

NO: **R058** COUNCIL DATE: **April 2, 2012**

REGULAR COUNCIL

TO: **Mayor & Council** DATE: **March 29, 2012**
FROM: **General Manager, Engineering** PROJECT FILE: **4809-309/11**
SUBJECT: **Increase in the Expenditure Authorization for Contract M.S. 4809-309-11 –
GCL Contracting & Engineering Inc. – Pattullo Pump Station Replacement**

RECOMMENDATION

The Engineering Department recommends in relation to Contract M.S. 4809-309-11, for the replacement of the Pattullo drainage pump station, that Council approve an increase of \$1,011,000.00 (from \$3,984,000.00 to \$4,995,000.00) in the expenditure authorization limit to cover the costs of extra work that was necessary to complete the project.

INTENT

The purpose of this report is seek Council approval for an increase in the expenditure authority related to the contract by which the Pattullo Pump Station was replaced.

BACKGROUND

GCL Contracting & Engineering Inc. (GCL) was retained by the City under Contract M.S. 4809-309-11 in March 2010 to carry out the construction of the replacement of the Pattullo drainage pump station and discharge piping (see the map attached as Appendix I). The construction work area in relation to installing the new pump station and related works is constrained on one side by a railway trestle, on other sides by at-grade railway tracks, by the Fraser River flood control dyke, by storm water channels and by the existing Pattullo Pump Station and discharge piping, and is also affected by poor soil conditions.

Construction proved to be extremely challenging; however, the project is now complete.

GCL has now made claims to the City for costs resulting from third-party imposed delays and for increases in the scope of work of the Contract, as follows:

- Delay caused by CN Railway in relation to addressing issues arising during construction;
- Delay experienced in receiving approval for installation of discharge piping through the Fraser River Flood Control Dyke from the Provincial Inspector of Dykes;

- Provision of a temporary bypass pumping system and associated night time security guard; and
- Provision of a transformer and electrical service connection that was originally to be provided by B.C. Hydro.

The total value of the claim from GCL was \$1,341,337.76 including HST.

DISCUSSION

GCL were delayed and incurred extra costs due to a number of conditions beyond their control. They also incurred extra costs for additions to the scope of work of the contract. As a result of discussions, GCL has agreed to absorb portions of their claim costs in the amount of \$208,200.00. It has been agreed that the remaining portion of the claimed costs are justifiable for the reasons outlined below:

1. Soil conditions where the Pattullo Drainage Pump Station is located in the Bridgeview area are very poor, which required that the pump station be constructed on piling. During pile driving operations CN notified the City's contractor that the pile driving operation was causing settlement of their timber railway trestle located nearby. A number of alternatives were explored by the contractor for dealing with this issue; however, since CN was in the process of replacing the trestle and eventually replaced the section of railway trestle adjacent to the pump station, none of the alternatives were found to be less costly than waiting for CN to complete their work and paying for the delay. The cost of this delay amounted to \$100,520.00.
2. The discharge piping from the pump station must pass through the Fraser River Flood Control Dyke. This required the approval of the Provincial Inspector of Dykes. Delay in receipt of this approval prevented the installation of the discharge piping and the electrical service that extends above the discharge piping. This contributed to an increased duration and higher cost of temporary pumping.
3. The City constructed a channel from the Pattullo Pump Station's forebay to the Old Yale pump station in preparation for the contract works as a means to manage stormwater runoff flows during the summer and had planned to address winter stormwater runoff flows, if needed, through the provision of temporary pumps as a contingency item. When the construction extended beyond the summer of 2010, the risk of higher stormwater runoff and the increased potential for flooding of upstream private property with associated liability potential was deemed significant enough to proceed with standby pumping capacity. At the request of staff, the contractor provided a temporary pumping system for the Fall-Winter period of 2010-2011, including discharge piping works and night-time security, and removed the system in the summer 2011. Subsequently, it became necessary to reinstall the temporary pumping system for the Fall-Winter period of 2011-2012. The total cost of the pump installation/removal, rental, operation and security was \$726,759.00.
4. B.C. Hydro would not provide a power service connection for the pump station without a statutory right-of-way for their works. As this required the involvement of Crown land on the Fraser River foreshore, timing to obtain such a right-of-way became an issue. Therefore, the City agreed to supply the transformer, main switch, fuses, primary service

cables, transformer pad, system grounding, surge protection and resistance testing. (When the customer owns the transformer, B.C. Hydro charges a lower rate for the electricity and thus costs are ultimately recovered.) The total cost for these electrical works that were not originally anticipated in the contract was \$162,144.00.

Due to the high groundwater table adjacent to the Fraser River, a sheet-pile cofferdam around the pump station site was employed in the construction methodology as excavation shoring. Although designed in accordance with geotechnical investigation recommendations, the sheet pile cofferdam failed during construction. Post analysis determined that this was due to an unforeseen soil condition. Insurance claims have been made by the contractor and the City for the failure of the cofferdam. The Risk Management Division commissioned an independent engineering evaluation of the project, in support of the City's insurance claim. This evaluation concluded that there was no error or omission in the geotechnical investigation or design, and thus an insurance claim is justified. If the insurance claim is honoured, the temporary pumping and security costs will be reduced by \$102,187.47.

FUNDING

The Provincial and Federal Governments, through the Provincial Flood Protection Program and the Build Canada Plan, have provided funding in the amount of \$1,793,333.33 towards the Pattullo Drainage Pump Station Replacement. The remaining funding for this contract is available in the approved Capital Budget.

CONCLUSION

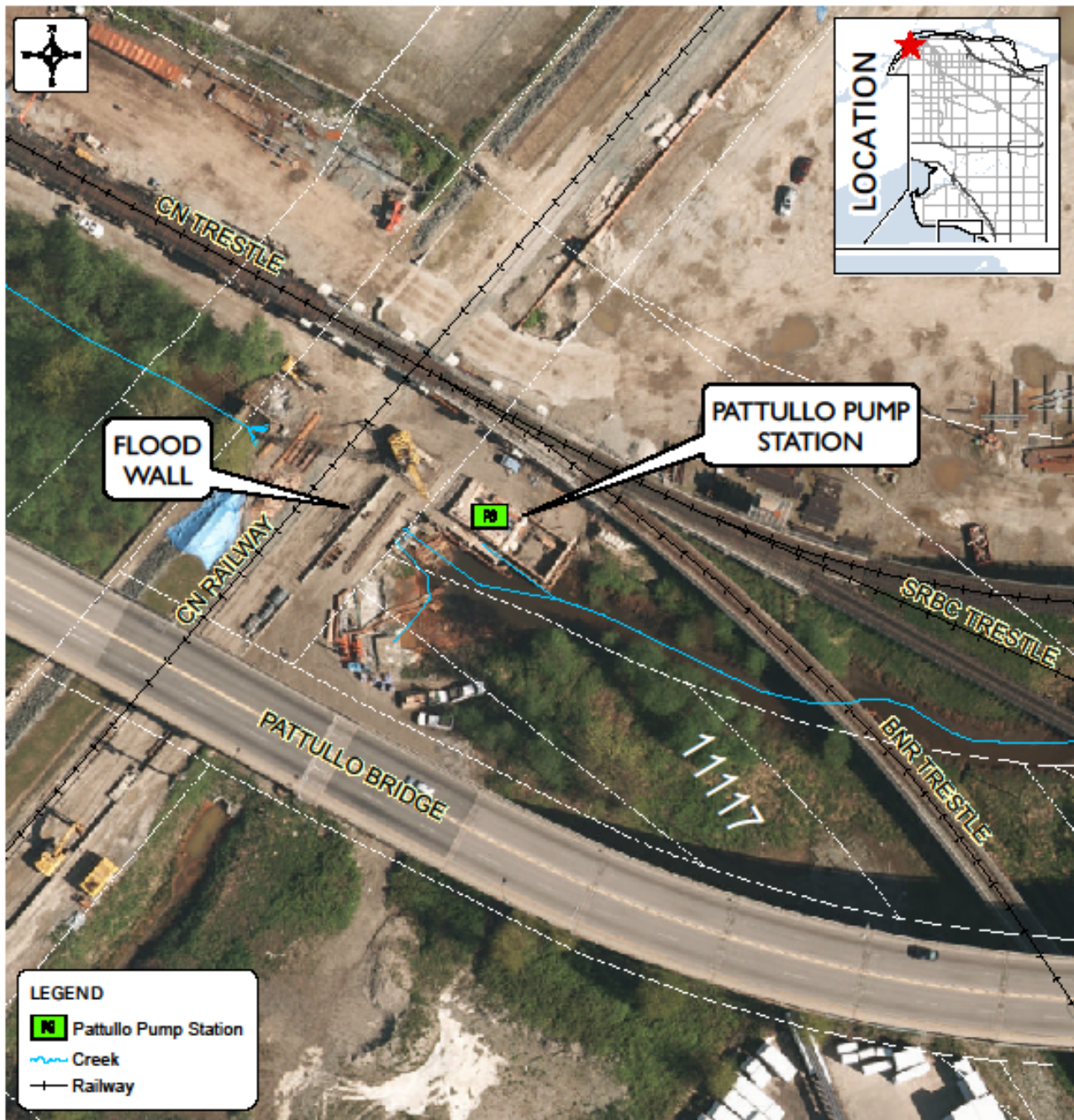
The City's Contractor, GCL Contracting & Engineering Ltd., was delayed and incurred extra costs in the construction of the Pattullo Drainage Pump Station Replacement due to conditions beyond their control and for items of work that went beyond the original scope of the contract. Based on the above discussion it is recommended in relation to Contract M.S. 4809-309-11 that Council approve an increase of \$1,011,000.00 (from \$3,984,000.00 to \$4,995,000.00) in the expenditure authorization limit to cover the costs of extra work that was necessary to complete the project.

Vincent Lalonde, P.Eng.
General Manager, Engineering

VL/KZ/RS/brb

Appendix I - Site Plan of Pattullo Drainage Pump Station

APPENDIX I AERIAL PHOTOGRAPH OF SITE



LEGEND

- Pattullo Pump Station
- Creek
- Railway

Produced by GIS Section: March 13, 2012, AW8

Date of Aerial Photography: April 2011



PATTULLO DRAINAGE PUMPSTATION LOCATION MAP

**ENGINEERING
DEPARTMENT**

The data provided is compiled from various sources and IS NOT warranted as to its accuracy or sufficiency by the City of Surrey.
This information is provided for information and convenience purposes only.
Lot sizes, Legal descriptions and encumbrances must be confirmed at the Land Title Office.

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