

Community Emergency Plan

Ring Creek



draft

Table of Contents

Key definitions	3
Introduction	4
Community Overview	5
Demographics	5
Land Use	5
Critical infrastructure	5
Response Capabilities	6
Hazard, Risk and Evacuation	7
Evacuation Routes	7
Interface Fire	9
Debris Flow/Landslide	10
Severe Storm (All Seasons)	11
Earthquake	12
Community Map – Ring Creek	14
Community Action Plan	15

Key definitions

Emergency	An event that requires prompt coordination of actions to protect the health, safety or welfare of people, or to limit damage to property or the environment.
Hazard	A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.
Resilience	Resilience is the capacity to adapt; by persevering, recuperating or changing to reach and maintain an acceptable level of functioning. Disaster resilience is built through empowering organizations, communities and society to share responsibility for keeping hazards from becoming disasters.
Risk	The combination of the likelihood and the consequence of a specified hazard event happening.
Vulnerability	Physical, social, economic and environmental factors or processes, that increase the susceptibility of a community to negative impacts from hazards. It is also a measure of how well prepared and equipped a community is to minimize impacts and cope with hazards.

Community Emergency Plan

Ring Creek

2017

Introduction

The SLRD Emergency Management Program provides emergency management services to the ~5,000 SLRD residents in the four Electoral Areas and partners closely with member municipalities. In addition to the Emergency Management Program, the SLRD funds and/or operates select Emergency Services in the region including:

- 9-1-1 Services
- Diking and drainage in Electoral Area D
- Fire and Rescue Services
- Wildfire Fuel Management Program.

Major emergencies and disasters are on the increase in Canada and worldwide. Disaster effects may be direct (e.g. damage to house, loss of income) or indirect (e.g. increased insurance premiums, reduced air quality due to smoke from wildfires elsewhere).

A number of communities in the SLRD are geographically isolated from traditional first responder organizations such as fire, police and emergency medical services. Communications and other infrastructure may be limited or prone to outages. The effect of this geographical separation is that communities will likely lead their own response, making community knowledge, preparation and skill building a vital aspect of emergency preparedness and increasing the resilience of these communities to adverse events.

The purpose of a Community Risk Assessment (CRA) is to guide practical steps in preparedness, response, recovery and mitigation that reduce both the likelihood of emergencies and the consequences when disaster cannot be avoided. Risk information also informs community residents, business owners, and institution managers of the hazards to expect and how best to prepare for them. Further, A CRA provides a platform from which to advance community-level emergency management and evacuation policy and planning.

A Community Action Plan (CAP) provides a blueprint for communities to increase their resilience through increasing skills, knowledge and connectedness – benefiting the community before a major emergency, during response and through the recovery process.

Community Overview

Ring Creek (RC) is a small settlement of ~50 residents at an elevation of 610m, located 6km to the east of the District of Squamish and surrounded by forested Crown owned land. Current residential development consists of freehold lots extending along a short section of Garibaldi Park Road and Ring Creek Road. The community is well known to the mountain biking community as it sits among and near some of the best known, and most widely used mountain bike trails in the sea to Sky Corridor.

The community is most obviously exposed to interface fire risk due to the surrounding forest, and the large volume of summer traffic along Garibaldi Park Road to the park entrance increases the potential of an interface fire starting from a vehicle accident or other human cause. Landslides represent both a direct risk and indirect risk, with a 2009 landslide blocking Garibaldi Park Road below the community. Severe storms may result in extended utility outages. The community has the potential to become isolated due to the effects of all three hazards. Earthquake is a further hazard, not specifically treated here, but emergency preparedness measures for the other three hazards are consistent with those required for earthquake.

Demographics

A mix of full time and seasonal residents.

Land Use

Single family homes.

Critical infrastructure

Drinking Water	Independent supply at each property
Sanitary/Waste Water Treatment	Septic tank or field.
Electrical Power Systems	Off grid, systems supplied by property owners
Gas Heating Systems	No
Communications	Landline, internet access and unreliable cellphone reception

Response Capabilities

Structural fire	No service to this community.
Wildland interface fire	Crews dispatched from Pemberton. Opportunity for more local training
Medical	Nearest BCAS base in Squamish
Police	Nearest RCMP detachment in Squamish
Evacuation	Opportunity for community training
Communication	Landline, internet and some cellphone reception, subject to any infrastructure impacts.

Hazard, Risk and Evacuation

RING CREEK HAZARD PROFILE

Flood	Debris Flow/ Landslide	Interface Fire	Severe Storm/ Utility failure	Earthquake	Hazardous Material
LOW RISK	MODERATE RISK	HIGH RISK	MODERATE RISK	MODERATE RISK	UNLIKELY

KEY:*

HIGH RISK

MODERATE RISK

LOW RISK

UNLIKELY

*Note that risk does not equal impact. A low risk event may still occur with high impact.

The risk assessment examines the high and moderate risk hazards.

Evacuation Routes

Evacuation route will be down the Garibaldi Park Road towards Squamish at the direction of first responders, and the recommended evacuation route and reception centre locations will also be printed on the official evacuation notice delivered by first responders and/or published on the SLRD website. There are no obvious vehicular alternatives to Garibaldi Park Road. In the event of a fast moving interface fire closing Garibaldi Park Road below the community, evacuation upwards and east to the Diamond Head parking lot of Garibaldi Park, and air assisted evacuation, may be the only option but has multiple additional risks including the time it would take to evacuate the entire community plus any recreational users in the area.

Community Muster Point, if required, will be the intersection of Garibaldi Park and Ring Creek Roads. The Muster Point will be used if evacuation is necessary by RCMP escort due to road conditions, or to receive additional information before evacuating.

Types of Evacuation

Evacuation Alert

This is the time to get ready to leave, putting together 'grab and go' bags with essential supplies, papers and prescriptions, and making any other arrangements to leave the property with all household members and pets. Residents may self-evacuate (voluntary) during this time, particularly if they have mobility issues or health conditions that may make it difficult to evacuate quickly. This is also the time to move livestock to safer areas.

Evacuation Order

Mandatory evacuation occurs when a population is ordered to leave a defined area according to a formal written document that outlines the impact area and why an evacuation is necessary.

Shelter-in-Place

Essentially, an instruction to the public to stay inside for safety reasons. It may also mean "seal the room", i.e. take steps to stop outside smoke or other contaminants from entering the room.

Evacuation Rescind

Formal notification that it is safe to return to the evacuated area. The affected area may still be under an Evacuation Alert under further notice, if the hazard still presents a threat.

Interface Fire

Ring Creek is located in a wildfire environment. Wildfires will happen – exclusion is not a choice. The variables in a wildfire scenario are:

- when the fire occurs, and
- where the fire occurs.

During the summer of 2017, a small wildfire ignited within 3.5km of the Ring Creek community but was rapidly contained and extinguished. However, the risk cannot be understated. The 2015 Elaho Fire north west of Squamish extended over 12,000 hectares and burned for almost two months before being assessed as 100% contained.

Potential ignition of an interface fire includes a lightning or human caused forest fire, a structural fire in the community that spreads to the wildland area, ignition relating to a vehicle accident or sparking, and a vehicle collision related fire on Garibaldi Park Road that spreads. The heavy volume of recreational traffic through the community during the summer months increases risk of a human caused ignition.

The consequences of an interface fire event have the potential to be severe/catastrophic for the Ring Creek community depending on ignition point, dryness, and wind conditions.

EVACUATION PROTOCOL:

At the **Evacuation Alert** stage:

- Residents with mobility or chronic health issues may choose to voluntarily evacuate to ensure their safety and continuity of care. If they choose to stay at this time, they should contact the SLRD Emergency Program staff to discuss their situation and/or make arrangements with a neighbor if they do not have a vehicle, and their primary healthcare provider if evacuation is medically complicated (e.g. dialysis, oxygen tanks).
- All other residents should make preparations to leave, ensuring that they have a plan for the safe evacuation of all people and pets, gather essential documents, medicines and necessities of food, clothing and other items.

At the **Evacuation Order or Tactical Evacuation** stage:

- At the direction of BC Wildfire Service, RCMP or other authorized first responders, residents will evacuate according to the evacuation route directions given.
- All residents must leave, ensuring that all people and pets in their household safely evacuate, and taking the previously gathered essential documents, medicines, necessities of food, clothing and other items. If these items have not been gathered in advance, there may be no time to take anything at the time of evacuation.

- Emergency Support Services (ESS) will be provided to those evacuated, including emergency accommodation if required.

Debris Flow/Landslide

Ring Creek is surrounded by variably steep slopes of Crown owned forested land that has a number of feeder creeks and streams. The slopes above development have a variable landslide risk depending on vegetation, soil and rock ground composition, slope gradient and moisture content. For example, a fire in a forested area above and away from the community may destabilise previously stable soil, releasing woody debris and soil downslope during spring freshet or a high volume rain event. A 2009 landslide blocked Garibaldi Park Road below the community and took seven months to fully remediate the road, highlighting the potential for the community to become isolated for an extended period.

EVACUATION PROTOCOL:

Evacuate if directed by first responders (imminent threat, tactical evacuation), and/or if an evacuation order is issued by the SLRD due to conditions being assessed as dangerous enough to warrant an evacuation of identified properties. First responders and the SLRD will take a conservative approach in assessing Debris Flow risk evacuation trigger points, to ensure resident safety. Evacuation will apply to all identified properties at risk, which may result in a partial or full evacuation of the affected community. Evacuation route is via Highway 99, north or south depending on location of Reception/Registration centres, and potentially depending on whether the highway is blocked in one direction due to a related landslide event.

Trigger points for evacuation are taken from the BC Forest Service Wet Weather Safety Guidelines (rainfall and snow melt), advice from provincial experts, and conditions at the time.

Evacuation Alert Trigger Points

- Rainfall event forecast of 25 – 45mm or more in less than 24 hours
- Rainfall event forecast of 25 – 45mm or more in less than 24 hours, plus snow melt calculations (see table #1 below)
- Cumulative rainfall of 40mm or more over >5 days, with additional continued rain forecast and/or snow melt calculations (see table #1 below).

Snow Melt Soil Moisture Input

Snow melt is an important factor in determining the total soil moisture input. The following tables provide guidance as to the amount of snow melt **that must be added** to the precipitation forecast or recorded in a rain gauge in applicable situations. Snow melt must be considered at or above the slope where the melt event is occurring.

Table #1: 24 Hour Snowmelt additions during rain-on-snow events

Average temperature	Open Area			Forested Area		
	Wind*			Wind*		
	Low	Moderate	High	Low	Moderate	High
0.5-2.0°C	3mm	10mm	25mm	1mm	5mm	11mm
2.1 – 5.0°C	15mm	35mm	75mm	5mm	10mm	25mm
5.1-10.0°C	25mm	70mm	120mm	10mm	28mm	40mm
10.1-15°C	35mm	95mm	160mm	15mm	40mm	60mm

***Low Wind** (<10 km/hr): Leaves and small twigs in constant motion speed; wind extends light flag

Moderate Wind (10-20km/hr, gusts >30km/hr): Small trees sway, maps/paper difficult to hold still.

High Wind (>20km/hr, gusts >40km/hr): Whole trees in motion, clouds moving rapidly, rain blowing sideways.

Tactical Evacuation Trigger Points

Heavy rainfall is occurring, and ANY of the following are observed:

- Sudden muddy water in creeks (especially in gullies)
- Sudden lack of flow in creeks during wet weather
- Cracks appearing in the soil
- Small (anything $\geq 1\text{m} \times 1\text{m}$) sloughs of soil occurring
- Landslides occurring in the general area, or sounds of landslides occurring
- Blocked culverts
- Forecast rainfall is occurring, and stream full conditions are occurring or close to occurring.
- Thunderstorm or heavy rainfall event not forecast, generating torrential downpours and/or observed debris activity in the affected slide areas.
- Cumulative rainfall of 45mm over >5 days or more, with additional continued rain forecast, plus additional snow melt calculations from table #1 (above).

Severe Storm (All Seasons)

The community may become temporarily isolated by a severe winter snow storm or summer storm with high winds that down trees and potentially knock out power lines nearby. Winter heating is a concern, especially for vulnerable residents. Extended power outages present health and safety risks including food spoilage, shortage and inability to store medications requiring refrigeration (e.g. insulin). Blocked roads compromise community access to

emergency health services.

EVACUATION PROTOCOL:

Shelter in place until downed power lines are confirmed by first responders or BC Hydro as no longer hazardous. If emergency assistance is required, call 9-1-1 (if able). If a storm related evacuation is required, follow the instructions of first responders and official information from the SLRD. In the event of evacuation, Emergency Support Services (ESS) will be provided to those evacuated, including emergency accommodation if required.

Residents who are vulnerable due to health conditions should discuss a plan in advance with their primary healthcare provider. This may include voluntary self-evacuation when a severe storm event is forecast, access to a back up power supply, and additional supplies of medication or an emergency prescription.

Earthquake

Depending on epicentre, type, and severity, a full range of impacts are possible for Ring Creek. Isolation is a significant possibility if Garibaldi Park Road is blocked (likely) even if structural damage is minimal in the community. Damage to waste water treatment and drinking water systems in conjunction with extended isolation would create public health concerns. Damage to communications infrastructure in the wider area, e.g. cellphone towers, may compromise communication to external response agencies.

SLRD ALERT.

Be in the know, not in the dark.

Free emergency notification service
direct from the SLRD to you.

Text, voice message and email options

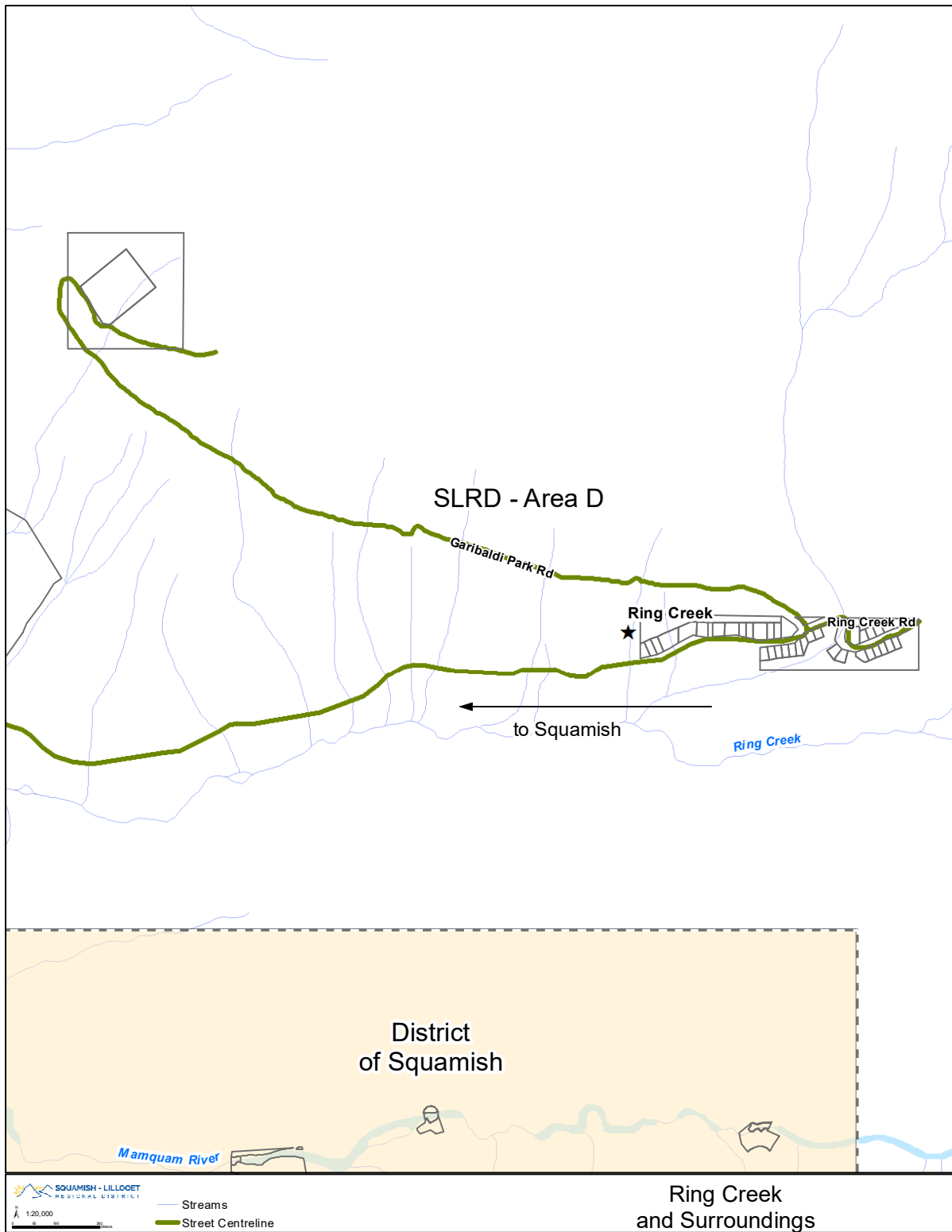
Sign up: <http://www.slrd.bc.ca/SLRDAlert>

EVACUATION PROTOCOL:

Remain in the 'Stop/Cover/Hold' position until shaking stops. If you are able, shelter in place until downed power lines are confirmed by first responders or BC Hydro as no longer hazardous. If you feel your house is unsafe, including if you smell gas, exit the building immediately. If emergency assistance is required, call 9-1-1. If an earthquake related general evacuation is required, follow the instructions of first responders and official information from the SLRD. Through Rapid Damage Assessment by trained teams, individual residences may be assessed as unsafe, in which case evacuation will be required. Emergency Support Services (ESS) will be provided to those evacuated, including emergency accommodation, food and clothing if required.

draft

Community Map – Ring Creek



Community Action Plan

The SLRD will work with community representatives every three (3) years to review, assess and update the Community Action Plan.

Historical Actions

- Independent power systems add to community resilience when other power infrastructure is affected.
- Independent water and waste treatment system may be a protective element in the event of damaged infrastructure in neighbouring communities.

Current and Future Potential Actions by the Community

- Establish a **Neighbourhood Emergency Team (NET)** with members who have completed a criminal record check (free for volunteers and required in order to be placed in many volunteer roles during response). The SLRD can support the NET through training in basic emergency preparedness, evacuation notification, recovery considerations and other relevant topics that facilitate a two-way knowledge exchange of local government emergency processes and community capacity building. The SLRD can also connect communities to funding when it is available (e.g. FireSmart) and may sponsor a training session by an external provider for multiple communities if budget is available and there is sufficient demand. NET team members would be utilised in a disaster response as qualified volunteers under the direction of the relevant agency. The size of the NET, its organization and the level of training is at the discretion of the community and is independent of the SLRD.

NET team members may be progressively trained in:

- First Aid and simple triage
 - Evacuation Processes
 - Radio Communication
 - Locating victims and resources
 - BC Wildfire S-100 Basic Fire Suppression and Safety
- Work to achieve official FireSmart Community status
 - Work with the SLRD to develop a basic Disaster Recovery Plan
 - Identify vulnerable residents and develop a plan with them for their continued safety in the event of a major emergency (EMBC resources available to assist planning)
 - Identify and document skilled individuals in the community (e.g. doctors, nurses, electricians, engineers).
 - Practice evacuation notification with the delivery of emergency preparedness public information resources to each house (these resources available through the SLRD)

- Campaign to get all residents signed up to the SLRD Alert emergency mass notification system for direct communication by email, text and landline from SLRD to residents and their nominated emergency contacts.

Looking for more information to make your community Disaster Resilient?

SLRD	www.slrd.bc.ca/services/emergency-management
GENERAL	http://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery
ANIMALS	http://www.cdart.org/beprepared.htm
FIRE SMART	www.firesmartcanada.ca