

# REVIEW OF THE CARIBOO REGIONAL DISTRICT EMERGENCY PROGRAM AND SERVICES

Key Findings Report

## ACKNOWLEDGEMENTS

This report was prepared by Chris Marsh of Clear Sky Consulting Ltd. Paul Edmonds of Red Dragon Consulting Ltd., Steve Newton of Innomergence Solutions Inc. and Mike Andrews of Get Set Solutions Ltd. provided emergency program assessment expertise and contributed to the report writing and review. Sam Bergman provided operational and emergency response analysis and recommendations.

Stephanie Masun and John MacLean of the Cariboo Regional District provided hours of support in person, by phone and videoconference to direct the project, and provided valuable insight into the particulars of how emergency management works in the CRD.

Thank you to the CRD staff, contractors, volunteers and other participants in the CRD Emergency Operations Centre during Wildfire Season 2021 for the many conversations, answers, and clarifications they provided to the project team.

This report was authored and compiled on the traditional and unceded territories of the Ktunaxa, Sinixt and Syilx nations. The report area of interest covers traditional, unceded and title lands of the Secwepemc, Dakelh, and Tsilhqot'in nations. We are grateful to live and undertake our work upon these lands.



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## ACRONYMS AND DEFINITIONS

Table 1. Acronyms and definitions.

<b>AAR</b>	<b>After Action Review:</b> A structured review or debrief process for analyzing what happened, why it happened, and how it can be done better by the participants and those responsible for the project or event.
<b>BCEHS</b>	<b>BC Emergency Health Services:</b> This service provides ambulatory care and transport for sick or injured persons in British Columbia.
<b>BCEMS</b>	<b>British Columbia Emergency Management System:</b> Identifies the standardized approach to emergency management to be utilized and practiced by provincial government agencies, ministries and crown corporations. BCEMS is based on the Incident Command System.
<b>CAO</b>	<b>Chief Administrative Officer:</b> Is an executive who supervises the daily operations of an organization and is ultimately responsible for its performance.
<b>CEPF</b>	<b>Community Emergency Preparedness Fund:</b> A funding stream for community emergency management managed by UBCM.
<b>CRD</b>	<b>Cariboo Regional District</b>
<b>CSC</b>	<b>Clear Sky Consulting Ltd.</b>
<b>DFA</b>	<b>Disaster Financial Assistance:</b> Financial aid provided to residents and communities to compensate for losses incurred during emergency incidents.
<b>DRR</b>	<b>Disaster Risk Reduction:</b> The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (through mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.
<b>EAF</b>	<b>Expense Authorization Form:</b> A document used by EMBC to provide approval for expenditures by local government during an emergency, to later be compensated for those expenses.
<b>ECC</b>	<b>Emergency Coordination Centre:</b> (Part of the PECC, as noted below.)

<b>EM</b>	<b>Emergency Management:</b> The organization and management of the resources and responsibilities for dealing with all humanitarian aspects of emergencies (preparedness, response, mitigation, and recovery). The aim is to reduce the harmful effects of all hazards, including disasters.
<b>EMBC</b>	<b>Emergency Management British Columbia:</b> The arm of the provincial Ministry of Public Safety and Solicitor General and the coordinating agency for all emergency management activities, including response, planning, training, testing, and exercising.
<b>EOC</b>	<b>Emergency Operations Centre:</b> A facility activated to support entities responsible for emergency response and recovery.
<b>EPA</b>	<b>Emergency Program Act:</b> The EPA and the associated regulations provide the legislative framework for the management of disasters and emergencies in B.C.
<b>ESS</b>	<b>Emergency Support Services:</b> A provincially managed, short-term program to see essential services provided to evacuees in emergency situations with the intent of preserving their emotional and physical wellbeing. Services are typically in place for 72 hours post-incident.
<b>FNESS</b>	<b>First Nations Emergency Services Society:</b> The mission of FNESS is to assist First Nations in developing and sustaining safer and healthier communities by providing emergency support services and programs.
<b>FNHA</b>	<b>First Nations Health Authority:</b> The FNHA is the health and wellness partner to over 200 diverse First Nations communities and citizens across BC. The FNHA's community-based services are largely focused on health promotion and disease prevention.
<b>HRVA</b>	<b>Hazard, Risk and Vulnerability Analysis / Assessment:</b> The purpose of an HRVA is to help a community make risk-based choices to address vulnerabilities, mitigate hazards and prepare for response to and recovery from hazard events.
<b>IC</b>	<b>Incident Commander:</b> The person responsible for all aspects of an emergency response; including quickly developing incident objectives, managing all incident operations, application of resources as well as responsibility for all persons involved. The incident commander sets priorities and defines the organization of the incident response teams and the overall incident action plan.

<b>ICS</b>	<b>Incident Command System:</b> A standardized emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hindered by jurisdictional boundaries.
<b>ISC</b>	<b>Indigenous Services Canada:</b> Works collaboratively with partners to improve access to high quality services for First Nations, Inuit and Métis. Our vision is to support and empower Indigenous peoples to independently deliver services and address the socio-economic conditions in their communities.
<b>ICP</b>	<b>Incident Command Post:</b> The incident command post is located at or in the immediate vicinity of the incident site and is the focus of the conducting of direct, on-scene control of tactical operations. Incident planning is also conducted at the ICP.
<b>MVI</b>	<b>Motor Vehicle Incident:</b> A collision that occurs when a vehicle collides with another vehicle, pedestrian, animal, road debris, or other stationary obstruction such as a tree, pole or building.
<b>PECC</b>	<b>Provincial Emergency Coordination Centre</b>
<b>PREOC</b>	<b>Provincial Regional Emergency Operations Centre:</b> During emergencies, such as wildfires, floods or earthquakes, local governments are responsible for leading local response efforts. If the emergency is beyond their capacity, PREOCs can be opened to provide support. PREOCs are offices comprised of emergency management staff, trained to assist local governments with planning, coordination, and logistics.
<b>RC</b>	<b>Reception Centre:</b> Locations designated by the local ESS team, in cooperation with the local authority, as safe gathering places for people displaced from their homes because of an emergency or disaster.
<b>RCMP</b>	<b>Royal Canadian Mounted Police:</b> The federal and national police service of Canada, providing law enforcement at the federal level. The RCMP also provide provincial policing in eight of Canada's provinces and local policing on a contract basis in the three territories and more than 150 municipalities, 600 Indigenous communities, and three international airports.
<b>RDA</b>	<b>Rapid Damage Assessment:</b> A process to identify the extent and impact of the damage caused by the disaster and to identify priorities for intervention.



<b>SOG / SOP</b>	<b>Standard Operating Guideline / Procedure:</b> A set of step-by-step instructions compiled by an organization to help workers carry out routine operations.
<b>SOLE</b>	<b>State of Local Emergency:</b> Declaring a state of local emergency enables local authorities in the Province of British Columbia to exercise the emergency powers listed in the Emergency Program Act. Local authority emergency program staff and elected officials must be prepared to declare a state of local emergency in response to an emergency or disaster at a moment's notice.
<b>UBCM</b>	<b>Union of BC Municipalities</b>
<b>WLFN</b>	<b>Williams Lake First Nation</b>

## CONTACT INFORMATION

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## DISCLAIMER

This information is the property of the Cariboo Regional District (CRD) and is intended to be used by the Cariboo Regional District, its staff, and authorized parties for the purpose of emergency management planning.

Information and data used in the compilation of this report has been gathered from various sources made available by the Cariboo Regional District and accessed for the purposes of research. These include the following:

- Various existing CRD plans, documents, maps, financial statements and other sources of information.
- Various Government of British Columbia reports, websites, documents, legislation and other sources.
- Consultation with CRD staff.
- Consultation with subject matter experts and a variety of external agencies.
- Various professional websites and reference documents.

The information contained in this document is the application of Clear Sky Consulting Ltd.'s professional expertise and opinion, subject to the accuracy and content of available information and the scope of work. Furthermore, it must be expected that the CRD emergency program will continue to evolve and be influenced positively and negatively by many factors. The user of this information accepts full responsibility for any errors or omissions contained therein.

Figure 1. Helicopters parked for the night at the 108 Mile Airport.



## EXECUTIVE SUMMARY

The Cariboo Regional District emergency program is at a crossroads. The Cariboo region has been unduly impacted by a decade of significant disasters and emergencies. Wildfires, floods, landslides and environmental disasters have all impacted residents and businesses within the region.

The Cariboo Regional District emergency program has risen to meet these challenges again and again — evacuating thousands of residents, coordinating massive response and recovery efforts, and releasing hundreds of pieces of information to the public. But the combination of the extreme impacts of these disasters, coupled with the current emergency program configuration, have led to challenges for the CRD. Numerous staff changes within the department since 2017 have left the program without any significant development and have led to a serious loss of institutional knowledge. These staff changes have, in part, been driven by extreme stress and impossible workloads.

There are regions within British Columbia where the emergency programs are rarely activated. This is not the case for the CRD emergency program. A near constant cycle of floods, fires and landslides over the past 5 years has meant that the department has had to focus solely on response and recovery and has had to neglect the other emergency management pillars — preparedness and mitigation — along with program and staff development, and in some cases, staff wellness and safety. Climate change appears to be impacting distinct parts of British Columbia differently and the CRD appears to be impacted more than most.

Added to this cycle of natural disasters has been the onset of the COVID-19 pandemic, which has tested emergency programs and regional district governments across the province. The CRD emergency program has had to rise to meet this challenge while managing spring and fall floods, emerging landslide issues, and a record-setting 2021 wildfire season, which again saw thousands of CRD residents evacuated from their homes. The onset of incredibly poor air quality for some areas of the CRD and a heat emergency compounded the effects on the region's most vulnerable residents.

In order to meet these challenges and to develop an efficient, high-performing and safe workplace for emergency program staff, the addition of staff resources is critical. This will allow further program development. Without the addition of resources and funding, the program is likely to continue to be challenged by incredibly high workloads, driven by constant emergency responses. It is unlikely that meaningful program development will be able to take place. The regional district may also be falling short of meeting provincial legislation and WorkSafeBC requirements.

This report includes 46 recommendations to enhance the CRD emergency program. Some require funding; others are industry best practices, while others could be supported by grant opportunities and shared effort with other jurisdictions. All will help the CRD emergency program to enhance the services they provide to the public. Many will increase staff retention and increase staff wellness.

While the intent of this report was to analyze the current situation for the CRD emergency program, undertake a gap analysis and provide recommendations, there were other things that became apparent as the project team proceeded with this project.

The individuals involved both in the CRD emergency program and the CRD staff in general care greatly for each other and the residents they serve. They do an incredible job under prolonged challenging conditions. Often overworked and often criticized by the public, CRD staff remain compassionate, empathetic, professional and efficient. Protecting these staff resources from harm must be the main goal of future CRD emergency program directives.

Figure 2. Aurora Borealis from Mica Mountain.



## INTRODUCTION

The Cariboo Regional District (CRD) is located in the interior of British Columbia. It has an area of governance of 80,609 square kilometers, which is the fourth largest regional district in the province. It has a population of 65,456 people, containing the incorporated communities of the City of Williams Lake, the City of Quesnel, the District of 100 Mile House and the District of Wells. Much of the rest of the regional district is populated through various unincorporated communities, though in some cases the unincorporated areas have larger populations than the incorporated centres. Many unincorporated communities identify as distinct communities (such as the 108 Mile Ranch area in the South Cariboo). There are several First Nations communities within the CRD as well, each with their own national governments. Much of the regional district is wilderness and not populated.

The main hazards that exist for CRD residents are wildfires, floods and landslides, along with typical human-related incidents. The vastness of the region challenges typical emergency management principles, which have generally been designed for places of higher population density. CRD staff have developed systems that work for their remote and rural management areas.

The COVID-19 pandemic has placed additional strain on an organization that was already actively responding to multiple natural disasters. The CRD emergency program is challenged by climate change, senior government legislation changes, and other influences that continue to bring changes to local government emergency programs.

The CRD emergency program has, over the past decade, been one of the most response-active emergency programs in the Province of British Columbia. Since 2017, the CRD emergency program staff have been asked to support the following major natural disasters across the regional district:

- 2017 — Significant and widespread wildfire impacts.
- 2018 — Significant and widespread wildfire and spring freshet flooding impacts.
- 2019 — Significant and widespread flooding impacts.
- 2020 — Significant and widespread flooding, and the impacts of the COVID-19 pandemic, and emerging widespread landslide issues.
- 2021 — Continuation of landslide issues, ongoing COVID-19 pandemic concerns, and significant wildfire impacts across the South Cariboo and Chilcotin.

These continual issues have had significant effects on staff stress and burnout, staff retention and turnover, emergency program development, and business continuity for the CRD. The CRD emergency program has had inconsistent staffing since 2017.

The objective of this report is to highlight areas of strength and to identify areas where improvements could be made. The basis for this report is to identify areas of hardship and reduce those issues where possible, to ensure a safe workplace and strong staff retention and development. This will in turn provide better emergency program support for CRD residents.



This report has identified the hard work of the CRD staff and volunteers to maintain emergency program capacity with limited availability of the appropriate resources. The residents of the CRD are fortunate to have dedicated, hard-working and compassionate individuals working to make emergency situations less impactful on their behalf.

Figure 3. The Gang Ranch area of the Cariboo Regional District.



## EMERGENCY MANAGEMENT INDUSTRY TRENDS

The Emergency Program Act (EPA) in British Columbia is currently being updated. The existing EPA was created in 1996 and no longer adequately addresses the kinds of issues that British Columbia communities and regions face, or the frequency and impact of current emergencies.

Historically, emergency management in British Columbia has been heavily focused on the response phase, which is a reactive way of managing emergencies (for example, putting out wildfires once they start, as opposed to making efforts to reduce the chances of new fire starts or reducing forest fuels so fires spread more slowly and can be managed more effectively). The Emergency Program Act will see a much more significant emphasis on the prevention, mitigation and recovery phases of emergency management, and with that will come increased expectations and workloads for emergency management programs.

This trend toward a holistic approach to comprehensive emergency management is further emphasized by Canada and British Columbia's endorsement of the United Nations' Sendai Framework for Disaster Risk Reduction. In addition to addressing the four pillars of traditional emergency management, the Sendai Framework focuses on the adoption of measures which address the three dimensions of disaster risk — exposure to hazards, vulnerability and capacity, and hazards characteristics — in order to prevent the creation of new risk, reduce existing risk and increase resilience.

In terms of emerging legislation and trends towards disaster risk-reduction, a review of the CRD emergency program is timely. The new act will contain guidance for both local authorities and provincial government ministries. The act is currently being drafted and is intended to be in place in the fall of 2022. A white paper has been released describing the potential changes, including the following highlights:

- The legislation will include a much stronger connection to the effects of climate change on the residents of British Columbia and their communities.
- The legislation will include a stronger connection to the Sendai Framework, which the Province of British Columbia adopted in 2018.
- An updated understanding of disaster risk-management and disaster risk-reduction, including more support for the challenges faced by vulnerable and at-risk populations during emergencies.
- An increased emphasis on critical infrastructure resilience.
- A requirement to consider current and potential risk factors.
- And, likely most importantly, an acknowledgement of the requirements for additional resources and capacity to deliver the new requirements (at all levels of government, and within the private and non-profit sectors).

The new Emergency Program Act is expected to result in significant increases in responsibility for local authorities. Increased record keeping and documentation, increased financial accountability, and more well-rounded emergency management programs will all be new requirements when the Act is brought into law. Draft legislation is not yet available for review by local authorities.

## HOW COST-BENEFIT ANALYSES CAN DRIVE DISASTER RISK REDUCTION

Reports such as this one often highlight perceived deficiencies in emergency programs and propose that the only solution is to increase program funding (in order to increase staffing, hire contractors and consultants, etc.). When faced with conflicting community priorities and limited funding, this can be a very challenging discussion to have with funders and residents alike (who may view this simply as a tax increase). However, there is significant documentation and analysis that shows that reducing risk can have significant cost savings for organizations.

The Province of British Columbia and the Government of Canada have incorporated the United Nations Office for Disaster Risk Reduction, Sendai Framework, into the Emergency Program Act modernization. This framework and other documentation (UNISDR 2017) reference that investment in disaster risk-



reduction generally represents a considerable saving in terms of avoided losses and reconstruction costs. The benefit ratio for disaster risk reduction ranges from 1:3 to 1:15 or higher, in some cases. A ratio figure of 1:6 is generally used as a median.

This means that, typically, \$1 spent on community preparedness, mitigation projects (like wildfire fuel reduction) and program development results in a \$6 cost savings when emergencies occur.

For example, if a community FireSmart program that costs \$10,000 per year saves the total loss of a community centre worth \$200,000 during a wildfire event, then the risk reduction ratio holds true. Emergency program development generally means that residents are better prepared for disasters, residents know how to prevent or minimize them, the community and the local government respond better to the event, and the region recovers faster. The main goal in all emergency management is to ensure the safety and care of people. Money spent to enhance their resilience is generally money well spent.

## OBJECTIVES

The project management team determined that there were four objectives to ensure that this project met the expectations of the CRD. The objectives that were deemed important to the team were as follows:

- Understand how current emergency events within the CRD are impacting the CRD and determine the impacts to the emergency management program.
- Highlight best practices within the CRD emergency management programs and determine situations that were causing challenges, and potential remedies to those situations.
- Determine appropriate staffing levels for the CRD emergency management program based on scope of work, including trends of increasing hazard frequency and magnitude, legislative requirements, expectations of the public within the CRD and the current funding configuration.
- Determine where improvements could be made to the CRD emergency program's current practice, documentation, facilities, staffing, emergency response and other aspects of the program.

## BCEMS GOALS

The British Columbia Emergency Management System (BCEMS) response goals are also supportive of this review. These goals provide guidance for those undertaking emergency response and are useful guiding principles at all times when considering different aspects of emergency management.

Figure 4. BCEMS Response Goals.

### **BCEMS Response Goals**

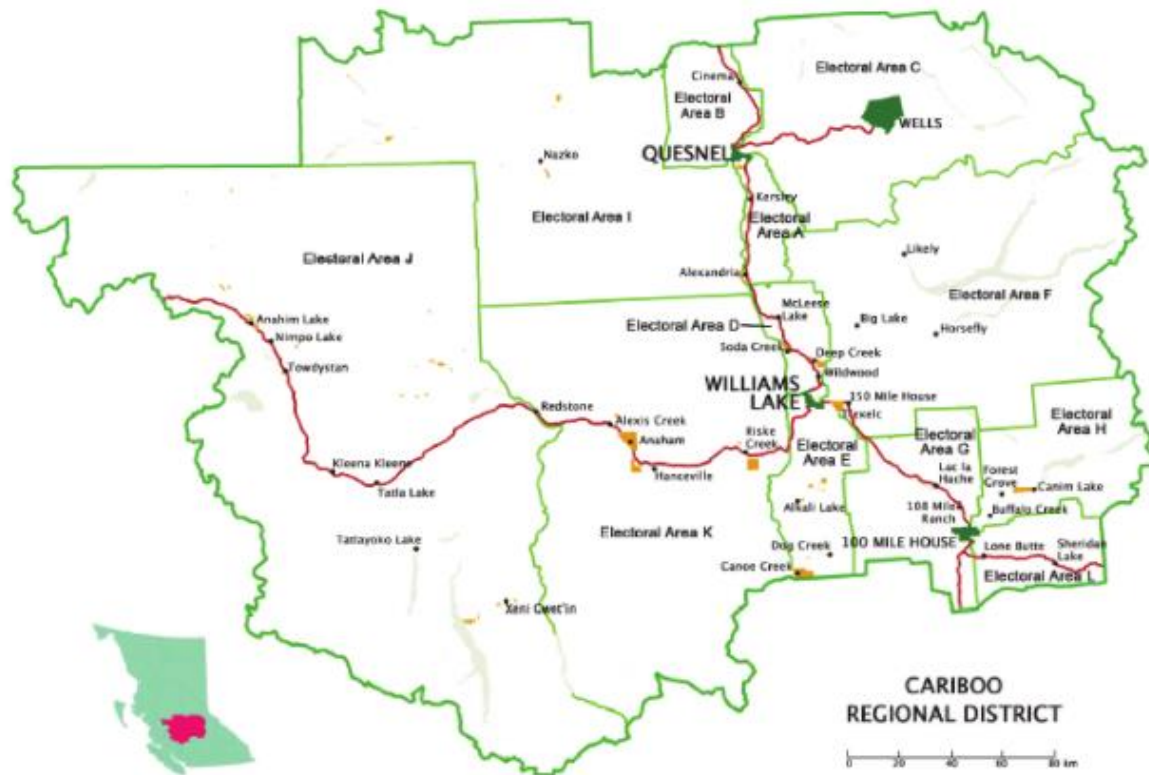
1. Ensure the health and safety of responders
2. Save lives
3. Reduce suffering
4. Protect public health
5. Protect infrastructure
6. Protect property
7. Protect the environment
8. Reduce economic and social losses

## SCOPE

### GEOGRAPHIC SCOPE

This review covers the entirety of the geographic area governed by the CRD. It does not include First Nations lands or incorporated municipalities. For reference, a map of the CRD is included below.

Figure 5. Map of the Cariboo Regional District.



### POLICY SCOPE

This review encompasses all aspects of how the CRD provides emergency management services to its residents, which includes the following:

- The services provided by the CRD emergency program.
- The financial aspect of the programs (budgets, expenditures, grants and others).
- The mandate and authority of the CRD emergency program, provided by the organization and the CRD Board of Directors.

- Staffing levels within the program and in support of the program (in consideration primarily of staff seconded to the EOC during operations, but also from the ability to work in support of the generation of maps, GIS data, crisis communications and other regional district services that support the program in routine situations).
- Demands on the program due to emergency response and recovery.

Figure 6. A BCWS helicopter picks up water destined for the 2021 Flat Lake fire.





## PROJECT MANAGEMENT TEAM

The project management team for the CRD Emergency Program Review was composed of both CRD staff and CSC staff working collaboratively to develop the report. A well-rounded approach was used to undertake actions that were supportive of development of the review.

### CRD STAFF INVOLVED:

***Stephanie Masun***, *Manager of Emergency Programs and Disaster Resilience*

### CSC LTD. STAFF INVOLVED:

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***Steve Newton*** (*Innomergence Solutions Inc.*), *Consultant*

***Mike Andrews*** (*Get Set Solutions Ltd.*), *Consultant*

***Sam Bergman***, *Technical Specialist and Reviewer*

Throughout the process, Stephanie Masun and Chris Marsh remained in regular contact to pose and answer questions, design the process and undertake activities to support the report development. Some of this contact was facilitated through CSC's presence in the CRD Emergency Operations Centre (EOC) during the wildfire response in summer of 2021.

It is worth mentioning that during the development of this study, the CRD was engaged in response to the unprecedented impacts of the 2021 interface wildfires. Several thousand CRD residents were ordered to evacuate from their homes while this report was under development.

## METHODOLOGY

The assessment of the CRD emergency program followed a four-step process. During a strategic review of this nature, it is important to consider a number of sources of information, perspectives and opinions before making recommendations. The four stages are documented below.

### RESEARCH AND DOCUMENT REVIEW

During the research and document review phase, CSC staff reviewed all emergency program documentation that was made available to them, including the following:

- Situation reports and response logs from past responses.
- Internal CRD plans, procedures, policies and operational protocols.
- Memorandums of Understanding and other agreements.
- Budgets.
- Grant applications and grant funded projects.
- Other pertinent documents.

As well, Chris Marsh of CSC spent 10 days in the CRD EOC in late July 2021, during which time he had access to all of the documentation used for emergency response during the 2021 wildfire season. This perspective and access to information was incredibly helpful in forming a greater understanding of emergency management processes within the CRD.

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### EXTERNAL DOCUMENT AND LEGISLATION REVIEW

Several external resources were used as sources of information. In general, many of the policies and procedures provided by EMBC have been used where applicable. As well, policies, procedures, bylaws and plans from other regional districts have been accessed where they were helpful. Applicable provincial legislation has been referenced, as have WorkSafeBC requirements. Major reference sources are noted below.

- Existing and proposed British Columbia Emergency Program Act legislation including the Emergency Program Act and the Local Authority Emergency Regulation.

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/emergency-management-bc/legislation-and-regulations/modernizing-epa>

[https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/00\\_96111\\_01](https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/00_96111_01)

[https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/380\\_95](https://www.bclaws.gov.bc.ca/civix/document/id/complete/statreg/380_95)

- [The Auditor General for Local Government BC report: Emergency Management in Local Governments — District of Mission audit](#)

- [Addressing the New Normal: 21<sup>st</sup> Century Disaster Management in British Columbia \(the Abbott Chapman report\)](#)
- [The British Columbia Emergency Management System guide](#)
- [Emergency Management BC Evacuation Guidelines](#)
- [The BC Housing Post Disaster Building Assessment Guide and Framework](#)
- [Province of British Columbia DFA Guidelines and Other Documentation](#)
- [UBCM Community Emergency Preparedness Grant Information](#)
- [Firestorm 2003 Provincial Review \(the Filmon Report\)](#)

## OUTREACH AND ENGAGEMENT

In 2021, the early onset of a significant and record-setting wildfire season made it unrealistic to approach many local governments, provincial government ministries and other external agencies for the purposes of this report. All were significantly impacted by wildfire readiness, response and recovery efforts. Most were unable to provide the time to answer questions and provide feedback for this project.

As such, in order to ensure sufficient input for the development of the report, the consultant relied upon extensive discussion with internal CRD staff. Targeted consultations were also undertaken with external agencies. This was made possible through the following initiatives:

- Key CSC staff worked in the CRD EOC during the CRD wildfire response efforts, and had the opportunity to interact with, work with and have discussions with a variety of staff and external support organizations.
- CSC staff reached out to several organizations not significantly impacted by the wildfire season for feedback. These included the Regional District of Kootenay Boundary, the Regional District of Bulkley-Nechako, North Shore Emergency Management and the City of Richmond and the British Columbia Association of Emergency Managers (BCAEM).
  - Note that the BCAEM outreach was to a member conducting a project to determine staffing resources and compensation within local governments across BC.
- Review of externally available documentation such as after-action reports, reviews, assessments and other documentation from similar regional districts and emergency management organizations.
- Review of high-profile audits and reports such as the Abbot Chapman report, “Addressing the New Normal: 21<sup>st</sup> Century Disaster Management in British Columbia,” and the Auditor General for Local Government BC report, “Emergency Management in Local Governments — District of Mission,” among others.

## REPORT DEVELOPMENT, VERIFICATION AND PRESENTATION TO THE CRD

The findings from consultation with both internal and external CRD resources, along with the results of the research and review process, were assembled as this report and provided to the CRD as a draft on August 13<sup>th</sup>, 2021. This report was presented to the CRD Board of Directors along with a PowerPoint presentation on September 9<sup>th</sup>, 2021.

The report process follows a typical development cycle with a draft developed, followed by an internal review by CSC staff and engaged subject matter experts, a review by CRD, and incorporation of comments and edits. The report has been released in its final version.



## STATE OF EMERGENCY MANAGEMENT IN BRITISH COLUMBIA

Emergency Management in British Columbia is changing rapidly. Disasters are happening more frequently and with greater intensity than at any point in the province's history. There are regions within British Columbia that are currently and more frequently impacted by disasters than others. Regions such as the Cariboo Regional District, the Bulkley-Nechako Regional District, the Regional District of Okanagan-Similkameen, and the Regional District of Kootenay Boundary have all appeared to suffer more disasters than most other areas in British Columbia. All four have experienced multiple compounding disasters — primarily floods and wildfires. Some of these events have impacted these regions in the same calendar year. This puts enormous strain on emergency management staff and local governments in general.

The vastness of these regions, their rural settings, and limited tax base make providing emergency management services a challenge under any circumstances. Servicing and supporting these expansive areas during crises becomes even more challenging than it would be for municipalities and local authorities with denser populations, a larger tax base and a smaller geographic footprint.

For each region, there have been several difficult flood and wildfire years over a short period of time. This, combined with a global pandemic, has created significant exhaustion and burnout among emergency response agencies at both regional and local levels.

Across the emergency management industry in British Columbia, there is a record number of employment vacancies within local governments, the provincial government, non-profits and the industrial sector (the primary employers of emergency management staff). The BC Association of Emergency Managers (BCAEM) maintains a job board of employment opportunities and the BCAEM person who maintains the job board noted that they are seeing greater numbers of postings across British Columbia in all employment sectors. These vacancies and an aging and limited pool of qualified and experienced talent have created an expertise void.

Notably, and perhaps coinciding with these vacancies, are more organizations reporting “organizational fatigue.” Both the BC Wildfire Service and Emergency Management BC have recently and publicly noted that their staff are experiencing burnout and stress-related injuries due to the demanding and challenging workload associated with more frequent and higher-impact disasters. Emergency response staff in many organizations are exhausted from years of stressful and traumatic emergency events, challenging disaster recovery processes and responsibilities, and underdeveloped local and provincial plans, programs and support services. This is leading to the loss of experienced staff in many organizations, such as EMBC, BCWS and others, as employees resign or enter retirement to avoid overly demanding roles.

Indeed, the next generation and the current fatigued workforce are increasingly seeking stronger work-life balance and / or are demanding greater compensation for the demands and challenges created by industry trends.

This, in turn, leads to the following issues, including, but not limited to:

- Lost time incidents where staff require time to heal, mentally and physically, away from the demands of their work.
- Stress related injuries.
- Poor staff performance.

Ultimately, if left unaddressed, many of these issues result in staff turnover, resignations, early retirements and other forms of “escape.”

Figure 7. Skimmer aircraft at the Williams Lake airport, July 2021.



## EMERGENCY MANAGEMENT IN THE CRD

The CRD has a practiced initial response team, which routinely activates an Emergency Operations Centre (EOC) to manage emergencies.

**A note about terminology: This report frequently mentions a CRD emergency program. Normally, an emergency program consists of established plans, procedures, policies, bylaws, legal mandates, agreements, dedicated resources and monitoring / evaluation criteria. However, most of these components and processes have not been developed in the CRD program. As such, the use of “emergency program” refers in general to the Emergency Planning Service, which has two staff members who are limited in their ability to implement an EOC and undertake emergency management activities.**

## SIGNIFICANT HAZARDS AND FREQUENCY OF RESPONSE

The Cariboo Regional District is a vast expanse of territory to manage as a local government. The region sees emergency events typical of the interior of British Columbia, including the following:

- Wildfires, often driven in part by the mountain pine beetle infestation.
- Floods, debris torrents and landslides.
- Increasing frequency of severe weather such as high winds, freezing rain, heat waves and wildfire activity.
- The possibility of transportation-system disruption and dangerous good spills as major highways (including the major interprovincial Highway 97) run through the region.
- The possibility of rail, oil and gas pipeline incidents, as the transport systems for these materials run through the region. Mining incidents are also a risk, as evidenced by the recent Mount Polley / Imperial Metals tailings pond dam failure and subsequent environmental impacts to the Quesnel Lake area.
- Other hazards driven by changing climates, weather patterns and other factors.

In addition to these natural and human-caused disasters came the onset of the COVID-19 pandemic. Local authorities across British Columbia struggled to determine what their legal, moral and ethical responsibilities were for both their residents and staff members during the early stages of the pandemic. Many emergency program managers were compelled to take the lead on organizational business continuity, which is generally under-planned and poorly understood throughout BC’s local authorities. Many organizations did not have updated pandemic plans. The CRD found themselves working to manage a similar situation to those in many other regional districts across the province.



The rapidly changing climate in the Cariboo region is making it harder to forecast weather and wildfire conditions, as historic norms no longer apply. This makes it more challenging to prepare for and anticipate emergencies.

The frequency of impacts from these events is significant. Several severe wildfire seasons over the past five years, along with multiple instances of flooding, have strained the CRD emergency management program beyond current capacity with an impact on staff and proactive emergency program activities. As well, the recent onset of landslides adds a layer of complexity to local responses, which has historically not been a response issue for this region.

The table below shows the trend toward an increasing frequency of emergency events over the last 11 years, as well as an increase in the length of time the EOC must remain activated in some cases.

**Table 2. EOC activations within the Cariboo Regional District over the last 11 years.**

Event	Total Days	Type	Task Number	Start	End	Evacuation Orders	Evacuation Alerts
2010 Wildfires	31	Wildfire	111661	28-Jul-10	27-Aug-10	?	?
2010 Hwy 20 Washout	8	Flood	112960	27-Sep-10	04-Oct-10	0	0
2011 Judson Road Fire	1	Wildfire	122885	27-Sep-11	27-Sep-11	0	0
2011 Cottonwood Flooding	32	Flood	120680	12-May-11	12-Jun-11	2	1
2012 Quesnel River Flooding	4	Flood	120154	26-Jun-12	29-Jun-12	0	0
2013 Canim Lake Road South Flooding	1	Flood	141283	20-Jun-13	20-Jun-13	0	0
2013 Wildwood Hazmat	5	Hazmat	134620	17-Jan-13	21-Jan-13	1	0
2014 Chelaslie River & Euchiniko Fires	66	Wildfire	151596	13-Jul-14	16-Sep-14	1	2
2014 Mt. Polley Tailings Breach	123	Hazmat	152048	04-Aug-14	04-Dec-14	?	?
2015 Keithley Creek Debris Flow	2	Debris Flow	161901	16-Jul-15	17-Jul-15	?	?
2015 Puntzi Lake Wildfire	23	Wildfire	161746	08-Jul-15	30-Jul-15	1	2
2016 Pine Valley Landslide	2	Landslide	171626	04-Jul-16	05-Jul-16	0	0
2017 Wildfires	77	Wildfire	181862	06-Jul-17	20-Sep-17	74	76
2018 Spring Freshet	19	Flood	190411	23-Apr-18	11-May-18	2	1
2018 Wildfires	45	Wildfire	191538	01-Aug-18	14-Sep-18	18	33
2019 Ice Jam	46	Ice Jam	196215	01-Mar-19	15-Apr-19	0	0
2019 Spring Freshet	22	Flood	200154	25-Mar-19	15-Apr-19	0	0
2019 West Chilcotin Flooding	16	Flood	201715	07-Jul-19	22-Jul-19	0	0
2020 COVID-19	592	Pandemic	206455	30-Mar-20	11-Nov-21	0	0
2020 Spring Freshet	ongoing	Flood	210182	22-Apr-20	not completed	10	14
2020 Fall Flooding	ongoing	Flood	214372	30-Oct-20	not completed	0	6
2021 Spring Freshet	ongoing	Flood	220057	01-Apr-21	not completed	0	1
2021 Wildfire	ongoing	Fire	221488	30-Jun-21	not completed	12	46

There are 262 working days in a year. Over 11 years (2,882 working days), the CRD EOC has been active for 1,836 days. This equates to over 60% of the total available staff time undertaking response activities (assuming a single-person emergency management program). This does not include the time spent dealing with disaster recovery and the aftermath of the response phase. These days do not account for the number of staff within the EOC but provide a strong indication of the skewed response proportion of the emergency program. Ideally, the response component of an emergency management program should be balanced with the other elements of emergency management — mitigation, preparedness, recovery and general program administration. However, the significant impact of response

requirements on the CRD emergency program indicates an imbalance and clearly shows why it has been challenging to build an effective program.

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## STAFF RECRUITMENT AND RETENTION

The frequency of emergency responses leads to additional issues for the CRD. Since 2017, the cycle of response to wildfires, floods and landslides has taken its toll on the organization. Several emergency managers have assumed the CRD Manager of Emergency Programs role and resigned within a short period of time due to the unsustainable nature of the stress, workload and cumulative fatigue associated with the position. The organization has seen stress-related injuries and leaves of absence, with no time to recover from back-to-back or long-term activations.

As such, the role of the emergency program has been reorganized to include only disaster management, and not management of CRD structural fire-fighting resources. (The original position was responsible for both.) While the segregation of the emergency management department has helped, the continual cycle of response and recovery remains problematic when considering that the traditional pillars of emergency management (mitigation, planning / preparedness, response and recovery) each require staff effort to enhance disaster risk-reduction. This should be coupled with the trend toward holistic disaster risk-reduction to enhance community resiliency.

**IMPORTANT: It is highly unlikely that the CRD executive management team will be able to break the cycle of staff lost-time incidents and staff turnover without additional staff resources to supplement the existing emergency management department capacity.**

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## PUBLIC EXPECTATIONS

As with other regions in British Columbia, the CRD is working with a sometimes apathetic and unprepared population who have ever-increasing expectations of how they will be supported during emergency events. Resilience can be low in some areas, and residents affected by disasters may need significant support during response and recovery phases.

There is an expectation (in part driven by the Province of British Columbia and UBCM annual grant promotion and communication) that there will be CRD FireSmart programs, community wildfire protection plans, and flood response and protection for private properties. It is not possible to meet these expectations with current staffing levels.

The CRD population has been repeatedly traumatized by wildfire evacuations and significant structural losses in some areas. As such, they are incredibly sensitive to information releases, local government directives and actions, and the BC Wildfire Service (and their wildfire response activities).

Added to these issues are pockets of the population who are near or below the poverty line and have a high dependency on government social services. Many of these residents are underinsured and report not being able to evacuate or self-sustain away from their homes due to poverty, which makes evacuations and response tactics challenging. Further, many of these individuals have a low level of trust in local government and some will defy the local authority in order to attempt to protect their property when official directives dictate they should do otherwise. Managing these types of situations is challenging, as they have a high degree of impact on the time CRD emergency program staff have available for other initiatives. These issues may also hamper innovation and continuous improvement within the CRD emergency program.

## EMERGENCY MANAGEMENT LEGAL REQUIREMENTS

The Emergency Program Act and its associated regulations, the Employment Standards Act and WorkSafeBC have legal requirements that apply to the local authorities within British Columbia.

### EMERGENCY PROGRAM ACT LEGAL REQUIREMENTS

As noted in the Emergency Program Act, local authorities within BC have a legislated requirement to have an emergency program in place and to develop an emergency plan. The current act, which is undergoing a legislative renewal process, clarifies what is expected of local authorities, as noted in the table below.

Table 3. Emergency Program Act requirements for local authorities.

Emergency Management Requirements
Emergency Program Act (Subject to change Spring 2022)
<p>a) Requires that local authorities have local emergency plans respecting preparation for, response to and recovery from emergencies and disasters.</p> <p>b) States that a board / council of a local authority must ensure that it has one or more local emergency plans that apply to <u>all of</u> the local authorities within the regional district,</p> <p>c) Requires that a board / council of a local authority must establish and maintain either:</p> <ul style="list-style-type: none"><li>• an emergency management organization with responsibility for <u>all of</u> the municipalities / electoral areas; or</li><li>• two or more emergency management organizations that have responsibility for <u>all of</u> the municipalities / electoral areas.</li></ul> <p>d) Permits the board/council of a local authority to appoint committees to advise and assist the local authority and appoint a coordinator for each emergency management organization it establishes.</p> <p>e) Sets out the conditions for declaring a state of local emergency and the powers of a local authority in a declared state of local emergency.</p> <p>f) Sets out financial provisions for emergencies or disasters.</p>

Specifically, the requirement to establish an emergency program and have an emergency plan is established in Sections 5 and 6 of the Emergency Program Act.

*Ministerial orders*

**5** *The minister may, by order, do one or more of the following:*

*(a) divide British Columbia into various subdivisions for the purpose of organizing integrated plans and programs in relation to emergency preparedness, response and recovery;*

*(b) require local authorities of the municipalities or electoral areas located within a subdivision referred to in paragraph (a) to prepare, in cooperation with designated ministries, integrated plans and programs, satisfactory to the minister, to deal with emergencies;*

*(c) establish procedures required for the prompt and efficient implementation of plans and programs to meet emergencies and disasters;*

*(d) require a person to develop plans and programs in cooperation with one or more local authorities, designated ministries and government corporations and agencies to remedy, alleviate or meet any emergency that might arise from any hazard to persons or property and that is or may be created by*

*(i) the person engaging in any operation,*

*(ii) the person utilizing any process,*

*(iii) the person using property in any manner, or*

*(iv) any condition that exists or may exist on the person's land.*

As well, Section 6 (on the following page) speaks to the development of plans and organizations to manage emergency response in more detail.



*Local authority emergency organization*

*6 (1) Subject to sections 8 (2), 13 (2) and 14 (3), a local authority is at all times responsible for the direction and control of the local authority's emergency response.*

*(a) if a local authority has not complied with subsections (2) and (2.1), the date by which the local emergency plan or plans required under those subsections must be prepared, with power to es*

*(2.1) For the purposes of subsection (2), a local authority that is the board of a regional district must ensure that it has one local emergency plan that applies, or 2 or more local emergency plans that in the aggregate apply, to all of the electoral areas within the regional district.*

*(3) A local authority that is a municipal council or the board of a regional district must establish and maintain an emergency management organization to develop and implement emergency plans and other preparedness, response and recovery measures for emergencies and disasters and, for that purpose,*

*(a) if the local authority is a municipal council, the municipal council must establish and maintain an emergency management organization with responsibility for the whole of the municipality, and*

*(b) if the local authority is the board of a regional district, the board of the regional district must establish and maintain*

*(i) one emergency management organization with responsibility for all of the electoral areas within the regional district, or*

*(ii) 2 or more emergency management organizations that in the aggregate have responsibility for all of the electoral areas within the regional district.*

*(3.1) Without limiting subsection (3), a local authority that is a municipal council or the board of a regional district may*

*(a) appoint committees the local authority considers necessary or desirable to advise and assist the local authority, and*

*(b) appoint a coordinator for each emergency management organization established by it under subsection (3).*

*(3.2) The minister may, by order, establish one or both of the following:*

*(a) if a local authority has not complied with subsections (2) and (2.1), the date by which the local emergency plan or plans required under those subsections must be prepared, with power to establish, for the board of a regional district, different dates for the preparation of local emergency plans for different electoral areas within the regional district;*

*(b) if a local authority has not complied with subsection (3), the date by which the emergency management organization or organizations required under that subsection must be established, with power to establish, for the board of a regional district, different dates for the establishment of emergency management organizations for different electoral areas within the regional district.*

*(4) A local authority may, in writing, delegate any of its powers and duties under this Act to the committee, emergency management organization or coordinator referred to in subsection (3), except the power to make a declaration of a state of local emergency.*

Further, the Local Authority Emergency Management Regulation requires the following:

*Local emergency plans*

*2 (1) A local authority must reflect in the local emergency plan prepared by it under section 6 (2) of the Act*

*(a) the potential emergencies and disasters that could affect all or any part of the jurisdictional area for which the local authority has responsibility, and*

*(b) the local authority's assessment of the relative risk of occurrence and the potential impact on people and property of the emergencies or disasters referred to under paragraph (a).*

*(2) Each municipal council and each board of a regional district that qualifies as a local authority under section 1 (1) of the Act must reflect in its local emergency plan, unless it is documented elsewhere,*

*(a) the commitment of the local authority to provide policy guidance and direction to the emergency management organization established by that local authority under section 6 (3) of the Act, and*

*(b) the procedures by which that guidance and direction is to be provided.*

*(3) A local authority must, as part of the local emergency plan prepared by it under section 6 (2) of the Act,*

*(a) require a periodic review and updating of the local emergency plan and establish a procedure for that review and revision,*

*(b) establish and maintain for all emergency response staff to whom responsibilities are assigned in the plan,*

*(i) a program of emergency response exercises, and*

*(ii) a training program,*

*(c) identify the procedures by which emergency resources, including, without limitation, personnel, equipment, facilities and financial resources, may be obtained from sources within or outside of the jurisdictional area for which the local authority has responsibility,*

*(d) establish the procedures by which the plan is to be implemented,*

*(e) establish procedures by which those persons who may be harmed or who may suffer loss are notified of an emergency or impending disaster,*

*(f) coordinate the provision of food, clothing, shelter, transportation and medical services to victims of emergencies and disasters, whether that provision is made from within or outside of the local authority,*

*(g) establish the priorities for restoring essential services provided by the local authority that are interrupted during an emergency or disaster, and*

*(h) recommend to service providers the priorities for restoring essential services not provided by the local authority that are interrupted during an emergency or disaster.*

*(4) A local authority may incorporate into its local emergency plan any confirmed, potential or anticipated assistance and resources of other levels of government or other non-government bodies.*

In terms of whether the CRD currently meets these requirements, this review discovered the following:

- The current CRD emergency plan was last substantially updated in 2006, well outside the 5-year recommended renewal cycle, and would likely no longer be considered sufficient.
- The current state of the CRD emergency program, with minimal staffing resources (and in relation to the high response requirement for Cariboo region emergencies), likely does not meet the requirement to have an emergency management organization.
- The CRD currently does not have an emergency management committee. The CRD participates on a regional protective services committee led by the City of Williams Lake, which is response-based and not sufficient for regional CRD emergency planning.
- It is not guaranteed that the minimal, centrally located staff resources provide a comprehensive emergency plan / program to the entirety of the CRD.
- There is currently no mechanism for the board to advise the emergency program.
- While the CRD does frequently declare a local state of emergency, it is not clear if the current emergency plan or bylaw would be considered sufficient legal authority to do so as required by the Emergency Program Act.

When Emergency Management BC brings the newly revised Emergency Program Act into law in 2022, it has been made clear that these requirements will shift from voluntary compliance to actual legal requirements to remove any ambiguity. As such, it would be appropriate for the CRD to ensure that they are able to meet the new requirements, to avoid undue hardship. The new act is expected to significantly reinforce the legal requirement to maintain an emergency plan and program in good standing, and emergency support from Emergency Management BC may well be tied to the appropriateness and completeness of these plans and programs.

## WORKSAFEBC AND EMPLOYMENT STANDARDS ACT LEGAL REQUIREMENTS

In its current configuration, the CRD emergency program is demanding much from its limited number of staff. Because of the requirement to maintain 24/7 availability to respond to emergencies anywhere in the Cariboo Regional District, the Manager of Emergency Programs must remain in contact with first responder agencies, CRD executive staff and Emergency Management BC at all times. There is no compensation provided for this availability outside of regularly scheduled hours of work.

As well, CRD staff are routinely required to work long or extended shifts and many subsequent shifts in a row, and may not receive suitable rest periods between shifts. These practices generally lead to staff experiencing poor mental and / or physical health and may also be in contravention of Employment Standards Act requirements and WorkSafeBC legislation.

Further, emergency program staff routinely work in a variety of capacities, including attending incident sites alone, because there is little capacity for extra staff support.

The Employment Standards Act states the following:

- There is a requirement to pay overtime rates where the employer requires or allows an employee to work more than 8 hours a day or 40 hours per week.
- An employer must allow an employee at least 32 consecutive hours free from work each week (7 days) or pay 1.5 times the regular wage rate for the time worked during that 32-hour period. An employee is also entitled to have 8 hours off between shifts unless required to work because of an emergency. (Note that the possibility of an emergency occurring does not apply; it must be an emergency in progress.)

Pertinent sections of WorkSafeBC legislation state the following:

*In sections 4.20.2 to 4.23, "to work alone or in isolation" means to work in circumstances where assistance would not be readily available to the worker*

*(a) in case of an emergency, or*

*(b) in case the worker is injured or in ill health.*

In terms of maintaining contact with a worker and ensuring their well-being, WorkSafeBC legislation states the following:

*4.21 Procedures for checking well-being of worker*

*(1) The employer must develop and implement a written procedure for checking the well-being of a worker assigned to work alone or in isolation.*

*(2) The procedure for checking a worker's well-being must include the time interval between checks and the procedure to follow in case the worker cannot be contacted, including provisions for emergency rescue.*

*(3) A person must be designated to establish contact with the worker at predetermined intervals and the results must be recorded by the person.*

*(4) In addition to checks at regular intervals, a check at the end of the work shift must be done.*

*(5) The procedure for checking a worker's well-being, including time intervals between the checks, must be developed in consultation with the joint committee or the worker health and safety representative, as applicable.*

*(6) Time intervals for checking a worker's well-being must be developed in consultation with the worker assigned to work alone or in isolation.*

- *Note: High risk activities require shorter time intervals between checks. The preferred method for checking is visual or two-way voice contact, but where such a system is not practicable, a one-way system which allows the worker to call or signal for help and which will send a call for help if the worker does not reset the device after a predetermined interval is acceptable.*

There have been recent losses of life of emergency responders within central BC where worker safety programs may have prevented the loss, such as [the tragic drowning of Cache Creek Fire Chief Clayton Cassidy in 2018](#).

Furthermore, in terms of training, education and certification to ensure that workers have safe workplaces, WorkSafeBC requires the following:

- *Employers are responsible for providing worker instruction and training under section 21 of the Workers Compensation Act. The Occupational Health and Safety (OHS) Regulation also requires mandatory worker education, training, and/or certification in many cases. Where specified in the Regulation, education, training, and certification must meet an acceptable training standard, or be provided by a person or agency acceptable to WorkSafeBC.*

As the CRD emergency program does not have a staff orientation, training, exercise or education plan or program, the CRD may be acting in contravention of WorkSafeBC guidance in the event of an incident. In particular, the CRD Manager of Emergency Programs is clearly not able to meet the requirements of the Employment Standards Act for being away from work if they must remain in contact at all times.

Opportunities and recommendations to rectify these issues are provided in the sections that follow. The CRD is encouraged to ensure that they maintain the health, safety and well-being of their staff who serve the residents of the region. Additional resources and capacity are required to ensure that workloads are reasonable, there is appropriate and safe capacity for program activities, and stress-related injuries are minimized.

## SUCCESSES WITHIN THE CRD EMERGENCY PROGRAM

While this project was undertaken specifically to evaluate the current state of the CRD emergency program and make recommendations, it's important to note that the CRD emergency program already manages complex emergency responses and provides incredible support to the CRD, which has seen a significantly high number of emergency events over the past decade.

The strengths of the program are many, but some of the more prominent ones are noted below, as derived from discussions with internal CRD staff, external organizations and time that CSC staff spent within the CRD EOC.

### ✓ **Leadership**

- During the wildfire season in the summer of 2021, both CRD staff and external participants working in the EOC noted the strength within the leadership team in the EOC. Both John MacLean (acting as Director) and Stephanie Masun (acting as the EOC Director and Deputy Director) kept the room informed, efficient, on task and calm during stressful wildfire activity.

### ✓ **Emergency operations — EOC strength**

- During the wildfire season in the summer of 2021, both CRD staff and external participants working in the EOC noted that the CRD EOC is very effective. The sheer number of activations that the staff group has had to manage shows that there is significant depth of experience, a level of comfort in the room, compassion and humour among CRD EOC participants. There is clear understanding and strong adherence to concepts of command, control and process flows; complex tasks are managed competently and the EOC itself functions at a very high level.
- It should be noted that this is also a weakness. A small core group of staff have been routinely activated for emergency response year after year since 2017.

### ✓ **Agricultural liaison programs**

- The addition of an Agricultural Liaison and an Agricultural Support Coordinator to the EOC staff team, as deployed during the 2021 wildfire EOC activation, showed great foresight and concern for the wellbeing of the ranchers and agricultural producers in the Cariboo region. These support systems are typically overlooked by other EOCs, and the relationships between the agricultural sector and the EOC is often missing entirely. The inclusion of sector-specific support services in the CRD EOC is innovative and progressive and should be commended.

### ✓ **Planning section strength and documentation**

- The CRD staff who support the planning section in the EOC are clearly well-practiced and care deeply for their organization and the well-being of CRD residents. The CRD EOC planning section may be one of the most proficient planning sections in the province — and is certainly one of the most experienced. The sheer number of evacuation alerts and orders that are prepared and released is significant. The strong documentation protocols and



retention established by the CRD EOC are exemplary and key to cost recovery and risk exposure.

✓ **Logistics support during response**

- Also noted during the 2021 wildfire response was the exceptional support provided by the logistics section. Tasked with ensuring the well-being of EOC staff and providing support for emergency operations (such as the provision of security guards to secure evacuated areas), the section deserves commendation.

✓ **Everbridge mass notification system**

- The CRD should be applauded for the development, management and effective use of their mass-emergency notification system. Clearly, a great amount of thought has been put into the development and execution of this system, which provides timely information for CRD residents. Across the region, 33% of CRD residents have registered for the notification service. By industry standards, this is a high degree of engagement for this type of service.

✓ **Staff dedication**

- Many external organizations and individuals who have interacted with the CRD emergency program have commented on the high degree of dedication shown by CRD staff during both emergency operations and regular programming. Despite the resource challenges and overwhelming emergency activation load, CRD staff and volunteers are known across the province to be approachable, relatable, dependable and compassionate.

✓ **Crisis communications**

- There may not be another organization in the province that does as good a job of providing factual, punctual and clear crisis communications. Due to high stress and other factors, tensions often exist with the threatened and affected public when interacting with local governments. The CRD Crisis Communications team and the contractors and staff who provide stellar support on the EOC information lines, social media feeds and media relations have demonstrated commendable significant and sustained efforts to keep CRD residents well informed.

✓ **Advance planning and GIS mapping during emergencies**

- CSC staff had the opportunity to witness the incredible in-depth advance planning that was undertaken during the wildfire emergency of 2021. Every fire had varying planning targets evaluated and mapped using CRD GIS systems well in advance of any recommendation for evacuation alert, order or order expansion. This level of advance planning and detail, and the speed at which the GIS technicians were able to produce maps ready for public release, was an incredible contribution to community and responder safety.

## KEY FINDINGS AND RECOMMENDATIONS

As part of the scope of the program review, CSC was asked to undertake a gap analysis and provide identification of opportunities for enhancement of the CRD emergency program. These recommendations are noted below. In order to better understand the financial and staff-cost implications of these recommendations, CSC has provided cost estimates, where applicable, to show the potential expense of developing that specific portion of the emergency program.

**IMPORTANT: Where possible, “Class D” estimates have been provided for planning purposes. These costs should be considered gross estimates until confirmed with prospective vendors and subject matter experts. Cost projections are highlighted in green.**

**IMPORTANT: Many of the recommendations note that there is no cost requirement — only staff time. It must be recognized that staff time does come at a cost, with both a financial cost to the organization and a time commitment from the emergency program, which is already operating at or above capacity.**

**Appendix B** contains all recommendations, arranged by sub-heading in a tabular format. [This link](#) provides quick access to those tables of recommendations.

## OVERALL CAPACITY

Almost every discussion with CRD staff, external agencies, support organizations and industry experts noted that the overall staffing capacity within the CRD emergency program is low.

The CRD emergency program supports diverse communities across thousands of square kilometers. The region itself has sustained more natural disasters than any other region of BC over the last ten years. The program is in its infancy and will need significant development work to become self sufficient and highly efficient. With only two full-time staff and the continuous cycle of staff changes, this CRD department is woefully under-resourced.

Emergency programs in BC are typically tasked with the following responsibilities:

- ✓ The development and maintenance of jurisdictional, departmental, hazard and functional plans, including a jurisdictional Hazard, Risk & Vulnerability Analysis.
- ✓ A progressive staff and volunteer training and exercise program.
- ✓ Volunteer recruitment, intake, support, supervision and recognition.
- ✓ Public education programs for multiple hazards.
- ✓ Grant management and other administrative processes.
- ✓ Ensuring operational readiness for hazards ranging from single house fires to those requiring mobilization of the jurisdictional EOC.

Across BC, the resources dedicated at the local-government level vary widely. Anecdotally, regions and municipalities that have not seen the need for significant emergency responses typically have few staff. Regions that are impacted frequently tend to have more emergency management staff. Some major cities in the Lower Mainland may have only one or two staff. At the other end of the spectrum, some regional districts have 6 or more emergency staff, as they have been repeatedly impacted by wildfires, floods and other emergencies.

Emergency managers typically expect that one day of emergency response in an EOC equals 10 days of recovery work. So, one day of minor flooding would equal 10 days of effort to manage all issues associated with those days of flooding. The CRD EOC has seen multiple and often compounding issues that run for weeks and months. This means that the cycle of response and recovery for current staff is never broken. Staff struggle to take a proactive approach to emergency management, which is key to organizational resiliency.

Issues like landslide response span years, so a staff member is required to maintain the response at all times, which leaves no time for program development, innovation or staff wellness. If one day of emergency response generally requires 10 days of recovery work, take the total number of days that the CRD EOC was activated over the past 11 years (1,874 days) and multiply it by 10 to indicate recovery days required (18,740 days). If we assume that there are 262 working days per year (2,882 days over 11 years), it is easy to see why the CRD emergency program does not currently have the capacity for innovation, development or staff wellness.

The CRD is also challenged in situations where there is not clear ownership of the responsibility for response to an emergency. For example, the CRD is currently managing landslide issues across the region. There is no provincial landslide plan or lead agency. As such, there is no lead organization like the BC Wildfire Service or a local fire department to help provide incident command for these situations. In local authorities where there are more resources and financial capacity, landslides are seen as a public works or engineering issue. However, these issues become complicated when they exist on crown land but carry potential risk for CRD residents. In these cases, CRD emergency program staff must often be on-site to assist property owners. This lack of local or provincial response capacity inhibits the core work of the emergency program.

CSC searched for industry data specific to BC and inquired with the BCAEM members undertaking staffing and compensation research to determine if they knew the emergency management program staffing levels or budgets by regional district or local authority. To date, that data has not been collected in any formal fashion. However, CSC was able to collate some information from regional district websites, budgets, and financial plans. This information is presented in **Appendix A**.

The analysis indicated the following themes:

- The CRD administers to one of the largest jurisdictions in the province.
- The CRD has a median population base among regional districts in the province.

- The CRD has a median investment of funding per capita among regional districts. (A note of caution in using this data: regional districts often report grant funding as an annual budget item, which can greatly skew the results of this analysis.)
- The CRD has a low number of staff allocated to their emergency program in relation to other regional districts.

The CRD has been challenged by staff turnover within the emergency program. Multiple managerial changes have taken place between 2016 and 2021. This leads to loss of continuity within the department, and during these transitions all forward program development is lost.

The CRD is a complex regional district. It encompasses over 80,000 square kilometers of land mass, has one of the lowest population densities in the province, has several small, remote, unincorporated municipalities, and is home to and the traditional territory of thirteen First Nations and three Indigenous national governments. In order to serve the region effectively, the CRD must rely on relationships and strategic partnerships across the region. There may be efficiencies in funding and staffing, and effort to be gained in seeking partnerships for program elements such as volunteer management, joint grant-funded initiatives, emergency equipment caches and otherwise.

Given the frequency of emergency events and subsequent EOC activations in the CRD, the need to develop formalized plans and programs, and the geographic and community complexity within the CRD, additional staff resources are needed. Recommendations and resource projections are noted below.

**IMPORTANT: For ultimate clarity, the CRD emergency program has only been able to focus on emergency response and recovery over the past five years due to the significant number, duration and severity of disasters. There has been insufficient time or resources to devote to program development, and the impact to the organization outside of the emergency program has also been significant. The cycle of disasters is not abating, with landslide issues becoming more significant, especially in areas affected by wildfire. Without some relief for the program, staff turnover is likely to continue, and the department will not be able to evolve effectively, which will ultimately be reflected in community readiness and resilience for future crises.**

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## EMERGENCY PROGRAM STAFFING

The Emergency Planning and Disaster Resilience department currently has the following staff allocations:

- Manager of Emergency Programs and Disaster Resilience
  - Reporting to the CAO, this is an exempt manager position responsible for the overall emergency program and disaster resiliency portfolios as well as supervision of subordinate staff.
- Emergency Planning Assistant
  - Reporting to the Manager of Emergency Programs and Disaster Resilience, this is a union position responsible for emergency program planning, programming, EOC operations and emergency support.

Both positions play an active role in any EOC activation.

The CRD has recently split the Protective Services department from the Emergency Planning department. They are now separate co-located departments that function well together due to past work history and complimentary service functions. The Protective Services department includes a manager of protective services, two fire services supervisors and a protective services assistant (who support CRD fire departments, the Central Cariboo Search and Rescue, and the 911 service). However, these other staff are fully committed to other responsibilities and are generally not available or responsible to the emergency management staff, except in extraordinary circumstances such as during EOC activations.

An EOC, when staffed to a level 2 (where most command and section chief positions are staffed), is disruptive and a significant draw on a smaller local government such as the CRD. The CRD emergency program is one of the smaller services within the CRD, but it has the potential to impact the other CRD staff significantly when emergency events occur, necessitating the EOC being staffed. The organization cannot disregard its mandated responsibility to assist the public in times of crisis, nor its obligations under the BC Emergency Program Act. Additional staff in this service would provide expertise and departmental capacity for an EOC activation (for events with lower staffing resource requirements), reducing demands, workloads, and stress levels among other CRD staff who may otherwise be needed in the EOC.

Currently, there are other staff within the CRD offsetting the lack of staff capacity within the CRD emergency program. The Chief Administrative Officer (CAO) in particular is often drawn into activations and emergency program activities because of a lack of trained and available emergency program staff. This is a draw on the day-to-day operations of the CRD and is a concern for business continuity. The CAO is a busy position and time spent outside of managing the organization results in a loss of effort in general CRD governance. These issues could be rectified with proper staffing of the emergency program.

### **RECOMMENDATION: HIRE THREE ADDITIONAL EMERGENCY PROGRAM STAFF TO SUPPORT CURRENT EMERGENCY PROGRAM STAFF.**

Many BC emergency programs are moving to staff their emergency programs with multiple staff resources, as organizations realize the complexity and demand of the developing climate crisis. It is unfair and unsafe to demand that a single staff resource be available at all hours of the day, every day, for immediate emergency response. Three additional staff members would complement the existing staff within the CRD emergency program, and provide suitable coverage should there be an illness, a need for staff leave, staff turnover or other disruptions of service.

The additional staff could be configured as follows:

**Table 4. Suggested structure of new staff resources.**

Type	Salary Range	Duties
<b>Emergency Operations Coordinator</b>	\$60,000 to \$75,000 per year	Manage minor emergencies, operational development
<b>Emergency Planning Coordinator</b>	\$60,000 to \$75,000 per year	Undertake the emergency planning cycle, including plan renewal and exercising
<b>Community Liaison Lead / Emergency Support Services (ESS) Director</b>	\$50,000 to \$60,000 per year	Manage the Community Liaison Program and act as the ESS Director as needed

Note that there are additional costs (office space, technology and others) associated with the hiring of new staff. A full cost analysis should be undertaken as part of the CRD staff planning process.

With the addition of these staffing resources (and associated portfolio budgets), the CRD has the option to designate these as EM generalists who share program portfolios, or to recruit portfolio-specific expertise such as Emergency Planners, a Community Liaison / ESS Director, a Public Education Coordinator or otherwise.

A core staff team would be the minimum number of staff required to efficiently manage a Level 1 or simple Level 2 EOC activation (i.e., for an apartment fire, small flood event, or minor wildfire emergency). During an EOC activation, there are a few critical positions that must be staffed — the EOC Director position, the Operations Section Chief position, the Planning Section Chief position, and a fourth position to manage logistics, liaison, finance and documentation duties. Without these core positions, the emergency program must draw from other areas within the CRD, thus taking those CRD staff away from their base positions and disrupting the business continuity of the organization (including, often, the CAO). Four positions is the minimum for a core base emergency operations team.

The recruitment of junior staff positions also allows for training and development of emergency program coordinators and provides for staff development within the CRD staff pool. Should there ever be a vacancy within the Manager of Emergency Programs position, there would be an opportunity to promote from within to fill the gap.

**IMPORTANT: Most of the following recommendations will be unachievable without the implementation of new staff resources. In order to build a successful program, the CRD emergency program needs the ability to both manage ongoing and developing emergencies, and the capacity to build program components to achieve sustainability, resiliency, and proficiency.**

#### **RECOMMENDATION: USE EXTERNAL STAFF AND CONTRACTORS TO ALLEVIATE THE PRESSURE ON INTERNAL CRD STAFF.**

Until staff resources can be added, the CRD should continue to seek support from qualified contractors and consultants to provide support for program development and emergency response. Furthermore, during EOC activations, the CRD should continue to seek lateral assistance from municipalities, other regional districts and First Nations governments. This provides the necessary surge capacity to staff the EOC and to reduce the impact on the CRD. As well, these are excellent opportunities for cross-training and relationship building; often jurisdictions in unaffected areas are keen to provide staff with opportunities to learn, whereby enhancing their own resilience.

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#### **STAFF RESOURCE COST PROJECTIONS**

The addition of emergency program staff would come at a cost to the CRD. The average salary for an emergency program coordinator (typically a non-management, union, technical specialist position) averages between \$60,000 to \$75,000 per year. This figure equates to \$75,000 to \$93,750 per year with additions such as pension, benefits and vacation costs.

**The addition of three of these positions — at entry-level funding — would cost the CRD approximately \$225,000 to \$281,250 per year in total.**

The estimates above do include benefits, but do not include additional costs like office space, IT infrastructure, training, development and vehicle use.

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#### **24-HOUR DUTY OFFICER CONCEPT**

Currently, the Manager of Emergency Programs must be available at all times to local emergency responders and EMBC. This means that to ensure that the region is not left unsupported by the CRD emergency program, the manager may not do any of the following:

- Be out of the range of cellular service.
- Be in a location that is too far from the office for a timely response.
- Undertake any activities that may hamper or delay an emergency response.



It should be noted that none of this “on-call” time is compensated. There is no provision for standby time, nor are there enough suitable alternate staff with whom the responsibility may be shared. Some jurisdictions in BC compensate exempt staff responsible for after-hours stand-by beyond their contractual work week with supplementary vacation days, time-in-lieu and / or financial premiums. Once engaged in ongoing emergency response, contracts dictate rates of compensation for working beyond regular hours and days of work.

When non-exempt staff are charged with on-call duties, there may be contractual obligations for compensation (generally direct financial compensation at overtime rates). For example, the Emergency Management BC Regional Managers are within a bargaining unit where the collective agreement requires an hour of pay for every four hours of stand-by. When engaged by phone or a response is required, there is a minimum 30-minute pay rate of time-and-a-half. Some jurisdictions engage non-exempt staff who are not full-time and supplement weekly on-call tenures with an additional day of pay.

It is unrealistic to expect that any staff member will be able to maintain 24/7 availability in perpetuity. Consistently being the individual who must respond to every house fire, minor emergency, or major emergency is damaging to the psychological sense of safety that all employees deserve. This is the reason why 911 dispatchers, first responders and other emergency managers (including provincial EMBC staff) are rotated out to less stressful tasks after difficult calls and shifts, and are not expected to be available at all times for response tasks.

This is also a point of failure in the organization. Should the Manager of Emergency Programs ever be unable to receive a notification of an emergency, the outside agency contacting the CRD may not have any other staff to contact, and important tasks like evacuations may not take place. The addition of extra staff provides an opportunity to have a second or redundant point of contact within the program.

The addition of more staff to the emergency program would also allow program staff to take holidays and have down time, even during EOC activations. With the current staff configuration, this is not possible.

**RECOMMENDATION: IN CONCERT WITH INCREASING STAFF LEVELS, DEVELOP A SYSTEM FOR A 24/7 EMERGENCY PHONE NUMBER TO BE REDIRECTED BETWEEN 3–4 CRD EMERGENCY PROGRAM (OR OTHER) STAFF MEMBERS, BASED ON A PREVIOUSLY DEVELOPED AND APPROVED SCHEDULE.**

**Cost: Approximately \$20 / month for the 1-800 number service.**

**IMPORTANT: The compensation of time allocated to stand-by staff — which may be a legal requirement for union or excluded staff — is not included in the estimate above.**

A phone number or cellular phone may be passed between employees weekly, or on whatever schedule is deemed appropriate by the team. This allows each member at least two to three weeks per month where they are not on call — which is beneficial for mental health and the ongoing resilience of the organization. There is also a need to integrate the emergency response system into general CRD organization business — and to consider incorporating manager positions outside of the emergency program into the rotation during business periods, and during periods where there is less chance of a response requirement. This will build internal capacity and alleviate pressure on the emergency program. There is a heavy responsibility for the emergency manager to simultaneously manage an EOC (if activated) and maintain an on-call capacity.

Other options include software and telephone-based pager-replacement technology, which would allow multiple people to get response support notifications, with the initial response charged to a Duty Officer. This allows depth and redundancy for unforeseen circumstances.

This emergency response notification system should also include a scheme delineating how the delegation of on-call responsibilities works and how the emergency program is activated (including EOC activation and authority to do so). Some of this direction may be captured in an updated emergency plan or can be created as a separate policy document.

This call centre system is currently used by several regional districts across the province — including the RDKB, RDEK, RDCK, and RDOS. Other jurisdictions use variations on these protocols or utilize similar systems. Organizations report that their staff are much more comfortable remaining within contact for the duration of a set schedule, rather than the expectation that they be available at all times.

Note that emergency program staff must be trained in the roles responsible for activating an EOC and managing the initial event if the Manager of Emergency Programs or the CAO are away or otherwise unavailable.

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## COMMUNITY LIAISON PROGRAM

During the engagement process, CRD staff noted that the Community Liaison Program, while beneficial, is time consuming and has not yet been fully maximized.

The concept of the Community Liaison Program is to provide a regional and geographically sensible distribution of contact points. These assist in informing the CRD emergency communications and response, supporting the delivery of emergency preparedness information, and building relationships with support organizations and individuals in areas that are infrequently visited by emergency program staff.

This type of program is very innovative and shows a keen interest in resident welfare by the CRD, and the CRD emergency program. These types of programs are rare, so the CRD should be commended for

having one. It is a necessity for a regional district that ranks fourth across all BC regional districts in area governed.

However, due to limited capacity within the emergency program, this program is not being used to its maximum potential. The emergency manager cannot manage the department and also undertake the execution of this sizeable program. These types of programs take time to administer and develop, and there are simply not enough staff resources to implement this program effectively under the current model. In order for this program to be most effective, it needs consistent development, long-term investment, and adequate training, oversight and effort.

It should be noted that the onset of the COVID-19 pandemic significantly disrupted the roll-out of this program, as in-person meetings halted and the CRD was not able to effectively undertake the responsibility. A core tenet of this program is the face-to-face meetings and interactions with program participants, which were not possible during the COVID-19 pandemic.

**RECOMMENDATION: IN CONCERT WITH INCREASING STAFF LEVELS, FULLY DEVELOP THE COMMUNITY LIAISON PROGRAM.**

**Cost: Staff time only. Potential travel costs. May be significant travel costs associated with program development.**

If fully resourced, the parameters of the Community Liaison Program could continue to be developed, supported, resourced and monitored. Community contacts facilitate relationship building, outreach, program development activities in terms of local hazards, risks, and vulnerability assessments, regional program development, and promote community-level emergency preparedness.

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## STAFF WELLNESS, HEALTH AND SAFETY

Staff wellness is a significant concern for emergency management programs. Emergency program staff face significant stress — they are often required to work with individuals and families who have incurred catastrophic losses, sometimes including the loss of loved ones or pets. These stories of loss, fragility and hopelessness, coupled with extreme stress during response and recovery activities, mean that emergency management staff face significant challenges in workplace wellness.

This workplace stress presents itself in these programs in many ways, including the following:

- Staff turnover, attrition and early retirement.
- Leaves of absence for mental-health reasons.
- Disassociation and loss of engagement.
- Staff burnout, loss of motivation and decreased productivity.
- Physical impacts such as cardiovascular disease and other physical manifestations of stress.
- Exhaustion and general unwellness.

These issues present themselves as lost-time incidents within the workplace, such as sick days, staff leave, health leave, loss of productivity and resignation.

Anecdotally, 90% of the Regional Municipality of Wood Buffalo staff, who operated the regional EOC for the Fort McMurray area, resigned from the organization within two years of the Fort McMurray wildfire.

Studies undertaken by Public Safety Canada within the last five years point to operational stress injuries that are frequently found present in public safety staff. These injuries include Post-Traumatic Stress Disorder (PTSD) and Operational Stress Injuries (OSIs). These injuries are incurred either by witnessing or being a part of a stressful event, or upon hearing about the stressful event from an affected individual (this is called secondary or vicarious trauma). Estimates from the report show that 10–35% of public safety staff will develop PTSD at some point in their career, and the percentage rises when there are frequent exposures to duress, stress and workload pressure.

Stress-related injuries are a significant risk for the CRD organization. Stress-related time-off may trigger an investigation into the root causes by WorkSafeBC. Lost time, staff absences and staff turnover have been some of the impacts that the CRD have already faced due to the extreme emergency response and recovery workload. An unhealthy workforce has cascading affects on productivity and, ultimately, service delivery to the tax-paying citizens to whom the regional district is responsible.

There are some ways that the CRD organization can lessen the impacts among emergency program and EOC staff.

**RECOMMENDATION: ENSURE THAT AFTER-ACTION REVIEWS (AARS) ARE CONDUCTED AFTER ANY EOC DEPLOYMENT, AND THE LESSONS LEARNED FROM THESE AARS ARE IMPLEMENTED.**

**RECOMMENDATION: ENGAGE DEDICATED STAFF TO WORK UNDER THE RISK MANAGEMENT OFFICER IN SIGNIFICANT RESPONSES IN ORDER TO ENSURE OCCUPATIONAL HEALTH & SAFETY POLICY COMPLIANCE, PSYCHOSOCIAL WELLNESS, WORKSAFEBC BEST PRACTICES, AND TO MONITOR FOR CONCERNS TO BE BROUGHT TO THE ATTENTION OF THE EOC DIRECTOR.**

**Cost: AARs are generally fully funded by expense authorization from Emergency Management BC.**

Funding and resources are available for these activities, and they can, if structured appropriately, provide some counselling support for staff as well. In the event of a future prolonged EOC activation, short in-house debriefing sessions for staff and contractors should be planned and delivered every one or two weeks, with monthly general debriefs as well. This provides opportunities to check in on staff well-being and collate emerging issues that need to be addressed. Following the demobilisation of the EOC, a more in-depth session should be held with EOC staff in correlation with an after-action review.

## **RECOMMENDATION: DEVELOP AN EMERGENCY PROGRAM AND EOC STAFF WELLNESS PROGRAM AND TOOLKIT.**

**Cost: Approximately \$25,000.**

Many emergency programs within British Columbia are working on these programs now (such as the RDKB). Many are built to assist with acute stress during EOC activations and chronic stress from general emergency program activities.

## **RECOMMENDATION: ENSURE EOC PARTICIPANTS HAVE ACCESS TO AN EMPLOYEE ASSISTANCE PROGRAM (VIA THEIR OWN BENEFITS), OR HAVE ACCESS TO A COUNSELLOR, IF NEEDED.**

**Cost: Counsellors are available for group or private sessions. Costs may be recoverable. Plan for \$150–\$250 per hour otherwise. Employee assistance programs are typically part of local government staff benefit packages.**

There are practitioners in BC who specifically support emergency responders in times of crisis. They can attend the EOC, lead group sessions, lead one-on-one sessions, and develop programs for future resilience. While some individuals may have some reluctance, these types of programs can be extremely beneficial for those individuals who access them.

Vicarious or secondary trauma is a serious risk for emergency responders, and the impacts from these kinds of trauma are real and potentially damaging for EOC staff. Vicarious trauma is the emotional residue that EOC staff and emergency management staff are exposed to from hearing trauma stories and becoming witnesses to the pain, fear and terror that trauma survivors have endured. Be aware that certain positions within the EOC and emergency program may be more susceptible to these effects. EOC information-line call takers, temporary-access permit staff, damage assessment notifiers and others may need additional support from the EOC to manage the stress that they witness. Be aware of EOC participants who begin to take too much ownership of positions, responsibilities, or response objectives, and those who refuse to leave upon shift completion.

## **GOVERNANCE AND STRATEGIC DIRECTION**

### **GOVERNANCE**

In order for an emergency program to function appropriately, the program must have the correct mandates and authority from which to govern. In order to determine these components, a reformed emergency program must take the time and effort to establish these mandates and authority.

The CRD emergency staff have not had the time to establish these mandates and authority. The emergency program, other than staff and a collection of emergency response practices, does not

operate in a strategic manner. The emergency management program has been stuck in a cycle of emergency response and recovery continually since 2017. This period has included significant flood and wildfire seasons, and the emergence of landside issues in specific areas within the CRD.

In order to effectively manage emergency incidents and the emergency program in general, CRD emergency program staff need the opportunity to determine what the program intends to provide in terms of services to area residents. The program has only been able to focus on two of the four main pillars of emergency management — response and recovery. Mitigation / preparedness, and prevention — which generally provide a 1:6 return on investment — are not currently possible due to lack of staff capacity and the constant focus on response and recovery.

**RECOMMENDATION: UNDERTAKE A STRATEGIC PLANNING PROCESS TO DETERMINE STRATEGIC AND OPERATIONAL PARAMETERS FOR THE EMERGENCY PROGRAM.**

**Cost: \$25,000 to \$50,000 depending on scope and detail.**

The emergency program has not had the opportunity to develop any of the following:

- A vision for the program.
- Objectives for the program.
- Staffing structure (generalists or designated subject matter experts and portfolios).
- Program governance and accountability.
- Regulatory compliance.
- Program budget and funding allocations.
- Administrative, technical and other support needs of the program, either from within the program or through support of other departments as defined in their workplans and mandates.
- What the components of the program are and how the effort will be divided among staff.
- Program policies, protocols, procedures, mutual aid agreements and bylaws that govern the emergency program.
- How the program will be evaluated and how a process of continual improvement would be implemented.

An effective strategic planning process would help to determine these parameters. The four pillars of emergency management (preparedness, mitigation, response and recovery) can be used to help identify activities. This work should be undertaken before any additional operational program development takes place.

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## EMERGENCY PROGRAM DESIGN

As additional staffing capacity is added, it makes sense to divide the responsibilities among staff so that the program can be more efficient. The intent of staff additions is to free up time for the Manager of Emergency Programs and Disaster Resiliency and to build program capacity. The development of specialty positions makes more sense than geographically assigning areas of responsibility.

For example, the Regional District of East Kootenay has just recently realigned their staff contingent. They now have a Planning Emergency Program Coordinator (EPC) who manages the emergency planning cycle by developing response plans, emergency plans and HRVAs, and assisting in building interagency relationships. They also have an Operations EPC who is responsible for the ESS program, day-to-day emergency operations (i.e., level 1 activations) and situational awareness. All staff are available for on-call duty officer shifts.

**RECOMMENDATION: AS NEW STAFF ARE ONBOARDED, CONTINUALLY ASSIGN WORK THAT ALIGNS WITH THE PLANNED DIVISION OF LABOUR. IT IS RECOMMENDED THAT THE CRD DEVELOP AREAS OF SPECIALTY FOR NEW STAFF.**

**Cost: Staff time only.**

For example, if an EPC is hired and assigned to support the operations aspects of the emergency management program, ensure that the responsibility for the Cariboo ESS program and / or the Community Liaison Program is transferred to that position as well.

Note that all staff, including managers and clerks, must maintain an awareness of key business areas for which they do not have primary responsibility, in case of an unplanned staff absence.

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## REGIONALIZATION

Currently, there are only two staff within the CRD emergency program. Only one of those staff is currently able to manage an active emergency response, though efforts are underway to build the proficiency of the second staff member.

This equates to very few individuals who can support an emergency response over the short term across the entirety of the CRD. EOC activations with multiple incident sites quickly become problematic.

As an EOC is activated and staffed, the EOC director will typically draw staff from within the host organization to fill roles (such as section chief positions). This has a significant draw on organizational resources and threatens the business continuity of the CRD.

One way to manage complex emergency responses is through creating agreements with like-minded, neighbouring organizations to provide support to one another during a crisis. Regional districts are encouraged to be the lead organizations in regionalized emergency programs by provincial entities like



Emergency Management BC. The adoption of the new Emergency Program Act will likely strengthen the need for regionalization, as the province moves to affirm the responsibility of local authorities to manage their own emergencies and be less reliant on provincial resources.

In this model, mutual aid agreements would be signed with organizations like the City of Quesnel, the City of Williams Lake, the District of Wells, and the District of 100 Mile House. Local First Nations should also be encouraged to be a part of this structure. There are ways to build the structure so that each individual organization maintains their own independence (as is required for legal processes such as evacuations and states of local emergency). However, there are several benefits to regionalization, including the following:

- An expanded staff pool from which to draw EOC participants during an emergency. (This includes the benefit of drawing staff from outside the active emergency zone.)
- A direct benefit in building lasting, trusting relationships within the region.
- The ability to significantly build the proficiency of EOC staff, especially those who may be from organizations that see infrequent EOC activations.
- The opportunity for smaller communities to learn from more experienced staff.
- The opportunity to standardize and streamline emergency planning, response, recovery and mitigation.
- The ability to have engaged personnel strategically available in areas of the CRD, reducing travel requirements and leveraging local knowledge and expertise.

These structures have existed within fire departments for years. Many fire departments would argue that they would not be able to operate without the benefit of regionalization or mutual aid programs. The same will be said for emergency management programs in the years to come.

Regionalization assists communities to be better able to manage difficult questions and initiatives such as the following:

- How do we best respond to emergencies, which likely exist across jurisdictional boundaries?
- How do we embed all four pillars of emergency management in our organization's day-to-day roles?
- How do we use risk information to help formulate plans for response, recovery, mitigation and preparedness?
- How do we enhance community education to be better prepared?
- How do we continuously improve through working together?

**RECOMMENDATION: UNDERTAKE A FEASIBILITY STUDY TO DETERMINE IF IT WOULD BE SUITABLE TO BUILD A REGIONAL EMERGENCY PROGRAM FOR MUNICIPALITIES AND FIRST NATIONS WITHIN THE CRD, WHICH WOULD INCLUDE THE SHARING OF COSTS AND STAFF, TO EASE THE BURDEN OF EMERGENCY MANAGEMENT ON ANY ONE AGENCY.**

**Cost: Staff time only, if conducted internally. \$50,000 to \$100,000 if facilitated by an outside consultant.**

Multiple CRD municipalities and First Nations have indicated a desire to explore this option, as noted through the engagement phase for this project and others. Should the CRD find itself with suitable resources to pursue this option, this could help alleviate cross-jurisdictional issues such as with the ESS program (more about that noted later in this report). It would also help secure CRD business continuity so that CRD staff, such as the CAO, would not need to be engaged during emergency responses as frequently.

**NOTE: It must be recognized that, due to low emergency program staff numbers, the CAO has invested significant time in the program since 2017. The CAO is currently backfilling for the lack of capacity within the emergency program and, as such, the investment of CAO time in the emergency program needs to be recognized. This constitutes a serious issue for the CRD, as the CAO's time is needed elsewhere to support local government operations.**

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## GRANT FUNDING

In general, provincial funding for local emergency programs is provided by way of grants. Many of these grants are delivered through several different funding streams by the Union of BC Municipalities.

The annual cyclic grant program offered by various funding organizations is not able to be adapted to funding issues that require immediate attention outside of response, and it is generally challenging to fund operational initiatives within these grant programs. Mitigation measures to stop chronic repetition of incidents must be planned, engineered and undertaken within acceptable grant cycles, which can be challenging for organizations with lower staffing levels. A comprehensive cyclic work program for provincial and federal grants should be explored to address long-term issues. Strategic risks across the region and a Hazard, Risk, and Vulnerability Analysis can be used to provide a high-level work plan. All available grants should be reviewed — in particular, the UBCM Community Emergency Preparedness Fund grants for flood management and EOC development, FireSmart / CRI grants, and joint provincial/federal improvement grants.

Grants can be problematic as their award is often infrequent, restricted to certain kinds of activities, and requires significant outlay of staff time to manage. Grants are not the simple funding arrangement they are often perceived to be.

Grants require significant amounts of time and resources in the following activities:

- The writing of grant applications.
- The time required to receive bids and quotes from prospective vendors.
- The writing of requests for proposals and to evaluate responses.
- The management of the bidding and award process.
- The time and effort required to receive, spend and account for the grant funds.
- Time involved in hiring a contractor or undertaking the material purchase.
- Providing and meeting interim and final reporting requirements.
- Providing project management throughout the grant period, and interaction with the contractor, temporary staff and / or project management committee.

Grants can be helpful when an organization is attempting to build specific tools, acquire specific goods or undertake specific projects. However, due to staff time requirements, they should be used for special initiatives and to supplement the more desirable year-over-year permanent core funding.

**RECOMMENDATION: GRANTS SHOULD BE ACCESSED SPARINGLY, AND WHEN APPLIED FOR, THE TRUE COST OF BOTH THE GRANT TIME AND THE STAFF TIME REQUIRED TO MANAGE THE GRANT SHOULD BE ACCOUNTED FOR. GRANT APPLICATIONS SHOULD BE REGIONAL WHERE POSSIBLE, IN ORDER TO INCREASE THE DOLLAR VALUE AND EFFICIENCY OF THE GRANT.**

**Cost: Staff time to manage the grant process.**

Grant programs often allow local governments to “hold back” up to 10% of the grant total for administration costs. This 10% should be held in reserve to offset staff costs, or to cover the costs of external project managers who could support the project (and thereby reduce the amount of staff time and effort required). For example, the CRD would be able to “hold back” \$2,500 of a \$25,000 grant for internal staff time costs.

**RECOMMENDATION: INVESTIGATE THE POSSIBILITY OF USING THE 10% ADMINISTRATION HOLD BACK FROM A VARIETY OF GRANTS (ACROSS THE CRD) TO SEE IF ENOUGH REVENUE COULD BE GENERATED TO HIRE A FULL TIME GRANT WRITER / GRANT PROJECT MANAGER.**

**Cost: There should be no cost to the CRD.**

Further to the above recommendation, while there may be potential initial financial and staff time costs, this initiative has the potential to be self-sustaining during the second and future years. It is important that the grant writer supports the whole organization. Also, it is important to recognise the cyclic nature of grants and to have contingency funds on hand, so the resource is not lost in the event of a gap or delay — hence why working across the entire organization provides that buffer.

## EMERGENCY OPERATIONS

### EOC OPERATIONS

Through engagement directly with CRD staff and from a deployment to the CRD in the summer of 2021, CSC staff were able to gather significant information about how the CRD EOC functions.

There is significant strength in the EOC staff group, including both regular CRD staff and those individuals asked by the CRD to support EOC Operations (contractors, consultants and others).

The CRD may wish to undertake some planning sessions and tabletop exercises to ensure that each EOC section is being utilized effectively and efficiently. CSC staff noted that the Command Staff and Planning Sections were very strong. There may be an opportunity to utilize the Operations Section more meaningfully, including as a group to maintain situational awareness, and to maintain contact and build relationships with other support organizations (Ministry of Transportation, Ministry of Environment and Climate Change, etc.).

The CRD EOC has documented some typical EOC processes — primarily in the Planning Section. Other processes in use, such as the re-entry permitting process and EOC exit interview processes, were in development during the 2021 wildfire season. However, there remain many processes specific to the CRD EOC that have yet to be documented due to low staff capacity. For the CRD EOC to remain efficient, these processes need to be documented and consistently used, and staff need to be oriented to them.

The following are different ways to document processes, and some benefits of each:

- Policies give firm guidance on how activities should be undertaken. Policies should be used in situations when there are legal considerations, such as evacuations.
- Checklists are ideal for repeated tasks when it is important to undertake several specific steps in a specific sequence.
- Procedures document how a process should be undertaken, generally in a step-by-step process.
- Flow charts break down processes into individual steps and show how these steps should progress.
- Standard Operating Guidelines (SOGs) are formal documentation but allow some interpretation around how processes should be undertaken to achieve specific goals. Using SOGs in public safety settings allows participants to advance through the process in the way that best suits the situation, as long as certain conditions are met, and the intended outcome is achieved.

Sometimes, written procedures can be too prescriptive and can cause challenges for staff when they are trying to follow them as completely as possible. CSC staff witnessed a situation where an evacuation alert area map was being produced. As a result of some prescriptive written processes, varying opinions and other factors, the release of the evacuation alert was delayed for several hours. These processes need to be simple guidelines that ensure the consideration of key concepts during dynamic situations, with the intent of streamlining and speeding up the process.

RECOMMENDATION: BALANCE THE TASKS, ROLES, AND RESPONSIBILITIES AMONG EOC SECTIONS SO THAT EACH SECTION PROVIDES ROUGHLY THE SAME CONTRIBUTION TO EOC ACTIVITIES, OR ENSURE THAT EACH SECTION HAS SUFFICIENT RESOURCES SO THAT ONE SECTION IS NOT UNDERTAKING TASKS BETTER SUITED TO SECTIONS DUE TO A GREATER NUMBER OF RESOURCES.

Cost: Staff time only.

RECOMMENDATION: CONTINUE TO DOCUMENT EOC CORE PROCESSES IN CLEAR LANGUAGE, USING APPROPRIATE TOOLS, SO THAT NEW EOC STAFF KNOW WHERE TO LOOK FOR DOCUMENTATION, HOW TO UNDERTAKE SPECIFIC TASKS, AND CAN QUICKLY GRASP THE CONCEPT OF HOW THE CRD EOC UNDERTAKES CERTAIN ACTIVITIES.

Cost: Staff time only.

Different levels of EOC activation require different methods of response management. For example, a level 1 EOC response can be managed through documented processes. However, a level 3 EOC response requires much more strategy and becomes more functional in nature because of the staff requirements and scope of responsibilities.

RECOMMENDATION: STREAMLINE AND STANDARDIZE EOC PROCESSES AND WRITTEN PROCEDURES WHERE POSSIBLE SO THAT THEY ARE EASY FOR NEW STAFF TO UNDERSTAND AND MEET THE GOAL OF SHORTENING PROCESS TIMES FOR TYPICAL EOC TASKS.

Cost: Staff time only.

RECOMMENDATION: ENSURE INCOMING EOC STAFF, PARTICULARLY THOSE UNFAMILIAR WITH CRD OPERATIONS, ARE BRIEFED ON SECTION-SPECIFIC PROCEDURES (FOR EXAMPLE, HOW TO ISSUE EVACUATION ALERTS). THESE PROCEDURES SHOULD BE DOCUMENTED SO THAT THERE IS, AT MINIMUM, A TRANSFER OF RESPONSIBILITIES IN WRITTEN FORMAT.

Cost: Staff time only.

RECOMMENDATION: CONTINUE THE BEST PRACTICE OF FORMAL AND INFORMED STAFF TRANSITIONS WHEN NEW STAFF ARE ROTATED INTO EOC POSITIONS.

Cost: Staff time only.

RECOMMENDATION: CONTINUE TO DOCUMENT AND REFINE THE TEMPORARY ACCESS PASS PROCESS MANAGED BY OPERATIONS (THE CRD PROCESS HAS BEEN NOTED AS A PROVINCIAL BEST PRACTICE).

Cost: Staff time only.

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## EOC STAFFING

When major emergencies or disasters occur and an organization like the CRD must activate an EOC, it is often a significant draw on organization resources. Many staff from departments outside of the emergency program must be seconded to emergency response to ensure that EOC positions are filled and regional district residents are supported as best as possible and in alignment with mandated provincial government legislation.

This often has a significant impact on day-to-day regional district business. Planners, administration staff, communications staff, clerks, building inspectors, fire department staff, procurement and contract staff, finance staff and others all find themselves tasked with supporting the EOC.

There are other ways to support the emergency operations centre and the CRD is already following this best practice. Section chief positions, communications positions, ESS positions and agricultural support positions are often contracted out during emergency response.

The addition of further contract positions can alleviate some of the pressure that the organization faces during activation. Maintaining a list of trusted support personnel, which can be called upon early in an event (by way of funding from EMBC through an expense authorization form approval) can be beneficial. As well, a regional program in this sense could see staff from other organizations (municipalities, First Nations and other regional districts) attending the CRD EOC and providing much needed and timely expertise and support.

### **RECOMMENDATION: EXPAND THE USE OF STAFF FROM OTHER AGENCIES, CONSULTANTS AND CONTRACTORS TO ALLEVIATE THE PRESSURE ON INTERNAL CRD STAFF.**

**Cost:** Costs should be recoverable during response and recovery from EMBC.

### **RECOMMENDATION: CONSIDER MORE FREQUENT ROTATIONS OF CRD STAFF WITHIN THE EOC TO PROTECT STAFF WORKLOADS AND CRD BUSINESS CONTINUITY (CONSIDER LESS BACK-TO-BACK DAYS IN THE EOC, OR MORNING AND AFTERNOON SHIFTS).**

**Cost:** Staff time only.

### **RECOMMENDATION: DEVELOP AND MAINTAIN A LIST OF TRUSTED INDIVIDUALS WHO CAN BE TASKED WITH RAPID DEPLOYMENT INTO THE CRD EOC.**

**Cost:** Staff time only.

### **RECOMMENDATION: CONTINUE TO INVITE STAFF FROM OTHER LOCAL AND FIRST NATIONS GOVERNMENTS INTO THE EOC FOR CROSS-TRAINING AND TO PROVIDE SUPPORT. CREATE TRAINING OPPORTUNITIES FOR NEW EOC PARTICIPANTS SO THEY CAN BE ORIENTED TO EOC ACTIVITIES IN A CONTROLLED AND SUPPORTIVE SETTING.**

**Cost:** Staff time only. Any travel costs should be recoverable from EMBC while under task.

**RECOMMENDATION: ENSURE OPERATIONS AND PLANNING CLERK POSITIONS ARE STAFFED DURING EOC ACTIVATIONS, AT MINIMUM, TO KEEP UP TO DATE ON DOCUMENTATION TASKS (IF CLERKS ARE NOT AVAILABLE FOR ALL SECTIONS).**

**Cost: Staff time only.**

**RECOMMENDATION: CONSIDER TRAINING TWO OR THREE CRD STAFF TO ACT IN EACH COMMAND AND SECTION CHIEF POSITION, FOR REDUNDANCY.**

**Cost: Staff time only.**

**RECOMMENDATION: DEVELOP AND MAINTAIN A SUPPLIER LIST OF RESOURCES THAT MAY BE NEEDED FOR THE EOC OR EOC OPERATIONS.**

**Cost: Staff time only, unless operationally engaged, whereby costs may be eligible for reimbursement.**

This supplier list may include, but is not limited to:

- Communications professionals.
- Subject matter experts (wildfire, forestry, flood, agriculture, etc.).
- Emergency management consultants.
- Heavy equipment suppliers and operators.
- Caterers.
- Flagging and traffic control companies.
- Security companies.
- EOC staff resources, including clerical support.
- Rental companies.
- Soil, sand, rock and gravel providers.
- Clinical counselors and wellness providers.
- Flood response contractors.

If desired, a prequalification process could be undertaken through the CRD Procurement department and BC Bid to identify statements of qualifications and / or standing contracts. This would allow these resources to be identified and the necessary procurement paperwork completed prior to the next emergency. This may include sample contracts, direct award rationale, development of potential vendor and supplier lists, and defining procurement rules and policies.

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## TRAINING AND EXERCISING

Because of repeated EOC activations, staff changes, and relatively low staff capacity, the CRD does not have an established and progressive training and exercise program. The intention of these programs is to establish foundational knowledge which builds confidence and competence as it expands in complexity and into function-specific orientations.

Exercises are often misconceived to be tests of readiness; instead, they should be capstones to training and an application of learning. It is only at the culmination of comprehensive training or in response that



personnel are tested. Drills or exercises should be more of an assessment of effective process and less of personal performance.

Staff are generally trained for specific positions within the EOC. Often, those whose base positions align with EOC positions are placed accordingly. For example, someone who is good at procurement will typically be placed in the Logistics Section. To better understand their individual roles and the processes associated with them, and to maximize organizational depth and flexibility, it is recommended that EOC staff cross-train where practical. Training sessions should be organized to initiate and train a core team and then extend to all staff for each section. This will allow familiarity and competence of the routine activities throughout the section team.

The Justice Institute of BC, other emergency management training organizations, and specialized consultants can help build out the skills of EOC participants. Emergency management training and exercises can be draws on staff time, especially for those seconded to the EOC from other departments and agencies. There can be greater flexibility in enrolling staff in online training and / or engaging emergency management consultants who specialize in training and who can adapt training delivery to the needs of clients.

It would be beneficial for EOC staff within the CRD to take additional training courses as their time and departmental budgets allow. Tracking the training taken by EOC participants allows for forecasting the needs of the department, and for planning and prioritizing training needs, which aids in budgeting.

**RECOMMENDATION: DEVELOP A CRD EMERGENCY TRAINING PROGRAM AND TRACK THE PROGRESS OF EOC PARTICIPANTS.**

**Cost: Staff time only.**

There are certain positions within the CRD that require specialized training. EOC call takers (staffing the information line), those handling temporary access permits, those who may be notifying residents of property loss, and those who may be presenting and speaking at public meetings all need specialized training to manage the challenging conversations they will be having. [The Justice Institute of BC provides an excellent course to navigate these situations.](#) The course may be paid for and hosted through the EOC grant process through the UBCM, for example.

**RECOMMENDATION: PROVIDE DIFFICULT CONVERSATION TRAINING TO CERTAIN STAFF WITHIN THE EOC.**

**Cost: Expect approximately \$1,000 per day for the instructor, plus travel costs.**

**RECOMMENDATION: DEVELOP A CRD EMERGENCY EXERCISE PROGRAM. INCLUDE TIMELINES, EXPECTED PARTICIPANTS, EXERCISE TYPES, SCENARIO IDEAS AND HOW COSTS MAY BE COVERED (FOR EXAMPLE, THROUGH GRANT OPPORTUNITIES).**

**Cost: Staff time only. The exercises themselves will range from \$10,000 to \$50,000, depending on the complexity, if outside contractors are used to develop them.**

An exercise program undertaken over a number of years will help to develop EOC staff proficiency. Training is valuable, but it is not a replacement for conducting the work. These experiences are best gained through a graduated exercise program. Typically, the exercise cycle runs over five or more years. Exercises start out basic, including position familiarization and walk-throughs (where everyone can see the process at slow speed), and progress to full-scale exercises running in real-time and potentially including many outside agencies. Often, grant funding can be received to help develop these programs. Exercises should both build experience and test systems designed to facilitate response. Refresher or orientation exercises can be designed and hosted for new staff and new EOC participants.

It is recommended that any exercise program gradually builds in complexity and that individual elements should be exercised in isolation prior to their integration into multi-functional and full-scale exercises. An annual training and exercise program is recommended for staff with stakeholder participation to develop and practice EOC activations, procedures, and general emergency management familiarity.

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## **EOC FACILITIES**

EOCs can be hectic, stressful and challenging locations to work in. The following observations and recommendations are based on the engagement of CSC staff and feedback from EOC staff during time spent in the Cariboo Regional District EOC during the 2021 wildfire response.

CSC found the CRD EOC to be an exceptionally well-functioning facility and noted the following:

- There is ample room for all EOC functions (Command, Operations, Logistics, Planning, Communications and Finance) to operate smoothly within the EOC space.
- The noise levels were reasonable during periods of high activity.
- There is ample space for teams and individuals to use as break-out rooms for targeted discussions and meetings.
- The display capabilities within the room are excellent.
- The layout follows a typical, functional Incident Command System layout.
- Sections that often are more vocal — like Communications — have their own locations to operate in, while still being a part of the discussions in the room (to maintain situational awareness).

The CRD EOC is highly functional as an emergency response coordination room. Specifically, the room facilitates the interaction between functional elements and promotes good communication between sections and functions. The technology within the room functions exceptionally well, with large displays for the viewing of situational awareness materials, good workflow and clear structure. Chairs and desks are comfortable and well positioned. The access control to the room is excellent. The EOC provides for suitable breakout and meeting spaces. The locations of break rooms and print machines are laid out well. In particular, the location and function of the Communications section — located for quietness and privacy, while also remaining connected to the general EOC — is exceptional.

**RECOMMENDATION: ENSURE THAT NEW STAFF BEING BROUGHT IN TO SUPPORT THE EOC RECEIVE A FACILITY BRIEFING UPON ENTRY, AND A DEMOBILISATION PLAN AND EXIT INTERVIEW UPON THE COMPLETION OF THEIR DEPLOYMENT. (THESE PROCESSES WERE INITIALIZED DURING THE 2021 WILDFIRE SEASON.)**

**Cost: Staff time only.**

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## EMERGENCY SUPPORT SERVICES

Emergency Support Services (ESS) is the component of emergency management that is used to support those residents impacted by disaster. It provides a system whereby those who have experienced impacts, such as the loss of a home to a structure fire or the displacement from a home due to landslide, are supported until one or more of the following can occur:

- Their insurance provides support for them.
- They can return home.
- There are other services activated by various levels of government to support their recovery.

ESS is one of the most frequently needed and used emergency management tools, and yet it remains one of the least supported systems in emergency management. Part of the issue is that there is an expectation for volunteers, typically elder citizens, to support these programs. Emergency programs and first responder organizations place much higher value on incident response, property protection, critical infrastructure protection and other aspects of emergency response, than on the welfare of residents. This happens because local governments are often not familiar with the nuances of working with people and social needs as opposed to more typical local government services.

The current ESS system within the CRD and its member municipalities is relatively complex. The District of 100 Mile House, the City of Williams Lake, and the City of Quesnel all have their own ESS teams (composed of volunteers and paid part-time ESS Directors). The CRD maintains agreements and contracts with the municipalities to provide services to CRD residents who may be impacted by emergency events. First Nations communities are assisted through an informal agreement between parties.

Currently, there is single contractor who keeps all aspects of the CRD ESS program operational. Should this individual leave or be unable to assist, the entire program is at risk. Additional (and formal) support is required, and additional agreements and documentation would be beneficial.

**RECOMMENDATION: CONSIDER REGIONALIZING THE ESS PROGRAM. HAVING A SINGLE AGREEMENT THAT MAINTAINS THREE SEPARATE CENTRALLY-MANAGED TEAMS WOULD BE SIMPLER AND REQUIRE LESS OVERSIGHT FOR ALL LOCAL GOVERNMENTS. INCLUDE FIRST NATIONS WHERE POSSIBLE.**

**Cost: Staff time only, if conducted internally. \$25,000 if an external contractor is used to develop the plan.**

Other organizations within BC, such as the Regional District of Okanagan-Similkameen, have implemented regional ESS programs in the last few years.

First Nations communities (and the development of First Nations ESS teams) could be included in this regional plan, which would build capacity in remote communities and provide additional levels of support for CRD and First Nations residents.

**RECOMMENDATION: HIRE A PART-TIME ESS DIRECTOR / COORDINATOR (OR INCLUDE IN OVERALL STAFF INCREASE OF THREE POSITIONS).**

**Cost: \$20,000 to \$50,000 per year.**

Right now, the ESS Director is compensated on an as-needed basis. When a higher level of service is required (such as for a level 2 or 3 response), the CRD EOC submits a funding approval request to the local EMBC office, and a just-in-time contract is established.

A more sustainable and adequately funded and resourced model, with the potential to build more robust systems, would be to hire a regional ESS coordinator as part of the evolution of the CRD emergency program. This person could create regional and local ESS plans, manage volunteer groups in a number of communities, and develop training programs for ESS volunteers. This is linked to previous program structure and resourcing recommendations as well.

**RECOMMENDATION: CREATE A REGIONAL ESS PLAN**

**Cost: Staff time only, if conducted internally. \$10,000 to \$25,000 if an external contractor is used to develop the plan.**

As noted above, a regional ESS plan is required. This plan would document response procedures, team training requirements, governance structures and other necessary particulars. This work could be undertaken by a contractor, but it would be best developed in the region, by the people familiar with the teams in place and the situations that they face on a regular basis.

**NOTE:** The Cariboo ESS teams are some of the most experienced teams in the province because of their frequent activation for catastrophic events (including supporting small and large activations and the combination of major wildfires and floods). As such, the health, safety and sustainability of the ESS teams in the Cariboo is of critical importance. These *volunteer* teams should be formally recognized for their heroic efforts in supporting CRD residents over the past five fire, flood, and landslide seasons.

**RECOMMENDATION: DEVELOP A RECOGNITION PROGRAM FOR ESS VOLUNTEERS.**

**Cost:** Plan for up to \$5,000 per year for recognition events and awards.

Figure 8. ESS Reception Centre during the 2021 fires. Photo courtesy the 100 Mile Free Press.



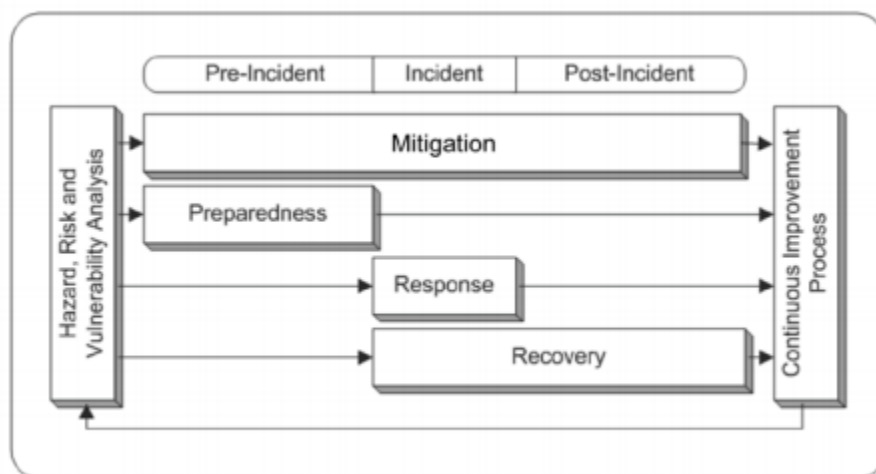
## EMERGENCY PLANNING

An important part of any emergency program is the emergency planning process. This is a continuous process that ensures that evolving hazards — such as landslides — are identified, plans are implemented to manage the response to these hazards, risks are mitigated to prevent an emergency, and residents are prepared for eventualities relating to the risk.

An emergency plan is a legislated requirement of the Province of British Columbia. The current CRD emergency plan is from 2006. An update was planned for 2017, but due to staff changes within the CRD, an updated version was not completed. A framework was completed, and an audit undertaken as an output of the funds expended for that work. However, an updated plan is not in place. There is no formal recovery plan, no evacuation route planning, no training and exercise plan, and few emergency operations plans. All of these are critical to the success of an emergency program. An updated HRVA and emergency plan can be used to identify strategic risks across the region and the HRVA can be used to provide a high-level work plan to delineate core activities for the emergency program.

General emergency management guidance recommends that emergency plans be reviewed annually, with a full update every five years. An effective emergency management plan with a full HRVA is a springboard for further operational plans, such as a flood response plan or evacuation plans, both of which the CRD would benefit from, but does not currently have.

Figure 9. The four phases of emergency management and the emergency management planning cycle.



Ideally, the CRD should have a full emergency planning cycle, whereby all plans and documentation within the CRD emergency program would be reviewed, revised, and updated every five years. However, lack of staff capacity has prevented this from happening. This review cycle should operate in tandem with, and incorporate lessons learned from, after-action reviews following incidents and exercises.

The lack of updated planning documentation is concerning in a region such as the CRD where frequent catastrophic natural disasters are taking place. An updated comprehensive emergency plan or strategy is

required for effective emergency management within the CRD. It is common for jurisdictions to compile all aspects of planning and procedures into one comprehensive emergency plan, but this can result in difficulty in reference. Any efforts in the development of emergency plans should consider the perspective of the end-user and should be drafted for ease of reference. Indeed, many plans are drafted in order to address dynamic situations and subject-matter and may be better written as guidelines, which are less descriptive and are intended for greater flexibility and adaptability of the end-user.

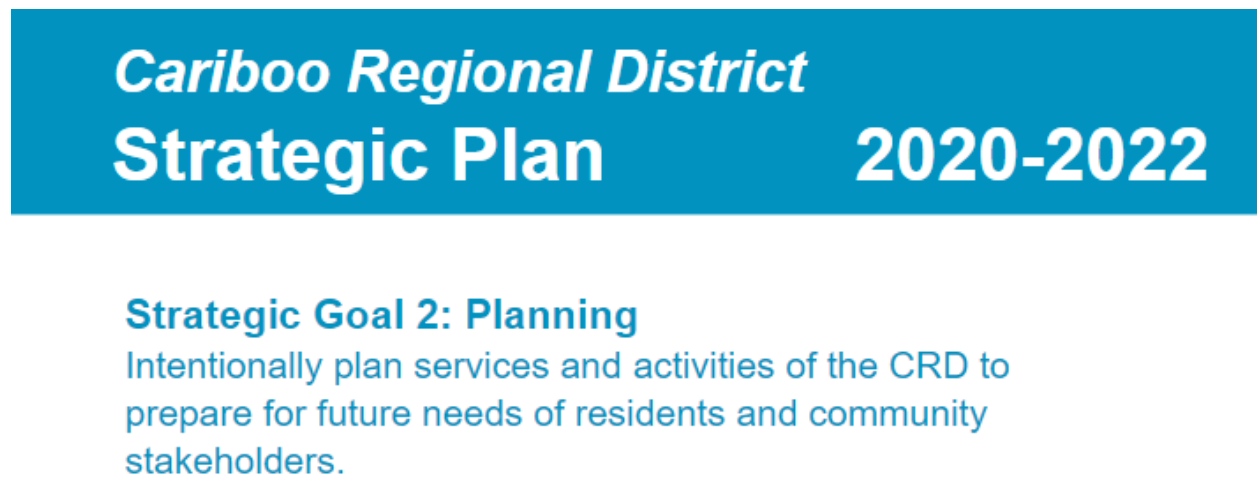
It should be recognized that the emergency planning needs of a jurisdiction may include the following:

- Jurisdictional, governance or management plan — this is the overarching plan that guides policy and concepts of operations. It should include the HRVA and define lead and support departments and agencies for each hazard.
- Departmental — these plans / guidelines are often incorporated in business continuity plans (or continuity of operations) and address departmental process criticality, internal and external dependencies, contingency strategies, data and documentation retention and backup, and staff succession strategies and emergency delegations of authority.
- Hazard-Specific or operational — often, the hazard-specific variables of impact and response requirements require operational reference. These may be incorporated into the broader jurisdictional plan, added as annexes or, depending on complexity, established as stand alone plans.
- Functional — these may be best defined as guidelines and may include ESS, damage assessment, evacuation and other operational activities.

The CRD Strategic plan notes that the development of an emergency management plan is a high priority, ranking the development of this plan as its second strategic goal for the period of 2020–2022.



Figure 10. Excerpt from the CRD Strategic Plan.



**RECOMMENDATION: MAKE UPDATING THE CRD EMERGENCY MANAGEMENT PLAN A PRIORITY. LOOK FOR OPPORTUNITIES TO BUILD OPERATIONAL RESPONSE PLANS FOR EVACUATIONS, WILDFIRES, FLOODS AND LANDSLIDES.**

**Cost: Staff time only, if conducted internally. \$50,000 to \$100,000 if an external contractor is used to develop the plan, depending on scope / level of detail.**

Additionally, one of the main priorities of any local authority is to ensure that they have a solid plan for implementing evacuations of their residents. While much of the incident response itself is managed by other agencies, evacuations must be timely, effective, efficient and safe. The planning of these activities must be a priority for any local government. Sufficient plan development, training, implementation and exercising of evacuation processes are critical to the safety of residents and visitors to CRD communities.

Furthermore, it is recommended to implement a planning cycle for emergency plans, to ensure that they remain current.

**RECOMMENDATION: ADOPT A FORMAL CRD EMERGENCY PLANNING PROCESS (AN OVERARCHING PLAN FOR PLAN DEVELOPMENT).**

**RECOMMENDATION: CONSIDER EMPHASIS ON PLAN WRITING IF / WHEN EXPANDING THE STAFFING CAPACITY OF THE CRD EMERGENCY PROGRAM.**

**Cost: Staff time only.**

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## RE-ENTRY, RAPID DAMAGE ASSESSMENT AND DAMAGE / HAZARD NOTIFICATIONS

Once the threat of the hazard has passed, the EOC needs to determine how and when to let the public back into the area. Under normal circumstances, the EOC will follow the procedure for lifting alerts and orders, and residents will be allowed to return to their homes. However, when there has been significant damage, the CRD will want to control the re-entry process to keep people safe.

The re-entry pamphlet developed by the CRD is a best practice that should be continued. The EOC will have to determine how best to provide this to residents (such as at a public meeting or at a security checkpoint).

The CRD needs to develop a formal Rapid Damage Assessment (RDA) procedure, ideally aligned to the revised Post Disaster Building Assessment (PDBA) guidance of BC Housing, which is recognized as an international best practice. Some of the CRD damage assessment documentation was completed during the EOC activation in July / August of 2021, and that work may be continued and expanded. Almost every EOC activation will require this process (or at the very least an assessment of damage), so documenting these processes increases EOC efficiency.

An issue that presented itself was how to determine the contact information of residents who may be absentee owners, evacuated, or unknown to local agencies. These individuals deserve to know that their properties have been impacted, but it is often difficult to contact them.

A variety of methods exist to try and determine how to contact homeowners, including the following:

- Access CRD tax records or building inspection / development permits.
- Determine if the individual is registered to use the Everbridge system.
- Determine if the BC Assessment system has their contact information.
- Determine if the person can be found through social media and / or Canada 411.
- If all else fails, consider contacting neighbours, local area directors and others to find contact information.

Once contact information has been determined, a process for damage notification must commence. This process would benefit from scripting how the information would be presented and offering specialized training to a few CRD staff.

Several platforms have been developed for electronic data collection by smart devices; these are visible to activated EOCs and engaged stakeholders. Systems and devices can be used to collect damage information, evacuation notification status and other functionality. This capability is based on ESRI ArcGIS Collector and has been integrated into the EMBC common operating picture. Similar functionality exists within the Lightship software and GIS platform, which also includes incident reporting, resource requests and other emergency management processes.

The following recommendations support further development work on these issues.

RECOMMENDATION: CONTINUE TO DEVELOP THE RE-ENTRY PROCESS, INCLUDING DEVELOPING PROCEDURES FOR MANAGING RISKS LIKE HAZARD TREES TO KEEP RETURNING RESIDENTS SAFE.

Cost: Staff time only.

RECOMMENDATION: COMPLETE THE RAPID DAMAGE ASSESSMENT (RDA) PLANNING WORK THAT WAS INITIATED IN SUMMER OF 2021. ENSURE THAT THERE IS A WAY TO MANAGE THE INFORMATION THAT IS DERIVED FROM THE RDA PROCESS.

Cost: Staff time only.

RECOMMENDATION: DEVELOP BEST PRACTICES FOR DETERMINING CONTACT INFORMATION FOR PROPERTY OWNERS WHOSE PROPERTIES MAY HAVE BEEN AFFECTED BY FLOOD, FIRE, LANDSLIDE OR ANOTHER HAZARD.

Cost: Staff time only.

Some local governments have developed templates for hazard notifications. An example that was used for dangerous erosion in the RDKB is shown on the next page.

Figure 11. A sample hazard notification for erosion.



## Hazard Notification

This notification is being issued due to potential for unstable riverbanks resulting from recent high water levels in creeks and rivers. After a preliminary review, your property has been identified as having potential for bank instability. If you have concerns about this issue, stay away from the edge of the bank.

If your home is near a riverbank and you are concerned about slope stability, you should prepare to self-evacuate if you see evidence of riverbank deterioration around your home:

- Gathering essential items; remember the 5 Ps (People, Pets, Prescriptions, Papers and Photos).
- Designating a meeting place for family members or co-workers outside the evacuation area.
- Arranging accommodation for your family if necessary.
- Preparing to move any disabled persons and/or children.
- Moving pets to a safe area outside the evacuation area.
- Moving personal belongings to higher location within your home.
- Monitoring news sources for information on evacuations

For more information and for assistance with transportation:

- Emergency Operations Centre: **1.888.747.9119**
- [www.rdkb.com](http://www.rdkb.com)
- #RDKBEmergency (twitter)
- Local media, radio and television



Date: May 18, 2018  
Time: 1:00 pm

## HAZARD-SPECIFIC FINDINGS AND RECOMMENDATIONS

### FLOOD AND WILDFIRE

The CRD has, unfortunately, significant experience with both floods and wildfires. Additional planning, response and outreach efforts will reduce response and recovery costs and impacts in the future.

#### **RECOMMENDATION: DEVELOP A COMPREHENSIVE FLOOD RESPONSE PLAN FOR HIGH-RISK AREAS.**

**Cost: \$25,000 to \$75,000 per community / area, depending on level of detail.**

CRD residents and assets have been impacted in recent years by flood events. Climate change research is telling us that more frequent and more impactful floods may be coming. Developing operational flood response plans allows the regional district to respond to flood issues using verified and predetermined actions. This alleviates the reactive nature of flood response and helps the community to be better prepared.

A flood response plan allows planning for a flood event to happen with predetermined response objectives. A flood response plan is developed entirely around how a given community will respond to a flood. This plan may include reference to other plans and guidelines (for example, ESS or evacuations) as well as sections capturing the following:

- Trigger points for flood actions.
- Anticipated flood impacts to critical infrastructure, homes and businesses.
- Areas that may need to be evacuated or restricted during floods.
- Locations of flood-fighting assets, or how to request them from EMBC.
- Locations where flood-fighting assets may be helpful.
- Anticipated flood levels.
- Plans for future mitigation efforts.
- Roles, actions and responsibilities of responders.
- Paths of communication for public preparedness.
- Strategic objectives for the organization during flood response.
- Information sources for decision-making.
- Safe evacuation routes.
- Identification of community centres to house evacuated residents.
- Contingency plans in case of loss of power and / or communication.
- Partner and interested-party communication protocols.
- GIS mapping of all critical assets and priority protection measures.



Figure 12. Williams Lake River flooding in 2020. Photo courtesy of the Williams Lake Tribune.



**RECOMMENDATION: NEGOTIATE A STRATEGIC FLOOD MANAGEMENT STRATEGY FOR THE WILLIAMS LAKE RIVER VALLEY.**

**Cost: Staff time only, if conducted internally. \$50,000 if using an outside consultant.**

It is recommended that the CRD, the Williams Lake First Nation and the City of Williams Lake discuss and implement a strategic flood management strategy for the Williams Lake River Valley (if one is not already in place) that accounts for cultural and environmental values, critical infrastructure, access and land movement within the valley area. The current flood-mitigation protection projects implemented during response and recovery suggest the need for an overall strategy for a flood risk assessment and mitigation plan to address the current mixture of bank stabilisation with assessment of downstream consequences.

**RECOMMENDATION: UNDERTAKE FLOOD RISK ASSESSMENTS AND MITIGATION PLANS FOR AREAS OF FLOOD CONCERN.**

**Cost: \$150,000 per assessment. Grant funding is typically available.**

It is recommended that flood risk assessments and mitigation plans be undertaken by accessing provincial funding (such as the UBCM CEPF funding), to assess the hazard and risk level for critical infrastructure and communities at risk from floods. The CRD likely has enough knowledge of areas of concern, based on recent floods, regarding where these assessments might be needed.

Figure 13. The aftermath of the 2021 Big Stick wildfire near Kleena Kleene.



## LANDSLIDE

In recent years, landslide issues have become a significant concern for the CRD emergency program. The risk associated with these slides remains relatively uncertain, but much development is at risk from these slides. Having a comprehensive plan that spans all of the pillars of emergency management will be required to manage this hazard.

### **RECOMMENDATION: UNDERTAKE A LANDSLIDE INVESTIGATION AND REPORT REVIEW.**

**Cost: \$25,000 for an engineering firm to undertake.**

Existing geotechnical reports and assessments should be reviewed by an appropriately qualified professional to ensure that identification of the hazard and potential risk areas are adequately identified and mapped within the CRD.

Future actions and considerations include reviewing and documenting the following:

- Landslide zones to depict active areas, head flanks and historic slide areas.
- Landslide boundaries depicted usually in three categories: well defined, poorly defined and inferred.
- All monitoring stations or locations.



- All ephemeral drainage lines.
- Landslide scarp areas.
- Tension cracks in addition to a monitoring program and trigger points table for the areas of concern, and a notification system and protective actions.
- Structural contours of slide surface and extent of landform.
- Monitoring program and mitigation measures for all water sources to identify any drainage mitigation measures to alleviate water penetration and slippage and ensure interconnection with existing flood mitigation projects in problem areas.

A report on known hazard areas and knowledge to-date should be developed.

**RECOMMENDATION: DEVELOP A COMPREHENSIVE LANDSLIDE MANAGEMENT PLAN.**

**Cost: \$50,000 to \$100,000, depending on scope.**

From discussions with CRD emergency program staff and others in the region, it is clear that landslide concerns are prevalent for CRD communities. Managing these issues will require research, professional assessment and recommendations, and long-term monitoring. A landslide plan would include sections devoted to monitoring, preparedness, trigger points, contingencies, mitigation plans, response plans, mapping and possible scenarios. The plan must be reviewed frequently and exercised with key emergency program staff.

**RECOMMENDATION: DEVELOP A LANDSLIDE EDUCATION PLAN.**

**Cost: Staff time only, if conducted internally. \$10,000 to \$20,000 if undertaken by a communications consultant.**

It is recommended that such a plan should consist of education material, notification of residents and emergency management procedures. An education program should be put in place for slow-moving landslides. Descriptions and monitoring should be incorporated into current emergency management procedures. Below are some examples of preparedness information that could be provided to residents:

- Changes may occur in your landscape, such as patterns of storm-water drainage on slopes (especially the places where runoff water converges), land movement, small slides, flows, or progressively leaning trees (especially if you are near a historic wildfire burn area).
- Doors or windows may stick or jam for the first time.
- New cracks may appear in plaster, tile, brick or foundations.
- Outside walls, walks or stairs may begin pulling away from the building.
- Slowly developing, widening cracks may appear on the ground or on paved areas such as streets or driveways.
- Underground utility lines may break.
- Bulging ground may appear at the bases of slopes.
- Water may break through the ground surface in new locations.
- Fences, retaining walls, utility poles or trees may tilt or move.



Figure 14. A Landslide on Dog Creek Road, Southwest of Williams Lake.



## CASE STUDY: REGIONAL DISTRICT OF BULKLEY-NECHAKO

As the CRD looks to build upon its current emergency program configuration, they can draw examples from emergency programs across the province. However, in order to determine what may be possible given the size, population, remoteness of communities and complexity of emergency issues, it is important to condense the list of locations to review those that have similarities to the CRD.

The Regional District of Bulkley-Nechako (RDBN) is one such location. It has a large landmass, several remote communities, several large communities, and has endured years of complex and impactful disasters. However, the RDBN only has about two-thirds of the population of the CRD, and consequently less tax income.

The RDBN has been developing their program for about a decade. The RDBN Board of Directors, following several significant wildfire years, recognized the impact that disasters were having on their communities and on the RDBN organization. As such, the RDBN emergency program saw significant growth in staff, budget allowances, and capability. The residents of the RDBN can now expect a very high level of service from this department.



Figure 15. Courtesy Regional District of Bulkley Nechako.

## STAFF

The RDBN emergency management group maintains the following staff allocations:

- A Director of Protective Services who oversees the department.
- A regional Fire Chief.
- An Emergency Program Coordinator.
- A Protective Services Assistant.
- A FireSmart Coordinator (a position currently funded by grants, but expected to become a permanent RDBN position).
- Two summer students (funded by RDBN).
- A Hazard, Risk and Vulnerability Coordinator (2-year term position).

These positions are funded from RDBN budgets, except for the FireSmart Coordinator, which is funded from grants.

The RDBN is pursuing an emergency management regionalization project, which would see the eight municipalities in this region become part of the program in return for funding commitments. This arrangement is seen as desirable for many, as the EPCs in the municipalities are typically fire chiefs or deputy fire chiefs. These individuals are typically required to act as incident commanders during

emergencies and as such, their availability to manage their respective EOCs is challenging. Developing a regionalized program whereby municipalities can maintain independence but can be supported by (and can help support) the RDBN EOC is seen as a benefit.

The RDBN has an exceptional regional ESS strategy as well. During the 2021 wildfire season, the RDBN partnered with area First Nations to release combined evacuation alerts and orders, which was appreciated by some First Nations. Going forward, some Nations have begun to inquire about combining certain efforts around emergency management, which again would increase the cooperation and resilience within the region.

## EMERGENCY OPERATIONS

The RDBN activates EOCs much like other organizations. However, due to the staff contingent, many small- and medium-sized emergencies can be managed within the department and do not have a significant impact on business continuity for the rest of the RDBN organization.

The RDBN is able to operate a 24-hour duty-officer response system which protects the well-being of their core staff and still provides excellent service for their residents.

## GRANTS

The RDBN has access to two grant writers who help prepare grant applications and manage grant programs. As such, the RDBN can maximize the funding available to the programs through grant programs. The RDBN uses regional grant requests, where one large grant request is used for both the municipalities and the regional district. This allows, for example, a \$25,000 grant to be requested for the regional district and for the municipalities — which then becomes a \$175,000 grant.

Grants have been allocated for EOC equipment, ESS equipment, and staff costs. Using grants to fund new staff for the program allows the RDBN to “test drive” positions and soften the funding requests from internal budgets, while demonstrating the value of the added staff and capacity.

## NEIGHBOURHOOD EMERGENCY PROGRAMS

The Neighbourhood Emergency Program is very similar to the CRD Community Liaison Program, but is more mature and much better resourced. The program is aiming to develop 19 community emergency response plans. This program provides capacity and situational awareness to the RDBN emergency program and EOC, and aids with community awareness, preparedness and resilience.

## STAFF WELLNESS

The RDBN emergency program places great value on staff wellness, health and safety. The larger staff contingent allows for the following:

- Staff vacations during periods of typically high EOC activity (such as summertime).
- Policy-directed days off for EOC staff (one paid day off after seven days worked, two after 14, and three after 21, with no exceptions). These days off are considered recovery time, not vacation, and staff are expected to rest, recover, and attend to their physical and mental well-being.
- The establishment of a duty officer phone system, where staff rotate through being available on call. This provides rest breaks for staff where they do not have to be concerned about being the first point of contact during an emergency event.

The RDBN also notes the following benefits from an appropriately resourced emergency management program:

- Less staff burnout and turnover.
- Better professional development.
- Less impact on traditional RDBN business areas, as minor or medium EOC activations do not impact the day-to-day operations of the RDBN as much.



## SUMMARY

The CRD emergency program is a high-performing service within the CRD organization. It is staffed by compassionate, hard-working individuals who sacrifice much in order to serve the residents of the CRD.

The program, however, has been under duress for many years. Significantly increasing numbers and severity of emergency events have impacted the region over the past decade. Unrelenting, stressful EOC activations and emergency response, exacerbated by lack of capacity, have caused staff turnover and stress injuries.

This is not unlike many emergency programs across British Columbia. The devastating wildfire season of 2021 will no doubt lead to more vacancies within local government emergency programs and more stress-related injuries for emergency management practitioners across the province.

With the commissioning of this report, the CRD has an opportunity to make positive changes to its emergency program. Additional staffing would reduce workloads and exposure to stress, provide opportunities to seek grant funding, develop internal tools and systems, and manage minor emergencies internal to the program without affecting the CRD business continuity. This, in turn, would mean better support for CRD residents during the most challenging situations they might face. Ultimately, the goal is to consistently reduce the harm that disasters have upon responders and the population that they serve.

It is now imperative that the recommendations are considered and implemented through a prioritized improvement program. Emergency management can be greatly enhanced by including the public in determining priorities and building resilience. The CRD should implement public consultation, information releases, and guidance documents to detail preparedness and guidance for property owners, businesses, agricultural producers and residents.

A table of recommendations can be found in **Appendix B**. These 46 recommendations represent a significant opportunity to build upon the strengths of the existing staff and program resources.

Clear Sky Consulting wishes the CRD all the best as they continue to build and improve their emergency program.

## APPENDIX A: REGIONAL DISTRICT EMERGENCY MANAGEMENT DATA

Regional District Name	Population	RD Area	Annual Budget of EM Program	Emergency Programming Investment per capita	Budget Notes	Combined with Fire Dept?	Number of staff	Staffing Notes	Other Notes
Alberni-Clayoquot	33315	6588	unknown		budget unclear				
Bukley-Nechako	39614	73361	\$ 1,035,588.00	\$ 26.14	Some from grants	Yes, but not budget	6 to 8	2 summer students	
Capital	418511	2340	\$ 674,000.00	\$ 1.61					population includes cities
Cariboo	65456	80609	\$ 294,000.00	\$ 4.49	Approx half is surplus from prev. yr.	No - separate fire services	2	One EPC, one clerk	
Central Coast	3584	24492	\$ 777,000.00	\$ 216.80					
Central Kootenay	63311	22095	\$ 707,000.00	\$ 11.17		yes			Regional Program, does not include Nelson, Castlegar
Central Okanagan	217214	2905	\$ 226,000.00	\$ 1.04	Unable to determine RDCO budget, only City of Kelowna Staff				Regional Program
Columbia-Shuswap	55823	28929	\$ 816,000.00	\$ 14.62					
Comox Valley	72625	1701	unknown		unable to determine - lumped with fire departments	yes			
Cowichan Valley	90448	3475	\$ 867,890.00	\$ 9.60					
East Kootenay	64695	27543	\$ 404,861.00	\$ 6.26		No - separate fire services		Manager of EM Programs, 2 x EPCs, FireSmart Coordinator	
Fraser Valley	331533	13335	unknown		unable to determine - lumped with fire departments	yes	2	One EPC, one Manager of Protective Services	

Regional District Name	Population	RD Area	Annual Budget of EM Program	Emergency Programming Investment per capita	Budget Notes	Combined with Fire Dept?	Number of staff	Staffing Notes	Other Notes
Fraser-Fort George	103392	50676	unknown		unable to determine - lumped with fire departments	yes			
Kitimat-Stikine	39150	104461	\$ 623,205.00	\$ 15.92					
Kootenay Boundary	33432	8082	\$ 521,000.00	\$ 15.58	Approx \$102K from reserve	yes - RFC is general mgr	2	1 mgr, 1 epc, 0.5 clerk, 0.1 comms, 0.2 RFC	Regional Program
Metro Vancouver	16133	2883	\$ 228,945.00	\$ 14.19					
Mount Waddington	11667	20244	unknown		Only streetlighting and fire dept costs in budget				
Nanaimo	169960	2038	\$ 393,578.00	\$ 2.32					
North Coast	19303	19781	\$ 63,720.00	\$ 3.30					
North Okanagan	90865	7503	\$ 373,540.00	\$ 4.11					
Northern Rockies	4956	85111	\$ 19,036.00	\$ 3.84					
Okanagan Similkameen	89075	10414	\$ 1,119,462.00	\$ 12.57	includes grants				
Peace River	66880	117391	\$ 684,847.00	\$ 10.24					
qathet	21102	5075	\$ 577,776.00	\$ 27.38	includes grants				
Squamish - Lillooet	46357	16310	\$ 251,151.00	\$ 5.42					
Stikine (unincorporated)	734	118663	n/a						
Strathcona	49085	18278	\$ 336,174.00	\$ 6.85					
Sunshine Coast	31810	3777	\$ 315,679.00	\$ 9.92					
Thompson-Nicola	146096	44448	\$ 787,943.00	\$ 5.39					

Some notes about the data found within the Regional District Emergency Management chart:

- Local government budgets do not follow a standard format for financial reporting, and often have very little detail about what is included in each budget line.
- Emergency program budgets often contain grant funds for the current year, which are not guaranteed and can significantly skew the results (such as in the case of the Central Coast Regional District).
- Many emergency programs, especially within regional districts, are combined with local fire services, 911 dispatch services, victim services and community policing. The emergency, or “protective services or public safety” departments may also include staff wages for fire chiefs, emergency responders and other non-traditional strategic emergency management program costs. As such, determining a specific figure from publicly available financial records that is comparable, and reflects only staff and operational costs for emergency programs, is ambiguous and challenging.



## APPENDIX B: TABLE OF RECOMMENDATIONS

**\*\*Note that each of these recommendations links back to the location in the document where the original recommendation and discussion can be found. \*\***

<b>Emergency Program Staffing</b>
<a href="#">Hire three additional emergency program staff to support current emergency program staff.</a>
<a href="#">Use external staff and contractors to alleviate the pressure on internal CRD staff.</a>
<b>24-Hour Duty Officer Concept</b>
<a href="#">In concert with increasing staff levels, develop a system whereby a 24/7 emergency phone number may be redirected, based on a previously developed and approved schedule, between three to four CRD emergency program (or other) staff members.</a>
<b>Community Liaison Program</b>
<a href="#">In concert with increasing staff levels, fully develop the Community Liaison Program.</a>
<b>Staff Wellness, Health and Safety</b>
<a href="#">Ensure that after-action reviews (AARs) are conducted after any EOC deployment, and the lessons learned from these AARs are implemented.</a>
<a href="#">Engage dedicated staff to work under the risk management officer in significant responses in order to ensure occupational health and safety policy compliance, psychosocial wellness, WorkSafeBC best practices, and to monitor for concerns to be brought to the attention of the EOC director.</a>
<a href="#">Develop an emergency program and EOC staff wellness program and toolkit.</a>
<a href="#">Ensure EOC participants have access to an employee assistance program (via their own benefits), or have access to a counsellor, if needed.</a>
<b>Governance</b>
<a href="#">Undertake a strategic planning process to determine strategic and operational parameters for the emergency program.</a>
<b>Emergency Program Design</b>
<a href="#">As new staff are onboarded, continually assign work that aligns with the planned division of labour. It is recommended that the CRD develop areas of specialty for new staff.</a>
<b>Regionalization</b>
<a href="#">Undertake a feasibility study to determine if it would be suitable to build a regional emergency program for municipalities and First Nations within the CRD, which would include the sharing of costs and staff, to ease the burden of emergency management on any one agency.</a>

<b>Grant Funding</b>
<u>Grants should be accessed sparingly and, when applied for, the true cost of both the grant time and the staff time required to manage the grant should be accounted for. Grant applications should be regional where possible, in order to increase the dollar value and therefore the efficiency of the grant.</u>
<u>Investigate the possibility of using the 10% administration hold-back from a variety of grants (across the CRD) to see if enough revenue could be generated to hire a full-time grant writer / grant project manager.</u>
<b>EOC Operations</b>
<u>Balance the tasks, roles, and responsibilities among EOC sections so that each section provides roughly the same contribution to EOC activities, or ensure that each section has sufficient resources, so that one section is not undertaking tasks better suited in other sections because of a greater number of resources.</u>
<u>Continue to document EOC core processes in clear language, using appropriate tools, so that new EOC staff know where to look for documentation, how to undertake specific tasks, and can quickly grasp the concept of how the CRD EOC undertakes certain activities.</u>
<u>Streamline and standardize EOC processes and written procedures where possible so that they are easy for new staff to understand and meet the goal of shortening process times for typical EOC tasks.</u>
<u>Ensure incoming EOC staff, particularly those unfamiliar with CRD operations, are briefed on section-specific procedures (for example, how to issue evacuation alerts). These procedures should be documented so that there is at least a transfer of responsibilities in written format.</u>
<u>Continue the best practice of formal and thorough staff transitions when new staff are rotated into EOC positions.</u>
<u>Continue to document and refine the temporary access pass process managed by operations (the CRD process has been noted as a provincial best practice).</u>
<b>EOC Staffing</b>
<u>Expand the use of staff from other agencies, consultants and contractors to alleviate the pressure on internal CRD staff.</u>
<u>Consider more frequent rotations of CRD staff within the EOC to protect staff workloads and CRD business continuity (consider less back-to-back days in the EOC, or morning and afternoon shifts).</u>
<u>Develop and maintain a list of trusted individuals who can be tasked with rapid deployment into the CRD EOC.</u>
<u>Continue to invite staff from other local and first nations governments into the EOC for cross-training and to provide support. Create training opportunities for new EOC participants so they can be oriented to EOC activities in a controlled and supportive setting.</u>
<u>Ensure operations and planning clerk positions are staffed at least during EOC activations to keep up-to-date on documentation tasks.</u>
<u>Consider training two or three CRD staff to act in each command and section chief position, for redundancy.</u>
<u>Develop and maintain a supplier list of resources that may be needed for the EOC or EOC operations.</u>

<b>Training and Exercising</b>
<a href="#">Develop a CRD emergency training program and track the progress of EOC participants.</a>
<a href="#">Provide difficult conversation training to certain staff within the EOC.</a>
<a href="#">Develop a CRD emergency exercise program. Include timelines, expected participants, exercise types, scenario ideas and how costs may be covered (such as through grant opportunities).</a>
<b>EOC Facilities</b>
<a href="#">Ensure that new staff being brought in to support the EOC receive a facility briefing upon entry, and a demobilisation plan and exit interview upon the completion of their deployment. (These processes were initialized during the 2021 wildfire season.)</a>
<b>Emergency Support Services</b>
<a href="#">Consider regionalizing the ESS program. Having one agreement that maintains three separate but centrally-managed administrative teams would be simpler and require less oversight for all local governments. Include First Nations where possible.</a>
<a href="#">Hire a CRD part-time ESS Director / Coordinator (or include in overall staff increase of three positions).</a>
<a href="#">Create a regional ESS plan.</a>
<a href="#">Develop a recognition program for ESS volunteers.</a>
<b>Emergency Planning</b>
<a href="#">Make updating the CRD emergency management plan a priority. Look for opportunities to build operational response plans such as evacuation, wildfire, flood and landside response plans.</a>
<a href="#">Adopt a formal CRD emergency planning process (an overarching plan for plan development).</a>
<a href="#">Consider emphasis on plan writing if / when expanding the staffing capacity of the CRD emergency program.</a>
<b>Re-entry, Rapid Damage Assessment and Damage / Hazard Notifications</b>
<a href="#">Continue to develop the re-entry process, including developing procedures for managing risks like hazard trees to keep returning residents safe.</a>
<a href="#">Complete the Rapid Damage Assessment (RDA) planning work that was initiated in summer of 2021. Ensure that there is a way to manage the information that is derived from the RDA process.</a>
<a href="#">Develop best practices for determining contact information for property owners whose properties may have been affected by flood, fire, landslide, or another hazard.</a>
<b>Flood and Wildfire</b>
<a href="#">Develop a comprehensive flood response plan for high-risk areas.</a>
<a href="#">Negotiate a strategic flood management strategy for the Williams Lake River Valley.</a>
<a href="#">Undertake flood-risk assessments and mitigation plans for areas of flood concern.</a>

<b>Landslide</b>
<a href="#"><u>Undertake a landslide investigation and report review.</u></a>
<a href="#"><u>Develop a comprehensive landslide management plan.</u></a>
<a href="#"><u>Develop a landslide education plan.</u></a>