

To: Electoral Area Services Committee

Date: 2020-02-13

From: Katarina Duke, Engineering & Community Services Tech

File No: 5315-20

**Subject:** Procurement of Rock for Nicomen Island Shoreline Protection Project

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## RECOMMENDATION

**THAT** the Fraser Valley Regional District Board direct staff to proceed with the procurement of rock for the Nicomen Island Improvement District (NIID) dike and drainage improvement project from the NIID owned rock quarry.

### STRATEGIC AREA(S) OF FOCUS

Support Environmental Stewardship  
Support Healthy & Sustainable Community  
Provide Responsive & Effective Public Services

### PRIORITIES

Priority #3 Flood Protection & Management

## BACKGROUND

Nicomen Island is protected from Fraser River flooding by a 35km network of dike, including five pump stations and a series of internal drainage infrastructure. This flood protection infrastructure is the responsibility of the Nicomen Island Improvement District (NIID). In 2015 the Ministry of Agriculture retained Golder Associates Ltd. (Golder) to undertake a study of the flood vulnerability of the existing NIID infrastructure and provide mitigation options to reduce the risk.

As a result, in March 2017 the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) and Ministry of Transportation and Infrastructure (MOTI) signed into a funding agreement with the Fraser Valley Regional District (FVRD) to complete the works identified in the 2015 Golder report. The FVRD is undertaking this project as NIID is a volunteer organization and does not have the resources to undertake a project of this magnitude.

This led to the forming of a Steering Committee (SC) consisting of NIID, FVRD staff, Leq'á:mel First Nation, and Area G Director Al Stobbart to collaboratively decide which works should be prioritized for improving drainage and flood protection. One item agreed upon by the SC is to construct 850m of rock armoring to protect a section of shoreline along the Fraser River that is particularly susceptible to erosion. Golder has been retained to design the shoreline protection.

## DISCUSSION

NIID owns a rock quarry with the capability to provide the rock meeting design and industry standards. Its close proximity to the work zone reduces costs associated with hauling to be reduced.

By allowing NIID to produce the rock for the project, funds saved on hauling could be reallocated to other aspects of the project and also provide NIID further capacity to perform ongoing dike and drainage maintenance required under the Dike Maintenance Act upon project completion.

Approximate rock quantities based on Golder's ongoing design works are:

Type 1 Cobbles (Filter) Material: 23,000 m<sup>3</sup> (62,000 tonne)

Type 2 Riprap Material: 24,000 m<sup>3</sup> (64,000 tonne)

An added benefit of utilizing the NIID rock pit is the reduction of two major environmental threats related to hauling, air and noise pollution, as well as the contributions to land-use related environmental stresses and to the environmental impacts of accidents.

Assuming rock costs are similar to other pits, the hauling distances from Armstrong Sand & Gravel (the second nearest rock pit from the area of work) and the NIID rock pit are approximately:

NIID Rock Pit: 6 km

Armstrong Sand & Gravel: 24 km

Therefore, in terms of hauling and assuming equivalent trucking costs per kilometer from each location, use of the NIID rock pit would be 4 times more cost effective than Armstrong Sand & Gravel.

If the Board provides direction to procure rock from NIID, the production of rock will commence. It is anticipated that it will take NIID several months to produce the necessary rock. Work is currently scheduled to take place in winter 2021.

## **COST**

The work to produce the rock will be completed by NIID on a time and material basis. A cost estimate has not been provided for NIID to complete this work.

## **COMMENTS BY:**

**Sterling Chan, Manager of Engineering & Infrastructure:** Reviewed and Supported.

**Tareq Islam, Director of Engineering & Community Services:** Reviewed and supported.

**Mike Veenbaas, Director of Financial Services:** Reviewed and supported.

**Jennifer Kinneman, Acting Chief Administrative Officer:** Reviewed and supported.