installed on the approaches to the bridge.

This rehabilitation will provide approximately 35-40 years of service.

Innovation

The replacement design for the Gleeson Line Bridge over McDougall Drain in the tender allowed for either a pre-cast concrete structure or a cast-in-place concrete structure. This option allows contractors the option to source the pre-cast components and do the installation; or supply and install the formwork and reinforcing steel and cast the concrete in place. This flexibility will leverage the most economical option with the same long-term durability.

For the Gleeson Line Bridge over Government Drain #1, rehabilitation over replacement of the existing concrete abutments and wing-walls were chosen because these elements have many years of remaining service life. Therefore, cost savings are achieved by repairing and re-using these existing elements.

These two (2) bridges were grouped together into a single tender in order to gain additional savings in mobilization, demobilization, and better pricing due to a larger volume of items. A larger project also attracts more bidders.

This tender allows the bidders to choose their preferred construction schedule within a two (2) year window. Due to this flexibility, Chatham-Kent receives a large number of bidders and more competitive prices.

The Tender was let on June 4, 2019 and the Purchasing Officer received and opened tenders for the work on July 4, 2019. The following table summarizes the bids received.

The tender results for are as follows:

Bidder	Location	Bid (including HST)
Intrepid General Ltd. ^^	Belle River, ON	*\$ 1,110,188.28
Clarke Construction Inc.	Blenheim, ON	\$ 1,364,701.00
Facca Inc	Ruscom, ON	\$ 1,426,568.50
Front Construction Industries Inc.	Windsor, ON	\$ 1,448,600.00
Sterling Ridge Infrastructure Inc.	LaSalle, ON	\$ 1,498,380.00
South Shore Contracting of Essex County Inc.	Essex, ON	\$ 1,534,088.00

* Denotes a clerical error that does not affect the ranking.

^^ Denotes Tender has been withdrawn.

Per the terms of the tender, work may not commence on the Gleeson Line Bridge over Government Drain #1 until July 15, 2020 due to a gas main relocation; and the Gleeson Line Bridge over McDougall Drain cannot be constructed during the months of May to September of each year due to the large number of Species at Risk (SAR) barn swallows. The total completion of the contract is November 30, 2020. The road will be closed at each bridge site for the duration of construction, however a detour will be in place.

The tender specifies that each of the structures must be completed independently with separate construction schedules. Each bridge must be completed before commencing construction on the other. At any time, work will not be taking place at both locations at the same time.

The lowest tender bid submitted by Intrepid General Ltd. was withdrawn on July 5, 2019. Therefore, the next lowest tender bid was submitted by Clarke Construction Inc. and is within the budget estimate.

Areas of Strategic Focus and Critical Success Factors

The recommendations in this report support the following areas of strategic focus:

- Economic Prosperity: Chatham-Kent is an innovative and thriving community with a diversified economy
- A Healthy and Safe Community: Chatham-Kent is a healthy and safe community with sustainable population growth

- People and Culture:**
Chatham-Kent is recognized as a culturally vibrant, dynamic, and creative community
- Environmental Sustainability:**
Chatham-Kent is a community that is environmentally sustainable and promotes stewardship of our natural resources

The recommendations in this report support the following critical success factors:

- Financial Sustainability:**
The Corporation of the Municipality of Chatham-Kent is financially sustainable
- Open, Transparent and Effective Governance:**
The Corporation of the Municipality of Chatham-Kent is open, transparent and effectively governed with efficient and bold, visionary leadership
- Has the potential to support all areas of strategic focus & critical success factors**
- Neutral issues (does not support negatively or positively)**

Consultation

The Tenders were opened by the Purchasing Officer and reviewed by the Engineering and Transportation Division and by Stantec Consulting Ltd.

Financial Implications

Project fees associated with this contract will be funded as summarized in the following table:

Financial Implications
Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of Gleeson Line Bridge over Government Drain #1

Project Costs

Recommended Tender ^A (Including HST)	\$1,364,701.00
Less HST Rebate 11.24%	- \$ 135,745.48
Total Current Project Costs	\$ 1,228,955.52
Total Current Project Funding	\$ 1,228,955.52

Note A: Contingency, Material testing and Inspection, and watermain relocation are carried as allowances in the contract with a total cost of \$145,000; and is accounted for in the Recommended Tender.

Contingency allowance may or may not be expended and is recommended to address any unforeseen issues which present during the course of the project and are not covered by the contract specifications.

Materials Testing and Inspection allowance may or may not be expended and is recommended to test and inspect construction materials for compliance with the contract specifications during the course of the project.

The watermain relocation allowance may or may not be expended and is recommended to address a conflict with the existing watermain and new structure.

The bridge project costs listed above will be funded from Bridge Lifecycle Reserve.

Prepared by:

Reviewed by:

Jason Cikatricis, C.E.T.
Engineering Technologist,
Engineering and Transportation

Chris Thibert, P.Eng.
Director,
Engineering and Transportation

Reviewed by:

Thomas Kelly, P.Eng., MBA
General Manager
Infrastructure and Engineering Services

Consulted and confirmed the content of the consultation section of the report by:

Jennifer Scherle
Purchasing Officer

Attachments: Appendix A - Consultant's Letter of Recommendation

(RTC:\Infrastructure & Engineering\I&ES\2019\4152 – Tender Award Contract T19-208
Replacement of Gleeson Line Bridge over McDougall Drain and Rehabilitation of
Gleeson Line Bridge over Government Drain #1)



July 17, 2019
File: 165620160

Attention: Jason Cikatricis, C.E.T
Municipality of Chatham-Kent
Infrastructure and Engineering Services
315 King Street W.
Chatham ON, N7M 5K8

Dear Mr. Cikatricis,

Reference: REPLACEMENT OF GLEESON LINE BRIDGE OVER MCDOUGALL DRAIN (BRIDGE 'A') AND REHABILITATION OF GLEESON LINE BRIDGE OVER GOVERNMENT DRAIN NO.1(BRIDGE 'B') Contract No. T19-208

Six tenders were received and opened by the Corporation of the Municipality of Chatham-Kent (Chatham-Kent) Purchasing Division on Thursday, July 4, 2019 for the above noted project.

Right after the tender opening Intrepid General Limited (Intrepid), the low bidder, contacted Stantec and the Municipality and informed that a major mathematic error was made in one of the tender items and would like to withdraw the tender submission. On July 5, 2019 Intrepid submitted an official request to withdraw their bid via email and the request was accepted by the Municipality. On the same day, Chatham-Kent informed Clark Construction Inc., the second low bidder, that they are the new low bidder.

Consequently, there are five tender submissions in lieu of six. The five successful tenders are submitted by Clarke Construction Inc. (Clark), Facca Incorporated Inc. (Facca), Front Construction Industries (Front), Sterling Ridge Industries Inc. (Sterling) and South Shore Contracting of Essex County Inc. (South Shore). They also submitted the bid bonds for the value specified in the Tender Documents. The bonds have been retained by the Municipality. We have reviewed the tender results and our comments are noted below:

A. Tender Prices (Including H.S.T)

Tenderers	Alternative Price Deduction (HST excluded)	Total Tender Price with Alternative (HST included)
Intrepid General Limited ■	Deduct \$ 104,644.00	* \$ 1,110,188.28
Clarke Construction	No submission	\$ 1,364,701.00
Facca Incorporated	Deduct \$ 65,000.00	\$ 1,426,568.50
Front Construction	No submission	\$ 1,448,600.00
Sterling Ridge Industries	No submission	\$ 1,498,380.00
South Shore Contracting	No submission	\$ 1,534,088.00

* Denotes adjusted total tender price

■ Denotes withdrew tender items



July 17, 2019

Mr. Jason Cikatricis

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**Reference: REPLACEMENT OF GLEESON LINE BRIDGE OVER MCDOUGALL DRAIN (BRIDGE 'A') AND
REHABILITATION OF GLEESON LINE BRIDGE OVER GOVERNMENT DRAIN NO.1 (BRIDGE 'B')
Contract No. T17-248**

B. Tender Forms

a) Clarke Construction Inc.

- Statements A, B and C are complete with satisfactory information
- Sub-contractors as listed are satisfactory except the precast open footing culvert and precast concrete retaining wall is to be supplied by IECS (Internal Erosion Control Systems). After discussion with IECS, we have confirmed that IECS is a CSA certified manufacturer of structural pre-cast concrete culvert structure and precast gravity retaining wall in accordance with specification requirement;
- For the alternative price in Item "AA", Clarke has no submission for cast-in-place concrete culvert construction.

b) Facca Incorporated Inc.

- No informalities were noted in the Form of Tender.
- Statements A, B and C are complete with satisfactory information. The proposed sub-contractors are satisfactory;
- Facca is a CSA certified manufacturer of structural pre-cast concrete;
- Facca provided a credit of \$65,000.00 (HST not included) for the alternative price in Item "AA".

c) Front Construction Industries

- Sub-contractors as listed are satisfactory;
- Statements A, B and C are complete with satisfactory information;
- Instead of list Sub-contractors, they put their "own force" for the supplier of "Precast Concrete Block Retaining Wall";
- There is no bid for alternative Item "AA" for "cast-in-place culvert construction".

d) Sterling Ridge Industries Inc.

- Statements A, B and C are complete with satisfactory information;
- Sub-contractors as listed are satisfactory except the precast concrete retaining wall is to be supplied by Underground Specialties in Windsor, which we have not worked with before. Underground Specialties can supply the gravity block retaining wall, but its shop drawings should be certified by professional engineer current licensed in Ontario;
- No unit prices for Tender items B10, B11, B12, B13 and B14 were noted;
- There is no bid for alternative Item "AA" for "cast-in-place culvert construction".



July 17, 2019

Mr. Jason Cikatricis

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**Reference: REPLACEMENT OF GLEESON LINE BRIDGE OVER MCDOUGALL DRAIN (BRIDGE 'A') AND
REHABILITATION OF GLEESON LINE BRIDGE OVER GOVERNMENT DRAIN NO.1 (BRIDGE 'B')
Contract No. T17-248**

e) South Shore Contracting of Essex County Inc.

- Statements A, B and C are complete with satisfactory information;
- Sub-contractors as listed are satisfactory;
- There is no bid for alternative in Item "AA" for "cast-in-place culvert construction".

We received the Form of Tender information in PDF format. Therefore, we are not able to verify whether all tender forms are sealed with the proper Corporation Seal.

A summary of tender results is attached for your reference.

C. Comments and Recommendation

1. With respect to the base bid and the alternative prices, the lowest tender price of **\$1,364,710.00** (Including H.S.T.) was submitted by Clarke Construction Inc. The second lowest tender price of **\$1,426,568.50** (Including H.S.T.) was submitted by Facca Incorporated Inc. The cost difference between those two tenders is **4.3%** which is considered excellent bidding for the type of construction involved.
2. With respect to the alternative prices, Clarke Construction Inc. did not have a submission for cast-in-place concrete construction option, but Facca Incorporated Inc. provided a credit of **\$65,000.00** (H.S.T. not included). However, considering of the credit, the final tender price submitted by Facca is still higher than Clark's submission.
3. We have worked with Clarke Construction Inc on a few bridge projects in the Municipality of Chatham-Kent before, their workmanship and experience are satisfactory. The second lowest bidder, Facca Incorporated Inc., has the experience and ability to complete the present contract.
4. The contractors' response to the tender call and the number of tender submissions is satisfactory. All the tender prices (Including H.S.T.) are close to the Engineer's estimate and the qualified low bidder's price is **3.4%** lower than Engineer's estimated of **\$1,412,500.00** (Including H.S.T.). There is no need to re-tender this project.
5. It is our recommendation to award the contract to Clarke Construction Inc. for a total tender price of **\$1,364,710.00** (Including H.S.T.).

We trust you will find the above tender evaluation satisfactory. Please contact the undersigned if you have any questions.



July 17, 2019

Mr. Jason Cikatricis

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**Reference: REPLACEMENT OF GLEESON LINE BRIDGE OVER MCDOUGALL DRAIN (BRIDGE 'A') AND
REHABILITATION OF GLEESON LINE BRIDGE OVER GOVERNMENT DRAIN NO.1 (BRIDGE 'B')
Contract No. T17-248**

Regards,

STANTEC CONSULTING LTD.

A handwritten signature in black ink, appearing to read 'Li Zhang', with a long horizontal stroke extending to the right.

Li Zhang, Ph.D, P.Eng. PE
Structural Engineer
Phone: (519) 966-2250 Ext. 238
Fax: (519) 966-5523
Li.Zhang@stantec.com

Attachment: Summary of Tender Results

c. Cc List

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