

NO: R002

COUNCIL DATE: January 11, 2021

REGULAR COUNCIL

TO: **Mayor & Council**

DATE: **January 6, 2021**

FROM: **General Manager, Engineering**

FILE: **1718-042/11**

SUBJECT: **Award of Contract No. 1718-042-11
32 Avenue Arterial Widening from 154 Street to 160 Street**

RECOMMENDATIONS

The Engineering Department recommends that Council:

1. Award Contract No. 1718-042-11 to Jacob Bros Construction Inc. in the amount of \$7,488,574.50, including GST, for 32 Avenue Arterial Widening from 154 Street to 160 Street;
2. Set the expenditure authorization limit for Contract No. 1718-042-11 at \$8,238,000.00, including GST and contingency; and
3. Authorize the General Manager, Engineering to execute Contract No. 1718-042-11.

BACKGROUND

This contract represents the first phase of a multi-phased program for congestion relief in South Surrey and providing multimodal infrastructure on 32 Avenue from King George Boulevard to 196 Street. After this phase, the next segment to be widened will be 32 Avenue from King George Boulevard to 152 Street including improvements to the Highway 99 and 32 Avenue Interchange which will be completed in partnership with the Ministry of Transportation in Infrastructure.

SCOPE OF WORK

The construction package related to this contract consists of the widening of 32 Avenue from 154 Street to 160 Street from two lanes to four lanes, including pedestrian and cycling infrastructure, to support growth and increased traffic volumes. As well, the drainage culvert located at Titman Creek and 32 Avenue will be replaced and upsized to improve fish passage.

The project locations are listed in the following table, which are also illustrated on the map attached to this report as Appendix “I”:

Map Reference Number	Project #	Project Description	Location
1	R-10048	32 Avenue Arterial Widening from 154 Street to 160 Street	32 Avenue: 154 Street to 160 Street
2	D-14112	Culvert and headwall upgrades	32 Avenue and Titman Creek

The Contract permits construction from 7:00 a.m. to 10:00 p.m., Monday through Friday, in compliance with the *Surrey Noise Control Bylaw, 1982, No. 7044*. The Contract does not include an option for contractors to work 24-hours a day, seven days a week as the work is located within a residential area.

The contract work is expected to start in February 2021 and be completed by September 2021.

Project Innovation

At the December 12, 2019 Regular Council, as part of Corporate Report No. R233; 2019 attached to this report as Appendix “II”, staff discussed piloting an innovative tender and construction technique called “A+B Bidding” for this Contract in an effort to reduce the cost and duration of this contract. A+B Bidding requires contractors to bid on the time and dollar amount to complete the project.

Most recently, staff successfully piloted the “A+B Bidding” for the 64 Avenue Arterial Widening from 184 Street to Fraser Highway. As a result of utilizing this procurement technique, the City realized a 30% reduction in the contract duration from an estimated 12-month contract duration to an eight-month contract duration. Staff implemented the same innovative procurement technique for the 32 Avenue Arterial Widening from 154 Street to 160 Street.

For this project, the Engineers (McElhanney Consulting Services Ltd.) anticipated duration was 200 days to complete the project. The contractors applied the A+B Bidding and offered a reduction in the number of days (from 200 days to 120 days) to complete the project.

TENDER RESULTS

Tenders for the subject Contract were opened on December 17, 2020 with the following results:

	<i>Contractor</i>	<i>Tendered Amount (incl. GST)</i>	<i>Corrected Amount (incl. GST)</i>	<i>Days to Complete Project</i>
1.	Jacob Bros. Construction Inc.	\$7,488,547.50	No Change	120
2.	B&B Contracting (2012) Ltd.	\$8,126,600.00	No Change	176
3.	Hanna Infrastructure Ltd.	\$8,251,812.45	No Change	195
4.	Drake Excavating (2016) Ltd.	\$8,527,979.47	\$8,518,310.41	200
5.	BD Hall Constuctors Corp.	\$8,620.403.40	No Change	195
6.	Lafarge Canada Inc.	\$9,027,381.30	\$9,027,381.40	200
7.	Wilco Civil Inc.	\$9,050,220.69	No Change	200
8.	Mainland Civil Site Services Inc.	\$9,298,776.99	\$9,203,699.70	190
9.	Tybo Contracting Ltd.	\$9,405,865.35	\$9,229,149.93	200
10.	Eurovia British Columbia Inc.	\$10,000,598.12	\$9,971,837.56	190
11.	Jace Cewe Construction Ltd.	\$10,490.700.15	\$10,452,489.46	200

The Engineer's (McElhanney Consulting Services Ltd.) pre-tender estimate was \$8,972,557.00 including GST.

EVALUATION

Under the A+B method, each bid submitted consist of two components:

- “A” – Traditional dollar amount for the contract items; and
- “B” – Days bid to complete the work.

The number of “B” days is multiplied by the Road Interference Cost and added to the “A” component to obtain the Tender Evaluation Price = $A + (B \times \text{Road Interference Cost/Day})$. The Road Interference Cost is an estimate of the additional costs incurred by motorists as a result of the increased travel time resulting from the construction work.

The City's consultant reviewed the tender submissions for accuracy and completeness. There was 6 arithmetic errors that had no bearing on the outcome of the tender process. All submissions included the required 10% bid bond and were signed on the Tender Form.

Based on the tender evaluation price, Jacob Bros. Construction Inc. Provides the best value to the City. Jacob Bros. Construction Inc. has provided a Consent of Surety for a Performance Bond and a Labour & Materials Bond, and agreed to complete the work within 120 working days. Jacob Bros. Construction Inc. past performance on similar work has been satisfactory. They have no outstanding legal claims against the City. It is recommended that Jacob Bros. Construction Inc. be awarded Contract No. 1718-042-11.

As a result of utilizing the A+B Bidding, the City realized a 40% reduction in the contract duration from an estimated 10-month contract duration to a 6-month contract duration.

SUSTAINABILITY CONSIDERATIONS

The work of this contract supports the objectives of the City's Sustainable Charter 2.0. In particular, this work relates to the Sustainability Charter 2.0 theme of Infrastructure by implementing street standards that minimize the negative impacts of transportation facilities on communities, while providing appropriate infrastructure in support of the City's transportation needs. Specifically, this Contract supports the following Desired Outcomes:

- All Infrastructure DO1: City facilities and infrastructure systems are well managed, adaptable and long lasting, and are effectively integrated into regional systems; and
- Transportation DO14: Goods movement throughout the city is efficient, and minimizes environmental and community impacts.

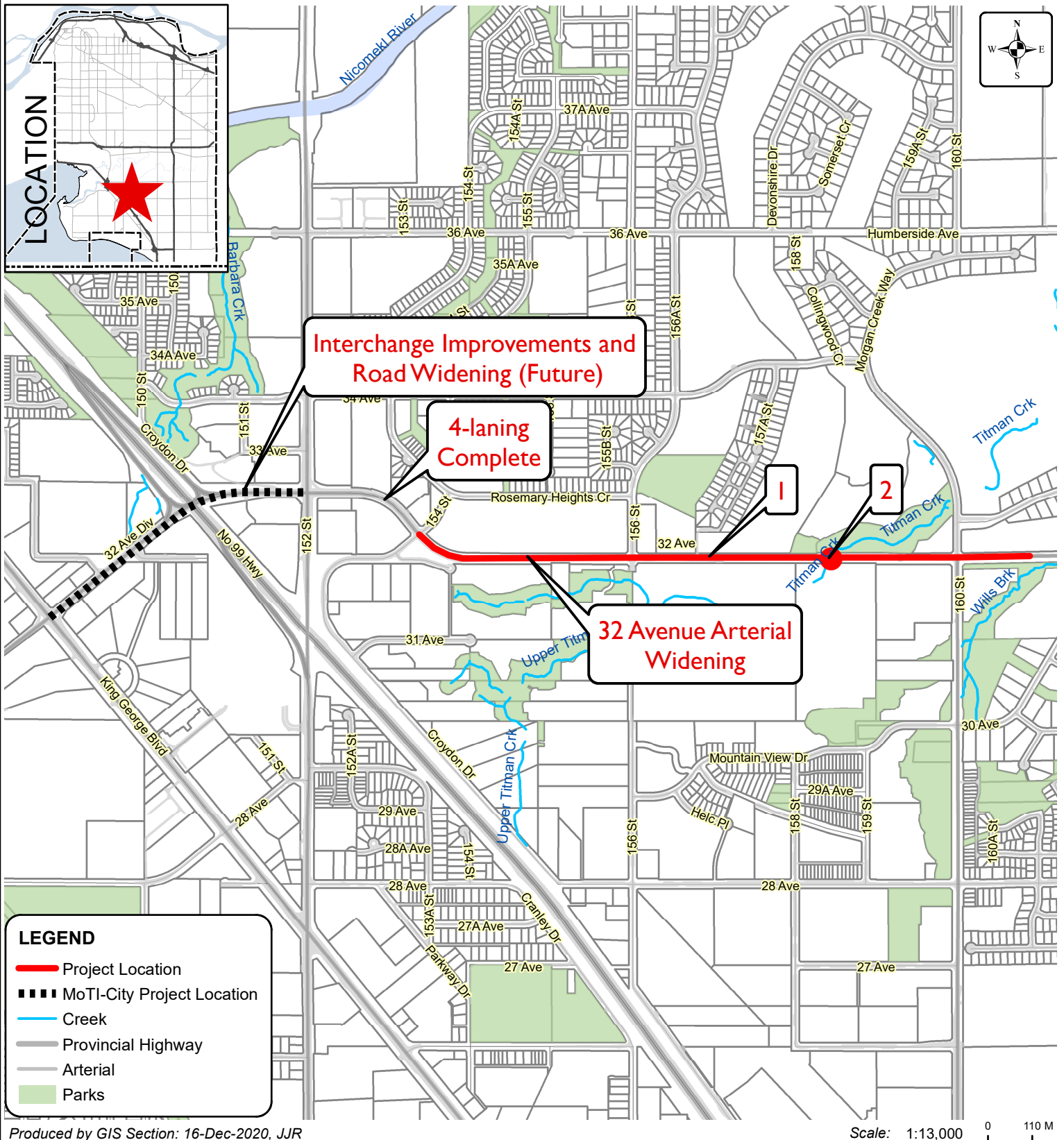
FUNDING

Funding for this Contract is available in the approved 2021 Transportation Budget

Scott Neuman, P.Eng.
General Manager, Engineering

VJ/JC/jb

Appendix "I" – Map of Locations – Contract No. 1718-042-11
Appendix "II" - Corporate Report No. R233; 2019



32 Avenue Arterial Widening from 154 Street to 160 Street

ENGINEERING
DEPARTMENT

CORPORATE REPORTNO: **R233**COUNCIL DATE: **December 16, 2019**

REGULAR COUNCILTO: **Mayor & Council**DATE: **December 12, 2019**FROM: **General Manager, Engineering**FILE: **o620-20 (CPP19)**SUBJECT: **Opportunities to Reduce the Duration and Costs of the Capital Infrastructure Projects**

RECOMMENDATION

The Engineering Department recommends that Council receive this report for information.

INTENT

The purpose of this report is to advise Council of the actions taken and those that are planned to reduce the duration and costs of the Engineering Capital Infrastructure Projects.

BACKGROUND

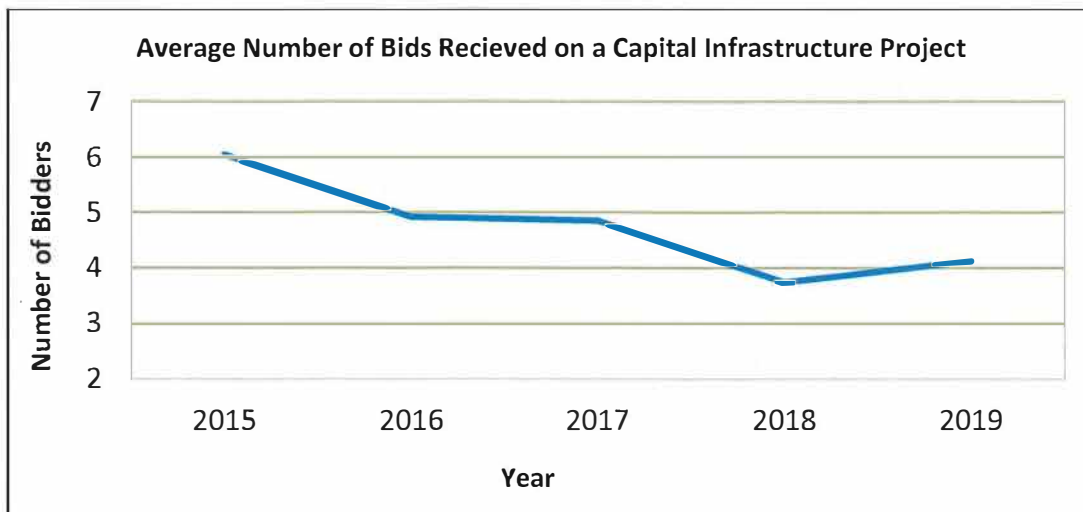
The annual Capital Infrastructure Program (the "Program") delivers projects included in the Engineering Department's 10-Year (2018-2027) Servicing Plan (the "Projects"). Annually, the Program typically has a value of \$75 to \$115 million. Projects planned for construction next year are outlined in the City's 2020 Capital Construction Program, which is scheduled to be published in January 2020.

In addition to projects delivered by the City, there are investments made to City infrastructure through Land Development projects. Furthermore, major infrastructure projects are planned within the City and within the region in the near future, such as the:

- Skytrain extension along Fraser Highway;
- Pattullo Bridge Replacement;
- Metro Vancouver projects;
- Broadway Subway Project; and
- YVR Airport Expansion.

DISCUSSION

With major regional and municipal capital infrastructure projects planned, the region is competing for resources from the construction industry who have indicated that they are challenged to meet increasing demands for construction services. As a result, the construction industry has increasingly become more selective in the projects pursued and their pricing is reflective of the increase in demand for construction services. As illustrated below, the average number of bidders the City has received on past projects has generally been declining over the past five years.



Although there are other external factors that influence the number of contractors that participate in the City's construction contract bids, there are opportunities for the City to increase participation and address barriers which may discourage a contractor from participating in a bid for a Project.

Delivery of Capital Infrastructure Program

Traditionally, Projects are delivered in a three-stage process of: design by an engineering consultant; bid through a publicly advertised tendering process; and built by a contractor with the contract awarded to the lowest bid price. Typically, it takes two to four years to deliver a Project from when it is initiated, with the design of a project taking one to three years depending on the complexity, the need to acquire lands to construct the project, and external approvals required for the project.

To reduce the cost and duration of each Project, staff consulted with major stakeholders, such as contractors who commonly work for the City, member municipalities, major material suppliers, engineering consulting firms, and conducted a literature research of best practices.

As a result of these efforts, staff have identified various actions for implementation to reduce construction costs and durations for each Project in the Program. These actions can be summarized as follows:

- Permitting road closures;
- Avoiding relocating third-party utilities (BC Hydro, Telus, FortisBC, etc.);
- Avoiding impacts to watercourses, which requires Provincial environmental approvals;
- Revised contract provisions;
- Innovative contracting techniques;
- Extended hours of work; and
- Other minor contract provisions and optimization changes.

A complete summary of each action is described in Appendix "I".

Next Steps

A number of identified actions have been implemented in 2019, and other actions for implementation in 2020 will include:

- Alternative bidding methods, such as A+B Bidding on select projects, to promote innovation, collaboration, and potential to reduce construction costs and durations;
- Disposal of select materials (asphalt and concrete) for certain projects at the City's Stokes Pit site so that the Engineering Operations Division may recycle this material for reuse;
- Modifying project designs to avoid the relocation of utility poles, impacts to watercourses, and land acquisitions on a project case-by-case basis; and
- Optimize the design phase processes by improving the project management process.

To measure the success of these actions, staff have established the following metrics for the Program:

- Number of bidders participating in a capital infrastructure project, with the aim to receive a higher participation for bids in 2020 than in past years;
- Contract durations when measures such as A+B Bidding, road closures, and extended hours of work are implemented, with the aim to reduce the duration of a project;
- Cost associated with third-party utility relocations (i.e., BC Hydro, Telus, FortisBC, etc.) with the aim to reduce the cost of relocations for major road widening projects; and
- Project schedules associated with third-party utility relocations for major road widening projects, with the aim of eliminating project delays associated with said relocations.

SUSTAINABILITY CONSIDERATIONS

The Engineering Department's actions to reduce the duration and cost of the Program supports the objectives of the City's Sustainability Charter 2.0. In particular, this work relates to Sustainability Charger 2.0 themes of Infrastructure. Specifically, this work supports the following Desired Outcome ("DO") and Strategic Direction ("SD"):

- All Infrastructure DO2: Infrastructure systems provide safe, reliable and affordable services; and
- Materials and Waste SD13: Work with local businesses and organizations to maximize the recovery and reuse of local materials and waste products as part of the circular economy.

CONCLUSION

The cost and duration of construction projects have been increasing. Following consultation with the construction industry and other stakeholders, several actions have been taken in 2019, and several more are planned 2020, to reduce the cost and duration of the City's Engineering Capital Infrastructure Projects.



Scott Neuman, P.Eng.
General Manager, Engineering

JA/VJ/cc

Appendix "I" – Opportunities to Reduce Construction Costs