

DRIF - Disaster Resilience & Innovation Funding Program**Expression of Interest**

DRIF Goal: First Nations and local government improve their resilience to natural and climate driven disasters through improved understanding of risks, vulnerabilities, and risk reduction options, and the development and implementation of non-structural and structural risk reduction projects.

This form is for reference only; please see the DRIF Program webpage for details on how to submit an EOI.

Section 1:

Primary Proponent: Cowichan Valley Regional District

Primary Proponent Name: As above

Authorized Representative Contact Information:

- Tracy Bowen
- Chief Financial Officer, CVRD
- 250-746-2573
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Project Contact Information:

- April Diver
- Manager of Emergency Operations and Planning, Emergency Management Cowichan (EMC), CVRD
- 250-710-7939
- April.Diver@emcowichan.ca

Partnering proponent(s): City of Duncan

Section 2:

Funding Streams:

- **Stream 2:** Structural (up to \$5M per proponent, maximum \$15M)

Project Title: EMCR DRIF 2025 Cowichan Region

Summarized Scope Statement:

- **Stream 2 structural project:** City of Duncan 3rd Street Culvert replacement project to manage flooding and water scarcity under new climate projections.

Project Type:

- New project

Related Hazards: Drought/water scarcity, flood.

Anticipated Start & End Dates: January 2, 2025 to December 31, 2027

Section 3:

Estimated Total Project Cost: \$1,850,000

Estimated DRIF Funding Program Request: \$1,850,000

Other Funding Sources Not Applicable

Section 4:

Ownership Declaration: The project will be in BC on land that the proponent has legal access to either through ownership, right of way, or other at the time the Shared Cost Agreement is signed. You can provide context in the project area description question that follows. Y/N

Location Description:

Stream 2 - City of Duncan

Section 5:

Rationale for Funding Request:

Range of events (Flooding – coastal, stormwater and fluvial - 2009, 2020, 2021, 2022, 2023).

Stream 2 - The proposed storm system (pipe twinning) along Third Street between Centennial Park and Canada Avenue is required to manage flood and storm surge runoff from a catchment area of 70.8 hectares with no overland flood route available. This area is currently in the flood fringe. Increasing events (and severity of events due to climate change) continue to overwhelm this area. The mitigation measure would increase flow efficiency and reduce flooding impact.

Estimated Number of People Impacted:

- **Stream 2** - 1 – 10,000

Impact to Community:

Stream 2 – The project aims to protect and mitigate flood impacts to a central section of Duncan's residential and business area. This area includes vulnerable populations (socio-economic vulnerabilities).

Critical Infrastructure Impacted

Stream 2 – This project is a direct mitigation of critical infrastructure for the City of Duncan.

Proposed Solution:

Stream 2 - Based on the results of the condition assessment the COD have opted to reuse the existing 900mm CSP which will be lined in the future. Several existing storm mains along Third Street are

proposed to be consolidated into one system which will twin the existing 900mm CSP pipe. The approximately 350m long twinned storm pipes inlet from the pond in Centennial Park, cross Canada Avenue, run along Duncan Street and discharge into the ditch near University Way, picking up several additional catchment areas along their alignments. During storm events, the pond acts as a stormwater detention system which provides some flow control into the piped systems, but some surcharging occurs during heavy rainfall. The reused and new storm mains will collect runoff from impervious surfaces and overland flow from developed residential and commercial properties.

Goal Alignment

Stream 2 – This project aligns with the goal of the funding program by apply a mitigation measure to a flood fringe area with a vulnerable population, where previous events have caused damage and where a 1-in-100-year event plus 20% climate change will now be addressed.

Rationale for Proposed Solution:

Stream 2 - The proposed storm system along Third Street between Centennial Park and Canada Avenue is required to manage runoff from a catchment area of 70.8 hectares with no overland flood route available. Analysis was performed with respect to the parameters specified in the City of Duncan Works and Services Bylaw No. 3158 and the analysis accounts for the 1-in-100-year major storm event (including an adjustment for climate change) to be maintained in the minor (piped) system due to lack of overland flood route. To adequately size the proposed storm sewer system in the area, the design flows in the system must be determined. To complete this, a Stormwater Management Model (SWMM) was utilized. The SWMM method was chosen because there is a complex drainage system proposed and a small pond in the system, for which the detention storage of is required to be utilized. Since this system is directly tied into Centennial Pond, the detention storage of the pond is key to understanding the hydraulics of the downstream storm sewers. Therefore, for this reason, a SCS Type 1A design storm was used in the hydraulic modelling to derive the proposed pipe sizing. The design storm was generated based on the North Cowichan IDF Station Rainfall Data (2019) return period rainfall amounts table. In addition, 20% was added to all rainfall intensities as part of climate change adaptation and resiliency best practices.

Section 6:

Engagement/Planned Engagement with First Nations and/or Indigenous Organizations Prior to Full Proposal:

The project and this application will be shared with First Nations in the region who have indicated an interest in emergency management activities. This includes Malahat Nation, Halalt First Nation, Ts'uubaa asat, Stz'uminus, Penelakut Tribe, and Cowichan Tribes.



Section 7:

Climate Adaptation: The project incorporates future climate conditions and considers climate change in the project methodology, including considering future impacts of the project on the environment as indicated above.

Section 8:

Authorized Representative (I am duly authorized to submit this Expression of Interest on behalf of the Primary Proponent)

Accuracy of Information (I confirm, on behalf of the Primary Proponent, that the information contained in this Expression of Interest is accurate)