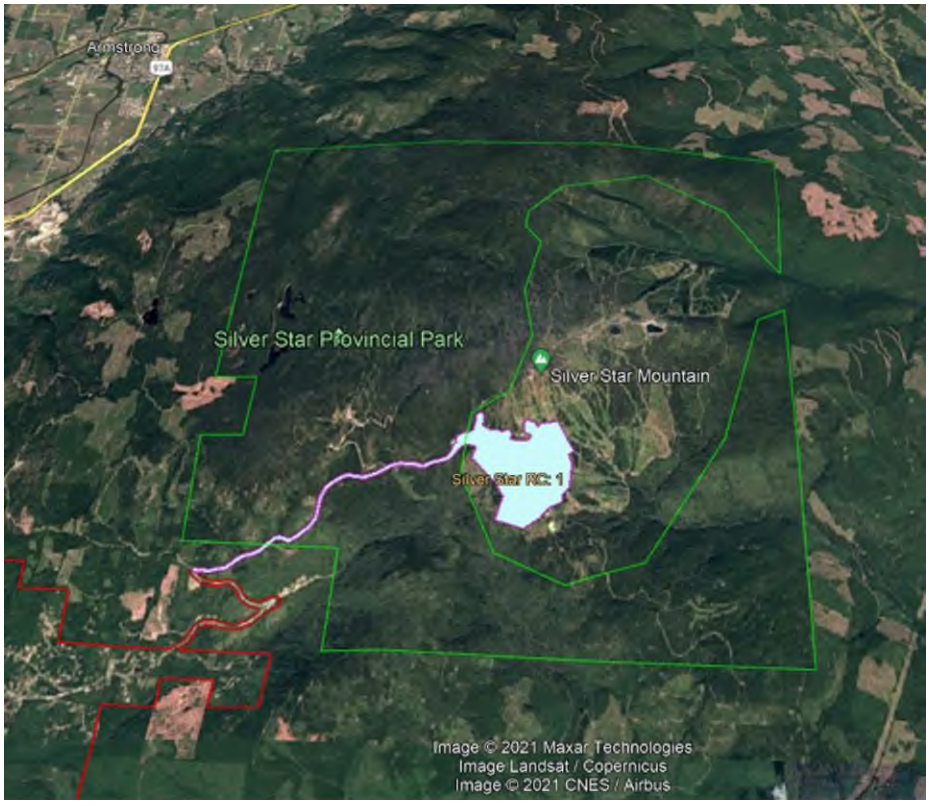
REGIONAL DISTRICT NORTH OKANAGAN

Area C Fire Protection Area

Silver Star Fire Rescue

50º21’32”N - 119º03’36”W

Community Structure Protection Plan



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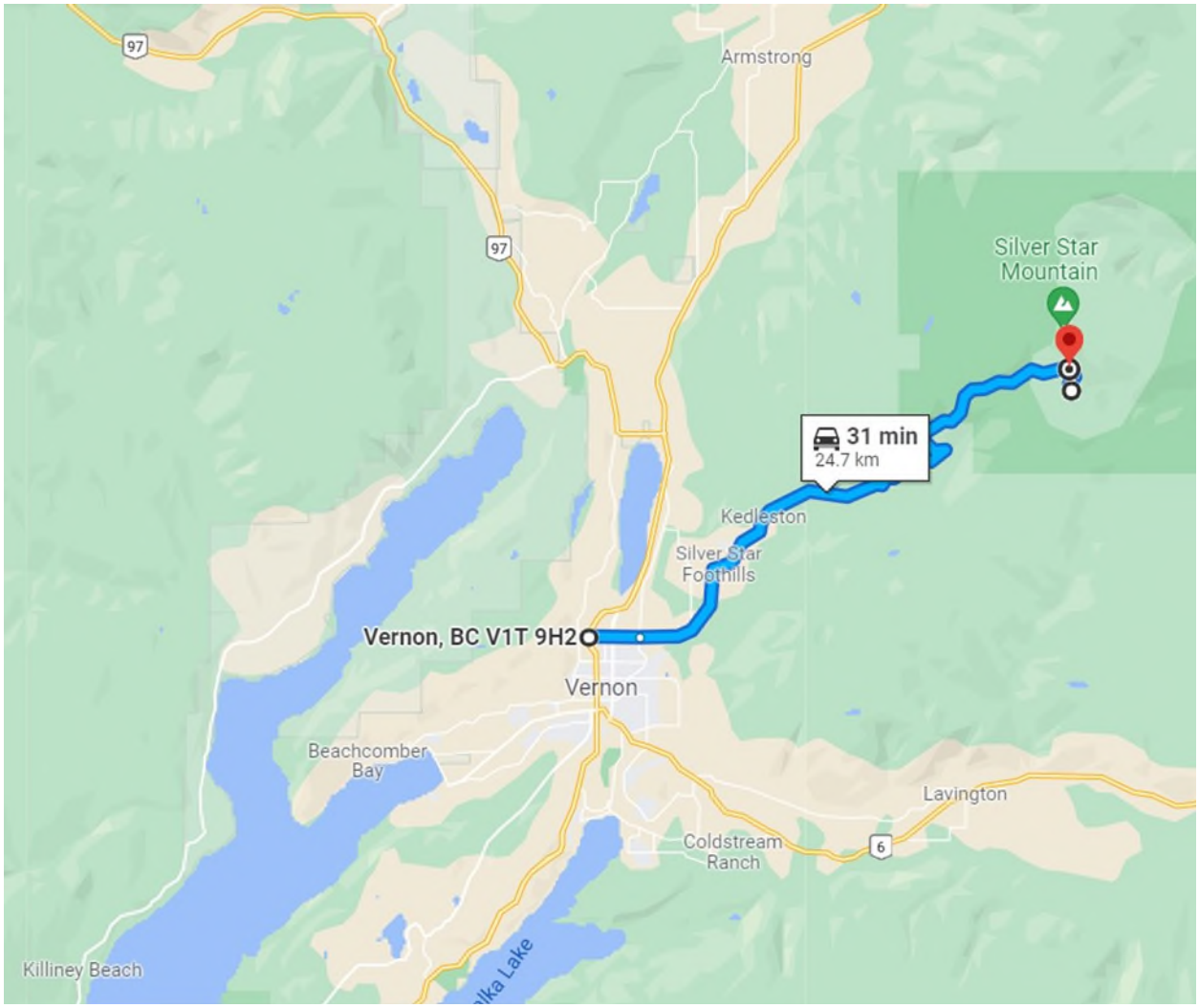
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Armstrong
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Silver Star Mountain
31 min
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Silver Star Foothills
Vernon, BC V1T 9H2
Vernon
Beachcomber Bay
Lavington
Coldstream Ranch
6
Killiney Beach

Document Control

Distribution

The following provides the locations where copies of document will be stored.

1. Regional District of North Okanagan: A digital copy saved at F:\5200-5799 ENGINEERING and PUBLIC WORKS\5214 Emergency Planning\25_Wildfire_Plan\09_Vernon.

    a. BCWS: A digital copy retained by BCWS SPCO Office. spco@gov.bc.ca

Version Control

RDNO will maintain control of the current version, updates, distribution and past version of both this document and the associated mapping.

To ensure that the document is current, the distribution points 1a are to track and verify all issued copies of the plan are most current when distributing updates.

Any updated plans are to be distributed by 01 March, in preparation for the annual wildfire season. Footer and headers must be verified to have the current year and month of update throughout the entire document.

Silver Star Community Structure Protection Plan

Purpose

To create a Pre-plan management template for use by British Columbia Wildfire Service (BCWS) Structure Protection Specialist (SPS) that enhances response assessment to Wildland Urban Environment (WUE) events affecting communities by:

(1) Soliciting local information through a timely and simple process in a widely accessible medium.
(2) Explicitly including the priorities of local communities.
(3) Providing a means to Pre-plan and share situational awareness in response planning with convergent first responders who arrive at WUE events with limited understanding of local geographic, economic, environmental, and social/cultural issues.
(4) Leveraging available technologies to achieve objectives 1-3 above.

The intention of developing this plan is twofold. **Part I** is general information intended for review and implementation during non-emergency periods by local communities and partners. **Part II** is a more detailed section intended to provide an incoming Incident Management Team or Structure Protection Specialist with accurate predetermined structural and cultural priorities requiring protection as well as to identify tactical and operational information as necessary.

Disclaimer

The recommendations made in this plan are based on fire probabilities for the conditions observed at the time of the survey in 2022**. It must be understood that all fire scenarios cannot be addressed and that this plan is not an absolute.** This plan should be used as a guide and implemented in part or in whole as circumstances dictate. The key to continued credibility of this plan is the time and accuracy employed to maintain the information provided here. This document should be reviewed by community officials or their designate and updated on an annual basis prior to wildfire season.

Introduction

The goal of this plan is to provide response agencies with a strategic framework to use for the protection of improved properties or other values at risk in the event of a significant wildfire. This plan recognizes the capability of the local fire department and the contributions that can be made by local, regional, and provincial fire service resources.

The information contained in this plan was developed for use with wildfire operations however, an incident management team may find this a valuable tool in any disaster situation. Experience has proven that many homeowners will be reluctant to leave their home and belongings when an evacuation is ordered. Fire officials do not have the authority to force anyone to leave, nor do they have the time to educate evacuees after an order is issued. Preplanning and education of the community prior to an incident is imperative for a successful operation. Local authorities and community leaders are encouraged to inform their residents on evacuation processes and procedures.

Response Priority

This Response Structure Protection Defense Pre-Plan is subject to ongoing review and may be improved based on feedback following exercising and/or use at actual Wildland Urban Environment events in the upcoming wildfire season. Input from community officials is imperative for local knowledge and to help prioritize integral infrastructure, properties, and areas for protection. The loss of commercial and industrial properties is associated with unemployment and economic impacts that can seriously affect the viability of communities, particularly those with smaller populations. Community members are forced to relocate to urban areas for school and employment. British Columbia Wildfire Service (BCWS) is committed to understanding the values and priorities of Communities.

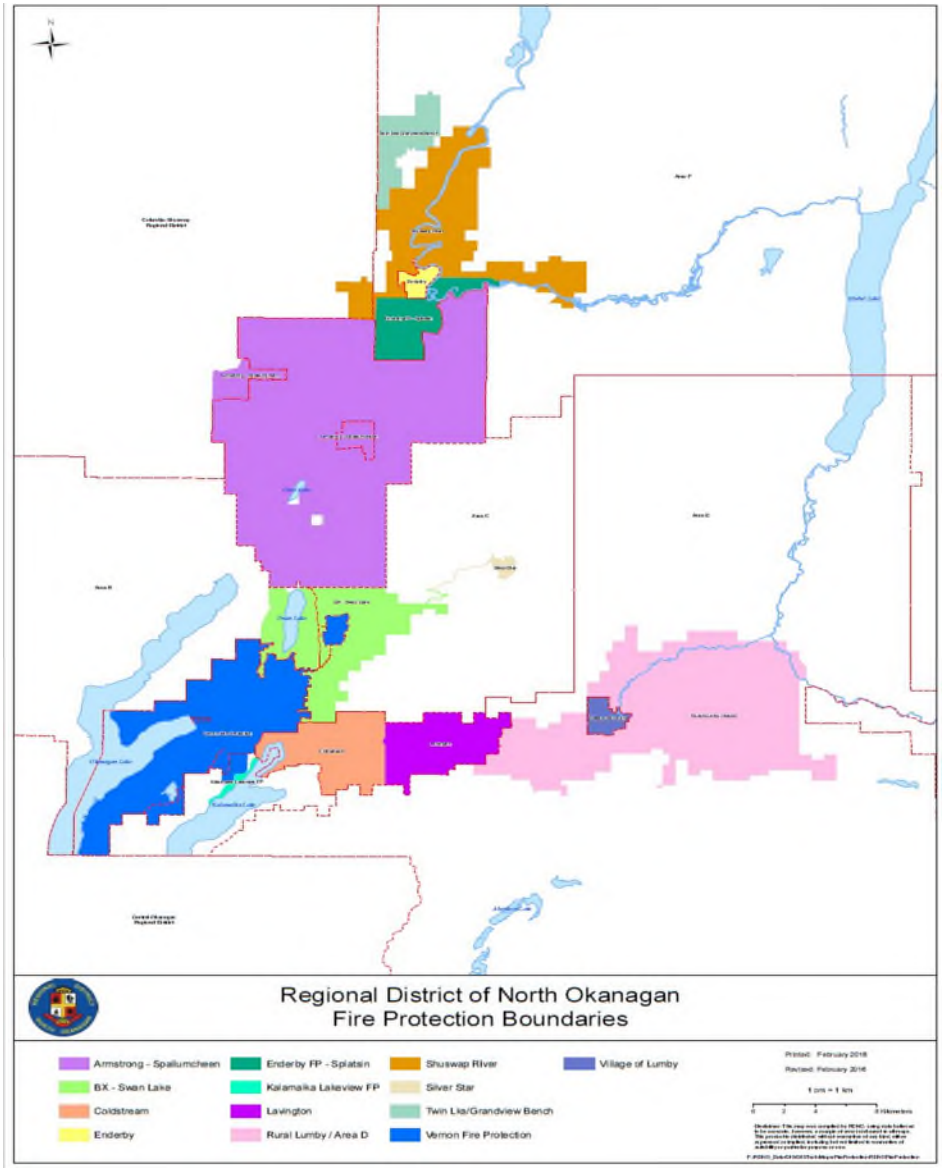
Through a consultation process facilitated by BCWS staff, the authority having jurisdiction (Municipality, Regional District, or First Nations Bands), have identified community priorities in their developed and natural environments. These priorities are included in the Structure Protection Defense Plan.

BCWS will determine strategies and allocate resources based on availability and the identified community priorities whenever possible. There will be a consultation process between BCWS and the Provincial Regional Operations Center and/or the Provincial Emergency Coordination Center.

Part I

Community Overview

Regional District of North Okanagan (RDNO) was incorporated in 1965 and provides a variety of services to more than 91,610 (2021 census) North Okanagan residents covering an area 7,512.58 sq km. RDNO population has grown by 8.6 percent since 2016 making it the seventh fastest growing regional district in BC. Within these geographical boundaries are five electoral areas and six municipalities.



Silver Star is an unincorporated community located within the Shuswap Highlands of the Monashee Mountains within Electoral Area 'C' of the Regional District of North Okanagan outside the boundary of Silver Star Provincial Park. Silver Star Provincial Park and the Controlled Recreation Area contained therein is situated on the divide between two major river systems. These are the Fraser River system via the Shuswap River, and the Columbia River system via the Okanagan Lake/River. The rural neighbourhood is recognized for its quiet country atmosphere located approximately 24 kilometers northeast of the City of Vernon. The Regional District has been provided legislative authority by the Province of BC, primarily though the "Local Government Act", to provide local government services to Silver Star. Fire Protection is provided by RDNO Silver Star Paid-On-Call Fire Department. Residential expansion into the forested area with only 1 primary access road to the west supports the need for a community wildfire structure protection plan.

Silver Star's proximity to Kelowna International Airport and a 5hr drive from greater Vancouver has resulted in a steady increase of visitors from outside the region who enjoy the unique recreational and social aspects of an all-season resort. The ski season runs from late November to mid-April. Summer mountain biking and hiking runs from the end of June through to September on the Nordic trails and through the provincial park.

Silver Star Fire Protection area is 2.34 sq km with a full-time population of 450 residents, with peak winter tourism population of 10,161 (in 2019) and peak summer population of 3000 with plans to grow.

Vernon resident Bert Thorburn became the first person to ski in the Silver Star area in 1930. He rode his bike up to the end of a logging road in the area and then walked a distance following forestry trails to a forest fire lookout. In 1981 Norm Crerar, Charlie Locke, John Hindle, Rob Marshall and John Gow formed Silver Star Mountain Resorts Ltd. and purchased the ski hill development. The first Nordic trails were cleared in 1981. In 1983 the Putnam Station Hotel was built by Russell Haubrich and Shella Ledingham, providing the first on hill hotel. In 2001 the Schumann family purchased Silver Star. In 2012, following the death of Desmond Schumann, daughter Jane Cann received 100% stake in Silver Star Resort. In 2019, Jane Cann sold Silver Star Resort and Silver Star Holidays to US adventure lifestyle company POWDR. POWDR is headquartered in Park City, Utah. POWDR owns ten resorts with Silver Star it's first Canadian property.

Silver Star Temperature and Precipitation

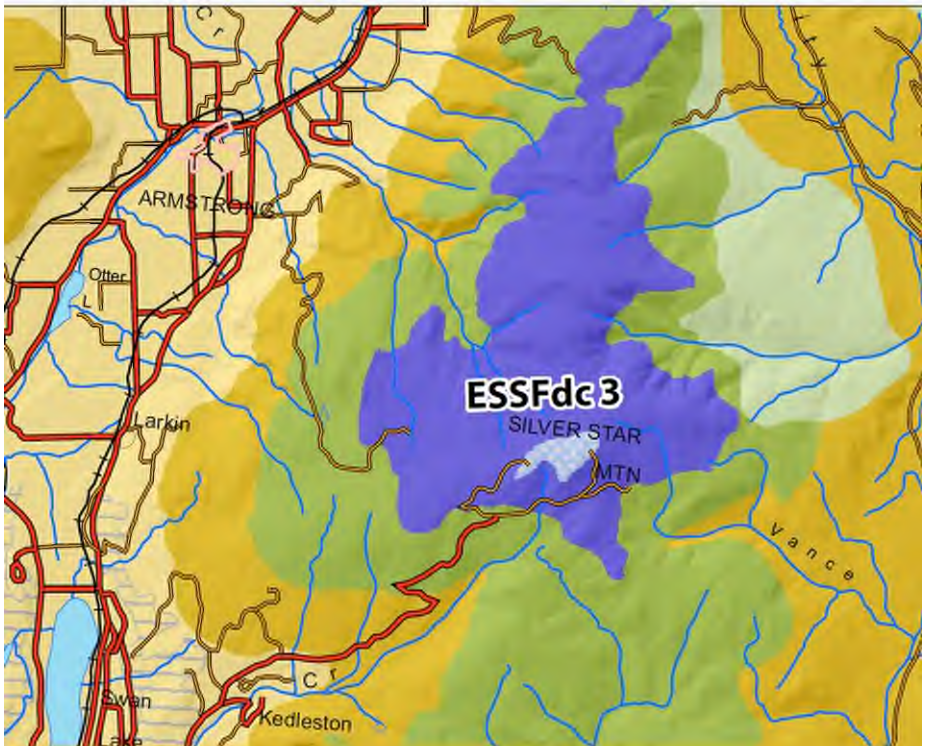
From June – August coincides with the busy summer tourism months and the greatest risk from wildfires to the community at Silver Star Mountain. July and Aug are the warmest and driest month. During 2021 highs in August were recorded at 88°F (31.1°C) with temperatures rarely dropping below 55.5°F (13.1°C) at night.

WEATHER BY MONTH // WEATHER AVERAGES SILVER STAR MOUNTAIN RESORT

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C	-5.3 °C	-4.4 °C	-0.4 °C	4 °C	9.8 °C	13.4 °C	17.7 °C	17.6 °C	12 °C	5.3 °C	-0.3 °C	-4.5 °C
(°F)	(22.5) °F	(24.1) °F	(31.3) °F	(39.3) °F	(49.6) °F	(56) °F	(63.8) °F	(63.7) °F	(53.6) °F	(41.5) °F	(31.4) °F	(23.9) °F
Min. Temperature °C (°F)	-8.2 °C	-8.2 °C	-4.3 °C	-0.7 °C	3.9 °C	7.6 °C	11.2 °C	11.5 °C	7.2 °C	1.8 °C	-2.4 °C	-6.6 °C
	(17.3) °F	(17.3) °F	(24.2) °F	(30.7) °F	(39) °F	(45.7) °F	(52.1) °F	(52.8) °F	(45) °F	(35.2) °F	(27.6) °F	(20.1) °F
Max. Temperature °C	-1.2 °C	0.4 °C	4.5 °C	9.5 °C	15.8 °C	19.4 °C	24.3 °C	24.3 °C	17.8 °C	9.8 °C	2.7 °C	-1.5 °C
(°F)	(29.8) °F	(32.8) °F	(40) °F	(49) °F	(60.5) °F	(66.8) °F	(75.8) °F	(75.7) °F	(64.1) °F	(49.7) °F	(36.9) °F	(29.2) °F
Precipitation / Rainfall	58	41	51	52	68	73	42	34	46	64	77	62
mm (in)	(2.3)	(1.6)	(2)	(2)	(2.7)	(2.9)	(1.7)	(1.3)	(1.8)	(2.5)	(3)	(2.4)
Humidity(%)	76%	75%	68%	61%	55%	57%	47%	48%	61%	74%	77%	75%
Rainy days (d)	10	8	10	9	9	9	6	5	6	10	11	11
avg. Sun hours (hours)	5.0	6.2	7.7	10.1	11.7	12.2	13.1	11.9	8.9	6.5	4.8	4.1

Biogeoclimatic Zone

Biogeoclimatic Zone is a geographical area with a relatively uniform macroclimate, characterized by a mosaic of vegetation, soils and, to a lesser extent, animal life reflecting that climate. Zones are usually named for the potential climatic climax or self-perpetuating vegetation. The biogeoclimatic zone vegetation effect the wildfire behaviour.



Silver Star Fire response area is located within the biogeoclimatic zones classified as Engelmann Spruce-Subalpine Fir dry cold (ESSFdc3) at the village, and Interior Cedar-Hemlock moist cool (ICHmk1) from the turn off to Sovereign Lake Rd. to the Fire Response boundary between Silver Star FD and BX-Swan Lake FD.

Silver Star is situated on the edge of the Okanagan Highlands typified by rolling summits. The elevation at the top of Silver Star Mountain is 1890 metres above sea level. The base Village is situated at 1600 metres above sea level. Around the community of Silver Star, the forest cover is pine and fir with some larch and cedar. Above this area and extending to the summit of Silver Star Mountain, is a sub-alpine zone of open meadows and stunted spruce, fir, and hemlock. These open meadows create extensive and dynamic views over the Okanagan Valley to the west and eastward to the peaks of the Monashee Mountains.

The IDFmw1 and the Interior Cedar Hemlock moist cool (ICHmk1) has been fraught over the past 20 years with forest health challenges from mountain pine beetle, and then with Douglas-fir and spruce beetle. A forest fuel management program will reduce the risk of a crown fire and will support a community FireSmart initiative to reduce structure loss from a wildfire.

Wildfire trends in B.C. and Canada, show increased impacts to values from wildfires and associated suppression costs, increased threats to communities and infrastructure and increased losses of natural resources including mid-term timber supply. This is being driven by the effects of climate change, the mountain pine beetle fuel type and increasing community, critical infrastructure, and natural resource development on the forested land base.

Wildland Urban Interface Risk Classification

Wildland Urban Interface Risk Classification (WUI RC) is determined utilizing the updated 2021 Provincial Strategic Threat Analysis (PSTA) and the 2020 WUI structure density data and mapping. WUI RC ratings take into consideration the underlying fuel types related to land-based activities (e.g., wildfires, harvesting, fuel treatments, development), updated vegetation resources inventory or changes to fire weather inputs (e.g., increases in threat levels due to shifts in the weather data). Risk Classification is determined utilizing the spatial WUI attributes combined with the PSTA wildfire threat layer (for Crown land) to identify at-risk areas at a strategic scale. The level of risk ("Risk Class") reflects the analysis of weighted PSTA threat components within the individual WUI RC polygons. Five Risk Class ratings were applied to the WUI polygons, with "1" being a higher relative risk and "5" being the lower relative risk. The application of relative risk does not imply "no risk" since the goal is to identify areas where there is higher risk.

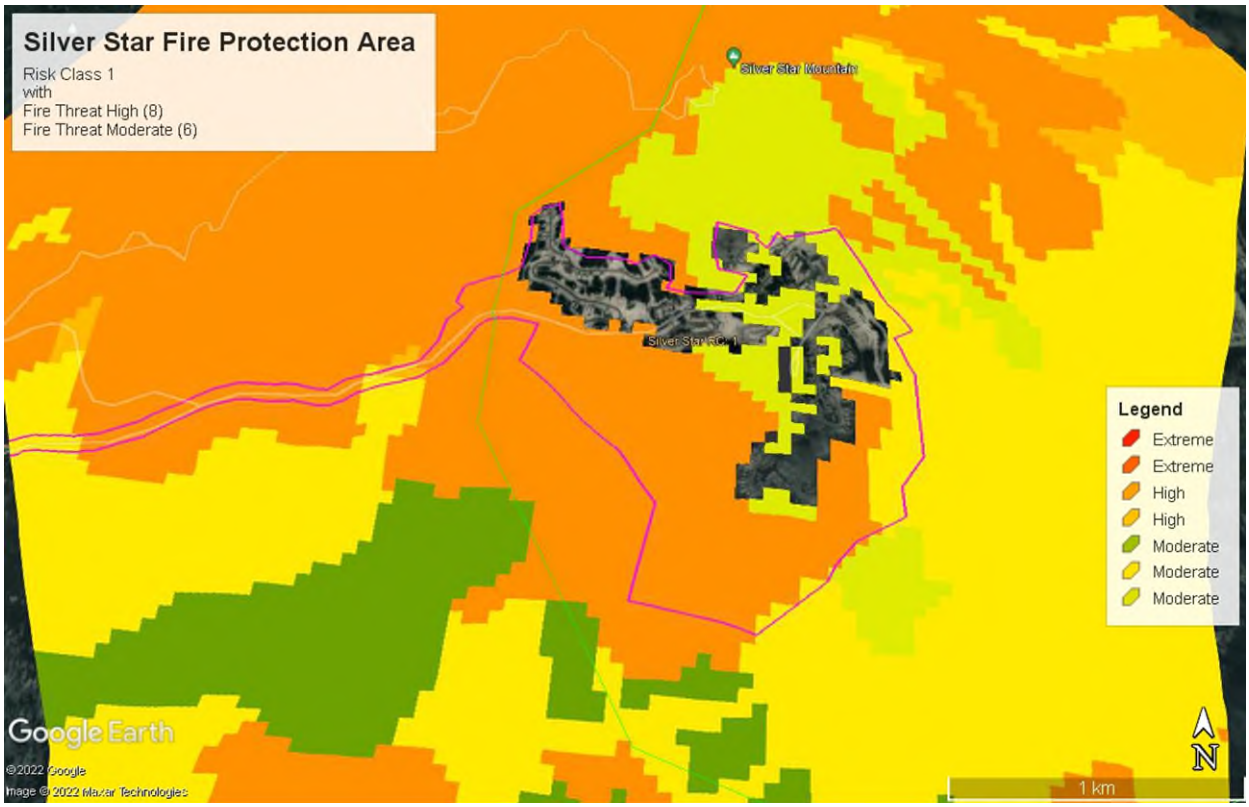
Silver Star Mountain is Risk Class 1

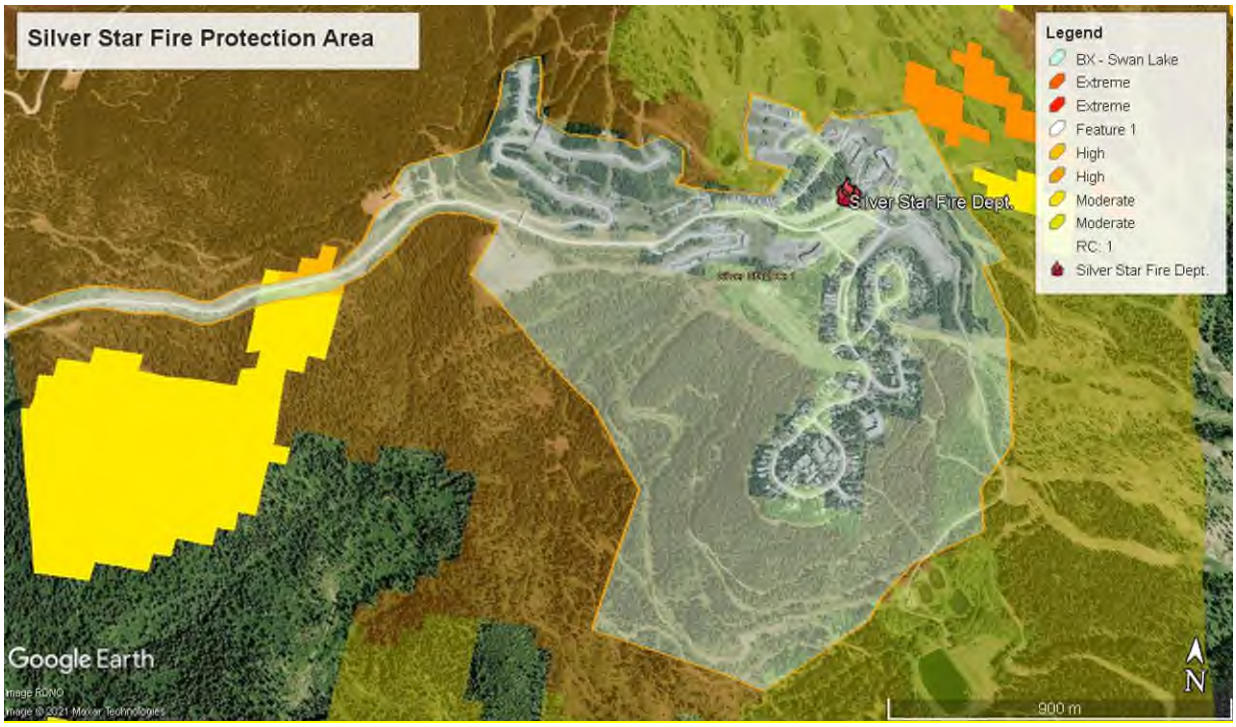
Wildfire Risk Assessment

Wildfire Risk Assessment is available in B.C. for provincial Crown land utilizing a two-kilometer-wide buffer zone to the edge of structures located in the WUI to indicate the distance that embers from a wildfire could reasonably expected to be carried by the wind and possibly ignite a structure. The wildland fuel Fire Threat is shaded with colours that are numbered from 1 (low) to 10 (extreme) to identify the level of wildfire risk if the fuel catches on fire.

The majority of Silver Star fire protection Area boarders on Fire Threat 8 (High).

Silver Star Wildfire Risk Assessment Map





Community Wildfire Hazard Rating

Community Wildfire Hazard Rating looks at homes and critical infrastructure as a fuel type and using a provincial assessment with multiple choice answers provides a score from Low to Extreme for consequences if a wildfire gets into the community. The assessment looks at specific information related to "Community Design" and "Community Challenges". The Silver Star Fire Protection Area assessment is based on input from the local fire department, RDNO and community members. The assessment resulted in a **Community Wildfire Hazard Rating of 81**. This indicates a need for improvement to better protect critical infrastructure and mitigate site hazards.

The letters in the rating section correspond to the recommendation section. The recommendations will need to be prioritize and modified to address interagency cooperation and funding to deliver on the actions in a timely and cost-effective way that reduces community wildfire risk.

COMMUNITY DESIGN	**Rating**	
ACCESS		
Two or more primary roads in and out. One primary and one secondary access. One road in and out (entrance and exit are the same).	0 3 5	5
BRIDGES *(Please note construction type and GVW)*		
No bridges or bridges with no weight and/or width restrictions. Low weight bridges restricting emergency vehicle access.	0 5	0
PRIMARY ROAD WIDTH *(main access/egress routes)*		
At least 7m wide. Less than 7m wide.	0 4	0
SECONDARY ROAD CHARACTERISTICS		

Majority of structures on primary access road. Majority of structures on secondary access roads with some primary road access. Majority of structures on secondary roads. Majority of structures located on secondary roads with some dead-end roads. Dead end road systems that limit emergency crews to remain in the area under certain fire conditions due to lack of egress.	0 1 2 4 5	5
EVACUATION PLAN		
Updated plan in place, community is aware. Plan in place not implemented community unaware. No plan.	0 3 5	3 **A**
FIRE DEPARTMENT		
Volunteer FD more then 25 members. Volunteer FD more then 20 less then 25. Volunteer FD less then 20.	1 3 5	5
FIRE SMART		
Community has FireSmart certified representative and strategies are in place. Community has started a FireSmart program, strategies not in place. Community presently has no FireSmart initiatives.	0 3 5	3 **B**
MUTUAL AID/AUTOMATIC AID		
Fire department has a mutual aid/auto aid agreement in place. Fire Department has no aid agreements.	0 5	0 **C**
TOTAL COMMUNITY DESIGN RATING is based on the community's ability to withstand fire front contact to critical infrastructure	**Rating 21**	

COMMUNITY CHALLENGES	**Rating**
UTILITIES	

All utilities are underground. Some utilities are underground. No utilities are underground.	0 3 5	3
ACCESS TO CRITICAL INFRASTRUCTURE *(example: Pump house and reservoir)*		
Access more than 4m wide with hammerhead turnaround and access for fire apparatus. Driveway less than 4m wide no turnaround has access for fire apparatus. No access for fire apparatus.	0 3 5	3 **D**
No obstructions or overhead branches below 5m. Obstructions or overhead branches below 5m.	0 5	0
No bridges or bridges with no weight and/or width restrictions. Low weight bridges restricting emergency vehicle access.	0 5	0
Driveway slope less than 10%. Driveway slope greater than 10% present.	0 5	0
No gate/non-locking gate. Locked gate/restricted access.	0 5	5 **E**
Most Addresses clearly visible from road. Most Addresses not visible from road.	0 5	0
DOMINANT TREES *(take an average of what's around the community)*		
Deciduous (Hardwoods). Mixed (Hardwoods and Conifers) 50/50. Conifers (Pine and/or Red cedar).	1 5 10	10
HOME IGNITION ZONES *(take an average of what's around the community)*		
10% of structures are in the **interface** with very light conifer fuel loads. 10% of structures are in the **interface** with moderate conifer fuel loads. --- 70% of structures are in the **intermix** with moderate conifer fuel loads. 10% of structures are in the **intermix** with heavy conifer fuel loads and heavy brush.	0 3 3 5	3 5
LADDER FUELS *(take an average of what's around the community)*		

No conifers or conifer branches pruned up at least 2.5m. Conifer branches close to ground.	0 5	5
TYPE OF GROUND COVER *(Majority or Type surrounding the community)*		
Grass up to 15cm tall, pine needles, hardwood leaves. Tall grass, 15-30 cm. Grass more than 30cm tall. Shrubs with leaves. Shrubs with needles. Moderate to heavy slash.	3 5 8 8 10 15	15
SLOPE OF COMMUNITY		
Much of the community is flat (0-5%) Most of the community is on a moderate slope (6-20%). Community is located on a steep slope not accessible to fire apparatus. (more than 20%).	0 2 4	2
FUEL STORAGE (includes propane tanks, firewood, elevated tidy tanks)		
None. Located more than 10m from structure and has a proper fuel break established. Located 1.5-10m from structure and has a partial fuel break established. Located less than 1.5 m from structure no fuel break established.	0 1 3 5	5
CRITICAL INFRASTRUCTURE RESPONSE PLAN (wildfire mitigative tactics)		
Community has a critical infrastructure response plan in place. Community has no critical infrastructure response plan in place.	0 3	0 **F**
FIRE DEPARTMENT TRAINING		
FD members trained to Playbook Exterior + S-100-S185 or WSPP-115 & WFF 1. FD members trained to Playbook Exterior with some wildfire knowledge. FD members trained to Playbook Exterior. FD members not trained to Playbook no wildfire knowledge.	0 1 3 5	0
FIRE DEPARTMENT ENGINE/TENDER		

Fire Department has minimum 1 engine and 1 tender with wildland equipment. Fire Department has minimum 1 engine and 1 tender. Fire Department has no tender and no wildland equipment.	0 3 5	0
FIRE CONTROL WATER SUPPLY		
Pressurized hydrants with minimum 1800 lpm (135 L/s) spaced less than 300m apart. Pressurized hydrants with less than 1800 lpm (135 L/s) or more than 300m apart. Hydrants fed by a generating system (requires power). Dry hydrant/standpipe available. River/Creeks/Cisterns that are accessible for drafting. No water sources.	0 2 3 5 7 15	2 **G**
HELICOPTER DIP SITES (*min 1.5 m water depth year-round 45' obstruction clear)*		
Under 2-minute turnaround (< 1 kilometer). Within 4-minute turnaround (1-3 Kilometers). Within 6-minute turnaround (3-6 Kilometers). Beyond 6-minute turnaround (greater then 6 k) or unavailable.	0 2 3 5	2 **H**
COMMUNITY MAPS		
There are updated maps available. There are no maps available.	0 5	0 **I**
TOTAL COMMUNITY CHALLENGES	**Rating 60**	

CALCULATING YOUR WILDFIRE HAZARD RATING

COMMUNITY DESIGN RATING	COMMUNITY CHALLENGES RATING	TOTAL
21	60	81

Low Fire Risk: **Overall Wildfire Hazard Rating = 0-25 points**

Exposure is minimal and well mitigated, and wildfire losses are unlikely except under the most severe conditions. If impacts occur, damage is expected to be limited and localized. Recovery would likely be rapid, with most needs managed locally and minimal outside assistance required.

Moderate Fire Risk: **Overall Wildfire Hazard Rating = 26-59 points**

Some mitigation measures are in place, but meaningful exposure to wildfire remains. Losses are possible under commonly experienced severe wildfire conditions. Recovery is expected to be manageable but may require coordination, short-term displacement, or targeted external support.

High Fire Risk: **Overall Wildfire Hazard Rating = 60-119 points**

Loss is likely under expected wildfire conditions due to significant exposure, high hazard, or gaps in mitigation. Impacts may include substantial property damage, service disruptions, or prolonged displacement. Recovery is expected to be challenging and resource-intensive, with coordinated external assistance likely required.

Extreme Fire Risk: **Overall Wildfire Hazard Rating = 120 or more points**

Loss is very likely, as conditions exceed reasonable protection and response capacity even with preparedness measures in place. Impacts may be widespread and severe, including major property or infrastructure loss and long-term displacement. Recovery is expected to be prolonged and highly disruptive, requiring sustained external assistance and significant recovery planning.

Notes & Recommendations from Community Wildfire Hazard Assessment Scores:

A – Evacuation Plan

The RDNO has developed an Evacuation Plan in 2022. Primary evacuation via Silver Star Mtn Rd. to Vernon. Evacuation requires a very coordinated emergency response for structure protection at a time when a high volume of persons will be evacuating on the same road that emergency vehicles will need to use.

Fire Dept. has a community airhorn (siren) with a community identified muster/ Safety Zone location at Parking Lot B.

Recommendation – Continue to assess evacuation route "Silver Star Mtn Rd." to identify and mitigate hazard trees that could fail resulting restrict egress during the emergency event and block the evacuation route.

Recommendation – Advocate for tree hazard mitigation with BC Hydro powerline vegetation management as a tree contact with the powerline could result in a wildfire that could block the evacuation route.

Recommendation – Consider installation of a positive pressure air exchange for the Silver Star Admin. Office located at 152 Main St. Site has potential to provide space for an EOC and could provide a Safety Zone for emergency responders to be in a position to deploy after the wildfire.

B – FireSmart Initiatives

Most homes destroyed in forest fires are not lost to direct flame contact but to firebrands (embers) carried by the wind. These embers can travel significant distances and ignite spot fires in easily combustible materials such as standing dead grass, stacked firewood, patio cushions, and welcome mats. Once these spot fires start, they can quickly spread to structures and escalate into a multiple-structure conflagration event, overwhelming suppression efforts and increasing the risk of widespread property loss. Encouraging FireSmart activities within the community can make a significant impact on structure survivability.

Recommendation - Continue to support public education and communications plans that follow FireSmart recommendations, particularly maintaining a fuel-free zone within the first 1.5 meters around structures. It is important to review the RDNO Area C Community Wildfire Resiliency Plan for specific recommendations and priorities. Class A roof coverings non-combustible siding should be promoted to reduce ignition risk. Non-combustible hardscapes such as concrete pavers, flagstone paths, decorative gravel (rock mulch), and natural stones should surround structures for a minimum of 1.5 meters. Additionally, spaces under decks should be enclosed to prevent the accumulation of leaf litter and other combustible materials that could ignite from wildfire embers.

Recommendation - Providing clear and consistent communication on Wildfire Sprinkler connections and other water conservations issues. Some property owners have pre-installed water cisterns for pre-installed rooftop wildfire sprinklers that responding agencies can connect to using fire department hoses and pumps when structures are threatened by wildfire. The pre-installation of sprinklers can significantly aid responding agencies in setting up community structure protection plans quickly when time is critical. However, unmanaged use of wildfire sprinklers can result in depletion of reservoir water long before the fire front impacts the structure and should therefore be controlled by the responding agency. Wildfire sprinklers must not be connected to the municipal water source, and unauthorized use can result in fines. Incorrectly installed sprinklers can lead to water damage and should be installed or verified by professionals. Homeowners are advised to consult their insurance provider when installing sprinklers. It is important to note that sprinklers are most effective when FireSmart initiatives have been completed. In many cases, FireSmart initiatives can make a structure extremely resilient, reducing or eliminating the need for sprinklers to protect the structure from wildfire.

Recommendation – Consider developing a map that identifies FireSmart properties will help BCWS prioritize the installation and operation of sprinklers for Structure Protection.

Recommendation – Develop a map that identifies properties with approved pre-installed sprinklers for effective timely activation and tactical resource allocation.

Important communication to property owners – During fire season, when not at home, ensure a 1.5m non-combustible zone is maintained around the home by storing flammable material like patio furniture, welcome mats or building materials indoors or 10m away from the house.

Utilize resources from preparedbc.ca or firesmartbc.ca such as the Emergency Wildfire Preparedness Checklist (https://firesmartbc.ca/resource/emergency-wildfire-preparedness-checklist/) to help empower residents to take action prior to an evacuation order.

Homeowners who have installed Wildfire Sprinklers should have the connections/hoses clearly visible for the responding agency. Wildfire sprinklers must not be connected to the municipal water supply. Doing so can significantly reduce the water available for firefighting operations, which rely on municipal reservoirs as a critical resource. Depleting these reserves compromises the ability to extinguish structure fires and limits firefighters' ability to work longer, harder, and safer during emergency response.

Contact the RDNO Utilities for more information about Wildfire Sprinkler use.

Sprinklers are most effective when run from an auxiliary water source, mounted and controlled by structure protection crews and utilized 30 min prior to fire arrival and the duration of the fire front. Privately installed Wildfire Sprinklers can cause water damage to a structure if not properly set up and monitored. Consult your insurance provider prior to installation and use.

C - Mutual Aid

An agreement is in place with BX-Swan Lake FD, Coldstream FD, Lumby FD, Armstrong FD, Enderby FD, and City of Vernon FD. *See Part II Silver Star Fire Protection Area - Mutual Aid, for list of apparatus.*

D - Critical Infrastructure

Critical Infrastructure includes the Silver Star Fire Hall, water treatment plant, water booster pump station, well pump houses, water storage reservoirs (tanks).

Recommendation – Consider upgrading the Alpine Training Centre with positive pressure ventilation to create smoke-free space to shelter in place with backup power. See Part II Critical Infrastructure.

Recommendation – Protect the private 3 phase power line at Silver Star is critical for operation of reservoir gate valves, pumps, and wells. Maintain a vegetation free zone for 1.5m around the power poles and from 1.5 to 3m remove all vegetation that exceeds 1m in height. Consider an application of a product like “Wood Guard” fire retardant (used by BC Hydro on its high-risk wood poles).

Recommendation - Consider Load transfer switch for backup 3 phase power at Vance. *Onsite back up generator scheduled for install 2026*

E – Locked Gates

Locked gates can restrict access for Responders during a wildfire event. Efforts should be made to provide for access to all locked gates including, Parking Lot E, Pinnacles Rd.

Critical Infrastructure - Silver Star Maintenance Shop.

F - Critical Infrastructure Response Plan

Completing preplans on all Critical Infrastructure and consider other commercial, industrial and multi residential complex properties provides additional resources to responding agencies.

Recommendation - Confirm ability to Email PDF files to mutual aid response crews.

Recommendation – Ensure plans are accessible and understood by responding agencies. Staff should be trained on the plans and the plans reviewed and exercised annually.

Recommendation – Confirm ability to email or transfer PDF files to mutual aid response crews.

Recommendation – Conduct a meeting with BCWS to collaborated on the response plan. Highly sensitive areas, like Watershed boundaries, should be identified, with consultation and restrictions on all proposed mitigation activities (fiber removal, burning, retardant) to adequately protect the watershed during and after a wildfire event.

G - FIRE CONTROL WATER SUPPLY

Much of the Silver Star Fire Protection Area has Hydrant protection. Fire Control Water Supply via hydrants is limited by the size of the community reservoirs for neighbourhoods such as the Ridge. The booster pump station for the Ridge Reservoir (tank) gets power from a 3-phase

overhead powerline that could be impacted from a wildfire. The pump station does not have backup power and has a limited 56 imp gal/min (4.2 L/s) refresh rate.

Non-hydrant protected areas include the sewer treatment plant, Mid-T Water Treatment Plant, Well #1, Well #2, Well #12, Paradise control building, Vance Creek pump station control building, Env Canada Doppler Radar and Communication antenna (Telus, BC Ambulance, RDNO, SS Fire Dept, Resort Repeaters). Private 3 phase power line from Solid Waste Transfer site to top of summit as well to Paradise and Vance storage reservoirs. Private 3 Ph lines from NATC to Wastewater Treatment plant.

Recommendation – The Ridge booster station: consider installing backup power or a transfer switch to allow connection to an external generator. Back up power to this pump station provides significantly increase the flow volume to the Ridge reservoir and is recommended to support Structure Protection.

Recommendation – Cisterns: Consider installation of strategically placed 10,000 – 20,000 gal cisterns to hold water storage during wildfire season for both filling Tenders and or water supply for SPU deployment. Consider locations like the top of the Ridge or the Knoll due to limited municipal water if power is lost and to reduce tender turn around time during initial wildfire suppression.

Recommendation – Alternative water supply: To supply Tenders with water for 2,500-gal relay tanks used for Structure Protection sprinklers, consider using portable pump directly drawing from the Attridge/Brewers Pond to create fill points. The RDNO is investigating the feasibility of this non-potable option and other options to provide the ability to access the full storage of Paradise Reservoir in the village.

Recommendation – Emergency response agencies should work closely with RDNO Small Utilities to manage water supply for structure protection and structure defense during a wildfire event. Establishing a collaborative environment where RDNO Small Utilities actively supports the Incident Command/IMT will enhance situational awareness regarding the availability and use of the municipal water system. This coordination is critical to ensure adequate water resources for firefighting operations and community safety.

Recommendation – Establish fuel supply agreements for the Water Treatment Plant back up generator with suppliers that are local *and* out of area. The suppliers' operations and staffing must remain unaffected by the incident (local evac orders).

Recommendation – Consider investing in high volume portable pumps for the movement of surface water for structure protection/defense operations, independent of the municipal system. Consider partnership with other departments within the North Okanagan to have as a shared resource to mitigate provincial resource shortfalls in the event of a wildfire. For Silver Star, the equipment could provide an effective portable hydrant line for Structure Protection from Attridge pond, Brewers ponds, Paradise, and Vance reservoirs.

Recommendation – Review the RDNO Small Utility Emergency Response Plan: Wildfire to include proactive coordination with the BC Wildfire Service Incident Management Team (IMT). This should specifically address hydrant use forecasting. Early engagement will ensure water supply planning aligns with operational needs for structure protection and defense.

H –Helicopter Fill Sites

Helicopters Fill sites allow for hoover and fill Bambi Buckets for quick water delivery during initial fire containment. Identified fill sites include Brewer's Pond, Attridge pond, Paradise reservoir, and Vance reservoirs. Further away Procter Lake and Swan Lake.

I – Maps

Silver Star composite maps

Recommendation – printed maps 60cm x 100cm for each Section showing Escape Routes, Safety Zone, Critical Infrastructure, Tender Filling sites, Hydrants, and property address. Include Overview to provide Structure Defense teams for operational planning.

Summary

Silver Star fire protection area is surrounded by forest that is **Risk Class 1** (highest relative risk) with **Wildfire Threat High (8)** bordering on a community assessed as High Fire Risk (81). A repeat of the summer of 2021 combined with a lightening strike in timber in the vicinity of Silver Star has the potential of becoming a fast-moving wildfire. If properties have not undertaken FireSmart recommendations and hot embers blow into residential neighbourhoods, they could ignite spot fires that will result in significant structure loss. The information should be used to promote FireSmart strategies on and around homes where they back onto both private and crown forests, and to prioritize the investment in forest fuel treatment plan.

The implementation of the recommendations is beyond the scope of this document.

Part II

Responder Safety Check List

All responders will receive a pre-deployment safety briefing that includes:

- Current wildfire location, rank, and direction of travel and any changes expected during the operational period;
- Current weather and any changes expected during the operational period;
- Current and planned air operations;
- Current and planned fuel mitigation activities (backburns, land clearing)
- Check-in procedures and intervals;
- Other hazards in operational areas;
- Safety zone locations;
- Medical unit location(s);
- Reporting structure, assignment, and radio call-sign;
- Assigned radio frequency(ies);
- Contingency communications (cell phone, satellite phone numbers); and
- Expectations for personal protective equipment.

"Drought conditions, the build-up of hazardous fuels, and more homes in fire-prone landscapes are changing how we experience Wildfires in British Columbia."

Silver Star Fire Protection Area

Latitude: 50o21’32”N **Longitude:** 119o03’36”W **Toporama Map:** 82L SW

Fire Department Jurisdiction: RDNO Electoral Area C, Silver Star Fire Dept. has approx. 450 permanent residents that reaches 11,000 tourists per night during peak winter season. Peak summer tourists per night reach 3,000. The community has a potential build out to serve 18,000. The fire protection area is 2.34 sq km.

Silver Star

Fire Department

9885 Silver Star Road

Silver Star Mountain

250-549-1556

Silver Star Fire Dept:

- has 16+ Paid-On-Call individuals
- operates three apparatus plus Type 3 SPU.
  - Type 1 Engine (SS E1) with 1250/1000/25F, (5 passenger)
  - Type 2 Engine (SS E1-2/Tender) with 1250/1000/0F (3 passenger)
  - Type 3 SPU (4 pumps, and 60 sprinklers with 2,000ft 1½.
  - Rescue Truck (SS R1) F550 no water or pumps.

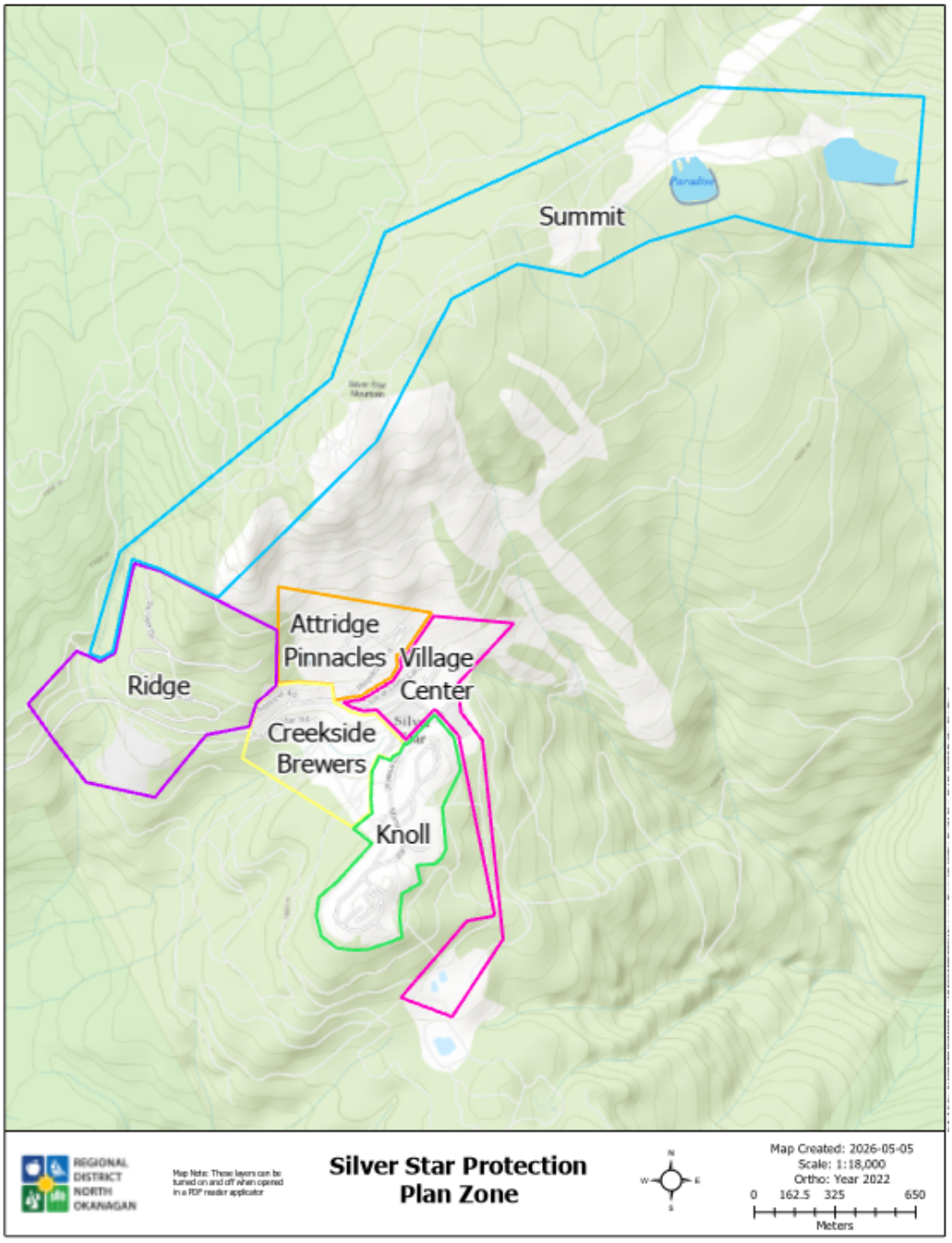
Mutual Aid (1Ex2 = 2 Type 1 Engines, 2Tx1 = 1 Type 2 Tender)

- BX-Swan Lake FD mutual aid apparatus
  - 2E/2Tx1 (BX E1-2) or 2Tx1 (BX T-1), and 3Ex1 (BX E1-3), 6Ex1 (BX R1-2) and 2SPUx1
- Coldstream/Lavington FD mutual aid apparatus
  - 2Ex1, and 2Tx1
- Lumby FD mutual aid apparatus
  - 2Ex1, and 2Tx1
- Armstrong FD mutual aid apparatus
  - 1Ex1 and 1Tx1
- Enderby FD mutual aid apparatus
  - 1Tx1
- City Vernon FD mutual aid apparatus
  - 1Ex1, and 2Tx1

Estimated Number of Private Dwellings:

For purposes of allocating resources to protect structures from a wildfire, Silver Star Fire Protection Area has been divided into 6 Wildfire Protection Areas.

- ~305 Residential structures
- ~ 58 Commercial/Operational Buildings



Area	Area Details
Zone 1 **Village Center** (Silver Star Rd, Main Street, Shortt St, Parking Lot B) **~16 Residential** **14 Commercial/Hotel** **1 Fire Hall** **1 Gondola Base Station** **1 Sewer Treatment Plant**	**Zone 1** is a Commercial area containing most of the areas services including restaurants, retail, hotels, rentals and administrative buildings. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is 20-30% (Southern aspect) with winds from the S/SW. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has no access for portable pumps and drafting site. Hydrants are limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: High Voltage-Aerial powerline, Sewage Treatment Plant and Fire Hall
Zone 2 **Knoll** (Monashee Rd, Silver Queen Rd, Odin Rd, Monashee Crt, Mistaya Lane) **~188 Residential** **4 Large Multi-Family**	**Zone 2** is a residential area with small to meds lots and 3 Large Multi-Family properties. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is hilltop with 10-30% (all aspect) with winds from the S/SW. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has no access for portable pumps and drafting site. Hydrants are limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: None
Zone 3 **Creekside Brewers** (Creekside and Fire Light Lodge 140 Monashee Rd) **~22 Residential** **8 Large Multi-family** **2 Small Commercial**	**Zone 3** is a residential area with 8 Large Multi-family structures and 1 commercial. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is 10-20% (Southern aspect) with winds from the S/SW. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has access for portable pumps and drafting site at Brewers Pond. Hydrants are private and limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: none

Zone 4 **Ridge** (Cathedral Dr and Purcell Dr.) **~63 Residential** **1 Maintenance Shop** **1 Transfer Station** Includes Silver Star Maintenance Area at 9675 Silver Star Rd. (fuel storage) Parking Lot E – Staging Area for incoming resources.	**Zone 4** is a residential area. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is 30-40% (Southern aspect) with winds from the S/SW. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Special Hazards: Above ground fuel tanks, shipping containers, mobile equipment, natural gas valve station, high voltage-aerial powerline Zone has no access for portable pumps and drafting sites but has a cistern located on 9792 Cathedral drive. Hydrants are limited to reservoir storage (Ridge Reservoir). Critical infrastructure: Ridge Pump Station, Ridge Reservoir, SS Maintenance Area, Well #2
Zone 5 **Attridge Pinnacles** (Pinnacles Rd to Arnica Lane) **~63 Residential lots** **4 Commercial Hotels**	**Zone 5** is a residential area. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is 30-40% (Southern aspect) with winds from the S/SW. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Special Hazards: high voltage-aerial powerline Zone has access for portable pumps at Attridge Pond. Hydrants are limited to reservoir storage from Mid-T on Pinnacles road and Ridge Reservoir for all others. Critical infrastructure: Includes Mid -T Reservoir and Water Treatment Plant

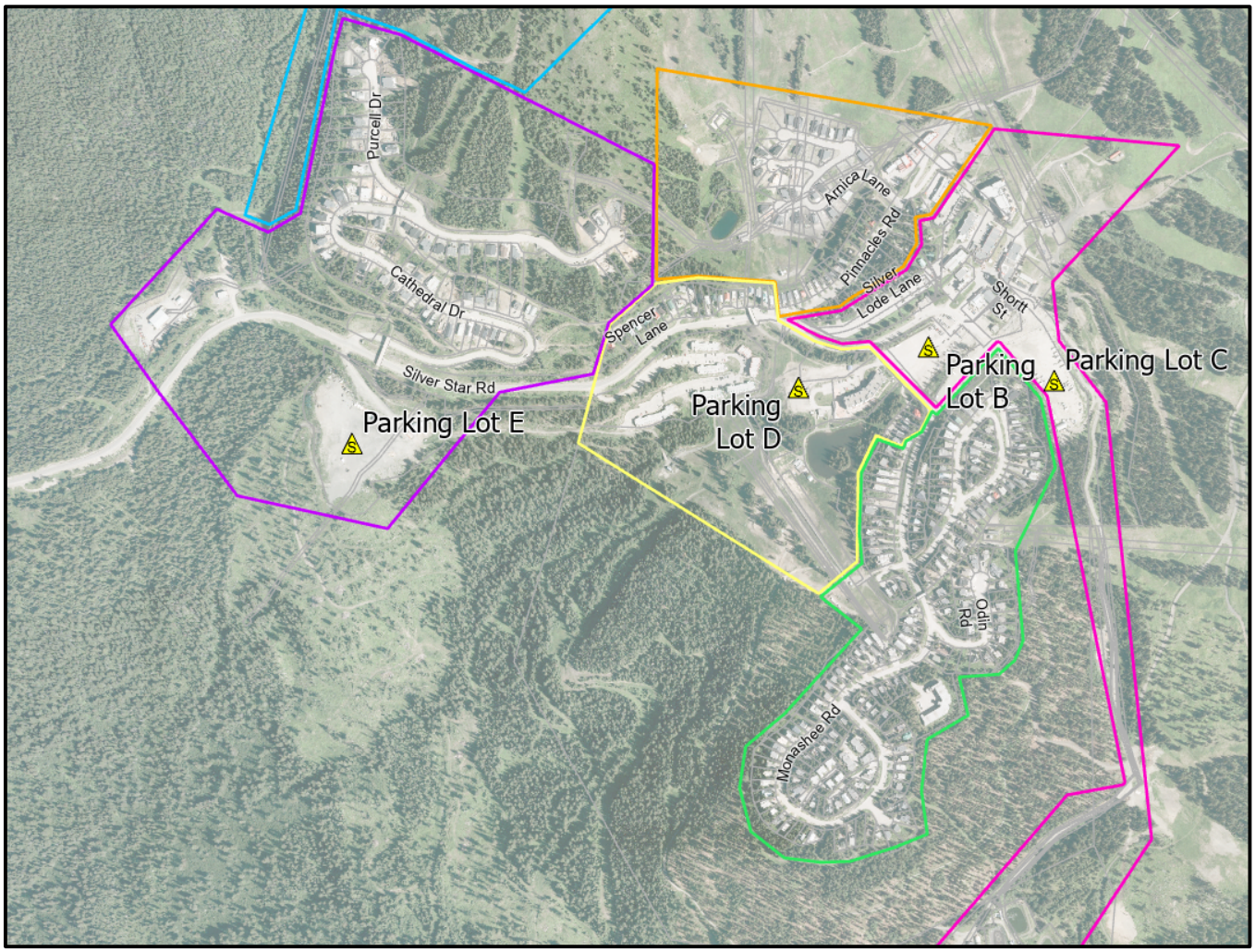
Zone 6 **Summit** (Transfer Station to Mtn summit to surface reservoirs) **0 Residential lots** **19 Out Buildings**	**Zone 6** is a corridor to the Mtn. summit and Critical Infrastructure. The adjacent area has heavy concentration of conifer and surface fuels. Zone topography is 30-50% (Southern aspect) with winds from the S/SW. Special Hazards: high voltage-aerial powerline **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, poor communications at beyond summit and limited safety zone. Zone has access for portable pumps at Attridge Pond. Hydrants are limited to reservoir storage from Mid-T on Pinnacles road and Ridge Reservoir for all others. Critical infrastructure: Well 10 Comms tower, Env Canada Comms site, Reservoir and Pump stations, Gondola and Chairlift Stations, 3 phase private power line

Safety Zone

This section considers safety zones large enough to hold responders' equipment and to shelter during fire passage for speedy return to mop up after fire front passes. Safety zones provide a quick response to extinguish spot fires that could ignite structures after the fire front has passed. Safety Zone options depending on the number of crews and vehicles.

Silver Star Emergency Response Plan has assessed the five (5) parking lots A – E as follows:

- Parking Lot A is too small as a Safety Zone.
- Parking Lot B is allocated for the Evacuation Muster location and Safety Zone and can provide a shelter area for people unable to evacuate
- Parking Lot C is allocated for seasonal RV camping and may not have adequate space for the Safety Zone.
- Parking Lot D has fuel storage and is too small due to buildings and forest edge.
- Parking Lot E is located across from the Ridge entrance and is allocated for Staging of responding agencies.



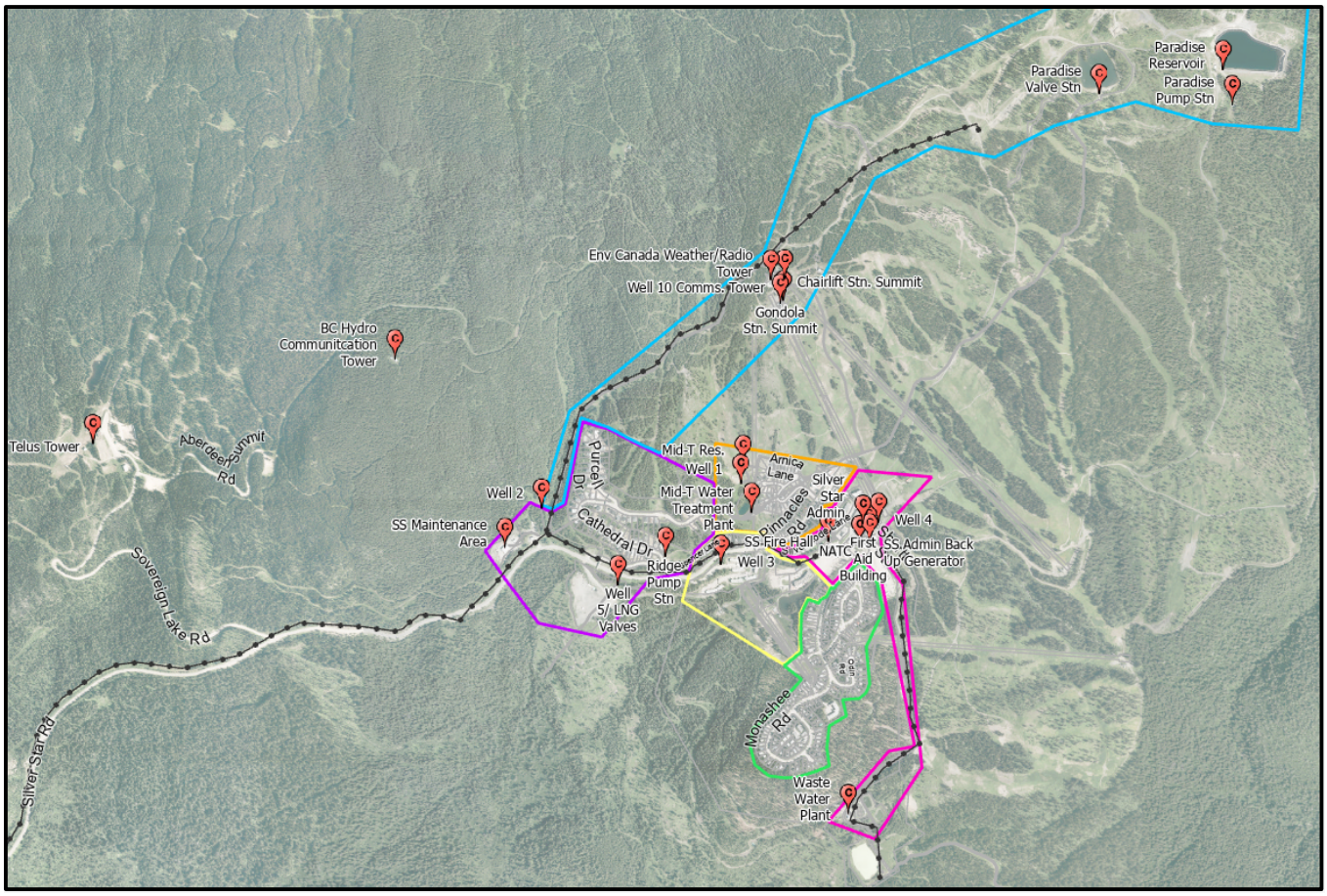
<table>
<tr><td>Possible EOC

Silver Star Admin. Office
152 Main St.
Located within Village Centre Wildfire Protection Area 1 of 6

Contact Silver Star Operations</td><td> 
Admin – EOC – (SS Admin. Has auto switch backup Gen power, set up with Mountain UHF radios, Fax, Internet, multi seat board room, large zoom TV, Kitchen, washrooms, showers)</td></tr>
<tr><td>1 Village Centre</td><td>Parking Lot B - Used for community muster location and Safety Zone.
Parking Lot C – Dependent on RV parking</td></tr>
<tr><td>3 Creekside Brewers</td><td>Parking Lot D</td></tr>
<tr><td>4 Ridge</td><td>Parking Lot E</td></tr>
<tr><td>6 Summit</td><td>Paradise and Vance Shale Pit temporary safety zone
Crews working in the vicinity of the Summit near Paradise/Vance Reservoirs have the Shale Pit for temporary refuge.</td></tr>
</table>

Critical Infrastructure

Critical infrastructure are structures that if damaged or destroyed would have a significant impact on the quick recovery of a community following a forest fire. For this reason, critical infrastructure is identified as the highest priority for structure protection.



1 Village Centre

Silver star Admin

152 Main Street

Possible EOC - (has auto switch backup Gen power, set up with Mountain UHF radios, Fax, Internet, multi seat board room, large zoom TV, Kitchen, washrooms, showers)

Contact Silver Star Operations

Silver Star Fire Dept

Silver Star Admin Building Back-up Generator

	
Silver Star Patrol Clinic / First Aid	
National Altitude Training Centre	

Silverhawk Wastewater treatment Road access is via a forestry road accessed from Parking Lot C	
3 Creekside Brewers Well 3 pump house is located beside the first Creekside Building down the strata road.	
4 Ridge Well 12, down slope of parking lot E (difficult to access during the winter)	No Image
Well # 2 Located behind the transfer station	

Fortis natural gas valve and water well #5 Located at the southeast corner of parking Lot E	
Silver Star Maintenance and Fuel Tanks	
5 Attridge Pinnacles Mid T Water Treatment Plant 9837 B Pinnacles Rd. Pumps up to the Mid-T Reservoir The Mid-T reservoir is an enclosed reservoir. (no Picture) Well 1 (no Picture)	

6 Summit

Includes 3 phase private power line to Paradise and Vance Reservoir, an old forestry lookout and Doppler Ant.

Radio Site at Summit

Radio site and Doppler Radar at Summit

Radio Site RCMP and BCAS at Summit

Cell and Radio Site Forestry lookout at Summit	
Paradise pump houses	
Vance Creek Reservoir Pump Building	

FireSmarting around the critical public infrastructure increase its resilience to wildfire and stand as an example to the public of proper FireSmarting methods.

Well Sites

Well sites are critical infrastructure with well head and electrical exposure above ground. The wells have no exterior connections and can not be used as a site to fill Tenders or operate sprinklers from. Well heads should be FireSmarted with a 1.5m non-combustible zone.

Well 1- Behind (60 m east of) 366 Monkshood Ln

Well 2- 120 m northeast of Transfer Station (9695 Silver Star Rd)

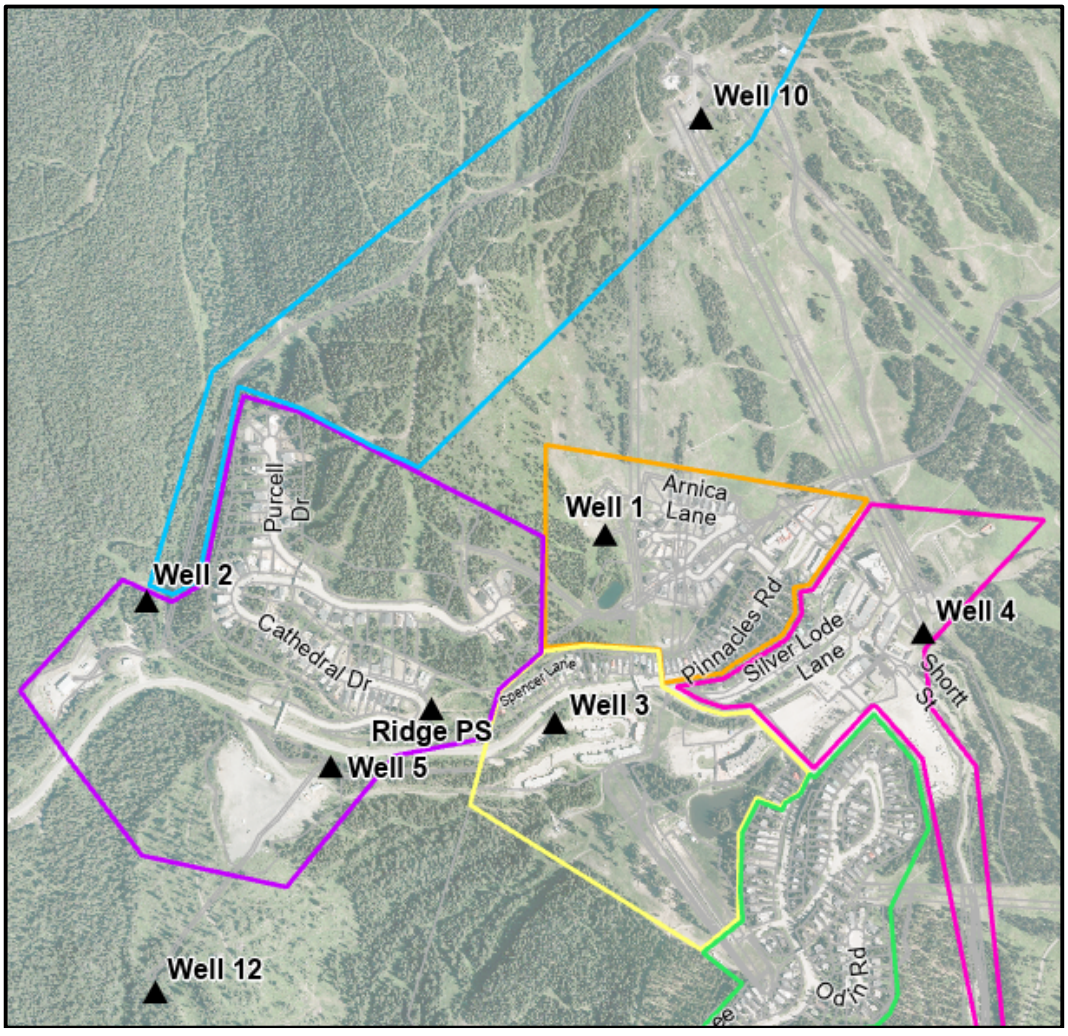
Well 3- On north side of entrance road to 9802 Silver Star Rd, Creekside Apartments, 45 m east of first apartment building.

Well 4- Behind (60 m west- southwest of) the town hall (150 Main St)

Well 5- Between Silverstar Rd and Parking Lot E- 185 m southeast of Silver Star Rd/ Cathedral Dr Intersection. 40 m northeast of horse barn.

Well 10- 750 m north- northeast of Mid-T Reservoir- adjacent to top of gondola and radar station.

Well 12- 600 m southwest of Cathedral Dr and Silver star Rd Intersection. Accessed from Parking lot E.



Municipal Water System

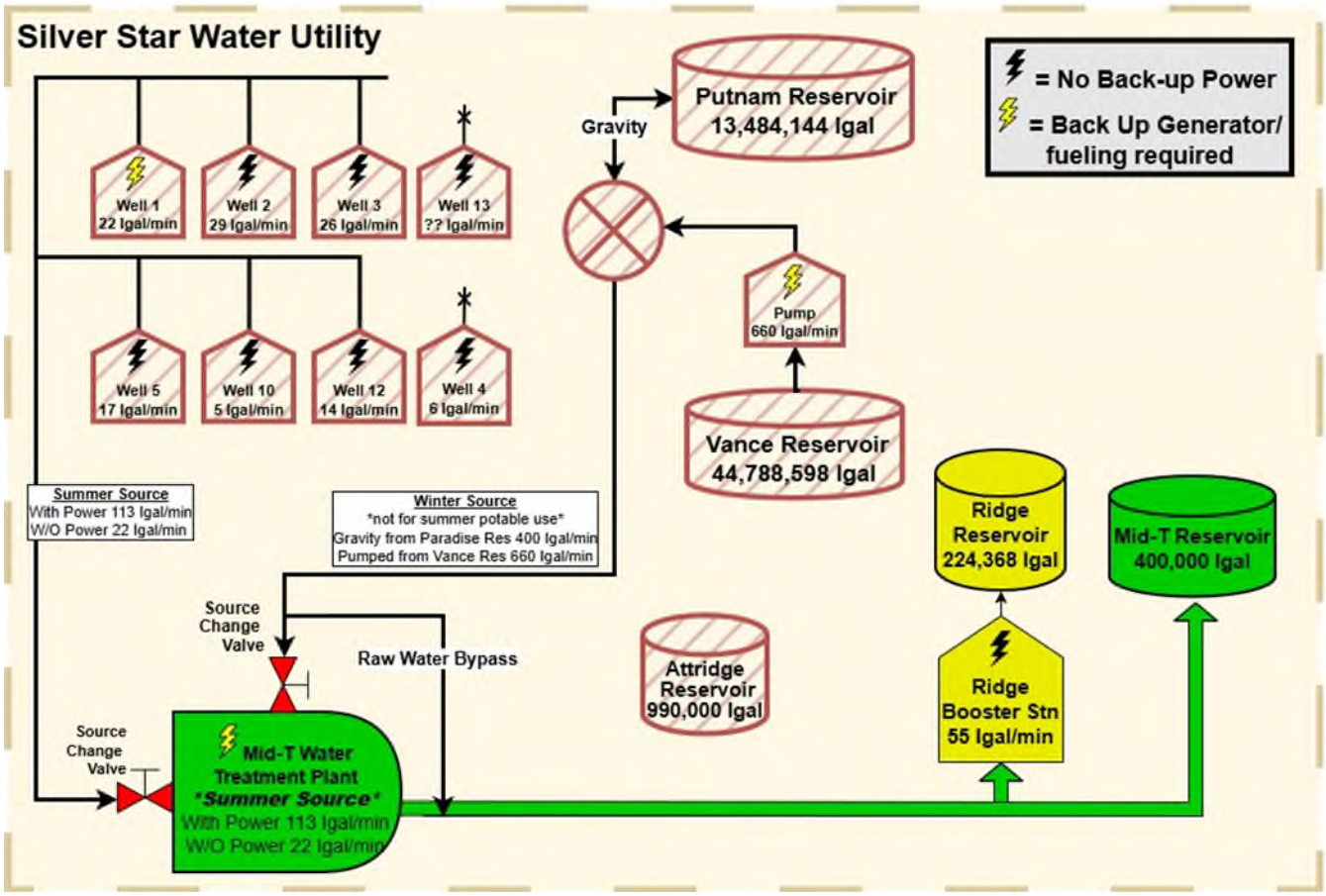
The Regional District of North Okanagan (RDNO) manages the Silver Star Water Utility (SSW) in Electoral Area "C". Small Utilities is responsible for the operation and management with oversight provided by the General Manager, Utilities and the RDNO Board of Directors. The SSW operations is contracted to Aberdeen Electric Ltd. **Before utilizing the Silver Star Water (SSW) for structure protection** contact the system operator or the Manager, Small Utilities (RDNO).

Peak season ranges from December 1 to March 31 and low season from April 1 to November 30. The total population during winter peak season is 10,161 vs 3000 in the summer low season (with many unaccounted day users).

The water source for the SSW utility comes from 2 of the 3 surface runoff collection reservoirs and 7 bedrock wells.

- Two open water surface reservoirs Vance Creek (Vance) and Paradise Lake (Paradise), are used to store water for peak winter season at Silver Star and are filled by runoff collected from snow melt.
- Attridge Reservoir, located in the Village beside the Mid-T Treatment Plant, is no longer connected to the water system but still collects groundwater from French drains installed in the adjacent ski slope,
- There are six operational bedrock wells connected to the water system and are identified as Wells #1, 2, 3, 5, 10 and 12. Well 4 is still operational but not connected to the water system and is designated as an emergency back up well. Well 13 is owned by POWDR and could be connected to add water to the 150mm water line running from Paradise to the Mid-T Water Treatment Plant.
- Brewer's Pond is another natural water collection point in the area and can be used for drafting.

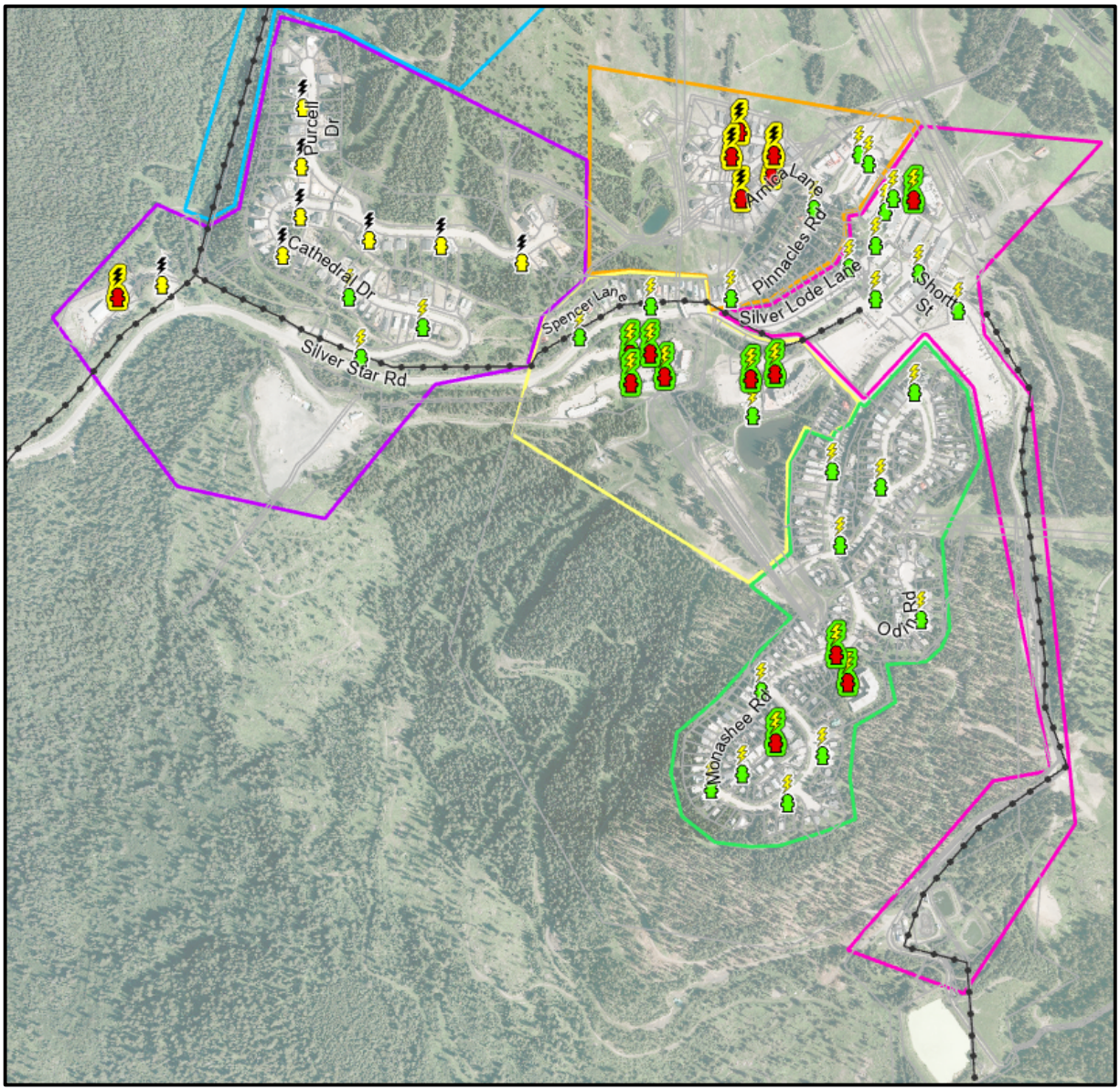
During the summer season, surface reservoirs (Putnam/Vance) are not used for the potable supply, only the wells provide water to the Mid-T water treatment plant (back up power Well 1 only). Water is pumped from the Mid-T Water Treatment Plant to the Mid-T Reservoir. Mid-T Reservoir provides water to most of the area and to the Ridge Booster Station, which pumps to the Ridge Reservoir (servicing the Ridge subdivision). Without the surface sources in the summer water is **very** limited. **A loss of power to the area drastically compounds the low summer water availability and nearly eliminates any refresh rate of the system.** Working closely with the Silver Star Water Utility (SSW), there may be options to bypass water treatment to increase water available to hydrants. This system change will result in non-potable water sent through the system and will result in costly remediation. This change can only be authorized through the Silver Star Water Utility (SSW) and must meet identified threshold criteria. The below table outlines system refresh rates as available power and water changes.



Below are identified scenarios and estimated refresh rates if the use of non-potable water through the municipal systems is identified as the only means to prevent catastrophic losses.

#	Scenario	Source	System Refresh rate	System status	Comments
1	Hydro is on. The system is operating as normal.	All wells active	8l/s 113 Igal/min	Potable	The system has a very limited refresh rate.
2	Hydro is off.	Only Well #1 Active	2L/s 22 Igal/min	Potable	This system flow will not support fire fighting operations, nor will there be meaningful recovery of the reservoirs. A procedure to use alternative sources (e.g. Brewer's Pond) should be implemented.
3	Hydro is off. Area under Order and boil water issued.	Paradise Res (Gravity)	30 l/s est. 400 Igal/min	Non-potable	Any time Paradise or Vance surface reservoirs are used, the system will become untreated or non-potable and required Water Utility authorization and processes.
4	Hydro is off. Area under Order and boil water issued. Back up power at Vance Pump Station.	Vance Res (Pump)	50 l/s est 660 Igal/min	Non-potable	System can be configured remotely if Hydro is on. Having a back up power at Vance Pump Stn. and would also ensure that Paradise is topped up in case of generator failure during a burn over or fuel outage.

The Mid-T Reservoir relies on backup diesel generators to maintain operations during power outages. To ensure system reliability, coordination between the RDNO Small Utilities, and Utility Operations is essential. Generators should be refueled as directed and **must not be left running for more than 24 hours without inspection**. If a backup diesel generator runs out of fuel, it cannot be easily restarted and may require mechanical servicing before being brought back online. This can result in prolonged outages, reduced water-system resilience, and impaired capacity to support firefighting and critical infrastructure needs during emergencies.



The prepared map outlines how different areas of the Silver Star Water System are affected during a power outage, based on their water source and power dependency.

- **Reservoirs with Backup Generators**
  - Hydrants are **color-coded by reservoir** and marked with a **yellow lighting bolt** to indicate backup power.
  - These reservoirs will **continue to refill and supply water** to hydrants during a power loss.
  - Generators must be **refueled and inspected a min. of every 24 hours**, or as directed by utility staff.

- **Reservoirs Without Backup Power**
  - Hydrants are **color-coded by reservoir** and marked with a **black lightning bolt** to indicate power dependency.
  - These will only supply water **until the reservoir is depleted**.

- **Pump-Only Systems (No Reservoir)**
  - These are shown as **black and white hydrants with a lightning bolt**.
  - Hydrants directly fed by pumps **without reservoir backup** will **lose water immediately** when power is lost.

- **Private Hydrants**
  - **Red hydrants** are privately owned and **not maintained** by Greater Vernon Water.
  - The coloured halo indicates which reservoir group they belong to.
  - Their **serviceability, maintenance, and flow capacity are unconfirmed**.

The Regional District of North Okanagan (RDNO) General Manager - Utilities, provides oversight of the water system. **All capacities and refresh rates are based on <u>maximum</u> capacities and flat-out pumping rates, or maximum rates allowed by a flow limiting PRV.** Reservoirs levels are subject to residential, commercial, and agricultural use and **<u>must never be assumed to be at full capacity</u>**. Any other water use within the system reduces refresh rates. Consult the water utilities for real-time updates and levels.

Retardant:
The supply for the Mid-T Water Treatment Plant is dependant on the surface water way from the Silver Star Watershed to Vance and Putnam Reservoirs. Disrupting this infrastructure with fire guards, debris or **retardant** can have a critical impact on water to the entire service area and water quality.

Hydrants are designed for Structure Suppression (structures on fire) and not wildfire front control, as they are limited by capacity and design. While hydrants may support Structure Protection operations (sprinklers deployed to increase humidity around the perimeter of each structure) this should only occur in coordination with utility operations and within tactical water resource limits. Hydrants must not replace the need for Structure Protection tender fill operations, which remain essential for wildfire response.

Structures located outside of Silver Star Fire Protection Area are not included in this plan and will require assessment if threatened by wildfire.

Reservoirs

Mid-T Reservoir

Location	Capacity	Recharge Flow	Rate Limiting Factor	Minimum Fill Time
9855 Pinnacles Rd – access road	1543 m3 339,464 Imp Gal	**Summer Source** **With Power 113 Igal/min** **W/O Power 22 Igal/min**	Supplied by the Mid-T Water Treatment Plant (WTP) with a backup generator to supply power during short-term outages (also powers Well #1). The Paradise Reservoir (gravity) and Vance (pumped) flow to the WTP. The surface reservoirs are only used to supply water during the winter. They can be activated year-round, but a sudden activation would cause significant turbidity spikes, and lead to water quality degradation. Generator requires fueling (200-gal Diesel) daily. Limited well flows and power loss limit rate.	50-257 hrs.

No Picture

Ridge Reservoir

Location	Capacity	Recharge Flow	Rate Limiting Factor	Minimum Fill Time
7682 Cathedral Dr.	1020 m3 224,368 Imp Gal	4.3 l/s **55 Igal/min**	Supplied by the Ridge Booster station with no back up generator.	68 hrs.

No Picture

Paradise Raw Water Reservoir

Location	Capacity	Recharge Flow	Rate Limiting Factor	Minimum Fill Time
Putnam FSR.	61,300 m3 13,484,144 Imp Gal	N/A	Gravity feeds the Mid-T Water Treatment plant. 150mm supply line limits flows to ~400 Igal/min. Can be supplemented from Vance Reservoir via pump (660 gal/min).	1 Year

No Picture

Vance Raw Water Reservoir

Location	Capacity	Recharge Flow	Rate Limiting Factor	Minimum Fill Time
Putnam FSR.	61,300 m3 44,788,598 Imp Gal	N/A	Can be supply Paradise Reservoir via pump @ 660 gal/min. Pump has back up generator install planned 2026 that will need to be fueled daily.	1 Year

No Picture

Hydrants

Silver Star Fire Protection Area has 48 fire hydrants. Hydrants are intended for Structure Suppression (structures on fire). Hydrants **should not be relied on** to support Structure Protection. **Reservoir capacity is extremely limited and with no refresh rate when power is off to the area.** Structure Suppression Relay Tanks would be filled by Tenders or managed the same as non-hydrant areas where MK3 and BB4 pumps from surface reservoirs such as Attridge, Brewers, Putnam, and Paradise with surface hose lays (4", 2.5", and 1.5"). Tenders may be able to fill from Attridge and Brewers to haul water to fill Relay Tanks as an alternative.

1 Village Centre

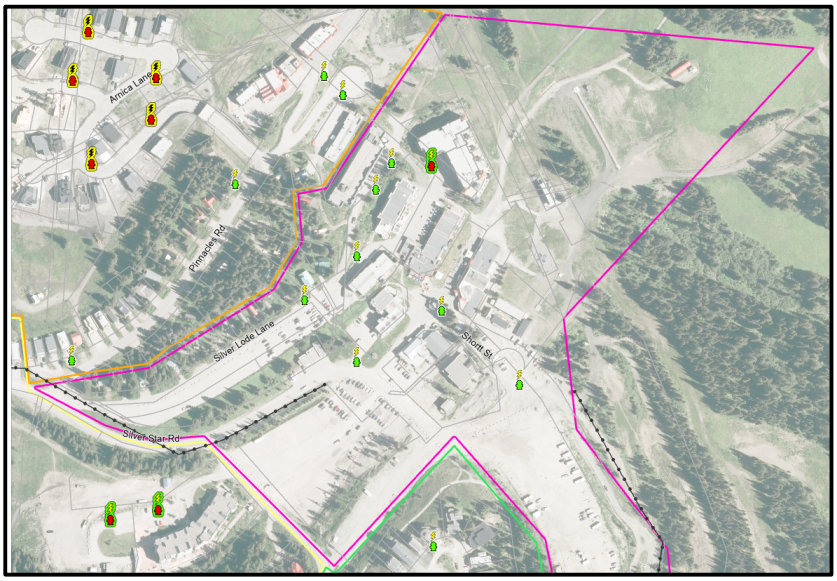
Wildfire Protection Area
1 of 6

(Silver Star Rd, Main Street, Shortt St, Parking Lot B)

8 Hydrants

Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll.

Mid-T Reservoir:
TWL 1,685m
339,464.1 Igal
<u>With Summer Source</u>
With Power 113 Igal/min
W/O Power 22 Igal/min
50-257 hrs. to fill.
200 gal diesel check daily



2 Knoll

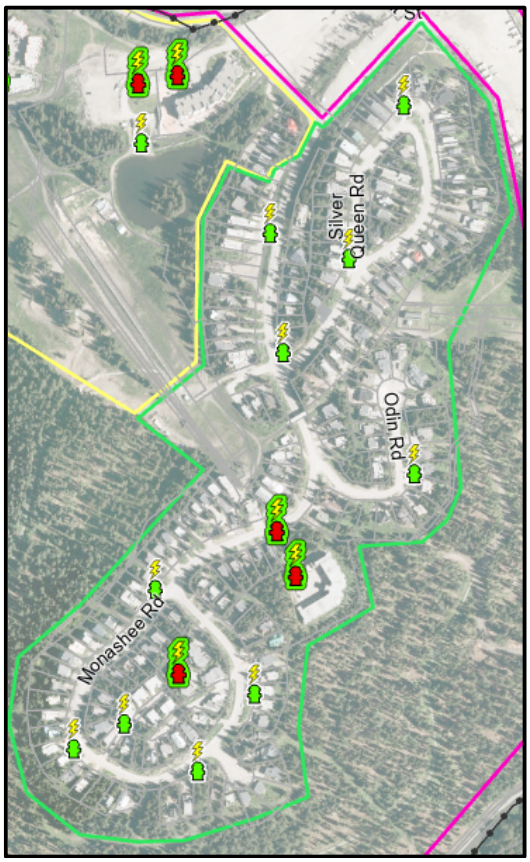
Wildfire Protection Area 2 of 6

(Monashee Rd, Silver Queen Rd, Odin Rd, Parking Lot C – RV camping area & also includes the Sewer Treatment Plant.)

13 Hydrants
1 Drafting site: Brewers Pond

Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll.

Mid-T Reservoir:
TWL 1,685m
339,464.1 Igal
With Summer Source
With Power 113 Igal/min
W/O Power 22 Igal/min
50-257 hrs. to fill.
200 gal diesel check daily



3 Creekside Brewers

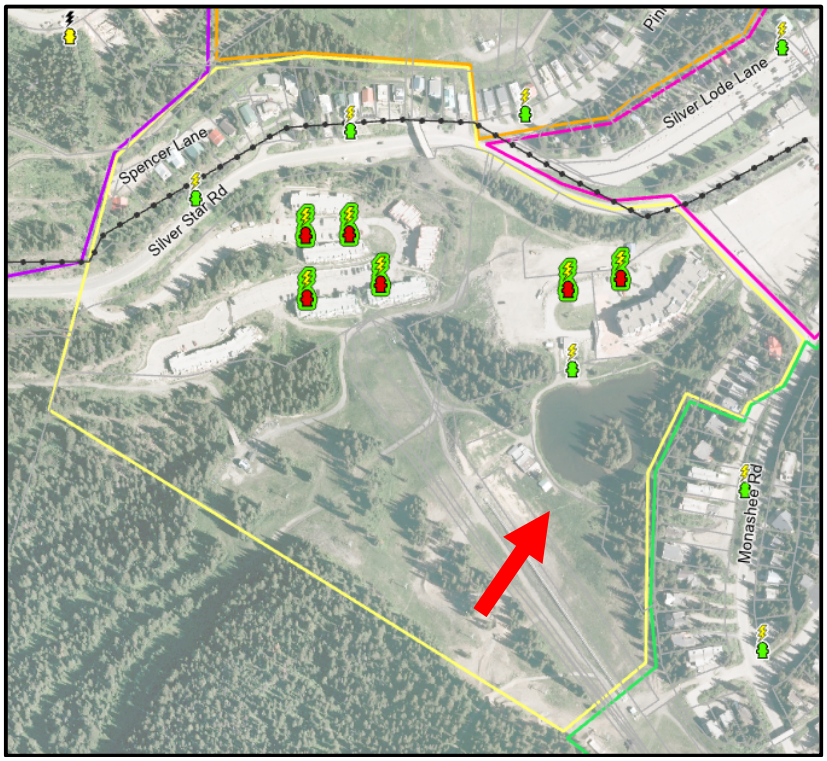
Wildfire Protection Area 3 of 6

(Creekside and Fire Light Lodge 140 Monashee Rd)

9 Hydrants
1 Drafting site: Brewers Pond

Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll.

Mid-T Reservoir:
TWL 1,685m
339,464.1 Igal
With Summer Source
With Power 113 Igal/min
W/O Power 22 Igal/min
50-257 hrs. to fill.
200 gal diesel check daily



4 Ridge

Wildfire Protection Area 4 of 6

14 Hydrants
1 Drafting site: Cistern

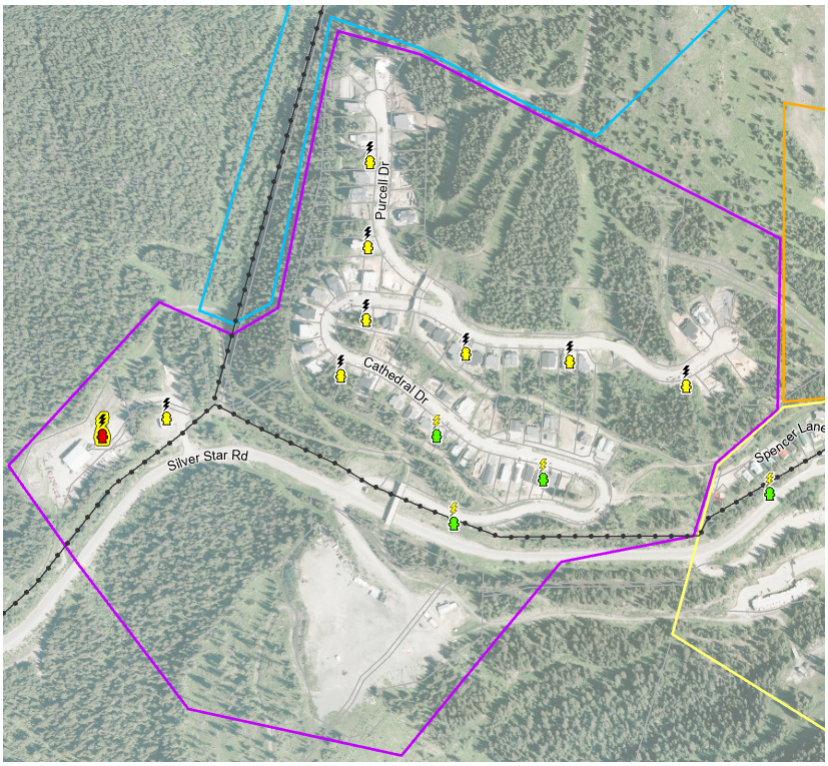
Water from Mid-T Reservoir is pumped to the Ridge Reservoir via the Ridge Booster Station.

Ridge Booster Station

9792 Cathedral Dr.
56 Igal/min
No backup power

Ridge Reservoir:
7682 Cathedral Dr.
TWL 1,732m
224,368.62 Igal.
Refresh rate 55 imp gal/min
Takes 68 hrs to fill.

Drafting Site:
Cathedral Cistern
10,000 gal
9792 Cathedral Dr.



Structure Protection with sprinklers in the Ridge neighbourhood should not rely upon the municipal water system.

Ridge Booster Lift pump refresh rate will be exceeded by running structure protection low flow sprinklers on 5 homes. The Ridge Pump Station does not have backup power.

A cistern is in place to supplement structure protection.

5 Attridge Pinnacles

Wildfire Protection Area 5 of 6

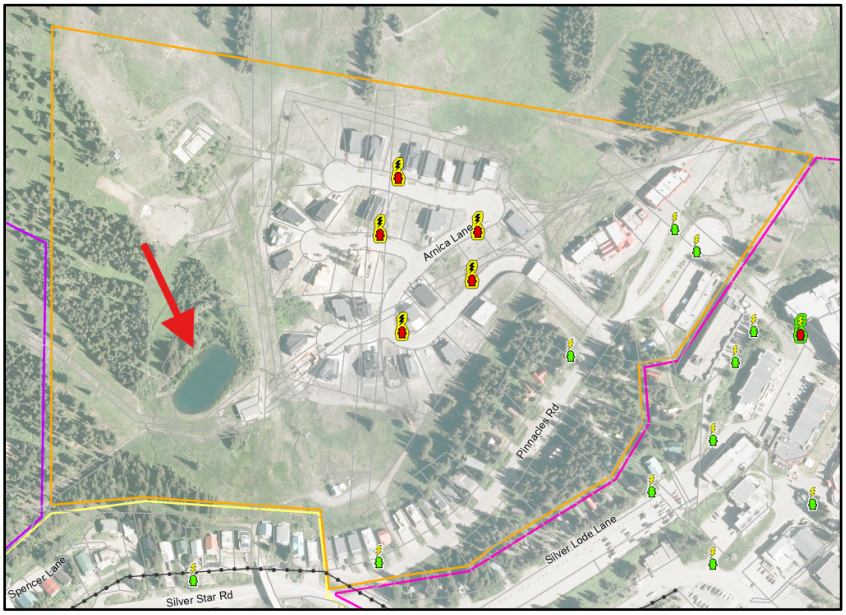
9 Hydrants
1 Drafting site: Attridge Reservoir

Mid-T Reservoir provides water to hydrants on Pinnacles Rd only Higher elevations are supplied from the Ridge Reservoir.

Mid-T Reservoir:
TWL 1,685m
339,464.1 Igal
With Summer Source
With Power 113 Igal/min
W/O Power 22 Igal/min
50-257 hrs. to fill.
200 gal diesel check daily

Drafting site:
Attridge Pond
A small unused open water reservoir located immediately upslope of the Mid-T Water Treatment Plant

9837 B Pinnacle Rd.
TWL 1,638.46m
990,000 Igal



Attridge reservoir is the original water storage pond for Silver Star Village built circa 1980. Currently not used for community water supply. Suitable for MK3 pump site to supply water for structure sprinklers for Pinnacles neighbourhood.

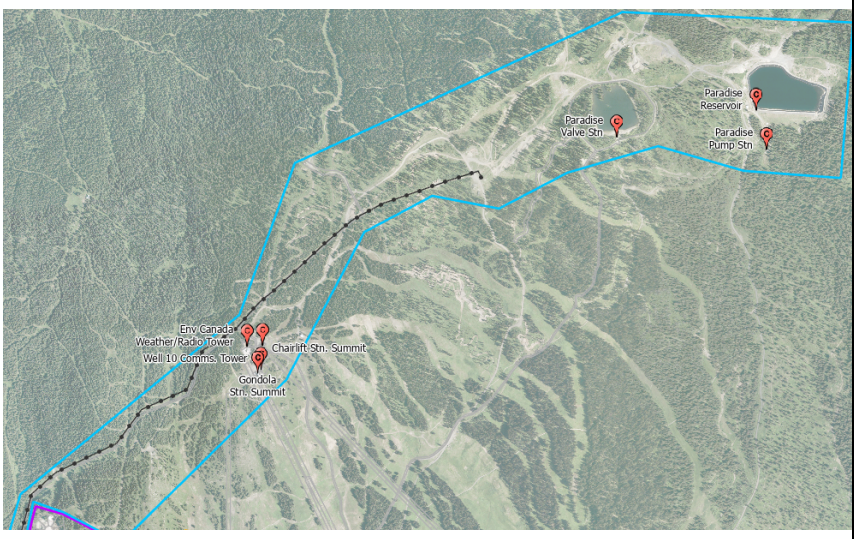
6 Summit

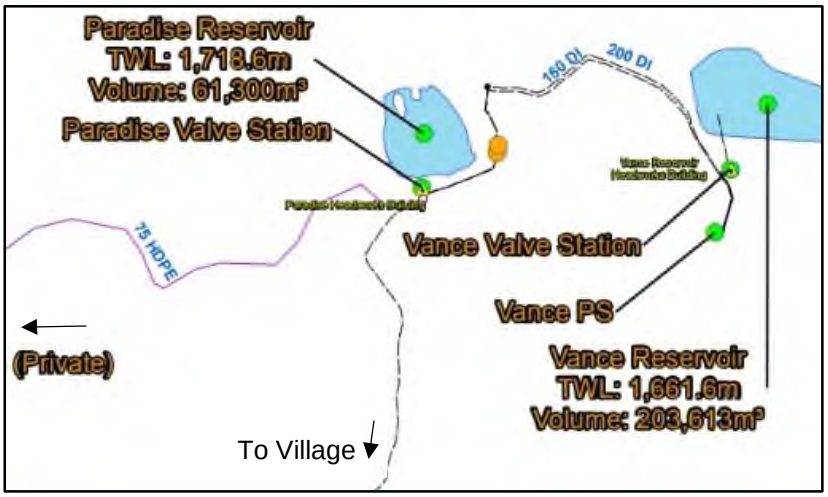
Wildfire Protection Area 6 of 6

Located outside of the Silver Star Fire Protection area.

0 Hydrants.
Drafting sites: Vance and Paradise Reservoirs.

Vance Reservoir
Putnam FSR.
TWL 1,661.6m
44,788,598 Igal when full.
Pumped to Paradise/Mid-T with back up generator



Paradise Reservoir Putnam FSR. TWL 1,718.6m 13,484,144 Igal when full. Gravity feed to Mid -T WTP. 150mm PVC line	

Outside of Silver Star Fire Protection Area but within the Silver Star Recreation Area and Silver Star Provincial Park are properties that if threatened by wildfire a BC Wildfire Structure Protection Specialist will have them prioritized and triaged for structure protection.

Definitions

Anchor Point: A safe location, such as a river or road, that is a barrier to fire spread and from where crews should start building a fire break or line. Anchor points should prohibit fire from establishing itself on the other side of an unsuspecting crew.

Community: An area or place considered together with its inhabitants, whether the community represents an official jurisdiction.

Drafting: The use of suction to move water from a vessel or body of water below the intake of a suction pump

Drafting Site: An area with water source that is suitable for the access and positioning of firefighting equipment (portable pump, tankers, brush trucks, and/or engines) to engage in drafting.

Escape Routes: Predetermined routes out of the hazard zone that leads back to the safety zone. Crews should always have two escape routes that are marked, walkable, clear of debris, and allow for expedient emergency egress.

Fill Site: A pressurized water source where fire apparatus can fill their tanks without drafting. Examples include hydrants, raised reservoirs, or pumps.

Fire Smart: A national program designed to reduce interface fire risk to communities. In BC, the program is administered by the Ministry of Forests, Lands and Natural Resource Operations Wildfire Management Branch.

Fuel Management: Generally associated with the reduction of surface and ladder fuels through mechanical removal, biological methods, or prescribed burns.

Lookout: Person who has the responsibility of watching fire behaviour and relating the situation to their supervisor. Should be located in an advantageous position for wildfire observation.

Risk Management: The continuous process of identifying, analyzing, and evaluating risks and resources; and weighing these factors against operational objectives. Risk management at WUI events must prioritize the life safety of first responders.

Safety Zone: An area devoid of combustibles and fuels, that provides a separation distance for firefighters and their apparatus that is four times the anticipated flame lengths.

Situational Awareness: The perception of environmental elements with respect to time and/or space, the comprehension of their meaning, and the projection of their status as variables (time, weather, resources, tactics, etc.) change.

Structure Triage: The process of inspecting and classifying structures according to the defensibility or non-defensibility based on numerous factors including the establishment of a safety zone, fire behavior, location, construction, and adjacent fuels.

Threatened Defensible: Structure Triage Category where Safety Zone and TRA are present with adequate water supply with structure defense tactics and conditions supporting firefighters remaining during fire front contact.

Threatened Non-Defensible: Structure Triage Category where Safety Zone or TRA or water supply is inadequate, and structure has challenges that do not allow firefighters to safely commit to stay.

Value: A generalized term used by responding emergency officials to identify structures (private and public) whether commercial, industrial, public infrastructure or residential.

Structure Defense Tactical Actions

Check & Go – Threatened Non-Defensible

Determining factor: Lack of time and inadequate defensible space.

Size up: Structure has significant tactical challenges. (Owners not invested in Fire Smarting the structure).

Tactics: Firefighters not able to commit to stay and protect structure. If time allows, ensure people are not present in the threatened structure (especially children, elderly, and invalid). Set trigger point for safe retreat. Patrol following the passage of the fire front will be needed to protect the structure.

Prep & Go – Threatened Non-Defensible

Determining factor: Time and resources to prepare structure for defense but Safety Zone and TRA are not present for firefighters to remain when fire front arrives.

Size up: Structure has some tactical challenges.

Tactics: Firefighters not able to commit to stay and protect structure. If time allows, rapid mitigation measures may be performed. Set trigger points for safe retreat.

Remember, pre-incident preparation is the responsibility of the homeowner. Patrol following the passage of the fire front will be needed to protect the structure.

Prep & Defend - Threatened Defensible

Determining factor: Adequate time exists to safely prepare structure for defense with Safety Zone and adequate water supply.

Size up: Structure has some tactical challenges.

Tactics: Firefighters needed onsite to implement structure protection tactics during fire front contact.

Standalone – could be Threatened Defensible or Threatened Non-Defensible

Determining factor: Structure and landscaping follow FireSmart guidelines

Size up: Structure has very few tactical challenges. Landscaping has very few tactical challenges.

Tactics: Firefighters may not need to be directly assigned to protect structure as it is not likely to ignite during initial fire front contact. However, no structure in the path of a wildfire is completely without need of protection. Patrol following the passage of the fire front will be needed to protect the structure.

Fire Front Following – used to come in behind the fire front.

Determining factor: A follow-up tactic employed when Check & Go, Prep & Go, or Bump and Run are initially used.

Size up: Come in behind the fire to search for victims, extinguish spot fires around structures, and reduce ember production.

Tactics: Used when insufficient time to safely set up ahead of the fire, or the intensity of the fire could cause injury to personnel located in front of the fire.

Bump & Run – used ahead of the fire to extinguish spot fires and hot spots to defend as many structures as possible.

Determining factor: Early stages of fire when resource commitment is light and structure defense is the priority. With adequate resources it can be used to control or steer the fire to a desired end point.

Size up: Identify and prepare control lines with dozers and fire crews to direct the fire to end point.

Tactics: Resources must remain mobile and must constantly identify Escape Routes to Safety Zones as they move with the fire front.

Anchor & Hold – an attempt to stop fire spread.

Determining factor: Urban neighbourhoods where the proximity of neighbouring homes presents a risk of house-to-house ignition.

Size up: Requires considerable resources, such as engine crews and hand crews.

Tactics: Fixed engines spotted in safe areas where they can safely withstand any fire situation. Mobile engines prepared to re-deploy to other areas if the fire escapes the Anchor & Hold line.

Tactical Patrol - initiated:

During the fire event in neighbourhoods away from the interface where there is predicted ember cast.

After fire front has passed to patrol and extinguish for hot spots and ground fires in proximity to structures.

Determining factor: Quick fire suppression to “Save what you can, and loose what you must”.

Size up: Patrol downwind of potential ember showers. Address safety issues such as power lines, burnt weakened trees, and other hazards.

Tactics: Mobility and continuous monitoring of an assigned area. Extinguish hot spots or secondary structure ignitions.

Structure Defense Plan Overview

When a community or fire protection area is overwhelmed in its ability to defend itself from wildfire, a request for additional firefighting resources may be submitted to the Province via the Office of the Fire Commissioner under an EMBC incident task number or through BCWS under a wildfire incident number. The management of the Provincial resources are detailed in the Inter-Agency Agreement between the Office of the Fire Commissioner, Fire Chiefs Association of BC and BCWS.

The Structure Defense Plan (SDP) that follows was created by a Structure Protection Specialist for this community. The SDP is a foundation of planning for what Fire Defense resources may be required during a wildfire event. During an actual event, the plan will be reviewed with the BCWS Incident Command Team and local authorities to determine what will be requested through the OFC. A general guideline for the number and types of fire apparatus required for an SDP is as follows:

- Type 3 Engine per home within the intermix
- Type 1 Engine per 2-3 homes within the interface when hydrants are present and working
- Type 1 Tender to support 3 water bladders or 2 Engines
- Type 2 Tender to support 2 Engines in areas without hydrants
- Type 4-6 Engines (Bush Truck) as required to support tactical patrols in the Incident Action Plan

With due respect to the general guidelines above, there are several other factors that must be considered when drafting an SDP for an area under threat of wildfire. These factors will vary as much as the communities that require defending. These factors may include but not limited to the following:

- Expected fire behavior and weather forecast.
- Type, volume, distribution, and proximity of natural fuels surrounding the improved areas and local infrastructure.
- Availability of outside resources.
- Access and egress in and around properties in the interface and intermix areas.
- Volume and distribution of properties and improved values in the area.
- Water Sources.
- Availability of Safe Zones.
- Time required to deploy provincial resources.

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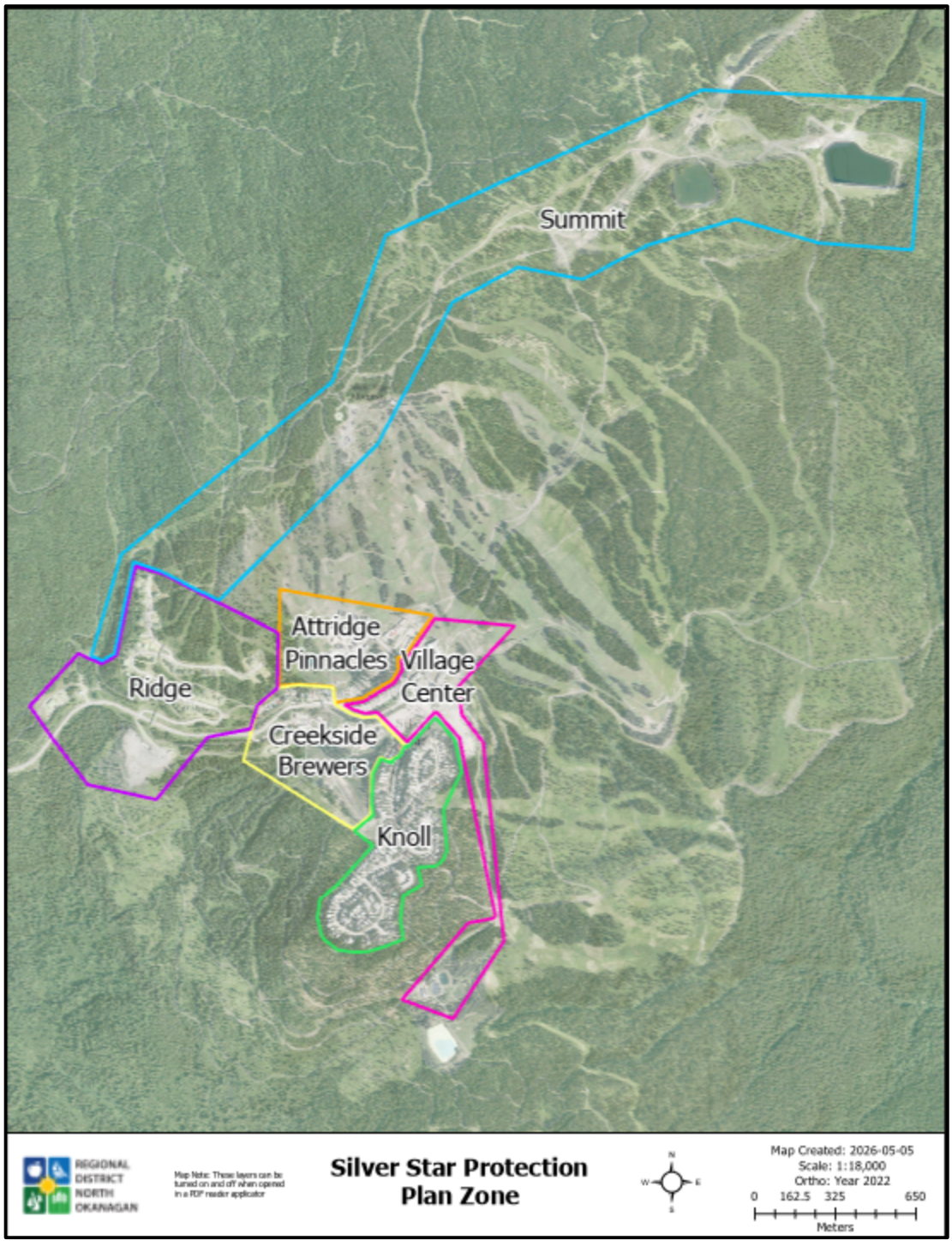
Area Overview

The Silver Star Structural Defense Plan is divided into 6 Wildfire Protection Areas for purposes of allocating resources to protect structures from a wildfire



1 Village Centre	**2 Knoll**	**3 Creekside Brewers**
4 Ridge	**5 Attridge Pinnacles**	**6 Summit**

STRUCTURE DEFENSE PLAN

Date	**June 2022**
Incident name / Number	**Silver Star Fire Protection Area**
EMBC Task #	
Fire Centre	**Kamloops**
GrpS Name, Ph#, email	**Kevin Dalgarno** **250-558-8549**
Area / Community	**RDNO Area C, Silver Star, Vernon**

Communications Plan		
Function	**Channel No.**	**Assigned to**
Ground to Ground	**OFC 01**	**Structure Protection**

Please be advised that the structure defense plan below is based on observations and are recommendations only. It is critical for the Structure Protection Specialist to develop his/her own structure protection plan as the fire dynamics might allow for different tactics.

Strategies must reflect a realistic approach taking into consideration the available resources. A strategy will fail if it requires many resources that can not arrive in a timely fashion. Strategy is subject to change due to changes in weather, fire behavior, resources availability, and objectives. Never get locked into a single plan of action.

Date: June, 2022 Evaluator(s): Dalgarno, Wacey, Betz

1SS

Primary Value RES/COM. /OTHER	**Location:** **Street / Unit #**	**Intermix/ Interface**	**Triage Category:** **Not Threatened Threatened Defensible Threatened Non-Defensible**	**Tactical Actions** **Check & Go - - - - Prep & Go Prep & Defend - - Bump & Run Anchor & Hold - - Tactical Patrol Fire Front Following**	**Resources** **SPC's/ENG Ie: 3E = Type 3 Engine 2T = Type 2 Tender**	**Water Source**	**Comments**
Com/ Res/ Seasonal Rec	**Zone 1** **Village Center** (Silver Star Rd, Main Street, Shortt St, Parking Lot B) **~16 Residential** **14 Commercial/ Hotel** **1 Fire Hall** **1 Gondola Base Station** **1 Sewer Treatment Plant**	Interface/ Intermix	Wildfire risk greatest from embers igniting spot fires. Homes along Silver Lode Ln are Threatened Non-Defensible Commercial hotels and business are Threatened Defensible	Silver Lode Lane (Parking Lot A) has 16 Cabins built amongst the trees. SPC's – Prep & Go followed by Tactical patrol after fire passes ENG – Tactical Patrol prior to fire front arrival. Leave before escape routes compromised ENG – Fire Front Following after the fire passes Commercial properties along Silver Lode Ln, Main St. ENG – Bump & Run during fire front arrival ENG - Anchor & Hold if risk of structure-to-structure ignition ENG/SPC – Tactical patrol after fire front passage	SPC 5 Pack x 1 SPU Type 2 x 1 5E x 2 1E x 4 Aerial Ladder Truck x 2	**8 Hydrants** Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll. **Mid-T Reservoir:** TWL 1,685m 339,464.1 Igal With Summer Source With Power 113 Igal/min W/O Power 22 Igal/min 50-257 hrs. to fill. 200 gal diesel check daily Interior sprinklers in businesses. Structural Protection sprinklers run from hydrants	Homes along Silver Lode Ln are set amidst mature forest with access from Parking Lot A. Sprinklers can directly attach to hydrants to conserve pumps and relay tanks for other areas. Businesses in the main village share a common wall. Risk of structure-to-structure ignition is high. **Aerial Ladder Truck** for structures greater than 3 floors will be needed. Maintain escape route to Parking Lot B in event fire out pace's suppression resources. Water supply and proximity to Safety Zone supports Anchor & Hold. **LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has no access for portable pumps and drafting site. Hydrants are limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: High Voltage-Aerial powerline, Sewage Treatment Plant and Fire Hall

2SS

Primary Value RES/COM. /OTHER	**Location:** **Street / Unit #**	**Intermix/ Interface**	**Triage Category:** **Not Threatened** **Threatened Defensible** **Threatened Non-Defensible**	**Tactical Actions** **Check & Go - - - - Prep & Go** **Prep & Defend - - Bump & Run** **Anchor & Hold - - Tactical Patrol** **Fire Front Following**	**Resources** **SPC's/ENG** **Ie:** **3E = Type 3 Engine** **2T = Type 2 Tender**	**Water Source**	**Comments**
Com/ Res/ Seasonal Rec	**Zone 2** **Knoll** (Monashee Rd, Silver Queen Rd, Odin Rd, Monashee Crt, Mistaya Lane) **~188 Residential** **4 Large Multi-Family**	Interface / Intermix	Wildfire risk greatest along the intermix where homes back onto the forest off Monashee Rd. Area is Threatened Non-Defensible	Monashee Rd. neighbourhoods bordering the forest SPC's – Prep & Go followed by Tactical patrol after fire passes ENG – Bump and Run prior to fire front arrival ENG – Fire Front Following after the fire passes ENG - Anchor & Hold if risk of structure-to-structure ignition, withdraw along Escape Route into the Safety Zone.	SPC 5 Pack x 2 SPU Type 1 x 1 2E x 3 5E x 3 2T x 4 2E x 2 1T x 2	**13 Hydrants** **1 Drafting site: Brewers Pond** Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll. **Mid-T Reservoir:** TWL 1,685m 339,464.1 Igal With Summer Source With power 113 Igal/min W/O Power 22 Igal/min 50-257 hrs. to fill. 200 gal diesel check daily Knoll Hydrants and Tenders to maintain 2,500-gal relay tanks with MK3's running sprinklers	**LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has no access for portable pumps and drafting site. Hydrants are limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: None Some homes are surrounded by forest. Sprinklers protect homes along the leading edge. Type 2 Engine crew Bump & Run maintaining escape routes to the safety zones. Type 5 Engines patrol dead-end streets with limited turning radius. Brewer's Pond possible BB4 pump site to fill Tenders and or pump site for structure sprinklers. Structural Protection Crew tactic - Prep and Go. Structure Suppression crews support SPC's with labor. When hot fire embers begin to land, the Engines commence tactic - Bump and Run extinguishing spot fires to defend as many structures as possible. Then move into Safety Zone at Parking Lot B. Tactical Patrol after main fire front has passed.

3SS

Primary Value RES/COM./OTHER	**Location:** **Street / Unit #**	**Intermix/ Interface**	**Triage Category:** **Not Threatened** **Threatened Defensible** **Threatened** **Non-Defensible**	**Tactical Actions** **Check & Go - - - - Prep & Go** **Prep & Defend - - Bump & Run** **Anchor & Hold - - Tactical Patrol** **Fire Front Following**	**Resources** **SPC's/ENG** **Ie:** **3E = Type 3 Engine** **2T = Type 2 Tender**	**Water Source**	**Comments**
Com/ Res/ Seasonal Rec	**3 Creekside Brewers** **~22 Residential** **8 Large Multi-family** **2 Small Commercial**	Interface	Area is Threatened Defensible	Bump & Run to extinguish spot fires Anchor & Hold if structure catches on fire to prevent structure to structure ignition. If fire out paces the ability to control it, withdraw along Escape Route into the Safety Zone. Tactical Patrol after fire front passage for mop up around structures. ENG/SPC – Tactical Patrol after fire front passage.	Creekside 2E x 5 Supported with hydrants Brewers 2E x 2 1T x 2 or pumps from Brewers Pond to porta ponds for Engines to draft from. Inspect roof tops to verify no flammable materials that would require roof top sprinklers	**9 Hydrants** **1 Drafting site: Brewers Pond** Mid-T Reservoir provides water to hydrants and customers at Creekside Brewers along with the Village, and Knoll. **Mid-T Reservoir:** TWL 1,685m 339,464.1 Igal With Summer Source With power 113 Igal/min W/O Power 22 Igal/min 50-257 hrs. to fill. 200 gal diesel check daily .	**LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Zone has access for portable pumps and drafting site at Brewers Pond. Hydrants are private and limited to reservoir storage (Mid-T Reservoir). Critical infrastructure: none Coordinate Structure Protection utilizing resources such as cat guard, aerial retardant, and sprinkler wet line between structures and advancing wildfire. Brewers pond with BB4 pumps to support Porta pond for Eng drafting at Fire Light Lodge.

4SS

Primary Value RES/COM. /OTHER	Location: Street / Unit #	Intermix/ Interface	Triage Category: Not Threatened Threatened Defensible Threatened Non-Defensible	Tactical Actions Check & Go - - - - Prep & Go Prep & Defend - - Bump & Run Anchor & Hold - - Tactical Patrol Fire Front Following	Resources SPC's/ENG Ie: 3E = Type 3 Engine 2T = Type 2 Tender	Water Source	Comments
Residential Seasonal Recreational	**Zone 4** **Ridge** (Cathedral Dr and Purcell Dr.) **~63 Res** **1 Maint. Shop** **1 Transfer Station** Parking Lot E – Staging Area for incoming resources.	Intermix	Area is Threatened Non-Defensible	Purcell and Cathedral Dr. SPC's – Prep & Go followed by Tactical patrol after fire passes ENG – Task Force Bump & Run, leave before escape routes compromised ENG – Fire Front Following after the fire passes ENG - Anchor & Hold if risk of structure-to-structure ignition, withdraw along Escape Route into the Safety Zone. ENG/SPC – Tactical Patrol after fire front passage.	SPC 5 Pack x 2 SPU Type 1 x 1 or SPU Type 2 x 3 1T x 3 2E x 3 with 1T x 2	**10 Hydrants** **1 Drafting site: Cistern** Water from Mid-T Reservoir is pumped to the Ridge Reservoir via the Ridge Booster Station. **Ridge Booster station** 9792 Cathedral Dr. 56 Igal/min No backup power **Drafting Site: Cathedral Cistern** 10,000 gal 9792 Cathedral Dr. Tenders will be required to support Str. Protection. Attridge pond for Structure Protection water source for homes closest to Silver Star Rd. and/or east to Cathedral.	**LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Special Hazards: Above ground fuel tanks, shipping containers, mobile equipment, natural gas valve station, high voltage-aerial powerline Zone has no access for portable pumps and drafting sites but has a cistern located on 9792 Cathedral drive. Hydrants are limited to reservoir storage (Ridge Reservoir). Critical infrastructure: Ridge Pump Station, Ridge Reservoir, SS Maintenance Area, Well #2 Neighbouhood with new home construction scattered on several streets. Will require more equipment and manpower to protect homes due to separation between homes. Use 2,500-gal Relay tanks with MK3's for sprinkler protection. Will need 3 type 1 tenders to shuttle water if the power line is impacted by wildfire. Coordinate Structure Protection utilizing resources such as cat guard, and aerial retardant.

5SS

Primary Value RES/COM /OTHER	Location: Street / Unit #	Intermix/ Interface	Triage Category: Not Threatened Threatened Defensible Threatened Non-Defensible	Tactical Actions Check & Go - - - - Prep & Go Prep & Defend - - Bump & Run Anchor & Hold - - Tactical Patrol Fire Front Following	Resources SPC's/ENG Ie: 3E = Type 3 Engine 2T = Type 2 Tender	Water Source	Comments
Res Com Seasonal Recreational	**Zone 5** **Attridge Pinnacles** (Pinnacles Rd to Arnica Lane) **~63 Residential 4 Commercial Hotels** Approx 40 homes are set amidst mature forest along Pinnacles Rd. Approx 20 homes on medium sized residential lots backing onto open ski runs.	Interface/ Intermix	Pinnacles Rd area is Threatened Non-Defensible with homes built within the forest Arnica and Monkshood LN area is Threatened Defensible with homes built on a previous open ski run with minimal forest within 30m of structures.	SPC's – Prep & Go followed by Tactical patrol after fire passes ENG – Task Force Bump & Run, leave before escape routes compromised ENG – Fire Front Following after the fire passes ENG - Anchor & Hold if risk of structure-to-structure ignition, withdraw along Escape Route into the Safety Zone. ENG-Tactical Patrol during and after fire event.	SPC 5 Pack x 1 SPU Type 2 x 2 2E x 2 5E x 1	**9 Hydrants** **1 Drafting site: Attridge Reservoir** Mid-T Reservoir provides water to hydrants on Pinnacles Rd only. Higher elevations are supplied from the Ridge Reservoir. **Mid-T Reservoir:** TWL 1,685m 339,464.1 Igal With Summer Source With power 113 Igal/min W/O Power 22 Igal/min 50-257 hrs. to fill. 200 gal diesel check daily **Ridge Reservoir:** 7682 Cathedral Dr. TWL 1,732m 224,368.62 Igal. Refresh rate 55 imp gal/min Takes 68 hrs to fill. **Drafting site: Attridge Pond** A small unused open water reservoir located immediately upslope of the Mid-T Water Treatment Plant 9837 B Pinnacle Rd. 990,000 Igal	**LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, and limited safety zone. Special Hazards: high voltage-aerial powerline Zone has access for portable pumps at Attridge Pond. Hydrants are limited to reservoir storage from Mid-T on Pinnacles road and Ridge Reservoir for all others. Critical infrastructure: Includes Mid -T Reservoir and Water Treatment Plant Coordinate Structure Protection utilizing resources such as cat guard, and aerial retardant. FireSmart Structures with no forest close by could potentially be Standalone and not require the deployment of roof top sprinklers.

6SS

Primary Value RES/COM /OTHER	**Location:** **Street / Unit #**	**Intermix / Interface**	**Triage Category:** **Not Threatened** **Threatened Defensible** **Threatened** **Non-Defensible**	**Tactical Actions** **Check & Go - - - - Prep & Go** **Prep & Defend - - Bump & Run** **Anchor & Hold - - Tactical Patrol** **Fire Front Following**	**Resources** **SPC's/ENG** **Ie:** **3E = Type 3 Engine** **2T = Type 2 Tender**	**Water Source**	**Comments**
Industrial	**6 Summit** 19 Structures not lived in, high voltage-aerial powerline Structures set amidst mature forest. Doplar Radar and communication towers critical infrastructure with limited water source 3km away. Private 3ph Powerline to Vance Reservoir pump house.	Intermix	Area is Threatened Non-Defensible	SPC's – Prep & Go ENG/SPC – Tactical Patrol after fire front passage for mop up around structures	SPC 5 Pack x 1 SPU Type 2 x 2 2T x 2 SPC 5 pack x 1 5E x 2 with 2T x 1 DTA/DTF, Powerline Rep	**0 Hydrants.** **Drafting sites: Vance and Paradise Reservoirs.** **Vance Reservoir** Putnam FSR. TWL 1,661.6m 44,788,598 Igal when full. Pumped to Paradise/Mid-T with back up generator **Paradise Reservoir** Putnam FSR. TWL 1,718.6m 13,484,144 Igal when full. Gravity feed to Mid -T WTP.	**LACES:** Lookouts may be required at different points to observe the fire, has overhead powerlines along single evacuation routes, poor communications at beyond summit and limited safety zone. Special Hazards: high voltage-aerial powerline Zone has access for portable pumps at Attridge Pond. Hydrants are limited to reservoir storage from Mid-T on Pinnacles road and Ridge Reservoir for all others. Critical infrastructure: Well 10 Comms tower, Env Canada Comms site, Reservoir and Pump stations, Gondola and Chairlift Stations, Private power line Coordinate Structure Protection utilizing resources such as cat guard, and aerial retardant. 3ph Powerline should be assessed. Grub poles and applying fire retardant from ground up to 4m. Communication towers and associated buildings don't have an adequate supply of water to run sprinklers and long distance to get to the Safety Zone before escape routes compromised. Set up tank farm near Summit and haul water. Return after fire will require Powerline Rep to verify safe to work in proximity to fire damaged private powerline, DTA, and DTF.

Date: June, 2022 Evaluator(s): Dalgarno, Wacey, Betz

Mapping

Mapping has been created to aggregate key information for the use by first responders. All mapping is georeferenced and generated using layers in all PDF files, which can be turned on and off using most PDF Viewer though a “layers” feature. This allows the document to be viewed and/or printed with only the features needed and to improved clarity.

Mapping produced for this document includes:

- Printable
  - 8.5” x11” PDF’s of each Operational zone with all features and an Operational Zone overview map
  - 48” x 36” All features map that includes the entire plan area with all features on an Orthophoto view

- Field GIS use (Avansa, Caltopo, Google Earth etc.)
  - Base Map image georeferenced with parcel and addresses
  - KMZ layer packaged of layers to be used with Base Map

- GIS
  - ArcGIS Pro files used in the creation of the plan and above maps

These maps are intended to be used as a starting point for operations and developed as resources allow. Layers, zones and PDF files may be used and distributed at the discretion of the incident command. Electronic copies of this mapping will be co-located with the plan were feasible.