Municipal Evacuation Route Plan

Prepared for:
The Town of Osoyoos

Developed and Prepared by:
Frontline Operations Group Ltd.
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www.frontlineops.ca

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Distribution List

Name	Hardcopy #	Role

Record of Amendments

Number	Date	Pages	Amended By

Glossary

BCEMS	BC Emergency Management System – A comprehensive framework that helps to ensure a coordinated and organized approach to emergencies and disasters. The standard practice provincial government ministries and Crown corporations; it is the recommended best practice for all emergency management stakeholders in BC and applies to emergencies, disasters, and catastrophic events
CBSA	Canadian Border Services Agency
CC	Community Contact
CS	The department of Community Services responsible for emergency preparedness and transit
DS	Development Services Department for the Town of Osoyoos including Planning, Building Inspection, and Bylaw Enforcement
ECC	Emergency Coordination Centre (EMBC)
EMBC	Emergency Management BC – the provincial coordination and support body for emergency management within the province
EOC	Emergency Operations Centre –Location or facility where responsible officials gather during an emergency to direct and coordinate emergency operations.
EPA	Emergency Program Act
ESS	Emergency Support Services including Reception and Shelter Services
Evacuation Alert:	To inform the affected population of a potential or impending threat to their safety – allows at-risk populations extra time to evacuate
Evacuation Order:	A formal written document under which the impacted population is ordered to evacuate the area specified immediately
Evacuation Rescind:	Notice issued when the emergency which necessitated the evacuation is under control and the hazard/emergency zone is declared safe
Evacuation Zone:	Larger area surrounding the Hazard Zone, in which residents are evacuated to remove them from the potential or actual threat to their safety or health
FLNRORD:	Ministry of Forest, Lands and Natural Resources Operations and Rural Development

Freshet	The period of time when rivers swell from snowmelt, generally April to July. Freshet flooding occurs when atmospheric conditions lead to rapid snowmelt and normal stream channels become overwhelmed.
GL	Group Lodging (ESS)
Hazard	Events or physical conditions that have the potential to cause fatalities, injuries, property damage, infrastructure damage, agricultural loss, damage to the environment, interruption of business, or other types of harms or losses
Hazard Event	A hazard that has already materialized and is impacting people or property (e.g. a hazardous waste spill, structure or interface fire within the community).
Hazard Threat	A hazard that may occur, but that has not yet impacted people or property (e.g. rising water level or a wildfire approaching the interface)
Hazard Zone	Area under direct threat with a high degree of risk to persons or property. There is to be no occupancy or staging within the hazard zone
HEMBC	Health Emergency Management British Columbia
IC	Incident Command
ICS	Incident Command System – A standardized on-site management system designed to enable effective, efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure
IHA	Interior Health Authority
MoTI	Ministry of Transportation and Infrastructure – responsibility for roads and storm drainage in the rural areas of the RDOS as well as provincially owned roadways including highways
PECC	Provincial Emergency Coordination Centre
PREOC	Provincial Regional Emergency Operations Centre
PW	The Public Work Department for the Town of Osoyoos including water, wastewater and solid waste
RCMP	Local detachment of the Royal Canadian Mounted Police – authority for policing and security
Risk	Likelihood x Consequence

Shelter-in-Place	The act of ordering people to stay indoors, rather than physically evacuating from the Town. Most often used in order to reduce exposure to airborne contaminants, or in the event of an active shooter or terrorist attack
SOLE	State of Local Emergency
Strategic Evacuation	Pre-planned evacuations in response to hazard events that provide adequate warning and preparation time. Uses the "Three Stage Evacuation Process": Alert, Order, Rescind
Tactical Evacuation	An evacuation resulting from a hazard impact that forces immediate action thereby allowing little or no warning and limited preparation time. Ordered at the site level by the Incident Commander
RDM	Regional Duty Manager
RDOS	Regional District of Okanagan Similkameen

Introduction

Context

In recent years, the Town of Osoyoos, with support from the RDOS, managed several small-scale evacuations in response to flood events. The Town faces multiple hazards that could lead to a large-scale evacuation or shelter-in-place requirement including flood, wildfire, hazardous material release, and wind storms, predominantly. The experience of other municipalities has demonstrated the importance of having a plan in place to facilitate the rapid organization and implementation of an evacuation or shelter-in-place initiative.

Based on this context, the Town of Osoyoos identified the need to create and maintain an Evacuation Route Plan to guide the planning and coordination of an evacuation or shelter-in-place response for all or part of the Town. To achieve this, the Town applied for a grant, offered by the UBCM, and issued a Request for Proposal to assist in the acquisition of a qualified contractor. Frontline Operations Group Ltd. was the chosen proponent and was formally issued a contract to prepare the Evacuation Route Plan in May 2019.

Emergency planning is a dynamic process. This Evacuation Route Plan is only one part of preparedness efforts that include training, exercises, and the debriefing of actual events. As the Town evolves, so will the Evacuation Route Plan, which will be regularly reviewed and adapted. Due to the nature of major emergencies, there may be a need to adapt the plan during an evacuation or shelter-in-place. Therefore, this plan acts as the foundation for continuous planning efforts rather than a final, rigid solution. This Evacuation Route Plan builds on the existing Emergency Response and Recovery Plan (ERRP) for the Town of Osoyoos and the Standard Operating Procedures established by EMBC.

Plan Structure

This plan is divided into two parts:

- The Evacuation Route Plan describes in detail how an evacuation or shelter-in-place incident will be planned and implemented. This part of the plan is designed to be used during training activities, and for public reference.

- The Operational Response Guide is designed for use during an evacuation or shelter-in-place incident. This guide is a set of planning and position checklists designed for use by municipal staff and stakeholders directly responsible for implementing an evacuation.

Purpose

The purpose of the Town of Osoyoos Evacuation Route Plan ("the Plan" or "the ERP") is to describe the provisions that have been made, and the procedures that follow, to ensure the safe and orderly evacuation of people and animals threatened by a natural or man-made hazard within the boundaries of the Town of Osoyoos. The Plan will also establish the principles, structures, roles and responsibilities for a coordinated partial or full evacuation of the Town of Osoyoos. The Plan specifies arrangements, agency roles and responsibilities, and a range of considerations and actions for the evacuation of people from a hazardous community environment to a location where they will be safe.

This plan should be read in conjunction with the following:

- Evacuation Operational Guide for First Nations and Local Authorities in BC: A guide to managing evacuations during emergency response (EMBC, 2019)
- Emergency Response and Recovery Plan for the Town of Osoyoos (Osoyoos, 2006)
- Emergency Response and Recovery Plan for the Regional District of Okanagan Similkameen (RDOS, 2010)

Objective

The objectives of this plan are to:

- Describe how the Town of Osoyoos will organize itself to plan and coordinate the evacuation or shelter-in place for part of or the entire Town
- Provide the specific tools such as position checklists, planning templates, etc. that will be used during the planning and coordination of an evacuation or sheltering-in-place event

The protection of life, livelihood and critical infrastructure is the key principle and the primary objective of this evacuation planning effort.

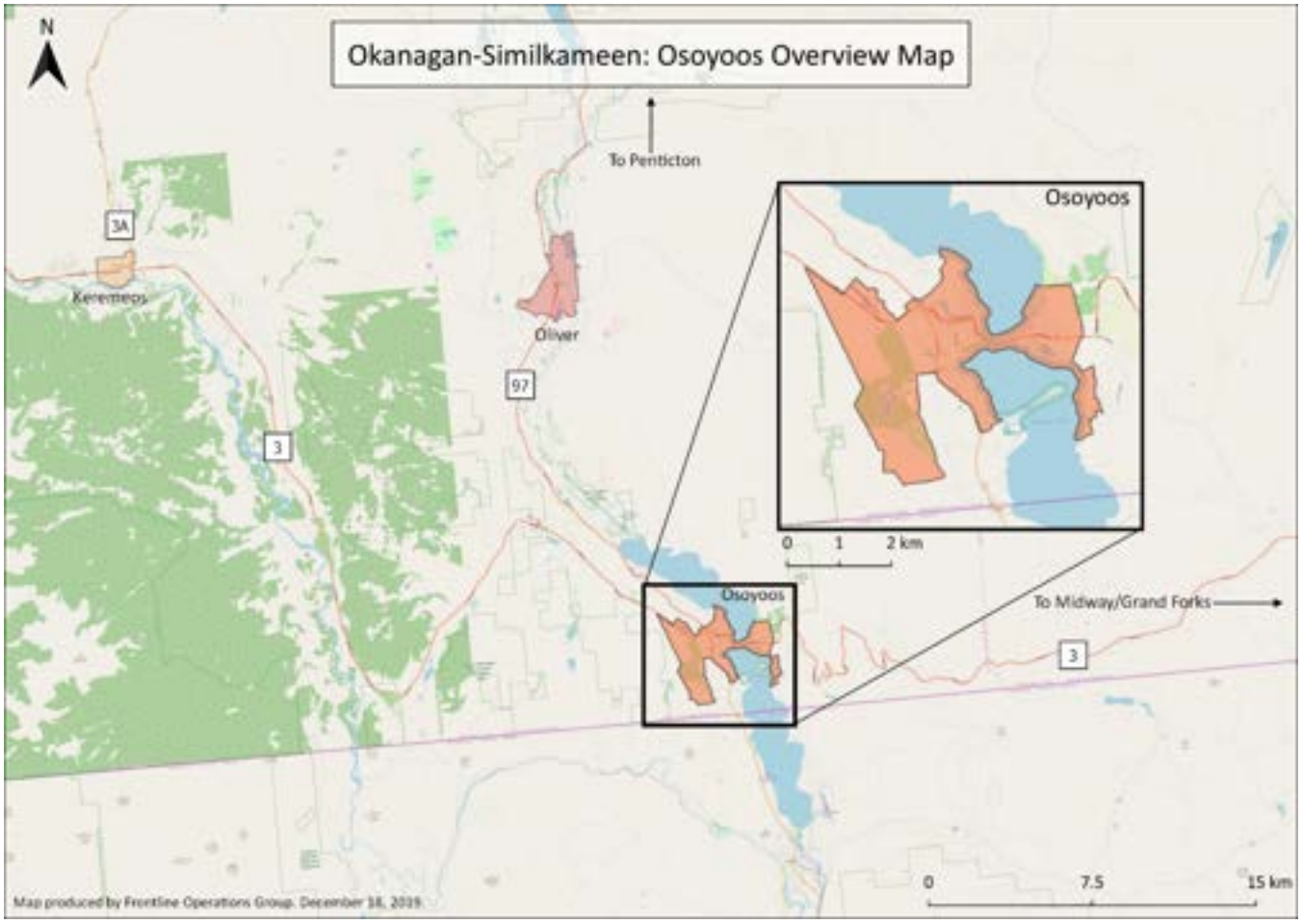
Vision

The vision for the Plan is:

- For all agencies in the Town with jurisdiction, responsibility, or resources for evacuation to come together and collaboratively develop an evacuation process and plan to effectively evacuate a partial or entire community;
- It will be based on realistic scenarios, strategies, resources and timelines, so it will be effective in practice;
- That all agencies with a role in the execution of the Plan will be included in its development and have a clear understanding and a sheared approach to evacuation planning;
- To enable evacuations to be executed effectively in a coordinated manner; and
- To demonstrate communities and agencies coming together to protect and service the public in times of emergency.

Scope

The Town of Osoyoos Evacuation Route Plan outlines the process and the resources needed to complete an evacuation of all or part of the Town. The various identified routes include those to the east, west, north or south using the existing highway system. The plan considers all hazards, meaning the plan and process are not specific to one hazard, but can be implemented for any hazard requiring the complete or partial evacuation of the Town. The plan can be implemented for a hazard threat or a hazard incident and can be implemented for evacuation scenarios that provide advanced warning or those that provide no notice and pose an immediate threat.



The Town of Osoyoos Evacuation Route Plan will be used in conjunction with the Osoyoos Emergency Response and Recovery Plan (ERRP) as well as the RDOS ERRP.

Emergency Response and Recovery Plan. The All-hazard Emergency Response and Recovery Plan describes how the Town will receive communication about potential emergencies, evaluate those emergencies and activate Site Command and/or the Emergency Operations Centre to coordinate the response. This can occur centrally, via the Emergency Coordinator or on-site via first responders. The plan also assigns responsibilities for specific emergency functions, all of which are respected by the Evacuation Route Plan.

Evacuation Route Plan. The Evacuation Route Plan describes who will coordinate an evacuation initiative and how the decision to evacuate or maintain the status quo is made; how the area to be evacuated is determined; and how the following functions will be coordinated:

- Perimeter and access control
- Evacuation routes and traffic control
- On-site notification
- Liaison with ESS, FLNROD, RCMP, and other external agencies
- Transportation
- Guidance to self-evacuating citizens
- Pet and livestock evacuation and care
- Zone clearance
- Re-entry planning
- Security

What is beyond the scope of the Evacuation Route Plan? The Plan will discuss, but not describe in detail:

- Plans for opening and managing reception centres (this is the responsibility of ESS and should be addressed in the Emergency Response Plan)
- Plans for sheltering outside of the Town of Osoyoos (the initial actions for a hosting community has been included)
- Plans for coordinating mass notification with the media (this is contained in the RDOS Corporate Communications Emergency Plan)

Authority

Authority to implement a mandatory evacuation within the Town boundaries rests with the Town itself. The Emergency Program Act states that:
"a local authority is at all times responsible for the direction and control of the local authority's emergency response".

The legal authority most commonly used by municipal officials to order an evacuation is the Emergency Program Act (1993) Section 12(1)[1]. To order a mandatory evacuation, a local authority must declare a State of Local Emergency (SOLE), as presented under Section 12 of the *BC Emergency Program Act*.

Under this section a municipal council via bylaw, resolution or by the order of the Mayor, is permitted to declare a SOLE giving legal power to "cause the evacuation of persons and the removal of livestock, animals and personal property that is or may be affected by an emergency or disaster and make arrangements for the adequate care and protection of those persons, livestock, animals and personal property."

In the Town of Osoyoos, the RCMP on behalf of Local Authorities, will action an evacuation order. In some instances, local SAR volunteers will also be used to support the RCMP.

For advice or assistance with an evacuation, contact EMBC's 24/7 Emergency Coordination Centre at 1-800-663-3456 and request to speak with the Regional Duty Manager for your region, or PREOC, if activated.

[1] The Emergency Program Act is currently in the process of being updated. Any changes to the act that pass after the finalization of the plan will need to be incorporated when available.

Alternate Measures of Authority

Not all evacuations require a declaration. In many cases it is preferable to utilize the existing statutes of other authorities and reserve declaring as a last resort. The decision will vary depending on the type of threat and the amount of time available before safety to the public is at risk.

Other authorities may include:

Agency	Legislative Measure
Town of Osoyoos Bylaw No. 1246	Section 5.4(e) authorizes council to cause the evacuation of persons and the removal of livestock, animals, and personal property from any part of the Municipality that is or may be affected by an Emergency or a Disaster and make arrangements for the adequate care and protection of those persons, livestock, animals and property.
Emergency Program Act **** currently being updated**	Section 12(1) of the Emergency Program Act permits Council via bylaw or resolution, or the Mayor by Order, to declare a local state of emergency. This then allows implementation of procedures to protect people and resolve the emergency, including evacuation 13(1). Section 9(1) of the Emergency Program Act permits the Solicitor General to declare a provincial state of emergency. Under a provincial declaration, the Solicitor General has the authority to order an evacuation as deemed necessary.
Criminal Code of Canada	The *Criminal Code of Canada* authorizes the RCMP to evacuate buildings or areas for criminal investigations or activities (i.e. bomb threats, hostage taking, drug laboratory, etc.). The RCMP have the authority to arrest and charge individuals who are obstructing the evacuation process or hindering emergency responder's in the performance of their duties.
Environmental Management Act	Section 80 (2.1 c) of the Environmental Management Act enables an officer (usually a Conservation Officer) to take whatever action is necessary to address a spill that has occurred that may pose a hazard to health or the environment including evacuate persons.
Fire Services Act	Section 25 (1) of the Fire Services Act enables the Fire Commissioner to evacuate a building or area due to threat from fire or explosion.
Forest Practices Code of British Columbia Act	Section 85 (1) of the Forest Practices Code of British Columbia Act enables a designated forest official to, by order, require a person to leave an area specified in the order if the government is engaged in fire control or suppression operations.

Highway Act	Section 23 of the Highway Act allows the Minister of Transportation to close highways for the protection of persons using the highway, or to enable permitted traffic to be handled safely and expeditiously.
Petroleum and Natural Gas Act	When the [Oil and Gas] commission believes that, because of hazardous conditions in a field or at a well, it is necessary or expedient to close an area and to shut out all persons except those specifically authorized, the commission may make an order in writing setting out and delimiting the closed area.
Public Health Act	Section 63 (161) of the Public Health Act allows Minister of Health or any medical health officer to order a person, or persons, to remain in a specified place, or not enter a place, to prevent the transmission of an infectious agent or a hazardous agent (i.e. epidemics, pandemics).
Wildfire Act	Section 11 of the Wildfire Act enables the Minister of Forests, Lands, and Natural Resource Operations to designate, by order, a specified area as a restricted area for a specified period if the minister considers it necessary or desirable to limit the risk of a fire, to address a public safety concern or to avoid interference with fire control.
Workers Compensation Act	Under the Workers Compensation Act, WorkSafeBC can evacuate a workplace, and isolate it with fences, barricades, etc., if it reasonably believes that an immediate danger of serious injury, illness or death exists.

Situation

Much of the South Okanagan is developed on flood plains, below large alluvial fans, making this region especially vulnerable to the risk of flooding, debris slides and wildfire. The Town of Osoyoos is no exception; situated on Osoyoos Lake with a significant elevation increase to the east and west, the Town has a high potential for overland flooding during spring freshet as well some risk of debris slides and wildfire that could impact the community and/or critical infrastructure.

The Town of Osoyoos is a low density, semi-urban municipality relying mostly on agriculture and tourism to fuel economy. Nearly half of the residents in Osoyoos are 65 years and older and this aging population will require extra time and planning to accommodate additional assistance and medical care requirements during an evacuation. Osoyoos is located at the intersection of highway 3 and highway 97, a main arterial route for residents, tourists and transportation trucks. Approximately 18,500 commercial and private vehicles use this route daily; during an evacuation scenario, excess traffic could quickly impede the ability to evacuate residents.

The community is situated at the southernmost end of the Okanagan Valley and boasts several beaches and waterfront properties along the shore of Osoyoos Lake. The Okanagan River drains into Osoyoos Lake flowing south through Penticton and is joined by the Similkameen River just below Osoyoos Lake. The Similkameen River often receives much higher annual flows than the Okanagan River which can cause a reverse water flow of the Okanagan River into Osoyoos Lake. Flooding in the Osoyoos area will most likely occur as a result of Zosel Dam restricting water flow out of the lake during drought conditions, increased flows in the Similkameen River due to an unusually high freshet event, uncharacteristically high rain events or a combination. During recent freshet events, significant flooding was experienced along the southern and northwestern shorelines. Waterfront properties, and critical infrastructure are at risk of overland flooding if the lake experiences a significant volume increase during freshet as it has in recent years. Of most notable concern to the Town are, the southeastern portion of highway 3, critical infrastructure located along lakeshore drive and residential communities on the southern shoreline as well as Willow Beach.

Wildfires have been a regular and natural disturbance agent in the Similkameen Valley for millennia. In recent years, Osoyoos has felt the effects of several wildfires, ranging from small fast-moving fires that are contained relatively quickly, to prolonged periods of large fires burning in the surrounding area. The Town is surrounded by ideal fuel for wildfire and dry, arid climate; fortunately, Osoyoos has been spared the wide-spread destruction of homes and wildfire infiltration into the interface, that other areas of the province have experienced. Of greater concern to the Town is the likelihood of wildfires in the surrounding area that could cause prolonged smoke exposure. Due to the high surrounding mountains and valley aspect, Osoyoos can experience high winds, causing smoke from surrounding wildfires to linger and affect air quality.

If the Town experiences significantly decreased air quality, it could require the implementation of clean air centers that residents can take refuge in and/or a public information campaign on reducing smoke exposure and sheltering in their homes.

Review of Hazards

The Evacuation Route Plan is considered "all-hazard" meaning the evacuation process and plan can be used to coordinate a partial or full evacuation for any threat or hazard. Although the plan can be implemented for any or all hazards, a review of the hazards that could necessitate an evacuation of the Town was included in the planning process. This review informed the potential scale of evacuation, the intensity of the event, the amount of time between the onset and the need for evacuation, and specific considerations for each hazard.

NATURAL HAZARDS				
Hazard	**Frequency/ Likelihood**	**Onset**	**Responding Agency**	**Considerations**
Fire – Interface	Moderate	Slow or sudden	BCWS in coordination with the Volunteer Fire Department	High risk in surrounding areas, like Anarchist Mountain. Fire spread into interface by spotting is more likely than ignition within the boundaries.
Overland flooding	Moderate	Slow	Municipal Public Works in conjunction with MoTI if the flooding affects roadways	River forecast centre provides stream advisories and warnings to the municipality and RDOS
Fire- Structural (Urban/Rural)	Low	Sudden	Osoyoos Volunteer Fire Department	
Windstorm	Moderate	Slow or sudden	Municipal Public Works with support from RDOS is needed	
Debris Slide	Low to moderate	Sudden	Multiple depending on affected area	Would likely occur outside of Town boundary but could affect access
Loss of Essential Services or Critical Infrastructure	Low to moderate	Slow or sudden	Town Public Works, RDOS, EMBC	Extended interruption to electrical power, water, sewer, or loss of community access and egress routes

HUMAN-CAUSED				
Dangerous goods release	Low to moderate	Sudden	MoTI, Ministry of Environment, BCEHS, Local Fire Dept.	Likely caused from an MVA involving the transport of dangerous goods
Hazardous substance spill or release	Low to moderate	Sudden	Ministry of Environment	Response could include shelter-in-place.
Disease	Low to moderate	Slow or sudden	HEMBC	

Hazards of Note

While the Plan can be used for any hazard requiring a full or partial evacuation of Osoyoos, there are specific hazards that are of concern to the Town and extra consideration was given to them during the planning process.

Wildfires and Wildland Urban Interface Fires

The Town of Osoyoos is located within a regional area characterized by wildfire occurrence, but the likelihood of a wildfire spreading into the municipal boundary is relatively low. The municipal boundary is primarily surrounded by agricultural development, which represents minimal fuel hazard to the Town (see Figure 1).

The most continuous forest stand is located at higher elevation ridgelines, outside of the municipal boundary, to the northeast and to the west. Interior Douglas Fir/Pondarosa Pine stands (C7 fuel type) dominates these higher elevations. The area of interest's (AOI) fuel type, apart from agricultural developments, can be classified as O1a/b – Open Grass. Both fuel types typically support wildfires that are quick moving and easily ignitable, due to the abundance of fine fuels and high exposures to wind. Homes located in the southwest residential neighborhood, adjacent to the Osoyoos Golf Club, are likely to be the most at risk for wildfire interface situations, due to the proximity to continuous fuel and homes being built into slope.

The possibility of firebrands (embers) being transported from a nearby wildfire and igniting spot fires within the Town should not be discounted. It is important to highlight the need for homeowners to take a proactive approach to FireSmart measures to reduce potential fuel sources on their property. The Town can be characterized by the additional ornamental plants found around homes, particularly Cedar/Juniper hedges and shrubs. Many of these types of vegetation are highly flammable and pose a significant risk to home ignition resulting from sustained radiant heat. Fortunately, O1 and C7 fuel types are significantly less conducive to ember transport therefore reducing the overall risk of airborne firebrands.



Figure 1 - The Town of Osoyoos; agricultural development is shown to enclose majority of the residential neighborhoods with the community

Weather conditions and trends were analyzed for the area of interest (AOI); specifically, the number of Fire Danger Class 4 & 5 days calculated for several BCWS fire weather stations in the region. Two fire weather stations are presented here – Penticton and McCuddy – in order to demonstrate an increasing annual trend of danger class 4 and 5 days. As climatic conditions continue to shift towards warmer temperatures the trend of increasing danger class 4 and 5 days is expected to continue.

Under plausible worst-case scenarios, using fire weather data from the McCuddy weather station and Osoyoos climate normals, resulting fire behaviour in the surrounding area is predictably extreme. In the O1b (Standing Grass) fuel type, with 40km/h wind in alignment with a 60% slope, the equilibrium rate of spread (ROS) is 236.04 m/min and a head fire intensity (HFI) in excess of 10,000kW/m. In C7 (Pondarosa Pine/Douglas Fir) fuel type under the same wind and slope conditions, the equilibrium ROS is 42.54 m/min with an HFI in excess of 10,000kW/m. These are worst-case fire behaviour predictions that push the limits of the FBP model but provide an illustration of potential extreme fire behaviours in the Osoyoos region (but *not* within municipal or agricultural boundaries).

Historical data collected for the area, however, shows that ideal conditions for extreme wildfire behaviour have previously occurred within the area. The highest Fire Weather Index (FWI) recorded for the area predicted fire behaviour in O1 fuel types of a ROS of 118.52 m/min with an HFI of >10,000kW/m and C7 fuel types of a ROS of 16.43 m/min with an HFI of >10,000kW/m. Slope was not considered in these calculations and it can be assumed the ROS would increase with increasing slopes.

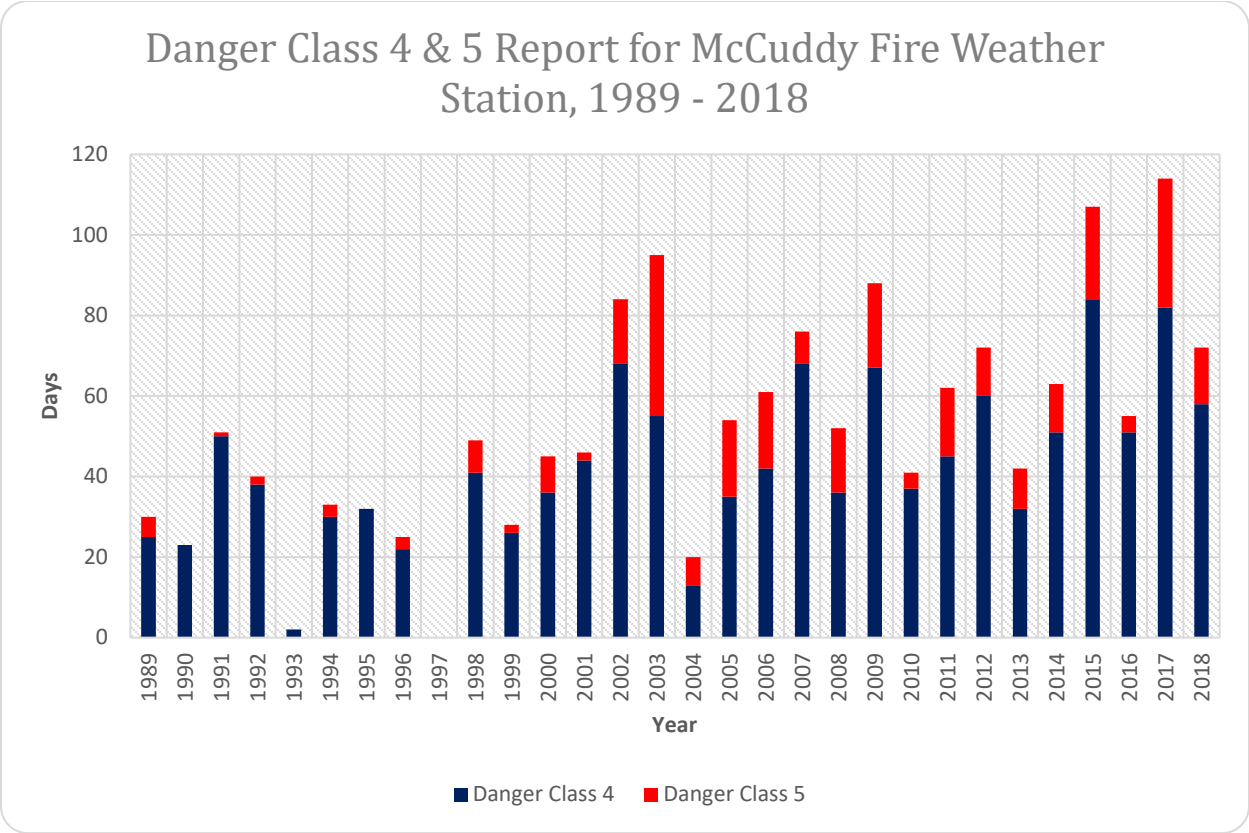


Figure 2 - Number of Fire Danger Class 4 and 5 days, per year since 1989 for the McCuddy weather station.

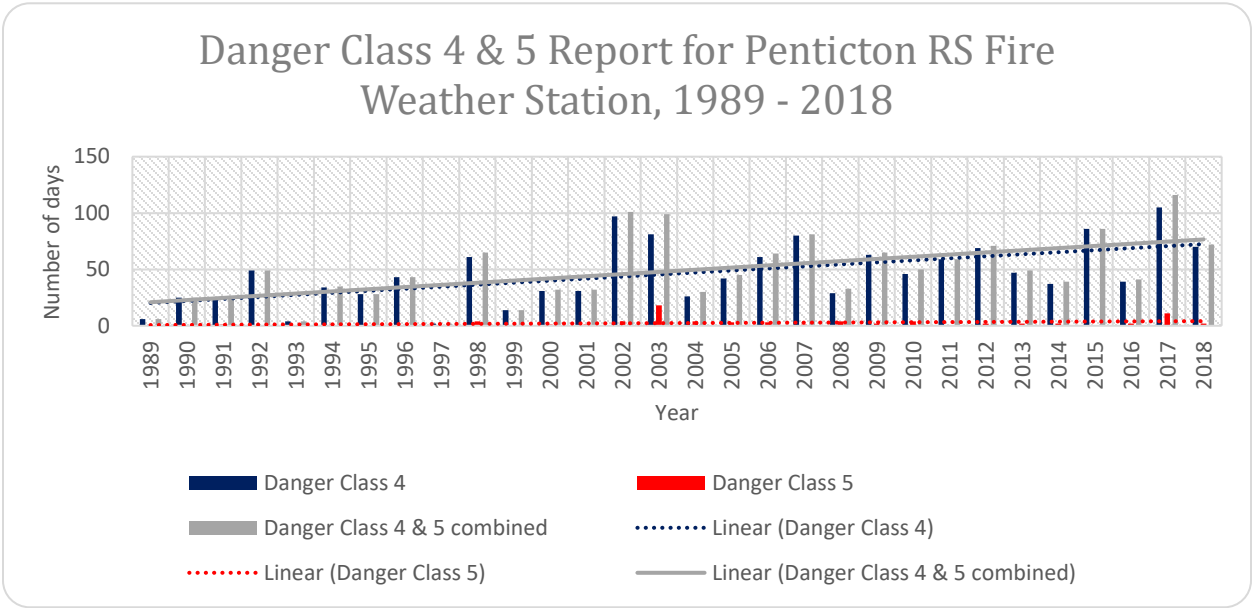


Figure 3 - Number of Fire Danger Class 4 and 5 days, per year since 1989 for the Penticton weather station.

The Town of Osoyoos has seen very little for wildland interface *within* municipal boundaries when compared to the numbers of wildfires burning outside of the AOI. There have been 98 reported wildfires from 1950-2018 within a 5km radius from Town center. Of those, 68 (69.4%) were person cause and of those 98 fires, 79 (76.5%) were less than a 0.5ha in size. The Town has been more recently impacted indirectly by heavy valley smoke from large neighboring fires. Heavy valley smoke during busy fire seasons can significantly impact air quality in the area, causing direct impacts on vulnerable populations with weakened respiratory systems.

In assessing and recommending potential evacuation requirements in relation to a wildfire in proximity to Osoyoos, careful consideration is required. Potential evacuation routes could put people into closer proximity with hazardous wildland fuels and dangerous wildfire behaviour, particularly along routes to the north and to the east. Prior to making any decision to evacuate people during a wildfire, careful assessment of the evacuation route(s) in relation to the potential for wildfire to impinge on the route(s), must be conducted. This is especially important in the case of Osoyoos as there is significantly less risk of catastrophic wildfire spreading into several parts of the municipal boundaries and therefore, the Town could be considered and established as a safe zone.

The Town of Osoyoos has yet to complete a Community Wildfire Protection Plan (CWPP) and the most recent Hazard, Risk and Vulnerability Analysis (HVRA) was last done in 2006. Due to the continuously changing landscape of the wildland interface environment, it is recommended that the HVRA be updated and a CWPP be developed for the Town. A CWPP provides a basis for all future wildfire mitigation actions within the community. It would provide clear content on the wildfire risks to the community, as well as strategic and operational recommendations to reduce risk and increase the community's resilience to wildfire threat.

Overland Flooding and Flood-related Hazards

The Town of Osoyoos is located along the shores of Osoyoos Lake which straddles the 49th parallel and drains into the Okanogan River across the US border in Oroville, Washington. The entire lake is 43 kilometers long; with 10.5 of those kilometers located on the Canadian side, it is recognized as the warmest freshwater lake in Canada.

Much of the community is located within the flood hazard area, including several municipal roadways, commercial lodging, and critical infrastructure such as pump houses, and electrical stations. There are approximately 350 civic addresses within the provincial flood plain. Beyond the risk of overland flooding, other critical infrastructure like the wastewater treatment plant are at risk of inundation due to excessive ground water accumulation.



Although Osoyoos is known for its low levels of precipitation, lake levels can be impacted by precipitation events further north, as well as freshet events following high-snowpack winters coupled with warmer than usual weather, causing rapid snowmelt. Additionally, the Similkameen River, which is fed by multiple tributaries throughout the Okanagan Valley, joins the Okanagan River just south of Osoyoos Lake and has a much higher mean annual flow resulting in the risk of reverse water flow into Osoyoos Lake.

The lake system begins in the north Okanagan at Armstrong and is fed by the eastern mountain snowpacks, which travel down through a series of lakes connected by the Okanagan River including: Kalamalka, Okanagan, Skaha, and Vaseux, finally arriving at Osoyoos Lake. From Osoyoos Lake the water flows into the Okanogan River in Washington State and continues south via the Columbia River to its final destination, the Pacific Ocean.

The lake varies in depth from 46 feet to 208 feet and has an average level of 911.5 feet above sea level (see figure 4). There are natural seasonal fluctuations in lake levels depending on runoff from the mountain snowpack and general precipitation with highest levels usually occurring between May and June. The current maximum permissible level determined by international agreement is 913 feet above sea level during a drought year. The lowest levels average 910.5 feet and usually occur between January and March. The level is also controlled by Zosel Dam, located at the U.S. end of Osoyoos Lake in Oroville, WA. The amount of water allowed out of the lake by Zosel Dam is decided each spring by the International Joint Commission (IJC) Osoyoos Lake Board of Control. The decision is based on examination of the snowpack activity, precipitation, current water level and weather forecasting estimates for the current year.

Date	Height (feet)
June 3, 1972	917.06
June 1, 1983	914.48
June 2, 1986	914.29
June 15, 1990	913.81
May 23, 1991	914.66
June 9, 1996	914.04
May 19, 1997	915.09
June 13, 2011	914.57
May 15, 2013	914.17
May 26, 2014	913.11
Sept 7, 2015	911.96
Apr 25, 2016	912.73
June 2, 2017	914.87
May 12, 2018	916.38
Aug 27, 2019	912.56

Figure 4 – Record of Osoyoos Lake Levels. Source: U.S Geological Survey

Osoyoos Lake has two unique sand and gravel spits running east-west right across the lake, adjacent to the southern portion of town. The first is called Haynes Point, which has been designated as a provincial park and the second, north of Haynes Point upon which Highway 3 and "Motel Row" have been built.

The Town continues to be a popular summer tourist and seasonal home destination. Because of this, the Town's population has been known to, more than, triple during summer months when tourists and seasonal residents populate the Town. The population and subsequent development growth have increased pressure on the lake due to the demand for both residential and commercial lakefront properties. This increased development coupled with the naturally low-lying land and climate change have significantly increased the risk of flooding for the Town. Current hydrological assessments report that when the lake reaches a level of 914 feet many residential and commercial properties can experience flooding in crawl spaces, basements, and roadways.

The natural shoreline or 'riparian zone' is gradually being replaced with concrete walls and fences, grass lawns, docks, and other artificial man-made structures which contribute to an increased risk of flooding in some areas of Town. The reduction of the oxbows and the creation of the river channel at the north end of the lake during the 1950's; disturbance of wetland areas reducing it to only one remaining wetland just south of Haynes point; and non-adherence to building codes leading to increased development in the floodplain have all contributed to increased flood risk.

Osoyoos Lake has a unique set of hydrological considerations, affected by Similkameen River flows and backwater influence. Osoyoos Lake flows into the Okanogan River in Washington State which supplies water to agriculture and residents in the immediate area. The Similkameen River which runs parallel to the Okanagan River joins the Okanogan River about 5 kilometers south of Oroville, Washington. During excessive periods of precipitation and runoff the water in the Similkameen River may back-up into the Okanogan River causing lake levels to rise resulting in flooding. The back-up occurs because the peak flow of the Similkameen River can be up to 10 times greater than that of the Okanogan River and with the shore at the confluence being relatively flat, high water levels in the Similkameen River can effectively slow or block the flow out of the Okanogan River and Osoyoos Lake.

Osoyoos experienced significant flooding in 2017 and 2018 that resulted in evacuation alerts and orders being issued for numerous homes and businesses both within the Town and the surrounding area. In 2018, the Town of Osoyoos experienced overland flooding that resulted in approximately 100 properties being evacuated over the course of the event. During the 2018 flooding event, lake levels rose to 916 feet above sea level causing significant flooding and damage to homes. The flooding threatened inundation of both lakeside drive and portions of highway 3, on the east side of Osoyoos. Overland flooding to highway 3 would cause significant challenges for access and egress, as well as necessitating re-routing of vehicles including large transport trucks.

The risk of flood-related hazards is expected to become more common in the Town and surrounding areas, as climate change brings heavier, more intense precipitation events. Rapid increases in temperature during the spring can also contribute to early snowmelt and increased risk of flooding during the spring freshet.

Community Profile and Evacuation Design

Understanding the demographics of the community was a significant part of the planning process. It allowed us to ensure that the Evacuation Route Plan would accurately represent the number of people and vehicles needing to evacuate. Information was compiled in the form of a demographic profile, which was then used to establish evacuation design and scenarios for modelling purposes.

Key questions that guided the design of the demographic profile:

- What is the maximum number of people, who we may need to evacuate?
- What is the maximum number of vehicles that will need to be on the highway during evacuation?
- What is the potential demand for transit services (i.e. how many people do not have their own transportation)?
- Where will people go once evacuated?
- How many people may require assistance to evacuate?
- How many people will require shelter and ESS services?
- How many people travel through the Town every day?
- Road capacity

The demographic profile for the Town of Osoyoos was used to:

- Develop evacuation design scenarios to guide the evacuation planning process
- Estimate the potential travel demand
- Estimate the transit resource and shelter requirements
- Determine clearance times for a mass evacuation scenario

Frontline Operations Group reviewed many data sources to retrieve this information:

- 2016 Census data
- Osoyoos Emergency Response and Recovery Plan
- Osoyoos Hazard Risk Vulnerability Analysis
- Osoyoos Official Community Plan (OCP)
- Okanagan Basin Water Board
- US Army Corps of Engineers
- MoTI Traffic Data Program
- Interviews with municipal staff and participating agencies
- ICBC insurance information
- BC Housing assessment data

Population Demographics

With a population of 5,085, the Town of Osoyoos is the southernmost town in the Okanagan Valley and is located 63km south of Penticton and 3.6km to the north of the US border crossing. The Town is surrounded by electoral area A of the Regional District of Okanagan Similkameen (RDOS) which is home to an additional 1,892 people.

The east west Crowsnest Highway (highway 3) runs through the Town and crosses Osoyoos Lake at its narrowest point, which is notably the lowest marked elevation in the Okanagan Valley. The Town is characterized by long, hot summers and short winters with infrequent snow and low humidity. It is well known for having some of the warmest temperatures in Canada, the warmest freshwater lake in Canada, and boasts plenty of fruit orchards. The area's abundant sunshine, and dry fertile soils create the ideal growing environment and as such, many of the orchards have been converted into vineyards, making Osoyoos one of the major wine-producing regions in Canada. Osoyoos is a popular summer vacation spot and as a result the population grows significantly during the summer months with both seasonal residents and tourists.

A detailed demographic profile can be found in the Operational Evacuation Plan. The demographic profile includes demographic information for permanent residents, vulnerable populations, seasonal residents, commuters and visitors. The median age of people living in these demographic groups were evaluated separately to better understand their points of origin, potential travel patterns and possible needs in an evacuation.

The median age of residents in Osoyoos is 60.7 years old. Most residents rely heavily on private vehicles for transportation as there is minimal public transit options and only one local taxi service. The majority of commuters in Osoyoos leave their homes between 6:00am and 8:59am, making it the busiest time on the roads. The 2016 census has identified that 75% of the population own and drive their own vehicle and approximately 7% of people carpool to work as the passenger in a vehicle. The total residential population fluctuates to some degree during the week, but the majority of residents that live in Osoyoos work within the Town.

Osoyoos is located at the junction of highways 97 and 3, the major north-south and east-west corridors through BC's interior. The Town is accessible via the Crowsnest highway (highway 3) from the east (Grand Forks) and west (Keremeos), highway 97 (Penticton) from the north and highway 97 from the south at the US border crossing. Osoyoos is located 400 kilometers from Vancouver on highway 3 and less than 4 kilometers from the United States border via Highway 97. The Town's main thoroughfare, Main Street, runs along highway 3 which receives approximately 18,700 vehicles daily. The closest commercial airport is in Penticton (63 km north), the next is in Kelowna. Osoyoos' local airport has a 2,800 ft. paved runway serving private, fixed-wing and rotary aircrafts.

Evacuation Design

Road capacity

The Ministry of Transportation and Infrastructure Traffic Data Program identified approximately 18,700 vehicles per day consisting of local and commuting traffic, lowering to 10,000 during winter months. It should be noted that the study does not provide information on the number of vehicles that stay in the Town versus those that are passing through. For that reason, worst-case scenario modelling will use the highest identified number of vehicles.
Utilizing the US army corps (USAC) road lane capacity tool, the 50km speed limit and a contingency amount (during an evacuation) we derive the highway capacity is approximately 700 vehicles per hour. This figure includes an allowance for emergency access vehicles and road obstructions. Other traffic models produce road lane capacity at 1000 vehicles per hour at 40 km/hour or even higher. For the Town, due to the number of constrictions (including bridges) and the potential delays at intersections and the fact that all merging traffic must enter one central transportation route the USAC calculations have been deemed appropriate.

If a mass evacuation of residents took place of 20,000 residents, tourists and commuting workers, assuming no lead in time for preparation, it would take a maximum of 28 hours and 34 min to clear all residents from a state of readiness. With an approximate lead in time for decision making we can include an additional minimum two hours which would result in the Town being cleared within 30 hours and 34min. A Tactical evacuation due to an impending threat would be implemented by the Fire Chief or RCMP and as such would be an expeditated process. These estimations do not include the lead in time for evacuation of a vulnerable population where preparation takes place during the Alert stage.

Evacuation Design Scenarios

The evacuation design scenarios for the Town were built using the maximum estimated population that can be expected during the year, which would be a peak summer weekend day. This includes permanent residents, commuters, seasonal residents, vulnerable populations, and visitors. We use the highest estimated numbers to develop our plan to accommodate for the worst-case scenario. Evacuation clearance times outside of peak days are not expected to be considerably different from a planning perspective due to the relative stability of the residential population base and minimal tourism numbers, as well as high vehicle ownership within the community.

If an evacuation occurred on a weekday during working hours while commuters are outside of the Town, there may be fewer vehicles on the highway; however, the remaining residents of single-vehicle households would require alternate transportation. It was decided that there are too many variables to accurately model this assumption.

Design Scenario	Total # of evacuees	Number of vehicles[2]	Require transportation[3]	Predicted destination	Require group lodging	Require evacuation assistance
Peak summer weekend day	20,000	10,000	400	Penticton Oroville (USA) Keremeos Grand Forks (dependant on location of hazard)	250	150
Peak summer weekday during business hours	15,000	7,500	400		250	150

[2] Due to the demographic and location of the Town, it is assumed that 90% of residents will have access to a vehicle
[3] It is assumed that during summer weekdays the population figure that requires transportation is comparatively higher than that of a weekend based on numbers of single vehicle families

Assumptions

General Assumptions about emergency planning include:

- Emergency management is a dynamic process. This means that the current plan is a snapshot of preparedness activities and actual events may require a change in what has been written in the plan. The Evacuation Route Plan should be regularly tested, reviewed and adapted to reflect lessons learned from tests and actual experiences.
- Emergency response requires room for flexibility and improvisation. The nature of emergencies and disasters is such that not all aspects of a response can be planned for. The structures and systems described in the Evacuation Plan should are therefore guidelines that can be adjusted and adapted by those responsible for evacuation.

Specific Assumptions about Evacuation Planning are:

- **Shelter-in-Place**
  - Spontaneous Evacuation may occur despite warnings to shelter-in place rather than evacuate

- **Evacuation**
  - Spontaneous evacuation will occur when there is enough warning of the threat. Between 5 and 20 percent of the people at risk will self evacuate before being directed to do so.
  - Some people will refuse to evacuate, regardless of the threat
  - Some individuals will require transportation support to evacuate
  - Some owners of animals will refuse to evacuate unless arrangements have been made to care for their animals
  - Many evacuees will seek shelter with relatives, friends or motels rather than use government-provided facilities
  - For some hazards, such as flooding and tsunami, designated evacuation routes must be used to safely evacuate people.
  - The day of the week and time of day will determine if individuals/families will be at their homes or separated at work/school
  - Many hazards provide a warning period which allows for a planned evacuation and re-entry
  - Approximately 10-20 percent of the population impacted will require some form of assistance from local ESS teams in Receptions Centres or Groups lodging facilities. This figure could vary depending on the compositions of the community.

Concept of Operations

Framework and Principles

In order to safely and efficiently evacuate the residents of the Town of Osoyoos, it is essential to establish a shared comprehensive framework that clarifies organizational structure, roles and responsibilities of stakeholders, and coordination processes. The Concept of Operations (CONOPS) for evacuation is based on the BC Emergency Management System (BCEMS) which was developed under the BC Emergency Program Act to standardize practice for all municipal and provincial governments and is the recommended *best practice* for all stakeholders in BC.

This CONOPS aims to aid evacuation planners in planning and coordinating all evacuation operations with multiple stakeholders at various levels and jurisdictions. This section provides an overview of the common framework and guiding principles that will be used during a mass evacuation scenario for the Town of Osoyoos, including BCEMS, Incident Command System (ICS), Unified Command (UC), inter-agency communications and standard operating procedures.

An overview of the coordination and management of an evacuation is also provided. The specific roles and responsibilities of each agency involved in evacuation are covered in the Roles and Responsibilities of Agencies section.

BC Emergency Management System (BCEMS)

BCEMS is a comprehensive framework that helps ensure a coordinated and organized approach to emergency and disaster response. Developed under the authority set out in the BC Emergency Program Act and the Emergency Program Management Regulation, BCEMS is standard practice for all provincial government ministries and Crown corporations as indicated in the Regulation. It is an emergency management system founded on the principles o the Incident Command System and includes common language, span of control, and management by objective and scalability. BCEMS is the recommended 'best practice' for all emergency management stakeholders in BC and applies to emergencies, disasters and catastrophic events. It operates under four operational levels: Site level, site support, provincial regional coordination, and provincial central coordination.

Incident Command System (ICS)

ICS is a standardized on-scene incident management concept designed specifically to allow responders to adopt an integrated organizational structure equal to the complexity and demands of any single incident or multiple incidents without being hindered by jurisdictional boundaries.

An ICS enables integrated communication and planning by establishing a manageable span of control. An ICS divides an emergency response into five manageable functions essential for emergency response operations: Command, Operations, Planning, Logistics, and Finance and Administration.

Unified Command

Although a single Incident Commander normally handles the command function, an ICS organization may be expanded into a Unified Command (UC). The UC is a structure that brings together the "Incident Commanders" of all major organizations involved in the incident in order to coordinate an effective response while at the same time carrying out their own jurisdictional responsibilities. The UC links the organizations responding to the incident and provides a forum for these entities to make consensus decisions. Under the UC, the various jurisdictions and/or agencies and non-government responders may blend together throughout the operation to create an integrated response team.

The UC is responsible for overall management of the incident. The UC directs incident activities, including development and implementation of overall objectives and strategies, and approves ordering and releasing of resources. Members of the UC work together to develop a common set of incident objectives and strategies, share information, maximize the use of available resources, and enhance the efficiency of the individual response organizations.

Coordination and Management of Evacuation

Site Level

Incident Commander/Unified Command

- The Incident Commander provides information and recommendations to the EOC for when an Evacuation Alert, Order or Rescind needs to be issued
- If the emergency situation shows an immediate threat to the health and safety of people, the Incident Commander can initiate a Tactical Evacuation
- Confers with the EOC (if activated) to determine area to be evacuated, proposed evacuation routes, Assembly Points, etc.
- Provides regular situational awareness to the EOC and EMBC on variety of topics
- Agencies, organizations, and partners at the site level should have representatives in the EOC in order to provide information and coordinate communications

First Responders

First Responders work at the site level of an event and include police, fire and ambulance. Activities of first responders include medical response, firefighting and managing crowds or evacuation zones. When a local authority EOC is activated, police and fire first responder agencies provide situational awareness to the local authority and submit requests for support to the local authority EOC. The BC Ambulance Service provides situational awareness and coordinates resources through the PREOCs and PECC.

Site Support

Emergency Operations Centre

- Activates the evacuation plan
- Supports the Site Level operations with resources and information, as required
- Initiates/authorizes early evacuation for vulnerable people and livestock
- Manages all aspects of the evacuation cycle including providing support to evacuees through ESS
- Ensures evacuees have essential supplies such as food, water, beds, sanitation services, clothing, and medical equipment and supplies
- Prepares for and coordinates Evacuation Alerts, Orders and Rescinds including the mapping of the evacuation area, and the identification of evacuation routes and reception centre locations
- Identifies and notifies potential host communities, maintains communication between identified host communities through the full evacuation cycle
- Tracks and records information on evacuation details, such as areas and numbers of impacted individual
- Provides concise, consistent, transparent, and accurate information to the public and the media
- Ensures elected officials have been alerted and kept informed
- Tracks costs and resources

Emergency Support Services (ESS)

- Works with EOC to determine locations of Reception Centres and Group Lodging
- Establishes and manages Reception Centres and Group Lodging facilities, under direction from the EOC
- Communicates resource needs to EOC
- Provides regular situational awareness to the EOC and EMBC on variety of topics, such as number of registrants, approximate value of referral distributed, additional supports required, and current status of operations
- Coordinates with local animal rescue organizations to provide transportation and shelter for pets and ensure pet owners have information for evacuating their pets

Provincial Regional Coordination

EMBC has its headquarters in Victoria and incorporates six regional offices. During an emergency, one or more of the PREOCs will activate as required, in support of local authorities and provincial ministries. PREOCs are responsible for the provision and coordination of provincial support or local authorities and First Nations within designated regional boundaries.

The PREOC for the Town of Osoyoos is covered by Central PREOC, located in Kamloops.

Local Authority

Local authorities include municipalities and regional districts. Local authorities hold primary responsibility for emergency planning, response and recovery within their jurisdictions. Under Section 6(2) and 6(3) of the Emergency Program Act, the local authority must develop emergency plans for response and recovery as well as establish an emergency management organization to develop and implement emergency plans and other preparedness, response and recovery measures.

During an emergency or disaster, the local authority will activate its emergency operation centre (EOC). In larger events, neighbouring local authorities may choose to run a joint EOC. Through the EOC, the local authority performs the following tasks:

- Assess the situation
- Provide support to the first responders, including resources
- Provide public information, including media briefings
- Coordinate the provision of food, clothing, shelter, and transportation
- Liaise with volunteer groups
- Provide situation reports to the PREOC
- Track finances
- Coordinate recovery of essential services
- Coordinate community recovery efforts
- Authorize States of Local Emergency, Evacuation Alerts, Orders, and Rescinds
- Provide policy direction and establishes priorities during all phases of an evacuation, base on recommendations by the EOC Director or Chief Administrative Officer (CAO)

Provincial Central Coordination

Emergency Coordination Centre (ECC)

The Emergency Coordination Centre (ECC) is a 24-hour centre that records, reports and monitors emergency incidents across the province 365 days per year. If an emergency incident occurs with potential to escalate or has required the activation of the local emergency operations centre(s), the ECC will contact designated EMBC regional and headquarters staff. EMBC staff will activate the PREOC and/or PECC if deemed necessary. The ECC facilitates the flow of information within and between agencies and senior officials if local telecommunications are impacted.

Provincial Emergency Coordination Centre (PECC)

The PECC is the central EOC responsible for the overall coordination of the integrated provincial response and implementation of the provincial priorities. The PECC is located in Victoria.

During activation, the activities of the PECC include:
- Supporting PREOCs;
- Coordinating provincial response and recovery activities;
- Assigning provincial critical resources;
- Providing provincial messaging;
- Creating and distributing provincial situation reports;

- Liaising with the federal government;
- Ensuring provincial senior officials are apprised of provincial response activities; and
- Implementing policy directives received from the Central Coordination Group (CCG)

Central Coordination Group (CCG)

During large emergency responses the Central Coordination Group (CCG) is activated to ensure cross-government and multi-agency coordination of response activities. The primary function of the CCG is to provide strategic direction as well as oversight of provincial integrated emergency response and recovery activities to the PECC. Participation is hazard-based and includes senior representatives from ministries/agencies with responsibilities associated with the event.

Organizational structure of the CCG is determined by the hazard type and the identified consequences or potential consequences of an emergency or disaster. It is generally co-chaired by EMBC and a senior representative (Executive Director or ADM level) from the ministry with primary responsibility for the event hazard.

Interagency Communications

The Town of Osoyoos manages its own Emergency Management Program with support from the RDOS, when requested. In the event of an emergency or disaster event that exceeds the capabilities of the Town, the RDOS will open their EOC in Penticton on behalf of the Town and manage the event under the authority of the Town.

Roles and Responsibilities of Agencies

Executing a mass evacuation that could require sheltering in a neighbouring community requires many agencies and clarity on the role of each. This section outlines the general roles and responsibilities of local, provincial, federal, private and not-for-profit agencies during a mass evacuation of the Town of Osoyoos.

When preparing for, or executing an evacuation, there are roles and responsibilities common to all agencies which include:

- Participate in evacuation planning and exercises
- Activate agency EOC when notified of mass evacuation
- Provide a representative to the local government EOC. If this is not possible, provide a 24/7 direct point of contact.
- Provide situational updates to the local government EOC

Local Government Agencies

Town of Osoyoos

- Lead all aspects of emergency preparedness, response, and management within municipal boundaries

- Assist in coordination and liaison with neighbouring local governments and provincial agencies.
- Monitor events and issue warnings
- Activate EOC to facilitate centralized decision-making, acquire and coordinate resources (vehicles, personnel, equipment)
- Primary communication and coordination link between agencies and organizations involved in the evacuation
- Provide data and information to response and support agencies
- Issue alerts, orders and rescinds on behalf of the Town with pre-consultation to the Town
- Assist individuals that cannot evacuate themselves
- Provide updated public information
- Oversee and monitor the evacuation process
- Coordinate damage assessments to facilitate the re-entry process

Regional District of Okanagan Similkameen (RDOS)

- Participate in Regional Emergency Program

When requested by the Town:

- Assist the Town with coordination and liaising of local stakeholders
- Assist with coordination and liaising of neighbouring local governments and provincial agencies
- Provide IC as appropriate
- Provide cascade or dissemination of evac orders (door-to-door, Local emergency comms system) as appropriate
- Support evacuees with Emergency Social Services (ESS)

Osoyoos Indian Band (OIB)

- Liaison in EOC
- Subject matter expert on sensitive or culturally significant land
- Assist with evacuation planning and implementation

RCMP

Operating on behalf of the local authority, as requested from the local government:

- Support the notification of an Evacuation Order to the community
- Request capacity support from Ground Search and Rescue (GSAR) for community evacuation notifications
- Staff security checkpoints for evacuation area to support public safety
- Facilitate temporary access as directed by Local Authority or First Nation, and/or responding agency
- Support repatriation upon Evacuation Rescind

Osoyoos Fire Rescue Services

- Assist with notifications

- Assist with stabilizing and directing residents away from the hazard
- Fill positions in EOC if requested
- Communicate situational awareness

BCEHS

- Respond to medical emergencies reported through 911
- When emergent, assist with movement of residents of care facilities
- EOC/Frontline – standby for emergency provision for staff
- EOC participation as needed

School District #53

- Report to superintendent's office
- Responsible for evacuation of students and staff during school hours
- Provide area of refuge (schools)
- Provide transportation (school buses)
- Manage evacuation of schools
- Coordinate with EOC on transportation and resource requirements

Provincial Government Agencies

Emergency Management BC (EMBC)

- Through activation of the Provincial Regional Emergency Operations Centre (PREOC), or Provincial Emergency Coordination Centre (PECC), or the Regional Duty Manager, as required
- Coordinates any national and international supports required for impacted communities
- Hosts daily coordination calls for Local Authorities, First Nations, and all responding agencies
- Provides connection and coordination between all responding parties
- Reviews and provides feedback on evacuation plans for the impacted community
- Assist with evacuation route planning and re-entry planning, upon request
- Assist in executing evacuations by way of resource requests or expenditure authorization for critical resources (e.g. transportation services, security, physical blockades, Search and Rescue)
- Assist with communications to evacuees and the general public
- Accesses provincial volunteer resources (Search and Rescue, ESS Mobile Support Team, Provincial Emergency Radio Communications Service, PEP Air, Road Rescue) as required

Interior Health

- Check water quality prior to re-entry
- Execute evacuation plan for Interior Health run assisted-living
- Coordinate with EOC for transportation and resource requirements

- Continuity of care for home health and mental health community clients
- Provision of a health care system liaison at ESS

Fortis BC

- Coordinate and help execute gas system isolations
- Monitor the threat area, expand the gas system shutdown if required
- Communicate with other agencies to maintain safety
- Restore gas assets safely once the evacuation is rescinded
- Shut down gas where appropriate
- Provide liaison for EOC
- Work with IC at site level
- Ensure public messaging related to gas safety is accurate and available
- When possible, have community reps at reception centres to offer an provide support
- Coordinate with IC to plan and execute restoration and re-lights of gas appliances

Ministry of Agriculture (AGRI)

- Provides advice to farmers, aqua-culturists and fisheries on the protection of crops, livestock, and provincially managed fish and marine plant stocks
- Coordinates the emergency evacuation and care of poultry and livestock
- Provides support to lead agencies, Local Authorities, First Nations, and agriculture producers, including with the planning and execution of livestock evacuation, emergency feeding, sheltering and care
- Provides support to EOC/CCs, PREOCs, and the PECC with assessing temporary access requests by individual agriculture producers
- During an animal health emergency, establishes quarantine or control zones that may prohibit, limit, or impose requirements in respect to the movement of persons into, from, or within the area
- During a plant or animal disease incident, or pest outbreak, serves as the Provincial lead agency for response, coordinating with the Canadian Food Inspection Agency as required

BC Wildfire Service (BCWS)

For wildfire hazard events:

- Leads the response of all operations to wildfire hazard
- Provides recommendations to First Nations and Local Authorities on Evacuation Alerts, Orders, and Rescinds
- Assists with delineation and mapping for boundaries of recommended Evacuation Alerts and Orders
- Provides recommendation on safety of temporary access
- Provides public information regarding Evacuations, in support of and in close conjunction with EOC/CC
- Maintains consistent and effective communication platforms and structures with EOC/CC and RCMP

- Provides technical expertise where requested for flood hazard event, as requested by PECC and/or PREOCs
- Provides resources, communications and logistical support

Ministry of Children and Family Development (MCFD)

As required, through support and coordination with the Emergency Management Unit, MCFD:

- Liaises with EMBC through regional and Provincial coordination calls
- Provides support to Service Delivery Areas and Local Service Delivery offices in the continuity of services
- Provides direct assistance to caregivers and contracted care providers in impacted areas
- Maintains a mechanism for the tracking of displaced children and youth in care
- Receives, assesses, and responds to reports of unattended children •
- Upon request, liaises with communities to assess need for local MCFD representation during major evacuations

Ministry of Environment (ENV)

- Monitors, augments, or takes over the response to hazmat incidents related to evacuations
- Provides technical advice to EOC/CCs, PREOCS, or the PECC, First Nations or Local Authority fire departments, public works, or other agencies or parties to support a timely effective response to hazmat incidents or consequences related to evacuation
- In regard to hazardous spills, identify and evaluate the immediate risks to and impact on the environment, human health or infrastructure and as necessary advise agencies or parties to take protective action in relation to the spill, which would include evacuations
- Declares a State of Environmental Emergency when required
- Orders response or recovery actions to protect the environment and human health

Forests, Lands, Natural Resource Operations and Rural Land Development (FLNRORD)

In response to flood hazards, and through the PREOCs and/or PECC:

- Through River Forecast Centre (RFC), issues advisories and provides forecast updates to First Nations and Local Authorities
- Communicates with First Nations and Local Authorities and Diking Authorities on flood mitigation works
- Provides technical advice and specialist expertise, support services, and staff for PECC/PREOCs

Health Emergency Management BC (HEMBC)

- Provides leadership and support to health sector
- Responsible for providing health services and care to existing patients and clients
- Evaluates the risk to affected communities and moves patients to health care facilities in other communities, as appropriate, usually during the Evacuation Alert stage

- Tracks outpatients during evacuations (those receiving home care, outpatient treatments, etc.) and makes certain outpatients are continuing to receive specialized care in host communities
- Provides psychosocial support to evacuees through the Disaster Psychosocial Services (DPS) program
- Prior to an Evacuation Rescind being issued by the EOC/CC, health authorities work to re-establish key health services
- During re-entry, health authorities utilize appropriate health programs to provide public health advice and guidance (e.g. how to address houses contaminated by moulds or freezers filled with rotten food)

Ministry of Transportation and Infrastructure (MoTI)

In respect to provincial highways:

- Works closely with First Nations and Local Authorities, and the RCMP during the pre-planning of an evacuation with regards to the selection, capacity, and conditions of proposed evacuation routes, and ensuring that all detours are viable for all types of traffic
- Provides assistance strategizing on proposed messaging to the public through DriveBC about alternate routes once an Evacuation Order is in effect
- Assists RCMP with traffic control and posts signage at key decision points along the evacuation route
- Local Maintenance Contractors conduct roving patrols, assisting evacuees with breakdowns along the route or fuel shortages etc.
- Responsible for staffing all checkpoints on provincial highways
- Prior to Evacuation Rescind, works closely with EOC/CC to establish timing of repatriation, and ensuring transportation infrastructure is in a condition to support evacuees returning home

Federal Government Agencies

Canadian Armed Forces (CAF)

Through written request by the Province in the form of a Request for Federal Assistance (RFA):

- May provide extraction services to trapped evacuees
- May deliver emergency resources to difficult-to-reach areas
- May provide any needed support as authorized by RFA Coordinated by the Joint Rescue Coordination Centre in Victoria, leads all Marine or Aircraft Search and Rescue

Indigenous Services Canada (ISC)

- ISC enters into service agreements with the Provinces, Territories or other response agencies, who in turn support evacuation from reserves during emergencies. ISC reimburses evacuation costs and supports First Nations and partners to resolve jurisdictional questions and other issues as they arise. Additionally, under ISC's Build Back Better Strategy Guide, the Department can contribute funding for additional social and cultural supports such as traditional foods and cultural continuity services.

Innovation, Science, and Economic Development Canada (ISED)

- Acts as the federal coordinator for telecommunication stakeholders whose infrastructure may be impacted
- Works closely with telecommunication carriers to support their efforts to mitigate or restore impacted services
- Acts as federal representation of the telecom stakeholders' interests in efforts such as temporary access, fuel prioritization, power re-energization, credentialing, public communications, international assistance, and the movement of resources
- Manages the information flow to and from telecom stakeholders and other federal government departments, particularly Public Safety Canada

Public Safety Canada (PSC)

- Coordinates Provincial Request for Federal Assistance (RFA) and works with federal family to provide support on behalf of the Government of Canada

Royal Canadian Mounted Police (RCMP)

Operating on behalf of the Local Authority or First Nation:

- Supports the notification of an Evacuation Order to the community
- Requests capacity support from Ground Search and Rescue (GSAR) for community evacuation notifications
- Staffs security checkpoints for evacuation area to support public safety
- Facilitates temporary access as directed by Local Authority or First Nation, and/or responding agency
- Supports repatriation upon Evacuation Rescind

Private Entities and Non- Profit Agencies

Canadian Red Cross (CRC)

Upon invitation from a Local Authority of First nation, and with approval from EMBC funding:

- Provides capacity support to local ESS team
- In the absence of local ESS, manages the ESS framework for evacuees

Ground Search and Rescue (GSAR)

Upon request by the RCMP or the EOC/CC:

- Provides support to RCMP for community notifications of Evacuation Alerts/Orders
- Provides short-term temporary checkpoint support until appropriate contracted resources arrive

Animal Lifeline Emergency Response Team (ALERT)

Upon request from local authorities:

- Setup of temporary animal relief shelters
- Evacuation of animals
- Rescue of abandoned or stranded animals
- Implementation of a record keeping and identification system
- Transportation of animals
- Coordination of veterinary care for sick or injured animals
- Coordination of animal food and supplies
- Compassionate removal of animals who don't survive the disaster
- Lost animal documentation
- Reuniting animals with caregivers
- Facilitating fostering and/or adoption of unclaimed or surrendered animals
- Maintenance of animals sheltered in place

Oil and Gas Commission (OGC)

- Monitors oil and gas activities in immediate area and prescribed zone around area
- Contacts permit holders with assets within and surrounding evacuation area to ensure they are aware of the situation and taking precautions, if necessary, and enable ongoing communication between responding parties
- Releases safety advisories to permit holders updating them on emergency event conditions

Evacuation Routes, Assembly Areas, and Transportation

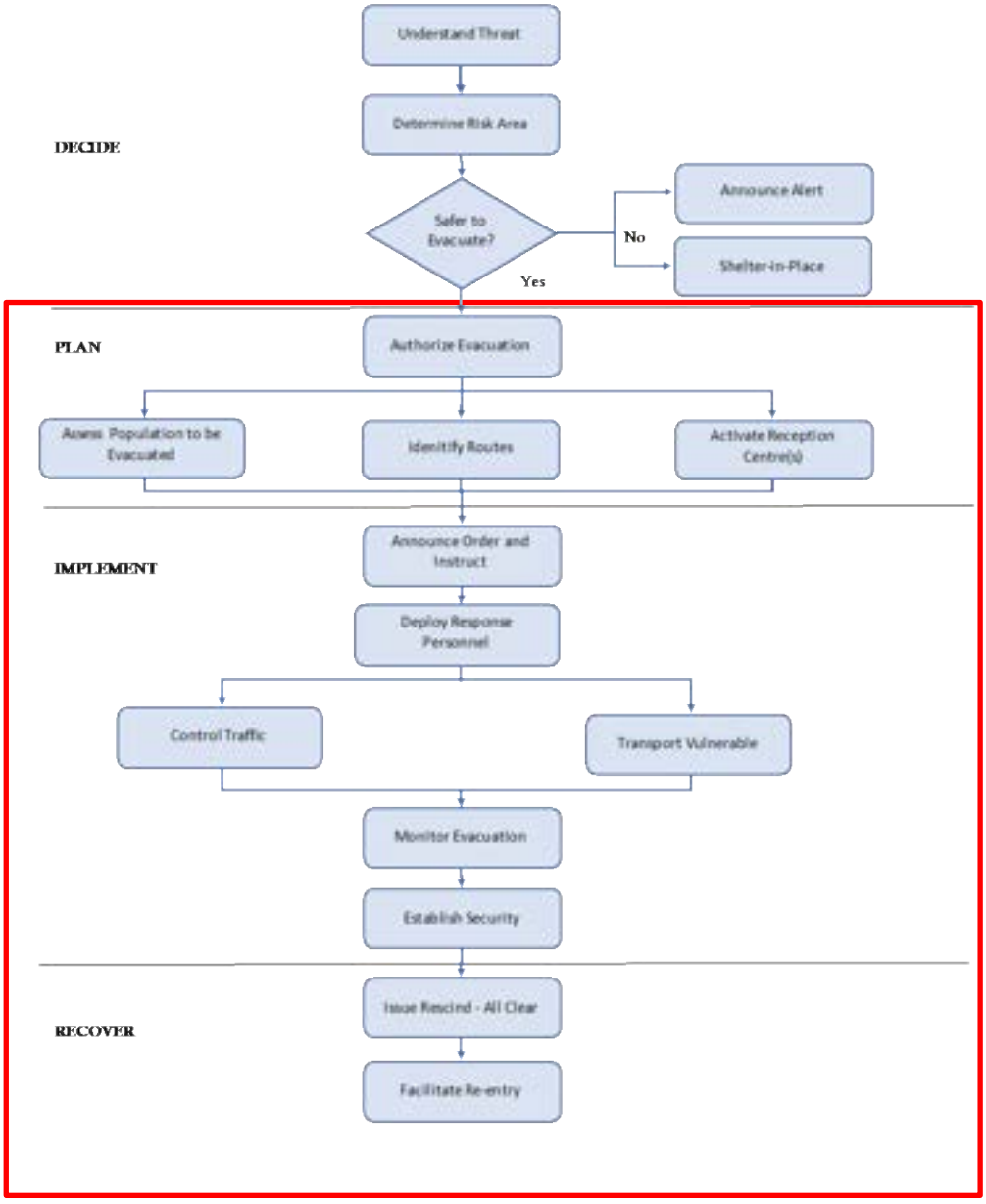
There are several strategies, techniques, and tools available to direct and control traffic during an evacuation. Evacuation strategies are implemented to best manage or enhance the capacity of the highway, modify routes to keep traffic moving, and manage the evacuation safely. A mass evacuation of the Town would likely overwhelm the capacity of the highway. As a result, during an evacuation of the Town, evacuation strategies will be required to reduce congestion and keep traffic moving. Traffic congestion is well-documented and is known to lengthen evacuation clearance times, contribute to evacuee discomfort and stress, and increase demand for enroute services such as food, water, fuel, emergency response vehicles and tow trucks. This section provides an overview of the different strategies available to the Town.

The specific evacuation scenario at the time of the emergency and the availability of resources, will dictate which strategies are implemented and in what capacity. Not all evacuation strategies will be viable or appropriate in every evacuation scenario. This section should be considered a toolbox for decision makers, meaning that only those strategies required and viable for the specific evacuation scenario will be implemented.

Decision to Evacuate

The Evacuation process involves the removal of people, animals and livestock from a dangerous or potentially dangerous area to a safer location.
The Evacuation Route Plan will outline procedures and resources for all activities within the section defined by a red rectangle, including:

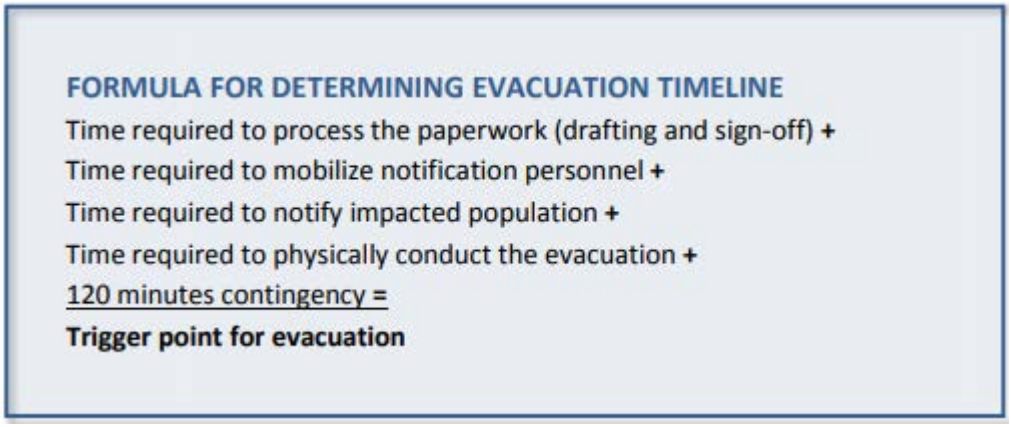
- ✓ Prioritizing/Phasing
- ✓ Egress
- ✓ Assembly points
- ✓ Vulnerable populations
- ✓ Animals and Livestock



The identification of trigger points and indicators will likely happen on an ad hoc basis, dependant on the type of hazard being dealt with. To facilitate the planning process, an overview of what is involved as well as a formula to facilitate the decision-making process has been provided below.

Ordering residents to evacuate is recognized as one of the most difficult decisions a local authority is likely to make. It should occur when the Director of the Emergency Operations Centre, in consultation with the Incident Commander, decides that the risk to the community is high or the community can no longer provide the necessities of life (food, water, shelter).

Timing is important; considering that ordering an evacuation too far in advance can expose the evacuees to unnecessary hardship and/or create a complacency for future evacuations. The general formula for determining the time needed to conduct an evacuation is provided below:



A detailed process and timeline for evacuation procedures for the Town of Osoyoos can be found in the Operational Guide.

Evacuation Zones

As part of evacuation planning, the Town of Osoyoos has identified evacuation zones. Evacuation zones delineate the population by area for the purpose of location-specific evacuation planning and response. During the evacuation planning phase, evacuation zones allow officials to evaluate the hazards, demographics, emergency traffic demand and egress routes of specific areas. During evacuation response, evacuation zones allow officials to issue evacuation alerts and orders to specific areas and to provide tailored information and instructions by location. Evacuation zones allow officials to provide residents and visitors with clarity on what actions they need to take based on their location and proximity to the hazard. It is critical that residents and employees know which evacuation zone they live and work in.



Evacuation Phasing

Evacuation phasing involves scheduling the departure times of evacuees by evacuation zone, so that people are evacuated in stages, rather than all at once to reduce congestion on roadways. Although the goal of an evacuation is to move people away from the threat as quickly as possible, a single concentrated travel departure pattern can inhibit overall traffic movement, particularly where there are critical constraints, such as intersections and merging lanes. In addition, because evacuations usually involve movement in a single direction away from the hazard, evacuees closest to the hazard can sometimes experience the longest travel times.

Although a phased evacuation may take longer overall to execute, it will provide a more efficient systematic evacuation through better traffic control, lower highway volumes and will decrease the likelihood of backups and driver travel times. Whenever possible, a phased evacuation is preferable. Public communication will be critical to promote trust and adherence as compliance with a phased approach may be challenging if people perceive a serious threat.

There are different strategies to implement phased evacuations, and the specific evacuation scenario at the time of the emergency will dictate if, and in what capacity, a phased evacuation is implemented. These strategies include:

1. Issuing sequential evacuation orders that begin evacuations in areas closest to the hazard first, and then working away from the hazard. This ensures that people most at risk are moved out of the hazard area first.
2. Issuing evacuation orders to evacuation zones closest to the outbound end of the community first and working backwards across the community. This strategy moves the outbound neighborhoods out of the way, so inbound traffic can move through.
3. Evacuating the neighborhoods with the densest population areas first, as this will take the longest.
4. Asking non-resident populations to leave during the evacuation alert stage to reduce the number of people that need to evacuate once the need for evacuation is confirmed and an evacuation order is issued.
5. Allowing people, who will take more time to evacuate (e.g. people with disabilities or medical health issues), to leave first to ensure they have the time they need to evacuate safely.

Note: Because it is impossible to enforce phased evacuations, these are a guidance-only strategy and will need to be included in public education prior to an evacuation, and once an evacuation is possible or confirmed. Public information is important to avoid shadow evacuees: people outside a declared evacuation zone, who evacuate unnecessarily or at the incorrect time. Shadow evacuees congest roadways and inhibit the egress of those evacuating from an area at risk.

Destination Assignment

Another strategy to modify demand in an evacuation is to assign evacuees to specific destinations. Destination assignment involves assigning evacuees to specific routes and destinations to decrease congestion on main evacuation routes. This strategy involves asking or directing evacuees, or in a worst-case scenario implementing roadblocks to compel compliance to a specific route or destination. In the Town of Osoyoos this would likely involve asking or directing some people to evacuate east and west, as one assumption is that congestion will be heavier heading north if evacuation routes to the north are open.

While destination assignment is an option, it is preferred that people are able to select their own route and destination, as they are more likely to have support at their preferred destination. If circumstances justify destination assignment, it is preferred that it be voluntary. Making destination assignment mandatory by way of a roadblock should be a last-resort option, as it can force people to unfamiliar areas where they lack support, and separate families and friends. Only in the most immediately life-threatening situations should people be evacuated without being able to gather their family, friends and pets.

Assembly Points

Designated Assembly Points serve as locations where those individuals without transportation will congregate in order to be transported to an Evacuation Point or designated Reception Centre. Assembly Points should be a large area and well-known to the general public. Areas such as shopping, and community facilities serve as appropriate spots for such Assembly Points.

Appropriate signage will be required leading up to each of the Assembly Points to assist those arriving on foot. The coordination of buses for transportation between the Assembly Points and Reception Centers is critical in the success of the evacuation process.

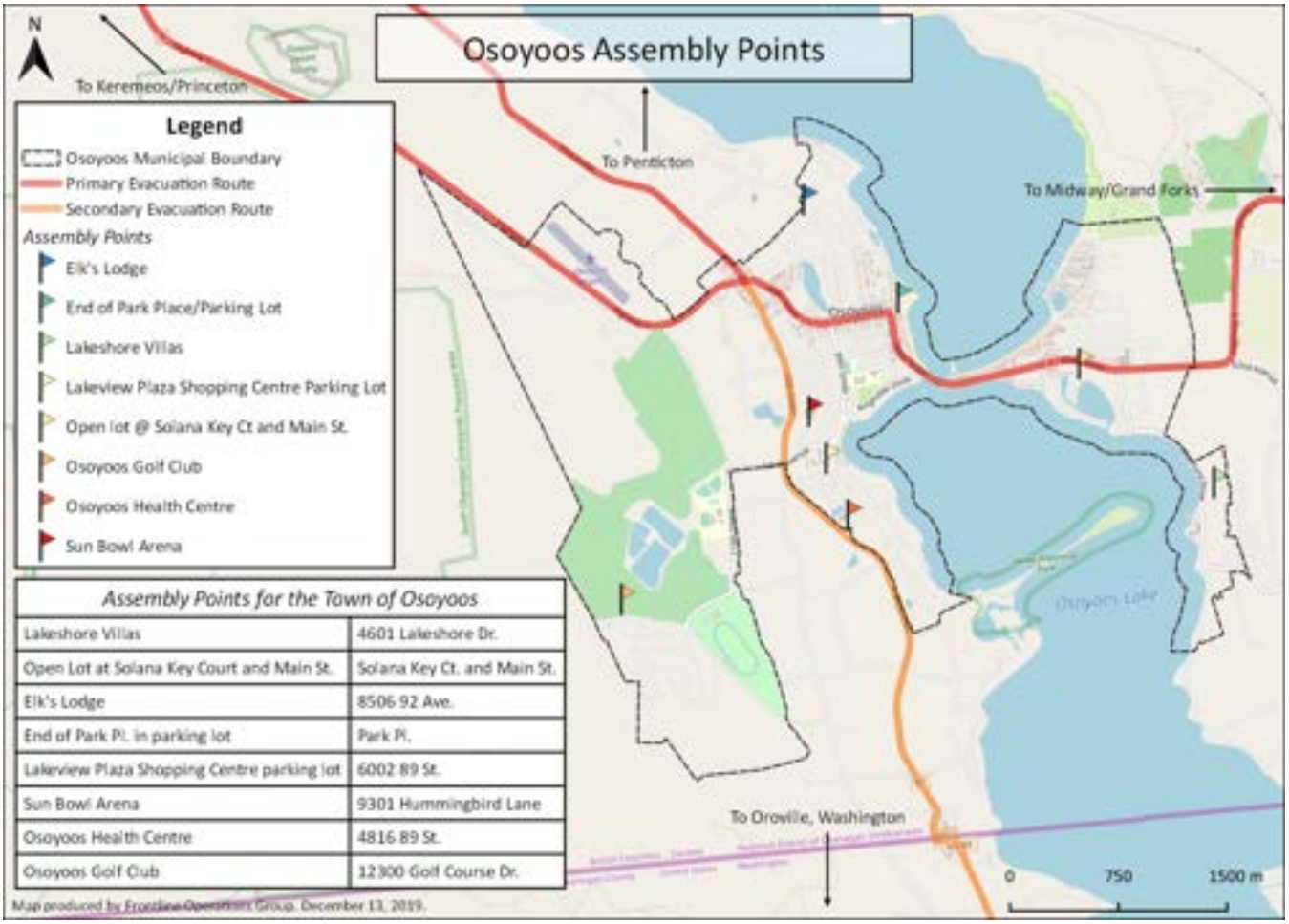
There will be some individuals who may be unable to get to an Assembly Point due to physical limitations. Those individuals must be encouraged to call the Emergency Call Centre (if activated) and advise that they will require assistance. This specific messaging must be included in any press releases by the Information Officer.

Transportation Assistance

People who are unable to travel to the designated assembly points for transportation should develop a personal emergency plan with a family, friend or neighbour that can provide them assistance and/or transportation assistance. If this is not an option, they will be directed to contact the EOC to arrange transportation directly from their residence. The EOC call center will ask a series of questions to determine transportation needs and forward the information to the EOC Operations desk for review and implementation. Details about accessible transit resources is available in the Operational Evacuation Plan.

Requests for Additional Transportation Resources

With its semi-remote location and limited municipal resources, it is highly unlikely that available transportation resources will be sufficient to meet the demand for transportation in a mass evacuation. Transportation resources will be required from outside the region. At the request of local government, EMBC will coordinate and provide additional resources in support of evacuation operations. The local government should put in a resource request for extra transportation resources, ideally as soon as an evacuation is considered and definitely at the evacuation alert stage. This is included in the Operational Evacuation Plan pre-evacuation checklist.
Pre-determined assembly areas for the Town are as follows:



Transportation Options for People with Pets

In addition to people, pets must also be considered during evacuation planning. For the purpose of this plan, household pets are defined as domesticated pets (e.g. dogs, cats, birds, rodents) that are traditionally kept in the home for pleasure, rather than commercial purposes and can travel in commercial carriers and be housed in temporary facilities. In coordination with EMBC, the Town will make every attempt to ensure that dedicated transportation resources are available to people with pets.

Reception Centers

Reception Centers are safe gathering places for people displaced from their homes as a result of an emergency or disaster. At a Reception Centre, individuals can register and receive Emergency Support Services (ESS) as well as information about the emergency situation including the evacuation.

The services that are provided at a Reception Centre include, but are not limited to:
- Registration
- Referrals for food, clothing, lodging and/or amenities
- Reunification with family or friends
- Emotional support
- Assisting persons with special needs
- First aid
- Multi-cultural services
- Pet care

Pre-determined reception centres for the Town are as follows:



Cross-border Evacuation

There is no formal provincial procedure in place for evacuations that require citizens to cross the U.S border to reach safety. If a hazard presents itself that limits evacuation route options to southbound, across the U.S border, it will involve coordination with Canadian Border Services, Canadian Customs and Immigration, U.S Customs and Border Protection and U.S Emergency Management. Ideally, the evacuation across the border will have a pilot and a sweep vehicle guiding all vehicles with evacuating citizens across the border as a convoy. Alternatively, buses will be used, and private vehicles will be left at home or at assembly points. This decision will be based on the nature of the hazard.

Further detail for cross-border evacuation considerations and procedures can be found in the Operational Guide.

Traffic Management

Coordination

The EOC, in coordination with the RCMP, will provide direction on the best routes to be used to facilitate an evacuation. Routes may need to be selected at the time of the incident depending on the type of hazard and degree of risk. This plan will identify the best and most direct routes out of the Town, with a focus on high risk neighbourhoods. Evacuation Routes should be separate from disaster routes intended for use by emergency responders and support vehicles. As Osoyoos is located at the intersection of highway 3 and highway 97 - a main transport route between the Kootenay's, the Okanagan and the lower mainland - excess traffic could quickly impede the ability to evacuate residents.

The following factors should be considered when selecting evacuation routes:

- Most evacuees utilize personal transportation
- Approximate vehicle capacity thresholds for routes based on
    - An average flow rate of 800-1,200 vehicles/hour/lane on arterial roadways
    - Average flow rate of 1,800 vehicles/hour/highway
- In Osoyoos the flow rate would be 10,000/day including local and visitor vehicles - if we extrapolate this for a 12hr period only this would result in 833/hour. According to the 2016 census data, Osoyoos roadways are most congested between 6 – 8 am and 4 – 6 pm.
- The average vehicle occupancy is four persons but evidence from real life evacuation show that families will tend to use two vehicles if they have them
- Route markings and identification
- Safety and condition of infrastructure
    - Bridges
    - Roads

Traffic Control

The EOC Director and RCMP liaison will approve traffic controls and management in consultation with MoTI. Measures may be established and controlled at key intersection and at access control points to major evacuation routes if needed.

In some cases, it may be necessary to control traffic on other routes to minimize impact on the evacuation traffic. The following information, may assist in planning;

- Many commuters will return home to gather family and belongings before beginning an evacuation
- Time of day (morning vs. night) and day of the week (weekday or weekend) will dictate where people will be and will affect the number of evacuees that may need assistance and/or transportation
- Evacuation routes may require maintenance and blockage extrication to keep routes flowing. On the highway, this is the responsibility of MoTI, all other roads throughout the Town are the responsibility of the municipality.
- Emergency and support vehicles require clearly identified lanes/routes to provide not only access to the evacuation/shelter-in-place zone, but also to exit from the zone
- Assembly points need to be locations that are familiar with the population at risk
- Mass transit routes may require a designated route or lane to facilitate and promote use of this means of evacuation

Strategies

Many traffic management strategies exist to help expedite the evacuation process. While all strategies are intended to improve evacuation traffic flow, any potential impacts should be considered in decision-making.

Implementing traffic management strategies in an evacuation are complex. To ensure that traffic management strategies are coordinated and implemented safely, it is recommended that a Traffic Management Plan (TMP) be developed as an addendum to the Evacuation Route Plan. The TMP would outline the specific traffic control devices that will be used and how they will be implemented. This may include text descriptions, customized traffic control layouts, and customized drawings of temporary traffic control devices (signs, signals, lighting, channelizing devices, paving markings, etc.) and traffic control persons. The TMP will meet standards of MoTI's *Traffic Management Manual for Work on Roadways.*

Some traffic management strategies to consider are:

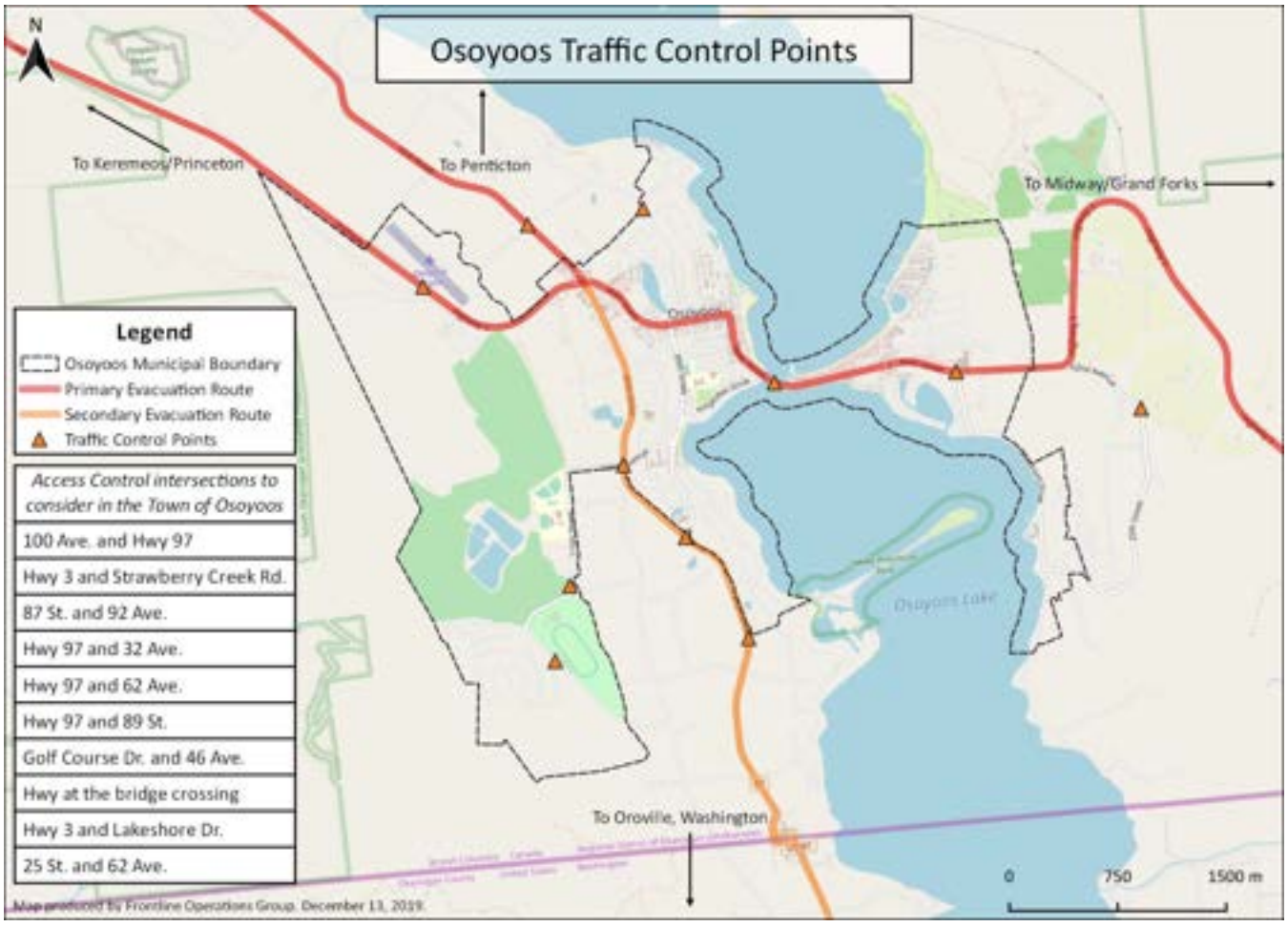
- Detours
- Road Closures and Access Control such as restricting inbound traffic to Emergency Services
- Flashing Signals
- Traffic Cones and Delineators
- Evacuation Lane Reconfiguration
- Signage
    - Dynamic Message Signs
    - Portable Changeable Message Signs

    - Printed Signage
- Modifying Highway Travel Speed
- Signal Timing Modification

Control Points

- Traffic controls should be established at key intersections and at access control points to major evacuation routes as needed
- In some cases, it may be necessary to control traffic on other routes to minimize the impact on the evacuation traffic
- The RCMP in collaboration with the IC and the EOC Operations Chief will identify the appropriate areas for traffic control points
- Each traffic control point should have a minimum of one tow truck equipped with fuel to assist stranded motorists or to remove disabled vehicles – on highway routes this should be coordinated by MoTI
- If possible, an ambulance should also be assigned to the primary control point

Potential traffic control points for the Town are as follows:



Enroute Services

During a mass evacuation, evacuees will need support enroute to keep moving. Making provisions, such as fuel stations, portable restrooms, water, tow trucks, dispersed emergency services, and shelter opportunities along the evacuation routes will improve effectiveness of an evacuation. Further traffic analysis is required to identify appropriate locations in which to station these services. However, possible staging areas could be the pull-out at Fruitvale Way or Oliver to the north and Keremeos to the west.

Fuel

Ensuring adequate fuel supplies is a key component to a successful evacuation. Fuel service must be maintained during emergencies both at pump stations in the evacuating community and at services stations enroute.

Local gas stations will be notified of a mass evacuation, as early as possible, to enable them to increase their fuel supplies in preparation for a surge in demand. If time and resources allow, fuel trucks will be staged at various locations enroute to provide emergency fuel supply and reduce the likelihood of stalled vehicles interrupting traffic flow.

Depending on the evacuation scenario, the EOC may want to consider rationing fuel to a dollar or litre limit to help avoid fuel outages. It is common during emergencies that people panic and purchase excessive amounts of fuel which can lead to insufficient fuel supplies.

Tow Trucks

Tow trucks will be stationed to attend to vehicles that are blocking traffic lanes due to mechanical problems, insufficient fuel or collisions.

Temporary Comfort Stations

If time and resources allow, temporary comfort stations will be set up along the evacuation route with portable toilets and water in locations that do not have existing rest stops.

Law Enforcement

If time and resources allow, law enforcement will be dispersed along evacuation routes to expedite response to incidents that present a safety risk to the public and/or first responders.

Security

As an area is being evacuated, access control measures must be established. Security may be obtained by establishing staffed access control points and barricades at key locations around the perimeter. The objective of access control is to:

- Provide a controlled area from which an emergency evacuation will take place and prevent entry by unauthorized persons
- Protect lives by controlling entry into hazard areas
- Maintain law and order in the hazard area
- Specific criteria for allowing entry into closed areas will be established for each incident

No Access

- Prohibits the public from entering the closed area
- Authorized personnel are the only ones allowed access (i.e. local, provincial work as required)
- Media representatives will be allowed access on a controlled basis

Temporary Access

- Allows persons into closed areas according to access criteria established by the EOC director
- Entry criteria should define the persons who will be allowed and whether motor vehicles are allowed
- A log of all vehicles/people entering the area will be kept at each point and forwarded to the EOC
- Staffing at access control points will be assigned in coordination with the RCMP and may include members of RCMP, SAR, or contracted security professionals

Access Control intersections to consider in the Town of Osoyoos
100th Ave. and Hwy 97
Hwy 3 and Strawberry Creek Rd.
87th St. and 92nd Ave.
Hwy 97th and 32nd Ave.
Hwy 97th and 62nd Ave.
Hwy 97th and 89th St.
Golf Course Dr. and Cypress Hills Dr.
Pebble Beach Dr. and 46th Ave
Hwy 3 at the bridge crossing
Hwy 3 and Lakeshore Dr.
25th St. and 62nd Ave.

Notification

The notification of an evacuation in a timely and effective manner is one of the most important steps that must be completed during an emergency event. Under the *Local Authority Emergency Management Regulation*, the Town of Osoyoos is required to establish "procedures by which those persons who may be harmed or who may suffer loss are notified of an emergency or impending disaster".

Timely notification is essential to ensure that residents are aware of the emergency situation and have all the information needed to evacuate safely. For further information and recommendations on communications during evacuations, refer to the EOC Communications Toolkit on the EMBC website.

There are several ways in which The Town of Osoyoos can notify their community of an evacuation including:

- ✓ Broadcast media – local radio and television
- ✓ Sirens
- ✓ Public address systems
- ✓ Door-to-door visits
- ✓ Notice boards
- ✓ Social media platforms (Facebook, Twitter, etc)
- ✓ Amateur radio
- ✓ Website
- ✓ Print media
- ✓ Automatic notification systems

**Send a copy of all evacuation notices to the appropriate EMBC PREOC, who can then share and amplify the information on Emergency Info BC's website, Twitter, and Facebook feeds.

Geo-based Resident Notification System

The Town of Osoyoos residents have access to the CivicReady® Mass Notification System provided by the RDOS. It is a voluntary, communication service available to residents to receive emergency and routine notifications. Residents can customize their notification preferences once signed up. Communications can be received through email, text and/or phone call.

The system enables the RDOS to draw a polygon around a geographic area on the map and send a mass notification to all residents in the area within minutes.

Using the mapping system, the RDOS, can warn residents of local hazards such as:

- A broken water main
- Dangerous wildlife frequenting residential areas
- Road failures and closures
- Flooding
- Wildfire
- Evacuation Alerts and Orders

Door-to-door

Door-to-door notification is still one of the best practices for notifying residents of an Evacuation Order. Trials and experience have shown that door knocking, when conducted by the emergency services, is the most effective method of issuing notifications during an emergency or evacuation, it is however, extremely resource intensive and slow.
If door knocking is used as a method of ordering evacuations, then it is recommended that doorknockers:

- ✓ Are uniformed members of a recognized organization
- ✓ Work from a script
- ✓ Provide handouts of written information to residents if possible

Generally, upon notification of the Order and through request, the following agencies will coordinate the door-to-door notification process for the impacted area(s) on behalf of the Town.

- ✓ RCMP
- ✓ The volunteer Fire Department
- ✓ Search and Rescue (SAR)
- ✓ Town Staff

If the capacity to provide door-to-door notifications is beyond what the Town can provide, a resource request can be submitted to the PREOC to source additional resources.

The steps for facilitating door-to-door notifications include:

- ✓ Request the assistance of the RCMP, Fire Department or SAR, and provide:
  - Evacuation Notification Kit containing:
    - Evacuation clipboard with Evacuation Recording Procedures and Evacuation Logs
    - Colour-coded flagging tape rolls
    - Waterproof pens
  - Copies of the Evacuation Order with a map of the geographic boundaries of the affected area
- ✓ Ensure each notification team has a method of communication (i.e. phone or radio)

House Marking

In British Columbia, a system of flagging tape in four different colours has been adopted which allows police and volunteers to quickly identify the status of any residence in an evacuation area.

The tape is attached to a location that can be viewed during a windshield evaluation to identify residents who:

BLUE	Not home/no answer and must be canvassed again
PINK	Have been notified of an order to evacuate
YELLOW	Have been verified as evacuated
ORANGE	Have been notified and are refusing to evacuate

Special Provisions for At-risk Populations

Residents of the impacted area may have specialized needs for evacuating. The aged, infirm, hospitalized, mentally or physically disabled, residents of nursing homes or retirement homes, daycares, schools, etc. may require specialized transportation and care to evacuate.

The facilities responsible for the care of the special group must have an evacuation plan for their site and a pre-selected destination where the needs of the special groups can be managed. They should be notified at the earliest possible time that an evacuation may occur – even before the Alert stage if possible. At this time, the EOC should engage in discussion with both the local facilities/operators and the provincial agency (IH, SD#53) to determine trigger points for evacuating these facilities.

A portion of the population with special needs, reside in family homes or their own homes and may not have a personal evacuation plan. Special populations under home care need to have a preparedness plan and identify themselves to emergency services personnel to ensure that they can be safely removed from danger.

It is recommended that the Town develop a voluntary registry to identify residents that may require additional assistance to evacuate their home.

Emergency Support Services

The local authority is required under Section 2 (3) (f) of the Local Authority Emergency Management Regulation to: "coordinate the provision of food, clothing shelter, transportation and medical services to victims of emergencies and disasters, whether that provision is made from within or outside of the local authority".

Emergency Support Services (ESS) will assist in determining types and locations of emergency shelter.

Sheltering is the process of providing for the basic needs of the affected people away from the immediate or potential effects of the hazard. In British Columbia, these provisions are provided by ESS. In situations where 50 or fewer evacuees require care, the Town can request assistance from the Canadian Red Cross, South Okanagan Personal Disaster Assistance Team. For any situation requiring the evacuation of more than 50 people, the responsibility rests with the Town who will request assistance from Regional District of Okanagan Similkameen.

ESS will principally be involved in evacuation in the event that evacuees need to be sheltered. An ESS Liaison may however be activated during a shelter-in-place incident in anticipation of a transition to evacuation.

During an evacuation, the role of ESS is to:

- Receive evacuees at Emergency Reception and Lodging Centres (ERLC)
- Provide food, water, and psycho-social support to evacuees
- Maintain a record of all persons who report to and ERLC
- Allocate resources to assembly points, depending on the size and scope of the emergency

Type of Emergency Lodging Services

Evacuees may be accommodated in the following ways:

- Private Accommodation: lodging with persons volunteering accommodation in their own home or with family or friends
- Commercial Accommodations: lodging in motels, hotels, hostels or commercial boarding homes
- Group Lodging Facilities: buildings such as schools, churches, community centres, arenas, auditoriums or other public facilities not normally used for living purposes that are adapted as dormitory types accommodation for large numbers of people in an emergency

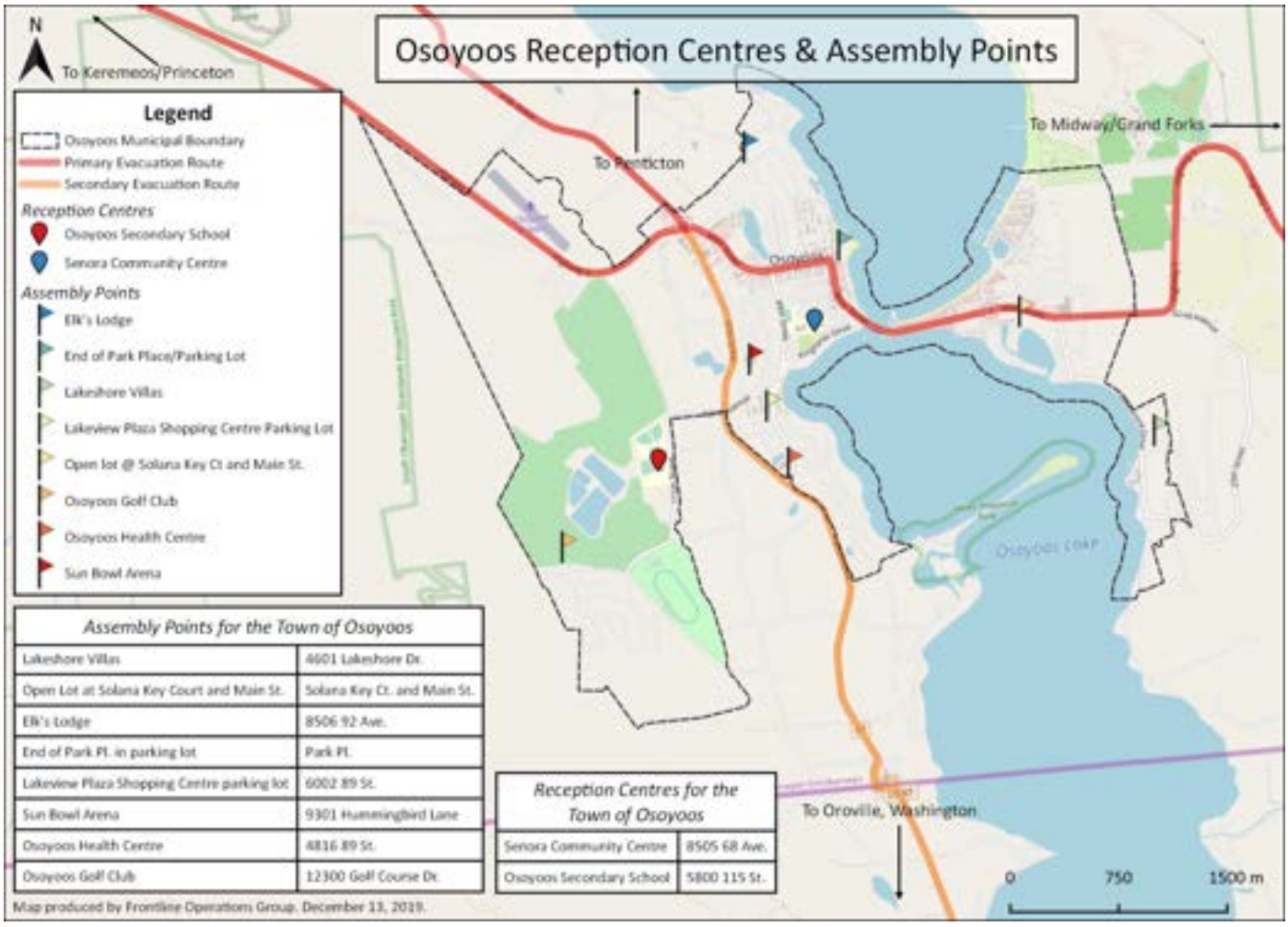
Minimum Evacuee Care Requirements

The facility used as a shelter must be secure, meaning that it is a safe location that protects the evacuees from further danger. The minimum service delivery requirements for physiological needs of the evacuees are maintaining a normal body temperature, alleviation of thirst, provision of facilities for excretion (toilets), providing the opportunity for rest and providing meals.

Shelter Activities

The activities that occur in Group Shelter Facilities:

- Registration of evacuees
- Building security
- Dormitory/rest areas
- Sanitation facilities (washrooms/bathing)
- Food storage, preparation, and service
- Cleaning and maintenance
- Preventative medicine, public health and first aid
- Planning care of evacuees and shelter operations
- Supervision of evacuees
- Scheduling of activities, volunteers and staff
- Coordination and liaison with on sire agencies and Emergency Management Team
- Recreation activities
- Communications and information
- Management of supplies, resources and records



Host Communities

When it is not possible to keep evacuees in the impacted community, it is common to ask neighbouring communities to help by providing shelter and care to the evacuees as needed. It is important for First Nations and Local Authorities to reach out to potential host communities in advance of an evacuation to pre-establish relationships and communication channels. There is no obligation for another community to act as a host community; fostering proactive, strong relationships with other communities will encourage mutual assistance in times of need.

For information on how host communities can be reimbursed for eligible costs associated with hosting another community's evacuees, refer to the Host Community Response Costs memo located on EMBC's website.

If possible, evacuees should be hosted in a community that is similar to the one they are evacuating from. For example, if evacuating a First Nations community, consider sending evacuees to another First Nations community of similar size where evacuees may feel more comfortable.

Note: do not send evacuees to another community without first confirming the host community is able, willing, and ready to receive and support your evacuees. Include EMBC in these discussions, wherever possible.

There are a few ways in which an evacuating First Nation or Local Authority can support a host community:

- ✓ Confirm with the host community that they are able to receive evacuees, and provide details on how many evacuees are being sent and any special considerations they should be aware of (e.g. number of vulnerable people, etc.)
- ✓ Provide an approved Extraordinary Evacuee Authorization Form to any evacuee not covered under an Evacuation Order to ensure the host community's ESS team has appropriate validation to support the evacuees (See Section 7.7 for more information)
- ✓ When possible, evacuate vulnerable people with a support person (e.g. health care worker or care giver) able to assist with their safety, reducing the burden on the host community
- ✓ Provide a regular information-briefing schedule for the host community and evacuees
- ✓ Maintain consistent, planned contact between the evacuating community's officials and the host community's officials
- ✓ Evacuate local community staff with their residents so they can provide support to the host community in matters concerning their residents
- ✓ Where possible, designate a Community Navigator to act as a liaison for the evacuees and provide a point of contact for the host community emergency support structures. See "Community Navigators" info box above
- ✓ Further support for the host community's ESS team can be provided via a request through EMBC

Pets and Service Animals

Evacuation and care of domestic animals is an increasingly important issue for emergency managers and the public. Providing options for domestic animal care during emergencies is one way to prevent homeowners from remaining in evacuation zones because they refuse to leave pets behind. It is the decision of the local authority emergency program if the community would like to incorporate domestic animal care into emergency planning and response.

In most cases, ESS coordinates pet services with assistance from local animal shelters and non-profit organizations. An Operational Guideline for Pet Services is currently under review by the Provincial Emergency Program. The preparation and planning for pets in reception centres (or pet-specific facilities if required) should be done in consultation with local or regional community groups such as Animal Lifeline Emergency Response Team (ALERT) and the local BC SPCA chapter.

Service animals are domestic animals trained to perform a specific service to assist their owner and should not be considered as household pets. Individuals with disabilities who are accompanied by qualified service animals must be allowed access to any location where the general public is allowed, and consideration should be made as to how to house individuals and families with service animals.

People, who have pets and require group lodging, will optimally find housing with a friend and family member. Co-located owner-pet shelters will be identified in sheltering communities where available, as an option for people, who evacuate with their pets. Use of such shelters should be encouraged and publicized, if other options are not possible.

Pet shelters may not be immediately adjacent to the human population shelter. In such cases, transportation to and from the shelters may need to be arranged. Separation of pets and owners should be avoided, if possible, but pets should not take the place of a person, if resources are limited. Service animals should not be separated from their owners, and adequate space for people with service animals will need to be provided in group lodging sites. Keeping people and pets together decreases stress for both people and their pets and is less labor-intensive.

Livestock

Livestock are an important source of livelihood in the RDOS. The basic responsibility for livestock protection rests with the individual producers and livestock owners who should have their own emergency plans in place to ensure that their exposure to loss is appropriately reduced. However, the Emergency Program Act vests some responsibilities with local government if a State of Local Emergency is declared.

Specifically, a local government may "cause the evacuation of persons and the removal of livestock, animals and personal property from any area of the local government's jurisdiction that is or may be affected by an emergency or a disaster and make arrangements for the adequate care and protection of those persons, livestock, animals and personal property."

Relocation of livestock, if required, should be done during the Evacuation Alert stage. Many of the costs for the movement of livestock and the supports provided to livestock producers are eligible response costs through EMBC, when certain conditions are met. No SOLE is required to evacuate livestock during the Alert stage, or for Local Authorities and First Nations to be eligible for reimbursement of these costs.

A representative from the Ministry of Agriculture may be available in the PREOC to help with the coordination needed for livestock relocation. Refer to the EMBC Policy 2.01 **Provincial Support for Livestock Relocation During an Emergency** for more information on how to evacuate livestock and what constitutes as eligible costs for reimbursement. Also, refer to the Ministry of Agriculture's **Livestock Relocation website** for guidelines and tools.

Contact EMBC prior to relocating livestock to confirm eligible costs for reimbursement and to receive a task number.

The Town of Osoyoos must be prepared to work in conjunction with several stakeholders to ensure the safe and efficient evacuation of livestock, the following considerations should be made:

- A Ministry of Agriculture representative should be requested to attend the EOC and at the very least advised of the incident and the potential for displaced animals.
- Animal Lifeline Emergency Response Team (ALERT) needs to be contacted and alerted of potential support requirements. The intent would be for ALERT volunteers to work in conjunction with ESS under the Operations Section at both the incident level and at the EOC.
- Livestock evacuation is based on the same premise as that for people. If time allows, the three stages, Alert, Order and Rescind will apply.
- The livestock Alert level may precede that of people due to the loading and transport times required.

Further considerations for animals and livestock evacuations:

Establishing liaisons with the following organizations could assist with evacuations of animals and livestock:
Local Humane/Societies for the Prevention of Cruelty to Animals
Local Veterinarians
British Columbia Veterinary Medical Association
British Columbia Cattleman's Association

As part of the greater evacuation planning process, the following lessons from previous evacuation incidents have should be considered during the planning process:

When a reception centre cannot handle pets:

- the location of a pet reception centre must be close to the human centre, so evacuees can be close to their pets
- Use same registration process for pets as for people
- Some people chose to live in vehicles rather than be separated
- Have an excellent working relationship with local kennels and animal boarding facilities.

When a reception centre has the facilities for evacuated pets and people:

- A detailed registration system for pets is needed
- Electronic records allow for easy retention of information and forwarding if animals are moved into care or another community
- Clear information on owner (i.e.: contact information, location, etc.)
- Access to veterinarian/vet services
- Cleaning schedule and staff
- Good communication with the rest of the reception centre
- Restricted access to pet area

Public Information

Once the decision to issue an evacuation alert or order has been made, the local authority will provide information to the public through official channels, including details about the hazard conditions, areas affected and evacuation activities and actions they should take to ensure safety.

All public notifications and information for advanced notice evacuations will be coordinated through the local government EOC Information Officer and approved by the EOC Director. Pre-scripted messages for use by the EOC Information Officer can be found in the Operational Plan.

Key Considerations

Public information should consider:

- ✓ Multiple sources – timely, accurate, relevant information should be provided through official channels
- ✓ Repetition – clear, concise messaging should be repeated
- ✓ Timeliness – information should be shared with the public as early and possible and regular updates should be provided
- ✓ Clear messaging – messages should be simple, clear, concise, consistent and free from technical jargon
- ✓ Translation and language options – if needed, key messages should be translated for residents and visitors

Message Dissemination

The local government will share the information through the following channels:

Local Government Website

The main portal for up-to-date information will be the local government/municipal website. An emergency alert will be posted on the home page of the website. Emergency alerts will only be issued for current emergency events, including evacuation alerts and orders. Instructions for people in the evacuation area, regular updates and situation reports will be posted as new information becomes available.

Public Notification Systems –RDOS CivicReady©

Residents of Osoyoos can sign up for CivicReady© through the RDOS website to stay up-to-date on emergency and routine notifications. The system will be used to inform residents of evacuation alerts and orders as well as relevant information leading up to an evacuation event.

Radio and Television Broadcasts

The Town of Osoyoos recognizes that radio and television broadcasters are a critical resource during an emergency. Residents and visitors rely heavily on local broadcaster for emergency information.

Evacuation information and updates will be supplied to local and provincial media sources for broadcast on radio and television. This will be particularly effective if the internet is not available or if people are in their vehicles and need updated information while travelling.

If the municipal website is functioning, radio and television broadcasters will be asked to monitor the local government website for the most current updates and to broadcast the information in a simple, clear, concise, and consistent format. Information will also be shared with broadcasters through media releases.

In Osoyoos, information will be broadcast on:

- CBC Radio One, CBUB-FM 95.3
- Bell Media, CJOR-AM 1240

Social Media

In addition to municipal websites, local governments will share timely information regarding the evacuation on Facebook and Twitter. The posts will include a link to the municipal website for more information.

 @EmergMgtRDOS

 Osoyoos Loop

 osoyoosloop, osoyoosfire

Reciprocal Agreements/Arrangements

If the emergency response effort has maximized the Town's available resources, or if they require assistance coordinating with outside agencies, the RDOS will provide response support at the request of the Town.

Administration and Logistics

The information throughout this plan can be used by the public, emergency management team and partner agencies alike for general knowledge about the evacuation process for the Town of Osoyoos. It can also be used for public education campaigns and training purposes. The detailed plan, in the form of checklists, decisions trees, templates, mapping, contact information, etc. can be found in the accompanying Operational Guide.

Plan Development and Maintenance

The Town of Osoyoos will ensure that the Evacuation Route Plan is:

- Updated annually to reflect current contact information, position titles, etc.
- Reviewed after events or exercises and updated if required, reflecting lessons learned and changes in other plans
- Practiced annually with partner agencies and stakeholders through a tabletop exercise or similar, to ensure compatibility and relevance of the plan

Resource	URL
BC Emergency Management Systems Guide (BCEMS)	https://www2.gov.bc.ca/gov/content/safety/emergency-preparednessresponse-recovery/emergency-management-bc/bcems
EOC Communication Toolkit	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-response-recovery/localgovernment/local_gov_communications_toolkit.pdf
Declaring a State of Local Emergency in BC	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-responserecovery/embc/policies/declaring_a_state_of_local_emergency_in_bc_jan_2019.pdf
EMBC Emergency Operations Centre Operational Guidelines	https://www2.gov.bc.ca/gov/content/safety/emergency-preparednessresponse-recovery/local-emergency-programs/guidelines
EMBC Regional Office	https://www2.gov.bc.ca/gov/content/safety/emergency-preparednessresponse-recovery/contact-us
Emergency Support Services (formerly Emergency Social Services) Field Guide	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-response-recovery/ess/fieldguide/essfieldguide.pdf
EOC Expenditure Authorization Form (EAF)	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-response-recovery/localgovernment/eoc-forms/eoc_expenditure_authorization_form.pdf
Evacuee Living Assistance Guidelines	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-responserecovery/embc/policies/503_evacuee_living_assistance_annex_-_guidelines_aug_2016.pdf
Financial Assistance for Emergency Response and Recovery Costs	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-response-recovery/localgovernment/financial_assistance_guide.pdf
Host Community Response Costs	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-response-

	recovery/localgovernment/emergency_management_bc_-_host_community_response_costs_memo.pdf
Introduction to the Incident Command System	https://www2.gov.bc.ca/assets/gov/environment/air-landwater/spills-and-environmental-emergencies/docs/intro-ics.pdf
Local Authority Emergency Management Regulation	http://www.bclaws.ca/civix/document/id/lc/statreg/380_95
Managing Access to Areas Under Evacuation Order	Evacuation Order https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-responserecovery/managing_access_to_areas_under_evacuation_order.pdf
Ministry of Agriculture Livestock Relocation	https://www2.gov.bc.ca/gov/content/industry/agriculture seafood/business-market-development/emergencypreparedness/livestock-relocation
Provincial Support for Livestock Relocation During an Emergency, EMBC Policy 2.01	https://www2.gov.bc.ca/assets/gov/public-safety-and-emergencyservices/emergency-preparedness-responserecovery/embc/policies/201_provincial_support_for_livestock_relocation_policy_aug_2016.pdf