



Emergency Management in Cowichan

A Report on the CVRD Emergency Program Service:
Gaps and Recommendations

Executive Summary

The Cowichan area is at risk from a range of natural and human hazards including structural fires, wildfires, floods, hazardous material releases, windstorms, landslides, earthquakes and pandemics. Over the past few decades, incidents have become increasingly prevalent. There have been multiple Regional Emergency Operations Centre (REOC) activations (e.g. floods 2009, 2020, 2021; windstorms 2018; pandemic 2020). The Emergency Support Services (ESS) program, a component within the regional Emergency Program Service, responds to approximately six small responses per year, and at least one large response every two years (e.g. large apartment fires, flood evacuations). Incidents in the Cowichan area are likely to increase due to climate change, increased urbanization, and increasing vulnerable populations.

The *Emergency Program Act* (EPA) establishes the local authority as responsible for emergency preparedness, response and recovery. The current requirements of the EPA are used as a baseline for requirements in this document, however a new act will be coming into force establishing more stringent requirements and increased local authority responsibilities in the near future.

The CVRD Emergency Program Service, a regional service funded by requisition and user fees, provides emergency management support, tools and resources to nine electoral areas, four member-municipalities (Town of Lake Cowichan, Town of Ladysmith, Municipality of North Cowichan, and City of Duncan) and four First Nations (Malahat, Cowichan Tribes, Halalt and Stz'uminus). Over time the functions of the CVRD Emergency Program Service have become unclear, and the distinction between the emergency program established for the Electoral Areas versus the supplemental regional emergency program service for member municipalities and First Nations has been blurred. The Emergency Program Service includes support for training, a regional plan, an emergency notification system and some other support for emergency preparedness and response. However, it does not address the need for each local authority and First Nation to establish or identify/delegate an emergency management organization, an Emergency Operations Centre (EOC) and team. It is also exclusive of community specific hazard assessments and planning that are both essential to ensure an effective response. Communities in the Cowichan area have not formalized their emergency program to the extent required to address the gaps between local authority responsibilities and the Emergency Program Service supplemental support.

Several emergency program models are discussed herein to provide insight on next steps and possible impacts. A regionalized model (where all Emergency Program elements are provided through one established emergency management organization for all partners) is compared to a blended model (where some elements continue to be provided under a regional service for partners, but other elements must be provided by each local authority independently). A single entity model where all program elements are established and maintained by each local authority is also briefly discussed, though it is likely untenable for most partners given the intensive resource requirements.

Moving forward, all parties would benefit from additional clarity, to which this report intends to provide. Gaps in local authority programs are highlighted as well as potential options and resource requirements to address those gaps. For the purpose of this report, the First Nation partnerships have not been discussed at length as they range in service delivery and funding models, however it will be essential to re-engage these groups going forward.

Table of Contents

PART 1: DISCUSSION & ANALYSIS.....	4
1. Governance & Administration	5
2. Hazard, Risk and Vulnerability Analysis (HRVA)	7
3. Risk Mitigation.....	8
4. Preparedness	10
A. Public Awareness/Education	10
B. Training & Exercises	11
C. After Action Reviews.....	12
5. Response Planning.....	13
A. Emergency Plans.....	13
B. Communications & Warning.....	14
C. Response Operations	15
D. Operational Readiness.....	18
6. Recovery Planning	20
7. Program Evaluation	21
PART 2: PROGRAM MODELS	22
1. Current State – Blended Model.....	22
2. Single Entity Model.....	22
3. Regionalized Model	23
PART 3: NEXT STEPS.....	24
Option 1 – Status quo.....	24
Option 2 - Addressing the gaps with improvements to the blended model	24
Option 3 - Moving to a regionalized model.....	24
Option 3A – Phased approach to regionalization	Error! Bookmark not defined.
PART 4: CONCLUSION	26
APPENDIX A: SUMMARY OF RECOMMENDATIONS & RISKS.....	27
APPENDIX B: SUMMARY OF PROGRAM MODELS.....	30
APPENDIX C: SUMMARY OF NEW RESOURCES AND COSTS – High Level Estimate Only.....	32
APPENDIX D: SUMMARY OF OPTIONS.....	37

PART 1: DISCUSSION & ANALYSIS

In January 2021, the Emergency Program Service and related emergency management activities within the partner municipalities were assessed using the Emergency Management BC Community Emergency Program Self Assessment Tool. This is currently the only tool provided by the provincial government to evaluate local authority and First Nation emergency programs. Although the tool has some limitations (not all requirements within categories are evenly weighted), the tool provides a defensible benchmark for program development and improvement.

The tool examines seven (7) program elements:

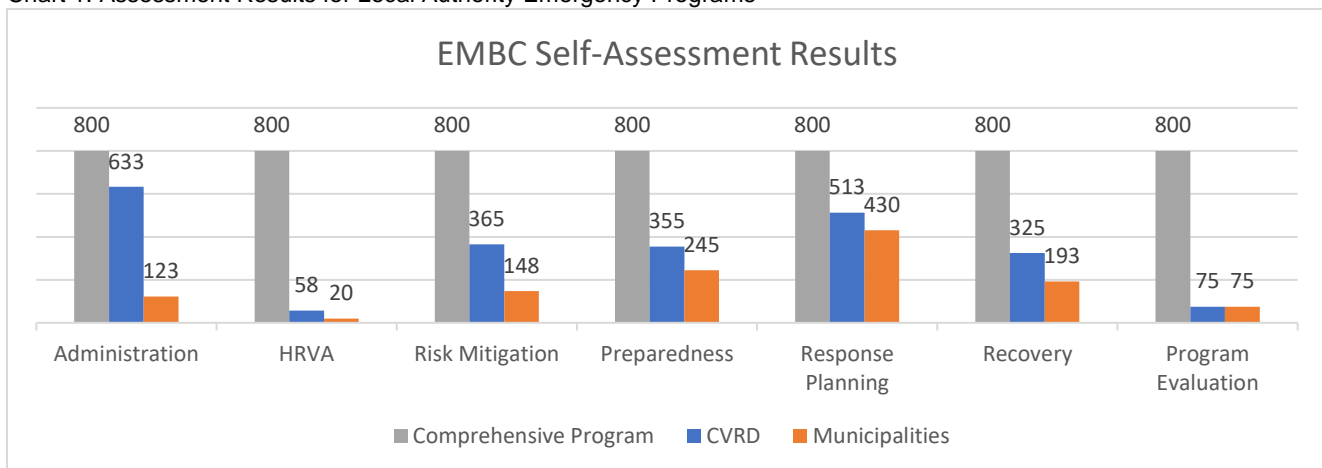
- [Governance & Administration \(Section 1\)](#)
- [Hazard, Risk and Vulnerability Assessments \(Section 2\)](#)
- [Risk Mitigation \(Section 3\)](#)
- [Preparedness \(Section 4\)](#)
- [Response Planning \(Section 5\)](#)
- [Recovery \(Section 6\)](#)
- [Program Evaluation \(Section 7\)](#)

Each element is ranked out of 800 points. Eight hundred points across all elements indicates a fully comprehensive and mature program according to the provincial government (EMBC).

For the Cowichan area, the Self Assessment Tool provided a high level and quick assessment of current state to establish critical gaps and generate options to advance the program(s). Recommendations, provided throughout the following section, identify program improvements to reduce risk in **key** areas and are not representative of the full effort required to achieve top scores. This initial analysis also did not include the First Nation partners and it should be noted that these partners may wish to self-assess or collaborate on future assessments moving forward.

Below is a summary of the findings as assessed in January 2021 for the electoral areas of the CVRD (indicated in blue and labelled CVRD) and for the municipalities (indicated in orange). Results include the Emergency Program Service components. Progress for the municipalities has been generalized (some communities may be more advanced or less advanced than others in some areas). Each element is described in more detail to provide the requirements (legislative and standard-based using CSA Z1600), current state, gaps and recommendations. A summary of the recommendations can also be found in [Appendix A](#).

Chart 1: Assessment Results for Local Authority Emergency Programs



1. Governance & Administration

Includes committees, Emergency Program Coordinator (EPC), legislative compliance, bylaws, policies, and program strategic plans (to define and implement emergency management organization objectives and mission).

Requirements:

Under the Emergency Program Act, a local authority that is a municipal council or the board of a regional district **must** establish and maintain an Emergency Management Organization. It must further reflect its commitment (either in the plan or another document) to provide policy guidance and direction to the emergency management organization it has established, and the procedures by which that guidance and direction is to be provided. Each local authority and regional district **may** appoint committees to advise and assist, and a coordinator.

Though not a mandatory requirement, an emergency program coordinator is recommended by both legislation and Canadian emergency management standards (CSA Z-1600) to coordinate and/or lead the development, implementation, evaluation, maintenance, and continual improvement of the program. CSA Z1600 and EMBC both recommend the development of a strategic plan for the emergency program to include mission, goals, policies/procedures, and implementation activities/schedule against a defined budget.

Current State

The CVRD has established a bylaw (1831) for the emergency management of its electoral areas. This includes the administration of the program, the implementation of the plan and declarations of local states of emergency. The CVRD has also established a bylaw (1909) to identify the cost recovery for a regional Emergency Program Service provided to the four municipalities within the Cowichan area – Municipality of North Cowichan, City of Duncan, Town of Lake Cowichan and Town of Ladysmith. The CVRD has also established several agreements with First Nations to share similar services to the Emergency Program Service.

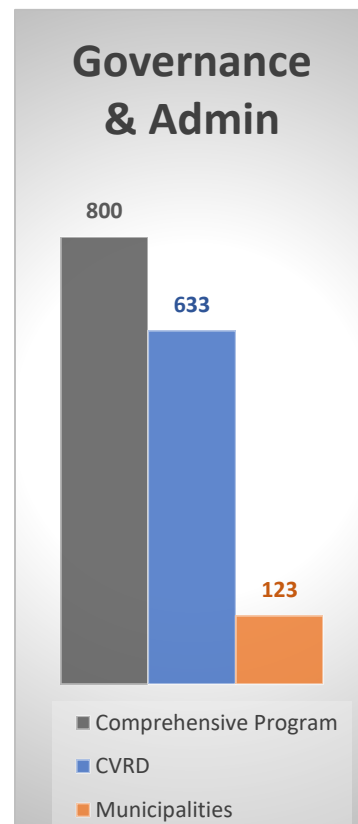


Table 1 CVRD Electoral Area Emergency Management Delegated Authorities

	Designated Emergency Management Organization (<i>EPA, s.3</i>)	Committees Appointed (<i>Bylaw 1831</i>)	Coordinator Appointed (<i>Bylaw 1831</i>)
CVRD Electoral Areas	CVRD Protective Services (now CVRD Emergency Management Division)	<ul style="list-style-type: none"> Protective Services Committee (no longer exists) – ongoing operation of the program Emergency Planning Committee – development and maintenance of the plan and program 	Emergency Program Coordinator – reports to Board through the PS Committee, facilitates preparedness, response and recovery measures, and activates the plan.

Gaps

Generally municipalities, though recipients of the regional Emergency Program Service, do not appear to have established bylaws to designate an emergency management organization. Legislative gaps are summarized below. Furthermore, few local authorities, if any, have formally developed and implemented an emergency program strategic plan.

Table 2 Legislative Gaps Amongst Local Authorities

	Designated Emergency Management Organization (<i>EPA</i> , s.3)	Committees Appointed	Coordinator Appointed
CVRD Electoral Areas	-	<ul style="list-style-type: none"> Protective Services Committee no longer exists – using Community Service Committee Emergency Planning Committee – unclear purpose, included members of municipalities and FNs 	-
Town of Lake Cowichan	None identified	<ul style="list-style-type: none"> Emergency Program Management Committee (Town of Lake Cowichan Bylaw No. 1039-2020) 	Not formally
City of Duncan	None identified	None identified	None identified
Municipality of North Cowichan	None identified	None identified	Acting role identified
Town of Ladysmith	None identified	None identified	None identified

Recommendations

- 1.1 *CVRD should update bylaws to reflect desired committee governance.*
- 1.2 *Municipalities must establish and/or identify the “Emergency Management Organization(s)” designated to develop and implement plans and other preparedness, response and recovery measures for the whole of the municipality, and establish bylaws and policies indicating same.*
- 1.3 *Each local authority or, in the event a single Emergency Management Organization is established, the EMO should develop and implement a clear written Emergency Program Overview to include scope, guiding principles, mission, goals, policies/procedures, and a strategic plan with actions and implementation schedule against a defined budget.*
- 1.4 *All municipalities should identify an Emergency Program Coordinator to act as central liaison and point of program coordination.*

2. Hazard, Risk and Vulnerability Analysis (HRVA)

Includes risk assessments (Hazard Risk Vulnerability Assessments) and the analysis which will be used to define and implement emergency management organization objectives.

Requirements

The *Local Authority Emergency Management Regulation* requires that “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 in paragraph (a).”

Both the provincial government and the CSA Z1600 emphasize the importance of risk assessment and impact analysis to inform emergency planning and the emergency program. An up-to-date Hazard Risk and Vulnerability Assessment prepares organizations for the most likely/high risk hazards, and enables them to set priorities for action, resourcing, and targeted training.

Current State

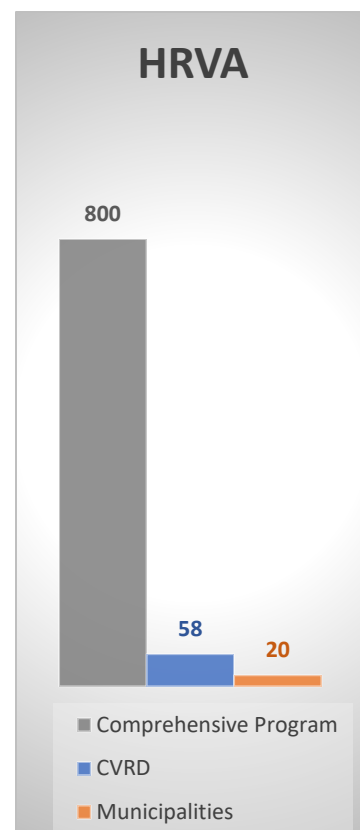
Participating jurisdictions are included in the Local Authority CVRD Emergency Plan (Regional Emergency Plan), which was based on a high-level Hazard, Risk and Vulnerability Analysis.

Gaps

Most local authorities do not have a community-specific all-Hazard, Risk and Vulnerability Assessment. The HRVA used in the development of the Regional Plan was a preliminary assessment only and has not been updated in several years. When the HRVA was initially developed, it did not follow the recommended fulsome process which involves a large working group including community members, vulnerable group representatives, engineers, environmentalists, hazard subject matter experts, and requires collaboration, community engagement and traditional knowledge.

Recommendations

- 2.1 *Each local authority, or the EMO if a single emergency management organization is established, should complete a fulsome HRVA (inclusive of all community nuances, vulnerabilities and resiliencies). This HRVA should be used to develop plans, procedures and focus the emergency program to address the greatest risks.*



3. Risk Mitigation

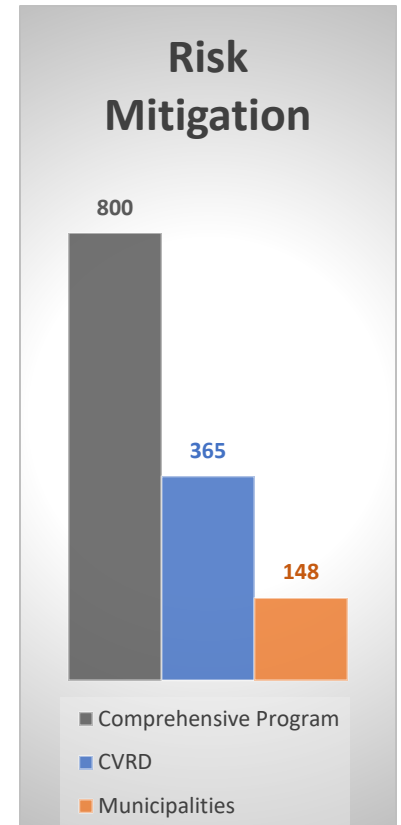
Mitigation is action taken proactively to prevent or minimize a hazardous event from occurring by eliminating the hazard, or reducing the potential impact.

Requirements

The current EPA does not include any specific requirements related to mitigation or prevention. Under CSA Z1600, the organization shall develop strategies to mitigate, limit or control the consequences, extent or severity of an incident. Furthermore, the organization shall develop strategies which focus on incident prevention.

Current State

The Corporate Strategic Plan includes a strategic objective for the Board to “identify and prioritize natural hazard assessments for wildfire, flooding, sea level rise, and landscapes, to inform local and sub-regional land use planning decisions”. The CVRD has recently implemented a Natural Hazard Risk Tolerance Policy to guide land planning/use decisions and engineering pre-requisites. Under the Environment Division of the CVRD and outside of the Emergency Program Service, a CVRD Natural Hazards Disaster Risk Reduction Strategy was developed and some natural disaster mitigation activities have been and are carried out including flood mitigation planning, dike management, and National Disaster Mitigation Program grant opportunities and projects (primarily flood focused). These programs include one or two municipal and/or First Nation members depending on the territory under examination and the opportunities available through grant programs.



The Cowichan area has a current Community Wildfire Protection Plan (CWPP) which was substantially updated in 2017. Some communities are in the process of developing their own CWPP. Some FireSmart program elements have been applied as one-off measures in select areas by local authorities (e.g. some fire prescriptions/treatments applied). Various small activities have been carried out when grant funding for one-off projects has become available.

Gaps

There is currently no fulsome resiliency assessment and mitigation strategy to include all hazards, all vulnerabilities, all partners and a range of risk controls has not been developed. Some high-risk hazards have only been included at a very preliminary level.

Wildfire threats, a high and likely risk in the Cowichan area, would be more thoroughly mitigated under a comprehensive FireSmart strategy and program to include awareness, preparedness, fuel management, other mitigation measures, and training. Currently small portions of the FireSmart program have only been implemented temporarily in the Cowichan area. The program has not been universally or consistently adopted by all electoral areas, local authorities or First Nations.

Recommendations

- 3.1 Each local authority or, in the event a single Emergency Management Organization is established, the EMO should draft an overall resiliency assessment and mitigation plan based on the HRVA (see recommendation 2.1).*

3.2 Each local authority or, in the event a single Emergency Management Organization is established, the EMO should develop and implement a comprehensive FireSmart strategy and program.

4. Preparedness

Includes training, exercises, public awareness and After-Action Reviews (post event/exercise debriefs and related corrective actions).

A. Public Awareness/Education

Requirements

There are no legislated requirements in BC to provide awareness and education to the public about emergencies.

CSA Z1600 recommends that the organization develop and implement public awareness and education programs where the public is potentially impacted by an incident.

Though not legislatively required, preparedness of communities, neighborhoods, families, businesses, and visitors is essential to reducing the burden on emergency responders and local governments during a significant incident. Preparedness reduces the impact of an incident and plays a direct role in reducing harm.

Most communities in BC provide some awareness/education to the public either passively (through websites, printed information in municipal offices) or more actively (through community presentations, preparedness events).

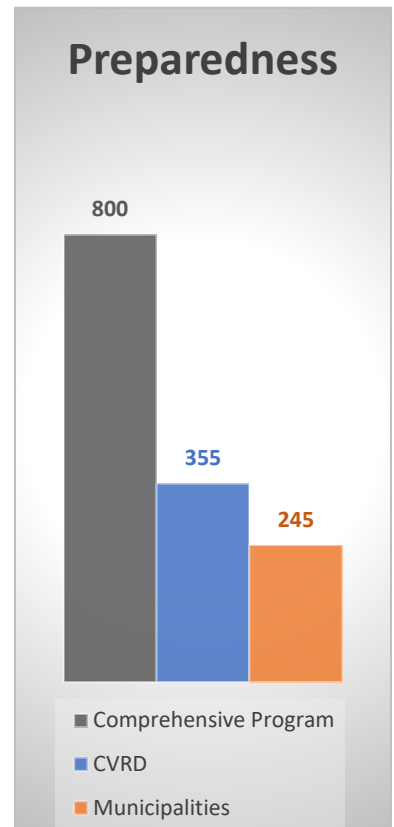
Current State

The CVRD currently delivers approximately 40-60 presentations per year to various groups in the Cowichan area as requested. The CVRD maintains and stores a large collection of education materials to support residents, business and visitors. All local authority websites provide some general information about preparedness. The CVRD, as part of the Emergency Program Service has also developed a neighborhood emergency program which provides tools and training to empower community groups to be prepared and to participate in the response/recovery. This program has been deployed to some Cowichan areas.

Gaps

Preparedness presentations are provided as requested, but there is no strategic plan to ensure consistent coverage and reach across all areas of the Cowichan and into all groups. There is currently no target measures or methodology to measure success of this program element.

The CVRD neighborhood emergency program was initially developed and implemented with a few groups, but due to limited capacity implementation has been sporadic. Training and tools are in many cases out of date and need to be refreshed. These groups require re-engagement and annual support to ensure they can be sustained and operational in a wide spread emergency.



Recommendations

- 4.1 The Emergency Program Service should continue to provide preparedness education and awareness to community groups, neighbourhood response teams, non-government organizations and other interested parties. An awareness plan should be developed to ensure a strategic, equitable, encompassing and measurable approach to awareness and education across the Cowichan area with a focus on vulnerable groups and neighborhood emergency teams.*
- 4.2 All partners should collaborate on an annual event to generate awareness and educate residents, visitors and businesses in the Cowichan area.*

B. Training & Exercises

Requirements

The EPA requires that each local authority must “establish and maintain for all emergency response staff to whom responsibilities are assigned in the [emergency] plan (i) a program of emergency response exercises and (ii) a training program”.

CSA Z1600 states that an organization should implement a training and educational strategy. It should have a plan for training that includes competencies, the scope, frequency, and records. It goes on to add that exercises should validate individual essential elements, interrelated elements, or the entire plan(s) and the results should be documented.

Current State

The CVRD Emergency Program Service currently provides training to local authority EOC teams and ESS teams. EOC training is coordinated as needed in consultation with the local authority. REOC training has been provided annually. ESS training is delivered with more frequency (as new volunteers join the ESS Level 1 team), but is primarily online through the Justice Institute of BC (JIBC). Reception centre training is delivered approximately every two years. Exercises are held several times a year, community participation varies.

Gaps

There is currently no established training and exercise strategy for all local authorities. Exercises for example should be delivered with increasing complexity as teams gain competence and confidence. Though training is occurring, an established frequency and schedule which ensures coverage across all areas/teams has not been implemented.

- 4.3 The Emergency Program Service should continue to provide training to EOC and ESS teams under a shared Training and Exercise Plan. This five-year plan should include the training requirements and recommendations for designated roles in a response, and provide a schedule of exercises for each community that increase in complexity over time, culminating in a full scale multi-jurisdictional exercise every three to five years.*

C. After Action Reviews

Includes post event and post exercise debriefs and actions of lessons learned.

Requirements

Under CSA Z1600, organizations should conduct exercises to validate individual essential elements, interrelated elements, or the entire emergency plan(s) and have the results documented. Organizations should use the exercise results to identify plan gaps and limitations, and improve and revise the plans. The organization shall take corrective actions on deficiencies, gaps, and limitations identified and documented during the [...] exercises, and tests. The organization must also establish change management, and continual improvement processes.

Current State

Post event reviews are regularly held by CVRD for significant REOC and ESS events. A debriefing is held to identify corrective actions, and these actions are assigned for completion. It is encouraged but unknown whether some municipalities may be reviewing events independently. Exercises generally incorporate some form of after-action review/debrief.

Gaps

Corrective actions are not currently being shared across all local authorities. There is currently no formalized reporting to the CVRD Board or Committees on corrective actions. There is also currently very limited capacity to track the completion of action items. Some corrective actions remain outstanding and are raised again in subsequent events.

- 4.4 Each local authority or, in the event a single Emergency Management Organization is established, the EMO should establish a formal After-Action Review process and procedures to clarify when debriefs will be held and how actions will be tracked to completion.*
- 4.5 Each local authority or, in the event a single Emergency Management Organization is established, the EMO should report annually on continuous improvement measures (and completion of corrective actions) to its council/board and to the public.*

5. Response Planning

Includes emergency plans, communications and warning, response operations, emergency support services, and operational readiness.

A. Emergency Plans

Includes regional response plans and community-specific response plans including evacuation route planning.

Requirements

The EPA requires that “a local authority must prepare or cause to be prepared local emergency plans respecting preparation for, response to, and recovery from emergencies and disasters” (S.6[2]). This also includes a “periodic review and updating of the plan(s)” and “procedures for updating the plan(s)”.

The *Local Authority Emergency Management Regulation* requires that “a local authority must reflect in the local emergency plan prepared by it under section 6(2) of the Act:

- c) The potential emergencies and disasters that could affect all or any part of the jurisdictional area for which the local authority has responsibility.

Current State

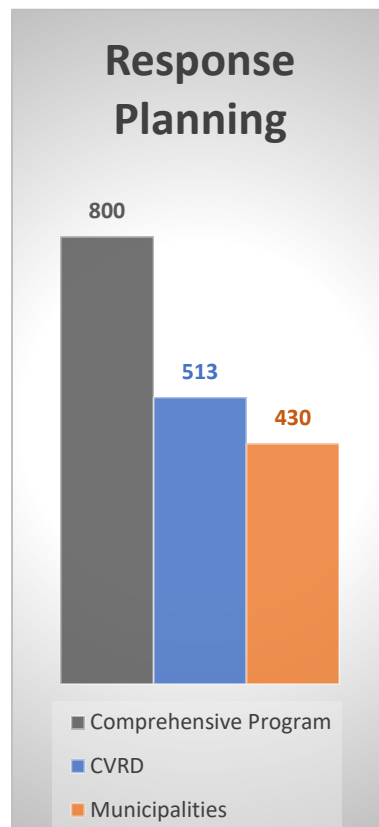
Participating jurisdictions are included in the Local Authority CVRD Emergency Plan (Regional Emergency Plan), which meets current legislative planning requirements. It includes general EOC Operational Guidelines for communities and the REOC to implement. Additionally, some communities have begun to develop Evacuation Route Plans (e.g. some electoral areas) through grant funding.

Gaps

Most local authorities do not have community-specific plans that are maintained, distributed and exercised. Existing Plans are not regularly exercised. With the exception of the regional emergency plan, there is currently no standardization or consistency between operational plans (so that neighbouring teams can easily support operations during an expanding incident). EOC guidelines are available to all communities however the tools, systems, people, and set-ups may not be established in each area to implement the plan.

Recommendations

- 5.1 *Each local authority should develop, implement and maintain a community-specific emergency plan. This plan should be based on the hazards, risks and vulnerabilities identified in the HRVA. It should consider and include specific procedures/people, evacuation routes, muster locations, critical services, and vulnerable groups for that community.*
- 5.2 *The CVRD or, if a single emergency management organization is established, the designated EMO should implement a community plan template so that plans in the*



Cowichan area follow a similar format and structure. This will enable interoperability, and reduce training and knowledge barriers when local authorities and First Nations support each other in response to an incident.

B. Communications & Warning

Includes internal and external communication to directly support response to an incident, e.g. radio systems, responder communication tools, EOC communication tools, public warning systems.

Requirements

Under the EPA, a Local Authority is required to “establish procedures by which those persons who may be harmed or who may suffer loss are notified of an emergency or impending disaster” (s.2e).

Under CSA Z1600, the organization shall implement its communication and warning strategy to address the needs for communication before, during, and after incidents. This should include a communications assessment, establishment of communication systems including the need for redundancy, interoperability, and security of those systems, procedures for the effective flow of information through the selected communication systems, emergency communication and warning capability to advise the affected populations of hazards and threats to people, property, the environment, and/or the continuity of services, a central point of contact for the social and designated media resources, and procedures to gather, monitor, and disseminate emergency information.

Current State

A central emergency notification system is provided by the CVRD for use by all partners. The system is primarily designed to be a public warning system where people who have registered receive emergency notifications from participating Local Authorities and First Nations via text, voice call and email, and mobile application. It can be used to notify and activate internal teams to respond to an emerging issue.

The region maintains an emergency communications network to support EOC and first responders in large scale events including:

- 30-person volunteer communications team
- Portable radio gateway (joins disparate radio networks for inter-operability)
- Deployable two-way radios (mobile, portable)
- Pre-positioned disaster radios in critical facilities throughout the region
- Portable VHF radio repeater
- Regional VHF radio network
- Portable MSAT satellite telephone
- Radio communications facility (dispatch capability)
- Access to communications trailer with multiple technologies available
- Radio technician and support vehicle w/ test equipment

Gaps

The emergency notification system relies largely on individuals to sign up before they will receive notifications. Promotion of the tool among residents and visitors is therefore critical to ensure adequate coverage can be achieved (25-30% target). Current coverage is estimated at 2%. Efforts are needed by partners to ensure a successful public warning platform. All local authority EOC teams should also be loaded into a notification tool to ensure they can be quickly activated. These lists

require some maintenance to ensure they are accurate. Knowledge of the Cowichan disaster radios is low, and some users may struggle with its use in a widespread emergency.

Recommendations

- 5.3 *All local authorities should identify the same notification system as the emergency alert system to ensure maximum participation and increased saturation.*
- 5.4 *All local authorities should actively advertise and promote the emergency alert system for the Cowichan area.*
- 5.5 *Each local authority or, if a single emergency management organization is established, the designated EMO should establish trained authorized users for the Emergency Notification System to ensure rapid deployment of public warnings and/or EOC team activations during an incident.*
- 5.6 *All EOC teams and alternates should be uploaded and maintained in the Emergency Notification System to enable rapid deployment.*
- 5.7 *The Disaster Radio program should be refreshed to include training for all partners and sites.*
- 5.8 *Emergency Communications exercises should be integrated into the Cowichan Exercise and Training Program.*

C. Response Operations

Includes teams (EOC and ESS), incident management systems and tools, and standard operating procedures.

Requirements

The EPA requires that “a local authority is at all times responsible for the direction and control of the local authority’s emergency response” (S.6[1]). Furthermore “a local authority may, in writing, delegate any of its powers and duties under this Act to the committee, emergency management organization or coordinator, except the power to make a declaration of a state of local emergency” (S.6[4]). The *Local Authority Emergency Management Regulation* requires that a local authority must “coordinate the provision of food, clothing, shelter, transportation and medical services to victims of emergencies and disasters” (S.2.3f).

CSA Z1600 emphasizes the importance of establishing an incident management system to control, direct and coordinate response, continuity and recovery activities. This should include organizational hierarchy, roles, and responsibilities for each incident management function. Under the BC Emergency Management System, communities should use a comprehensive response management system based on Incident Command System to ensure a coordinated and organized response to emergencies and disasters. Furthermore, under CSA Z1600, the organization must further have operational procedures for response, procedures to conduct damage and impact assessments (situational analysis), and procedures to allow for a transfer of leadership during response.

Current State

The *Emergency Management Agreement* (signed November 2017) between all local authorities in the Cowichan area states that local authority Emergency Operations Centres are established for emergency events affecting only a single jurisdiction, whereas the Regional Emergency Operations Centre may be established for electoral area incidents or larger, multi-jurisdictional events.

Several municipalities have identified Emergency Operations Centre (EOC) teams. The CVRD has established a Regional Emergency Operations Centre (REOC) team. All teams use the Incident Command System (or some variation) to identify roles and responsibilities. With increasing remote requirements due to COVID-19, the CVRD uses a trial version of D4H to support a virtual REOC.

The Emergency Program Service currently provides Emergency Support Services (ESS) for all communities in the Cowichan area. This short-term temporary support to victims of emergencies and disasters is provided in both level 1 events (e.g. house fire where only one or two families impacted) and in large events (with multiple households impacted such as floods, wildfire evacuations). ESS is currently provided by both CVRD and Ladysmith staff, and a recently developed team of volunteers.

Gaps

Not all groups have maintained a current EOC team. Some roles are missing from these teams which may create a gap in a response. Situational analysis and damage assessment processes have not been formalized, nor roles identified to complete these functions.

The ability to operate EOCs and the REOC remotely, continue as the threat of COVID-19 remains. Virtual tools, such as D4H were only purchased temporary but have now become increasingly embedded in processes and procedures.

Changes are forthcoming to the provincial government's financial disaster assistance guide which will reduce cost reimbursement eligibility during response. Local authorities will likely have to cover any human resource costs to run EOCs and ESS. To help manage these costs, the region must continue to support staff response capacity and build additional volunteer capacity (in particular to support the ESS program).

Recommendations

- 5.9 Each local authority should maintain a current roster for their local EOC. This roster should be updated regularly and should identify at minimum section chiefs (planning, operations, logistics, finance) and management staff (director, liaison, information, risk management). If a regionalized EMO is established, each partner should provide an alternate available for each essential role.*
- 5.10 The REOC should implement incident management tools and systems that support ongoing remote activities.*
- 5.11 Situational awareness and analysis procedures and roles for a response should be formalized for all EOCs/REOC.*
- 5.12 Damage assessment processes should be formalized and personnel in all jurisdictions trained to implement during an incident.*

5.13 The Cowichan area should continue to build on response team capacity by increasing volunteer engagement. Volunteer teams can provide additional support to staff (which continue to provide a reliable backbone for response in the region).

D. Operational Readiness

Includes managing resources such as vehicles, trailers, facilities, equipment and supplies to ensure a state of readiness and ensuring the right procedures exist to request resources, procure support and manage extraordinary expenses.

Requirements

The EPA requires that a local authority “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”.

According to CSA Z1600 organizations must establish primary and alternative EOCs (physical or virtual), capable of supporting the management of emergency and continuity response operations. Organizations must conduct tests to confirm the functionality and interoperability of critical systems, equipment, and technology.

Current State

The CVRD currently maintains number of caches and facilities aimed to provide response support during an incident. These resources are available to all local authorities under the Emergency Program Service.

Table 3 Emergency Management Resources (available under the Emergency Program Service)

Vehicles	<ul style="list-style-type: none">• 1 1/2 (1 Passenger/SUV & 1/2 Truck)
Trailers	<ul style="list-style-type: none">• 1 Emergency Support Services Trailer (Mobile Reception and Pet Care Unit)• 1 Sprinkler Protection Unit
Storage Units & Supplies	<ul style="list-style-type: none">• 5 Storage Containers (Bing’s Creek) with significant quantities of various disaster supplies and equipment
Facilities	<ul style="list-style-type: none">• 1 Primary REOC• 4 Primary Reception Centres (one maintained by Ladysmith)
Other Equipment/Supplies	<ul style="list-style-type: none">• Evacuation Kits (distributed to RCMP detachments)• Disaster Radios at key infrastructure/services

All municipalities have identified a location for a primary local EOC.

Gaps

The CVRD has some mobile units, but a limited capacity to tow these units. Only one part-time tow-capacity vehicle (split between two services) is available to the Emergency Program.

Most supplies are stored in fixed locations, centrally located and a significant event could prevent access.

In isolation, all local authorities have only a primary EOC. It is unknown if these EOCs are regularly maintained. Secondary EOCs within each jurisdiction have not been identified. Secondary reception

centres have also not been formally identified, though some informal secondary reception centres do exist.

Disaster supplies are in a centralized location which may be difficult to access in a widespread and devastating event.

There is no established testing or maintenance schedule for facilities or supporting equipment, for CVRD or for local authorities.

Recommendations

- 5.14 Each local authority should identify a secondary location for an EOC.*
- 5.15 The CVRD (Emergency Program Service), or EMO if a single emergency management organization is established, should implement an operational readiness maintenance and testing plan to ensure regular and established testing and maintenance of equipment, tools and systems.*
- 5.16 Each local authority should identify prepositioned (fixed) disaster supply locations based on community layout and vulnerabilities. These locations should be stocked, maintained, and part of a public awareness campaign.*
- 5.17 Secondary reception centres should be identified/confirmed in each community. Baseline requirements for these secondary centres should be established and maintained.*
- 5.18 The CVRD, or EMO if a single emergency management organization is established, should assess mobile assets and establish an appropriate fleet procurement and management plan. Vehicles should be appropriate for daily operations as well as response activities.*

6. Recovery Planning

Recovery involves the steps and processes taken/ implemented to repair communities affected by an emergency event, restore conditions to an acceptable level, or improve them where possible, and to restore self-sufficiency and increase resilience. In this context, it includes essential service recovery and community recovery.

Requirements

The *Local Authority Emergency Management Regulation* requires that each local authority must “establish the priorities for restoring essential services provided by the local authority that are interrupted during a disaster” S.2(3.g), and “recommend to service providers for restoring essential services not provided by the local authority that are interrupted during an emergency or disaster” S.2(3.h).

Under CSA Z1600, the organization shall execute procedures to restore and return operations from the temporary measures adopted during an incident to support normal business/operations requirements after an incident. The organization shall also provide recovery plans for short-term and long-term priorities for restoration of functions, services, resources, facilities, programs, and infrastructure.

Current State

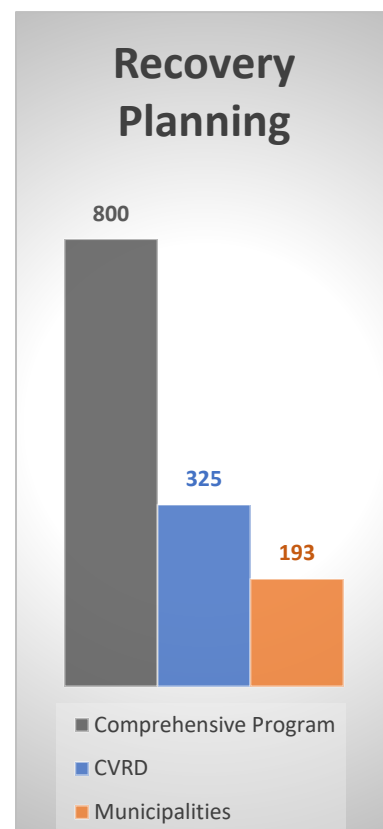
Several local authorities have taken some initial steps towards business continuity planning, especially given the impact of COVID-19, but most do not have any formal recovery plans (either for short term or long-term recovery). In a significant event, most local authorities in the Cowichan Area would rely on Disaster Financial Assistance funding (provided in some cases after a widespread event has occurred) to establish a recovery coordinator and develop a plan.

Gaps

Recovery planning “at the time of the event” can be ineffective. While recovery is being planned, valuable time passes during an incident and additional damages may be compounded (e.g. mold in a flood). The recovery role of the EOC team and other local authority staff may not be clear and may create additional delays.

Recommendations

- 6.1 *Each local authority or, if a single emergency management organization is established, the EMO should develop templated recovery plans for top hazards as identified in the HRVA. Recovery plans should include the priorities to restore essential services, processes to re-establish community functions, and recovery roles. The plans must be relevant and achievable by local authorities with or without a Disaster Financial Assistance program.*



7. Program Evaluation

Includes self reviews, internal reviews, and audits. After Action Reviews (post event or post exercise) are not included in this section – see instead Section 4 Preparedness.

Requirements

CSA Z1600 requires that “the organization shall conduct scheduled evaluations to validate conformance to strategies, plans, and procedures, and have the results documented.” This also includes taking corrective actions on “deficiencies, gaps, and limitations identified and documented during the program evaluation [...] and audit and review processes”. The standard includes the provision that “senior management shall review the emergency and continuity management programs at planned intervals” to ensure accountability at all levels.

The organization shall ensure that the program review process incorporates ongoing analysis and evaluation, as well as corrective action planning and review.

Current State

There have been no formal emergency program evaluations in the past ten years for any local authorities in the Cowichan area outside of this report. Due to limited resources and increasing incident, most local authorities in the Cowichan area have not engaged in program review activities outside of any After Action Reviews (which are captured and evaluated under in Section 4 – Preparedness).

Gaps

For all local authorities, there have been no formal program-wide evaluations or measures of success outside of post-event reviews (which focus solely on the improvements that can be made as discovered during an incident). There has been no formal annual report on progress shared with partners. Community engagement on program effectiveness has been informal to date.

Recommendations

- 7.1 *Each local authority or, if a single emergency management organization is established, the EMO should develop and implement a program evaluation process and schedule. Progress should be reported to senior levels and summarized for the public.*



PART 2: PROGRAM MODELS

Across BC, the approach and implementation of emergency response and management programs is varied. There are several emergency program governance models available to local authorities and First Nations. The models, described below, and variations of the same can be found across BC. A summary of program models can be found in [Appendix B](#).

1. Current State – Blended Model

Currently Cowichan local authorities are operating under a blended model where some elements continue to be provided under a regional service for partners, but other elements must be provided by each local authority independently.

The CVRD's Emergency Program Service provides the following:

- Support for training (delivery of training to established EOCs including tabletop and functional exercises, training for ESS teams, training for ECT);
- A regional emergency plan;
- An emergency notification system;
- A redundant emergency communications network and support;
- Emergency preparedness awareness for the public;
- A REOC and team; and
- An ESS program (for small and large incidents).

Local Authorities (including the CVRD for its Electoral Areas) are each responsible for the following:

- Establishing an emergency management organization and strategic plan for the organization
- Establishing a committee (if not covered by policy group) to provide advice and decisions on program
- Establishing policy group (authority to declare a State of Local Emergency)
- A Local EOC (stocked, supplied, maintained) and team
- Community specific hazard assessments and plans to ensure an effective response
- Community-specific mitigation
- Additional training beyond that offered by CVRD Emergency Program Service

As the cost and resource requirements to implement some program elements are shared, this model can be cost-effective where needed. Partners can maintain control and individual identity in other elements of the program. However, this model requires a more complex governance system to ensure both the autonomy of some program pieces and joint decisions for other program elements. Although this model has been in operation in the Cowichan area for several decades, there has been confusion about the roles and responsibilities of each partner which may have led to a degradation of the program as a whole.

2. Single Entity Model

A single entity model requires each local authority to manage, operate and deliver all elements of its own emergency program. The local authority must establish its own emergency management organization and manage all program areas under a single strategic plan. Some portions may be contracted out to third parties/private entities (e.g. emergency alert system) but the local authority still administers and has primary responsibility for each element of the program.

The single entity model is primarily seen in large rural municipalities where the population base (and therefore funding mechanism) is substantial. This model allows the local authority to maintain control over all elements of its program, however it can be resource intensive. Single entity emergency management programs must take extra care to develop agreements, build partnerships, and train/exercise with other partners to ensure interoperability (as this is not already established as a natural part of their daily governance structure). Changes in guidelines and legislation (such as the proposed changes to the EPA and forthcoming changes to the Financial Assistance for Response and Recovery Guide) are more impactful to the single entity. It is likely that this model may not be achievable for most local authorities in the Cowichan area given the intensive resource requirements and effort required to establish, maintain and improve a program.

3. Regionalized Model

A regionalized model is where all emergency program elements are managed and coordinated for multiple partners through one established emergency management organization (EMO). A single governance structure is established representative of all partners to set a single strategic plan for the EMO. The EMO operates under this strategic plan to achieve mitigation, preparedness, response and recovery objectives for all partners. A centralized budget and consolidated resources help ensure a consistent and cost-effective program. One EMO for all can leverage regional grant opportunities and establish greater depth of positions (multiple EOC Directors across the region can step into the role for any partner). Local authority interoperability is built naturally into daily operations, and becomes second nature during a response.

A notable recent example of this model is the Regional District Central Okanagan EMO. The RDCO EMO is a regional service working under a single bylaw and governance structure for all municipal, regional district CAOs and in partnership with Westbank First Nation. The EMO derives its authority from the Regional District Board of Directors which is made up of 13 elected and appointed representatives from the Electoral Areas and the member municipalities. In addition, a non-voting member is appointed to represent the Westbank First Nation. The Regional Board delegates its full authority to the Emergency Management Organization comprised of the Chief Administration Officers (CAOs) from each member municipality plus the Emergency Program Coordinator (EPC). It is also based on the continuation of a Service Agreement with the City of Kelowna for the provision of an EPC, support staff and the Emergency Operations Centre itself.

PART 3: NEXT STEPS

The options and resource impacts of proceeding are discussed below – working within the current model to address gaps, or moving towards a regionalized model to address the gaps as one organization. The human resource requirement for both models is summarized below as generalized estimates only.

A detailed analysis of the resource impact is also available in [Appendix C](#).

Option 1 – Status quo

Municipalities and the CVRD may choose to maintain status quo. The risks with not proceeding with any particular recommendation are highlighted in [Appendix A](#) and do include regulatory non-compliance. Generally, the recommendations that are contained in this report were selected as they are either the most effective way or the only way to address a high-risk gap. The recommendations and this report are not focused on low risk items.

Option 2 - Addressing the gaps with improvements to the blended model

To implement the recommendations in this report, while still maintaining the current governance model, each municipality will require 0.75 – 1.0 fulltime position to implement and maintain their portion of the emergency program as described in this report. This position would act as municipal EPC/liaison and take on the development, implementation and maintenance of the required components of the emergency program while still being supported by the offerings of the Emergency Program Service. Municipalities would also need to invest in appropriate EOC and disaster supplies, personal protective equipment (PPE), and potentially a vehicle to support the recommendations. Grant funding may provide some relief to initial development efforts.

To support the ongoing emergency program requirements for its electoral areas, the regional district will need to add 0.75 of a fulltime employee. This additional resource is required to address the local authority gaps that exist in the electoral area program, not the regional Emergency Program Service.

The Emergency Program Service, delivered by the CVRD, will require an additional investment of one 0.75 fulltime employee to address any current service area gaps and support the recommendations described in Part 1 for all partners. This above the 0.75 fulltime employee described above to support the electoral areas.

Option 3 - Moving to a regionalized model

Given the escalation of incidents and pivotal changes in future legislation, as well as the benefit of pooled resources to adapt to change, a regionalized model is worth strong consideration.

If all local authorities agree to move to a fully regional model, the establishment and operation of a regionalized EMO would require the addition of two fulltime employees. This also aligns to other BC examples of staff compliment required to support multiple local authorities. The roles for a regionalized EMO could be established by discipline as seen in chart 2, or by jurisdiction as seen in chart 3. Initial efforts would be focused on establishing governance and planning including developing a strategic plan for a regionalized emergency management organization, completing HRVAs and developing/updating community emergency plans.

The governance of a regionalized model is also an essential consideration, as the organization itself may best report directly to all CAOs. Like the Emergency Program Service currently, it could continue to be accountable to the Board. Additional consideration should be given to our First Nation Partners

who may also wish to engage with a future EMO and derive benefits from a collaborative approach. This would be an important consideration when designing the governance structure for such an organization.

Chart 2 – Roles by Function

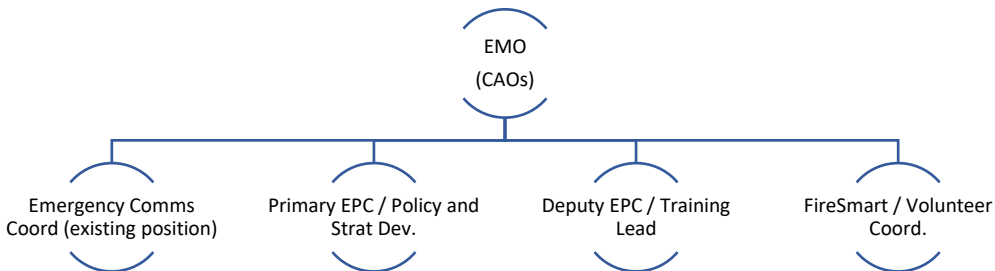
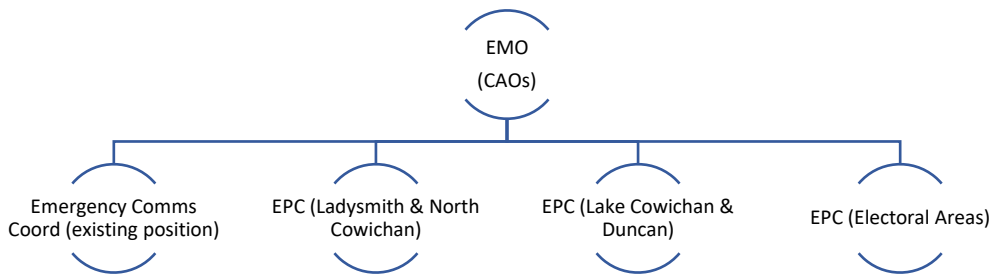


Chart 3 – Roles by Jurisdiction



A summary and comparison of the above options – option 1, 2, and 3 - is included in [Appendix D](#).

PART 4: CONCLUSION

An emergency management program is an essential and regulated service. Local Authorities will need to determine the best strategy to support a sustainable and adaptable emergency management program in the Cowichan area. Regardless of the selected model for Cowichan local authorities, an investment into resources and effort is required by all respective local authorities and the regional emergency program service to address critical gaps. This investment is essential to address the increasing frequency and severity of incidents and risk, as well as meet current regulatory requirements.

APPENDIX A: SUMMARY OF RECOMMENDATIONS & RISKS

Below is a table summary of recommendations and risks for electoral areas (EAs), municipalities (generalized) and the Emergency Program Service (EPS) provided by the CVRD. It takes into consideration the current coverage of the CVRD Emergency Program Service and assumes that all local authorities will continue to operate under a blended approach to emergency management (local authority program + Emergency Program Service).

Table 4 Emergency Program Recommendations, Risks and Responsible Party

Program Element	Recommendation / Deliverable	Risks of not proceeding	Responsible		
			EAs	Munis	EPS
1. Governance & Administration	1.1. CVRD to update bylaws for electoral areas to reflect desired committee governance.	Delegation of Authority / Roles not clearly defined, non-compliance with Act	✓		
	1.2. Municipalities must establish/identify the “Emergency Management Organization” designated to develop and implement plans and other preparedness, response and recovery measures for the whole of the municipality, and establish by-laws and policies indicating same.	Delegation of Authority / Roles not clearly defined, non-compliance with Act		✓	
	1.3. Each local authority or, in the event a single Emergency Management Organization is established, the EMO should develop and implement a clear written Emergency Program Overview to include scope, guiding principles, mission, goals, policies/procedures, and a strategic plan with actions and implementation schedule against a defined budget.	Delegation of Authority / Roles not clearly defined, non-compliance with Act	✓	✓	
	1.4. All municipalities should identify coordinator to act as central contact and point of program coordination.	No central point of coordination, responsibilities for maintenance of the program are divided up among multiple individuals/depts		✓	
2. Hazard, Risk and Vulnerability Analysis	2.1. Each local authority, or the EMO if a single emergency management organization is established, should complete a fulsome HRVA (inclusive of all community nuances, vulnerabilities and resiliencies). This HRVA should be used to develop plans, procedures and focus the emergency program to address the greatest risks.	Risk assessment informs planning, resources and decisions. Without a current risk assessment, planning/resources may be inappropriate.	✓	✓	
3. Risk Mitigation	3.1. Each local authority or, in the event a single Emergency Management Organization is established, the EMO should draft an overall resiliency assessment and mitigation plan based on the HRVA (see recommendation 2.1).	Mitigation is applied as-needed and may not be appropriate or reduce largest risks. Mitigation may not be cost effective (doesn't consider existing resiliencies).	✓	✓	
	3.2. Each local authority or, in the event a single Emergency Management Organization is established, the EMO should develop and implement a comprehensive FireSmart strategy and program.	Increased vulnerability / lower resilience to wildfire. Current piecemeal approach will only address some risks temporarily.	✓	✓	
4. A) Preparedness – Public Awareness	4.1. The Emergency Program Service should continue to provide preparedness education and awareness support to community groups, neighbourhood response teams, non-government organizations and other interested parties. An awareness plan should be developed to ensure a strategic, equitable, encompassing, and measurable approach to awareness and education across the Cowichan area with a focus on vulnerable groups and neighborhood emergency teams.	Varying degrees of preparedness throughout Cowichan, ineffective use of resources.			✓
	4.2. All partners should collaborate on an annual event to generate awareness and educate residents, visitors and businesses in the Cowichan area.	Other methods may not be as effective (higher cost/lower benefit)	✓	✓	

DESCRIPTION			Responsible		
Program Element	Recommendation / Deliverable	Risks of not proceeding	EAs	Munis	EPS
4. B) Preparedness – Training & Exercises	4.3. The Emergency Program Service should continue to provide training to EOC and ESS teams under a shared Training and Exercise Plan. This five-year plan should include the training requirements and recommendations for designated roles in a response, and provide a schedule of exercises for each community that increase in complexity over time, culminating in a full scale multi-jurisdictional exercise every three to five years.	Training and exercises may not be appropriately planned (scheduled, benefiting multiple teams) and may have low attendance.			✓
4. C) Preparedness – After Action Reviews	4.4. Each local authority or, in the event a single Emergency Management Organization is established, the EMO should establish a formal After-Action Review process and procedures to clarify when debriefs will be held and how actions will be tracked to completion.	Improvements / change may not occur.	✓	✓	
	4.5. Each local authority or, in the event a single Emergency Management Organization is established, the EMO should report annually on continuous improvement measures (and completion of corrective actions) to its council/board and to the public.	Improvements / change may not occur or may not be appropriate.	✓	✓	
5. A) Response Planning – Emergency Plans	5.1. Each community (local authority) should develop, implement and maintain a community-specific emergency plan. This plan should be based on the hazards, risks and vulnerabilities identified in the HRVA. It should include specific procedures/people, evacuation routes, muster locations, critical services, and vulnerable groups for that community.	Response/decisions based on generalized information only, less effective responses. Potential for increased threat to life safety.	✓	✓	
	5.2. The CVRD or, if a single emergency management organization is established, the designated EMO should implement a community plan template so that plans in the Cowichan area follow a similar format and structure. This will enable interoperability, and reduce training and knowledge barriers when local authorities and First Nations support each other in response to an incident.	Less effective responses.			✓
5. B) Response Planning – Communications & Warning	5.3. All local authorities should identify the same notification system as the emergency alert system to ensure maximum participation and increased saturation.	Public confusion, risk to life safety, poor coverage/saturation, increased costs.	✓	✓	
	5.4. All local authorities should actively advertise and promote the emergency alert system for the Cowichan area.	Risk to life safety if there is poor coverage/saturation. Less effective preparedness/response. More burden on emergency responders during an incident.	✓	✓	
	5.5. Each local authority or, if a single emergency management organization is established, the designated EMO should establish trained authorized users for the Emergency Notification System to ensure rapid deployment of public warnings and/or EOC team activations during an incident.	No warnings / delayed warnings, increased threat to life safety.		✓	
	5.6. All EOC teams and alternates should be uploaded and maintained in the Emergency Notification System to enable rapid deployment.	Time delay to establish EOC response (impacting support to emergency responders on site).	✓	✓	
	5.7. The Disaster Radio program should be refreshed to include training.	Unable to use system in an emergency.			✓
	5.8. Emergency Communications exercises should be integrated into the Cowichan Exercise and Training Program.	Less effective communications in an emergency.			✓
5. C) Response Planning –	5.9. Each local authority should maintain a current roster for their local EOC. This roster should be updated regularly and should identify at minimum section chiefs (planning, operations,	Time delay to establish EOC response (impacting support to emergency responders on site).		✓	

DESCRIPTION			Responsible		
Program Element	Recommendation / Deliverable	Risks of not proceeding	EAs	Munis	EPS
Response Operations	logistics, finance) and management staff (director, liaison, information, risk management). If a regionalized EMO is established, each partner should provide an alternate available for each essential role.	Individuals may have to fill roles without adequate/knowledge/training.			
	5.10. The Regional Emergency Operations Centre should implement incident management tools and systems that support ongoing remote activities.	Remote REOC operations will be less effective, (decreased communications, common picture, less effective decisions, record management challenges).			✓
	5.11. Situational awareness and analysis procedures and roles for a response should be formalized for all EOCs/REOC.	Inability to gain adequate situational awareness. Poor decisions during a response, risk to life safety.	✓	✓	
	5.12. Damage assessment processes should be formalized and personnel in all jurisdictions trained to implement during an incident.	Inability to assess impact of incident. Poor decisions during a response, risk to life safety.	✓	✓	
	5.13. The Cowichan area should continue to build on response team capacity by increasing volunteer engagement. Volunteer teams can provide additional support to staff (which continue to provide a reliable backbone for response in the region).	Increased cost of response and emergency support services as financial reimbursement from province is reduced.			✓
5. D) Response Planning – Operational Readiness	5.14. Each local authority should identify a secondary location for an EOC.	Time delay to establish EOC response (impacting support to emergency responders on site).		✓	
	5.15. The CVRD (Emergency Program Service), or EMO if a single emergency management organization is established, should implement an operational readiness maintenance and testing plan to ensure regular and established testing and maintenance of equipment, tools and systems.	Equipment and systems may malfunction or be unavailable during a response.			✓
	5.16. Each local authority should identify prepositioned disaster supply locations based on community layout and vulnerabilities. These locations should be stocked, maintained, and part of a public awareness campaign.	Equipment and supplies may not be accessible in some areas, impact to life safety and increased reliance on emergency responders in those areas.	✓	✓	
	5.17. Secondary reception centres should be identified/confirmed in each community. Baseline requirements for these secondary centres should be established and maintained.	Primary Reception Centres may not be accessible in some areas, impact to life safety and increased reliance on emergency responders in those areas.			✓
	5.18. The CVRD, or EMO if a single emergency management organization is established, should assess mobile assets and establish an appropriate fleet procurement and management plan. Vehicles should be appropriate for daily operations as well as response activities.	Vehicles may malfunction or be unavailable during a response. Some assets may not be deployed.			✓
6. Recovery Planning	6.1. Each local authority or, if a single emergency management organization is established, the EMO should develop templated recovery plans for top hazards as identified in the HRVA. Recovery plans should include the priorities to restore essential services, processes to re-establish community functions, and recovery roles. The plans must be relevant and achievable by local authorities with or without a Disaster Financial Assistance program.	Delayed recovery (increased cost and impact to essential services, some infrastructure and vulnerable groups may not recover if they are not prioritized early).	✓	✓	
7. Program Evaluation	7.1. Each local authority or, if a single emergency management organization is established, the EMO should develop and implement a program evaluation process and schedule. Progress should be reported at senior levels and summarized for the public.	No continuous improvement, no commitment to the program, lack of public buy-in, reputational damage.	✓	✓	

APPENDIX B: SUMMARY OF PROGRAM MODELS

Table 5 Emergency Program Implementation Models

	Regionalized Model	Blended Model	Single Entity Model
Description	All EM services coordinated/administered by one entity for multiple entities	Some EM services coordinated/administered centrally by one entity for multiple entities, other services coordinated managed by each single entity	Full EM Program managed by single entity
Governance	One governing body / organization	Fee for Service (services governed by a Regional Board), and governance for the Emergency Program must be set up for each local authority to manage their independent program components	One governing organization for each entity
Program Areas	All centrally managed	Some program areas managed by each entity, some centrally managed	Each entity manages its own full emergency program
Examples	Regional District of Central Okanagan, Emergency Management Oceanside	CVRD	City of Vancouver, City of Nanaimo
Benefits	<ul style="list-style-type: none"> • Efficiency - pools resources (benefits small players), maximizes grant opportunities (benefits large players), increases response efficiency and depth • Increases preparedness – one source of truth • Less administration (one governing body / organization) • Collaborative approach 	<ul style="list-style-type: none"> • Some cost savings • Some collaboration 	<ul style="list-style-type: none"> • Full autonomy

Challenges

- Newer model, may take some time to implement (stand up an organization to act as the organization) – PHASED APPROACH could be used
- Disproportionate benefits
- Complex governance
- Role/responsibility confusion
- Public confusion
- Requires significant resources to implement all areas or some areas/functions are not addressed
- May not be feasible for all groups
- May create silos
- Increasing demands

APPENDIX C: SUMMARY OF NEW RESOURCES AND COSTS – High Level Estimate Only

DESCRIPTION		BLENDED MODEL									NEW REGIONALIZED MODEL		
		Estimate per Municipality			Estimate for CVRD (filling the gap for EAs)			Estimate for gap in Emergency Program Service			Estimate for Combined EMO		
Program Element	Deliverable	Development (per Municipality)	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required
Governance & Administration	1.1 CVRD to update bylaws, confirm/re-establish committee	-	-	-	20 hrs	40 hrs	-	-	-	-	-	-	-
Governance & Administration	1.2 Establish/identify the municipal “Emergency Management Organization(s)”, supporting By-laws and policies.	60 hrs	40 hrs (quarterly committee meetings and prep)	-	-	-	-	-	-	-	60 hrs	EMO - 40 hrs Partners-10 hrs (committee attendance)	-
Governance & Administration	1.3 Emergency Program Overview (Strategic Plan) with actions and implementation schedule against a defined budget.	40 hrs	20 hrs	-	40 hrs	20 hrs	-	-	-	-	50 hrs (additional consultation effort)	EMO - 20 hrs (maintain strategic plan, budget)	-
Governance & Administration	1.4 Establish Municipal EPCs (or additional staff as required to provide an EMO)	40 hrs (interviews/onboarding)	150 hrs (Liaison and Incident Response/Recovery activities only, other hours captured under each deliverable)	Vehicle/mileage to support work activities and site response /support, PPE, Training, office	-	-	-	-	-	-	-	EMO - 105 hrs (to account for additional incident response/recovery support, liaison)	-
Hazard, Risk and Vulnerability Analysis	2.1 Updated HRVA	70 hrs	20 hrs	Subject matter experts, community feedback would be needed.	70 hrs	20 hrs	Subject matter experts, community feedback	-	-	-	EMO - 140 hrs (for all areas)	EMO - 40 hrs Partner (review) – 5 hrs	Subject matter experts, community feedback
Risk Mitigation	3.1 Community Disaster Resilience Plan	120 hrs	20 hrs (bi-annual review/update)	Impacts other areas of local authority administration – community planning, bylaws, development, waste mgmt., utilities etc.	60 hrs (mitigation plans for some hazards already in progress)	10 hrs (bi-annual review/update)	Impacts other areas of local authority administration – community planning, bylaws, development, waste mgmt., utilities etc.	-	-	-	120 hrs	EMO - 40 hrs (bi-annual review/update) Partners – 10hrs	Impacts other areas of local authority administrations

DESCRIPTION		BLENDED MODEL									NEW REGIONALIZED MODEL		
		Estimate per Municipality			Estimate for CVRD (filling the gap for EAs)			Estimate for gap in Emergency Program Service			Estimate for Combined EMO		
Program Element	Deliverable	Development (per Municipality)	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required
Risk Mitigation	3.2 FireSmart Program	300 hrs	450 - 600 hours (depending on size of municipality)	Grant funding is sometimes available for this function	300 hrs	600 hours (full program requires a 0.5 FTE)	Grant funding is sometimes available for this function	-	-	-	450 hrs	EMO - 600 hrs (full program requires a 0.5 FTE)	Grant funding is sometimes available for this function
Preparedness	4.1 Regional public awareness strategy	-	-	-	-	-	-	35 hrs	100 hours (likely to identify substantially more opportunities than are currently in the program)	-	35 hrs	EMO - 140 hrs (likely to identify substantially more opportunities than are currently in the program)	Updated materials
Preparedness	4.2 Cowichan Emergency Preparedness Annual Event	-	70 hours (set-up, promotion, attendance)	-	-	70 hours (set-up, promotion, attendance)	-	35 hrs (planning event)	-	-	-	EMO - 70 hrs	-
Preparedness	4.3 Five-Year Cowichan Training & Exercise Plan to include 5.8 Communications Exercises)	-	105 hours (to attend additional training which is likely to be annual instead of roughly every 2 yrs under ad hoc system)	-	-	- (already attending annually)	-	35 hrs	70 hours (Trainer impact only, REOC staff already attend annual training) currently delivered)	-	70 hrs	EMO - 105 hrs (plan maintenance, development of exercises, and additional opportunities) Partners – 50 hrs (joint training opportunities may reduce training burden)	-
Preparedness	4.4 After Action Review Process	35 hrs	-	Tracking tool	20 hrs (process mostly established)	-	Tracking tool	-	-	-	20 hrs	-	Tracking tool
Preparedness	4.5 Annual report on continuous improvement post incident	-	10 hrs (assumes one significant event every 2 years)	-	-	5 hrs (AARs already completed regularly, only reporting is not currently provided)	-	-	-	-	-	EMO - 25 hrs (assumes one significant event per area every 2 years)	-
Response Planning	5.1 Community-Specific Emergency Plan	140 hrs	20 hrs	Speciality, generally contracted or, at minimum, requires GIS support	120 hrs (Several electoral areas already completed)	60 hrs	GIS	-	-	-	240 hrs	EMO – 140 hrs Partners Review – 10 hrs	GIS, Partner feedback

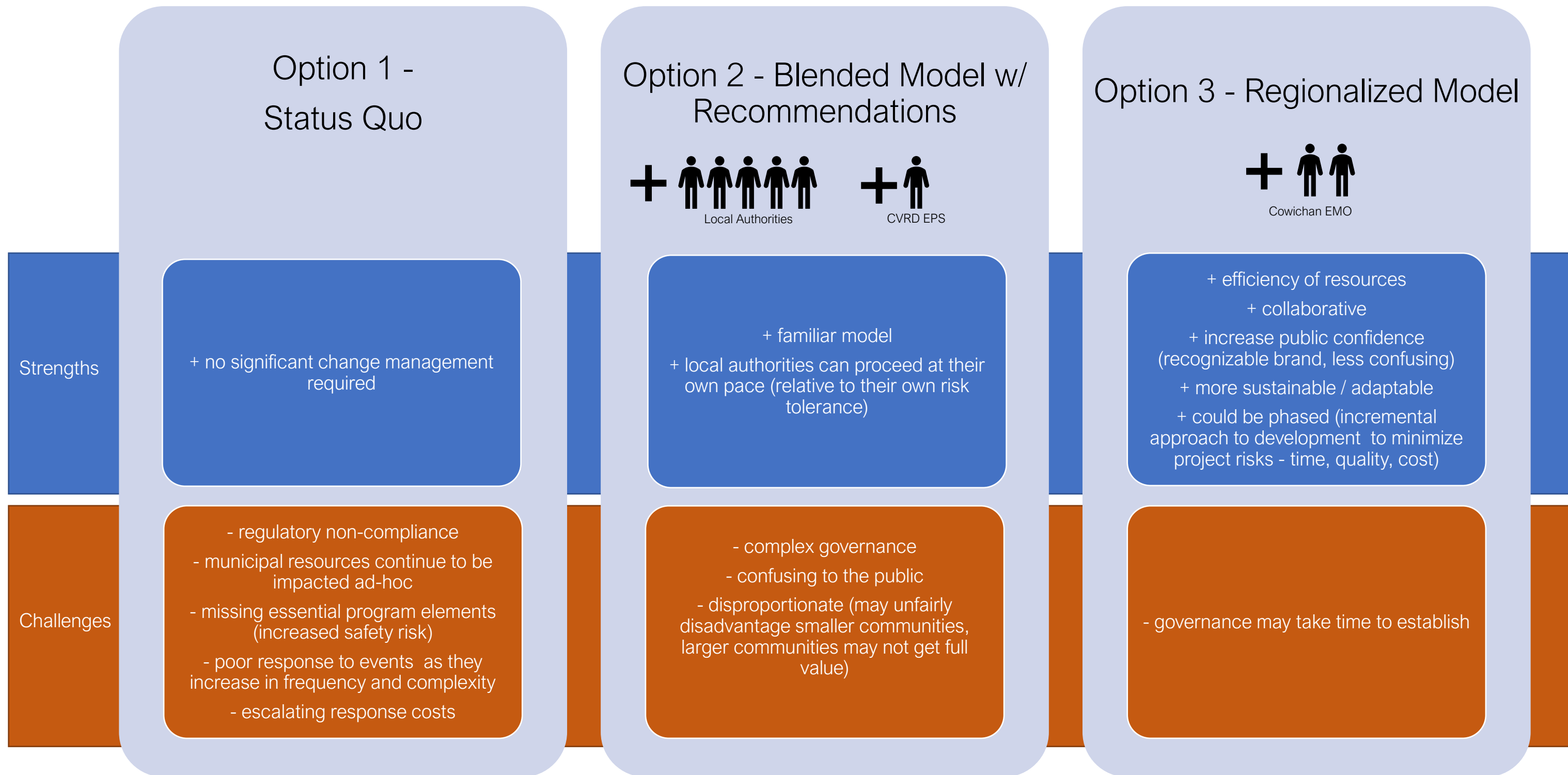
DESCRIPTION		BLENDED MODEL									NEW REGIONALIZED MODEL		
		Estimate per Municipality			Estimate for CVRD (filling the gap for EAs)			Estimate for gap in Emergency Program Service			Estimate for Combined EMO		
Program Element	Deliverable	Development (per Municipality)	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required
Response Planning	5.2 Community Plan template	-	-	-	-	-	-	70 hrs	-	-	70 hrs	-	-
Response Planning	5.3 Confirm single Emergency Notification System	10 hrs (to update messaging/ media)	-	-	-	-	-	-	-	-	-	-	-
Response Planning	5.4 ENS Promotion	10 hrs	10 hrs	Advertising costs, materials	10 hrs	10 hrs	Advertising costs, materials	-	-	-	10 hrs	EMO - 10 hrs	Advertising costs, materials
Response Planning	5.5 Trained users for ENS	-	6 hrs (annual training, each user, 3 users)	-	-	6 hrs (annual training, each user, 3 users)	-	10 hrs (agreements, user procedures/ policies)	2 hrs (deliver training online to all users)	-	-	EMO – 6 hrs (activates for any community when requested)	-
Response Planning	5.6/5.9 EOC Roster Maintenance and inclusion in ENS	-	4 hrs (quarterly update)	-	-	4 hrs (quarterly update)	-	-	-	-	-	EMO - 10 hrs Partner - 1 hr (quarterly update for all partners)	-
Response Planning	5.7 Update Disaster Radio Program	-	-	-	-	-	-	40 hrs	10 hrs	-	40 hrs	EMO - 10 hrs	-
Response Planning	5.8 Comm Ex Plan (included under 4.3)	-	-	-	-	-	-	-	-	-	-	-	-
Response Planning	5.9 Sufficient depth on key EOC Team roles	20 hrs (role specific training for additional recruits)	-	-	-	-	-	-	-	-	-	-	-
Response Planning	5.10 Incident Management Tool/Application	-	-	-	-	-	-	70 hrs	35 hrs (training, record retention, post incident clean up)	Solution annual license cost	70 hrs	35 hrs (training, record retention, post incident clean up)	Solution annual license cost
Response Planning	5.11 Situational Analysis Roles and Procedures	20 hrs	-	GIS mapping, displays, situation status boards	10 hrs	-	-	-	-	-	20 hrs (all primary and secondary EOCs)	-	-
Response Planning	5.12 Damage Assessment Roles and Procedures	20 hrs	10 hrs (annual training)	-	20 hrs	10 hrs (annual training)	-	-	-	-	20 hrs	EMO - 10 hrs (annual training)	-
Response Planning	5.13 Volunteer Team Mgmt	-	-	-	-	-	-	-	450 hrs	PPE for additional recruits, rewards	-	EMO - 450 hrs	PPE for additional recruits, rewards

DESCRIPTION		BLENDED MODEL									NEW REGIONALIZED MODEL		
		Estimate per Municipality			Estimate for CVRD (filling the gap for EAs)			Estimate for gap in Emergency Program Service			Estimate for Combined EMO		
Program Element	Deliverable	Development (per Municipality)	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required
Response Planning	5.14 Secondary EOCs	70 hrs	4 hrs	Supplies / storage back-up power, grant applications and approval	-	-	-	-	-	-	140 hrs (bring all EOCs to same standard)	EMO - 20 hrs	Supplies (Regional grant)
Response Planning	5.15 Operational Readiness Cycle	2 hrs	14 hrs (checks on EOC, etc.)	-	-	-	-	14 hrs	20 hrs (quarterly checks on REOC, annual check on disaster supplies, ESS supplies, trailers)	-	14 hrs	EMO - 50 hrs (Rotation of checks and exercises, leverage volunteers)	-
Response Planning	5.16 Pre-stocked Disaster Supply Locations	70 hrs (plan, implement)	- (captured above)	Storage and supplies (\$25,000) – potentially grant funded	- (Exists in reception centres)	-	-	-	-	-	70 hrs (plan, implement regional approach)	- (captured above)	Storage and supplies (100,000) – potentially grant funded
Response Planning	5.17 Secondary Reception Centres	-	-	-	-	-	-	70 hrs	30 hrs	Supplies (potentially grant funded)	70 hrs	EMO - 30 hrs	Supplies (potentially grant funded)
Response Planning	5.18 Fleet Management	-	-	-	-	-	-	14 hrs	35 hrs (for four vehicles)	Additional vehicle required for trailer and to replace old EPC vehicle	14 hrs	EMO - 35 hrs (for five vehicles)	Additional vehicles required - for trailer and to replace old EPC vehicle, for any new positions
Recovery	6.1 Recovery plans	140 hrs	14 hrs (Bi-annual review)	-	140 hrs	14 hrs (Bi-annual review)	-	-	-	-	200 hrs (develop one template for use by all)	EMO - 40 hrs (bi-annual review of plans)	-
Program Evaluation	7.1 Program Evaluations	35 hrs (determine process, schedule, standards, reporting)	35 hrs	-	35 hrs (determine process, schedule, standards, reporting)	35 hrs	-	-	-	-	35 hrs (determine process, schedule, standards, reporting)	EMO - 105 hrs (reviewing one encompassing program for all partners)	-

DESCRIPTION		BLENDED MODEL									NEW REGIONALIZED MODEL		
		Estimate per Municipality			Estimate for CVRD (filling the gap for EAs)			Estimate for gap in Emergency Program Service			Estimate for Combined EMO		
Program Element	Deliverable	Development (per Municipality)	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required	Development	Annual Operations / Ongoing	Other resources required
TOTAL HOURS		1202 hours	1037 hours	-	845 hours	904 hours	-	393 hours	752 hours	-	1948 hours	EMO 2136 Partners 86	-
Hours Per Local Authority		1202 hours	1037 hours	-	845 hours	904 hours	-	393 hours	752 hours	-	390 hours	513 hours	
Summary Ongoing Impact*		0.75 – 1 FTE**			0.75 FTE			0.5 – 0.75 FTE			1.75 - 2 FTE for the EMO 86 hours per year for each partner (for review, consultation, etc.)		

*A full-time emergency management position has approximately 1,200 working hours. Calculation based on 35 hours per week for 52 weeks (1820 hrs), minus 12 Stats and Xmas closure (112 hrs), 6 weeks vacation/illness/leave (210 hrs), 10% admin e.g. payroll, reviews, organizational admin (150 hrs), 10% response (150 hrs) = 1198 working hours per FTE.

**Average requirement, may vary from municipality to municipality



Option 2 & 3 Funding Examples

Model	Financial Impact	2021 Example
Option 2 Current Blended Model + Recommendations	<ol style="list-style-type: none"> Add 0.75 – 1.0 FTE to each local authority (will vary depending on existing capacity and desired classification/responsibilities). \$80,936 increase to 205 requisition for CVRD Emergency Program Service. 	<ol style="list-style-type: none"> Budget increase varies depending on local authority. Cost per \$100,000 household is \$3.74 (up from \$3.41). This does not include the increase in municipal or electoral area costs.
Option 3 Regionalized Model *	<ol style="list-style-type: none"> No local authority requirement to add positions – plan for 86 hours per year to support consultation, review and approval of program pieces. To support an increase of 2 FTEs for the region - \$323,743 increase to 205 requisition for CVRD Emergency Program Service. 	<ol style="list-style-type: none"> n/a Cost per \$100,000 household is \$4.70 (up from \$3.41)

* Assumes all local authorities have selected this model

Requisition Examples

	Requisition (CVRD Function 205)	Cost per \$100,000 Household	Estimate only (uses 2021 assessment numbers*)				
			City of Duncan	District of North Cowichan	Town of Ladysmith	Town of Lake Cowichan	Nine CVRD Electoral Areas
Current 2021 Budget	\$867,890	\$3.41	\$43,271	\$289,638	\$73,915	\$24,008	\$437,058
Option 2 - 2022 Blended Model Est.**	\$948,826	\$3.74	\$47,306	\$316,649.00	\$80,808	\$26,247	\$477,816
Option 3 - 2022 Regional Model Est.	\$1,191,633	\$4.70	\$59,412	\$397,680	\$101,487	\$32,963	\$600,090

* For comparison purposes only. Actual requisition would depend on 2022 assessment numbers.

** Does NOT include financial impact to local authority's budget to implement their portion of the program in a blended model.