

# Community Emergency Plan

## Bralorne & Gold Bridge



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## 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

## Bralorne & Gold Bridge 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 progress 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

Bralorne and Gold Bridge are neighbouring communities in the Upper Bridge River Valley area. Home to a permanent population of ~75, these communities are situated 13 kilometers apart along the Lillooet Pioneer Road (Road 40). Summer visitors and seasonal residents add to the population in the area, enjoying the natural beauty and outdoor recreation opportunities. Gold Bridge is the hub of the Upper Bridge River Valley. Most of the services are located here, such as the post office, library, school, BC Ambulance station and general store. Due to the distance from the nearest larger centres of Lillooet (~125km) and Pemberton (~80km) plus variable seasonal road conditions, emergency response from outside agencies may be delayed depending on the nature of the emergency event.

The two communities are exposed to interface fire risk due to the surrounding forest, hot dry summers, and high visitor numbers in the summer months. Similarly, the risks presented by a severe weather event are shared by both, with the potential for extended utility outages and physical isolation until connecting roads are cleared. The communities are differentially exposed to flood and land movement hazards depending on topography.

### Demographics

A mix of full time and seasonal residents.

### Land Use

Single family homes, some seasonal and commercial accommodation.

### Critical Infrastructure

Drinking Water	An SLRD owned and operated water supply system is located at Bralorne and serves the Bralorne area. All other areas have independent water collection and supply per household.
Sanitary/Waste Water Treatment	Bralorne has an independent WWT facility owned and operated by the SLRD. All other areas operate on individual septic tanks or septic fields per building.
Electrical Power Systems	BC Hydro supply available to all residences
Gas Heating Systems	No residential supply
Communications	Landline, some internet access, no cellphone reception

### Response Capabilities

Structural fire	No structural fire service.
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Wildland interface fire	Crews dispatched from Lillooet, with support from Pemberton. BRV is within the Lillooet Fire Zone of the Kamloops Fire Centre.
Medical	There is 1 BCAS unit stationed in Gold Bridge.
Police	Nearest RCMP detachment in Pemberton, though RCMP respond from Lillooet during winter months.
Evacuation	Evacuation notification training held with the community representatives at the GLFPS Hall in 2017. Recommend an additional community Evacuation Notification kit be held at the Gold Bridge BCAS station.
Communication	<p>Landline and internet access available, subject to any infrastructure impacts. Radio communication from the BCAS station.</p> <p>Minto Communications Society (MCS) services all residential neighbourhoods in the BRV with fixed wireless internet, with the exception of Marshall Lake who use satellite internet.</p> <p>Internet comes into the valley via the TELUS microwave link which is shared with the landline phone service. From the TELUS central office in Gold Bridge, there is a 2km fibre link that runs along the hydro lines in Gold Bridge to the MCS office at 104 Haylmore Ave in Gold Bridge. If those hydro lines are still standing, the office has back up battery power for the internet that will run for 3 days and then there is the option to use generator power after that. Most of MCS repeater sites have back up battery or are solar/wind powered so hydro outages do not overly affect service provision. In an emergency situation MCS can provide internet connectivity to residents and emergency responders at the 104 Haylmore Ave office which is shared with the Bridge River Valley Community Association. If emergency internet service is required in other neighbourhoods MCS can provide it at a central location, depending on the situation.</p>

# Hazard, Risk and Evacuation

## BRALORNE AND GOLD BRIDGE HAZARD PROFILE

COMMUNITY	HAZARD					
	Flood	Debris Flow/ Landslide	Interface Fire	Storm/ Utility failure	Earthquake	Hazardous Material
Gold Bridge	Orange	Orange	Red	Red	Yellow	Green
Bralorne	Yellow	Yellow	Red	Red	Yellow	Green

### 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 of the following four hazards examines the communities together, where appropriate, and considers areas separately where the level of risk differs. Hazard exposure may vary between areas due to variables such as geographical differences and additional mitigation actions taken by one of the communities.

## Evacuation Routes

There are two main evacuation routes from the area, and the chosen evacuation route in the event of a major emergency will depend on threat, location and time to evacuate, and will be at the direction of first responders. The condition of forest service roads to carry residential vehicle traffic will also be a factor. The recommended evacuation route will be printed on the official evacuation notice delivered by First responders and/or published on the SLRD website.

Route one: Pemberton via Hurley River Forest Service Road

Route two: Lillooet via the Lillooet Pioneer Road (Road 40)

There are additional forest service roads but these are typically not in a condition suitable to carry other than 4WD, or drivers inexperienced with these kinds of road conditions.

**Muster Point:** Gold Bridge Community Complex parking lot

Community Muster Points are used if evacuation is by bus or RCMP escort due to road conditions, or to receive additional information or supplies (e.g. bottled water) 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

Bralorne and Gold Bridge are 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 2009, a wildfire of note threatened the area and there is a history of wildfire starts, which have fortunately not resulted in structural loss for this area. 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, and ignition relating to a vehicle accident or sparking.

The consequences of an Interface Fire event have the potential to be severe/catastrophic for these communities.

### 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.

## Severe Storm (All Seasons)

The communities may become temporarily isolated by a severe winter snowstorm or summer storm with high winds that down trees and potentially knock out power. 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 and winter conditions of forest service roads compromises community access to emergency health services. Landline infrastructure may be damaged, resulting in no 9-1-1 service, although at least some phone access via internet (e.g. Skype) should remain available due to robust back up systems for local internet provision.

#### **EVACUATION PROTOCOL**

Shelter in place until downed power lines are confirmed by BC Hydro as no longer hazardous. If emergency assistance is required, call 9-1-1 if possible. 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.

#### **Flood**

Gold Bridge is exposed to some flood risk due to spring freshet flows and the potential for streams to overflow banks, and lake level rise to threaten lakeside properties. Gold Bridge has an additional risk factor from the nearby BC Hydro dam. In terms of stream flow, the main risk of flooding comes from an outburst flood scenario, where a collection of woody debris and rocks become lodged in one area by high stream flows, forming a barrier. The water pooling behind the barrier can rapidly cause flooding of properties nearby, but the greater hazard is from the volume of water and debris released suddenly when the temporary dam gives way.

#### **Dam Failure**

The inhabited areas of the Bridge River Valley are located downstream of the BC Hydro Teraghi and La Joie dams. BC Hydro has an emergency notification protocol in the unlikely event of a dam failure. Should a dam failure occur, BRV residents in low-lying areas should immediately follow the instructions of first responders and evacuate to higher ground, well away from the Bridge River. Residents in low-lying areas of the BRV are strongly encouraged to sign up for the SLRD Alert notification system, as this is the fastest way to receive evacuation instructions related to an imminent dam failure.

## 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 flood risk evacuation trigger points, to ensure resident safety.

### **Evacuation Alert** trigger points:

An evacuation alert would be triggered by Environment Canada, the River Forecast Centre forecasting conditions that trigger a flood watch, and/or onsite observation of those conditions.

### **Evacuation Order** trigger points:

- Notification to SLRD from BC Hydro

Evacuate if heavy/torrential rainfall is occurring, and ANY of the following are observed:

- Sudden lack of flow in creeks during wet weather
- Landslides occurring in the general area, or sounds of landslides occurring
- Forecast rainfall is occurring, and stream full conditions are occurring or close to occurring.

## Debris Flow/Landslide

Gold Bridge has developed near steep slopes backing onto Crown owned forested land that has a number of 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.

## 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 flood 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 will depend on the location of the slide, and whether a potential evacuation route is blocked 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), 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).

### **SLRD ALERT.**

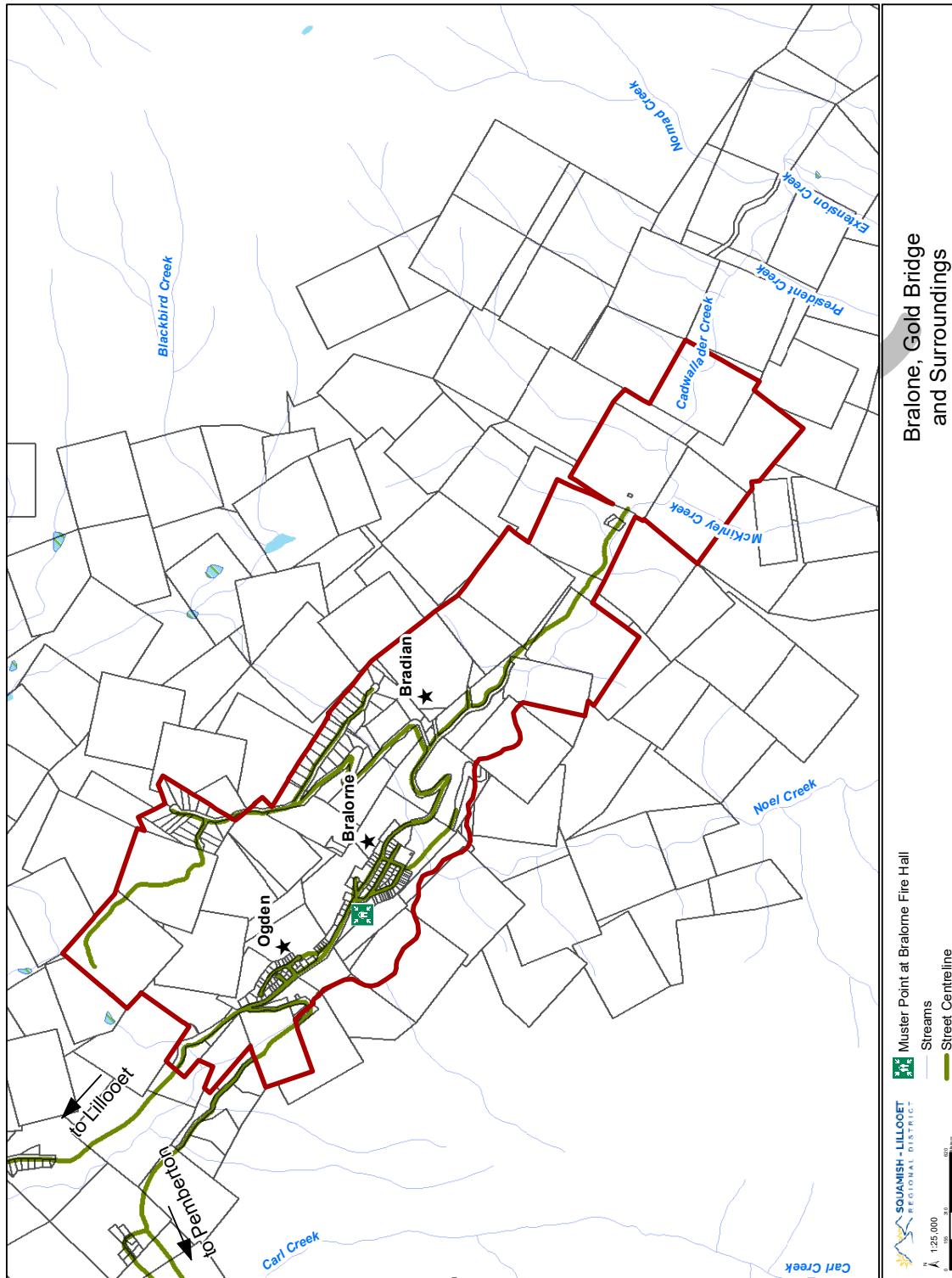
**Be in the know, not in the dark.**

Free emergency notification service  
direct from the SLRD to you.

Text, voice message and email options

**Sign up: <http://www.slrdbc.ca/SLRDArt>**

## Community Map – Bralorne and Gold Bridge Area



## 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 water and waste treatment system may be a protective element in the event of damaged infrastructure in neighbouring communities.
- Some properties have carried out FireSmart mitigation activities including tree trimming and removal of woody debris.
- In 2013 an Electoral Area A Community Asset Inventory was completed and provides an excellent overview of the area, including infrastructure. This inventory was updated in 2017.

### Current and Future Potential Actions by the Community

- Establish a **Neighbourhood Emergency Team (NET)** in each community, with members who have completed a criminal record check (free for volunteers and required in order to be placed in many volunteer roles during disaster 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
- Hold community FireSmart clean up days once a year to pool resources and remove woody debris from around homes and trim trees in the fire ignition zones. The SLRD may assist with reimbursement for equipment such as wood chippers through the

FireSmart grant programme, and provide advice and assistance through the BCWS if a safe burn pile can be established.

- Work with the SLRD to develop a basic Disaster Recovery Plan
- Fund generators for emergency power at agreed community locations
- 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) as an update and extension of the 2017 Community Asset Inventory.
- 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.slrdbc.ca/services/emergency-management](http://www.slrdbc.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](http://www.firesmartcanada.ca)