

Community Emergency Preparedness Fund

Flood Risk Assessment, Flood Mapping &
Flood Mitigation Planning

2019 Application Form

Please complete and return the application form by **February 22, 2019**. All questions are required to be answered by typing directly in this form. If you have any questions, contact cepf@ubcm.ca or (250) 387-4470.

SECTION 1: Applicant Information	AP (for administrative use only)
Applicant: City of Quesnel	Date of Application: February 22, 2019
Contact Person*: Tanya Turner	Position: Director of Development Services
Phone: (250) 992-2111	E-mail: tturner@quesnel.ca

* Contact person must be an authorized representative of the applicant.

SECTION 2: Project Summary
<p>1. Name of the Project: Update Floodplain Mapping</p>
<p>2. Type of Project. Please identify each component you are applying for:</p> <p><input type="checkbox"/> Flood Risk Assessment</p> <p><input checked="" type="checkbox"/> Flood Mapping</p> <p><input type="checkbox"/> Flood Mitigation Planning</p>
<p>3. Project Cost & Grant Request:</p> <p>Total Project Cost: \$241,800.00 Total Grant Request: \$150,000.00</p> <p>Have you applied for or received funding for this project from other sources (i.e. National Disaster Mitigation Program or Gas Tax)?</p> <p>We have applied for this project under the National Disaster Mitigation Program (Intake 5). The City was notified in October 2018 that the application had been shortlisted with the final decision about which projects will be funded expected in April 2019.</p>

4. Project Summary. Please provide a summary of your project in 150 words or less.

The work will involve providing updated flood mapping for the City of Quesnel. This mapping can then be used to help update the risk assessment and in community and land development planning. The 1992 floodplain mapping does not consider the impacts of climate change so completing the update will also allow for that important consideration in the analysis.

SECTION 3: Detailed Project Information

5. Project Area. Describe the proposed project area (location, size, population, land use, etc.).

Map indicating the location of the proposed project must be included with this application.

The City of Quensel (population 10,007) is the focus area of the work. The community is the service area for two nearby First Nations (Lhtako Dene Nation - population 163 and Nazko First Nation - population 407) and the surrounding unincorporated areas (e.g. Bouchie Lake, Red Bluff and Dragon Lake communities with total population of approximately 4,000).

Significant wildfires have occurred in the watershed, especially to the northwest of the City. No permanent flood protection has been completed in the last 10 years, but temporary dikes have been put in place during some high water events in the last decade. It is not known how the impacts to the watershed or climate change will impact the future risks of flooding.

6. Proposed Activities.

- a. What specific activities will be undertaken as part of the proposed project? Please refer to Section 4 of the Program & Application Guide for eligibility and note that activities must align with the required workplan and budget.

Refer to attached work program for detailed methodology. The following is a summary of the activities

- 1) Project Start-up: City and Consultant start-up meeting and site tour, followed by gathering and reviewing background material
- 2) Climate Adaption Review: Calculate regional runoff, establish baseline climatic conditions and identify climate change adaption
- 3) Field Surveys: Complete bathymetric survey of rivers and survey of creek
- 4) Initial Stakeholder Engagement: Prepare for and complete Project Workshop #1 and first phase of stakeholder engagement
- 5) Flood Map Creation and Analysis: Computer model creation and flood map preparation, channel stability assessment, update Risk Assessment Information Template, flood mitigation planning and cost estimates
- 6) Stakeholder Engagement: Present findings and gather input, conduct meetings and pop-up displays for public engagement
- 7) Final Reporting: Compile deliverables in draft report and review, submission of final report

- b. List any potential implementation risks that may impact the ability to deliver on the project, and explain what mitigation measures are in place to address them (e.g. staff capacity, procurement, etc.).

Risk 1) Cost of river cross section data collection can vary significantly - An estimate of the needed survey has been developed. If the cost increases then certain areas will be prioritized for the field work.

Risk 2) All stakeholders do not take an active role in the process - A proactive stakeholder engagement strategy will be developed to help direct communications efforts

- 7. Rationale.** What is the rationale and evidence for undertaking this project? This may include local flood hazard and/or seismic vulnerability as identified in the Emergency Plan or flood mapping, threat levels identified in completed flood risk assessments and/or recent flood history (e.g. evacuation order and/or disaster financial assistance).

Copies of any relevant documents that support the rationale for this project must be included with this application.

- The new mapping will help identify areas of risk.
- This information will help with development controls and the identification of structural mitigation needs.
- By being proactive the impacts of high water levels can be reduced, which will save on emergency response from all levels of government.
- The City will have more accurate floodplain maps to aid with the local development process
- Risk of flood or channel erosion issues will be more accurately identified which will help with mitigation planning. This will help to inform an update of the City's Risk Assessment.

8. Engagement & Collaboration

- a. Describe how the proposed project will contribute to a comprehensive, cooperative and regional approach to flood planning.

The project will identify the extent of major flooding that could occur and the impacts of that updated flood area. As the subject area includes major road links and railway infrastructure the process will involve engaging with a number of public and private stakeholders.

Protecting key portions of the community from flooding by helping to prioritize investments in planning controls, public communications and structural mitigation will also involve a regional approach to setting priorities.

- b. List current and potential stakeholders and partnerships, and describe their level of engagement and commitment to the project.

Local First Nations (Lhtako Dene and Nazko) and surrounding unincorporated areas in the Cariboo Regional District are aware of the flooding risks in Quesnel as the impact of flooding has been witnessed during their operations. Through government-to-government communications sessions the City has noted the importance of proper floodplain management.

9. Proposed Deliverables & Outcomes

- a. What specific deliverables will result from this project?
- Meeting notes for the start-up meeting and all project meetings;
 - Technical memoranda, as produced;
 - Colour, bound hard copies of the final report;
 - Digital version of the final report and all drawings in PDF format;

- Relevant GIS files of floodplain mapping and other relevant information; and
- Digital version of hydrologic/hydraulic model input files.

Note that final deliverables will also be submitted to UBCM at project completion, prior to March 31, 2020.

- b. Describe how the proposed project considers climate change in the project methodology and mitigates the impacts of climate change through the final deliverables.

The change in climate will be estimated to help update the hydraulic flow regime that will be experienced by the Fraser River, Quesnel River and Baker Creek. Since the Fraser and Quesnel watersheds are snow-dominated, projections with respect to precipitation, temperature, and snow depth prepared by the Pacific Climate Impacts Consortium (PCIC) will be used. The projected climate values will be applied to historical flow rates to estimate future peak flows and runoff volumes.

This process will result in having floodmapping that reflects historical conditions as well as the predicted impact of climate change. That information will help to produce updated floodplain maps.

- c. To what extent will the proposed project increase understanding of the social and economic impacts of flood events to the community?

The Risk Assessment using the existing flood maps indicate that even using the current floodplain maps there exists risk to public and private infrastructure. Using more accurate floodplain maps will help to update the risk assessment should any additional properties be within the risk area. That information will help to engage stakeholders and develop planning and mitigation strategies. Major flooding could also impact key transportation routes and the railway in the City. Understanding the scale of impacts to these key transportation components will help to assess the impact on the community and economy.

- d. How does the project align with other work by your local authority in meeting Provincial Flood Hazard Area Land Use Management Guidelines, including existing or future amendments to local plans, policies, building codes, floodplain zoning bylaws, and/or public awareness/education?

As noted in the Guidelines, it is important for the City to consider relevant floodplain mapping when updating bylaws. This project will help to update Official Community Plan and local Zoning Bylaw development considerations to reflect an updated floodplain.

- 10. Monitoring & Performance Measures.** Describe how the project will be monitored and what performance measurements will be used (e.g. work progress reports, timeline review, resource planning, procurement plan and roll out, etc.).

The project is organized to include a number milestones that involve reporting (meeting minutes, stakeholder meetings, deliverables for review) that can be tracked to ensure the project is continuing at a pace that meets the prescribed schedule. The City's primary contact will also be in regular communications with the Consultant's project leader as part of project delivery.

- 11. Qualified Professionals.** Outline the procurement process and how you will select a qualified professional to complete this project.

The work will be completed with the use of specialist consultants to support City direction and stakeholder engagement. The City will be actively involved in the stakeholder engagement process and during the updated risk assessment process. The City intends to engage Urban Systems Ltd. as they have specialists in the area of work that are familiar with the Quesnel area and the local rivers and creeks. This firm was selected as part of a public, competitive request for proposal process related to creating a Waterfront Development

Plan. We believe there are logical synergies between these two projects to justify having that same firm complete this work. Note that Urban Systems Ltd. was also selected through a qualifications based selection process to provide ongoing engineering services to the City. This engineering project can fall within the terms of that original engagement agreement.

12. Additional Information. Please share any other information you think may help support your submission.

Note that the City has already invested in LIDAR elevation data (captured in Spring 2018) to help facilitate this work. Making that investment with municipal funds helps to reduce the grant request and also helps to show that the City sees this project as a priority for the community.

SECTION 4: Required Application Materials

Only complete applications will be considered for funding. The following separate attachments are required to be submitted as part of the application:

- Local government Council or Board resolution, or Treaty First Nation resolution, indicating support for the current proposed activities and willingness to provide overall grant management.
- Detailed workplan and budget for each component identified in the application. This must include a breakdown of work activities, tasks, deliverables or products, resources, timelines (start and end dates), and other considerations or comments. The budget must clearly identify the CEPF funding request, applicant contribution, and/or other grant funding.
- Map identifying the location of the proposed project.
- If applicable, copies of any relevant documents that support the rationale for this project must be included with this application.

SECTION 5: Signature

I certify that: (1) to the best of my knowledge, all information is accurate and (2) the area covered by the proposed project is within our local authority's jurisdiction (or appropriate approvals are in place).

Name: Tanya Turner

Title: Director of Development Services

Signature:

Date: February 22, 2019

An electronic or original signature is required.

Submit applications to Local Government Program Services, Union of BC Municipalities

E-mail: cepf@ubcm.ca

Mail: 525 Government Street, Victoria, BC, V8V 0A8