
TO: Committee of the Whole

FROM: Duncan Taylor
Manager, Engineering Services

MEETING: May 14, 2019

FILE: 5330-20-CRFR&PSU

Subject: Chase River Forcemain Replacement – Engineering Scope Change

RECOMMENDATION

That the Board authorize staff to negotiate a revised fee with CH2M Hill Canada (now Jacobs Engineering) for engineering services for the Chase River Forcemain No.1 and City of Nanaimo Haliburton Street upgrades, not to exceed a total contract value of \$435,000 (excluding GST).

SUMMARY

Serious leaks in one of the Chase River wastewater forcemains have required that it be shut down and replaced on an expedited emergency basis. This critical infrastructure must be replaced in 2019 to ensure adequate forcemain capacity for the coming winter wet weather season.

In July 2018, the Regional District of Nanaimo (RDN) Board awarded the Detailed Engineering Services for the Chase River Forcemain No.1 Replacement and Pump Station Upgrade Project to CH2M Hill Canada (now Jacobs Engineering) for \$199,682 (excluding GST).

Following award of the engineering services contract, an opportunity was identified to partner with the City of Nanaimo (CoN) to coordinate CoN watermain replacement and road upgrades along this stretch of Haliburton Street. Combining these activities into one coordinated construction project allows the RDN and CoN to reduce overall cost and disruption to the taxpayer by coordinating engineering, procurement and construction resources.

In December 2018, the RDN and the CoN agreed to cost share the engineering design for the three projects, under the current RDN Engineering Services contract with CH2M Hill Canada. The CoN has agreed to pay 100% of approved engineering consultant costs associated with the design of the watermain and pedestrian/cycling facilities upgrades.

This report seeks Board approval for staff to negotiate a revised CH2M Hill contract value of up to \$435,000 to incorporate design costs associated with the CoN scope of work, and additional design work required for the RDN forcemain project. The additional RDN scope includes design of an above ground valve station to allow the connection of the new forcemain to the pump station and the replacement of the aging system controller to ensure a reliable pumping system.

BACKGROUND

The Chase River Pump Station and Forcemains are critical infrastructure components of the southern communities wastewater infrastructure that receives wastewater from the south end of the City of Nanaimo. Wastewater from the pump station is conveyed approximately 1.1 kilometers northward beneath Haliburton Street to the Nanaimo Interceptor Pipeline through twin 450 mm diameter ductile iron pipes (Chase River Force Mains No. 1 and 2). The forcemains were installed in 1980 and 1998 respectively.

Serious leaks the Chase River Wastewater Forcemain #1 have required that it be shut down and replaced on an expedited emergency basis. This project was advanced as a high priority for completion in 2019 before the wet weather season to eliminate the current risk of wastewater spills from the system. The engineering was expedited by combining the pre-design and detailed design into one services contract. It was anticipated that the initial contract scope would need to be revised as the design proceeded. In July 2018, the RDN Board awarded the Detailed Engineering Services for the Chase River Forcemain No.1 Replacement and Pump Station Upgrade Project to CH2M Hill Canada for \$199,682 (excluding GST).

Following the award of the engineering services contract, an opportunity was identified to partner with the City of Nanaimo (CoN) to coordinate CoN watermain replacement and road upgrades along this stretch of Haliburton Street. Combining these activities into one coordinated construction project allows the RDN and CoN to reduce overall cost and disruption to the taxpayer by coordinating engineering, procurement and construction resources.

Design and construction tendering are proceeding under an extremely tight schedule to ensure the work can be completed prior to the wet weather season, and winter shutdown of asphalt plants (anticipated end of October).

City of Nanaimo Scope of Work.

The Chase River Forcemain No. 1 (CRFM1) installation beneath Haliburton Street will require the removal of the asphalt surface and road closure during construction. The CoN Transportation Masterplan identifies the same section of Haliburton Street for a dedicated pedestrian/cycling path (see image below) and the CoN Capital Plan includes replacement of the aging asbestos cement watermain. The CoN has elected to undertake the multi-use path and water main replacement work on Haliburton Street to correspond with the timing of the RDN forcemain replacement, in order to reduce overall cost and disruption to the taxpayer.



In December 2018, the RDN and the CoN agreed to cost share the engineering design for the three projects, under the current RDN Engineering Services contract with CH2M Hill Canada. A change order for design fees in the amount of \$81,205 was negotiated between RDN, CoN, and CH2M Hill to undertake design work associated with the pedestrian/cycling path and watermain replacement. Additional design work associated with storm system and road design has recently been identified at an estimated cost of up to \$39,285, subject to approval by CoN staff.

RDN Scope of Work

In July 2018, the RDN Board awarded the Detailed Engineering Services for the Chase River Forcemain No.1 Replacement and Pump Station Upgrade Project to Jacobs Engineering for \$199,682 (excluding GST).

Through the design process, CH2M Hill has identified changes required to the valve station and electrical system design, not anticipated in the original expedited engineering scope, to allow the new forcemain to be commissioned without risk of overflows at the pump station during tie-in of the new forcemain to the pump station. This work includes relocating the valve chamber and variable frequency drive and associated controls/electrical components. A change order in the amount of \$86,741 has been negotiated between RDN and CH2M Hill to complete this work.

ALTERNATIVES

1. That the Board authorize staff to negotiate a revised fee with CH2M Hill Canada for engineering services, for the Chase River Force Main No.1 and City of Nanaimo Haliburton Street upgrades, not to exceed a total contract value of \$435,000 (excluding GST).
2. Defer the proposed additional engineering. This will result in: significant risk of environmental spills during connection of the new force main to the existing wastewater system; lost partnership opportunity with CoN; and higher ultimate cost and disruption to the taxpayer.

FINANCIAL IMPLICATIONS

The proposed contract value of \$435,000 is available in the total 2019 project budget for the Chase River Forcemain Project. The City of Nanaimo has agreed to pay their portion of the project expenditures to the RDN.

The City of Nanaimo portion of the proposed maximum contract value is up to \$120,490, comprised of:

- \$81,205 (previously approved scope)
- \$39,285 (scope revision – expenditure subject to CoN approval)

The RDN portion of the proposed maximum contract value is up to \$314,423 comprised of:

- \$199,682 (original contract amount)
- \$86,741 (current change order design for new valve station and system controller)
- \$28,000 (10% contingency)

The additional RDN scope includes design of an above ground valve station to allow the connection of the new forcemain to the pump station and the replacement of the aging system controller to ensure a reliable pumping system.

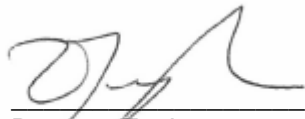
STRATEGIC PLAN IMPLICATIONS

The upgrade of the Chase River Forcemain; Pump Station and Haliburton Street infrastructure directly supports the Board Key Strategic Areas of:

Environmental Stewardship: This project will upgrade existing infrastructure, reducing the risk of accidental discharge of untreated wastewater to the environment.

Growth Management: The Chase River Pump Station and Force Main are critical infrastructure assets. Upgrading and maintaining this crucial part of the wastewater management system are vital components of the RDN's Asset Management Plan.

People and Partnerships: Through the partnership with the City of Nanaimo, we can optimize the construction of buried infrastructure and provide a tangible benefit to the community with the addition of a safe multi-use pathway along a section of Haliburton Street.



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April 19, 2019

Reviewed by:

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- R. Alexander, General Manager, Regional and Community Utilities
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