

**AGLG**

AUDIT REPORT  
DECEMBER 6, 2018



**AUDITOR GENERAL FOR  
LOCAL GOVERNMENT**

ACCESSIBILITY • INDEPENDENCE • TRANSPARENCY • PERFORMANCE

# EMERGENCY MANAGEMENT IN LOCAL GOVERNMENTS CAPITAL REGIONAL DISTRICT

An independent assurance audit carried out by the  
Auditor General for Local Government of British Columbia





## MESSAGE FROM THE AUDITOR GENERAL FOR LOCAL GOVERNMENT

To the Chair and Board of the Capital Regional District:

I am pleased to present this performance audit report on the management of emergency services by the Capital Regional District.

Our performance audits are independent, unbiased assessments, carried out in accordance with professional standards. They aim to determine the extent to which the area being examined has been managed with due regard to economy, efficiency and effectiveness.

We conducted this audit in accordance with the standards for assurance engagements set by the Auditing and Assurance Standards Board of the Chartered Professional Accountants of Canada and under the authority of the *Auditor General for Local Government Act*.

Local governments across British Columbia face a wide range of hazards. As providers of essential services, including protective services, drinking water, wastewater and roads, local governments must effectively prepare for, respond to and recover from emergency events, protecting the health and safety of their residents while minimizing damage to their property.

This audit reviewed emergency management processes and practices at the corporate level as well as at the level of the electoral areas where the Capital Regional District acts as local government. This report is neither an audit of causes of past emergency events nor an evaluation of previous emergency event responses.

We were pleased to find that the Capital Regional District had a significant focus on emergency management over the last few years and implemented many good practices. From a regional perspective, management recognized the importance of sharing information and resources among local authorities in the region and was enhancing coordination of emergency management with various stakeholders. Internally, management recognized the importance of an integrated approach to emergency management and strived to make it a part of its organizational culture.

Our report identifies a few areas where the Capital Regional District could improve on its emergency management practices, in particular, by establishing more holistic business continuity management processes and practices across the organization and strengthening its focus on the recovery of core services.

I believe there is a great deal of information here that is relevant to many other local governments across the province that also manage emergency services, especially given recent events such as flooding and wildfires.

I want to thank the Capital Regional District for your cooperation during the performance audit process and your response to our findings and recommendations.

A handwritten signature in black ink, appearing to read 'Gordon Ruth'. The signature is fluid and cursive, written over a white background.

**Gordon Ruth, FCPA, FCGA**  
*Auditor General for Local Government*  
Surrey, B.C.

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## EXECUTIVE SUMMARY

1. Local governments are a major part of British Columbia's public sector, providing a wide range of critical core services. Given the importance of these services, all local governments should take a comprehensive, coordinated and organized approach to emergency management.
2. Emergency management involves all levels of government, each of which needs emergency management plans. British Columbia's *Emergency Program Act* and the Local Authority Emergency Management Regulation set out emergency management requirements for local governments.
3. Under the Regulation, each local government is responsible for creating local emergency plans and guidelines setting out the priorities and means by which it will restore essential services following an emergency or disaster. In addition, the Compensation and Disaster Financial Assistance Regulation provides for compensation to owners of lost or damaged property and disaster financial assistance to eligible claimants and local governments.

### WHAT WE EXAMINED

4. The overall purpose of the audit was to provide an objective and independent assessment of the effectiveness of emergency management plans and programs in the Capital Regional District (CRD).
5. Our specific audit objectives were to assess the alignment of the local government's emergency management system with legislative requirements and to determine the level of statutory compliance as a starting point for the local government's emergency management program.
6. We also examined the robustness of the organization's emergency management plans, programs and practices to determine whether they included activities necessary to respond to and manage the consequences of an emergency event in a timely manner. Finally, we assessed whether the CRD had developed a business continuity management system containing recovery procedures necessary to resume critical operations in the event of a disruption.

### WHAT WE FOUND

7. Overall, the Capital Regional District had taken major steps to develop an emergency management program and continuously improve it. The Regional District:
  - Complied with requirements set out in the Local Authority Emergency Management Regulation
  - Made significant progress developing an integrated approach to emergency management where the program was treated as a shared responsibility and was part of the organizational culture rather than a stand-alone project
  - Facilitated resource and information sharing in the region among local authorities' emergency programs through establishing and/or participating in a partnership with the Province and regional commissions. These agencies all had a role in promoting coordination, cooperation and collaboration between levels of government
8. For the Capital Regional District to strengthen its emergency management program, it should:
  - Develop a centralized emergency recovery and business continuity strategy to deal with emergencies and sustain long-term recovery. The Regional District recognized the need to do more work in this area and was taking important steps toward that goal
  - Develop a performance measurement system for emergency management and improve monitoring and reporting to external and internal stakeholders
9. We identified specific opportunities to further strengthen the Capital Regional District's emergency management processes and practices.



## GOVERNANCE AND STATUTORY COMPLIANCE

10. The Capital Regional District met its emergency management legislative requirements by:

- Establishing relevant bylaws and governance committees and commissions
- Preparing its community risk assessment and local emergency plans, including supplementary procedures outlining key response activities, public notification methods and guidance for provision of food, shelter and other social services during emergencies

While the Regional District established a process to regularly review its local emergency plans and identified essential services, as required by the legislation, there were opportunities to strengthen its document review process.

### STATUTORY COMPLIANCE

	<p><b>POLICY DIRECTION</b> CRD had bylaws in place that guided the Regional District's emergency management program.</p>
	<p><b>EMERGENCY MANAGEMENT ORGANIZATION</b> CRD established a number of committees and commissions that facilitated development and implementation of emergency plans and other emergency preparedness, response and recovery measures.</p>
	<p><b>EMERGENCY MANAGEMENT PLAN</b> CRD established a corporate emergency plan that described roles and responsibilities in emergency planning, including for the electoral areas. The plan had provisions outlining preparedness, response and some recovery activities from emergencies based on the risk assessment. The three electoral areas developed their own emergency plans in the same format as the corporate emergency plan.</p>
	<p><b>PLAN IMPLEMENTATION, RESOURCING AND PUBLIC NOTIFICATION</b> CRD allocated resources, assigned responsibilities to implement local emergency plans and established emergency notification procedures.</p>
	<p><b>TRAINING AND EXERCISING</b> CRD developed a three-year training plan that supported emergency response training and exercises.</p>
	<p><b>EMERGENCY MANAGEMENT PLAN REVIEW PROCESS</b> CRD developed a process to ensure plans are regularly reviewed and updated, however, this process could be strengthened.</p>
	<p><b>EVACUATION STRATEGY</b> CRD prepared general evacuation guidelines as part of its corporate emergency plan that described the steps to issue an evacuation alert or order and the legal responsibilities on evacuation for the Regional District and other responding agencies. However, evacuation strategies should be strengthened to include additional content.</p>
	<p><b>EMERGENCY SOCIAL SERVICES</b> CRD ensured it had resources and support in place for the coordination and provision of food and lodging, clothing, transportation and medical services. However, emergency social services documentation could be enhanced by including additional details.</p>
	<p><b>PRIORITIZATION OF ESSENTIAL SERVICES RESTORATION</b> CRD prioritized its essential services and identified critical infrastructure.</p>

EXPECTATION MET

EXPECTATION NOT MET

## PLANNING AND RESOURCING

11. The Capital Regional District implemented strong emergency planning and management practices to ensure effective response during an emergency. The Regional District had not developed a centralized, holistic approach to business continuity and recovery, however, it recognized the need to do so and was taking important steps toward this. There are a few other opportunities for the Regional District to improve its planning documentation and processes.

### ESSENTIAL ACTIONS

- ✓ CRD developed risk-based emergency plans and guidelines at the corporate level and for its electoral areas. These local emergency plans focused on the response phase during an emergency.
- ✓ CRD's emergency plans outlined key response actions, including the designation, functions and condition requirements of emergency operation centres at the corporate level and in the electoral areas. CRD's emergency management guidelines covered the roles and responsibilities of the emergency operations centre and key response activities. CRD's emergency planning documentation could be improved by addressing all four phases of emergency management and describing the backup and delegation process for the Board Chair during an emergency.
- ✓ CRD identified emergency communication and information management requirements as part of emergency planning and implemented processes with staff, volunteer members and relevant service providers.
- ✓ CRD engaged with response partners, departmental leaders and electoral areas to plan for and implement its emergency management program.
- ✓ CRD established and maintained a volunteer strategy for its emergency activities.
- ✓ CRD developed and maintained an Emergency Social Services program in electoral areas that was based on community input and supported by ongoing training.
- ✗ CRD had not developed a centralized approach to emergency recovery and business continuity.

## TRAINING AND AWARENESS

12. The Regional District identified long-term emergency management training requirements and developed plans that supported training needs over time. However, there is an opportunity for the Regional District to strengthen its training process.

### ESSENTIAL ACTIONS

- ✓ CRD provided fundamental training on emergency management to emergency management staff and volunteers.
- ✗ CRD did not provide its Board with regular refresher training on emergency management.
- ✓ CRD prepared various materials to raise public awareness of emergency management.

## EXERCISING AND TESTING

13. The Regional District conducted emergency exercises to validate the effectiveness of its local emergency plans. However, there is an opportunity for the Regional District to improve its practices.

### ESSENTIAL ACTIONS

- ✓ CRD staff conducted various types of emergency exercises over the last few years, for example, emergency operations centre exercises, tabletop exercises, communication and response exercises, that allowed staff to familiarize themselves with their roles and responsibilities during or after emergency events.
- There is an opportunity for the CRD to consider conducting larger-scale exercises that test the collaboration of the corporate office, electoral areas and other relevant parties involved in various response scenarios.

## CONTINUOUS IMPROVEMENT AND PERFORMANCE MEASUREMENT

14. The Regional District has been continuously improving its emergency management program over the last few years. For example, the Regional District:

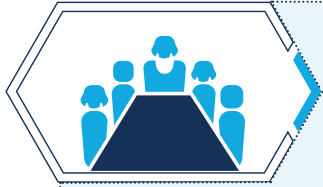
- Formalized its Emergency Management Committee
- Created a long-term emergency training and exercise plan
- Implemented a public notification system
- Initiated the hiring of a full-time business continuity coordinator

However, while senior management was informed of emergency management program results, the Regional District did not have a formal performance measurement system in place to assess progress toward program objectives. The reporting process also required improvements.

### ESSENTIAL ACTIONS

- ✓ CRD continued to make progress in its emergency program in the corporate office as well as in electoral areas.
- ✗ CRD had not developed a formal process to measure performance of the emergency management program and did not report timely and fully the results of the programs to internal and external stakeholders.

## Exhibit 1—RECOMMENDATIONS



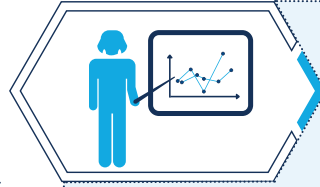
### GOVERNANCE AND STATUTORY REQUIREMENTS

1. The Capital Regional District should confirm the review cycle of its local emergency plans, including plans developed by the electoral areas and ensure the review cycle is implemented as designed.
2. The Capital Regional District should strengthen its evacuation planning at the corporate and electoral area levels by including detailed procedures that address aspects of evacuation before, during and after an emergency or disaster.
3. The Capital Regional District should enhance its emergency social services manuals to include collaboration with Emergency Management BC and ensure they are aligned with the process outlined in the electoral areas' emergency plans and the Regional District's emergency communication plan.



### EMERGENCY PLANNING

4. The Capital Regional District should formally assess the business impact of its essential services in a more holistic way to inform organizational business continuity planning.
5. The Capital Regional District should review and update its emergency plans and procedures to ensure these documents consider all four phases of emergency management and address the backup and delegation process for the Board Chair during an emergency.
6. The Capital Regional District should continue taking steps toward building an organizational business continuity management system that is integrated with departmental service restoration plans.



### TRAINING

7. The Capital Regional District should strengthen its emergency training by ensuring that Board members have regular refreshers on emergency management and crisis leadership, in addition to foundational training that includes specifics of emergency management in regional districts.



### EXERCISES

8. The Capital Regional District should consider conducting full-scale and/or larger-scale joint exercises that test the collaboration of all relevant parties involved in responding to a major emergency in the region. Staff should continue completing progressive, smaller, in-house exercises to further increase familiarity with their roles and responsibilities and to validate emergency plans in preparation for the larger scale joint exercise.

In conjunction with developing and implementing a more holistic business continuity management system, the Capital Regional District should strengthen its business continuity emergency training and exercises.

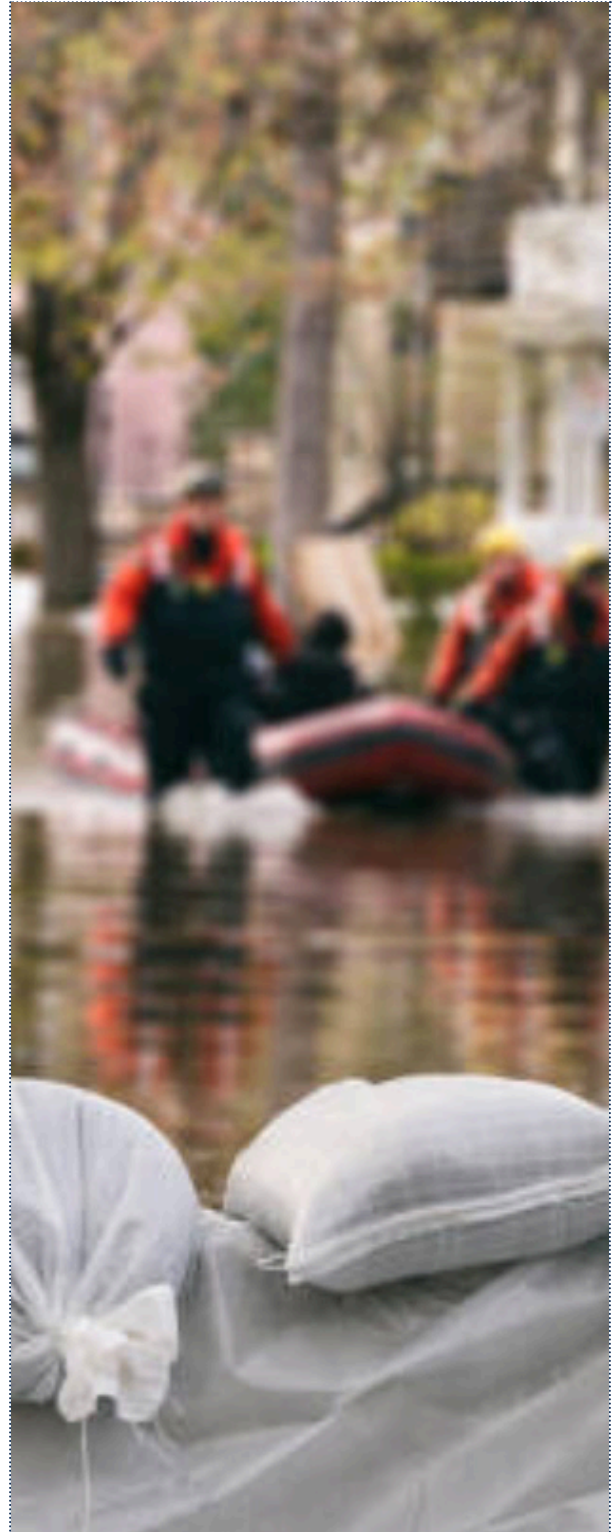




## MAINTENANCE AND CONTINUOUS IMPROVEMENT

9. The Capital Regional District should improve data collection, analysis, monitoring and reporting on its emergency management program as part of a continuous improvement process. This should include the following:

- A performance measurement system that assesses progress toward objectives for its emergency management program at the corporate and electoral area levels
- Monitoring of progress
- Regular reporting to the Board, senior management and the public on results



## INTRODUCTION

15. This report presents the results of a performance audit conducted by the Auditor General for Local Government of British Columbia (AGLG) under the authority of the *Auditor General for Local Government Act*. The audit was performed in accordance with the standards for assurance engagements set out by the Chartered Professional Accountants of Canada (see the About the Audit section for more information).

16. Local governments are a major part of British Columbia's public sector. They provide critical core services such as land use control, drinking water and wastewater services, roads and sidewalks, public safety and parks and recreation facilities. Given the importance of these services, all local governments should establish a comprehensive, coordinated and organized approach to emergency management.

17. As part of the office of the AGLG's 2017/18 risk-based audit planning process, we identified emergency management as highly relevant and significant due to the operational, reputational and financial risks local governments may encounter in preparing for, responding to and recovering from a significant emergency event.

18. A few examples of these risks include resourcing and capacity constraints that can affect a local government's ability to develop and implement comprehensive emergency management programs, low levels of awareness across organizations on emergency response measures and insufficient knowledge of procedures necessary for the effective and efficient recovery of essential services. These risks can negatively impact a local government's residents and the local economy.

19. The purpose of this audit was to assess the effectiveness of the emergency management practices of the Capital Regional District, identify opportunities for improvement and highlight good practices.

20. This audit considered what local governments are required by provincial legislation to have in place, as well as good practices that can add to the robustness of emergency services. In carrying out our work, we acknowledge the considerable differences that exist in size and capacity across British Columbia's local governments. We take these differences into account in identifying and applying our audit criteria.

21. We selected the Capital Regional District and three other local governments to be audited on this topic. We selected these auditees based on their varying size, geographic location, type and individual community characteristics, including the impact of potential hazards and risks facing each local government and its residents.

22. The other local governments we selected for audit on this topic were the Town of Sidney, the District of Mission and Fraser Valley Regional District. We may conduct more audits on emergency management in the future, as this is an important service area for local governments.

23. We assessed the Capital Regional District's performance in managing its emergency management program (including plans related to the four phases—mitigation/prevention, preparedness, response and recovery), business continuity management and key elements such as governance, policies and procedures, communications, training and exercising and monitoring, reporting and updating.

24. Our findings are based on our review of documents related to the audit topic, interviews with the local government's staff, elected officials and others and analysis of relevant data and information.

## EMERGENCY MANAGEMENT

25. As shown in *Exhibit 2*, emergency management is a shared responsibility of all levels of government and all are required to have emergency management plans. British Columbia's *Emergency Program Act* and the Local Authority Emergency Management Regulation set out legislative directions on emergency management for B.C.'s local governments. Under the Regulation, each local government—including municipalities and regional districts—is responsible for developing local emergency plans and guidelines.

26. Emergency Management BC was formed to be the provincial government's lead coordinating agency for all emergency management activities. It provides executive coordination, strategic planning and multi-agency facilitation. It strives to develop effective working relationships in an increasingly complex emergency management environment.

27. Emergency Management BC works with local governments, First Nations, federal departments, non-government organizations and volunteers to support all phases of emergency management.

*Exhibit 2*—ROLES AND RESPONSIBILITIES FOR EMERGENCY MANAGEMENT



28. Emergency Management BC has developed the British Columbia Emergency Management System. Given Emergency Management BC’s leading role in the province, many of our audit criteria and their measurement are drawn from that agency’s publications<sup>1</sup>.

29. Business continuity management is a key element of emergency management, which focuses on maximizing the availability of government services, programs and resources to help continue or restore services in the event of a major operational failure, emergency or disaster. We selected ISO Chapter 22301 Business Continuity Management as the authoritative source of audit criteria in this area.

Robust emergency response and recovery planning can improve response and recovery time and lessen the impact on and costs to a community in times of disaster. It is vitally important that these plans are carefully laid out and regularly updated.

Business continuity management is a holistic framework to manage risks and the potential impact that threaten a local government’s business continuity and provides a process for building resilience within the organization. Business continuity management does not eliminate risks, but instead manages them by preparing for potential business interruption through risk solutions, documented plans, staff familiarization through training and exercises and a culture of continuous improvement.

FOUR PHASES OF B.C.’S EMERGENCY MANAGEMENT SYSTEM



**MITIGATION & PREVENTION**

Mitigation/prevention activities are intended to help local governments reduce the potential impact of an emergency incident on the health, safety and security of residents, as well as damage to property and the environment. Activities may include flood mapping and zoning restrictions, the building of flood dykes, berms and other physical barriers, forest fuel management and earthquake-proof construction of capital projects.

**PREPAREDNESS**

Preparedness includes actions taken in advance in order to be ready to respond to an emergency incident and manage its consequences. These may include emergency response plans, mutual assistance agreements, resource inventories and training, equipment and exercise programs.

**RESPONSE**

Emergency management response consists of actions taken during or immediately before or after an emergency incident to manage the impact through activities such as evacuation, emergency public communication, search and rescue and emergency medical assistance. The goal is to minimize human suffering associated with emergency incidents.

**RECOVERY**

Recovery following an emergency incident includes steps taken to repair or restore infrastructure and services to a minimum operating level and, over the longer term, to a state of “new normal.” These measures may include return of evacuees, reconstruction and repair of damaged structures and possible provision of financial assistance to affected and eligible individuals.

Source: Emergency Management BC web content

<sup>1</sup>Source: *British Columbia Emergency Management System* published in 2016 and *Emergency Management in BC: Reference Manual*, published in 2011.

## OUR EXPECTATIONS BASED ON THE AUDIT CRITERIA



We expect a local government to incorporate seven key elements of an emergency management program into its plans and practices. These include:

- 1 Governance and statutory requirements**, including structures, systems and processes necessary to ensure the local government meets all legal requirements
- 2 Planning**, with a focus on addressing major hazards and risks
- 3 Resourcing** that considers personnel and volunteers, facilities, equipment and supplies
- 4 Training** targeted to staff, key stakeholders and the public
- 5 Exercising and testing** of plans and procedures
- 6 Public and stakeholder engagement** designed to promote awareness and education
- 7 Maintenance and continuous improvement**, including ongoing review and revision of the emergency management program



We also expect a local government to incorporate seven key elements of a business continuity management system into its plans and practices, including:

- 1 Governance**, through a framework to support business continuity that includes leadership, commitment, objectives, policy and procedures
- 2 Business impact analysis**, to gain an understanding of the potential consequences of business disruptions faced by the local government
- 3 Business continuity plan** with recovery strategies that maximize the delivery of essential services and functions
- 4 Review and revision**, with an emphasis on continuous improvement
- 5 Training and awareness** to ensure proficiency in business recovery practices and promote an understanding of everyone's involvement
- 6 Exercises and testing** to validate business recovery strategies and procedures
- 7 Performance measurement** to assess the effectiveness of the business continuity management system as a whole and the plan in particular



# CONTEXT

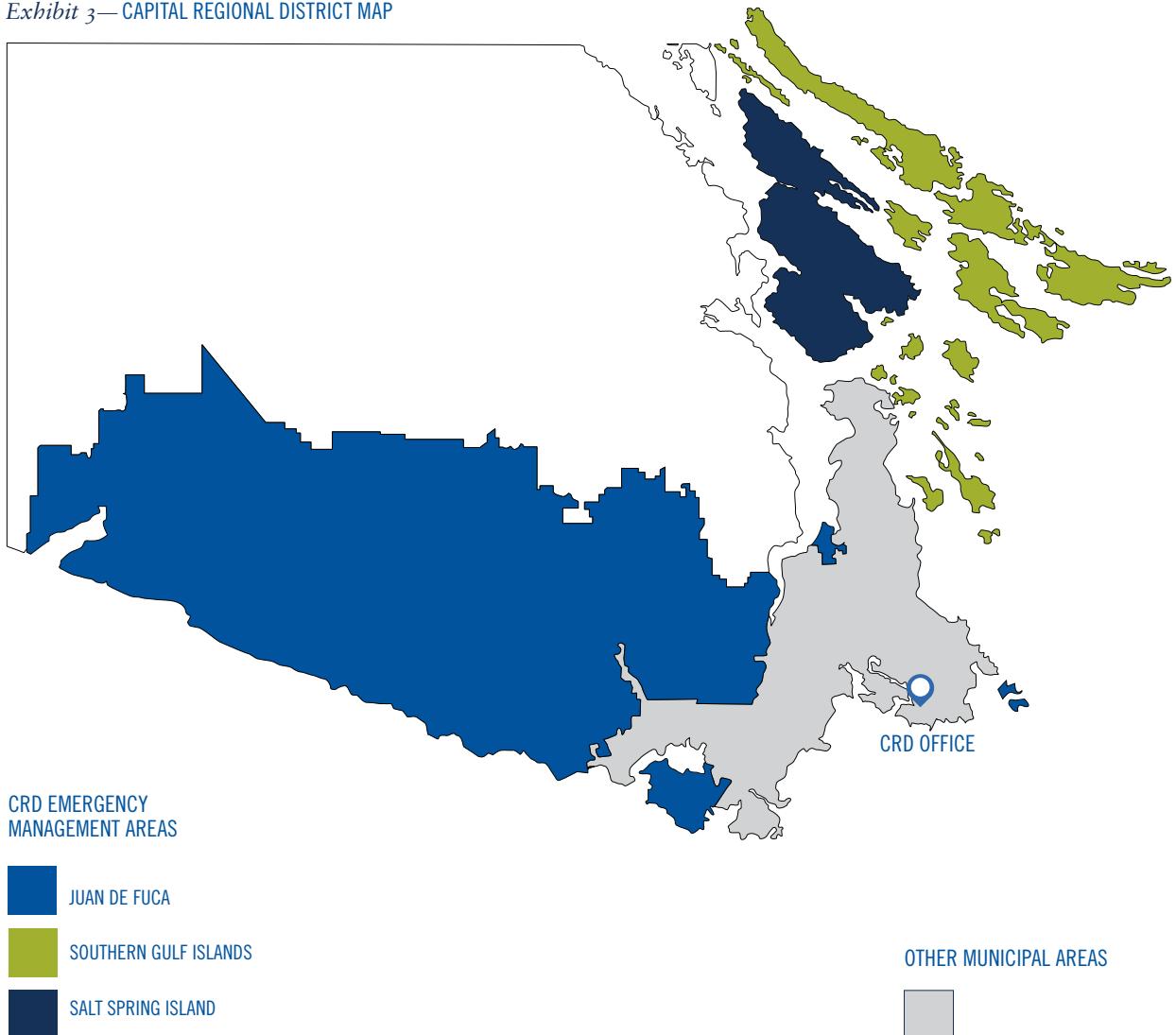
## CAPITAL REGIONAL DISTRICT

### OVERVIEW

30. The Capital Regional District is one of 27 regional districts in British Columbia. It is located at the southern end of Vancouver Island, at the southwest corner of B.C., with administrative offices located in the City of Victoria.

31. The Capital Regional District was created in 1966 when the Province of British Columbia first established a system of regional districts for the province. The Regional District's geographic area covers more than 2,300 square kilometres and the 2016 census indicated that its population exceeded 383,000 residents. This was a 6.49 per cent increase in five years and the Regional District was the second-most populous in the province. There are nine First Nations located within the boundaries of the Regional District.

Exhibit 3—CAPITAL REGIONAL DISTRICT MAP



## THE CAPITAL REGIONAL DISTRICT'S ROLE IN EMERGENCY MANAGEMENT

32. The Regional District has 13 municipalities, including British Columbia's capital Victoria, Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke and View Royal and three unincorporated electoral areas:

- Southern Gulf Islands (including five main islands—Mayne, Saturna, Galiano, North and South Pender Islands)
- Juan de Fuca
- Salt Spring Island

33. The three electoral areas vary in size and density, as shown in *Exhibit 4*.

*Exhibit 4*—ELECTORAL AREAS IN THE CAPITAL REGION

ELECTORAL AREA	LAND AREA (SQ. KM)	2011 POPULATION	2016 POPULATION	2011-2016 POPULATION % CHANGE
SOUTHERN GULF ISLANDS	216.30	4,868	4,732	-3%
JUAN DE FUCA	1,511.89	4,466	4,860	9%
SALT SPRING ISLAND	193.50	10,234	10,557	3%

Source: 2016 Census and CRD documents

34. The economy of the Regional District is diverse, with significant employment in tourism, the service sector, government services, education, agriculture and fishing. There is a significant proportion of people over the age of 65 (21.7 per cent) living in the area.

35. The Capital Regional District operates in a highly complex environment where much of its role is to coordinate activities and to facilitate collaborative arrangements such as cost-sharing and shared services arrangements entered into in order to promote efficiency and cost-effectiveness.

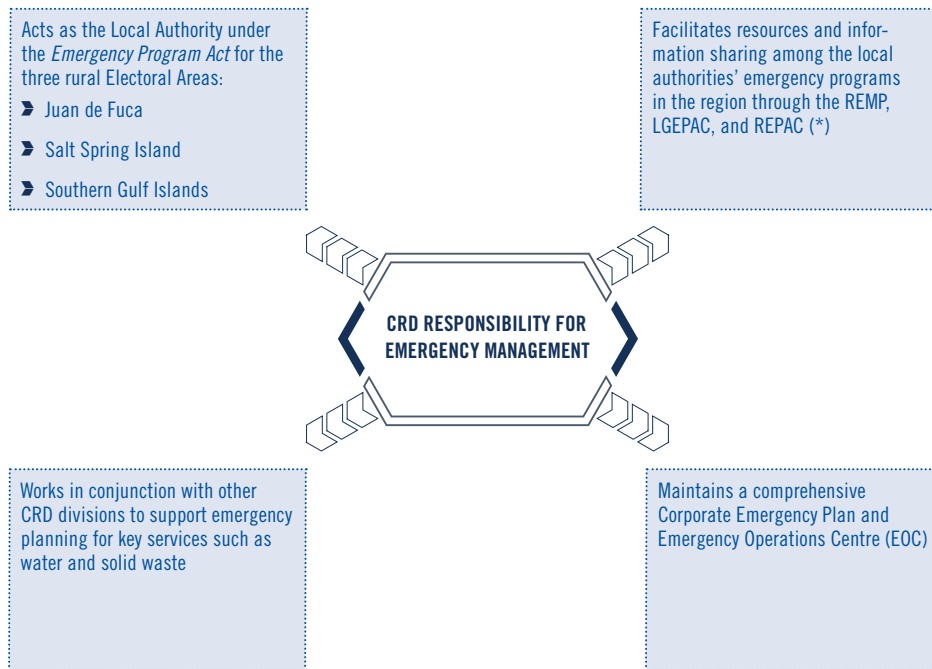
36. The Regional District has more than 900 employees, delivering more than 200 services at the following levels:

- Regional level—where all municipalities are served (for example through the Regional Emergency Management Partnership initiative)
- Sub-regional level—where two or more jurisdictions are served
- Local level—in electoral areas where the Regional District is the local government

37. To ensure continued public safety, the Regional District offers protective services, which includes emergency management. The Regional District’s specific responsibilities for emergency management are presented in *Exhibit 5*.

38. Each of the 13 municipalities in the Regional District is responsible for its own emergency management, with the Regional District facilitating resource and information sharing among the emergency programs. The Regional District works in conjunction with other agencies to provide information, support and collaboration to ensure a coordinated response to regional emergencies. The recently established Regional Emergency Management Partnership (REMP) is intended to play a major role in enhancing emergency management planning activities within the region. This is discussed later in the report.

*Exhibit 5*—CAPITAL REGIONAL DISTRICT RESPONSIBILITIES FOR EMERGENCY MANAGEMENT



(\*)  
 REMP—Regional Emergency Management Partnership  
 LGEPAC—Local Government Emergency Program Advisory Commission  
 REPAC—Regional Emergency Planning Advisory Commission

Source: CRD web content

39. Capital Regional District’s emergency management expenses, at the corporate level and electoral area level, are included in *Exhibit 6*.

41. As shown in *Exhibit 7*, the majority (64 per cent) of expenses were for emergency management programs in the electoral areas.

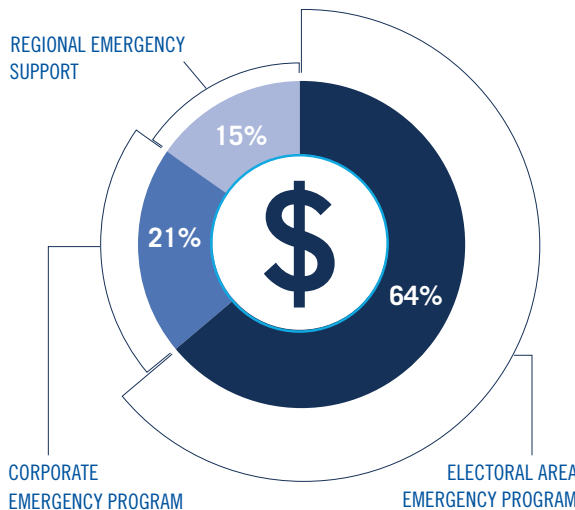
40. As shown in *Exhibit 6*, over the 2014-2017 period, the Regional District spent on average \$122,000 per year on regional emergency support, which included activities to raise public awareness and enhance coordination of emergency management within the region. It financed these services through its General Revenue Fund.

*Exhibit 6—CAPITAL REGIONAL DISTRICT EMERGENCY MANAGEMENT EXPENSES*

Emergency Management Expenses	2014 \$	2015 \$	2016 \$	2017 \$	2014-2017 % Change	2014-2017 \$ Average
<b>REGIONAL</b>						
Regional Emergency Support	106,217	110,783	132,409	137,806	30%	-
<b>Sub-Total</b>	<b>106,217</b>	<b>110,783</b>	<b>132,409</b>	<b>137,806</b>	<b>30%</b>	<b>121,804</b>
<b>CORPORATE</b>						
Corporate Emergency Program	154,270	154,420	181,050	162,950	6%	
<b>Sub-Total</b>	<b>154,270</b>	<b>154,420</b>	<b>181,050</b>	<b>162,950</b>	<b>6%</b>	<b>163,173</b>
<b>ELECTORAL AREAS</b>						
<b>Southern Gulf Islands</b>						
Emergency Program	180,292	163,530	163,184	213,835	19%	
<b>Juan de Fuca</b>						
Emergency Program	56,443	59,265	54,835	60,365	7%	
Search and Rescue	72,736	54,857	85,814	71,092	-2%	
<b>Salt Spring Island</b>						
Emergency Program	67,426	71,146	95,788	96,914	44%	
Search and Rescue	12,662	12,745	14,648	19,231	52%	
Electoral Area Emergency Management Coordinator	83,855	77,824	127,089	113,921	36%	
<b>Sub-Total</b>	<b>473,414</b>	<b>439,367</b>	<b>541,358</b>	<b>575,358</b>	<b>21%</b>	<b>506,874</b>
<b>TOTAL</b>	<b>733,901</b>	<b>704,570</b>	<b>854,817</b>	<b>876,114</b>	<b>19%</b>	<b>792,351</b>

Source: CRD 2014-2017 financial statements and financial records. Expenses exclude fire department operations, emergency telephone services (911 call answer services and the Capital Region Emergency Service Telecommunication expenses).

*Exhibit 7—CAPITAL REGIONAL DISTRICT EMERGENCY MANAGEMENT EXPENSES CHART*



Source: Capital Regional District 2014-2017 financial statements and financial records.

42. As shown in *Exhibit 8*, the cost of the Southern Gulf Islands’ electoral area emergency management program, on a per capita basis, was approximately four times higher than for Salt Spring Island or Juan de Fuca. This was due to the numerous islands in that electoral area that are geographically spread out and isolated.

*Exhibit 8—CAPITAL REGIONAL DISTRICT PER CAPITA COST OF EMERGENCY MANAGEMENT PROGRAM IN ELECTORAL AREAS*

ELECTORAL AREA	2017 EXPENDITURES \$	2017 POPULATION	PER CAPITA \$
SOUTHERN GULF ISLANDS EMERGENCY PROGRAM	213,835	4,780	44.74
JUAN DE FUCA EMERGENCY PROGRAM	60,365	4,942	12.21
SALT SPRING ISLAND EMERGENCY PROGRAM	96,914	10,654	9.10

Source: 2017 CRD population estimates, 2017 CRD Financial Statements

43. The Regional District spent an average of \$86,000 per year over 2014-2017 period on managing its search and rescue teams mainly for services in:

- Juan de Fuca, where CRD’s bylaws provided a budget for training, maintaining a training facility and purchasing vehicles and equipment. Response costs were covered by Emergency Management BC
- Salt Spring Island and the Southern Gulf Islands, where the Regional District’s bylaws provided for covering operational costs. These services also had other sources of funding.

HAZARDS

44. The Capital Regional District is located in one of the most active seismic zones in North America, so earthquakes rank among the greatest concerns. Earthquake threats include the Cascadia Subduction Zone off the west coast of Vancouver Island and shallower earthquakes near Georgia Strait and Puget Sound.

45. A related significant risk is that of tsunamis, as the Regional District has coastline that extends around the entire southern end of Vancouver Island as well as the Gulf Islands.

46. Other hazards that have been identified by the Regional District include severe weather, power outages, wildfires, pandemics, hazardous materials, flooding and marine emergencies.

CRITICAL INFRASTRUCTURE IN THE REGION

47. The Regional District includes a variety of critical infrastructure that could be affected by emergencies, including 23 different utilities responsible for potable water distribution, wastewater and stormwater systems. The region also has extensive road networks, numerous overpasses and other transportation infrastructure including Victoria Harbour and Esquimalt Harbour (administered by the Department of National Defence) and Victoria International Airport.

48. The region is home to dozens of public schools in four separate school districts, numerous private schools, two universities and a college. Two major general hospitals are located in the region, along with several smaller hospital facilities. With British Columbia’s capital city located within the Regional District, there are extensive provincial government offices and other facilities in the area, along with federal and local government infrastructure. Therefore, coordinated and collaborative response and recovery efforts among various partners and stakeholders in the region are critical.

WATER AND WASTE MANAGEMENT SERVICES

49. The Capital Regional District provides both drinking water and wastewater services through its Integrated Water Services department. This team manages a number of drinking water supply systems that provide water to municipalities and electoral areas in the region, including:

- The Regional Water Supply Service (also called the Greater Victoria Water Supply System), which serves 370,000 customers in the Greater Victoria area, including Esquimalt, Oak Bay, Saanich and Victoria
- The Saanich Peninsula Water Supply System, serving Sidney, Central Saanich and North Saanich
- The Juan de Fuca Water Distribution Service, serving Colwood, Langford, Metchosin, View Royal, Sooke, parts of Highlands and the Juan de Fuca Electoral Area



50. The Regional District transmits water from the Sooke and Goldstream reservoirs through pipelines and the Kapoor Tunnel. Its major drinking water disinfection treatment plant is the Japan Gulch plant in Langford.

51. The Regional District provides wastewater management services to over 330,000 customers in the Greater Victoria area, including Langford, Colwood, Oak Bay, Saanich, Esquimalt, Victoria and View Royal. Sanitary sewer collection systems at Clover Point in Victoria and Macaulay Point in Esquimalt receive screened, untreated wastewater and convey it through a series of collection sewers to two marine outflows.

52. The Regional District had plans to upgrade and expand its liquid waste management systems. During the time of this audit, a new wastewater treatment plant at McLoughlin Point in Esquimalt was under construction.

53. The Regional District collects various types of solid waste, including that for recycling, household hazardous waste, salvageable items as well as yard and garden waste and others. It operates the Hartland Landfill Facility in Saanich. This landfill is the only solid waste disposal facility in the region and receives about 140,000 tonnes of solid waste annually.

# FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

## SUMMARY OF FINDINGS

54. The overall purpose of this audit was to provide an objective, independent examination of the Capital Regional District's emergency management program. Specifically, we set out to determine whether—during the period covered by the audit—the Capital Regional District had:

- An emergency management system in alignment with legislative requirements
- Emergency management plans that included activities necessary to respond to an emergency event in a timely manner and manage its consequences
- A business continuity management system containing the recovery procedures necessary to resume critical operations in the event of a disruption

55. The Regional District was successful in meeting most of the expectations included in our audit objectives. Over the last few years, it made significant progress with its emergency management program and implemented good practices to ensure an effective response during an emergency. However, we found that the Regional District lacked some measures that would help ensure recovery of the community and critical operations in the event of disruption.

### GOVERNANCE STRUCTURE AND STATUTORY COMPLIANCE

56. The Regional District complied with requirements set out in the Local Government Emergency Management Regulation. It had a governance structure that supported the delivery of emergency management services, including committees and commissions that facilitated emergency planning and provided oversight of its emergency program. In addition, the Regional District had a full-time dedicated emergency manager who had direct access to key decision-makers.

## EMERGENCY PLANNING

57. The Capital Regional District developed emergency plans that provided guidelines on how to prepare for, respond to and recover from an emergency. The key document was an integrated Emergency Plan that described the Regional District's roles and responsibilities for emergency planning, including those in support of the electoral areas.

58. The Regional District's emergency planning focused on the emergency preparedness and response phases, with limited focus on recovery. Instead of using a coordinated approach at the corporate level, it took a decentralized approach to service recovery, embedding considerations for business continuity into some of its departmental operations. Management has recognized the need to develop a holistic business continuity management system and was taking steps toward doing so.

59. The Regional District facilitated resource and information sharing among local authorities' emergency programs in the region. It did this by establishing or partnering with the Province and regional commissions that had roles in promoting coordination, cooperation and collaboration among levels of government.

60. The Regional District recognized the importance of emergency management training and provided opportunities to staff at various levels of the organization to participate. It identified long-term progressive training requirements and had plans to fill such training needs over time.

61. In addition, the Regional District supported regular emergency management exercises that allowed staff to familiarize themselves with roles and responsibilities during or after an emergency.

## LOOKING AHEAD

62. To more effectively deliver its emergency management services and be better prepared for any future disruptive events, the Capital Regional District should:
- Develop a strategic, centralized approach to business continuity management with a focus on the recovery of critical services such as the provision of clean drinking water
  - Upon completion of progressive smaller exercises, conduct full-scale and larger-scale joint exercises that test the collaboration of all relevant parties involved in responding to a major emergency in the region
63. As part of a continuous improvement process, develop a performance measurement system for its emergency management services, monitor progress and improve its existing reporting process to ensure results are reported regularly to external and internal stakeholders
63. By making these improvements, the Regional District will strengthen its position as a well-prepared local government.



## GOVERNANCE AND STATUTORY REQUIREMENTS

64. Local governments are expected to comply with statutory requirements set out in the *Emergency Program Act* and Local Authority Emergency Management Regulation.

65. Overall, the Capital Regional District had met all emergency management legislative requirements.

66. The Regional District:

- Established relevant bylaws and a governance structure
- Prepared its community risk assessment and local emergency plans
- Developed supplementary procedures where it outlined key response activities, public notification methods and guidance for the provision of food, shelter and other social services during emergencies
- Established a regular review process for its local emergency plans
- Identified essential services to be prioritized for service restoration or maintenance.

67. The statutory requirements and how the Regional District complied with them are presented on the following pages.

### STATUTORY REQUIREMENTS

POLICY DIRECTION <i>page 23</i>	EMERGENCY PLANS REVIEW PROCESS <i>page 28</i>
EMERGENCY MANAGEMENT ORGANIZATION <i>page 23</i>	EVACUATION STRATEGIES AND EMERGENCY SOCIAL SERVICES <i>page 30</i>
RISK ASSESSMENT AND EMERGENCY PLANS <i>page 26</i>	PRIORITIZATION OF ESSENTIAL SERVICES RESTORATION <i>page 31</i>
EMERGENCY PLAN PROVISIONS <i>page 27</i>	

**STATUTORY REQUIREMENT****POLICY DIRECTION**

The legislation requires local governments to set policy direction to guide their emergency management program, as well as to support business continuity of their essential services.

68. The Capital Regional District met the legislative requirement and through a number of bylaws set policy direction to guide its emergency management program.

69. The Regional District's Emergency Program bylaw #3447 adopted in 2007 was the key bylaw that supported the corporate emergency program and articulated the duties and authorities of relevant personnel and committees/commissions.

The bylaw included considerations for business continuity. The bylaw gave the Emergency Management Committee authority to prepare and review plans including procedures to establish priorities for restoring essential services provided by the Regional District.

70. In addition to bylaw #3447, the Regional District also established other bylaws to support local emergency programs delivered in the electoral areas.

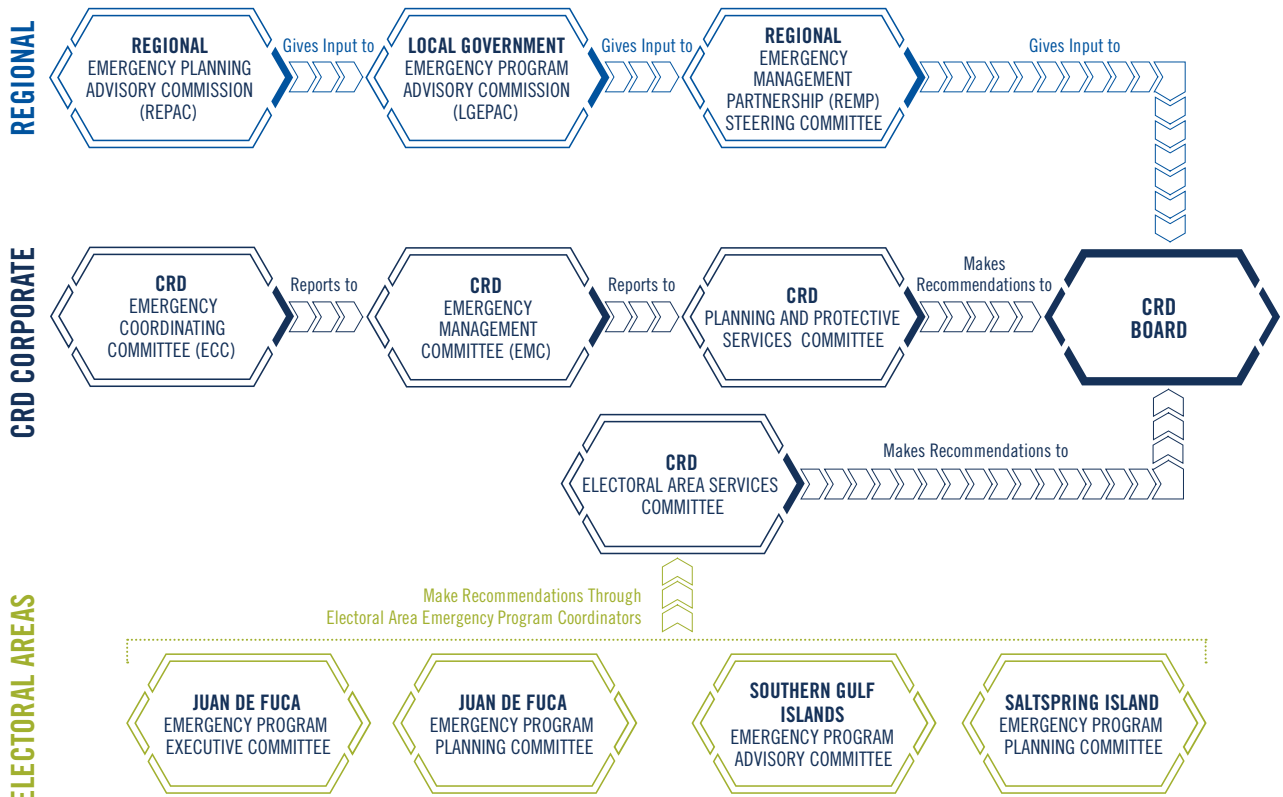
**STATUTORY REQUIREMENT****EMERGENCY  
MANAGEMENT  
ORGANIZATION**

The legislation requires local governments to establish an emergency management organization, such as a committee or a sub-committee, to develop and implement emergency plans and other emergency preparedness, response and recovery measures.

71. The Capital Regional District met the legislative requirement. The Regional District established and maintained local emergency management organizations, as shown in *Exhibit 9*, that developed and implemented emergency plans and other preparedness, response and recovery measures for emergencies and disasters.



Exhibit 9—CAPITAL REGIONAL DISTRICT EMERGENCY MANAGEMENT GOVERNANCE



COMMITTEE/COMMISSION	COMPOSITION	COMMITTEE/COMMISSION ROLE	MEETING FREQUENCY
Regional Emergency Planning Advisory Commission (REPAC)	Emergency Program Coordinators from local governments and relevant external partners such as BC Hydro, BC Ambulance Services, health authority, First Nations representatives and others	Develop and promote initiatives that will increase communication and cooperation for hazard mitigation, emergency preparedness, response, and recovery among any agency or organization that may have significant responsibility during a major emergency in the Capital Region	Quarterly
Local Government Emergency Program Advisory Commission (LGEPAC)	Emergency Program Coordinators from local governments in the region	Increase communication and cooperation among local government emergency programs with the purpose of strengthening capacity to prepare for, respond to and recover from a multi-jurisdictional emergency event	Monthly
Regional Emergency Management Partnership (REMP) Steering Committee	Ministerial, regional municipal and First Nation representatives	Enhance regional coordination and effectiveness of emergency preparedness	Bi-monthly
CRD Emergency Coordinating Committee	CRD emergency manager, deputy emergency manager, electoral area emergency coordinators and department representatives	Review emergency plans and provide advice to the Emergency Management Committee	Quarterly
CRD Emergency Management Committee	CRD electoral area directors, Emergency Manager and senior management members	Prepare, review and present emergency management plans to the Planning and Protective Services Committee	Semi-annually
CRD Planning and Protective Services Committee	CRD Board members	Oversee and make recommendations to the Board regarding planning and protective services including local emergency management	Bi-monthly
CRD Electoral Area Services Committee	CRD electoral area directors	Oversee and make recommendations to the Board regarding services in the electoral areas including local emergency management	Monthly
CRD Electoral Area Emergency Program Planning Committees	CRD electoral area emergency management staff and community members	Focus on emergency planning	At least quarterly
CRD Electoral Area Emergency Program Advisory Committees and Commissions	CRD electoral area emergency management staff and community members	Collect input from electoral area community members and make recommendations to the Regional District	At least quarterly

Source: Capital Regional District bylaws, documentation and Commissions'/Committees' terms of reference.

## CAPITAL REGIONAL DISTRICT BOARD

72. The Regional District Board approved the corporate and electoral area emergency plans, the annual emergency management budgets and appointed the Emergency Program Coordinator. Through its emergency program bylaws, it established committees to facilitate emergency planning and provide oversight to its emergency programs. Selected board members were part of the two committees (the Board's Emergency Management Committee and the Planning and Protective Services Committee), that provided oversight of the Regional District's emergency management program.

73. Committee members were briefed regularly on emergency management matters through periodic meetings. We were advised that the Board was satisfied with the amount and completeness of information received, including during emergencies.

## CAPITAL REGIONAL DISTRICT EMERGENCY MANAGEMENT COMMITTEES

74. The Regional District established three committees to facilitate its emergency planning and provide oversight of its emergency programs: Planning and Protective Services Committee, Emergency Management Committee and Emergency Coordinating Committee. Roles, composition, meeting frequency and reporting structure of these committees are presented in *Exhibit 9*.

75. In the electoral areas, there were local emergency planning committees and an emergency program advisory commission, which met on a quarterly basis. The bylaws supporting local emergency programs in the electoral areas outlined the roles and responsibilities, mandates and membership of these committees/commission.

76. In addition to these committees/commission on emergency management, the Regional District had an Electoral Area Services Committee that made recommendations on matters regarding the three electoral areas to the Board, which included emergency management.

## REGIONAL EMERGENCY MANAGEMENT COMMISSIONS AND COMMITTEES

77. Although not legislatively required, the Capital Regional District founded two regional emergency commissions to coordinate emergency management with other local authorities and relevant parties: the Local Government Emergency Program Advisory Commission and the Regional Emergency Planning Advisory Commission. These commissions' composition, purposes and responsibilities were outlined in the Regional District's bylaws and their terms of reference. Roles, composition, meeting frequency and reporting structure of these two commissions are also presented in *Exhibit 9*.

78. In addition, in March 2016 the Regional District and the Province of B.C. formed a Regional Emergency Management Partnership (REMP) upon signing a memorandum of understanding. This partnership engaged other local authorities in the region including municipalities, electoral areas and First Nations. A steering committee was established to support this partnership. Its purpose was to enhance regional emergency management planning activities within the regional district. More details about the partnership are presented later in the report.

## EMERGENCY PROGRAM COORDINATORS

79. In 2015, the Regional District Board appointed a senior manager in the Protective Services division to serve as its Emergency Program Coordinator/Emergency Manager. The senior manager had relevant education and extensive experience in emergency management in B.C., other provinces and internationally.

80. The Board also appointed a Deputy Emergency Program Coordinator / Emergency Manager who had relevant education and extensive experience in emergency services and was assigned to manage the emergency and fire protection programs in the electoral areas.

81. In addition, there were contracted emergency coordinators and their deputies in each of the three electoral areas. They reported to the Emergency Manager and his deputy in the corporate office. The three emergency coordinators were either certified in emergency management or were in the final stage of obtaining the certification.

**STATUTORY REQUIREMENT****RISK ASSESSMENT AND EMERGENCY PLANS**

The legislation requires local governments to develop an emergency plan outlining preparedness, response and recovery activities based on the risk profile of its jurisdictional area.

82. The Capital Regional District met this legislative requirement by assessing its risks and hazards and preparing its local emergency plans.

**RISK ASSESSMENT**

83. The Regional District prepared a Capital Region Consolidated Risk Assessment report in 2011 that was last updated in 2017.

84. The three electoral areas maintained their own risk profiles; these were last updated in 2017. These documents were used to drive the planning of local emergency responses.

**EMERGENCY PLAN**

85. The Capital Regional District drafted a corporate emergency plan in 2013 that was reviewed and adopted by the Board in 2015. The plan provided guidelines to prepare for and respond to emergencies and disasters and included descriptions of duties and responsibilities in the emergency operations centre sections on emergency recovery. This was an integrated plan, which described the Regional District's roles and responsibilities for emergency planning, including those in support of the electoral areas.

86. The Regional District's corporate emergency plan did not reflect neighbouring local authorities' emergency plans due to a lack of legal authority to do so. However, the Regional District discussed coordination of regional emergency management matters through its participation in organizations such as the Local Government Emergency Program Advisory Commission, Regional Emergency Planning Advisory Commission and the Regional Emergency Management Partnership.

87. The three electoral areas had each developed an emergency plan in the same format as the corporate emergency plan. Similar to the corporate emergency plan, these electoral area plans were drafted in 2013 and adopted by the Board in 2015. These documents reflected policy requirements, provided guidelines including procedures, roles and responsibilities and information regarding the response structure for the electoral area. The Regional District's corporate and electoral area emergency plans included evacuation guidelines.

88. In addition to the corporate and electoral area emergency plans, the Regional District had developed an emergency plan for its drinking water service, following the same format as the other emergency plans.

89. The current local emergency plans, including the corporate and electoral area emergency plans, followed the BC Emergency Response Management System rather than the newer BC Emergency Management System, which is encouraged by the Province and covers all four phases of emergency management with more content on recovery. As a result, the local emergency plans focused on activities during the response phase more than on recovery.

90. Although not included in the local emergency plans, the Regional District developed and/or made use of some materials relating to the emergency recovery phase, such as guidance on building damage assessment.

91. As discussed elsewhere in this report, the Capital Regional District recognized the need to develop centralized, comprehensive emergency recovery strategies and was taking some steps to address this gap.

**BC EMERGENCY MANAGEMENT SYSTEM**

The BC Emergency Management System is recognized as a standard system for emergency response and is currently mandated for use within the Government of B.C.

It is a comprehensive framework that helps ensure a coordinated and organized approach to emergencies and disasters. The system is based on the four phases of emergency management: mitigation/prevention, preparedness, response and recovery.

The Province has encouraged local governments to make a transition from the older BC Emergency Response Management System which focused more on the response phase to the BC Emergency Management System, which considers all four phases of emergency management, including recovery.

In 2016, Emergency Management BC published a guidebook called British Columbia Emergency Management System to promote adoption of this system across the province.

Local governments using this system are well positioned to apply for provincial financial assistance in the event of an emergency.

Source: Emergency Management BC, (2016) *BC Emergency Management System* and Emergency Management BC web contents

**STATUTORY REQUIREMENT****EMERGENCY PLAN PROVISIONS**

The legislation requires that a local government's emergency plan:

- Has provisions for establishing and managing a program for emergency response team members' training and exercises
- Has procedures for the allocation of resources, implementation of the plan and emergency notification

92. The Capital Regional District met this legislative requirement by including relevant provisions in its corporate emergency plans.

**TRAINING AND EXERCISES**

93. The Regional District's corporate and electoral area emergency plans laid out the requirement to provide emergency management training to staff and to conduct emergency exercises at least annually to test the effectiveness of the plans. In 2017, the Regional District prepared a three-year emergency training and exercise plan that supplemented the local emergency plans. Details on the Regional District's emergency training and exercises are discussed in the Training, Exercising and Testing sections later in this report.

**RESOURCE ALLOCATION AND PLAN IMPLEMENTATION**

94. The Capital Regional District Board approved the emergency management plans and annual budgets, appointed an emergency program coordinator and established committees to implement the emergency management plans.

**EMERGENCY NOTIFICATION**

95. The Capital Regional District identified emergency notification methods in its corporate emergency plan, including channels such as website updates, Emergency Management BC and social media.

96. In 2017, the Regional District launched its public alert notification system, which enables notifications to subscribers through emails, phone calls and text messages. Subscription to the system was available online. The Regional District put this system into use during large-scale emergency exercises and actual events. The Regional District's emergency management team intended to test this system twice a year. Staff told us that the system had been functioning as expected and, as of June 2018, had approximately 5,000 subscribers in the three electoral areas. This notification system augmented the phone tree alert system already in place in the electoral areas.

97. A public education strategy to increase subscription to the emergency notification system was part of a neighbourhood preparedness program carried out by community volunteers. We were advised that parts of the electoral areas did not have cell phone coverage, as they were in more remote areas. This limits the potential of the notification system as well as the number of subscribers in these areas. In this case, reliance was placed on volunteers to notify residents about an emergency.

98. For areas particularly vulnerable to tsunami risk, such as the Jordan River and Port Renfrew areas in Juan de Fuca Electoral Area, the Regional District implemented a tsunami siren system, which was tested and in full operation in 2018.

**STATUTORY REQUIREMENT****EMERGENCY PLANS  
REVIEW PROCESS**

The legislation requires local governments to have processes that ensure plans are regularly reviewed and updated as appropriate.

99. The Capital Regional District met this legislative requirement by setting up processes to regularly review its risk assessments and emergency plans. However, these processes could be strengthened as described below.

**RISK ASSESSMENT REVIEW AND UPDATES**

100. In 2011, the Regional District developed a consolidated risk assessment based on a comprehensive analysis. The risk assessment was updated in 2015 and again in 2017.

101. The three electoral areas maintained their own risk profiles. The electoral areas' emergency program coordinators and other local emergency planning volunteer members reviewed risk profiles annually when they prepared annual emergency management work plans. More formal reviews and updates of the risk profiles were conducted every few years. These risk profiles were last reviewed and updated in 2017.

**EMERGENCY PLAN REVIEW AND UPDATES**

102. The Regional District's Emergency Coordinating Committee was responsible for regular reviews of local emergency plans and providing advice to the Emergency Management Committee.

103. In 2014, the Regional District's Emergency Coordinating Committee reviewed a draft of its corporate and electoral areas' emergency plans (these were approved by the Board in 2015) and supplementary policies and procedures. This included the declaration process of a local state of emergency, emergency operations centre activation and emergency notifications.

104. Regional District staff told us that the Regional District informally adopted a three-year review cycle for its emergency plans. However, the document stated that it would be reviewed annually. This indicates inconsistency between documented policy and practices.

105. The Regional District's Integrated Water Services department, responsible for both drinking water and wastewater treatment services, prepared its own emergency management guidelines for drinking water services. The department had emergency procedures prepared prior to 2013 and updated them in 2016 and 2017. This is discussed later in the report.

106. Regional District staff told us that the electoral areas' emergency program coordinators maintained and updated their emergency contact lists as part of their emergency management plans. For example:

- The Juan de Fuca contact list was reviewed every 1.5 months
- The Southern Gulf Islands contact lists, including one for each major island, were reviewed at least semi-annually and updated upon any key member's turnover
- On Salt Spring Island, the emergency coordinators and neighborhood emergency preparedness community leaders collectively maintained an emergency telephone tree, which was reviewed regularly and updated as necessary

107. The Regional District's communication department coordinated with department heads across the organization to maintain and update lists of internal contacts. For external contacts, the Regional District shared a regional emergency contact list with other Local Government Emergency Program Advisory Commission members, which was maintained and updated by them.

108. The Integrated Water Services department developed a comprehensive emergency communication list for its own use in 2015, as part of its emergency response guidelines. This list included contacts for suppliers, the health authority and important customers such as hospitals and schools. This list has been updated a few times since then, with the last update in 2017 as part of emergency response guideline updates.

109. The Regional District's solid waste service department staff maintained their own emergency contact list and shared it with the emergency manager. The list was last updated in 2017.

### RECOMMENDATION ONE

The Capital Regional District should confirm the review cycle of its local emergency plans, including plans developed by the electoral areas and ensure the review cycle is implemented as designed.

### BUSINESS CONTINUITY PLAN REVIEW AND UPDATES

110. The Regional District has not established a holistic, centralized business continuity management program to be reviewed and evaluated on a regular basis. This issue is addressed later in the report.



**STATUTORY REQUIREMENT****EVACUATION STRATEGIES AND EMERGENCY SOCIAL SERVICES**

The legislation requires local governments to have strategies to manage:

- Potential evacuation
- Resources and support for the coordination and provision of food and lodging, clothing, transportation and medical services to those affected by an emergency incident

111. The Capital Regional District met this legislative requirement by maintaining an evacuation plan and an emergency social services program. However, its evacuation plan and emergency social services manual could be strengthened as described below.

**EVACUATION PLAN**

112. The Regional District had prepared general evacuation guidelines as part of its corporate emergency plan, which described the steps to issue an evacuation alert or order and the legal responsibilities on evacuation for the Regional District and other responding agencies. The electoral areas had similar evacuation guidelines in their emergency plans. While the guidelines met minimum requirements for an evacuation plan, they were high-level and did not include specific aspects of evacuation, for example, vulnerable population, reluctant evacuees, re-entry to evacuated zone, evacuation route options, transportation arrangements, division of various areas into more manageable areas for evacuation and collaboration with emergency social services.

113. Staff told us that, in case of an emergency when the corporate emergency operations centre is activated, staff in the centre's planning section would typically "plan in the moment" and provide input on evacuation planning, such as critical infrastructure locations, geography of the area and zoning.

114. During the time of this audit, all three electoral areas were in the process of mapping evacuation routes. The major evacuation routes identified were mapped and used to inform evacuation planning and training.

115. On the Southern Gulf Islands, staff had prepared evacuation plans for each major island. These plans identified reception centres, roles and responsibilities for the electoral area emergency operations centre during an evacuation, high-level roles and responsibilities for support to evacuees and directions to deal with reluctant evacuees.

116. Staff told us that local residents, in places facing high tsunami risk, such as the Port Renfrew area in Juan de Fuca Electoral Area, generally knew the evacuation routes. Signs were put up by the Regional District to assist visitors in identifying potential hazards and evacuation routes.

117. In addition, Regional District staff advised us that there were no formal transportation arrangements for evacuation in the electoral areas. Each of the three electoral areas kept a list of vehicle providers, such as school buses, that may be able to assist during evacuation. However, having such a list is not sufficient and does not guarantee that the Regional District will have priority access to these services in case of an emergency.

**RECOMMENDATION TWO**

The Capital Regional District should strengthen its evacuation planning at the corporate and electoral area levels by including detailed procedures that address aspects of evacuation before, during and after an emergency or disaster.

**EMERGENCY SOCIAL SERVICES**

118. The Capital Regional District has developed and maintained an emergency social services program in the electoral areas where it was responsible for emergency management services. Based on our review of the program, we noted the following:

- Each of the three electoral areas prepared its own emergency social services strategies and manuals that described the main activities
- The program had designated emergency social services representatives by area, such as on each major island or in each community
- The program was decentralized in the electoral areas as it relied heavily on local volunteers
- The team members in each electoral area had regular discussions about their services
- The program incorporated input from community members and was supported by ongoing training



- Emergency social services strategies and manuals described the main activities at each local reception centre and were used for training in support of the programs. However, we noted that emergency social services documentation did not include guidelines around collaboration with Emergency Management BC, for example who, when and how volunteers can request help from Emergency Management BC through the corporate office
- Team members in the electoral areas received additional training through Justice Institute of BC courses and Emergency Management BC materials
- Emergency social services exercises were held at least annually in each electoral area
- Staff told us that team members conducted regular inventory counts of supplies at reception centres to ensure these would be available during emergencies
- Communication and decision-making processes between electoral areas and the corporate office were identified as part of emergency planning, including the process related to emergency social services, and implemented with staff and volunteer members

### RECOMMENDATION THREE

The Capital Regional District should enhance its emergency social services manuals to include collaboration with Emergency Management BC and ensure they are aligned with the process outlined in the electoral areas' emergency plans and the Regional District's emergency communication plan.

#### STATUTORY REQUIREMENT

#### PRIORITIZATION OF ESSENTIAL SERVICES RESTORATION

The legislation requires local governments to establish priorities for restoring essential services and recommend to service providers priorities for restoring essential services not provided by the local authority that are interrupted during an emergency or disaster.

119. The Capital Regional District met this legislative requirement by prioritizing its essential services and identifying its critical infrastructure.

120. To ensure that essential services delivered by unionized staff can be continued even when there is limited staff capacity, such as during job action, the Regional District established priorities for essential services restoration at the corporate level. Management identified these essential services: water and wastewater, 911 emergency communication and emergency response, information technology, animal control, social housing, landfill and services to meet regulatory requirements.

121. The Regional District's critical infrastructure included integrated water services, the Hartland landfill and all infrastructure that may be impacted during emergency events—for example emergency operation centres, communication centres, alternate sites, radio and communication towers - thereby affecting the Regional District's ability to respond during emergency events.



## EMERGENCY PLANNING



We expect the Capital Regional District to have comprehensive emergency plans based on current hazard, risk and vulnerability analysis. These plans should outline the roles and responsibilities of all key participants and the Regional District should ensure that staff have a high level of awareness of those roles and responsibilities. We expect these plans to include a range of preparedness, response and recovery measures designed to guide key participants. Further, the plans should clearly outline emergency information and communication protocols and systems.

We also expect the local government to have mutual aid agreements and/or memorandums of understanding with stakeholders and relevant parties in support of emergency preparedness, as well as response and recovery activities. Plans should include a high degree of coordination between the regional district and the municipalities within its boundaries. In addition, we expect the local government to have a strategy to identify and manage a core group of volunteers who may be involved in key response and recovery activities during and following an emergency.

We expect local governments to support business continuity and to have components of a business continuity management system in place, including a set of objectives and measures, organizational structure, policy and procedures for conducting risk analysis and business impact analysis and regular exercising and updating of business continuity plan(s) and any supplementary documents.

122. The Capital Regional District partially met our expectations in this area. We found that over the last few years, the Regional District made significant progress in its emergency management program at the corporate and electoral area levels and implemented good practices in emergency planning and management to ensure effective response during an emergency.

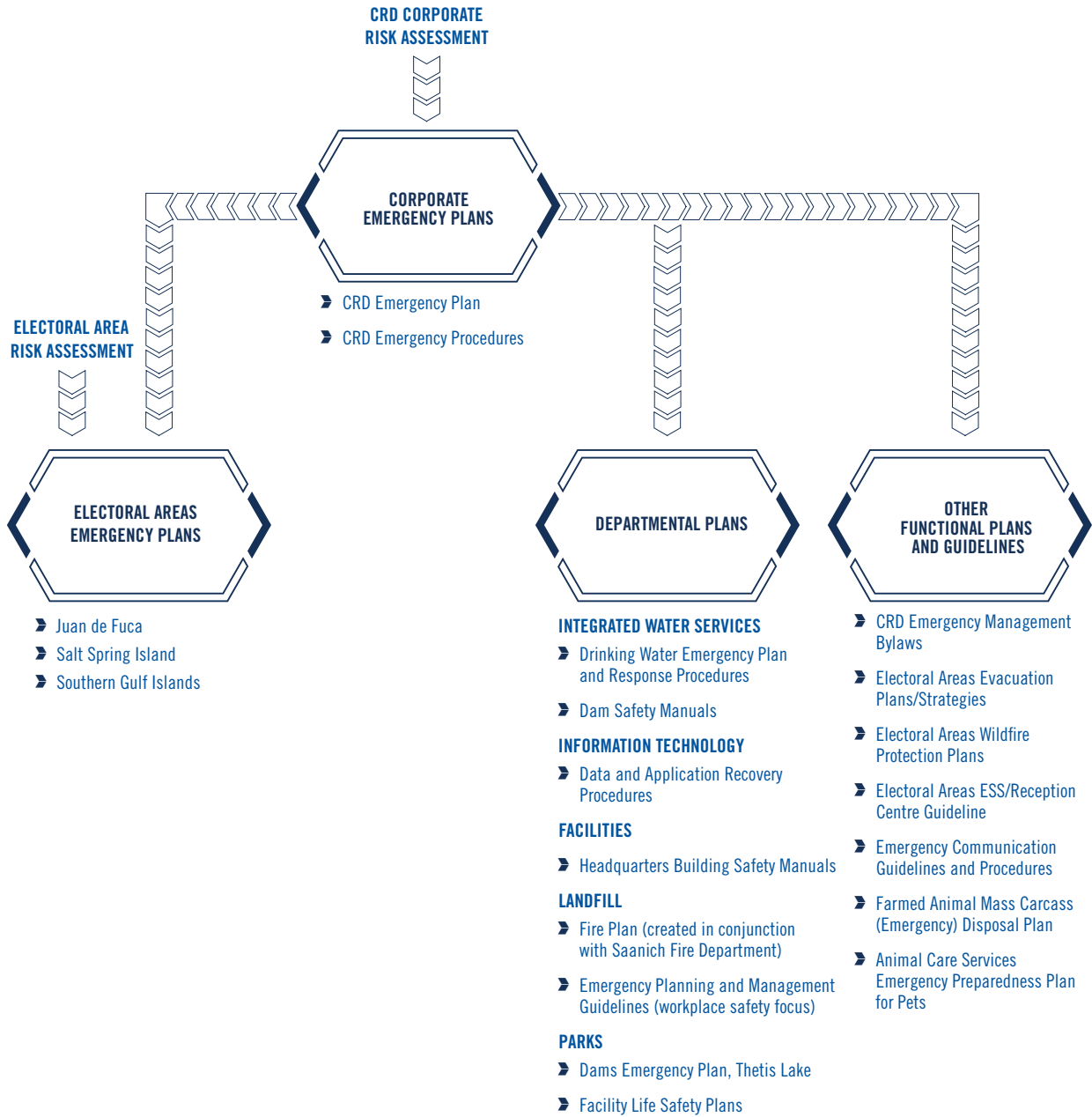
123. For example, the Regional District prepared emergency plans based on its risk assessment. These plans contained essential elements that outlined staff roles, responsibilities and communication protocols. To plan for its emergency

response, it engaged with various stakeholders, including emergency response partners, leaders at the departmental level and electoral area representatives.

124. However, the Regional District's emergency management approach focused on emergency preparedness and response phases and lacked content for the recovery phase and business continuity. The Regional District had a decentralized approach and embedded responsibilities for recovery and business continuity into its departmental operations, rather than at the corporate level.

125. A summary of the Regional District's emergency plans is presented in *Exhibit 10*.

Exhibit 10—CAPITAL REGIONAL DISTRICT EMERGENCY PLANS



Source: CRD documentation

## RISK ASSESSMENTS

### HAZARD, RISK AND VULNERABILITY ANALYSIS

126. The Capital Regional District has developed emergency plans at the corporate and electoral area levels based on its risk assessment:

- The Regional District updated its consolidated corporate risk assessment in 2017, identifying three risks on which to focus its emergency preparedness activities: wildfire, earthquake or tsunami and atmospheric hazards
- The electoral areas identified their key risks, hazards and vulnerabilities by assessing the likelihood and potential impact. For example:
  - Juan de Fuca identified five primary risks in its risk profile: wildfire, severe weather, severing of transportation route(s), earthquake and tsunami
  - Salt Spring Island also recognized severe weather and tsunami among its top risks, along with the risks from dam failures and flooding
  - Southern Gulf Islands identified seismic risks, wildfire and severe weather which might cause power outages over large areas

Some of the Regional District’s mitigation and preparedness strategies for these primary hazards are described in *Exhibit 11*.

### HAZARD, RISK AND VULNERABILITY ANALYSIS

Emergency Management BC developed a Hazard, Risk and Vulnerability Analysis process to facilitate the risk assessment that informs organizational emergency planning.

This analysis helps a local government make risk-based decisions around managing vulnerabilities, preventing or mitigating risks and hazards and preparing for, responding to and recovering from a hazardous incident. It is used to anticipate risks and help save lives and property, reduce damage and quicken a community’s recovery following an emergency.

Hazard, risk and vulnerability analysis involves:

- Gathering risk information such as floodplain maps or major industries
- Identifying associated hazards
- Analyzing risks based on likelihood and consequence
- Formulating risk reduction measures
- Consulting with the community

Developing action plans or mitigation projects that address or reduce the risk.

Where possible, mitigation projects should be incorporated into overall planning and the day-to-day operations of the local government. To ensure its ongoing effectiveness, a hazard, risk and vulnerability analysis should be updated at least every two to three years or following any significant changes in the community.

*Exhibit 11* — CAPITAL REGIONAL DISTRICT HAZARD/RISK MITIGATION AND PREPAREDNESS STRATEGIES



Source: CRD documentation

## SERVICE DISRUPTIONS RISKS ASSESSMENT (BUSINESS IMPACT ANALYSIS)

127. The Regional District had not assessed the business impact of service interruption. However, some individual departments identified their own risks and considered potential impact from service disruption. Examples include wastewater and solid waste services. However, these risk assessments were not sufficiently comprehensive to be considered a formal business impact analysis for the Regional District.

### BUSINESS IMPACT ANALYSIS

A business impact analysis assesses relative risks and potential impact on operations and evaluates the organization's business processes. Such an analysis determines critical functions of the local government that must continue if an emergency event triggers an interruption.

## DRINKING WATER

128. The Regional District identified gas leaks, water quality contamination, dam failure, wild-fire and earthquake as the primary hazards for its water systems, including its largest water supply system, the Greater Victoria water system. It had not assessed service impact to establish priorities for certain users, such as hospitals or certain water supply areas. The Integrated Water Services department was developing a post-disaster water supply strategy during the time of our audit.

## WASTEWATER SERVICES

129. The Regional District did not develop a formal impact analysis for its wastewater treatment service. Staff told us that the Integrated Water Services department had a good understanding of the hazards, risks and impact for wastewater services, however, the department had not formally consolidated and documented them.

## SOLID WASTE SERVICE

130. Regional District staff identified primary hazards for the Hartland Landfill site, which included earthquake, major fire, major power outage, hazmat and pandemics. Although staff had planned for workplace safety and prepared guidelines for service closures, the impact of potential service disruptions and damages had not been assessed and documented.

## CRITICAL BUILDINGS AND INFRASTRUCTURE

131. The Capital Regional District identified a number of its assets, as discussed below, that it considered critical to operations in case of emergency.

### CAPITAL REGIONAL DISTRICT HEADQUARTERS

132. In 2017, the Regional District conducted a risk assessment for its headquarters located in downtown Victoria. This building was the Regional District's primary emergency operations centre. This modern building was designed to be seismically resilient and included enhanced life safety features which, according to the building's safety manual, should minimize the risk of a disastrous fire situation.

### CRITICAL INFRASTRUCTURE

Local governments should determine in advance those assets they consider to be critical infrastructure. These are the assets needed to provide services throughout an emergency. There are nationally-recognized types of critical infrastructure: those necessary to provide drinking water, food, transportation, health, energy and utilities, safety, telecommunications and information technology, government, finance and manufacturing.

Emergency Management BC has developed a tool to facilitate local governments' assessment of assets. By using this tool, a local government will enhance its overall awareness of its critical infrastructure and associated relationships with key players and will understand how critical each asset truly is and what opportunities may exist to strengthen its robustness. This will result in a more resilient community across all four phases of emergency management. The tool, associated guides and aids can be found on Emergency Management BC's website.

Source: EMBC web content

133. The Regional District’s risk assessment included the likelihood and consequences of potential hazards to its headquarters and the services offered there. According to the Regional District, earthquakes are the only potential hazards that can cause major or catastrophic damage and service disruption at the site. Risks that can lead to moderate consequences are cyberattacks or a loss of connectivity, which can prevent service access. Other risks that could cause less significant consequences were fire, flooding, drought, virus, pandemics, severe weather and others.

134. Staff told us that, in addition to its headquarters, the Regional District’s Integrated Water Services building was also designed to be seismically resilient and was identified as the secondary Emergency Operations Centre location.

**RADIO TOWERS**

135. The Regional District had several radio towers that were critical to its operations. Some of the towers’ risk exposures were analyzed in the Greater Victoria Water Supply System vulnerability assessment as they held its SCADA monitoring system as well as the Regional District’s radio equipment. The results of this assessment are summarized in *Exhibit 12*.

**DISASTER DEBRIS MANAGEMENT**

136. Debris clearance, removal and dispersal may be some of the tasks in disaster recovery. Having a comprehensive disaster debris management plan enables local governments to collaborate and coordinate efforts, resources and communications, to maintain continuity and recover from emergencies. We noted that the Local Government Emergency Program Advisory Commission, in which the Capital Regional District had a leading role, had been working toward building a regional disaster debris management program.

**RECOMMENDATION FOUR**

The Capital Regional District should formally assess the business impact of its essential services in a more holistic way to inform organizational business continuity planning.

*Exhibit 12*—CAPITAL REGIONAL DISTRICT RADIO TOWERS RISK IN GREATER VICTORIA WATER SUPPLY SYSTEM

RADIO TOWER SITE	POTENTIAL RISKS
MT MACDONALD	Well protected from all hazards except wildfire
HEALY PEAK	Located at the high point of land, at risk during earthquake
SURVEY MOUNTAIN	At risk during extreme weather events

Source: 2016 Greater Victoria Water Supply System Vulnerability Assessment



## EMERGENCY RESPONSE PLANNING

137. The Capital Regional District embedded its risk assessment results into its local emergency plans for the corporate office and electoral areas. Along with community overviews, the Regional District used these risk assessment results to inform and drive its emergency planning and response activities.

138. The corporate and electoral area emergency plans and associated emergency program procedures outlined key emergency response steps and associated roles and responsibilities, including:

- Activation of the emergency operations centre
- Response activities at the emergency operations centre
- Mobilization of staff, equipment and logistical support
- Declaration of a State of Local Emergency
- Evacuations

139. The emergency plans also clarified roles and responsibilities between different levels of government or their emergency operations centres. For example, the emergency plans described:

- Expected actions of the Regional District and Emergency Management BC during an emergency. This provided guidance to the Regional District's emergency response staff on how to collaborate with Emergency Management BC during actual incidents
- Expected actions, roles and responsibilities for and between the Regional District headquarters and the electoral areas, including emergency operations centres and department operations centres

140. We noted that neither the Regional District's emergency plans nor its emergency response procedures identified a backup for the Board Chair, or referred to the delegation process for the Board Chair during or after an emergency as required by the Regional District's emergency management bylaw #3447. Under the provincial *Emergency Program Act*, the Board Chair, as the head of the local authority, is responsible to convene the Board for policy decisions on emergency response.

In addition, the Regional District's Board Chair, elected by the Board annually, was also a municipal elected official, therefore holding dual responsibility and potentially competing roles in emergency management.

141. The Regional District's executive team members had identified backups for other key emergency operations centre positions. They did this in 2015, recording recommended personnel names for each emergency operations centre section and key position.

## WATER AND WASTEWATER

142. The Integrated Water Services department prepared its own emergency response procedures for drinking water services provided through the department's various water supply systems. These guidelines were in addition to the department's emergency plan, which was based on the corporate emergency plan.

143. The drinking water services emergency guidelines focused on departmental matters and contained emergency procedures for various types of risks and hazards the department faced, for example watershed spills, watershed security issues, water quality and water infrastructure emergencies. This comprehensive set of procedures detailed initial actions, notifications, reporting and responding actions, communication methods and requirements and was accompanied by supplier and contact lists.

144. The Regional District's Integrated Water Services emergency guidelines focused on drinking water service and did not deal with wastewater service. Although the Regional District lacked an emergency guideline for wastewater with a comparable level of detail as for drinking water services, staff told us that the Regional District had automated and manual systems and processes in place to monitor its untreated wastewater and detect when and where leakage happens. The Regional District also developed leak aid plans for response.



## WILDFIRE

145. To prevent and prepare for wildfire incidents, the Regional District had prepared community wildfire protection plans for communities in Juan de Fuca, Salt Spring Island and each major island of Southern Gulf Islands. These plans focused on fuel management, prescription and treatment. Staff told us that the Regional District was planning to update these plans to reflect recent changes in provincial requirements.

## LANDFILL

146. The Capital Regional District's Hartland landfill was one of the Regional District's identified critical services infrastructure assets. The Regional District considered the landfill seismically stable "by design." During the period covered by this audit, the landfill department prepared a set of departmental emergency planning and management guidelines that focused on workplace safety.

147. In 2015, the department developed a Fire Safety Plan. In addition, following a 2015 landfill fire incident, the department completed a detailed after-action report to identify lessons learned from the incident and incorporated these into its operations. Staff told us that the department recognized the need to consider the four phases of emergency management, instead of focusing almost entirely on workplace safety.

### RECOMMENDATION FIVE

The Capital Regional District should review and update its emergency plans and procedures to ensure these documents consider all four phases of emergency management and address the backup and delegation process for the Board Chair during an emergency.

## EMERGENCY OPERATIONS CENTRE

148. The Regional District followed the BC Emergency Response Management System to design its emergency operations centre structure and clearly indicated the functions and responsibilities for each of the centre's sections and positions in the emergency plans.

149. The Capital Regional District's emergency plans covered the locations, functions and condition requirements of emergency operations centres at the corporate level and in the electoral areas. Along with a set of emergency procedures, these emergency management guidelines covered the roles and responsibilities of emergency operations centre sections and key emergency response activities.

150. Emergency management documentation was available in hard copies at emergency operations centre locations and online on the Regional District's corporate SharePoint site. These included local emergency plans, procedures and forms with additional resource materials for emergency management. Regional District management staff who may need to be at the emergency operations centre during emergencies were given a copy of the emergency management guidelines in a binder, enabling them to review these files when required. We were advised that staff members were also given an encrypted memory stick with electronic copies of the guidelines to use in case staff have difficulties accessing the binder during emergencies.

151. The Regional District designated primary and secondary emergency operations centres for its corporate office. The primary corporate emergency operations centre was located in a seismic-resilient office building in Victoria, with a secondary corporate centre available in View Royal, about a 25-minute drive from the primary centre. The Regional District had additional centres:

- On the Southern Gulf Islands, there was at least one emergency operations centre location on each major island
- In Juan de Fuca, there was one emergency operations centre
- On Salt Spring Island, there was one primary and one secondary emergency operations centre

152. The Regional District furnished its emergency operations centres with necessary equipment. For example, the primary corporate centre was set up with communications equipment such as ham radio, computers, supplies and auxiliary power. Electoral area centres had radio and satellite communications systems in place, as well as computers and supplies.

153. To support its emergency operations centre, the Regional District established an organizational structure called department operations centres, each of which contained a group of senior staff and facilities specific to one Regional District department. Department operations centre personnel were expected to coordinate the department's activities and interact with the emergency operations centres during emergency response and recovery. The locations of emergency operations centres and department operations centres, including those in electoral areas, were listed in the emergency plans.

154. According to the Capital Regional District's emergency program bylaw #3447 and its corporate emergency procedure, the Regional District's corporate emergency operations centres could be activated by the Board, the Board Chair, the Chief Administrative Officer or the Emergency Manager.

155. In the electoral areas, local emergency program coordinators would, in collaboration with the emergency manager, decide whether or not to activate an electoral area emergency operations centre. When an electoral area centre was activated, the Regional District's corporate centre would be open to support the electoral area's emergency response. In this case, the corporate centre's director, typically the Regional District's emergency manager, would direct electoral area staff to provide timely situation reports about the incident and impacted area.

## COMMUNICATIONS

156. The Regional District identified its emergency communication and information management requirements as part of its emergency planning and implemented them with staff, volunteer members and relevant service providers.

157. The Regional District laid out the roles and responsibilities of emergency notification and communication in its corporate emergency plan, including communication requirements at different stages of an emergency event.

158. In 2016, the Regional District prepared an emergency communication guideline, which specified roles and responsibilities relating to information coordination and release during an emergency, both internally and externally. This included communication among Regional District departments, information coordination with response agencies and the provision of information to the media. It provided tips and instructions on how to carry out these emergency communication duties. For example, it described how to draft a corporate message regarding the emergency incident for public release. Staff told us that they used this guideline in training and exercises to become familiar with its contents.

159. In addition to its implementation of a public notification system in 2017, the Regional District identified other methods for public alerts and notifications and listed them in its emergency plans. The listed internal emergency communication methods included: phone, internet, amateur radio and Capital Region Emergency Service Telecommunications (CREST) radio.

160. The CREST radio system provided radio communications for emergency response agencies such as fire departments, police departments and ambulance services in the region. Some Regional District Board members also sat on the CREST Board. The Regional District coordinated with CREST and local news media on emergency communication planning, to ensure the effective use of these communication methods.

161. According to staff, some parts of the electoral areas were not covered by cell phone service. To enable mobile communication in these areas, the Regional District installed satellite telephones in the emergency operations centres and department operations centres. In addition, it prepared communication kits for local members' mobile use. These kits included various mobile communication devices, accessories and power supplies. The Regional District's emergency management team tested their emergency communication devices weekly, including their ham radio systems both at the corporate office and in the electoral areas. The team maintained complete test records at the corporate office.

## COORDINATION

162. The Capital Regional District initiated and coordinated activities with relevant partners in the region on emergency management.

### THE PROVINCIAL GOVERNMENT

163. As stated earlier in this report, the Regional District signed a memorandum of understanding with the Province in 2016 regarding the Regional Emergency Management Partnership. This partnership aimed to promote coordination, cooperation, collaboration, capacity and integration between all levels of government during all phases of emergency management. It is expected to enhance emergency preparedness, public education and common public messaging for each of the primary hazards the region may face and strengthen regional information sharing, communications and joint planning, training and exercises.

164. The partnership embodied a collaborative approach to regional emergency planning, with the Regional District, municipalities and the provincial government working together in the case of a multi-jurisdictional, regional or multi-site emergency.

165. The Capital Regional District and the Province each provided resources in a 50/50 partnership to work with the Regional District's municipalities and electoral areas to prepare for emergencies or disasters that are multi-jurisdictional or could impact the entire region. The parties developed a strategic plan and identified the following areas to focus on between 2017 and 2019:

- Understand regional emergencies, hazards and vulnerabilities to support loss prevention, mitigation and preparedness
- Plan for regional partners to collaborate on emergency response, business continuity and disaster recovery
- Enhance the partnership's governance, capabilities and efficiency

166. By June 2018, the partnership reported a number of achievements, for example:

- Established the Regional Emergency Management Partnership Steering Committee
- Established the Regional Emergency Management Partnership 2017-2019 Financial Plan
- Established the Regional Emergency Management Partnership staffing positions (one with Emergency Management BC and one with Regional District)
- Researched and reviewed emergency management activities undertaken by local governments and the Regional District
- Outreached to local governments on regional emergency management issues. Conducted a number of workshops, for example, a regional engagement workshop that clarified roles and responsibilities for emergency management within the region
- Outreached to First Nations on the regional partnership, discussed their engagement with the partnership and further enhanced emergency management collaboration
- Completed community meetings that outlined emergency management response capacity and capabilities of the region
- Completed a number of plans, such as the Regional Public Education Plan and Communication and Engagement Plan
- Initiated steps related to the regional public preparedness measurement project
- Improved the "Prepare Yourself" website to make it more user-friendly

167. In addition to the Regional Emergency Management Partnership, the Regional District worked closely with Emergency Management BC and liaised with other external emergency response partners on emergency planning, training and exercises. During the period covered by the audit, the Regional District participated in emergency planning workshops and emergency exercises organized by external emergency response partners in the region.

#### REGIONAL ORGANIZATIONS AND PARTNERS

168. The Regional District offered support and assistance on emergency management to some municipalities in the region. For example:

- ▶ In 2015, the Regional District conducted a sea-level rise study for the region and shared the results with potentially-affected municipalities, including the mapping of potential flood zones in the region
- ▶ The Regional District provided back-up emergency operations centre facilities to the City of Victoria and similar support to the Greater Victoria Harbour Authority

169. As the founder, the Capital Regional District played a leading role in meetings of the Local Government Emergency Program Advisory Commission and the Regional Emergency Planning Advisory Commission. The Regional District's emergency manager (or designate) chaired these organizations' regular meetings and led some working groups such as a group dealing with E-Team emergency operations centre software, a platform for an integrated public safety response and situational awareness.

170. The meetings of both commissions covered a variety of topics and aspects of emergency preparedness such as experience-sharing, training opportunities, exercise planning and other coordination activities. By leading such discussions, the Regional District also coordinated with other local authorities and First Nations and supported emergency management training in the region.

171. In 2006, the Capital Regional District founded a regional Emergency Hazardous Materials (hazmat) Response team in partnership with fire departments in the region. This function was funded by the fire service programs and directed by a subcommittee of the Greater Victoria Fire Chiefs Association. Although not within the Regional District's emergency management program, the emergency management team at the Regional District and the region's municipalities could request hazmat response service through their fire departments. This regional hazmat response team cross-trained with Regional District staff at the Japan Gulch Water Treatment Plant.

#### FIRST NATIONS

172. The Regional District continuously engaged First Nations representatives in the region on emergency planning. First Nations representatives attended Regional Emergency Planning Advisory Commission and Regional Emergency Management Partnership Steering Committee meetings as commission or committee members. In addition, the Regional District held ongoing discussions with First Nations on emergency planning, often together with Emergency Management BC. Through participation in Local Government Emergency Program Advisory Commission monthly meetings, the Regional District shared with other local governments in the region its experience and progress with First Nations on emergency management.

#### SUPPLIERS AND CONTRACTORS

173. The Capital Regional District signed several agreements or memorandums of understanding with contractors to obtain professional help on emergency planning and preparedness. For example, in 2016, it engaged with an academic institution for a tsunami modelling study and tsunami siren system.

174. In the electoral areas, a number of memorandums of understanding were in place with local communities and organizations for the use of facilities during an emergency, including buildings and generators. Staff told us that, in addition to these written agreements, the electoral areas relied on ongoing working relationships and verbal agreements with local suppliers and service providers. Local emergency management staff considered this informal approach more practical and effective in rural or remote areas than a more formalized approach that would be effective in urban areas.

#### VOLUNTEER MANAGEMENT

175. The Regional District established and maintained a volunteer strategy for its emergency activities.

176. Emergency programs in the electoral areas relied heavily on volunteer help. Except for appointed emergency program coordinators and their deputies, all other local emergency management staff in the electoral areas were volunteers. These volunteers took on various responsibilities such as neighbourhood preparedness, emergency social services, community emergency planning, committee or commission meetings and fire protection. In addition, the Regional District supported two volunteer search and rescue teams consisting of over 30 members each for deployment in Juan de Fuca and Salt Spring Island. Except for the search and rescue teams, emergency management volunteers were recruited and administered locally in the electoral areas.

177. We were advised that the local volunteer programs were well received by community residents. For example, as of 2017:

- On Salt Spring Island, the neighbourhood preparedness program grew from about ten volunteers in 2010 to approximately 340 volunteers
- On the Southern Gulf Islands, the emergency program had about 450 volunteers from different islands
- The Juan de Fuca emergency program had approximately 120 volunteers

178. A variety of strategies contributed to the volunteer teams' growth and retention. For example:

- Use of websites and social media to introduce emergency programs and attract new members
- Regular discussion of volunteer team expansion and coordination
- Encouraging existing members to recruit in their community
- Incorporating volunteer members' input on training and equipment into local emergency planning
- Recognition events for volunteer members at least annually

179. Emergency program coordinators in the electoral areas recorded volunteer time spent and periodically reported this information to the Regional District's emergency management team, enabling the corporate office to know the time and effort invested in local emergency programs. Staff told us that the Regional District offered administrative help to electoral areas, relieving local emergency program staff and volunteers of administrative duties.

180. There were no major or catastrophic disasters recorded in the Capital Region in recent years. Local emergency program staff advised that when a major disaster happened elsewhere, they seized the opportunity to promote public awareness of their programs and recruit volunteers.

## BUSINESS CONTINUITY PLANNING AND SERVICE RECOVERY STRATEGIES

181. The Capital Regional District had not developed a business continuity plan that would provide formal guidelines and priorities for restoring the Regional District’s business operations. As a result, the Regional District’s business continuity practices were centered mainly at the departmental level and had some gaps. Most departments providing essential services developed their own formal or informal strategies relevant to or supporting recovery and business continuity.

182. The Regional District recognized the need to establish a centralized business continuity management system and demonstrated organizational support for it by taking the steps listed in *Exhibit 13*.

183. According to the Capital Regional District’s Asset and Risk Management service plan that was last updated in 2017, the Regional District was planning to establish a centralized business continuity management program in 2018 and implement it in 2019.

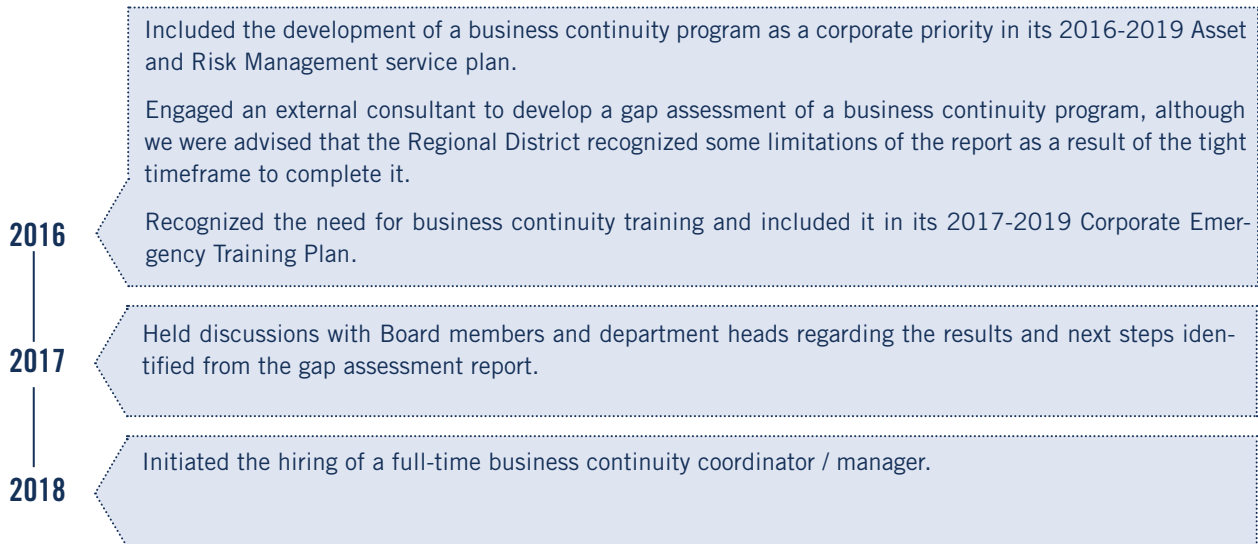
### BUSINESS CONTINUITY PLANNING

Emergency operations can be delayed or hampered if local government activities are impacted by an emergency. Business continuity plans are concerned with returning a local government’s critical services to full operation as soon as possible. They address productivity loss and physical damage that may result from disruptions while normal services and operations are being restored.

Local governments should prepare business continuity plans to ensure that emergency operations and critical services continue despite the loss of power, facilities, infrastructure and/or communication systems.

By creating and maintaining a business continuity plan, a local government can help ensure it has the resources and information it needs to deal with an emergency and sustain long-term recovery.

*Exhibit 13*—CAPITAL REGIONAL DISTRICT ORGANIZATIONAL SUPPORT FOR BUSINESS CONTINUITY



Source: CRD documentation



184. The Regional District had some business continuity practices in place. They are described in the next few sections.

#### OFFICE CLOSURE POLICY

185. The Capital Regional District established an office closure policy in 1991, which was last updated in 2016. The policy covered office operations during severe weather or emergency situations.

186. This policy was sent to all Regional District managers for distribution and raising awareness among staff.

#### DEPARTMENT OPERATIONS CENTRE STRUCTURE

187. The Regional District established department operations centres, each of which contained an individual department's senior staff and facilities. This structure facilitated coordination and communication among service departments and decision-makers who would be located at emergency operations centres, allowing for efficient and effective response and recovery actions during emergencies. The roles and responsibilities, locations and activation criteria of department operations centres were indicated in the corporate emergency plan.

188. As previously stated, the Regional District identified its emergency communication and information management requirements and methods. These communication channels could also be used for business continuity purposes, such as for communication among service departments and for disseminating public announcements on service disruptions and alternative delivery approaches.

#### INDIVIDUAL SERVICES RECOVERY PROCEDURES AND PRACTICES

189. The Regional District developed some emergency response and service recovery procedures at the departmental level as described below.

#### DRINKING WATER SERVICE

190. As previously mentioned, the Regional District's Integrated Water Services department developed a set of emergency response procedures. These procedures were aimed at informing and assisting the restoration of drinking water services. For example, the procedures set out steps to report an emergency incident and corresponding potential service disruption, how to get service restoration directions and how to contact equipment suppliers or contractors when needed.

191. We noted two critical links in the Greater Victoria Water Supply System (the largest water system serviced by the Regional District) where no water supply redundancy was in place: Main No. 4 to Saanich Peninsula and Main No. 15 to Sooke.

192. We were advised that staff had taken some steps to help mitigate service disruptions at these critical links. For example, the Integrated Water Services department had water tanks available that could supply the Saanich Peninsula for up to 24 hours. The Regional District had not yet assessed the seismic resilience of these water tanks, but told us it considered that to be part of future seismic planning it intended to undertake.

193. In relatively remote service geographies such as parts of the electoral areas, staff advised us that the Integrated Water Services department could shuttle water tanks and provide portable water to where service would be needed, assuming roadways were intact. They told us that these options had proven effective during past incidents.

194. The Integrated Water Services department had provisions in its contracts with major suppliers (such as heavy equipment operators and suppliers) to require them to respond within a certain timeframe after a major emergency event. The department had not discussed business continuity planning with these suppliers to further ensure they are aligned with the Regional District's needs.



195. The Integrated Water Services department had not prepared formal guidelines to document its existing business continuity processes. Staff told us that the department was developing a post-disaster water supply strategy/plan and planned to complete it in 2018.

#### WASTEWATER SERVICE

196. The Capital Regional District had not developed formal, comprehensive emergency response procedures for its wastewater service. Staff told us the Integrated Water Services department relied on existing automated and manual monitoring controls of wastewater flow and leak-aid plans. In case of an emergency, the following options would be considered:

- All pump stations were located near the ocean, therefore, during an emergency—or when the normal wastewater process was completely out of service—the Regional District could discharge wastewater directly into the ocean. This option would have environmental impact
- In a case where the Supervisory Control and Data Acquisition (SCADA) monitoring system failed, most drinking water and wastewater services could continue operating, as 95 per cent of the activities could be monitored manually. However, there might be a staff capacity limit on conducting manual monitoring during an emergency, which would vary depending on the scale of the emergency. Given the environmental and subsequent financial impact of potential overflows or leakage, it is critical to have the SCADA system monitoring the wastewater service

#### SOLID WASTE SERVICE

197. Staff told us that the solid waste service department had incorporated business continuity considerations into its operations, including:

- An onsite fuel tank and agreements with suppliers on emergency fuel supply
- Backup generator in case of power outage, although staff were not sure how long this generator could run
- Backup water supply (water tanks) at the landfill site

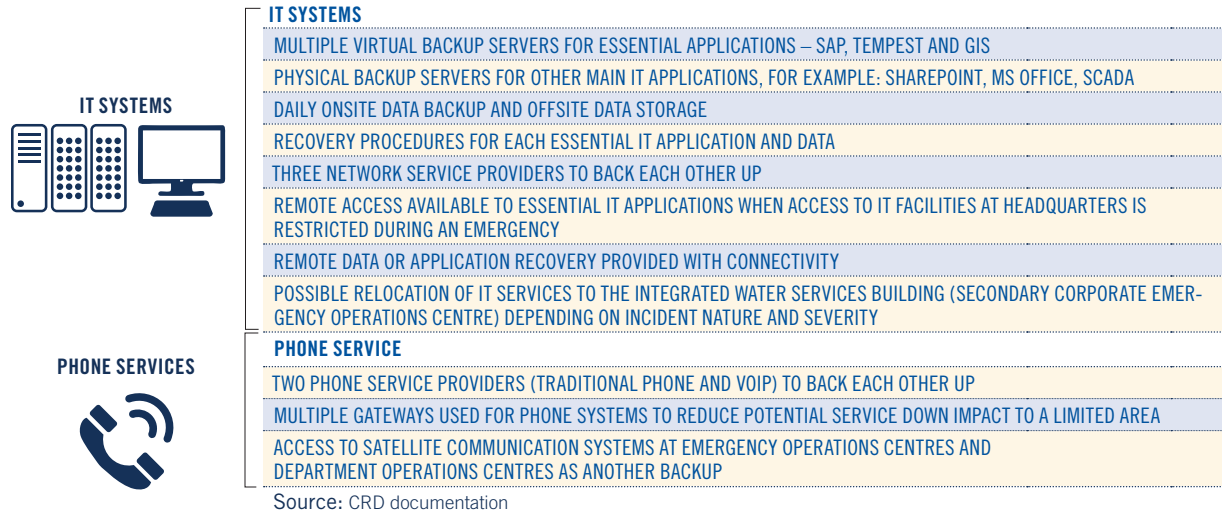
198. In 2017, department staff prepared a guide outlining aspects of the operation to check or investigate during emergencies and what to consider to maintain open, reopen or temporarily close the Hartland Landfill site. This guide also laid out next steps for the department's business continuity planning. For example, it indicated where the department lacked a contingency plan or documented alternative service delivery or service restoration steps, depending on the type of emergency.

#### INFORMATION TECHNOLOGY SERVICE

199. The Regional District's information technology recovery procedures were based on a formal business impact analysis that clearly identified recovery priorities and targets.

200. The Regional District had established backup and restoration processes for its information technology systems, which helps to ensure business continuity. The department also incorporated backup and business continuity considerations into its telephone service, as shown in *Exhibit 14*.

Exhibit 14—CAPITAL REGIONAL DISTRICT INFORMATION TECHNOLOGY BUSINESS CONTINUITY CONSIDERATIONS AND RECOVERY PRACTICES



201. While the Information Technology department identified possible relocation of its services to the Integrated Water Services building as a backup option, it had not assessed whether the building met its needs, in terms of security, capacity and other considerations, as an alternate location. It also had not prepared guidelines on relocation needs.

202. The Information Technology department identified dependencies in the recovery process and stated them in its procedures. A key dependency was network connectivity. Other than having three service providers to back each other up, staff told us that the Regional District had not discussed the business continuity (such as priorities) of their network service providers, to see how they meet the Regional District’s needs and business continuity expectations.

203. Overall, the Regional District had a limited focus on recovery phase planning and had not systematically and formally assessed its business continuity risks. Developing an organizational business continuity management system will help to ensure that the Regional District has a coordinated and organized approach to emergencies and disasters, allow transition to the BC Emergency Management System covering four phases of emergency management and position the Regional District well to receive any assistance from and coordinate with the Province in the event of an emergency.

**RECOMMENDATION SIX**

The Capital Regional District should continue taking steps toward building an organizational business continuity management system that is integrated with departmental service restoration plans.



## RESOURCING

We expect a local government to take steps to ensure its emergency management program is adequately resourced in terms of staffing and budget.

We expect the Capital Regional District to have an annual operating budget and financial management policies and procedures to support its emergency management program, including cost recovery.

204. The Capital Regional District met our expectations in this area. The Regional District had budgeting and financial management procedures for its emergency management services, which aimed to ensure that the program was adequately resourced in terms of staffing and budget.

205. At the corporate level, the finance department prepared a consolidated emergency management budget based on strategic priorities and departmental service needs as provided by the emergency manager and departmental staff.

206. At the electoral areas level, local emergency program coordinators gathered input from planning and advisory commission or committee members and other community volunteers on resource requirements before they proposed their electoral areas' annual emergency management budget to the Regional District's emergency management team. Proposed local emergency management budgets were broken down to detailed line items such as office supplies, training and travel costs. Requests were submitted along with the electoral areas' annual operational work plans, allowing reviewers at corporate headquarters to see how proposed activities were reflected in the budget.

207. After the Board's approval of the emergency management budget, the finance department and the Regional District's emergency management team regularly monitored budget status. Staff reported on actual emergency expenditures compared to year-to-date budgets for each electoral area and for each major island in the Southern Gulf Islands.

208. In addition to operating reserves, the Regional District established reserve funds for equipment replacement, which could be used to recover or replace some equipment after a disaster, as shown in *Exhibit 15*. Between 2013 and 2017, the Regional District's equipment replacement fund balances were close to the net book value of existing machinery and equipment.

209. In addition, the Regional District had insurance coverage for infrastructure that included earthquake, fire and flood.

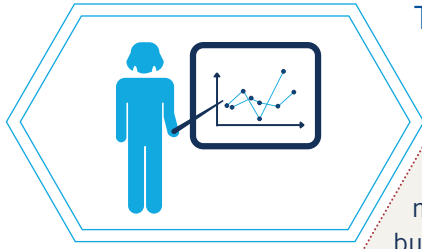
210. Furthermore, the Regional District had a guide on applying and receiving Provincial financial assistance for emergency response and recovery. The corporate emergency plan referred to this guide.

*Exhibit 15* — CAPITAL REGIONAL DISTRICT EQUIPMENT REPLACEMENT RESERVE FUNDS

FINANCIAL ITEM	2013	2014	2015	2016	2017
EQUIPMENT REPLACEMENT RESERVE FUND, \$	20,882,520	19,838,445	19,627,138	20,522,344	21,481,293
NET BOOK VALUE OF MACHINERY AND EQUIPMENT*, \$	19,990,302	20,150,389	19,893,513	19,988,588	21,196,674
EQUIPMENT REPLACEMENT RESERVE FUND, A PERCENTAGE OF NET BOOK ASSET VALUE	104%	98%	99%	103%	101%

Note: \* excludes Capital Region Housing Corporation (CRHC)

Source: CRD financial statements



## TRAINING

We expect local governments to provide opportunities for the training of emergency planning committee and emergency operations centre members, volunteers and key stakeholders. In particular, there should be a budget in support of a training plan, along with documented training activities, including training certifications of emergency operations centre members.

### ELECTED OFFICIALS TRAINING

211. The Capital Regional District mostly met our expectations in this area. The Regional District had identified long-term emergency management training requirements and had plans to meet these training needs over time. The Regional District provided foundational training on emergency management to its board members, emergency management staff and volunteers. However, we identified opportunities to strengthen training.

212. To support staff training, the Regional District developed an emergency management training budget as shown in *Exhibit 16*. This budget planned for an approximately nine per cent increase between 2018 and 2022.

213. The Capital Regional District Board, elected in 2014, received background materials and fundamental emergency management training in 2015 and 2016. This training included an introduction to the relevant legislative requirements, an overview of the Regional District’s emergency management program, board members’ responsibilities, emergency operations centre and departmental operations centre functions and other content.

214. Along with this training, Board members participated in progressive tabletop exercises to familiarize themselves with their roles during an emergency. However, we noted that Board members had not received other emergency management training or participated in exercises since 2016.

*Exhibit 16*—CAPITAL REGIONAL DISTRICT 2018-2022 EMERGENCY MANAGEMENT TRAINING BUDGET

LOCATION	2018 \$	2019 \$	2020 \$	2021 \$	2022 \$	2018-2022 %CHANGE
SOUTHERN GULF ISLANDS	6,960	7,100	7,240	7,380	7,520	8%
JUAN DE FUCA	2,600	2,650	2,700	2,750	2,810	8%
SALT SPRING ISLAND	3,370	3,440	3,510	3,580	3,650	8%
CRD CORPORATE	14,450	15,030	15,330	15,640	15,950	10%
<b>TOTAL</b>	<b>27,380</b>	<b>28,220</b>	<b>28,780</b>	<b>29,350</b>	<b>29,930</b>	<b>9%</b>

Source: CRD budget documents

## CORPORATE OFFICE STAFF TRAINING

215. The Regional District's corporate office staff had either been adequately trained or were in the process of being trained.

216. Key emergency management staff (including three deputy positions/backups in electoral areas) had been adequately trained:

- The emergency manager had a certificate in emergency management and the six electoral areas' emergency program coordinators were either certified or close to being certified
- Other emergency management staff and executive members had received foundational emergency management training

217. In 2016, the Regional District developed a three-year emergency management training plan for its staff. This plan identified annual and long-term emergency management learning objectives. In support of these learning objectives, the plan specified relevant courses, schedules, delivery methods, proposed candidates and responsibilities for these training activities in 2017. Supplementary to this training plan and schedule, the emergency management department established records to track staff training requirements and their completion.

## EMERGENCY MANAGEMENT GENERAL TRAINING REQUIREMENTS

All emergency operations centre personnel and their alternates should, at a minimum, have training on emergency management that includes the following Justice Institute of BC courses:

- Introduction to Emergency Management (online)
- Incident Command System 100 (online)
- Emergency Operations Centre Essentials (two-day)

The emergency operations centre management team, section chiefs and their alternates should have the above courses, plus the following courses, depending on their role:

- Operations and planning section chiefs—Emergency Operations Centre Operations and Emergency Operations Centre Planning (one day each)
- Logistics and finance section chiefs—Emergency Operations Centre Logistics and Finance (one day each)
- Information officer, information team, municipality spokespersons - Information Officer course (two-day)

Depending on roles, additional training includes the following courses:

- Incident Command System 200, 300 and 400 (this training is intended for site responders and is more operational and tactical, whereas emergency response centre training is more strategic)
- Introduction to Emergency Social Services
- Emergency Social Services Reception Centre Operations
- Evacuation Planning

Elected officials, new or existing, should have the following training, at a minimum:

- Introduction to Emergency Management
- Emergency Management for Elected Officials and Executives

218. To contain training costs, the Capital Regional District held in-house sessions to introduce the incident command system and department operations centre functions to relevant staff. The three-year training plan recognized this foundational training as a base and proposed a progressive approach to training:

- Corporate training activities in emergency management in 2017 continued to focus on foundational elements, such as emergency operations centre essentials and emergency operations centre applied training courses. Employees from various departments received training to raise corporate awareness and build foundational knowledge across the organization
- In 2018 and 2019, corporate emergency management training was expected to refocus to help staff to prepare for large-scale disasters, for example, how to respond to and recover from a subduction earthquake. Topics such as communication and coordination among internal departments and with external entities during and after a disaster were anticipated to be a key part in the 2018 and 2019 training and exercises plan. Management should ensure that staff are comfortable and knowledgeable in their own roles and responsibilities before participating in these larger scale exercises

#### ELECTORAL AREAS

219. The three electoral areas prepared their own training plans as part of their annual emergency work plans, which outlined the planned training activities for local emergency management personnel, including staff and volunteers. Local emergency work plans included education and refreshers on foundational topics such as emergency operations centre operations and emergency social services. Given varying geographic and demographic factors, local emergency program staff tailored their training plans to reflect particular hazards facing each electoral area.

220. The electoral areas encouraged their staff and volunteers to participate in planned training activities on emergency management and the Regional District covered their transportation and accommodation costs.

221. The Regional District did not have a process to track planned and completed training activities for the electoral areas on an annual basis. However, emergency management staff had the ability to identify, through review of monthly reports, the number and types of training in the electoral areas. Our analysis for 2017 showed that most planned training activities had taken place in the electoral areas.

#### BUSINESS CONTINUITY TRAINING

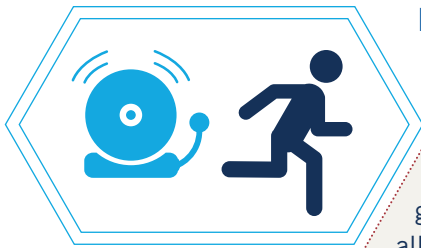
222. The Capital Regional District recognized the need to develop a formal consolidated business continuity plan and stated its intention to start working on one in 2018. The Regional District identified business continuity-related training in its 2017-2019 Emergency Staff Training Plan and tentatively included a roll-out of it in 2018.

223. The Regional District told us that staff from some essential service departments were exposed to training that supported the business continuity of their services. For example, Integrated Water Services department staff were aware of and trained on drinking water emergency response procedures, which informed and assisted the service restoration process. The Regional District also told us that information technology staff were trained through regular exercises to recover major applications and data.

#### RECOMMENDATION SEVEN

The Capital Regional District should strengthen its emergency training by ensuring that Board members have regular refreshers on emergency management and crisis leadership, in addition to foundational training that includes specifics of emergency management in regional districts.





## EXERCISING AND TESTING

We expect local governments to have procedures to support regular exercising of their emergency management plans. We also expect local governments to periodically conduct or participate in exercises that involve all key stakeholders such as provincial and federal government officials, surrounding communities, police and ambulance personnel, representatives of major industries and key suppliers, First Nations and volunteers.

224. The Capital Regional District mostly met our expectation in this area as staff conducted various types of emergency exercises over recent years. For example, staff members familiarized themselves with roles and responsibilities by completing emergency operations centre and tabletop exercises and communication and response exercises.

225. In 2015, the senior leadership team identified members who would best fit into specific emergency operations centre sections and positions. Staff told us that senior leadership team members had opportunities to be cross-trained in various roles during the exercises, enabling them to fill other roles if required during an emergency.

226. According to the Regional District's three-year training plan, its emergency training and exercises in 2018 and 2019 were expected to focus on preparing for a large-scale seismic event, including exercises, such as a wide-area earthquake drill, designed for that purpose.

227. The Regional District's emergency management team advised us that they designed tabletop exercise scenarios based on real incidents, reflecting major potential hazards and following a progressive approach for educational purposes. For example:

### EXERCISING EMERGENCY PLANS

Because emergency incidents are largely unpredictable, it is important for local governments to progressively exercise or test their plans on a regular basis in order to build robustness of plans and increase the confidence of emergency management personnel.

Exercising can occur in various formats:

- Discussion-based activities such as tabletop exercises familiarize participants with plans, procedures and responsibilities and can inform new plans and plan revisions
- Operations-based drills tend to be focused on the functionality of specific activities, such as a building evacuation drill or a hazardous material containment drill
- Full-scale exercises typically involve multiple stakeholders and are designed to exercise "boots on the ground" responses to a wide-scale emergency incident

- In 2016, the Board undertook emergency tabletop exercises under three scenarios: a smaller area wildfire, a regional large-scale wildfire and a shallow earthquake
- In 2017, the Integrated Water Services department conducted tabletop exercises based on two emergency scenarios: a dam safety scenario and a wildfire scenario

228. Each electoral area conducted several emergency exercises every year. Similar to the training events at the corporate level, the three electoral areas designed their exercises to reflect their particular potential hazards. Therefore, the exercises were based on various scenarios and covered hazards such as wildfire, tsunamis, earthquakes, oil spills, dam failure and others.

Exercises should be geared to the local government's current hazard, risk and vulnerability assessment and focused on incidents considered high risk in terms of likelihood and consequence. Exercises should be scaled progressively to increase their complexity and challenge over time.

Source: EMBC educational materials



229. Some exercises focused on individual response functions, such as communications and emergency social services. Most of the electoral area emergency exercises were well-documented tabletop exercises designed to make staff and volunteers familiar with their roles and responsibilities in various scenarios.

230. However, most exercises were not joint or full-scale exercises that included the corporate office, electoral areas and all other relevant parties to test collaboration. The corporate office participated in electoral area exercises through planning or receiving reports. According to the Regional District's corporate emergency plan, when an electoral area's emergency operations centre opens, the corporate centre also must open. This was not exercised jointly, although it was practised in real events.

231. The Regional District did not have a process to track planned and completed exercise activities for the electoral areas on an annual basis. However, emergency management staff had the ability to identify, through review of monthly reports, the number and types of exercises in electoral areas. Our analysis for 2017 showed that most exercises in electoral areas had taken place.

232. The Regional District prepared after-action debriefing notes for its major emergency exercises, including tabletop, emergency communication exercises and specific hazard response exercises. Exercise results were discussed and recommendations were considered for continuous improvement.

233. Regional District staff also attended after-action debrief sessions conducted by external partners, who prepared and shared their notes with the Regional District. These included regular emergency exercises by the Victoria Airport Authority and an external response exercise under a marine oil spill scenario.

234. The Regional District did not have a formal consolidated business continuity plan to test or exercise, although some departments conducted regular tests and exercises relating to their decentralized business continuity processes. For example:

- The Integrated Water Services department conducted emergency tabletop exercises annually, selecting at least one major potential hazard scenario each year. Staff told us that drinking water emergency guidelines and procedures were used to design and practise these exercises
- Staff told us that the information technology department randomly selected applications and tested backup processes weekly. Staff also restored their systems every two months.

#### RECOMMENDATION EIGHT

The Capital Regional District should consider conducting full-scale and/or larger-scale joint exercises that test the collaboration of all relevant parties involved in responding to a major emergency in the region. Staff should continue completing progressive, smaller, in-house exercises to further increase familiarity with their roles and responsibilities and to validate emergency plans in preparation for the larger scale joint exercise.

In conjunction with developing and implementing a more holistic business continuity management system, the Capital Regional District should strengthen its business continuity emergency training and exercises.



## PUBLIC AND STAKEHOLDER AWARENESS AND EDUCATION



We expect local governments, as part of their emergency management programs to ensure the following:

- Promote public and stakeholder awareness of emergency management. This could include website information, pamphlets, emergency preparedness week events, newsletters and newspaper advertising
- Organize focused engagement initiatives for stakeholders that strengthen their roles in emergency mitigation, preparedness, response and recovery
- Have an emergency notification system designed to provide residents with emergency alerts (legislative requirement). Local government websites should be able to provide alerts, updates and information during and after an emergency incident

235. The Capital Regional District met our expectation in promoting public and stakeholder awareness and education. The Regional District also had an emergency notification system in place, as discussed earlier in this report.

236. The Regional District prepared and provided materials on emergency management to raise public awareness:

- It established an educational website on emergency preparedness called “Prepare Yourself” and distributed similar booklets to the public. The website contained comprehensive information for personal and household emergency preparedness, including key community risks, local emergency program contacts, preparation of an emergency kit, tips to reduce risks of property damage and recommendations for the public during and after an emergency, such as evacuation steps, the use of utility services and what to do during a service disruption

- Every year, the Regional District holds an Emergency Preparedness Week fair to promote public awareness in the Capital Region. From the fairs, the public can learn how to prepare for emergencies and what resources are available in their local communities.

237. In the electoral areas, local emergency program coordinators and volunteers carried out activities for neighbourhood emergency preparedness:

- On the Southern Gulf Islands, presentations to the public were planned on each major island at least annually
- In Juan de Fuca, 63 out of approximately 120 volunteers were involved in the neighbourhood preparedness program at the end of 2017
- On Salt Spring Island, a community emergency preparedness program (called the POD) was created. In 2017, there were 66 POD leaders responsible for POD areas and 271 neighbourhood leaders assigned to the program (more than three per cent of the local population). POD and neighbourhood leaders were trained for emergency preparedness, including first aid and evacuation, and continuously interacted with local residents to promote public awareness and support local emergency preparedness activities.

## PUBLIC AWARENESS AND PREPAREDNESS

Emergency management experts have traditionally said that residents should be prepared to be self-sufficient for up to 72 hours following an emergency event. More recently, these experts have suggested that people should plan to be on their own for a full week, with some experts saying two weeks may be more realistic in the aftermath of a wide-area emergency such as a catastrophic earthquake.

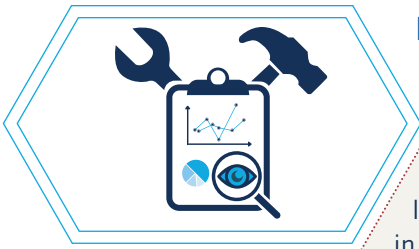
During such an event, first responders will be fully occupied with saving lives and protecting property, government officials will be busy restoring essential services such as water, roads and other critical infrastructure and consumer outlets providing groceries, gasoline and pharmaceuticals are likely to face shortages as the region recovers.

To properly prepare, residents need to understand the potential hazards facing their community, such as earthquake, tsunami, floods and wildfires. They should manage the risks and prepare:

- Make a telephone list of important family, medical, business and emergency numbers
- Damage-proof the home to minimize impact
- Build a grab'n'go bag containing a few essential items
- Have an emergency kit including food, water and basic medical supplies in a location that can be readily accessible following an event

More information on emergency preparation is available on Emergency Management BC's website.

Source: EMBC web contents



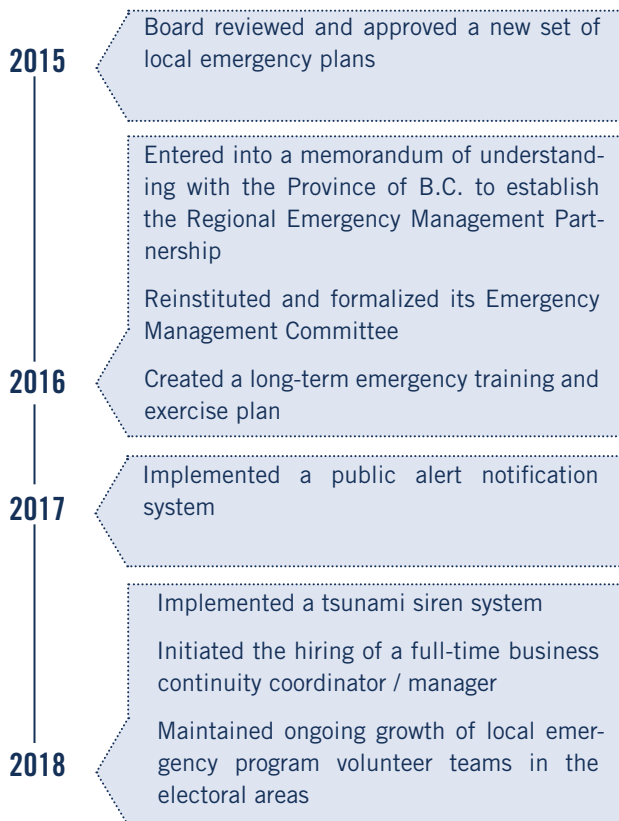
## MAINTENANCE AND CONTINUOUS IMPROVEMENT

We expect local governments to adhere to the principle of continuous improvement. Besides regular review of emergency plans, lessons learned following emergency incidents and exercises should be reflected in those plans and incorporated into operational actions. Formal reporting of emergency management progress and results also supports the continuous improvement of a local emergency management program.

238. We found that the Capital Regional District had continuously improved its emergency management program during the period covered by this audit. However, there were opportunities for the Regional District to develop a performance measurement system and strengthen its monitoring and reporting of emergency management program results.

### CONTINUOUS IMPROVEMENT

239. Over recent years, the Regional District continuously improved its emergency management program. For example:



240. In addition, the Regional District prepared comprehensive after-action reports on major emergency incidents. A 2015 Hartland landfill fire and a 2016 water main #3 break were examples of such incidents. After-action reports on these incidents captured the challenges, successes, lessons learned and recommendations that were used to inform future emergency planning.

### PERFORMANCE MANAGEMENT

241. While the Capital Regional District had some progress reporting in place, it lacked a mechanism to measure emergency management and business continuity program performance and trends in a consistent manner that could be reported to internal and external stakeholders.

242. Emergency management reporting to the Board was event-driven rather than being a standing item on the agenda. Emergency management program high-level results were reported to the Board annually as part of service plan updates for the Planning and Protective Services division. This report highlighted the main activities and achievements in the division during the year compared to service plan objectives. However, the report was relatively high-level and only covered results of the whole division.

## EXAMPLES OF EMERGENCY MANAGEMENT PERFORMANCE INDICATORS

### Emergency Mitigation / Prevention

Frequency and regularity of the review and updating of the hazard, risk and vulnerability assessment

Annual cost of emergency mitigation/prevention-related activities such as a fire prevention campaign and inspections

### Emergency Preparedness

- Number of emergency planning committee meetings per period
- Number of reviews and updates of emergency management plans based on hazard, risk and vulnerability assessment per period, including supplementary emergency plans for all critical services
- Number of emergency operations centre refresher training sessions and emergency exercises conducted per year to validate the emergency plan
- Number of mutual aid agreements and memorandums of understanding for provision of key services
- Number and annual cost of community awareness and engagement campaigns

### Emergency Response

- Emergency response time
- Number of incidents responded to per year and number of response evaluations and revisions
- Cost of emergency response-related activities, including staff and volunteer time, equipment and supplies

### Emergency Recovery

- Emergency response time
- Cost of emergency recovery-related activities, including staff and volunteer time, equipment and supplies
- Total cost per incident, including response and recovery costs

Note: This list is not comprehensive and local governments are encouraged to define their own.

243. The Regional District did not have a formal reporting process to senior management that compared the annual emergency work plan with actual results. As a consequence, the Regional District was unable to ensure that planned activities were completed and program objectives were achieved.

244. Electoral area emergency program coordinators held regular meetings with emergency management department staff and reported monthly to the emergency manager on community emergency program activities, expenditures and volunteer hours. In some instances, electoral areas prepared an annual summary of emergency management activities. However, this was not a mandatory requirement and emergency program coordinators were not consistent in their approach.

245. At the departmental level, staff captured some performance indicators that supported departmental operations, for example, information technology indicators for systems availability, reliability and security, or drinking water service outage. However, these were not developed as part of a business continuity management program.

## RECOMMENDATION NINE

The Capital Regional District should improve data collection, analysis, monitoring and reporting on its emergency management program as part of a continuous improvement process. This should include the following:

- A performance measurement system that assesses progress toward objectives for its emergency management program at the corporate and electoral area levels
- Monitoring of progress
- Regular reporting to the Board, senior management and the public on results

## ABOUT THE AUDIT

246. The office of the AGLG complies with the independence requirements, other ethical requirements and rules of professional conduct of the Chartered Professional Accountants of British Columbia applicable to the practice of public accounting and related to assurance engagements and the standards of conduct of the B.C. Public Service.

247. This audit was performed in accordance with the standards for assurance engagements set out by the Chartered Professional Accountants of Canada in the CPA Handbook—Assurance and Value-for-Money Auditing in the Public Sector, PS 5400, PS 6410, PS 6420 and Canadian Standard on Assurance Engagements 3001—direct engagements. Additionally, the AGLG applies Canadian Standards on Quality Control, CSQC 1.

### OBJECTIVE

248. The overall objective of this performance audit was to obtain reasonable assurance that the Capital Regional District has effective emergency management plans and programs in place.

### PERIOD COVERED BY THE AUDIT

249. The audit covered the most current emergency management plans and programs. We reviewed the period from January 2012 to December 2017 for any financial data and trend analysis. We completed our examination work in June 2018.

### AUDIT SCOPE AND APPROACH

250. The audit included a review of the Capital Regional District's performance in managing its emergency management (including plans related to the four phases: mitigation/prevention, preparedness, response and recovery), business continuity management and key elements such as governance, policies and procedures, communications, training and exercising and monitoring, reporting and updating.

251. The audit did not include an investigation of causes of past emergency events or an evaluation of previous emergency event responses, however, we examined any post-event learnings and how they were reflected in current plans.

252. To carry out the audit, we designed detailed audit procedures that we used to obtain sufficient and appropriate audit evidence. We also reviewed documents related to the audit topic, interviewed internal and external stakeholders and analyzed relevant data and information.

### AUDIT CRITERIA

253. Performance audit criteria define the expectations against which we assessed the local government's performance. We identify our criteria before we begin assessing a local government. We intend them to be reasonable expectations for the local government's management of the area being audited in order to achieve expected results and outcomes. Current legislation and regulations serve as an authoritative source of criteria for this audit.

254. Below are the criteria we used to assess the local government:

**OBJECTIVE 1**—The local government has an emergency management system in alignment with legislative requirements.

- The local government has prepared a local emergency plan that describes how to prepare for, respond to and recover from emergencies and disasters based on the risk profile of its jurisdictional area (hazard, risk and vulnerability analysis).
- The local emergency plan has provisions for establishing and managing the emergency response team members, training, procedures for allocation of resources, procedures for implementing the plan, emergency notifications, coordination of food, clothing, shelter provision, etc., and priorities for restoring of essential services.
- The local government has established and maintained a local emergency organization (internal and external) to develop and implement emergency plans and other preparedness, response and recovery measures for emergencies and disasters.
- The local government has developed a clear process for periodic review and revision of the local emergency plan and carried out this process.



- The local government has prepared an evacuation plan to coordinate providing food, clothing, shelter, transportation and medical services to those impacted by emergencies.
- The local government has established and maintained an emergency training and exercise program.

**OBJECTIVE 2**—The local government has emergency management plans that include activities necessary to respond to and manage the consequences of an emergency event in a timely manner.

- The local government provides organizational support for emergency management, including policy direction and resource planning and allocation (facility, finance and human resources).
  - The local government has a committee comprised of local government personnel, agency representatives and designated volunteers responsible for emergency management and has established working relationships with these key stakeholders including having plans, agreements, exercises and tests and joint training.
  - The local emergency plan covers the designation, roles and functions and condition requirements of an emergency operations centre (EOC), the response activities at the EOC and team member training and deployment (human resource management) during an emergency event.
  - Response and recovery guidelines reflect the risks and hazards assessed, and outline key actions in the response process, from the activation of the EOC, response activities at the EOC, mobilization and declaration of a state of local emergency to evacuation steps.
  - The local emergency plan covers emergency information management requirements, including the roles and responsibilities of an emergency information officer and appropriate spokespersons, communication means and requirements for all key parties, information distribution and controls at each response and recovery step.
- The local government has the infrastructure and capacity to establish and maintain a volunteer strategy for emergency activities and to manage volunteers.
  - The local government has an emergency social services strategy.
  - Educational materials on emergency management are provided to raise public awareness.
  - Emergency management team members are provided adequate training.
  - The local emergency plan has been exercised and tested with relevant parties in frequency and scale appropriate to the local government’s size, capacity, risk and impact assessment and prioritization results.
  - The local emergency plan reflects up-to-date policy requirements, lessons learned from past incidents, exercises, tests and best practices.
  - The local government is aware of the support outlined in the provincial strategy issued by Emergency Management BC in 2015, “*A Strategy to Advance Support for Local Authority Emergency Management Programs.*”
  - The local government has necessary controls (bylaws, protocols, policies and procedures) for the financial management of its emergency planning.
  - The local government has developed clear frameworks to ensure the clarity of roles and responsibilities between the local government and Emergency Management BC.

**OBJECTIVE 3**—The local government has developed a business continuity management system which contains the recovery procedures necessary to resume critical operations in the event of a disruption.

- The local government has assessed the needs of an organizational Business Continuity Management System (BCMS) and set its scope expectation and objectives, such as risks and uncertainties covered services and boundaries, in consideration of interests of key stakeholders, legislative requirements and organizational vision and mission.

- Organizational support for BCMS is demonstrated, such as leadership, employee awareness and policy support.
- Business continuity risks and impact are evaluated, prioritized and updated regularly.
- Resource requirements for BCMS, including financial, physical and human resources have been identified and allocated.
- Business continuity processes (including response and restoration structure and procedures) are developed based on risks assessed, and roles and responsibilities for all involved parties within or outside of the local governments are identified.
- Business continuity policy and procedural requirements are implemented, and roles and responsibilities are communicated to all relevant parties within and outside the organization.
- Controls are in place to ensure BCM information and documents are organized, accessible, reliable and up to date.
- Business Continuity Plans (BCPs) are regularly tested and exercised to ensure feasibility and effectiveness.
- BCMS is reviewed, evaluated and reported regularly to ensure effectiveness and compatibility with policy, information system requirements and other emergency plans.
- BCPs reflect lessons learnt and best practices and are subject to continuous monitoring and improvement.

# SUMMARY OF LOCAL GOVERNMENT COMMENTS



Making a difference...together

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October 26, 2018

0400-20

Gordon Ruth FCPA, FCGA  
Auditor General for Local Government  
201 – 10470 152<sup>nd</sup> Street  
Surrey BC V3R 0Y3  
Via Email: [Gordon.ruth@aglg.ca](mailto:Gordon.ruth@aglg.ca)

Dear Mr. Ruth:

Re: Emergency Management in Local Governments

The Capital Regional District (CRD) Board is in receipt of the Auditor General for Local Government's proposed final audit report for the CRD on the topic "*Emergency Management in Local Governments*" sent by email from your office on September 12, 2018.

On October 10, 2018 the CRD Board approved the attached action plan as the Board's comments to the Auditor General for Local Government. We appreciate the recommendations and are constantly striving to improve our emergency management program.

The CRD appreciates the collaborative efforts of your team during this audit process as we continue to strive for excellence in the area of emergency management to ensure the safety of our residents and resilience of the CRD's many service areas.

Please contact Shawn Carby, Senior Manager, Protective Services at 250.360.3186 if you have any questions.

Sincerely,

Steve Price  
CRD Board Chair

Attachment

pc: Robert Lapham, Chief Administrative Officer  
Kevin Lorette, General Manager, Planning & Protective Services  
Shawn Carby, Senior Manager, Protective Services



## CAPITAL REGIONAL DISTRICT ACTION PLAN

AGLG RECOMMENDATION	STEPS TAKEN	RESOURCES NEEDED	RESPONSIBILITY	TARGET DATE
<b>EMERGENCY MANAGEMENT—GOVERNANCE AND STATUTORY REQUIREMENTS</b>				
<b>1.</b> The Capital Regional District should confirm the review cycle of its local emergency plans, including plans developed by the electoral areas and ensure the review cycle is implemented as designed.	Protective Services is currently reviewing and updating the corporate and Electoral Area (EA) emergency plans as part of our regular review cycle and will incorporate this recommendation in the updated documents.	Within current resources	Protective Services	2 <sup>nd</sup> quarter 2019
<b>2.</b> The Capital Regional District should strengthen its evacuation planning at the corporate and electoral area levels by including detailed procedures that address aspects of evacuation before, during and after an emergency or disaster.	The strengthening of the evacuation plans at both the corporate and electoral area levels will occur during the emergency plan review and updating is currently underway for 2018/2019 as per the planning cycle.	Within current resources	Protective Services	2 <sup>nd</sup> quarter 2019
<b>3.</b> The Capital Regional District should enhance its emergency social services manuals to include collaboration with Emergency Management BC and ensure they are aligned with the process outlined in the electoral areas' emergency plans and the Regional District's emergency communication plan.	CRD already collaborates with Emergency Management British Columbia (EMBC) on emergency social services (ESS) as that is the only way to access the funding that supports the delivery of these services during responses. All ESS service requests in the Electoral Areas require an EMBC task number prior to initiation. Any request for ESS that is beyond the capacity of the CRD resources is coordinated with EMBC. Protective Services will review manuals to ensure that the Regional and Electoral Areas processes are aligned and any deficiencies are corrected.	Within current resources	Protective Services	2 <sup>nd</sup> quarter 2019
<b>EMERGENCY MANAGEMENT—EMERGENCY PLANNING</b>				
<b>4.</b> The Capital Regional District should formally assess the business impact of its essential services in a more holistic way to inform organizational business continuity planning.	The CRD has posted for a Business Continuity Coordinator to undertake the business impact assessment across the organization and will be responsible for developing the business continuity program for the CRD.	Within current resources	Risk Management	4 <sup>th</sup> quarter 2019
<b>5.</b> The Capital Regional District should review and update its emergency plans and procedures to ensure these documents consider all four phases of emergency management and address the backup and delegation process for the Board Chair during an emergency.	Emergency plans are being updated in 2018/2019 consistent with the CRD's planning review cycle and will address all four (4) phases of emergency management and will evolve in alignment with Asset Management and the business impact assessment components of the business continuity plan.  The CRD has a process in place for back-up and delegation of the Board Chair during emergencies and this will be reviewed for potential deficiencies.	Within current resources	Protective Services	2 <sup>nd</sup> quarter 2019

AGLG RECOMMENDATION	STEPS TAKEN	RESOURCES NEEDED	RESPONSIBILITY	TARGET DATE
<b>EMERGENCY MANAGEMENT—EMERGENCY PLANNING</b> <i>continued</i>				
<p><b>6.</b> The Capital Regional District should continue taking steps toward building an organizational business continuity management system that is integrated with departmental service restoration plans.</p>	<p>The CRD has posted for a Business Continuity Coordinator to develop the business continuity program for the CRD consistent with current CSA and ISO standards.</p>	<p>Within current resources</p>	<p>Risk Management/all CRD Departments</p>	<p>Ongoing</p>
<b>EMERGENCY MANAGEMENT—TRAINING</b>				
<p><b>7.</b> The Capital Regional District should strengthen its emergency training by ensuring that Board members have regular refreshers on emergency management and crisis leadership, in addition to foundational training that includes specifics of emergency management in regional districts.</p>	<p>Emergency training is continuing as part of the approved 2017-2019 CRD Emergency Management Staff Training Plan. In conjunction with this, the Chief Administrative Officer (CAO) has been working with the Local Government Management Association (LGMA) and EMBC to develop an updated emergency management training program for delivery to elected officials across B.C. after the upcoming municipal elections.</p>	<p>Within current resources</p>	<p>Protective Services/Corporate Services</p>	<p>Ongoing</p>
	<p>Emergency management orientation for the CRD Board is planned for shortly after the October 2018 elections. This will be followed up with a tabletop exercise by 2nd quarter of 2019 to build on the orientation session. Annual updating will be ongoing.</p>	<p>Within current resources</p>	<p>Protective Services</p>	<p>2<sup>nd</sup> quarter 2019</p>
<b>EMERGENCY MANAGEMENT—EXERCISES</b>				
<p><b>8.</b> The Capital Regional District should consider conducting full-scale and/or larger-scale joint exercises that test the collaboration of all relevant parties involved in responding to a major emergency in the region. Staff should continue completing progressive, smaller, in-house exercises to further increase familiarity with their roles and responsibilities and to validate emergency plans in preparation for the larger scale joint exercise.</p>	<p>Escalating functional emergency management exercises is a component of the 2017-2019 CRD Emergency Management Staff Training Plan. Training and exercises are undertaken in a cyclic and regimented manner to validate training and processes in increasingly complex scenarios. This approach is demonstrated in the figure below from the training plan.</p>	<p>Within current resources</p>	<p>Protective Services/Risk Management</p>	<p>Ongoing</p>
<p>In conjunction with developing and implementing a more holistic business continuity management system, the Capital Regional District should strengthen its business continuity emergency training and exercises.</p>	 <p>Progression of Training 2017-2019</p>	<p>Large functional exercise - \$25,000</p>	<p>Protective Services</p>	<p>2020</p>
	<p>Business continuity is considered in the CRD training and exercises, though this is currently performed in a decentralized manner. The addition of the Business Continuity Coordinator will guide the development of the business continuity component and will be incorporated into the exercise regime.</p>		<p>Protective Services/Risk Management</p>	<p>2020</p>

AGLG RECOMMENDATION	STEPS TAKEN	RESOURCES NEEDED	RESPONSIBILITY	TARGET DATE
<b>EMERGENCY MANAGEMENT—MAINTENANCE AND CONTINUOUS IMPROVEMENT</b>				
<p>9. The Capital Regional District should improve data collection, analysis, monitoring and reporting on its emergency management program as part of a continuous improvement process. This should include the following:</p>	<p>Protective Services will be updating our processes for reporting and continuous improvement which will be aligned with current Emergency Management Accreditation Program (EMAP) guidelines as well as with Canadian Standards Association (CSA) and International Organization for Standardization (ISO) standards.</p>	<p>Within current resources</p>	<p>Protective Services</p>	<p>2<sup>nd</sup> quarter 2019</p>
<ul style="list-style-type: none"> <li>➤ A performance measurement system that assesses progress toward objectives for its emergency management program at the corporate and electoral area levels</li> </ul>	<p>Reporting will be done in alignment with the CRD service planning processes and key performance indicators. The performance measures will be reported through the CRD Emergency Management Committee to the CRD Board annually.</p>	<p>Within current resources</p>	<p>Protective Services</p>	<p>Annually</p>
<ul style="list-style-type: none"> <li>➤ Monitoring of progress</li> </ul>	<p>Board reports are public record and will be done annually.</p>	<p>Within current resources</p>	<p>Protective Services</p>	<p>Annually</p>
<ul style="list-style-type: none"> <li>➤ Regular reporting to the Board, senior management and the public on results</li> </ul>	<p>Board reports are public record and will be done annually.</p>	<p>Within current resources</p>	<p>Protective Services</p>	<p>Annually</p>



## AGLG CONTACT INFORMATION

STAY CONNECTED WITH THE AGLG



The AGLG welcomes your feedback and comments. Contact us via email [info@aglg.ca](mailto:info@aglg.ca), our website at [www.aglg.ca](http://www.aglg.ca) or follow us on Twitter [@BC\\_AGLG](https://twitter.com/BC_AGLG).

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