

Community Emergency Plan

McGillivray Falls Recreation Retreat



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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

McGillivray Falls Recreation Retreat

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

McGillivray (formerly McGillivray Falls) is an unincorporated recreational retreat on the west shore of Anderson Lake, just east of midway between the towns of Pemberton and Lillooet, and around 8 kilometres from D'Arcy. McGillivray Falls Recreation Retreat Ltd. (MFRR) holds title to the property, and is a company controlled by 40 shareholders with a Board of Directors. The SLRD Land Use Contract for the area included provisions for a recreational area by the lake including small summer cabins for the shareholders of MFRR. McGillivray is a water access only community, with property owners and visitors generally travelling to the community by boat from the SLRD-owned dock at D'Arcy.

The area is beautiful but easily isolated with no cell phone reception in the community. Landline phone and power lines are exposed to outages at several points. Power supply is entirely 'off-grid' with electricity supplied by solar panels and diesel generators. The community recognises the need for development of critical infrastructure needs including implementation of an emergency water delivery system that can provide ample water to all portions of the developed areas. A wildland interface fire, or a fire within the community that spreads are the primary hazards.

Demographics

A caretaker who is generally resident; the rest of the community are recreational residents during the summer months.

Land Use

Recreational cabins, a dock and some common land areas.

Critical infrastructure

Drinking Water	Well and surface supply
Sanitary/Waste Water Treatment	Properties have independent septic field or tank
Electrical Power Systems	Solar and diesel generator. Generator power dependent on fuel supplies.
Gas Heating Systems	None
Communications	Landline, internet access, VHF radio

Response Capabilities

Structural fire	No structural fire service
Wildland interface fire	Crews dispatched from Pemberton. Opportunity for more local training
Medical	Nearest BCAS base is in Pemberton For medical emergencies, the community maintains a class 1 first aid kit The caretaker will be taking an industrial first aid course in 2018.
Police	Nearest RCMP detachment in Pemberton
Evacuation	Evacuation plan to be developed
Communication	Landline and internet access available, subject to any infrastructure impacts. Radio communication with Ponderosa, and a satellite radio in order to communicate with emergency service providers.

Hazard, Risk and Evacuation

MCGILLIVRAY FALLS HAZARD PROFILE

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

Evacuation route will be via boat to D'Arcy at the direction of first responders, and also printed on the official evacuation notice delivered by first responders and/or published on the SLRD website.

Community Muster Point, if required, will be at the Anderson Lake dock. The Muster Point will be used if evacuation is by first responder escort due to conditions, or to receive additional information before evacuating.

A potential secondary evacuation route is via the rail tracks to the Ponderosa community and on to D'Arcy via road.

There is a helicopter-landing site in the community.

Evacuation Routes

The community is water access only with no vehicle access, and so evacuation will preferably be water based, with residents evacuating in their own boats.

There are hiking trails, but as any threat is likely land based, this slow and strenuous evacuation option is not considered feasible.

There is a rail line running nearby and an existing historical train stop for McGillivray Falls. Depending on the location and nature of the threat, a rail-based vehicle could reach residents via this route.

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

McGillivray 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.

Historically, a number of spot fires have occurred in the area and wildfires of note have occurred in the vicinity, including the 2009 fires near Seton Portage. There have been a few close calls. A structural fire destroyed an old cabin in the summer of 1983. The building was completely destroyed but the fire was contained to the building with limited firefighting resources. During another fire situation, a small fire at the northwest edge of the area threatened the community and the community was without water to respond. Fortunately there was no wind, and the fire responders were able to extinguish the blaze within two days.

In the future, the community plans to have a much more secure water delivery system, coupled with community members trained in the S100 course

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, or ignition relating to an off road vehicle accident or sparking.

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

Evacuation Protocol:

At the **Evacuation Alert** stage:

- Residents with mobility or chronic health issues should evacuate voluntarily at this point to ensure their safety and continuity of care.
- All other residents should make preparations to leave, gathering essential items for the return trip to their permanent residences.
- At the direction of BC Wildfire Service, RCMP or other authorized first responders, residents will evacuate according to the directions given.

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 items. If these items have not been gathered in advance, there may be no time to take anything at the time of evacuation.

Severe Storm (All Seasons)

The community may become temporarily isolated by a severe storm with high winds that down trees and prevent water travel due to the weather or subsequent damage to or destruction of the dock. Isolation presents health and safety risks including no 9-1-1 service. Compromised water travel compromises community access to emergency health services and supply lines. Most, if not all, dwellings would have limited capability to withstand hurricane force winds. Evacuation beforehand would be the only rational strategy. There is only one year-round resident; severe snow/blizzard conditions are not likely to cause many problems as harsh winter conditions are normally encountered intermittently.

Evacuation Protocol: Shelter in place (if relevant) until severe weather has passed and be highly alert to tree fall hazard. 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.

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, and additional supplies of medication or an emergency prescription.

Debris Flow/Landslide

Debris flows are very fast-moving, liquefied landslides that carry soil and other debris including boulders, and vegetation. Debris flows are most often triggered during periods of intensive rainfall resulting in high soil saturation levels but can also be triggered by rockfall or avalanche on unstable slopes. Concave slopes like gullies and ravines are particularly susceptible to debris flows because they tend to concentrate surface water runoff and accumulate surface water and loose soil. Debris flows can be the result of natural factors and man-made interventions.

McGillivray is somewhat exposed to debris flow hazard due to its location at the foot of steeply sloping terrain and a nearby slide or blockage of the feeder streams to the falls could create an outburst flood hazard. There have been several instances of large debris flows along the Creek, with damage contained within the Creek boundaries and impacts limited to the water supply system.

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.

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.

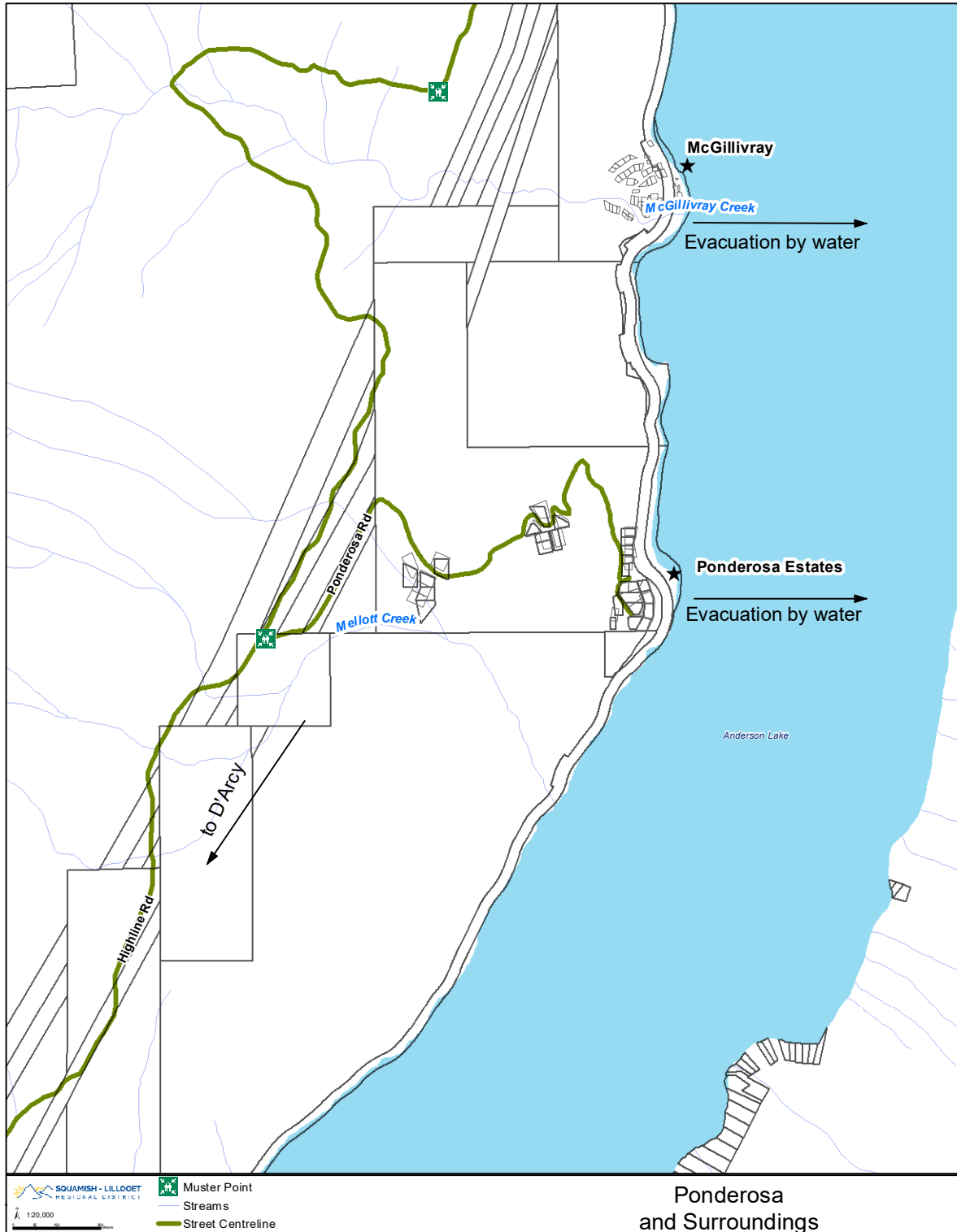
Be in the know, not in the dark.

Free emergency notification service
direct from the SLRD to you.

Text, voice message and email options

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

Community Map – McGillivray



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, waste treatment systems and power supply are a protective element but water potability may be compromised after a severe storm or slide event that increases sediment.
- Initial discussions between strata management and SLRD regarding evacuation planning.
- FireSmart program initiated in 2016
- The community has scheduled S100 training for the spring of 2018.

Current and Future Potential Actions by the Community

- Establish a **Neighbourhood Emergency Team (NET)** with community 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
- Continue FireSmart activities and apply for official FireSmart Community status
- 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.
- The SLRD recommends the community purchase of a satellite phone, to be held by the caretaker and available to the community at all times.

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