Fraser Valley Regional District

CORPORATE REPORT

To: Fraser Valley Regional District Board
From: Tareq Islam, Director of Engineering & Utilities

Date: 2023-09-28
File No: 1855-30

Subject: Electoral Areas Flood Protection Gap Analysis and Infrastructure Policy Framework

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RECOMENDATION

THAT the Fraser Valley Regional District (FVRD) Board approve a sole-sourced purchasing agreement in an amount not to exceed $216,000.00 with the selected proponent, Urban Systems Ltd., to assist in Electoral Areas Flood Protection Gap Analysis and Infrastructure Policy Framework;

AND THAT the FVRD Board authorize its signatories to execute a contract with Urban Systems Ltd. for these services, funded by a provincial grant received on January 23, 2023.

BACKGROUND

The Community Emergency Preparedness Fund (CEPF) comprises a range of funding channels designed to bolster the resilience of local governments, First Nations, and communities in their response to emergencies. This financial support is made available by the Province of British Columbia and is overseen by the Union of British Columbia Municipalities (UBCM). These funds are directed towards projects related to Disaster Risk Reduction-Climate Adaptation (DRR-CA).

The Province of British Columbia initiated a call for applications specifically for DRR-CA projects. The FVRD Board granted approval for the application on September 22, 2022. Subsequently, on January 23, 2023, the Evaluation Committee of the Community Emergency Preparedness Fund, responsible for assessing projects under the DRR-CA funding stream for the year 2022, awarded an amount of $216,000.00 to the Flood Protection Gap Assessment and Infrastructure Policy project.

DISCUSSION

Climate change has led to a significant rise in environmental hazards, particularly floods and debris flows, over recent years. BC, including the Fraser Valley Regional District (FVRD), has experienced an increase in such incidents, often attributed to extreme weather phenomena like atmospheric rivers. These weather events have been responsible for varying degrees of flooding and debris flows.

To address these challenges, the Disaster Risk Reduction-Climate Adaptation (DRR-CA) funding stream is specifically tailored to bolster the resilience of FVRD's Electoral Areas. Its primary goal is to mitigate

risks stemming from natural hazards like floods and debris flows by formulating and executing effective preparedness, mitigation, and adaptation strategies.

The Electoral Area Flood Gap Analysis project, a key initiative under this funding stream, encompasses the development of sustainable flood policies for Electoral Areas. These policies are instrumental in guiding service delivery, cost recovery mechanisms, and governance. Additionally, the project involves the prioritization of essential upgrades and initiatives pertaining to FVRD-owned flood and debris basin infrastructure. This comprehensive effort also includes risk mapping, assessments, planning, land use planning, and community education related to climate risks.

It is worth highlighting that the FVRD has been facing a recurring challenge of coping with severe weather events. A prominent example of this is the November 2021 Atmospheric River event, which inflicted significant damage upon FVRD's flood protection infrastructure.

Under the DRR-CA funding stream, two distinct projects have received approval, and they are as follows:

Category 1 Activities

Existing Flood Protection and Drainage Infrastructure Gap Analysis

As part of this project, we will conduct assessments on the current infrastructure sites within the Electoral Araes. These assessments will be based on an updated historical and climate change hydrological evaluation of the Electoral Lands. Utilizing the findings from this updated assessment, along with stakeholder input and the desired project outcomes, we will proceed to conduct a gap analysis. This will be followed by the development of a conceptual design and the establishment of a framework for addressing the identified gaps from a climate change perspective.

The infrastructure to be evaluated within the scope of this project includes:

- Baker Trails Village Debris Control Works
- Cascade-Carratt Creek Flood Protection Works
- Elbow Creek Flood Protection Works
- Elbow creek dam, fish ladder, and private intake structure
- Frosst Creek Flood Protection Works
- Rexford Creek Drainage and Debris Control (incl. Debris basin)
- Wilson Road Dike
- Popkum Drainage Service Areas
- FVRD owned storm sewer system
- Other flood related infrastructures

Flood Infrastructure Gap Analysis will consist of the following:

- Background Review
- Site Visit and Stakeholder Engagement
- Lidar Survey (Allowance)
- Level of Service Workshop with FVRD

- System Mapping
- Review Current Level of Service
- Historical and Climate Change Hydrologic Assessment
- Assess Gaps
- Prepare Conceptual Design

Prioritization of Projects

- Determine Tool for Prioritization and Adapt to FVRD
- Conduct Workshop w/ FVRD staff
- Rank Projects and Prepare Matrix

Category 2 Activities:

Flood Protection Service Delivery Policy

Currently, there is no comprehensive regional strategy in place for flood protection within the Fraser Valley Regional District (FVRD). To address this gap and enhance preparedness for potential climate-related disasters, we propose adopting a proactive planning approach.

Outlined below are the phases of the proposed project. The work plan, which has received approval from the Province, encompasses the following elements:

Review and Categorize Existing Practices and Systems

- Review Background Documentation
- Develop Infrastructure Database and Categorize Existing Systems
- Characterize Current Level of Service

Policy Formulation

- Develop Servicing Tools Available
- Legislative, Regulatory and Guideline Reviews
- Establish Objectives and Principles
- Policy Design and Development
- Develop Draft Policy Framework
- Policy Workshop with FVRD Staff and EASC
- Technical Memo: Policy Formulation

Bylaw Review and Recommendations

- Develop List of Affected Bylaws and Confirm Scope of Amendments
- Review Existing Bylaws

All existing bylaws related to flood protection and drainage infrastructure will be assessed. A list of affected bylaws will be determined based on the outcomes of the priority setting framework and

historical and climate change hydrologic assessment. It is anticipated the affected bylaws will include:

Zoning Bylaws and Official Community Plans (OCPs), Subdivision Development Control Bylaw, Flood Protection and Storm Sewer System Bylaws.

Other FVRD Bylaws that regulate, set policy, or provide guidance with respect to:

- Climate change
- Disaster mitigation and planning
- Green infrastructure
- Source control

This project adopts a comprehensive approach by prioritizing critical areas of concern associated with potential vulnerabilities in the Fraser Valley Regional District's (FVRD) flood protection infrastructure. Proactive risk mitigation of FVRD's flood protection systems will not only safeguard the region but also enable the efficient allocation of emergency resources to neighbouring communities when necessary.

Furthermore, to foster regional cooperation, FVRD staff will actively collaborate with other regional districts. This collaboration aims to facilitate a comparison of flood management approaches and gather valuable insights that can inform the project's outcomes.

Category 3 (Small Scale Structural Activities):

After the completion of Category 1 and Category 2 activities, the Fraser Valley Regional District (FVRD) will seek additional funding, with a potential allocation of up to $5.0 million. This funding will be earmarked for small-scale structural projects, which may involve new construction, modifications, or reinforcement of existing critical infrastructure owned by the province. The primary objective of these projects is to diminish the vulnerabilities to natural hazards and climate-related disasters.

Urban System Ltd. (USL) has direct experience developing policies related to FVRD's utility service provision at the regional scale. USL's experience includes the development of regional servicing policies and strategies.

Furthermore, USL has successfully undertaken both the Electoral Area's Water Gap Analysis and the Electoral Area's Sewer Gap Analysis projects, encompassing both capital works and policy development. Additionally, USL has provided valuable technical support for this project.

Staff propose to sole-source the work to USL In this instance, sole-sourced purchasing aligns with Section vii. of the sole-source provisions in the FVRD's Procurement Policy:

> *vii. where the work is a continuation or follow-up assignment most appropriately done by the original service provider;*

COST

Category 1: $150,000

Category 2: $66,000

Total = Category 1 + Category 2 = $216,000

Category 3: up to $5.0 million (application to be made after Category 1 and Category 2 Activities are completed)

COMMENTS BY:

Kelly Lownsbrough, Director of Corporate Services/CFO: Reviewed and supported.

Jennifer Kinneman, Chief Administrative Officer: Reviewed and supported.