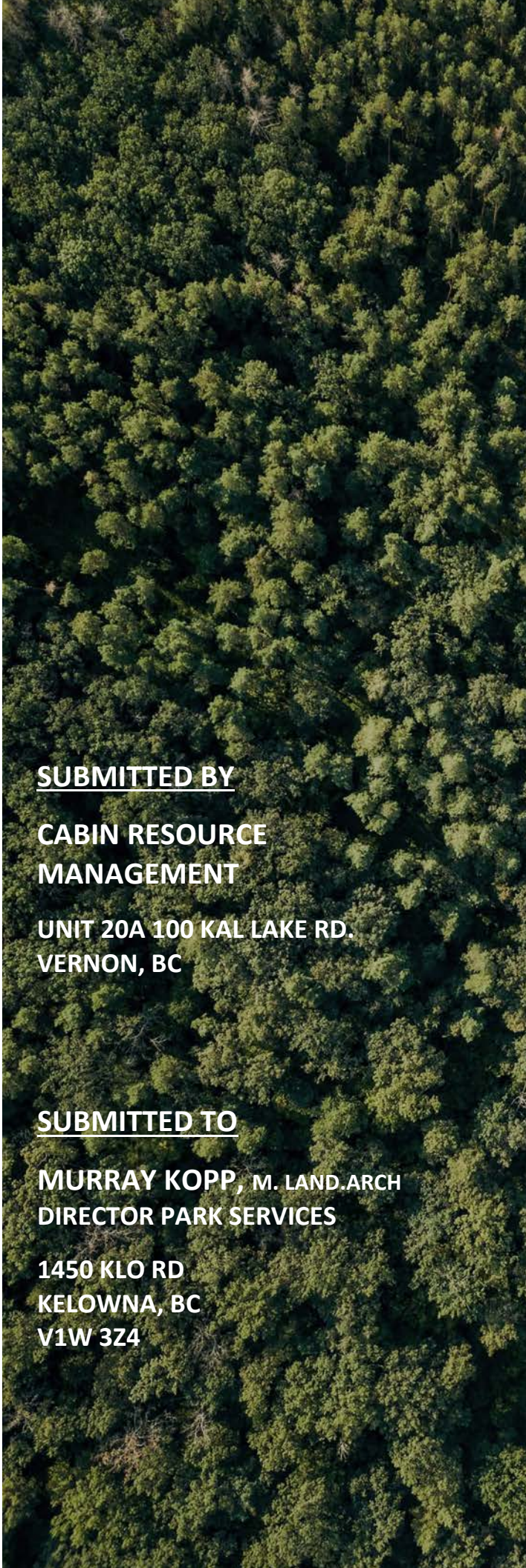
REGIONAL DISTRICT OF CENTRAL OKANAGAN

Parks Community Wildfire Protection Plan



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EXECUTIVE SUMMARY

The Community Wildfire Protection Plan identifies the wildfire risks faced by a community and examines possible ways to reduce and mitigate those risks. Funded by the Community Resiliency Investment Program, the RDCO Parks CWPP is an update of the 2010 version. In addition to the RDCO Parks CWPP, a second CWPP was developed for the RDCO electoral areas. While both documents were CWPP's, having a Regional CWPP and a Regional Parks CWPP caused confusion and for clarity sake the Regional Parks plan was re-named an Operational Wildfire Protection Plan. Hereinafter, the 2010 version of the RDCO CWPP will be referred to as the "2010 RDCO Parks OWPP".

The 2010 RDCO Parks OWPP outlined fuel management activities to treat high risk fuel areas within the RDCO parks. Since the release of the 2010 version, many of these fuel management activities have been completed. However, since 2010, fuel types have changed, fuel loading has increased, and acquisitions increased total park area by almost 100 hectares. This expansion in area has resulted in the increase of wildland urban interface (WUI). Severe wildfire seasons have continued to occur since the release of the 2010 RDCO Parks OWPP. This CWPP is a response to the current and predicted future wildfire risks faced by RDCO Parks and provides recommendations on how to increase public safety and decrease community vulnerability.

This CWPP provides 35 recommendations for improvements from areas of fuel management, FireSmart initiatives, community education, park infrastructure, and wildfire response (Table 2). These recommendations are summarised and prioritised below. We recommend the RDCO begin with three actions that will act on several of the high priority recommendations.

FUEL TREATMENTS OF THE 4 HIGHEST PRIORITY AREAS IDENTIFIED IN THE CWPP. These areas represent the highest fire risk to values and should be treated first (Table 1). Funding is available through the Community Resiliency Investment program.

SUPPORTING, COORDINATING, OR ENCOURAGING MULTI-JURISDICTIONAL EMERGENCY EXERCISES. Wildfire response in RDCO Parks involves different municipalities and agencies and successful response depends on cooperation. There is benefit for continuing consistent discussion-based tabletop exercises as well as operations-based drills/functional exercises specific to wildfire response. These exercises should both serve as training exercises to refresh practical skills and as opportunities to improve response plans.

DEVELOP, COORDINATE, AND/OR PARTICIPATE IN A COMMUNITY FIRESMART RESILIENCY COMMITTEE. The RDCO already participates in coordinated emergency response. However, this CWPP AOI overlapped with several CWPP's and a patchwork of ongoing fuel treatment activities. We recommend this committee immediately assesses and mitigates landscape level wildfire risk across the entire region as well as coordinating FireSmart activities. RDCO Parks should continue its own wildfire preparedness activities regardless of the formation of this committee.

Table 1: High Priority Fuel Treatment Unit Recommendations.

FTU #	FTU Name	Area (ha)	Priority	Treatment Unit Type	Local Fuel Threat	Comments
KAL2	Kalamoir	18.6	High (61)	Polygon Treatment Area	Moderate	Treat to protect subdivision to N & W
LCG1	Lebanon Creek	28.4	High (61)	Polygon Treatment Area	Moderate	Treat to protect subdivision to N & park users/infrastructure
SCA1	Scenic Canyon	10.8	High (60)	Polygon Treatment Area	High	Treat to protect subdivisions to E & W & park users/infrastructure
SCR1	Stephens Coyote Ridge	36.8	High (60)	Polygon Treatment Area	Moderate	Treat to protect homes to E & park users/infrastructure. Adjacent to areas treated in 2014.

STATEMENT OF LIMITATIONS

This CWPP scope is limited to parkland managed by the RDCO. Given the current funding requirements and procedures, higher level wildfire planning for local governments is limited to Community Wildfire Protection Planning. While this plan meets the requirements of the UBCM 2018 CWPP Template, the main focus is on fuel management; a prioritized list of planned fuel treatment units with detailed treatment methodologies and regimes. All aspects of CWPP planning were assessed, but many areas are not directly relevant to the limited scope of this CWPP as it would pertain to a community-wide CWPP. This includes, but is not limited to, emergency response, evacuation routes, and critical infrastructure. A major recommendation from this CWPP is the formation of a Community FireSmart Resiliency Committee to assess, coordinate, implement, and improve wildfire planning across the region.

SUMMARY OF CWPP RECOMMENDATIONS

Table 2: Summary of CWPP Recommendations.

Rec ID#	Recommendation/ Next Steps	Priority	Funding Source/Responsibility
1	When planning for undeveloped parks, include a qualified professional with expertise in wildfire management to ensure strategic planning of trails and infrastructure.	High	Internal
2	Maintain mutual aid agreements with local fire departments to ensure coverage of RDCO parks.	High	N/A
3	Contact currently recognized FireSmart communities to confirm they have renewed their recognition status. Ensure documents outlining community's continued participation in FireSmart have been submitted.	Low	CRI Funding
4	Have a qualified professional with experience in operational wildland fire planning, prevention, and suppression review the Emergency Plan for wildfire preparedness prior to finalization.	Moderate	Internal
5	Test emergency plans through tabletop and live simulation exercises comprised of members of all jurisdictions.	High	CRI Funding
6	Conduct inter-jurisdictional review of CWPPs and identify opportunities for synergy amongst common action items, FireSmart initiatives, and proposed treatment areas.	High	CRI Funding
7	Update the 2015 Regional Parks Design Guidelines Document to include fire resistant construction materials, building design and landscaping approaches. Update General Design Parameters to include information on Emergency Egress Routes and First Responder Accessibility to create more readily defensible spaces within parks. Consider mandatory requirement of at least one 'Type 1: Major Multi-Use' Trail.	Moderate	Internal

Rec ID#	Recommendation/ Next Steps	Priority	Funding Source/Responsibility
8	Update the 2000 Central Okanagan Official Plan for the Regional Park System. Engage with qualified professionals experienced in wildfire planning and management during the update of this plan.	Moderate	Internal
9	When developing Regional Park Management Plans ensure that all applicable recommendations and action items in the CWPP are addressed.	High	Internal
10	Increase signage and updated map kiosks throughout parks. Properly place signs at all trailheads, trail connections, and decision-making points outlining most effective egress routes.	Low	Internal
11	Establish 'no campfire' signs and no smoking signs at all high use areas (picnic facilities, washrooms, infrastructure, beaches) and trail heads.	Low	Internal
12	Continue to assess and monitor number of visits for each park. Analyze data to determine most frequented park and utilize data to allocate funding accordingly.	Low	Internal
13	Reduce the risk of wildfire surrounding the facilities outlined in Section 3.2 Critical Infrastructure using the recommendations outlined in the FireSmart Begins at Home Manual. Use these facilities as FireSmart Demonstration Buildings to provide residents with examples of what houses in the WUI should look like.	Moderate	CRI funding
14	Communicate and coordinate with BC Hydro and Fortis BC to ensure utility right of ways within the AOI are maintained with best management practices.	Low	Internal
15	Make FireSmart informational materials readily accessible to RDCOs park users and local community members within the AOI. This includes providing FireSmart informational materials at park trail heads, kiosks and infrastructure such as the Mission Creek Regional Park Environmental Education Centre for the Okanagan. As well as using websites and social media platforms.	Low	CRI funding

Rec ID#	Recommendation/ Next Steps	Priority	Funding Source/Responsibility
16	Community signage should be established in parks where FTU treatments have taken place, providing pre and post treatment photographs, outlining FMP objectives and how fire behaviour will be impacted.	Moderate	CRI funding
17	Engage with those communities and neighbourhoods adjacent to the AOI and encourage the pursuit of the FireSmart Canada Neighborhood Recognition Program.	High	Internal/CRI funding
18	Provide FireSmart training to RDCO Parks Staff as Local FireSmart Representatives to work with groups and neighborhoods in planning and implementing FireSmart practices.	Moderate	Internal
19	Work with local First Nations to develop workshops and public events on the importance of wildfire in the landscape and cohabitating with fire.	Moderate	CRI funding
20	Advocate to provincial government to create permanent wildfire hazard mitigation building requirements under the BC Building Act	High	Internal
21	Update WDPA mapping to reflect wildfire risk mapping from this CWPP Updated. Update the Natural Hazards section of all OCPs overlapping with the AOI to specify: - A list of design criteria and construction materials that must be applied within DPAs - A list of Fire-Resistant plants and trees native and suitable to the area that must be applied within the DPAs - The mandatory establishment of residential sprinkler systems for homes in areas without hydrants or Fire Department Response Services that fall within WDPAs Create an enforcement process through bond collection to ensure requirements of WDPs are completed.	High	CRI Funding
22	Educate local industrial managers and businesses about FireSmart building design and promoting the use of fire-resistant building material. Specifically, educate contractors developing new subdivisions within or adjacent to the new AOI on relevant by-laws and FireSmart principles.	Moderate	Internal

Rec ID#	Recommendation/ Next Steps	Priority	Funding Source/Responsibility
23	Connect with Local Governments, First Nations, industry representatives, provincial agency staff, and local fire departments to coordinate the development of a Community FireSmart Resiliency Committee.	High	Internal
24	Apply for CFRC development and maintenance funding through the CRI program (CRI Activity #4 Interagency Cooperation).	High	Internal
25	Provide RDCO parks field staff with FireSmart 101 and Basic Wildland Fire Suppression and Safety Training (S-100 and S-185) training. Ensure FireSmart 101 training implementation during landscaping and maintenance activities.	High	CRI funding
26	Establish a Pre-Incident plan following the pre incident planning checklist provided in the 2021 CWRP Supplemental Instruction Guide. Pre-Incident planning should be implemented with cross-jurisdictional participation and executed in live simulation exercises to ensure efficiency.	Moderate	Internal
27	RDCO employees with expertise in wildfire mitigation and/or hired qualified professionals should assist local communities with FireSmart principles at the neighbourhood and home level.	Moderate	Internal
28	Develop and implement an Annual FireSmart Community day and provide access to debris disposal with RDCO or contractor crews. Conduct community FireSmart implementation days at neighbourhood levels during which a community chipper can be used.	High	CRI funding
29	Make this CWPP update available to all district residents, fire halls, industry representatives and the public at large. Post its publication on social media platforms and the RDCO website.	Moderate	Internal
30	A summary of the CWPP and its recommendations, wildfire risk maps and Homeowners FireSmart Manuals should be distributed to residents of communities outlined in the summary of FireSmart table.	High	CRI funding

Rec ID#	Recommendation/ Next Steps	Priority	Funding Source/Responsibility
31	Updated wildfire mitigation and resiliency activities should be incorporated into the RDCOs webpage as it occurs. Update the RDCO website to showcase ongoing FireSmart projects, new wildfire risk reduction projects, current community events, current wildfire risk, and updated educational resources.	Moderate	Internal
32	Develop and implement wildfire management and risk reduction interactive youth programs. Consider the use of the emergency preparedness curriculum and contacting local BCWS and FireSmart representatives to help with curriculum development and delivery. Implement these programs in RDCO parks and/or at the Environmental Education Centre for the Okanagan. Engage with local schools to adopt this program.	Moderate	CRI funding
33	Conduct annual Community Wildfire Preparedness Days.	Low	CRI funding
34	Construct and operate additional fire danger rating signs in those high-use parks currently without signage.	Low	Internal
35	Organize, host, or support wildland fire training exercises in partnership with BCWS and local fire departments.	High	CRI funding

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LIST OF ABBREVIATIONS

ABCFP: Association of British Columbia Forest Professionals

AOI: Area of Interest

BCWS: BC Wildfire Service

BEC: Biogeoclimatic Ecological Classification

BUI: Build Up Index

CDC: BC Conservation Data Centre

CFFBPS: Canadian Forest Fire Behaviour Prediction System

CFRC: Community FireSmart Resiliency Committee

CIIZ: Critical Infrastructure Ignition Zone

CRI: Community Resiliency Investment

FBP: Canadian Forest Fire Behaviour Prediction System

FLNRORD: BC Ministry of Forests, Lands, Natural Resource Operations, and Rural Development

FMP: Fuel Management Prescriptions or Fuel Management Plans

FWI: Fire Weather Index

HIZ: Home Ignition Zone

ISI: Initial Spread Index

LiDAR: Light Detection and Ranging

NDT: Natural Disturbance Type

OCP: Official Community Plan

OWPP: Operational Wildfire Protection Plan

OSLRMP: Okanagan Shuswap Land and Resource Management Plan

PSTA: Provincial Strategic Threat Analysis

RDCO: Regional District of Central Okanagan

RPF: Registered Professional Forester

UBCM: Union of BC Municipalities

VAR: Values at Risk

WDPA: Wildfire Development Permit Areas

WRR: Wildfire Risk Reduction

WUI: Wildland Urban Interface

SECTION 1: INTRODUCTION

This Community Wildfire Protection Plan (CWPP) provides the Regional District of Central Okanagan (RDCO) with actionable wildfire reduction planning objectives for their parks. This document identifies the wildfire risks in RDCO Parks and their surrounding area, describes the potential consequences of wildfire to the community, and recommends operational planning objectives. This update accounts for newly created parks, fuel management activities, and fuel type changes.

1.1 Purpose

The intent of this CWPP is to update the 2010 RDCO Parks OWPP and provide an outline of actionable wildfire mitigation measures for the area. Current wildfire risks both within and surrounding RDCO parks will be identified, potential wildfire consequences will be addressed, and wildfire risk reduction options and techniques will be described.

The goals of this CWPP are:

1. Create a WebMap that illustrates wildfire risk, fuel type, proposed treatment areas, and wildfire threat assessment plot locations within RDCO parks and its corresponding 2km buffer
2. Update the priority rating of parks based on need for treatment through determining their proximity to urban interface, wildfire hazard rating, treatment intricacy, and values
3. Summarize implemented recommendations from the previous operational plan
4. Summarize new treatment recommendations for each park and estimate associated treatment costs
5. Promote community engagement and education through FireSmart and communication initiatives

The expected outcomes from realizing these goals are:

1. Reduce the negative social, economic, and environmental impacts of wildfire on RDCO parks
2. Create more defensible and resilient space in RDCO parks
3. Reduce wildfire occurrence and likelihood in RDCO parks
4. Protect human life and critical infrastructure

1.2 CWPP Planning Process

The successful development of this CWPP hinges on a detailed planning process. The following phases outline Cabin's development process.

'PROJECT DATA COMPILING AND RELEVANT DOCUMENT REVIEW AND COMPILATION' PHASE

This phase involved creating the WebMap geodatabase, processing LiDAR data for the RDCO, analyzing shapefiles for the 2010 RDCO Parks OWPP maps, and compiling PSTA data package for the AOI. Digitized Wildfire Threat Assessment worksheets were also collected in the field.

Relevant documents were reviewed prior to the commencement of the consultation and liaison phase. These documents included, but are not limited to, the 2010 RDCO Parks OWPP, FLNRORD district guidance documents, RDCO wildfire bylaws, RDCO Official Community Plans, RDCO Forest Health Strategy – Regional Parks, and the RDCO Parks and Recreation Department Fuel Management Strategy.

'CONSULTATION AND LIAISON' PHASE

Meetings with key local government representatives took place during this phase. Key local government representatives included members from the RDCO, BCWS, BC Parks, and FLNRORD. Contact with jurisdictions adjacent to and overlapping with the AOI including the City of West Kelowna, the City of Kelowna, the District of Peachland, and the District of Lake Country occurred to ensure continuity in fuel treatments and to identify plans through which synergies can be made.

'FIELD WORK' PHASE

This phase includes the planning and implementation of field work. Throughout the AOI, wildfire threat, fuel type and surface fuel loading assessments were conducted. Planning of fieldwork included the creation of maps, and establishing wildfire threat and fuel assessment sampling plans. Alongside the creation of a sampling plan, a geodatabase was established with fillable wildfire hazard assessments as per UBCM guidelines.

'CWPP DEVELOPMENT' PHASE

The CWPP was developed through analyzing all data and information compiled in phases the above 3 phases. The outcome of this phase was a spatial map illustrating the wildfire hazards for each of the parks in the RDCO. The map shows the following information:

- Wildfire risk
- Fuel Type
- Fuel Treatment Units and their corresponding treatment specifications

Using the resulting spatial product, a risk management strategy was developed to rank the AOI based on treatment priority. Treatment priority was determined using the Priority Setting wildfire threat assessment worksheet.

Alongside the risk management strategy, a summary of new recommended treatments for the RDCO parks is outlined. These are prioritised based on the outcomes the risk assessments.

SECTION 2: LOCAL AREA DESCRIPTION

To effectively plan for wildfire mitigation activities, it is necessary to understand the dynamics between a community and its surrounding environment in terms of wildfire hazard, wildfire threat, and risk of loss. This section provides information on the area of interest (AOI) including a geographical definition of the AOI, current community engagement, historical wildfire incidences, and linkages to other plans.

Figure 1: Dead standing trees in John's Family Nature Conservancy from the 2003 Okanagan Mountain Fire.

2.1 CWPP Area of Interest

The AOI for the RDCO Parks CWPP is unique in that it spans 49 parks over a wide geographic area, from Peachland to Lake Country. The AOI extends further to include the WUI, a 2km buffer around the parks made up of RDCO land and crownland. The entirety of the AOI spans 9,468ha.

As of 2016, 194,882 people live within the RDCO and in 2019, 849,000 visits were documented within the parks (Stats Canada, 2016). The 49 RDCO parks include regional parks, Westside Community parks, and Eastside Community parks making up 2100ha of the central Okanagan (RDCO, 2019a). Parks assessed include the following:

1. Kaloya Regional Park (KYA)
2. Kopje Regional Park (KOP)
3. Okanagan Centre Safe Harbour Regional Park (OCH)
4. Reiswig Regional Park (REI)
5. Bertram Creek Regional Park (BCR)
6. Johns Family Nature Conservancy Regional Park (JFN)
7. Robert Lake Regional Park (RLA)
8. Stephens Coyote Ridge Regional Park (SCR)
9. Woodhaven Nature Conservancy Regional Park (WNC)
10. Lebanon Creek Greenway Regional Park (LCG)
11. KLO Creek Regional Park (KLO)
12. Scenic Canyon Regional Park (SCA)
13. Mission Creek Regional Park (MIC)
14. Mission Creek Greenway Regional Park (MCG)
15. Goats Peak Regional Park (GPE)
16. Star Community Park* (SCP)
17. Gellatly Heritage Regional Park (GHE)
18. Gellatly Nut Farm Regional Park (GNF)
19. Kalamoir Regional Park (KAL)
20. Raymer Bay Regional Park (RBA)
21. Traders Cove Regional Park (TCO)
22. Rose Valley Regional Park (RVA)
23. Glen Canyon Greenway Regional Park (GCG)
24. Shannon Lake Regional Park (SLA)
25. Cinnabar Creek Community Park (CCW)
26. Fintry Access #1 Community Park (FA1)
27. Fintry Access #2 Community Park (FA2)
28. Killiney Beach Community Park (KBE)
29. Killiney Community Hall (KCH)
30. Pine Point Community Park* (PPP)
31. Bouleau Lake Community Park* (BLG)
32. Westshore Estates Community Park (WEC)
33. McCulloch Station Regional Park* (MST))
34. Black Mountain-sntsk'il'ntən Regional Park (BMO)
35. Mill Creek Regional Park (MCR)
36. Ellison Primary Community Hall (EPR)
37. Lakeshore Road Community Park (LRC)
38. Scotty Creek Community Park (SCC)
39. Ellison Estates Trail Community Park* (EET)
40. Sunset Ranch Community Park* (SRC)
41. Joe Rich Community Hall Park (JRC)
42. Three Forks Community Park (TFC)
43. Daves Creek Corridor Community Park (DCC)
44. Philpott Trail Community Park (PTC)
45. Jack Creek Linear Trail Community Park* (JCL)
46. Antlers Beach Regional Park (ABE)
47. Hardy Falls Regional Park (HFA)
48. Trepanier Creek Greenway Regional Park (TCG)
49. Coldham Regional Park* (COL)

*undeveloped parks

REC ID	Action Item
1	When planning for undeveloped parks, include a qualified professional with expertise in wildfire management to ensure strategic planning of trails and infrastructure.

2.2 Community Description

Local infrastructure is variable due to the wide geographic area that the RDCO parks encompass. Infrastructure within parks includes trails, an environmental education centre, picnic shelters, boardwalks, view platforms, bridges, staircases, historical sites, community halls, washroom facilities, playgrounds, and outbuildings. Existing evacuation and egress routes within the parks include well established trail systems and emergency vehicle accesses within most parks. RDCO Parks staff put on a

variety of programs in the parks including guided hikes, nature programs, school programs, and special events.

Economic drivers within the RDCO as of 2011 include (RDCO, 2012):

- Goods-producing sectors (agriculture, natural resources, energy, utilities, construction, and manufacturing) comprise 21.61% of jobs in the region
- Service sectors (retail, health care, social assistance, food services) comprise 78.39%of jobs in the region

The RDCO is protected by 4 fire departments within designated fire protection areas including, Ellison Fire Department, Joe Rich Fire Department, North Westside Fire Rescue, and Wilson's Landing Fire Department. An Emergency Mutual Aid Agreement between the RDCO, City of Kelowna, District of Peachland, City of West Kelowna, and District of Lake Country allows for fire departments within the RDCO to share firefighting services, apparatus, and personnel upon request (RDCO, n.d.).

REC ID	Action Item
2	Maintain mutual aid agreements with local fire departments to ensure coverage of RDCO parks.

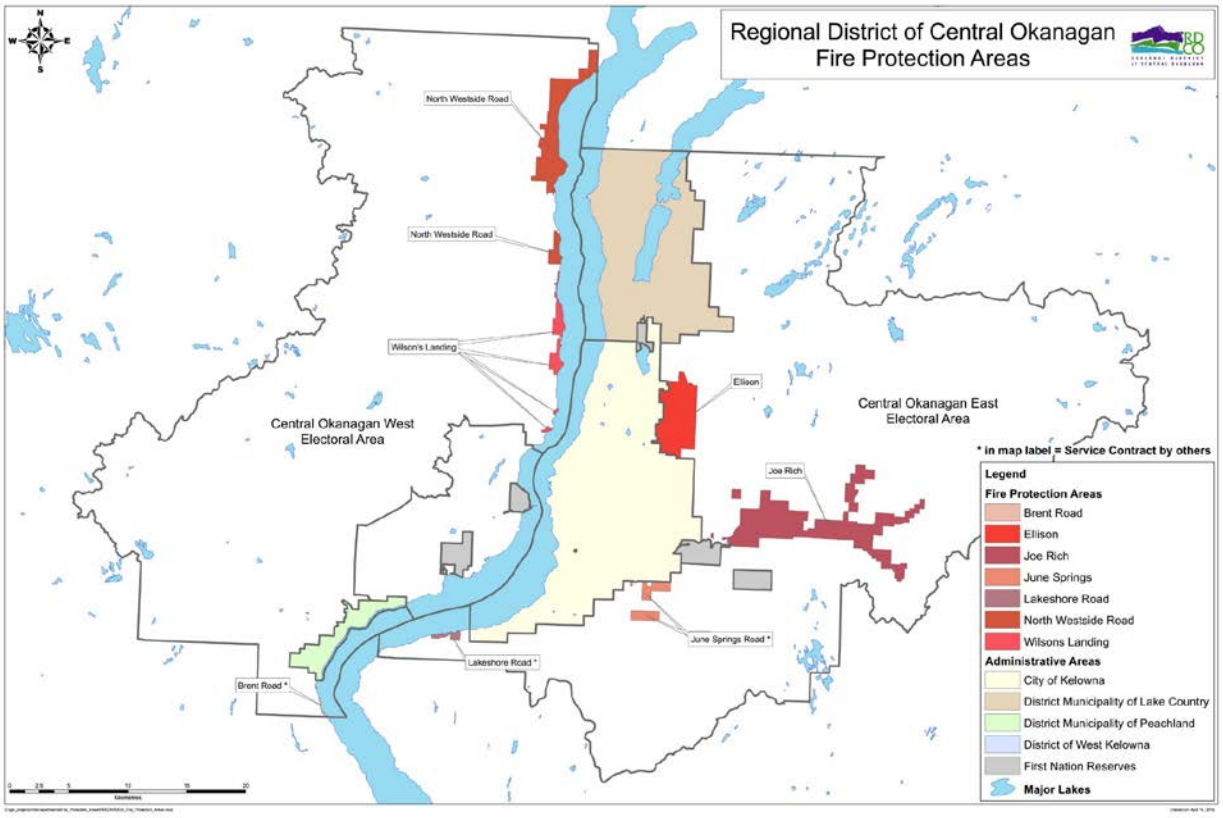

Figure 2: Regional District of Central Okanagan Fire Protection Areas (RDCO, n.d.)

2.3 Past Wildfires, Evacuations, and Impacts

Wildfire is an integral part of the ecosystems and landscapes that make up the AOI. Increased fire suppression and exclusion over the past century has led to an increase in fire severity and significantly destructive fire seasons. Three notable fires that impacted the AOI include:

- The Okanagan Mountain Park Wildfire in 2003 which impacted 5 regional parks: Bertram Creek, Lakeshore Road, Woodhaven Nature Conservancy, John's Family Nature Conservancy, and Lebanon Creek Greenway. The 2003 wildfire season has been dubbed one of the most significant interface wildfire events in the history of BC. Of the 265,000ha burned in BC during the 2003 fire season, Okanagan Mountain Park Wildfire contributed 25,635.6ha, destroying 239 homes and forcing 45,000 residents to evacuate. Consistent winds, dry fuels, and lightning resulted in the ignition and growth of the fire. This fire cost $200 million in damages (K. G. Hirsch & Fuglem, 2006).
- The 2009 Glenrosa fire, forced more than 11,250 residents to flee their homes in West Kelowna. The fire grew rapidly due in part to high temperatures of 37˚C and 70km/hr winds that pushed it to encompass over 300ha, including both Goats Peak and Gellatly Heritage Park. Four homes were lost (Price, 2011).
- The 2017 fire, also known as the Joe Rich fire, contributed 489ha of the 1,216,083ha burned in the 2017 fire season, going down in history as the most extensive number of hectares burned in a wildfire season since 1950. 1,100 residents were evacuated within Joe Rich and no structures were lost (Kelly, 2017).

The following table outlines major fires that occurred within the southern interior of BC in proximity/adjacent to the AOI.

Table 3: Major Fires.

Year	Fire Name	Size (ha)	Evacuation Order/Alert	Information on Impact
2009	Terrace Mountain	9,277	1,550 people evacuated 2,500 properties on alert	Part of the 2009 $382.1 million BC wildfire season
2009	Rose Valley Dam	200	8,000 people evacuated	Part of the 2009 $382.1 million BC wildfire season
2011	Bear Creek	40	550 people evacuated	Part of the 2011 $53.5 million BC wildfire season
2012	Trepanier Creek	200	1,550 people evacuated	3 homes and several buildings were destroyed by the fire Post Forest Fire Rehabilitation and Park assessment project for the Regional Park Part of the $133.6 million BC wildfire season

Year	Fire Name	Size (ha)	Evacuation Order/Alert	Information on Impact
2014	Smith Creek	280	2,900 people evacuated	Part of the $ 297.9 million BC wildfire season
2015	Westside Road	560	70 properties evacuated	100 homes lost BC Hydro service Part of the 2015 $277.0 million BC wildfire season
2016	Bear Creek	53	468 evacuated	Part of the 2016 $129.0 million BC wildfire season
2017	Philpott Road	465	1,100 evacuated	No structures lost Part of the 2017 $649.0 million BC wildfire season
2017	Okanagan Centre	55	330 properties evacuated 650 properties on alert	8 homes were lost Part of the 2017 $649.0 million BC wildfire season
2017	Elephant Hill	191,865	Village of Cache Creek and multiple Thompson-Nicola RD Electoral Areas evacuated	Over 120 homes were destroyed by the fire Provincial state of emergency Part of the 2017 $649.0 million BC wildfire season

2.4 Current Community Engagement

Throughout the RDCO park employees and users recognize the threat of wildfire and support hazard mitigation activities such as those described in this document. The RDCO has taken steps to reduce wildfire hazard within their parks through supporting the development and implementation of fuel management plans (FMPs) recommended in the 2010 RDCO Parks OWPP. The RDCO developed and implemented FMPs in Scenic Canyon, Kalamoir, Coldham, Stephen's Coyote Ridge, Mill Creek, Rose Valley, Glen Canyon, Trepanier Creek Greenway, and Black Mountain-sntsk'il'ntən parks based off of the 2010 CWPP. Prior to the development of the 2010 RDCO Parks OWPP, an FMP was developed and implemented in Mission Creek Greenway. The communities of District of Peachland, Okanagan Centre Community in Lake Country (2019), Carr's Landing Community in Lake Country and Gallagher's Canyon (2016-2018) took steps to become recognised FireSmart communities (FireSmart, 2020).

REC ID	Recommendation/Action Item
3	Contact currently recognized FireSmart communities to confirm they have renewed their recognition status. Ensure documents outlining community's continued participation in FireSmart have been submitted.

2.5 Linkages to Other Plans and Polices

Existing plans that touch on fire, emergency, and resource policies and management were reviewed for the CWPP update. This includes emergency plans, other CWPP's, local bylaws, previous FMP's, high level natural resource plans, and provincial legislation. This ensures consistency between higher level plans, avoids information duplication, and identifies opportunities to synergize.

2.5.1 Local Authority Emergency Plan

The Kelowna Fire Department administers the Central Okanagan Regional Emergency Plan to support surrounding local governments including City of Kelowna, District of Lake Country, District of Peachland, City of West Kelowna, Westbank First Nation, and the Regional District of the Central Okanagan electoral areas. This plan has multiple objectives that include:

- Assists emergency personnel responding to disasters and emergencies such as wildfires, floods, plane crashes, etc.
- Establishes a central organization that coordinates responses and assess emergencies to determine the best way to share regional resources and requests assistance from provincial and federal governments
- Guides recovery and restoration operations post-emergency

REC ID	Recommendation/Action Item
4	Have a qualified professional with experience in operational wildland fire planning, prevention, and suppression review the Emergency Plan for wildfire preparedness prior to finalization.
5	Test emergency plans through tabletop and live simulation exercises comprised of members of all jurisdictions.

2.5.2 Affiliated CWPPs

Jurisdictions adjacent to RDCO parks include the City of West Kelowna, the City of Kelowna, the District of Peachland, and the District of Lake Country. Each of these jurisdictions have completed their own respective CWPP. Opportunities to collaborate on strategic wildfire planning should be pursued. Benefits of collaboration include shared costs of wildfire planning, greater access to funding sources, and the ability to strategically plan at a landscape level. Each CWPP for the adjacent jurisdictions was reviewed to avoid duplication and identify opportunities for collaboration.

REC ID	Recommendation/Action Item
6	Conduct inter-jurisdictional review of CWPPs and identify opportunities for synergy amongst common action items, FireSmart initiatives, and proposed treatment areas.

2.5.3 Local Government and First Nation Plans and Policies

Local Government and First Nations plans, polices and bylaws that impact the AOI and areas directly adjacent include:

- The Brent Road-Trepanier, Ellison, Rural Westside, and South Slopes Official Community Plans
- Joe Rich Rural Land Use Bylaw
- Westbank First Nation Comprehensive Community Plan
- Okanagan Indian Band Strategic Plan
- Memorandum of Understanding for The Protection of Cultural Sites Within Regional Parks
- RDCO Parks Fuels Management Strategy
- Regional Park Design Guidelines
- The Central Okanagan Official Plan for the Regional Park System
- RDCO Park Management Plans
    - Woodhaven, Kalamoir, Goats Peak, John's Family Nature Conservancy, Black Mountain-sntsk'il'ntən, Mission Creek*, and Stephens Coyote Ridge*

*Currently being developed

There are four Official Community Plans (OCPs) as well as the Joe Rich Rural Land Use Bylaw which outline Wildfire Development Permit Area (WDPA) guidelines. WDPAs allow local governments to require that exterior design and finish on buildings, landscaping, vegetation management, location of accessory structure, and community access be regulated to address wildfire hazard (RDCO Planning, 2017). WDPAs have the following objectives:

- Reduce the susceptibility to wildfire of new constructions or large additions
- Address wildfire risk reduction at time of subdivision
- Ensure important ecosystem values are addressed in wildfire mitigation recommendations and activities

The Westbank First Nation Comprehensive Community Plan and Okanagan Indian Band Strategic Plan were reviewed and no relevancy to the CWPP was identified.

The RDCO Parks Fuels Management Strategy was developed in 2005 and has objectives similar to that of CWPPs. The Fuels Management Strategy objectives include the development of fuel treatments that mimic natural disturbance regimes and the assessment and prioritization of treatments for areas within the AOI. This plan was reviewed to establish if recommended areas have been treated or now need to be treated.

Figure 3: Example of a Type 1: Major Multi-Use Trail in Mission Creek Greenway.

REC ID	Recommendation/Action Item
7	Update the 2015 Regional Parks Design Guidelines document to include fire resistant construction materials, building design, and landscaping approaches. Update the General Design Parameters to include information on emergency egress routes and first responder accessibility to create more readily defensible spaces within parks. Consider mandatory requirement of at least one 'Type 1: Major Multi-Use' Trail in every park.
8	Update the 2000 Central Okanagan Official Plan for the Regional Park System. Engage with qualified professionals experienced in wildfire planning and management during the update of this plan.
9	When developing Regional Park Management Plans ensure that all applicable recommendations and action items within the CWPP are addressed.

2.5.4 Higher Level Plans and Relevant Legislation

There are a multitude of provincial and federal legislations and higher-level plans that influence and support wildfire risk reduction planning. While not exhaustive, the following is a summary of several influential acts, regulations, and plans that influenced the development of this CWPP.

THE OKANAGAN SHUSWAP LAND AND RESOURCE MANAGEMENT PLAN (OSLRMP) – 2001 higher-level plan providing guidance on the management of natural resources and Crownland within the Okanagan-Shuswap. The management objectives within the OSLRMP should be referred to when conducting wildfire fuel management plans to ensure that values such as wildlife, biodiversity,

recreation areas, coarse woody debris, and trail corridors are not compromised in meeting fuel hazard reduction objectives (Ministry of Forests, 2001).

BC BUILDING ACT AND BUILDING CODE – provincial regulation that allows local governments and First Nations to create Wildfire Development Permit Areas (Government of BC, 2016).

BC LOCAL GOVERNMENT ACT – the legal foundation upon which local governments can represent their communities. This act directs the administering and designation of development permit areas though OCPs.

BC OPEN BURNING AND SMOKE CONTROL REGULATIONS – governs burning of vegetative material associated with many activities including wildfire mitigation. It aims to ensure there is minimal risk to air quality and can be accompanied by additional local government by-laws (BC Ministry of Environment and Climate Change Strategy, 2019).

BC FOREST AND RANGE PRACTICES ACT – ensures the protection of all resources, ecosystems, and organisms during the implementation of forestry and range practices.

BC WILDFIRE ACT AND WILDFIRE REGULATIONS – this act is enforceable upon citizens of BC and is responsible for placing bans and restrictions on fire uses to promote wildfire prevention, control, and rehabilitation. Local governments, such as the RDCO have a responsibility to respond to wildfire on non-Crown public lands within their administrative boundaries (*Wildfire Act*, n.d.).

2.5.5 Ministry or Industry Plans

Completed fuel treatments within the AOI include:

- Rose Valley FMP
- Coldham FMP (2013)
- Scenic Canyon FMP (2013)
- Stephen's Coyote Ridge FMP (2014)
- Mill Creek FMP (2015)
- Black Mountain-sntsk'il'ntən FMP (2013)
- Mission Creek Greenway FMP (2006)
- Glen Canyon FMP (2014)
- Trepanier Creek Greenway FMP

These treated areas were reviewed to determine if any maintenance treatment was be required. Other projects in areas adjacent to the AOI include the following FES funded projects (Forest Enhancement Society, 2020):

- Joe Rich Wildfire Threat Reduction
- CWPP COK Southeast Kelowna Landscape Level Fuel Break
- Trepanier Wildfire Rehabilitation
- West Kelowna Wildfire Rehab Project
- District of Peachland CWPP Fuel break

SECTION 3: VALUES AT RISK

The intent of this section is to outline the extent to which wildfire has the potential to impact the values within the AOI. Values at risk (VAR) are human life, property, cultural values, resources, buildings, infrastructure, etc. that may be impacted by wildfire.

3.1 Human Life and Safety

Human life and safety are of utmost priority in the event of wildfire. This section reviews population distribution within the AOI, evacuation and egress routes, picnic areas, and other areas within the AOI that have high use during the fire season. The AOI is unique in that there are no residences within the parks however census reports from 2016 determined that 194,882 people live within the RDCO, surrounding the AOI. 849,000 visits were documented within the parks in 2019.

RDCO parks contain 68km worth of trails that are well signed and outline the most effective egress routes in the event of an emergency. Considering the population within parks daily during the wildfire season is likely made up of a significant number of tourists who are not familiar with the area, increased signage and map kiosks should be considered throughout parks or established within parks that do not yet have them. Greater signage and mapping of the AOI will decrease the likelihood of human displacement in the event of a wildfire.

None of the RDCO parks permit camping or campfires, however 15 of the 48 parks provide picnic facilities which are considered high use areas. Other high use areas within the AOI would include playgrounds and washrooms.

Figure 4: Raymer Bay Picnic Shelter.

REC ID	Recommendation/Action Item
10	Increase signage and updated map kiosks throughout parks. Properly place signs at all trailheads, trail connections, and decision-making points outlining most effective egress routes.
11	Establish 'no campfire' signs and 'no smoking' signs at all high use areas (picnic facilities, washrooms, infrastructure, beaches) and trail heads.
12	Continue to assess and monitor # of visits for each park. Analyze data to determine most frequented park and utilize data to allocate funding accordingly.

3.2 Critical Infrastructure

Critical infrastructure are any assets that are essential to the health, safety, security, or economic wellbeing of the community and the effective functioning of government. This sub-section identifies where critical infrastructure is located within the AOI.

Critical infrastructure within the AOI is mostly limited to recreationally and socially used venues and spaces. In the event of a wildfire the tourism industry in the area would be impacted. The following facilities are located within the parks and have cultural, recreational, social, and environmental value:

- The Environmental Education Centre for the Okanagan is located in Mission Creek Regional park and provides public programming to educate park users on the ecosystem and its services
- Gibson Heritage House is located in Kopje Regional Park
- Killiney, Ellison and Joe Rich Community Hall are all located within the AOI and are used for social gatherings and regular community programming
- Heritage buildings and cemetery located in Gellatly Heritage Park

Figure 5: The Environmental Education Centre for the Okanagan located in Mission Creek Regional Park (Twila Amato, 2020).

There are incidence of electrical power and water infrastructure within the AOI that not only provide for the AOI but also for surrounding RDCO community.

REC ID	Recommendation/Action Item
13	Reduce the risk of wildfire surrounding the facilities outlines in section 3.2 Critical Infrastructure using the recommendations outlined in the FireSmart Begins at Home Manual. Use these facilities as FireSmart Demonstration Buildings to provide residents with examples of what houses in the WUI should look like.

3.2.1 Electrical Power

There is 24.64km of electrical transmission and distribution lines located within the AOI. These transmission and distribution lines service the surrounding RDCO communities. The protection of power delivery systems is crucial. Moreover, these lines are a source of ignition, further highlighting the need to maintain fuel loading within their right of ways. BC Hydro and FortisBC are responsible for ensuring that vegetation and fuels within the right of way is maintained (Arthur, 2016). Transmission lines within the AOI are outlined in the following table.

Table 4: Electric Transmission Lines

Park	Transmission Line Length (km)
Black Mountain-sntsk'il'ntən	1.64
Rose Valley	1.16

Park	Transmission Line Length (km)
Scenic Canyon	1.13
Mill Creek	1.07
Mission Creek	0.61
Glen Canyon	0.40
Woodhaven Nature Conservancy	0.21
Mission Creek Greenway	0.20
Ellison Estates Trail	0.07
Three Forks	0.05
Daves Creek Corridor	0.00
2km Park buffers	18.1

REC ID	Recommendation/Action Item
14	Communicate and coordinate with BC Hydro and Fortis to ensure utility right of ways within the AOI are maintained with best management practices.

3.2.2 Water and Sewage Infrastructure

The RDCO owns and operates 7 community water distribution systems. Each of these systems provides water to infrastructure within the AOI and the communities adjacent to it. The Joe Rich Community Hall Park is serviced by the Joe Rich Water System. This system includes a 130m^3 reservoir and approximately 100m of watermain that supplies the fire hydrant. The Killiney Beach Water System falls within the AOI, servicing approximately 293 homes. This system is made up of multiple reservoirs holding 1,384m^3 of water, 14,000m of PVC water main and 4 pump stations. 1 of the 4 pumps is located on the southern end of Killiney Beach, with a capacity of 141L/sec. The Sunset Ranch Water System falls within the AOI and is sourced from 2 wells. The system is made up of a 1,500m^3 reservoir and 7,700m of water main, distributing water to 285 homes surrounding Sunset Ranch Park. The Westshore Estates Water system falls within the AOI providing water to 279 homes in proximity to the Westshore Estates Community park. The system is made up of a 510m^3 reservoir 1,100m^3 reservoir, 14,000m of water main and 2 pump stations. Ensuring access to water distribution systems is maintained during a wildfire event is the responsibility of the RDCO. The location of pump stations, reservoirs, valves, and fire hydrants within the AOI must be considered during fuel management prescription development and wildfire risk reduction planning (RDCO, 2019b, 2019c, 2020).

3.3 High Environmental and Cultural Values

The intent of this sub-section is to identify and understand where high environmental and cultural values are located within the AOI to effectively determine wildfire risk and appropriate mitigation activities.

3.3.1 Drinking Water Supply Area and Community Watersheds

Community Watershed's and drinking water supplies that come from surface water sources are susceptible to water quality impacts due to wildfire. Wildfires increase erosion rates, in turn increasing sediment loading in water sources. Fluxes in sediment loading in drinking water sources can damage or disrupt treatment processes that purify the water. Moreover, increased sediment loading will result in increased water treatment costs. The following table outlines the watersheds that overlap with the AOI. All of the watersheds rely completely or partially on surface water, making them vulnerable to wildfires impact on water quality (Miexner, 2004).

Table 5: Community Watersheds.

Community Watershed	Source Type	Watershed Use	Number of Connections
Hope Community Watershed	Surface (Hope Creek)	Emergency Back Up	284
Lambly and Rose Valley Community Watershed's	Surface (Lambly Creek and Rose Valley Lake)	Primary Supply Source	3,800
Trepanier Community Watershed	Surface (Trepanier Creek)	Primary Supply Source	1,500
KLO and Hydraulic Community Watershed's	Surface (Hydraulic and KLO Creek's)	Primary Supply Source	2,700
Mission Community Watershed	Surface (Mission Creek)	Primary Supply Source	8,628
Kelowna Community Watershed	Ground and Surface (Kelowna Creek)	Primary Supply Source	6,000

RDCO is one of 3 major water user groups for the Trepanier Community Watershed and one of 2 major water user groups for the Mission Community Watershed. Most of the watersheds that overlap with the AOI are the primary source of water for the surrounding community. Watersheds that are in areas highly vulnerable to wildfire need to be protected accordingly to mitigate against the disruption of access to clean drinking water system (RDCO, 2020).

3.3.2 Cultural Values

The AOI falls within Westbank First Nation lands and has been used by the Syilx People for time immemorial. The RDCO and Westbank First Nation have entered into a Memorandum of Understanding

for the Protection and Conservation of Cultural Heritage Sites in Regional Parks. The objectives of the Memorandum of Understanding (MOU) include but are not limited to:

- Protect the integrity of all archaeological sites within regional parks
- Emphasize the importance of archaeological sites and manage their conservation in a manner that is consistent with the MOU, the Heritage Conservation Act, and Westbank First Nation cultural interests

The Archaeology Branch of the Ministry of Forests, Lands and Natural Resource Operations and Rural Development has spatial data on 14 recorded archaeological sites within the AOI. These sites include Cache Pits, Ceremonial Features, Pictographs, cultural materials, trails, and lithics. Each of these archeological sites relate to aboriginal life prior to European settlement. These sites are sensitive in nature and therefore exact detail and locations is not outlined report. These sites are to be protected under the Heritage Conservation Act and need to be considered during fuel management prescriptions and wildfire risk reduction practices. When wildfire planning takes place consultation with the Archaeology Branch and/or an Archeologist will be required.

3.3.3 High Environmental Values

The RDCO encompasses several ecosystems that contain known occurrences of blue-listed species and provides habitat for several other blue-listed and red-listed species at risk. In addition, many parks are located around riparian habitat and sensitive soils.

The BC Conservation Data Centre (CDC) publicly lists spatial data on 3 Blue-listed species at risk within the AOI. Blue-listed species are considered vulnerable to human activity and natural events; therefore the impacts of fuel management prescriptions and wildfire risk reduction projects need to be considered. Consultation with the CDC and/or a professional biologist will be required during the development of fuel management plans within the AOI.

The ecosystems within the RDCO provide critical habitat for additional red-listed species (Table 6) as well as blue and yellow-listed species. While known occurrences may not overlap with individual fuel management treatments, each treatment must assess and manage for relevant species. These local species at risk reports are publicly available and updated frequently.

Table 6: Red-listed Species at Risk.

Species		**Classification**
American Badger	*Taxidea taxus*	Red-listed
American White Pelican	*Pelecanus erythrorhynchos*	Red-listed
Barn Owl	*Tyto alba*	Red-listed
Black-crowned Night-heron	*Nycticorax nycticorax*	Red-listed
Brewer's Sparrow	*Spizella breweri*	Red-listed
Desert Nightsnake	*Hypsiglena torquata*	Red-listed
Grasshopper Sparrow	*Ammodramus savannarum*	Red-listed
Northern Leopard Frog	*Lithobates pipiens*	Red-listed
Peregrine Falcon	*Falco peregrinus*	Red-listed
Swainson's Hawk	*Buteo swainsoni*	Red-listed
Tiger Salamander	*Ambystoma tigrinum*	Red-listed

Species		Classification
Western Grebe	*Aechmophorus occidentalis*	Red-listed
Western Screech Owl	*Megascops kennicottii*	Red-listed
White-headed Woodpecker	*Picoides albolarvatus*	Red-listed
Yellow-breasted Chat	*Icteria virens*	Red-listed

All fuel management prescriptions and wildfire risk reduction projects must take into consideration the potential presence of high environmental values and determined if they will be impacted through fuel management activities.

3.4 Other Resource Values

3.4.1 Recreation Features

Each RDCO park includes extensive recreational features - primarily highly developed trail networks. The RDCO maintains over 68km of trails within the park system that supports a variety of user groups. Although these features are not considered critical infrastructure, they are the main features within the parks and provide well established access routes for ground suppression sources. Other recreational features include sports fields, beaches, and playgrounds.

Figure 6: Soccer field at Bertram Creek Regional Park

SECTION 4: WILDFIRE THREAT AND RISK

This section defines the wildfire threat and risk to the AOI while discussing the factors that influence threat and risk. Wildfire threat describes the potential fire behaviour that could occur in an area while wildfire risk is the likelihood of a wildfire occurring. The factors influencing wildfire threat and risk that will be discussed in this section include fire regime, ecology, and weather.

4.1 Fire Regime, Fire Weather, and Climate Change

This subsection provides context on wildfires ecological impact on the AOI. Past, current, and future fire regimes will be described and factors that influence these regimes will be addressed such as climate change, human settlement, and forest pests.

4.1.1 Fire Regime and Fire Weather

Ecological variation in British Columbia is attributable to the different natural disturbance regimes through which ecosystems have evolved. In BC, biodiversity objectives are set based on 5 natural disturbance types (NDTs) which have an associated biogeoclimatic zone (British Columbia Ministry of Forests and British Columbia Ministry of Environment, 1995)

Table 7: Natural disturbance breakdown of RDCO Parks Biogeoclimatic Zones.

Biogeoclimatic Zone	Natural Disturbance	Area (ha)	Percent (%)
ICHmk1	NDT3	802	7
IDFdk2	NDT4	129	1
IDFdm1	NDT4	546	5
IDFmw1	NDT4	2761	25
IDFxh1	NDT4	3593	33
MSdm1	NDT3	1128	10
PPxh1	NDT4	1915	18

Characteristic of the lower elevation southern interior region of BC, the RDCO Parks predominantly fall within the following 3 biogeoclimatic zones:

- Okanagan Very Dry Hot Interior Douglas-fir (IDFxh1)
- Okanagan Very Dry Hot Ponderosa Pine (PPxh1)
- Shuswap Moist Warm Interior Douglas-fir (IDFmw1)

Each of these biogeoclimatic zones are classified as NDT4 – Ecosystems with frequent stand maintaining fires. Fire regimes within these ecosystems are naturally low intensity, high frequency surface fires. Historically these fire regimes resulted in a natural mosaic of uneven-aged stands through which grassland and shrubland openings could be found (Klenner et al., 2008).

Seventeen percent of the AOI is comprised of biogeoclimatic zones that classify as NDT-3 ecosystems with frequent stand-initiating events. These ecosystems are characterized by frequent wildfires that range in size from spot fires to over 200,000ha. This NDT type is home to the largest fires in the province

resulting in a mosaic landscape of different aged stands. The ecosystems that make up the AOI are dependent on fires to: maintain vegetative species composition; regulate coarse woody debris loading; recycle nutrients in the soil, and regulate pests and disease outbreaks.

However, in the past century, human settlement and fire suppression efforts altered fire regimes and disrupted fire-maintained ecosystems. Fire suppression resulted in increased forest ingrowth and forest encroachment into grasslands and shrublands, and incidence and severity of biotic disturbance agents. As a result, fuel loads across the landscape increased and fire regimes were altered (ABCFP, 2013). For example, historical fire frequency levels ranging from 4 to 50 years have increased to 150 to 250 years (Swift & Ran, 2012). Greater intervals between fires allows for more fuel build up and results in fires of higher severity and greater intensity. Current stand structure and composition within the BEC zones characterizing the AOI is reflective of an even-aged monoculture with significant losses in grasslands and shrublands due to forest encroachment (Odion et al., 2014).

The Fire Weather Index (FWI) is a numerical rating of fire intensity developed by the Canadian Wildland Fire Information System derived from the Build up Index (BUI) and Initial Spread Index (ISI). BUI is a numerical rating of the total amount of fuels available for consumption while ISI is a numerical rating of the expected rate of fire spread. Using 90th percentile fire weather index date from 3 BCWS weather stations within and adjacent to the AOI data can be extrapolated on fire regimes such as rate of spread and size for different fuel types (K. Hirsch, 1996). The following table illustrates the rate of spread, fire size 1 hour after ignition, head fire intensity and fire behaviour levels for fuel types present within the AOI.

Table 8: Fire Regimes and Properties of FBP Fuel Types within the AOI

Fuel Types	Area in AOI (ha)	ROS (m/min)	1-hour fire size **(ha)	Head Fire Intensity (kW/m)	Fire Type	Fire Behaviour (mod/high/extreme)
C-2	65	20	77	>10,000	Continuous	Extreme
C - 3	1,103	9	16	4,000-10,000	Intermittent	High
C - 4	3	20	77	>10,000	Continuous	Extreme
C-5	365	4	3	4,000-10,000	Surface	Moderate
C - 7	4,471	4	3	>10,000	Surface	Moderate
D – 1/2	370	4	3	500-2,000	Surface	Moderate
M – 1	903	8	11	>10,000	Intermittent	High
M – 2		15	43	>10,000	Continuous	Extreme
O1a*	1,912	34	98	2,000 – 4,000	Surface	Moderate
O1b*		37	98	2,000 – 4,000	Surfaces	Moderate

Note: (BUI = 225, ISI = 12), O1a/b use degree of curing not BUI* 10km/h was used as the effective wind speed**

In context, fire intensities <800kW/m can be suppressed with hand tools, fire intensities <2,000kW/m can be suppressed by air support and machinery and fire intensities >3,000kW/m are unlikely to be suppressed (Alexander, 2000; Government of Western Australia, 2019). An ecosystem once managed by frequent low intensity surface fires has transitioned to infrequent high intensity crown fires as seen in the 2003, 2009, and 2017 fire seasons. It is evident that fire management policies and professionals within the AOI must acknowledge the necessity of fires presence within the landscape from both an ecological and safety perspective.

Figure 7: Dead standing fuels in John's Family Nature Conservancy.

4.1.2 Climate Change

A collaborative report on Climate Projections for the Okanagan Region was developed by the Regional District of North Okanagan, Central Okanagan, and Okanagan Similkameen in February of 2020. This report outlines the following key findings which will have direct influence on wildfires:

- Summers are getting hotter – it is predicted that the number of days with temperatures over 30°C will triple by the 2050s
- Winters are getting hotter – it is predicted that by the 2050s there will be 28% fewer frost days
- Summers are getting drier – by the 2080s, trends suggest a decrease in summer precipitation by 23%
- Season lengths are changing – warming temperatures will result in shorter winters and longer summers
- Spring and Fall are getting wetter – a 17% increase in rainfall during spring and fall is expected by the 2080s

The extent of climate changes impact on wildfire is complex and interdependent. However, it is clear that climate change will increase wildfire activity (Vines, 2020). Warmer and drier summers will create more severe wildfires and increased fire danger. Longer summer seasons will result in longer fire seasons, increasing the amount of time over which fires will burn and extending the duration over which the AOI will be subject to ignition sources. Longer summers results in longer growing seasons. This, alongside increased precipitation in spring and fall, has potential to create more productive stands and in turn increase fuel levels (Boegelsack et al., 2018; Kirchmeier-Young et al., 2019). More specifically, it is evident that warmer conditions and elevated wildfire risk will result in more area burned and wildfire seasons like that seen in 2003, 2009, 2017 and 2018 becoming the norm. 2050 projections show that the changes in precipitation and temperature trends will result in the likelihood of annual occurrence of a fire season similar to 2017 occurring every two to five years (ICF, 2019).

Using fire weather data from the Fintry weather station, the following table provides a summary of the average number of fire danger class days per month over the last 10 years (2010-2020). This has been calculated for each month within the fire season, from April to October. The average number of High and Extreme rated fire danger days are approximately 56 and 5 respectively representing about 29% of the fire season.

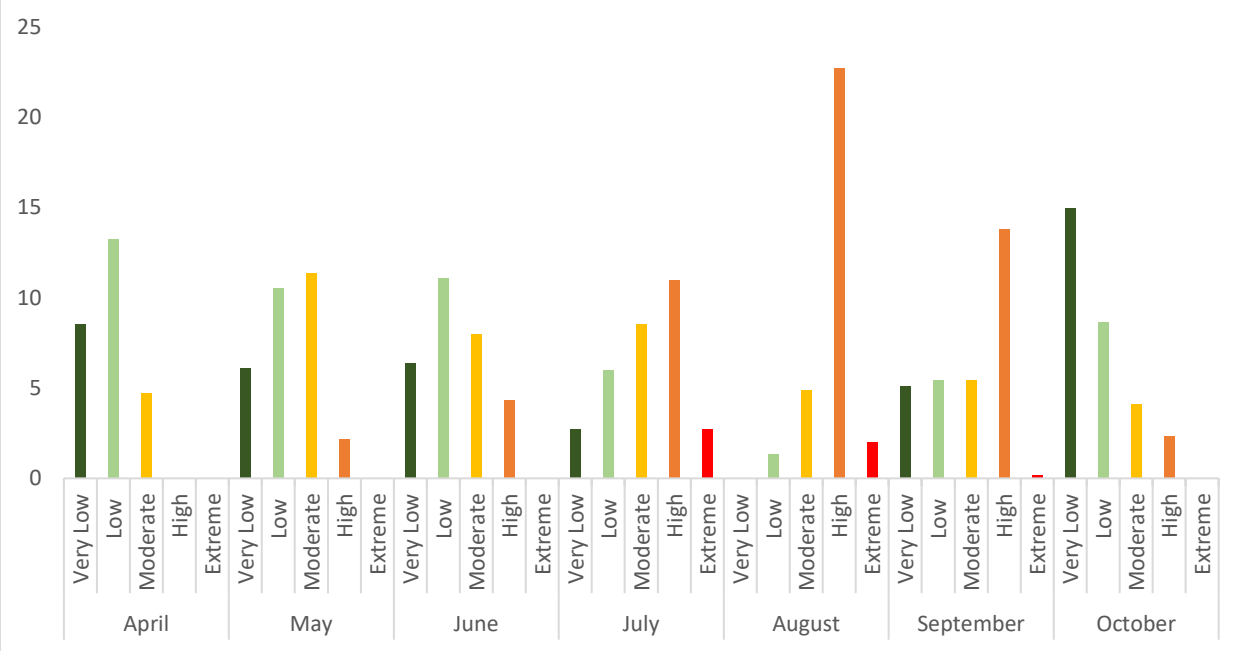

Figure 8: Average Number of Respect Fire Danger Days for April to October from 2010 to 2020

The indirect effects of climate change on wildfire mainly relate to pest population and disease occurrence. Longer hotter summers allow for pests such as tent caterpillars, ash borers, and wood boring beetles populations to complete two reproductive cycles, doubling their rate of infestation. Furthermore, decreasing winter severity will allow greater numbers of insects, such as the mountain pine beetle, to survive through the winter. Under rising temperatures, stands at higher elevations and northern latitudes are falling within the mountain pine beetles range, this is dramatically evident in southern BC. The susceptibility of trees to pine beetle attack also increase in drought conditions that force host trees into stress. Similar to pests, most diseases are strongly influenced by environmental conditions such as temperature (Anderegg et al., 2015). For example, stressed hosts from moisture deficiencies onset by drought will be more susceptible to Armillaria root disease (Cleary et al., 2008). Host susceptibility to mortality in the PP and IDF BEC zones are high. The resulting tree mortality from insect and disease attack results in greater fuel accumulation. Fuel build-up in turn, supports more intense fires. Furthermore, areas with greater accumulations of coarse woody fuels have potential to carry surface fires farther (Odion et al., 2014).

4.2 Provincial Strategic Threat Analysis (PSTA)

The Provincial Strategic Threat Analysis (PSTA) interprets datasets on historical fires, historical weather, topography, and fuel types at a provincial level, in turn providing information on relative wildfire threat across the province. Maps and data provided by the PSTA include information on fire density, fuel types, spotting impact, and threat ratings, as well as the impact these variables may have on values such as communities, natural resources, and infrastructure. The PSTA provides local governments, landowners, industry, and stakeholders a foundation of information upon which wildfire planning can be conducted (BC Wildfire Service, 2017).

It is important to note that the data provided by the PSTA has a number of limitations. The local wildfire threat assessment conducted during a CWPP ensures that local factors are considered to improve and build upon the data provided in the PSTA.

4.2.1 Wildfire Threat Rating

Wildfire threat relates to the likelihood of hazardous fuels igniting and fire spreading into the community directly or via embers. In the PSTA, wildfire threat is defined as a score, grouped into ten classes ranging from Nil to Extreme (or 1 to 10). A higher wildfire threat is accompanied by a higher number. A PSTA threat class of 7 is considered to be the threshold for fire threat, any scores higher than 7 are considered the most severe and are in most need of mitigation. The Wildfire Threat Score is calculated using a weighted averaging process with 3 key fire behaviour input factors, each representing a condition necessary for there to be a wildfire threatening a community (BC Wildfire Service, 2017). The 3 factors, their role in fire threatening a community, and their associated weight are as following:

1. Fire Density/History – An ignition occurs (30%)
2. Head Fire Intensity – The resulting fire generates sufficient intensity and spreads rapidly (60%)
3. Spotting Impact – The fire spread into and/or transports embers into the community (10%)

4.2.2 Spotting Impact

Spotting is the movement of embers from the head of the fire to areas past the fire perimeter. It is often falsely assumed by the public that values such as homes and infrastructure are ignited and destroyed by flames and radiant heat from the wildfire. Contrarily, research and past wildfires point to embers being the main ignition source of structures (Zurich, 2019). This is especially common in high intensity fires where embers are carried by the wind and dropped on structures and communities, known as spotting impact. Spotting impact is broken down into 10 classes ranging from Extreme to Nil.

In BC spotting distances have been documented up to 2km from the fire. Based on ISI Roses, prevalent wind direction within the AOI comes from the South South West (SSW). Therefore, structures northeast of high-risk fuel types are vulnerable to spotting from wildfires. Areas in the AOI that are SSW of communities need to be considered as high priority for fuel treatments and wildfire risk reduction planning.

4.2.3 Head Fire Intensity

Head Fire Intensity (HFI) is a prediction of the energy being release at the leading front (also known as the fire's head) of a fire, measured in kW/m. HFI is commonly used to estimate difficulty of controlling a fire and what suppression methods would be most effective. HFI is based on fuel type, weather

conditions, and topographical characteristics and is a direct function of the amount of fuel available for consumption. It's weighted highest of the 3 fire behaviour input factors at 60%, as it represents the greatest impact on structures. A higher intensity fire will spread faster, burn more severely, create more spotting embers, and will be more challenging to suppress (K. Hirsch, 1996).

4.2.4 Fire History & Density

A review of historical fire trends, ignitions and spread patterns is necessary to predict future fire trends and ignitions more accurately. Fire history data from BC provincial government dates back to the 1950s and is used to determine fire density, the third input for the PSTA. Fire density represents the ignition and fire spread potential based on historical data, assuming that areas with previous fire occurrences will continue to remain fire-prone. Fire density trends can reflect patterns of industry, lightning and weather (Heyerdahl et al., 2012).

Table 9: Fire occurrence within RDCO parks.

Fire Year	Fire Size (ha)	Fire Cause	Park
2017	489.4	Human	Philpott Trail
2012	200	Human	Trepanier Creek Greenway
2009	303.3	Human	Goats Peak, Gellatly Heritage
2005	25	Human	Rose Valley
2003	25635.6	Lightning	Bertram Creek, Lakeshore Road, Woodhaven Nature Conservancy, John's Family Nature Conservancy, Lebanon Creek Greenway
1969	51.4	Human	Shannon Lake
1960	26.6	Human	Glen Canyon
1958	220.1	Human	Black Mountain-sntsk'il'ntən
1955	12.9	Human	Stephens Coyote Ridge
1952	391.9	Human	Traders Cove
1934	1.7	Human	Mission Creek Greenway
1931	1097.1	Human	Stephens Coyote Ridge, Robert Lake
1929	1049.7	Human	Westshore Estates Community Park, Bouleau Lake

1926	66.6	Human	Scenic Canyon
1924	574.3	Human	Daves Creek Corridor

Table 10: Fire occurrence within the 2km WUI buffer of the AOI.

Year	Fire Size (ha)	Cause	Year	Fire Size (ha)	Cause	Year	Fire Size (ha)	Cause
1919	182.2	Human	1929	1049.7	Lightning	1960	559.5	Lightning
1921	90.3	Human	1930	1960.6	Lightning	2003	25635.6	Human
1921	90.3	Human	1930	217.4	Human	2011	1.1	Human
1922	74.2	Lightning	1930	357.4	Lightning	2012	40.3	Human
1924	12.9	Human	1930	1960.6	Human	2014	6.3	Lightning
1924	574.3	Human	1931	1003.4	Human	2015	564.6	Human
1924	163.7	Human	1932	8.2	Human	2017	489.4	Human
1925	107.7	Lightning	1932	843.7	Human	2017	2224.1	Human
1926	298.8	Human	1946	41.4	Human	2017	489.4	Lightning
						2018	1789.9	Human

4.3 Local Wildfire Threat Assessment

This section provides a detailed assessment of the local wildfire threat through the following key steps:

1. Validate local fuel types and develop fuel type map
2. Determine the proximity of fuels to community
3. Assess fire spread patterns using ISI Roses
4. Assess topography (slope and aspect)
5. Stratify WUI based on relative wildfire threat
6. Wildfire Risk Classification

Local Wildfire Threat Assessment is carried out using the methodology outlined in the Wildfire Threat Assessment Guide and completing the associated worksheets in the field. This guide is used to validate the PSTA threat rating through ground truthing. In doing so, each forest stand can be assigned a quantifiable wildfire threat rating score to ensure fuel management prescriptions and wildfire risk reduction activities are being carried out most effectively (BCWS, 2020). The key steps outlined above are described in the following sub-sections.

4.3.1 Validation of Local Fuel Types

Sixteen national fuel types were established by the Canadian Fire Behavior Prediction System based on the following attributes (Perrakis et al., 2017):

- vegetated vs non-vegetated
- treed vs non treed
- land coverage
- crown closure
- dominant tree species, % cover, height, and age
- BEC zone and sub zone
- Previous harvesting history
- % dead standing trees
- Disturbance history (insect attack, fire, disease)

PSTA data provided by BCWS to aid in the development of this CWPP included fuel typing for the AOI which was derived from vegetation resources inventory data. As this is a coarse level provincial layer, fuel types were updated using ortho-imagery and field type verification. Commonly updated fuel types were:

- Grasses or shrubs as forests or vice versa
- Major recent disturbance areas (forest fires or harvesting)
- Areas of recent fuel management treatments

Validating local fuel types is critical to providing accurate wildfire threat ratings and locating fuel treatments in areas of highest wildfire threat. The following table outlines the potential for crown fire establishment and/or for spotting to occur based on each of the FBP fuel types (K. Hirsch, 1996).

Table 11: Fuel Type Categories and Crown Fire Spot Potential.

Fuel Type Categories	Fuel Type - Crown Fire/ Spot Potential
1: C1, C2, C4, M3-M4 (>50% C/DF)	High
2: C3, C7, M3-M4 (<50% C/DF) M1-M2 >50% Conifer	Moderate
3: C5, C6, O1a/b, S1- S3[1] M1-M2 (26-49% Conifer)	Low
4: D1, D2, M1-M2 (<26% Conifer)	Very Low

Each of the Fuel Types present within the AOI are described below

C-2 FUEL TYPE – BOREAL SPRUCE

There are very minor components of the C-2 fuel type within the AOI. Areas comprised of the C-2 fuel type are dominated by young, densely stocked Fd and Py stands with up to 100% crown closure. Height to live crown is low at 0-2m. Sparse to moderate volumes of down woody material are present. The stand has moderate to high burn difficulty where wind driven fire has the potential for extreme fire behavior and active crown fire. These stands are characteristically dense, with horizontal and vertical fuel continuity resulting in potentially high fire behaviour (Perrakis et al., 2017).

Figure 9: Example of C-2 fuels in Mission Creek Regional Park.

C-3 FUEL TYPE – MATURE JACK OR LODGEPOLE PINE

This fuel type is characterized by >80% conifer, mature, fully stocked stands. In RDCO parks, these stands are typically dominated by Fd and Py with up to 100% crown closure. Height to live crown is high at approximately 8m while dead surface fuels are typically light and scattered. The stand has moderate burn difficulty where wind driven fire has the potential for extreme fire behavior and active crown fire (Perrakis et al., 2017).

Figure 10: Example of C-3 fuels in Rose Valley Regional Park.

C-4 FUEL TYPE – IMMATURE JACK OR LODGEPOLE PINE

This fuel type characterized by >80%conifer, young, dense stands. In the AOI, C-4 fuel types are common and are typically dominated by Fd and Py and up to 80% crown closure. Naturally thinning mortality levels are high resulting in both standing dead stems and dead downed woody fuel. As a result, vertical and horizontal fuel loading is continuous and surface fuel loading levels are higher than that in C-3 fuel type. Fire behaviour potential is high due to the fuel load amount and continuity (Perrakis et al., 2017).

Figure 11: Example of C-4 fuels in the WUI 2km buffer near Philpott Trail.

C-7 FUEL TYPE – PONDEROSA PINE – DOUGLAS FIR

The C-7 fuel type dominates the AOI, specifically at low to mid elevations. This fuel type is characterized by >80% conifer presence and uneven aged stands of Py and Fd. These stands are generally more open with up to 40% crown closure and varying height to live crown (2-6m). Surface fuels are typically light and scattered mostly made up of pine grass, needle litter, and occasional incidences of coarse woody debris. C-7 fuel type is not inherently hazardous based on the spacious stand structure (Perrakis et al., 2017).

Figure 12: Example of C-7 fuels in the 2km WUI buffer near Hardy Falls.

D-1 FUEL TYPE – LEAFLESS ASPEN

This fuel type is characterized by >80% deciduous presence ranging in stand density, age and height to live crown. Dominant species for this fuel type in the AOI include Act, At, and Ep. Surface fuels are sparse and mostly made up of leaf litter and deciduous shrubs or herbaceous material. Fire behaviour potential in D-1 fuel type is relatively low as it typically reduces wildfire behaviour (Perrakis et al., 2017).

Figure 13: Example of D-1 fuels in John's Family Nature Conservancy.

M-1/2 FUEL TYPE – BOREAL MIXEDWOOD LEAFLESS/GREEN

This fuel type is commonly found along waterways within the AOI at low elevations. Within the AOI typical species making up the M-1/2 fuel type are Fd, Act, At, and Bl. Surface fuel levels are dependent on deciduous and coniferous components. Fire behaviour potential in M-1/2 stands is also dependent on coniferous components, greater amounts of conifers will result in higher wildfire behaviour potential (Perrakis et al., 2017).

Figure 14: Example of M-1/2 fuels in John's Family Nature Conservancy.

O-1A/B – GRASS

O-1a/b grass fuel types are very common within low elevations of the AOI. Generally, there is little to no stand density or crown closure. Grass loading is the only surface fuel presence. This fuel type is easily dried out in the summer months resulting in significant areas of easily ignitable fuels in which fire can spread quickly. In some cases, these fuels are able to transition into other adjacent fuel types, resulting in greater fire behaviour potentials (Perrakis et al., 2017).

Figure 15: Example of O-1 fuels in Black Mountain-sntsk'il'ntən Regional Park.

Table 12: AOI Fuel Types and their respective coverage and potential fire behaviour.

Fuel Type	Area (ha)	Percent Cover (%)	Crown Fire/Spot Potential
C-2	65	1	High
C-3	1,103	12	Moderate
C-4	3	<1	High
C-5	356	4	Low
C-7	4,471	47	Moderate
D-1/2	370	4	Very Low
M-1/2 (>50% Conifer)	903	10	Moderate
O-1a/b	1,912	20	Low
Water/Non-fuel	254	3	N/A

Figure 16: Example of Water/Non-fuel in Scenic Canyon Regional Park.

Fuel types dominated by conifers or O-1a/b fuel types adjacent to conifer stands are of greatest concern for wildfire hazard. Moreover, fuel types with High crown fire/spot potential should be prioritized for fuel treatment and wildfire risk reduction planning (Government of Western Australia, 2019).

4.3.2 Determining Proximity of Fuels to Communities

The wildland urban interface (WUI) is comprised of areas where forests meet urban development. In these areas the risk of wildfire is greatest to values such as homes and human life. Moreover, the greatest risk of human ignition sources can be found here. It is crucial to prioritize fuel treatments closest to values within the WUI and progressively treat outwards. Therefore, in the local wildfire threat assessment, fuels closest to values are weighted higher. Proximity of fuels to communities was assessed through dividing the WUI into the 3 areas outlined in the following table. The width of each WUI zone was determined based on the spotting distances of high and moderate fuel type spotting potential and the threshold for crown fire potential. The WUI is weighted significantly in the local wildfire threat assessment to capture the importance of fuels proximity to values (Ager et al., 2019; Bento-Goncalves & Vieira, 2020; Hanberry, 2020).

Table 13: Wildland Urban Interface Zones.

Proximity to the Interface	Descriptor	Explanation
WUI 100	(0-100 m)	This Zone is always located adjacent to the value at risk. Treatment would modify the wildfire behaviour near or adjacent to the value. Treatment effectiveness would be increased when the value is FireSmart.
WUI 500	(101-500m)	Treatment would affect wildfire behaviour approaching a value, as well as the wildfire's ability to impact the value with short- to medium- range spotting; should also provide suppression opportunities near a value.
WUI 2000	(501-2000m)	Treatment would be effective in limiting long - range spotting but short-range spotting may fall short of the value and cause a new ignition that could affect a value.
	>2000 m	This should form part of a landscape assessment and is generally not part of the zoning process. Treatment is relatively ineffective for threat mitigation to a value, unless used to form a part of a larger fuel break / treatment.

4.3.3 Fire Spread Patterns & ISI Roses

Initial Spread Index (ISI) Roses summarize wildfire direction and rate of spread. Wind speed, wind direction, and fine fuel moisture condition are all factors which influence ISI Roses. ISI Roses illustrate the frequency of counts by wind direction as a percent and the initial spread index. The ISI Rose for the Fintry BCWS weather station was generated using hourly ISI data for peak burning periods (month of July) from 1996 to 2015. The Fintry weather station provides the most representative weather data for the AOI. Based on the Fintry ISI Rose, periods of higher ISI value and therefore higher wildfire spread potential are associated with winds predominantly from the South and Southeast. Interface areas in the S and SE of the AOI that are downwind from fuels will be at the highest risk based on wind patterns.

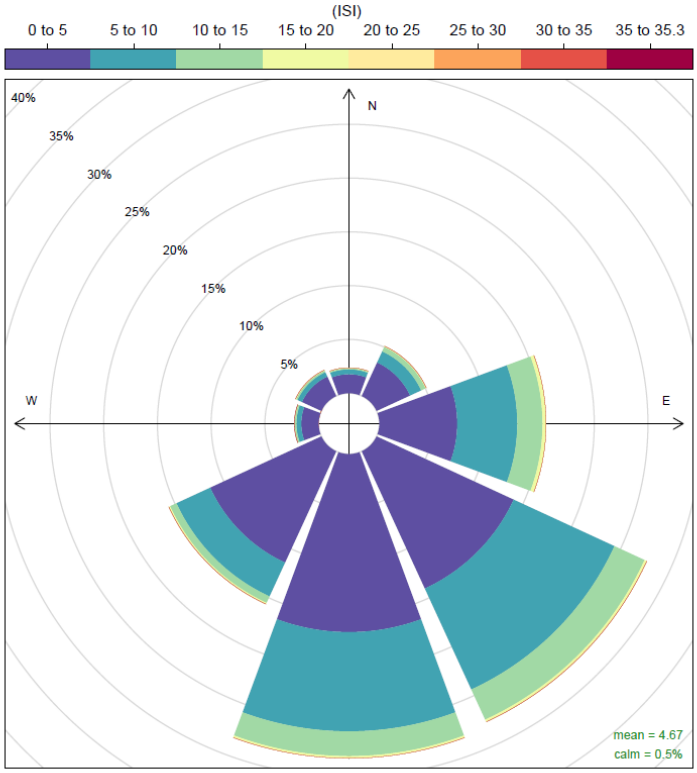

Figure 17: ISI Rose for Fintry Fire Weather Station from 1996 to 2015.

4.3.4 Topographical Assessment

The most important topographical factor that relates to wildfire is slope. How steep the slope is (slope percentage) and the location of values on the slope (slope position) directly impact fire behaviour implications. Slope percentage dictates the trajectory of a fire and its rate of spread. As outlined in the table below, a greater slope percent results in a greater rate of spread and more significant fire behaviour implications.

Table 14: Slope Percentage and Fire Behaviour Implications.

Slope Percent Class	Fire Behaviour Implications
<20%	Very little flame and fuel interaction caused by slope, normal rate of spread.
21-30%	Flame tilt begins to preheat fuel, increase rate of spread.
31-45%	Flame tilt preheats fuel and begins to bathe flames into fuel, high rate of spread.
46-60%	Flame tilt preheats fuel and bathes flames into fuel, very high rate of spread.
>60%	Flame tilt preheats fuel and bathes flames into fuel well upslope, extreme rate of spread.

The position of a value on a slope impacts how much momentum a wildfire will gain during an uphill run before it reaches the value. As the following table outlines, a value at the top of a slope will be impacted by more signification fire behaviour.

Table 15: Slope Position of Value and Fire Behaviour Implications.

Slope Position of Value	Fire Behaviour Implications
Bottom of Slope/ Valley Bottom	Impacted by normal rates of spread.
Mid Slope - Bench	Impacted by increase rates of spread. Position on a bench may reduce the preheating near the value. (Value is offset from the slope).
Mid slope – Continuous	Impacted by fast rates of spread. No break in terrain features affected by preheating and flames bathing into the fuel ahead of the fire.
Upper 1/3 of slope	Impacted by extreme rates of spread. At risk to large continuous fire run, preheating and flames bathing into the fuel.

Therefore, fuels along steep slopes atop which values are located should be prioritized for fuel treatment and wildfire risk reduction planning.

4.3.5 Stratifying the WUI into Local Wildfire Threat Classes

To stratify the WUI based on Relative Wildfire Threat the updated fuel type map from section 4.3. was used. Where fuel types were changed HFI values were updated. HFI values were updated by using those from similar fuel types in proximity to the new fuel type polygon. The wildfire threat rating was recalculated with the new HFI value and the same fire density and spotting impact values initially provided by the PSTA. Updated wildfire threat ratings to reflect local conditions is necessary to calculate accurate wildfire risk (Johnston & Flannigan, 2018).

4.3.6 Local Wildfire Risk Classification

The wildfire risk classification assessed 8% of the AOI as high or extreme wildfire risk (Table 16). The majority (58%) was assessed to be a low risk. However, this is a risk class relative to other areas within the AOI. Its purpose is to assist in prioritising areas for fuel treatment activities. A low or moderate fire risk area can still support a surface or crown fire and pose a threat to values.

Table 16: Wildfire Risk Classification.

Wildfire Risk Class	Area (ha)	Percent of total area
Low	5527.8	58%
Moderate	3255.5	34%
High	678.9	7%
Extreme	5.9	<1%

Local wildfire risk is determined using each of the factors previously described in Section 4.3 Local Wildfire Threat Assessment. Classifying wildfire risk entails measuring the fire behaviour potential while considering the implications to values. Local wildfire risk is represented with a numerical score based on the following 5 weighted categories:

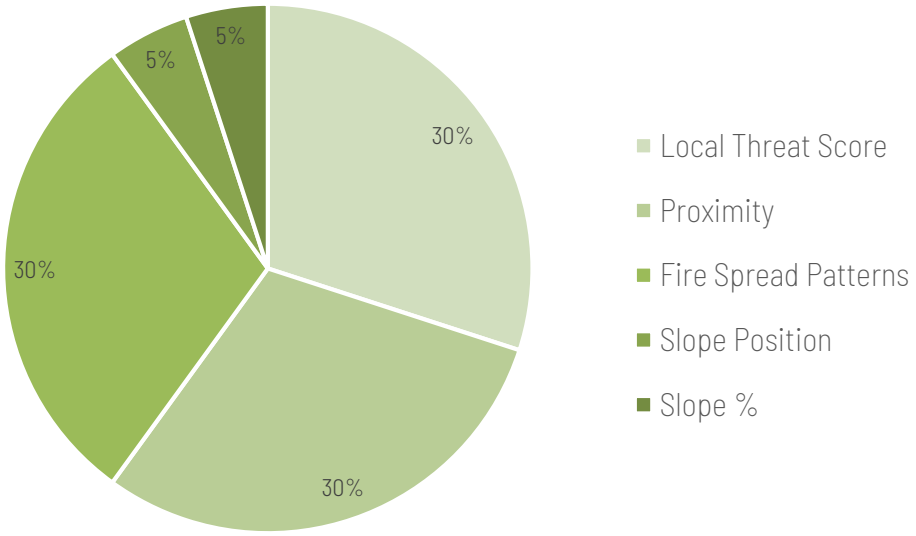

Figure 18: Local wildfire risk inputs and respective weights.

Wildfire risk scoring system is based on a maximum score of 10. Each of the relative fire risk classes is described below and their associated weighting score range is provided.

Table 17: Relative wildfire risk and its associated weighted score and description.

Relative Risk	Weighting	Description
No Risk	<0.1	The combination of the local fuel hazard (usually PSTA Class 0 or 1), weather influences, topography, proximity to the community, fuel (non-fuel) position in relation to fire spread patterns, and known local wildfire threat factors make it a no risk for threatening a community. These areas are non-fuel or sparsely vegetated and will not support spreading fires, and any patches of vegetation will usually self-extinguished. Low to no risk to any values at risk.
Low	0.1-3.9	The combination of the local fuel hazard, weather influences, topography, proximity to the community, fuel position in relation to fire spread patterns, and known local wildfire threat factors make it a lower potential for threatening a community. These stands will support surface fires, single tree or small groups of conifer trees could torch/ candle in extreme fire weather conditions. Fuel type spot potential is a low risk to values.
Moderate	4-6.9	The combination of the local fuel hazard, weather influences, topography, proximity to the community, fuel position in relation to fire spread patterns and known local wildfire threat factors make it possible that a wildfire in this area would threaten the community. Areas of matted grass, slash, conifer plantations, mature conifer stands with very high crown base height, and deciduous stands with 26 to 49% conifers. These stands will support surface fires, single tree or small groups of conifer trees could torch/ candle. Rates of spread would average between 2-5 meters/ minute. Forest stands would have potential to impact values in extreme weather conditions. Fuel type spot potential is unlikely to impact values at a long distance (<400m).
High	7-8.9	The combination of the local fuel hazard, weather influences, topography, proximity to the community, fuel position in relation to fire spread patterns, and known local wildfire threat factors make it likely that a wildfire in this area would threaten the community. This includes stands with continuous surface/ crown fuel that will support regular torching/ candling, intermittent crown and/or continuous crown fires. Rates of spread would average 6 -10 meters/ minute. Fuel type spot potential is likely to impact values at a long distance (400 -1 000m).
Extreme	9+	The combination of the local fuel hazard, weather influences, topography, proximity to the community, fuel position in relation to fire spread patterns, and known local wildfire threat factors make it very likely that a wildfire in this area would threaten the community. Stands with continuous surface/ crown fuel and fuel characteristics that tend to support the development of intermittent or continuous crown fires. Rates of spread would average >10 meters/ minute. Fuel type spot potential is probable to impact values at a long distance (400 -1 000m or greater). These forest stands have the greater potential to produce extreme fire behaviour (long range spotting, fire whirls and other fire behaviour phenomena).

SECTION 5: RISK MANAGEMENT AND MITIGATION FACTORS

This section outlines risk management and mitigation strategies that can be carried out within a community to reduce the risk and impact of wildfire. Proactively mitigating wildfire risk can reduce the impact of wildfire which can only be done with an understanding of the risks that apply to a given community. To be most successful in mitigating wildfire risk, coordination and distribution of information between the RDCO, City of Kelowna, District of Lake Country, District of Peachland, and City of West Kelowna. The following risk mitigations options will be discussed:

- Fuel Management
- Fire Smart
- Communication and Education

Risk assessment must be conducted within forested landscapes and beyond, considering high risk activities, human use, and other environmental factors within the AOI. In assessing these other factors, the following recommendations will meet the specific needs of the AOI and build resilience to wildfire impact.

5.1 Fuel Management

Fuel management or vegetation management reduces fire behaviour potential through the alteration of combustible materials that fuel wildfires. Fuel management in BC is guided by stand level prescriptions known as Fuel Management Prescriptions (FMPs). FMPs describe fuel management activities that will create post treatment stand conditions resulting in reduced fire behaviour (2020 Fuel Management Prescription Guidance, 2020). FMPs follow three principles:

1. Prescribe specific measurable targets to reduce fire behaviour
2. Account for site specific considerations that influence wildfire risk reduction objectives
3. Adhere to other legal resource management and non-statutory objectives

FMPs primary objectives are:

- Modify fire behaviour from crown to surface fire during 90th percentile local fire weather conditions
- Enhance public safety
- Create a more defensible space that allows for successful suppression opportunity by firefighting personnel

This report identifies and prioritizes fuel treatment units (FTUs) in which FMP development should take place. It also identifies areas that do not require an FMP currently but should be monitored for future needs. FTUs for the AOI are outlined in Table 13 Fuel Treatment Summary Table which describes the type, size and local fuel threat of the FTU polygon. FTU establishment and prioritization is described in the following subsections.

5.1.1 Methodology for Treatment Recommendations and Prioritization

The entirety of the AOI was assessed and classified into one of the four treatment unit type: Monitor, Polygon Treatment Area, Fuel Break, or N/A. Areas without fuels such as bodies of water saturated marshes, bogs, paved/built surfaces, and irrigated lawns absent of trees were designated as N/A treatment units. Monitor treatment units were retained for analysis but do not require a fuel treatment and are not prioritized. All treat polygons (Polygon Treatment Area or Fuel Break) were established based on:

- Fuel type
- Wildfire threat assessments
- Priority setting
- Wildfire risk class

As outlined in section 4.3 Local Wildfire Threat Assessment, wildfire risk is a combination of the local fuel hazard, local fire weather, topography, proximity to community and values, and fuel position in relation to fire spread patterns.

When developing treatment areas or FTUs other considerations included operational feasibility and defensibility. The treatment area must be large enough in size to be effective, relatively continuous, and linear. Where possible, treatment areas should take advantage of topographical, man-made, and natural fuel breaks (rock out crops, wetlands, rivers, lakes, roads, hydro lines, irrigated fields, and non-fuel areas etc.). Moreover, where appropriate FTUs should be placed adjacent to recommended FTUs in overlapping CWPPs, completed FMPs, and completed fuel treatments.

All 'Treat' FTUs outlined in Table 9 were prioritized based on scores derived from Priority Setting wildfire threat assessment worksheets. These worksheets consider the following factors (2020 Fuel Management Prescription Guidance, 2020):

- Proximity to values
- Proximity to treated/fuel free areas
- Wildfire spread direction
- Access
- Topography (slope and aspect)
- Fuel assessment rating
- Wildfire risk class

5.1.2 Treatment Types

The BCWS 2020 Fuel Management Prescription Guidance document groups treatment units into two types; Fuel Breaks and Polygon Treatment Areas. For this report there will 4 treatment type designations:

1. Monitor Polygons
2. Treat – Polygon Treatment Area
3. Treat – Fuel break
4. Inoperable Polygons (N/A)

Areas assigned as a Fuel Break or Polygon Treatment Area are prioritized for fuel treatment because of their hazardous fuel types and high wildfire risk. Within the AOI these fuel types are conifer dominated, such as C-2, C-3, C-4, C-5, C-7, M-1/2, and O-1a/b. Although O-1a/b is not a coniferous fuel type it is capable of rapid fire spread and surface fire development. Therefore, O-1a/b with significant fuel loading adjacent to or embedded within coniferous stands should be treated.

TREAT – POLYGON TREATMENT AREA

Polygon Treatments Areas are fuel treatments that do not form part of a continuous fuel break and do not necessarily anchor onto fuel free areas. Polygon Treatment Areas aim to reduce fire behaviour associated with surface fires to an intensity <2,000kW/m or to a fire intensity that will not support a continuous crown fire in high risk (90th percentile) fire weather.

TREAT – FUEL BREAK

A Fuel Break is a linear feature on the landscape. Fuel Breaks must be at least 1km in length, begin and end at an anchor point, and be >100m wide where it is closest to values. Fuel Breaks are linear and approximately >1km in length to be most effective under 90th percentile fire weather conditions. Fuel breaks are intended to reduce fire behaviour associated with surface fires to an intensity <2,000kW/m. Fuel Breaks where the critical surface intensity is already <2,000kW/m, are intended to reduce fire behaviour associated with surface fires to a lower intensity. Portions of the Fuel Break extending past the 100m width zonation are to reduce fire behaviour associated with surface fires to an intensity <4,000kW/m. In areas where the critical surface intensity is already <4,000kW/m, the intent is to reduce fire behaviour associated with surface fires to a lower intensity (2020 Fuel Management Prescription Guidance, 2020).

MONITOR POLYGONS

Areas of low risk were assigned 'Monitor' so that wildfire threat and/or presence of hazard trees can continue to be assessed overtime. Annual wildfire threat assessments should be carried out in 'Monitor' polygons by qualified RDCO parks staff and/or a registered professional forester. Assessments for hazardous trees should be conducted by a Wildlife/Danger Tree Assessor and may need to be conducted at more frequent intervals than wildfire threat assessments.

Fuel types such as D-1/2, O-1a/b, M-1/2, and C-7 are commonly assigned to monitor. D-1/2 fuel types generally reduce wildfire behaviour and do not require modification however should be monitored for hazard trees and heavy surface fuel loading. O-1a/b should be monitored for heavy surface fuel loading and grazing, prescribed burns, or mowing on a semi-annual basis may need to be considered. M-1/2 fuel types dominated by deciduous trees should be monitored for hazard trees and surface fuel loading. C-7 fuel types are not inherently hazardous based on their stand structures however should be monitored for increases in surface and ladder fuel loading and/or extensive mortality. Without natural, low intensity, stand maintaining fires a C-7 fuel type will naturally increase fuel loading through juvenile tree growth and accumulation of surface fuels. As a result, these areas require maintenance treatments. Large swaths of the AOI which may contain areas of high-risk fuels but low wildfire risk due to their distance from values were marked as monitor, these areas should be reassessed if development is to occur within them. If a wildfire threat assessment reveals that the wildfire risk for the polygon has increased to anywhere from moderate to extreme, the polygon should be reconsidered as a 'Treatment' Polygon.

'Monitor' polygons are assigned potential, future recommended stand treatment and debris management techniques but are not of significant risk to be prioritized currently for treatment.

INOPERABLE POLYGONS

Areas considered inoperable have no wildfire risk or have wildfire risk that is not able to be treated due to inaccessibility. Areas with slopes >60% are considered inaccessible. Areas with no wildfire risk include water, paved/built surfaces, irrigated lawns with no trees, and any areas with no vegetation. In the AOI areas that do not support fire commonly include beaches, water bodies, manicured lawns and sports fields, and paved/gravel/dirt areas. Polygons considered inoperable in this CWPP due to slope were

excluded only if they did not pose a significant threat to values; a high threat area of steep slopes should be treated if it poses a wildfire threat to values. However, treatments in these areas are typically expensive and/or limited to prescribed fire.

5.1.3 Stand Treatment Techniques

Treatment specifications are influenced by budgetary constraints, topography, fuel type, and values. Treatments can be carried out by hand or machine. Although the use of machine can be more cost and time effective, some areas are inaccessible by machine and/or are too sensitive to be disturbed by heavy equipment. The following treatment specifications can all be carried out either by hand crews or mechanically.

OVERSTORY THIN (OT) – Removal of overstory stems to meet target density and crown closure levels.

THIN FROM BELOW (TFB) – This treatment specification is similar to overstory thinning but targets the removal of trees in all stand layers (regen to overstory) in order to meet target density and crown closure levels. The largest, healthiest trees in each layer are retained.

UNDERSTORY THIN (UT) - This treatment specification entails that no overstory trees (with the exception of hazard trees) are removed, focusing on regen, poles, and saplings (Resource Practices Branch, n.d.).

HAZARD TREE REMOVAL (HTR) – Removal of trees that pose a threat to human safety.

PRUNING (P) – This treatment specification involves the removal of branches that create ladder fuels on retained stems. Pruning is prescribed to raise crown base height. This is commonly prescribed at 2 to 3m (Resource Practices Branch, n.d.).

SURFACE FUEL REDUCTION (SFR) – This treatment specification is prescribed when surface fuel load levels are too high. Surface fuel load reduction commonly follows harvest treatments to abate the excess loading produced from harvesting activities. SFR generally involves dragging debris to a chipper, air curtain burner or piling for burning but may also involve the raking of litter and needles (Lehmkuhl et al., 2007). Other forms of SFR can be carried out through prescribed burning and/or grazing.

5.1.4 Debris Management Techniques

Like stand treatment techniques, debris management is influenced by budgetary constraints, topography, and operability. These treatments can be carried out manually, mechanically or via prescribed fire methods.

CHIP OR DRAG AND REMOVE (CDAR) – This involves the chipping or dragging of debris and complete removal from the site for disposal or use elsewhere. This debris management method can be applied in any fuel type or treatment type when access permits and removes the majority of surface fuels from the unit (Husari et al., 2015).

LOP AND SCATTER (LS) – When relatively small pieces of coarse woody debris are scattered to lay flat along the surface in situations where surface fuel levels are low and the dispersion of coarse woody debris does not increase fire risk. This method can be used to meet biodiversity objectives (Schnepf et al., 2009).

PILE BURN (PB) – Piling and burning to dispose of debris can be implemented on sites where access is limited or sites are isolated. This treatment is subject to air quality restrictions and open burning smoke control regulations.

BROADCAST BURN (BB) – A form of prescribed fire. Broadcast burns are a controlled application of fire to a specific area to accomplish debris management objectives. A broadcast burn can be conducted post stand treatments or on its own. Broadcast burns require a burn plan (Pausas & Keeley, 2019).

GRAZING (G) – When herbivory livestock animals such as goats, sheep, and/or cattle are used to manage debris amount and arrangement through both ingestion and trampling. This method is only effective on fuels that are palatable to livestock animals such as forbs and grass (Nader et al., 2007).

5.1.5 Fuel Treatment Units

The following table outlines fuel treatment units (fuel breaks and polygon treatment areas) based on prioritization. All monitor and inoperable polygons can be found in appendix 1: Fuel Treatment Units.

Table 18: Fuel Treatment Summary Table

FTU #*	FTU Name*	Total Area (ha)	Priority (Priority Setting Score)	FTU Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Estimated Average Cost ($)	Comments
SCP1	Star Community Park	2.0	63	PTA	Moderate	C-7	HTR SFR	Manual	BB CDAR PB	Manual	3,580.24	Treat to protect values subdivision to N & park users. Extensive dead downed/standing trees.
TCG1	Trepanier Creek	10.0	63	PTA	Moderate	C-7	HTR SFR	Both	CDAR	Both	11,152.12	**Not a fuel treatment.** High priority to clean up dead standing trees within park as a result of wildfire
KAL2	Kalamoir	19.2	61	PTA	Moderate	C-7	HTR P SFR UT	Manual	CDAR PB	Manual	99,360.00	Treat to protect subdivision to N & W
LCG1	Lebanon Creek	28.4	61	PTA	Moderate	C-7	HTR P SFR UT	Both	BB CDAR PB	Both	103,100.77	Treat to protect subdivision to N & park users/infrastructure
SCA1	Scenic Canyon	10.8	60	PTA	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	73,085.69	Treat to protect subdivisions to E & W & park users/infrastructure
SCR1	Stephens Coyote Ridge	36.8	60	PTA	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	133,271.85	Treat to protect homes to E & park users/infrastructure. Adjacent to areas treated in 2014.
KOP1	Kopje	1.7	59	PTA	Moderate	C-2	HTR SFR UT	Both	CDAR	Both	5,057.98	Treat to protect community to E & park users/infrastructure.
RBA1	Raymer Bay	5.5	59	PTA	Moderate	C-7	HTR P	Manual	CDAR	Manual	14,829.31	Treat to protect homes to N & S & park users/infrastructure.

*it is important to note that FTU's starting with 'WUI' are NOT Regional District Parks but RDCO and/or Crown land within the RDCO Park WUI.

FTU #*	FTU Name*	Total Area (ha)	Priority (Priority Setting Score)	FTU Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Estimated Average Cost ($)	Comments
GCG2	Glen Canyon	17.3	58	PTA	Moderate	C-7	HTR P SFR TFB	Manual	CDAR PB	Manual	138,428.36	Treat to protect surrounding community & park users/infrastructure
SCA6	Scenic Canyon	46.3	58	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	313,847.33	Treat to protect new development to E. Interspersed with inoperable steep slopes
WUI10	Caesars Community	8.7	57	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	58,799.47	Treat to protect home to N.
RVA1	Rose Valley	137.2	56	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	930,018.43	FB to protect subdivision to N & E. anchors off of fuel type and 200m buffer
WUI57	Philpott Community	41.6	56	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	281,988.10	FB to protect community to W and S anchoring off of cut blocks and road
JRC1	Joe Rich Community Hall	0.3	56	PTA	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	1,990.38	Treat to protect Joe Rich community and fire hall to N.
WNC1	Woodhaven Nature Conservancy	12.5	56	PTA	High	C-3	HTR P SFR TFB	Both	CDAR PB	Both	84,724.95	Treat to protect subdivisions to N, E, & W & park users/infrastructure
WUI13	Mount Boucherie	15.5	56	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	105,050.31	Treat to protect subdivisions to E and S
WUI56	Philpott Community	23.2	56	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	157,262.59	Treat to protect community to the S.
WUI1	Killiney Community	129.7	55	FB	High	C-7	HTR P SFR TFB	Both	CDAR	Both	814,642.34	FB to protect community to E, anchors off roads and topo features. Landscape level break w WUI2
MCR1	Mission Creek	57.8	55	PTA	Moderate	C-7	HTR P SFR UT	Both	CDAR	Both	218,261.20	Treat to protect subdivision to N. Establish

*it is important to note that FTU's starting with 'WUI' are NOT Regional District Parks but RDCO and/or Crown land within the RDCO Park WUI.

FTU #*	FTU Name*	Total Area (ha)	Priority (Priority Setting Score)	FTU Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Estimated Average Cost ($)	Comments
												fuel break with adjacent D-1/2 & water
TFC1	Three Forks	4.6	53	PTA	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	18,214.20	Treat to protect homes to N, E, & W & park users/infrastructure.
WUI22	Coldham	18.7	52	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	126,931.98	FB to protect community to W. Anchoring off topo features and roads
WUI36	Philpott Community	65.2	52	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	441,922.49	FB to protect community to S & E. Anchoring off of cut blocks and roads
WUI51	Killiney Community	102.2	52	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	693,040.97	FB to protect community to E anchors off of topo features. Landscape level break w WUI3
WUI42	McCulloch Station	101.6	50	FB	Moderate	C-3	HTR P SFR TFB	Both	BB CDAR PB	Both	688,636.19	FB to protect homes to WSW anchoring off of lake and roads/trails
WUI43	McCulloch Station	14.0	50	PTA	Moderate	M-1/2	HTR P SFR UT	Both	CDAR PB	Both	55,638.02	Treat to protect homes to N.
WUI48	Fintry Community	2.5	50	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR	Both	15,928.27	Treat to protect homes to E.
WUI46	Rose Valley Community	15.7	49	PTA	Moderate	C-7	HTR P SFR TFB	Both	CAR LS PB	Both	72,514.27	Treat C-7 fuels to protect homes to E. Create fuel break with adjacent D-1/2 fuels
GCG1	Glen Canyon	28.2	46	PTA	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	191,479.40	Treat to protect surrounding community & park users/infrastructure
WUI8	Caesar's Community	80.5	43	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR	Both	505,689.93	FB to protect community to E anchors off of topo

*it is important to note that FTU's starting with 'WUI' are NOT Regional District Parks but RDCO and/or Crown land within the RDCO Park WUI.

FTU #*	FTU Name*	Total Area (ha)	Priority (Priority Setting Score)	FTU Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Estimated Average Cost ($)	Comments
												features and administrative boundaries
WUI2	Killiney Community	57.6	42	FB	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	390,317.05	FB to protect community to S, anchors off roads & Okanagan lake. Landscape level break w WUI1 & 3
WUI3	Killiney Community	75.8	42	FB	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	513,507.82	FB to protect community to SE, anchors off roads & bottom of Talus. Landscape level break w WUI2&51
WUI16	Shannon Lake Community	2.4	42	PTA	Low	M-1/2	HTR P SFR TFB	Both	CDAR PB	Both	16,017.57	Treat to protect subdivision to W. Conifer dominated M-1/2 fuels
WUI55	Philpott Community	79.5	41	FB	Moderate	C-3	HTR P SFR TFB	Both	CDAR PB	Both	538,895.52	FB to protect community to S anchoring off of cut blocks and road
WUI53	Ellison Community	63.0	38	FB	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	27,322.48	FB to protect community to S anchors off of top of stream slope
GPE2	Goats Peak	24.4	38	PTA	High	C-7	HTR P SFR UT	Both	CDAR PB BB	Both	100,456.32	Treat to protect community to E & park users/infrastructure.
KCH1	Killiney Community Hall	1.0	36	PTA	Moderate	C-7	HTR P SFR UT	Manual	CDAR LS	Manual	4,571.99	Treat to protect Killiney Community Hall to S.
SLA1	Shannon Lake	3.2	36	PTA	Moderate	C-7	HTR P SFR TFB	Manual	CDAR	Manual	27,470.73	Treat to protect subdivision to S & park users/infrastructure
MST1	McCulloch Station	3.4	35	PTA	High	C-3	HTR P SFR TFB	Both	CDAR PB	Both	23,275.17	Treat to protect Cabin to E.

*it is important to note that FTU's starting with 'WUI' are NOT Regional District Parks but RDCO and/or Crown land within the RDCO Park WUI.

FTU #*	FTU Name*	Total Area (ha)	Priority (Priority Setting Score)	FTU Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Estimated Average Cost ($)	Comments
WUI39	Trepanier Creek	8.7	35	PTA	Moderate	C-7	HTR SFR	Both	CDAR PB	Both	11,505.60	Treat to remove of dead standing/downed FdPy
GCG5	Glen Canyon	12.8	25	PTA	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	56,679.12	Treat to protect community to SE.

*it is important to note that FTU's starting with 'WUI' are NOT Regional District Parks but RDCO and/or Crown land within the RDCO Park WUI.

5.1.6 Fuel Management Funding Sources

Over the past 5 years the provincial government has significantly increased the amount of funding for fuel management planning and implementation. The Community Resiliency Investment (CRI) Program was introduced in 2018 as an incentive for communities to carry out fuel management initiatives on provincial Crown land and private land. The CRI has two funding mechanisms, FireSmart Community Funding and Support (FCFS) and Crown Land Wildfire Risk Reduction (WRR). Current WRR CRI funding regimes include investment of up to $25 million per year and is internally sourced. The FCFS is administered through UBCM. Currently $60 million has been invested into this program and is available to communities for the support of FireSmart activities, including fuel management projects (BC Ministry of Forests, Lands, 2020). CRI funding should be pursued for fuel management planning and all other applicable fire prevention activities by the RDCO.

5.2 FireSmart Planning & Activities

FireSmart provides communities with resources and programs designed to increase their resiliency to wildfire across Canada. FireSmart has developed plans, assessments, and guides to mitigate wildfire hazard in existing communities and prevent wildfire hazard in new developments. FireSmart is a responsibility that must be shared amongst all levels from provincial and local government to individuals within a community. Although FireSmart focuses on residential developments, its principles and applications can be applied to mixed-use areas and any structures or buildings. It is crucial to implement FireSmart to build a wildfire resilient community where life and property are protected from the inevitable event of wildfire.

This section summarizes the level of FireSmart that has been completed in the AOI and recommends FireSmart activities that can be applied within the AOI.

5.2.1 FireSmart Goals & Objectives

The goal of FireSmart is to encourage communities and citizens to adopt and conduct FireSmart practices to mitigate against the effects of wildfire to both public and private property assets. These adopted practices should aim to meet the following objectives:

- Reduce the potential for an active crown fire to move through private land
- Reduce the potential for ember transport through private land and structures
- Create landscape conditions around properties where fire suppression efforts can be effective and safe for responders and resources
- Treat fuel adjacent to and nearby structures to reduce the probability of ignition from radiant heat, direct flame contact, and ember transport
- Implement measures to structures and assets that reduce the probability of ignition and loss

These practices are broken down into seven disciplines: education, emergency planning, vegetation management, legislation, development, interagency cooperation, and cross training each providing practices and resources crucial to reaching the goal of a FireSmart community (Alberta government, 2013).

5.2.2 Key Aspects of FireSmart for Local Governments and First Nations

The intent of this subsection is to provide a summary of each of the 7 FireSmart disciplines and in doing so outline activities that gauge current level of implementation and recommend next steps.

EDUCATION – Education is the starting point for a FireSmart community. Public outreach and education build awareness, understanding, and a sense of responsibility amongst community members creating a foundation upon which the successful implementation of other FireSmart disciplines can occur. Education is not limited to individual residents but should also be directed towards land managers (such as the RDCO), visitors, volunteer organizations, industry professionals, and elected officials. The RDCO should consider the following educational outreach tools and tactics.

REC ID	Recommendation/Action Item
15	Make FireSmart informational materials readily accessible to RDCO Parks users and local community members within the AOI. This includes providing FireSmart informational materials at park trail heads, kiosks, and infrastructure such as the Mission Creek Regional Park Environmental Education Centre for the Okanagan. As well as using websites and social media platforms.
16	Community signage should be established in parks where FTU treatments have taken place, providing pre and post treatment photographs, outlining FMP objectives and how fire behaviour will be impacted.
17	Engage with those communities and neighbourhoods adjacent to the AOI and encourage the pursuit of the FireSmart Canada Neighborhood Recognition Program.
18	Provide FireSmart training to RDCO Parks Staff who are WUI Specialists, Urban Planners, and/or Forestry Professionals should become trained as Local FireSmart Representatives to work with groups and neighborhoods in planning and implementing FireSmart practices.
19	Work with local First Nations to develop workshops and public events on the importance of wildfire in the landscape and cohabitating with fire.

Ideally these recommendations would be implemented by a Community FireSmart and Resiliency Committee that coordinates activities across all the municipalities and First Nations within the RDCO. However, these activities should be pursued regardless of the formation of such a committee (BC FireSmart, 2020).

LEGISLATION– Legislation initiatives are higher level opportunities to reduce wildfire risk on both private and administrated land. Reviewing and updating bylaws to strengthen their impact on wildfire risk reduction development is crucial. The influence of FireSmart on legislation has cascading effects on other FireSmart disciplines, especially development (BC FireSmart, 2020).

REC ID	Recommendation/Action Item
20	Advocate to provincial government to create permanent wildfire hazard mitigation building requirements under the BC Building Act

DEVELOPMENT – The development of communities in wildfire-prone areas and the expansion of the WUI should be minimalized where possible. However, growing populations within the RDCO inevitably means more community land use will occur. Therefore, development standards are crucial in reducing the impact wildfire may have (FireSmart Canada, 2020).

REC ID	Recommendation/Action Item
21	Update WDPA mapping to reflect wildfire risk mapping from this CWPP update. Update the Natural Hazards section of all OCPs overlapping with the AOI to specify: - A list of design criteria and construction materials that must be applied within DPAs - A list of Fire-Resistant plants and trees native and suitable to the area that must be applied within the DPAs - The mandatory establishment of residential sprinkler systems for homes in areas without hydrants or Fire Department Response Services that fall within WDPAs Create an enforcement process through bond collection to ensure requirements of WDPs are completed. Apply for funding through UBCM CRI program to complete above outlined updates.
22	Educate local industrial managers and businesses about FireSmart building design and promoting the use of fire-resistant building material. Specifically, educate contractors developing new subdivisions within or adjacent to the new AOI on relevant by-laws and FireSmart principles.

INTERAGENCY COOPERATION – FireSmart efforts are most effective when collaboration occurs between all stakeholders within an area. This includes local fire departments, local government, provincial government, industry representatives, and First Nations. Community FireSmart Resiliency Committees (CFRCs) provide a setting in which stakeholders can come together and discuss the common vision of FireSmart and wildfire risk reduction. CFRCs strengthen collaboration between key partners and provide a means to share information and synergize plans to conduct FireSmart initiatives at a multiscale level (UBCM, 2020a).

A regional approach to wildfire management should be considered between the District of Peachland, District of Lake Country, City of Kelowna, City of West Kelowna, Westbank First Nation, and the RDCO. A CFRC would establish collaboration and organization of wildfire management at a regional level that is currently absent within the RDCO. Moreover, CFRCs will aid in the flow of information from a provincial level to individual members of the community. Community engagement would increase with the establishment of a CFRC through the development of the following projects and initiatives (Thompson et al., 2018):

- Identify FireSmart activities that should be undertaken in regional communities to best build wildfire resiliency
- Coordinate applications to the CRI program and other funding communities
- Develop a network of FireSmart Representatives throughout the RDCO
- Create an advocacy program for participation in the FireSmart Canada Community Recognition program

REC ID	Recommendation/Action Item
23	Connect with Local Governments, First Nations, industry representatives, provincial agency staff, and local fire departments to coordinate the development of a Community FireSmart Resiliency Committee.
24	Apply for CFRC development and maintenance funding through the CRI program (CRI Activity #4 Interagency Cooperation).

CROSS-TRAINING – Wildfire suppression, structural protection, and FireSmart knowledge and skills are required amongst many different professions in the Wildland Urban Interface and not just by those who work directly within a wildfire environment. Cross-training focuses on sharing necessary knowledge amongst different disciplines and in doing so, expands local capacity and expertise. A more diverse set of individuals with wildfire response and FireSmart training will support the development of a resilient community.

REC ID	Recommendation/Action Item
25	Provide RDCO parks 'field' staff with FireSmart 101 and Basic Wildland Fire Suppression and Safety Training (S-100 and S-185) training. Ensure FireSmart 101 training implementation during landscaping and maintenance activities.

EMERGENCY PLANNING – Emergency planning prepares communities for the dynamic and complex nature of wildfires. Emergency planning is multifaceted, involving concurrent onsets of first responders and response events. Wildland urban interface incidents will quickly overwhelm resources and render them ineffective without emergency pre-planning between all first responders and for all phases of response. RDCOs local Emergency Management Plan will cover general emergency planning, however the following topics should be considered for wildfire specific response planning in addition to those within the RDCO EMP.

Pre-Incident planning develops an all-encompassing list of fire management information so that it does not need to be gathered when an incident has already developed. Pre-Incident planning considers logistical and operational needs as well as order of command (UBCM, 2020b).

REC ID	Recommendation/Action Item
26	Establish a Pre-Incident plan following the pre-incident planning checklist provided in the 2021 CWRP Supplemental Instruction Guide. Pre-Incident planning should be developed with cross-jurisdictional participation and executed in live simulation exercises to ensure efficiency.

VEGETATION MANAGEMENT – Vegetation management aims to reduce potential wildfire intensity and WUI exposure to ember. There are two forms of vegetation management, fuel management treatments and residential scale FireSmart landscaping. Refer to section 5.1 Fuel Management for a description of fuel management treatments. Residential scale FireSmart Landscaping is the creation of more fire-resistant spaces through the removal or reduction of flammable vegetation.

Vegetation management at the residential scale is further delineated into the home ignition zone (HIZ) and the critical infrastructure ignition zone (CIIZ) and their corresponding priority zones. Vegetation management within the HIZ and its corresponding priority zones is the responsibility of the private property owner but in the case of smaller lots, the HIZ may extend onto publicly owned lands or adjacent private lands. CIIZ vegetation management is the responsibility of the local government. Vegetation management planning in both the HIZ and CIIZ should be carried out by horticulture specialists and forest professionals whose area of expertise falls under wildfire mitigation (FLNRORD, n.d.).

REC ID	Recommendation/Action Item
27	RDCO employees with expertise in wildfire mitigation and/or hired qualified professionals should assist local communities with FireSmart principles at the neighbourhood and home level.
28	Develop and implement an Annual Firesmart Community day and provide access to debris disposal with RDCO or contractor crews. Conduct community FireSmart implementation days at neighbourhood levels during which a community chipper can be used.

5.2.3 Identify Priority Areas within the Area of Interest for FireSmart

Although there are no neighbourhoods/communities within the AOI, below we identify priority communities that are adjacent to the AOI which would benefit from FireSmart assessments and FireSmart community plans. These areas are prioritized based on wildfire risk adjacent to established communities and critical infrastructure. This is another activity that would be led by a Community FireSmart and Resiliency Committee.

Table 19: Summary of recommended FireSmart activities for identified priority communities

Area ID	Wildfire Risk Rating (E/H/M/L)*	FireSmart Y/N*	FireSmart Canada Recognition Received Y/N*	Recommended FireSmart Activities*
Rural Westside Trepanier Valley & Brent Road Community	L-H	N	N	Adapt a FireSmart Grant Program as an initiative for property owners to conduct FireSmart treatments around their homes Encourage neighborhoods adjacent to RDCO parks to establish Neighborhood Associations to develop and implement FireSmart Activities

Area ID	Wildfire Risk Rating (E/H/M/L)*	FireSmart Y/N*	FireSmart Canada Recognition Received Y/N*	Recommended FireSmart Activities*
Joe Rich Community South Slopes: Lakeshore Road and June Springs Community Ellison Community				Develop and/or promote education for the reduction of human-caused fires Organize and host a community FireSmart day, FireSmart events and workshops, and wildfire season open houses Apply for FireSmart Canada Community Recognition Partnership between private landowners and RDCO to plan vegetation management on private property adjacent to RDCO parks Conduct FireSmart home and property assessments Organize off-site debris disposal for private landowners who have undertaken their own vegetation management, including: - Provide a dumpster, chipper or other collection method - Waive tipping fees - Provide curbside debris pick-up

*wildfire risk rating, FireSmart, FireSmart recognition received, and recommended FireSmart Activities outlined above are applicable to ALL communities outlined under area ID.

5.3 Community Communication and Education

As stated in 5.2.2 Key Aspects of FireSmart for Local Governments and First Nations, education is the cornerstone of FireSmart and mitigation activities.

A community well informed on the importance of wildfire resiliency and where RDCO funding is being funneled into wildfire resiliency projects creates a sense of awareness and ownership pride. This report is only to be successful if the community is engaged and supportive of its recommendations. The following recommendations must be implemented to ensure community communication and education is fulfilled.

REC ID	Recommendation/Action Item
29	Make this CWPP update available to all district residents, fire halls, industry representatives, and the public at large. Post its publication on social media platforms and the RDCO website.
30	A summary of the CWPP and its recommendations, wildfire risk maps and Homeowners FireSmart Manuals should be distributed to residents of communities outlined in the summary of FireSmart table.
31	Updated wildfire mitigation and resiliency activities should be incorporated into the RDCOs webpage as it occurs. Update the RDCO website to showcase ongoing FireSmart projects, new wildfire risk reduction projects, current community events, current wildfire risk, and updated educational resources.
32	Develop and implement wildfire management and risk reduction interactive youth programs. Consider the use of the emergency preparedness curriculum and contacting local BCWS and FireSmart representatives to help with curriculum development and delivery. Implement these programs in RDCO parks and/or at the Environmental Education Centre for the Okanagan. Engage with local schools to adopt this program.
33	Conduct annual Community Wildfire Preparedness Days.
34	Construct and operate additional fire danger rating signs in those high-use parks currently without signage.

SECTION 6: WILDFIRE RESPONSE RESOURCES

Interface fires are often complex incidents that involve coordinated response between wildland and structural firefighters and integration between different levels of government. This section provides a high-level overview of resources that are available to local governments in the case of a wildfire.

6.1 Local Government and First Nation Firefighting Resources

This sub-section outlines local fire department capacities including number of fire departments, equipment, water availability, and training. In outlining current capacity, limitations can be addressed and implications of wildfire that impact firefighting efforts can be outlined. Contingencies that have been put in place to combat these implications are described below as well as recommended measures that should be taken to help make community firefighting more effective.

6.1.1 Fire Departments and Equipment

The Regional District of Central Okanagan's total area encompasses several municipalities, First Nations, and Fire Protection Areas each with their own firefighting capabilities. These are the primary first responders for the majority of the AOI.

The RDCO completed a Fire Services Review (*Fire Services Review*, 2015) and the board of directors accepted the report in 2016. This review focused heavily on organisational structure and administrative controls. However, the review recommended that the RDCO should continue to support the current path to increased effectiveness and efficiency through a centralised Fire Chief. This review did not specifically address capabilities of fire departments to respond to wildfire situations; however, the RDCO can support cross training initiatives and exercises by allowing fire departments access to parks or other area for departments to train in wildland settings.

Municipalities and First Nations coordinate their own fire services; the RDCO is responsible for the 7 Fire Protection Areas that are outside of Municipal and First Nation boundaries. Brent Road, June Springs, and Lakeshore are covered through contracts to local municipal departments; Wildfires outside of municipal, fire service areas, and First Nation boundaries are actioned by BC Wildfire Service crews. However, local fire departments can request support from the BC Wildfire Service or other fire departments through mutual-aid agreements.

Table 20: Overview of Fire Departments operating within the RDCO and their fire suppression structure

Municipality	**Fire Suppression Structure**
District of Peachland	Volunteer Paid on-call
City of West Kelowna	Full-time and Volunteer Paid on-call
City of Kelowna	Full-time and Volunteer Paid on-call
District of Lake Country	Full-time and Volunteer Paid on-call
First Nation	**Fire Suppression Structure**

Westbank First Nation	Supplied through West Kelowna Fire Protection
Okanagan Indian Band	Volunteer Paid on-Call
Fire Protection Areas	**Fire Suppression Structure**
Brent Road	Supplied through District of Peachland
Ellison	Paid on-call
Joe Rich	Paid on-call
June Springs	Supplied through City of Kelowna
Lakeshore Road	Supplied through City of Kelowna
North Westside Road	Paid on-call
Wilsons Landing	Paid on-call

6.1.2 Water Availability for Wildfire Suppression

There is sufficient water availability for wildfire suppression within RDCO parks. This CWPP is specific to the RDCO parklands; water availability requirements for pure wildland fire response is often different than the needs for structural fire response.

While actioning a structural fire a large volume of water is required; this typically requires an on-site fire hydrant. Specifications vary, but a structural fire engine can deliver 5000-6000 litres per minute. In contrast, a wildland fire crew of 20 can effectively operate with only 300 litres per minute. This difference is due to the specific techniques used in wildland fire response. Given these water requirements, wildfire response typically involves utilising a nearby water source and moving water to the fire – either through a hose lay or with water tender trucks. These tenders are either owned by fire departments or industrial vehicles hired on an as needed basis. The water is dispensed into portable water storage tanks and used to supply a smaller delivery system utilised by hand crews.

A search of RDCO data returned 284 active fire hydrants within the project's AOI; this does not include hydrants operated by municipalities or First Nations. Furthermore, many RDCO parks are adjacent to natural water sources such as streams, rivers, and lakes. We do not recommend any changes to existing infrastructure specific to RDCO parks wildfire protection.

Recommendations for improvement in assessing the capabilities of water delivery are encompassed in recommendations for cross-training exercises and drills; exercises, training, and drills will build capacity for fire departments to gain familiarity with wildfire fighting and identify areas for improvements within specific fire departments. The BC Emergency Management System (*British Columbia Emergency Management System*, 2016) identifies the following beneficial activities:

- **TRAINING** Either formal training or developmental training that is role specific
- **DISCUSSION-BASED EXERCISES** Facilitated tabletop or workshops that explore how an emergency response would unfold

- **OPERATIONS-BASED EXERCISES** Drills or functional exercises involving front-line staff in a simulated emergency response.

Each activity provides specific benefits to emergency response that is not limited to wildfire suppression. Future activities should include all three types of activities, incorporate wildfire response, and occur frequently enough that staff from every jurisdiction within the RDCO remains current in wildfire response.

6.1.3 Access and Evacuation

The size, distribution, and location of RDCO Parks results in few access and evacuation routes designed for large scale evacuation of vehicles within parks. The infrastructure within parks is typically foot paths, some of which are also utilised as routes for light operational vehicles. Existing evacuation and egress routes within the parks include well established trail systems and emergency vehicle accesses within most parks. These are not access or evacuation routes designed to support a large-scale evacuation of civilians or to provide access for a large-scale wildfire response. The analysis of these routes falls under the scope of larger scale emergency planning undertaken by the City of Kelowna and encompasses the RDCO.

Three potential areas for improvement are noted and already undertaken by the RDCO. Firstly, maintaining and improving signage on trails to direct trail uses and fire personnel in the event of an emergency. This is already at sufficient levels, is a recommendation earlier in this plan, and is already a work item for the RDCO. Secondly, maintaining existing trails including hazard tree removal and brushing. This is already undertaken by the RDCO. Thirdly, incorporating new trails as fire breaks or maintaining existing trails as fire firebreaks. This already is a recommendation in the report, the RDCO maintains trails to a level required for a firebreak, and a future wildfire risk reduction prescription completed by a qualified professional will consider this objective. As of such we do not make any recommendations specific to this section.

6.1.4. Training

The RDCO should support, where possible, wildland fire training exercises for RDCO, municipality, First Nation, and fire protection areas response staff. The cross-training action items recommended in section 5.2.2 Key Aspects of FireSmart for Local Governments and First Nations, should be implemented alongside the action item described below. Other recommended action items to support cross training are included elsewhere in this CWPP.

These training exercises can include, but are not limited to, structural protection, wildfire firefighting, chainsaw operations, water delivery systems, and cross agency cooperation. Ideally training exercises should occur frequently enough to maintain skill currencies for experienced fire personnel and to build wildland fire skill sets in inexperienced or junior personnel. A key item for these exercises is to identify areas for improvement whether communication, coordination, individual skillsets, or equipment. Learnings for improvement identified within these exercises should be acted upon within individual emergency response programs.

REC ID	Recommendation/Action Item
35	Organize, host, or support wildland fire training exercises in partnership with BCWS and local fire departments.

6.2 Structure Protection

A complete list of structures within the RDCO Parks is located in Section 3.2 Critical Infrastructure. The RDCO does not maintain a significant number of structures within its parklands. An earlier recommendation states that FireSmart activities should be maintain around these limit sites.

Furthermore, local fire departments provide structural protection units which will provide coverage to these structures in the event of a wildfire. At this time, no further recommendations are suggested.

APPENDIX 1: FUEL TREATMENT UNITS

Table 21: Fuel Treatment Summary Table

FTU # & Stratum	FTU Name	Total Area (ha)	Priority (Priority Setting Score)	Treatment Unit Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Comments
ABE1	Antlers Beach	5.8		N/A		Water					Water
ABE2	Antlers Beach	1.1		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Sand surfaces with sparse FdPy
BCR1	Bertram Creek	9.6		N/A		Water					Water
BCR2	Bertram Creek	5.2		Monitor	Low	C-7	HTR P SFR	Both	CDAR PB	Both	Sparse components of irrigated lawns and built surface
BCR3	Bertram Creek	11.3		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR PB	Both	O-1a/b fuel with dead downed PyFd
BCR4	Bertram Creek	0.5		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawn with sparse trees.
BLG1	Bouleau Lake	2.3		Monitor	Low	Non-fuel	HTR	Both	CDAR PB	Both	Sand surfaces used by recreational vehicles
BLG2	Bouleau Lake	2.2		Monitor	High	C-7	HTR P SFR TFB	Both	PB	Both	Treat prior to further development.
BMO1	Black Mountain - sntsk'il'ntən	122.8		Monitor	Low	M-1/2	HTR P SFR UT	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
BMO2	Black Mountain- sntsk'il'ntən	247.7		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
BMO3	Black Mountain- sntsk'il'ntən	86.4		N/A	Low	C-7					Inoperable due to steep slopes (+60%).
BMO4	Black Mountain- sntsk'il'ntən	201.9		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
CCW1	Cinnabar Creek	0.3		Monitor	Low	C-7	HTR SFR	Manual	CDAR	Both	No public access. Ortho shows sparse FdPy

*FTU#& Stratum starting with 'WUI' are areas located within the WUI of RDCO owned land and Crown land. These areas are located OUTSIDE of RDCO Parks and are not to be mistaken for RDCO parks.

FTU # & Stratum	FTU Name	Total Area (ha)	Priority (Priority Setting Score)	Treatment Unit Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Comments
COL1	Coldham	11.1		Monitor	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Treated in 2014. Not currently considered a wildfire hazard. Monitor for ingress.
DCC1	Dave's Creek Corridor	2.3		Monitor	Moderate	C-7	HTR	Manual	CDAR	Manual	Linear features. No feasible treatment. Monitor for hazard trees, surface fuel &/or ingress.
EET1	Ellison Estates Trail	0.5		Monitor	Low	C-7	HTR SFR	Manual	CDAR PB	Manual	Linear features. No feasible treatment. Monitor for hazard trees, surface fuel &/or ingress.
EPR1	Ellison Primary	0.7		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawn and paved surface. Sparse trees.
FA11	Fintry Access #1	0.2		Monitor	Low	C-7	HTR	Manual	CDAR LS	Manual	Irrigated lawn sparse M-1/2 fuel components.
FA12	Fintry Access #1	0.4		N/A	Low	Water					Water
FA21	Fintry Access #2	0.1		Monitor	Low	D-1/2	HTR	Manual	CDAR LS	Both	Sparse Act
FA22	Fintry Access #2	0.2		N/A	Low	Water					Water
GCG1	Glen Canyon	28.2	46	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect surrounding community & park users/infrastructure
GCG2	Glen Canyon	17.3	58	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Manual	CDAR PB	Manual	Treat to protect surrounding community & park users/infrastructure
GCG3	Glen Canyon	10.6		N/A	Low	C-7					Inoperable due to steep slopes (+60%).
GCG4	Glen Canyon	27.1		Monitor	Low	D-1/2	HTR P SFR	Both	CDAR PB	Both	Monitor to maintain surface fuels to impede potential for surface fire establishment
GCG5	Glen Canyon	12.8	25	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Treat to protect community to SE.
GHE1	Gellatly Heritage	3.0		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR G	Both	Irrigated lawn with pruned & spaced PyFd.

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FTU # & Stratum	FTU Name	Total Area (ha)	Priority (Priority Setting Score)	Treatment Unit Type	Local Fuel Threat	Dominant Fuel Type	Stand Treatment Technique	Stand Treatment Methodology	Debris Management Technique	Debris Management Methodology	Comments
GNF1	Gellatly Nut Farm	4.0		Monitor	Low	Non-fuel	HTR	Both	CDAR	Both	Ornamental/nut crop trees. irrigated lawns with sparse trees.
GPE1	Goats Peak	28.3		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%)
GPE2	Goats Peak	24.4	38	Polygon Treatment Area	High	C-7	HTR P SFR UT	Both	CDAR PB BB	Both	Treat to protect community to E & park users/infrastructure.
HFA1	Hardy Falls	2.1		N/A	Low	M-1/2					Inoperable due to steep slopes (+60%).
HFA2	Hardy Falls	2.4		Monitor	Low	M-1/2	HTR SFR	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
JCL1	Jack Creek Linear	0.1		N/A	Moderate	C-7	HTR P SFR TFB	Manual	CDAR PB	Manual	Feature is embedded within C-7 fuels. Fuel treatment not feasible. Reassess prior to development
JFN1	John's Family Nature Conservancy	406.8		Monitor	Low	O-1a/b	HTR SFR	Both	BB	Both	Sparse PyFd Regen. components of D-1/2 fuels.
JRC1	Joe Rich Community Hall	0.3	56	Polygon Treatment Area	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect Joe Rich community and fire hall to N.
JRC2	Joe Rich Community Hall	0.7		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Sparse PyFd
KAL1	Kalamoir	2.9		N/A		Water					Water
KAL2	Kalamoir	19.2	61	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Manual	CDAR PB	Manual	Treat to protect subdivision to N & W
KAL3	Kalamoir	9.4		Monitor	Low	O-1a/b	HTR SFR	Manual	CDAR BB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
KBE1	Killiney Beach	1.1		Monitor	Low	C-7	HTR P SFR UT	Manual	CDAR PB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
KBE2	Killiney Beach	4.1		N/A	Low	Water					Water

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KCH1	Killiney Community Hall	1.0	36	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Manual	CDAR LS	Manual	Treat to protect Killiney Community Hall to S.
KCH2	Killiney Community Hall	0.9		Monitor	Low	Non-fuel	HTR	Manual	CDAR LS	Manual	Sparse PyFd
KLO1	KLO Creek	4.7		Monitor	Low	M-1/2	HTR P SFR TFB	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
KLO2	KLO Creek	12.4		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
KOP1	Kopje	1.7	59	Polygon Treatment Area	Moderate	C-2	HTR SFR UT	Both	CDAR	Both	Treat to protect community to E & park users/infrastructure.
KOP2	Kopje	2.0		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawn with sparse PyFd.
KYA1	Kaloya	4.7		Monitor	Low	C-7	HTR P SFR UT	Both	CDAR	Both	Irrigated lawn bordered by C-7 fuels.
LCG1	Lebanon Creek	28.4	61	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Both	BB CDAR PB	Both	Treat to protect subdivision to N & park users/infrastructure
LCG2	Lebanon Creek	3.3		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
LCG3	Lebanon Creek	7.0		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
LRC1	Lakeshore Road	0.1		Monitor	Low	C-7	HTR	Manual	CDAR PB	Manual	No public access. Ortho shows C-7 fuel with dead standing trees.
MCG1	Mission Creek Greenway	57.8		Monitor	Low	D-1/2	HTR P SFR	Both	CDAR	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
MCR1	Mission Creek	57.8	55	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Both	CDAR	Both	Treat to protect subdivision to N. Establish fuel break with adjacent D-1/2 & water
MIC1	Mill Creek	13.7		Monitor	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Treated in 2014. Not currently considered a wildfire hazard. Monitor for ingress.
MIC2	Mill Creek	1.7		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).

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MST1	McCulloch Station	3.4	35	Polygon Treatment Area	High	C-3	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect Cabin to E.
OCH1	Okanagan Safe Harbour	0.8		Monitor	Low	Non-fuel	HTR	Manual	CAR	Manual	Sparse PyFd
OCH2	Okanagan Safe Harbour	0.5		N/A		Water					Water
PPP1	Pine Point	0.2		Monitor	Low	O-1a/b	HTR SFR	Manual	BB CDAR	Manual	Ortho shows sparse PyFd. Property S of Pine Point has developed trails within park.
PTC1	Philpott Trail	4.9		Monitor	Low	C-7	HTR	Both	CDAR PB	Both	Linear features. No feasible treatment. Monitor for hazard trees, surface fuel &/or ingress.
RBA1	Raymer Bay	5.5	59	Polygon Treatment Area	Moderate	C-7	HTR P	Manual	CDAR	Manual	Treat to protect homes to N & S & park users/infrastructure.
RBA2	Raymer Bay	0.8		Monitor	Low	O-1a/b	HTR SFR	Manual	BB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
RBA3	Raymer Bay	0.6		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawns with sparse trees
RBA4	Raymer Bay	0.6		N/A		Water					Water
REI1	Reiswig	1.0		N/A		Water					Water
REI2	Reiswig	2.9		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawns & paved surfaces. Sparse trees.
RLA1	Robert Lake	2.0		N/A		Water					Water
RVA1	Rose Valley	137.2	56	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect subdivision to N & E. anchors off of fuel type and 200m buffer
RVA2	Rose Valley	102.9		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Reassess for treatment prior to further development
SCA1	Scenic Canyon	10.8	60	Polygon Treatment Area	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect subdivisions to E & W & park users/infrastructure
SCA2	Scenic Canyon	5.4		Monitor	Low	D-1/2	HTR P	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress

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SCA3	Scenic Canyon	45.0		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR G PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
SCA4	Scenic Canyon	61.5		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
SCA5	Scenic Canyon	10.6		N/A	Low	Water					Water
SCA6	Scenic Canyon	46.3	58	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect new development to E. Interspersed with inoperable steep slopes
SCA7	Scenic Canyon	21.3		Monitor	Low	C-7	HTR SFR UT	Both	CDAR PB	Both	Treated in 2013. Not currently considered a wildfire hazard. Monitor for ingress
SCA9	Scenic Canyon	19.2		Monitor	Low	C-7	HTR P SFR UT	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
SCC1	Scotty Creek	1.3		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawn and paved surface. sparse trees.
SCP1	Star Community Park	2.0	63	Polygon Treatment Area	Moderate	C-7	HTR SFR	Manual	BB CDAR PB	Manual	Treat to protect values subdivision to N & park users. Extensive dead downed/standing trees.
SCR1	Stephens Coyote Ridge	36.8	60	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Treat to protect homes to E & park users/infrastructure. Adjacent to areas treated in 2014.
SCR2	Stephens Coyote Ridge	72.4		Monitor	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
SCR3	Stephens Coyote Ridge	2.0		N/A		Water					Water
SLA1	Shannon Lake	3.2	36	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Manual	CDAR	Manual	Treat to protect subdivision to S & park users/infrastructure
SLA3	Shannon Lake	0.4		N/A		Water					Water
SRC1	Sunset Ranch	2.6		Monitor	Low	O-1a/b	HTR SFR	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
TCG1	Trepanier Creek	10.0	63	Polygon Treatment Area	Moderate	C-7	HTR SFR	Both	CDAR	Both	Not a fuel treatment. High priority to clean up dead standing trees within park as a result of wildfire

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TCG2	Trepanier Creek	10.5		N/A	Low	Non-fuel					Paved surface.
TCG3	Trepanier Creek	3.2		Monitor	Low	C-7	HTR	Both	CDAR PB	Both	Small features. No feasible fuel treatment.
TCO1	Traders Cove	13.2		Monitor	Low	O-1a/b	HTR SFR	Both	BB CDAR	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
TCO2	Traders Cove	0.8		N/A		Water					Water
TFC1	Three Forks	4.6	53	Polygon Treatment Area	Moderate	C-7	HTR P SFR UT	Both	CDAR PB	Both	Treat to protect homes to N, E, & W & park users/infrastructure.
TFC2	Three Forks	0.7		N/A	Low	Water					Water
TFC3	Three Forks	0.2		Monitor	Low	O-1a/b	HTR SFR	Manual	CDAR PB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WEC1	Westshore Estates	0.9		Monitor	Low	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect park values. recommended to coincide treatment with WUI52
WEC2	Westshore Estates	1.1		Monitor	Low	Non-fuel	HTR	Manual	CDAR PB	Manual	Irrigated lawns and built surfaces. Sparse PyFd.
WNC1	Woodhaven Nature Conservancy	12.5	56	Polygon Treatment Area	High	C-3	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect subdivisions to N, E, & W & park users/infrastructure
WNC2	Woodhaven	4.8		Monitor	Low	Non-fuel	HTR	Mechanical	CDAR PB	Manual	Irrigated lawns and paved/built surfaces. Sparse PyFd.
WNC3	Woodhaven	11.9		N/A	High	C-7					Inoperable due to steep slopes (+60%).
WUI1	Killiney Community	129.7	55	Fuel Break	High	C-7	HTR P SFR TFB	Both	CDAR	Both	FB to protect community to E, anchors off roads and topo features. Landscape level break w WUI2
WUI10	Caesars Community	8.7	57	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect home to N.
WUI11	Traders Cove Community	1.4		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).

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WUI12	Rose Valley Community	7.9		Monitor	Low	Non-fuel	HTR	Manual	CDAR PB	Manual	Irrigated lawn. Sparse PyFd.
WUI13	Mount Boucherie	15.5	56	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect subdivisions to E and S
WUI14	Mount Boucherie	23.7		Monitor	Low	O-1a/b	SFR	Manual	BB G	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI15	Shannon Lake Community	3.2		Monitor	Low	Non-fuel	HTR	Manual	CDAR	Manual	Irrigated lawns, paved/built surfaces. Sparse FdPy
WUI16	Shannon Lake Community	2.4	42	Polygon Treatment Area	Low	M-1/2	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect subdivision to W. Conifer dominated M-1/2 fuels
WUI17	Shannon Lake Community	33.8		Monitor	Low	O-1a/b	HTR	Both	CDAR PB	Both	Irrigated lawns, paved/built surfaces. Sparse FdPy
WUI18	Glenrosa Community	5.8		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR LS PB	Both	Feature is embedded within C-7 fuels. Fuel treatment not feasible. Reassess prior to development.
WUI19	Glenrosa Community	3.4		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Feature is embedded within C-7 fuels. Fuel treatment not feasible. Reassess prior to development.
WUI2	Killiney Community	57.6	42	Fuel Break	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to S, anchors off roads & Okanagan lake. Landscape level break w WUI1 & 3
WUI20	Trepanier Community	7.4		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI21	Trepanier Community	2.2		Monitor	Low	O-1a/b	HTR SFR	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI22	Coldham	18.7	52	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to W. Anchoring off topo features and roads
WUI23	Coldham	39.4		Monitor	Low	O-1a/b	HTR SFR	Both	CDAR PB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI24	Carrs Landing	72.1		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI26	Trepanier Community	7.6		Monitor	Low	O-1a/b	HTR SFR	Manual	BB CDAR PB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress

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WUI27	Peachland	423.9		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Overlap with area currently being developed for fuel management. Reassess for expansion of treatment prior to further development
WUI29	Crawford Community	13.0		Monitor	Low	O-1a/b	SFR	Both	BB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI3	Killiney Community	75.8	42	Fuel Break	High	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to SE, anchors off roads & bottom of Talus. Landscape level break w WUI2&51
WUI30	Crawford Community	14.2		Monitor	Low	O-1a/b	SFR	Both	BB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI31	Crawford Community	2.1		Monitor	Low	Non-fuel	HTR	Manual	CDARPB	Manual	Irrigated lawns and paved surfaces. Sparse FdPy.
WUI32	Gallagher's Canyon Community	58.6		Monitor	Low	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Overlap with previously treated areas.
WUI33	Medicine Creek 12	21.6		N/A	Low	C-7	HTR	Manual	CDAR	Manual	Feature is embedded within C-7 fuels. Fuel treatment not feasible. Reassess prior to development.
WUI34	Black Mountain Community	62.2		Monitor	Low	O-1a/b	SFR	Both	BB	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI35	Black Mountain Community	2.1		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
WUI36	Philpott Community	65.2	52	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to S & E. Anchoring off of cut blocks and roads
WUI37	Ellison Community	78.5		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI38	Trepanier Community	9.5		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Feature is embedded within C-7 fuels. Fuel treatment not feasible. Reassess prior to development.
WUI39	Trepanier Creek	8.7	35	Polygon Treatment Area	Moderate	C-7	HTR SFR	Both	CDAR PB	Both	Treat to remove of dead standing/downed FdPy
WUI4	Fintry Community	7.6		Monitor	Moderate	C-7	HTR P SFR	Manual	CDAR	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress

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WUI40	Crawford Community	9.8		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
WUI41	John's Family	979.3		Monitor	Low	O-1a/b	HTR SFR	Both	BB	Both	Minor components of Py and Fd regen
WUI42	McCulloch Station	101.6	50	Fuel Break	Moderate	C-3	HTR P SFR TFB	Both	BB CDAR PB	Both	FB to protect homes to WSW anchoring off of lake and roads/trails
WUI43	McCulloch Station	14.0	50	Polygon Treatment Area	Moderate	M-1/2	HTR P SFR UT	Both	CDAR PB	Both	Treat to protect homes to N.
WUI44	Rose Valley Community	133.4		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CAR LS PB	Both	Monitor for hazard trees, surface fuel &/or ingress. Treat prior to further development
WUI45	McCulloch Station	831.0		N/A	Moderate	C-3					N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI46	Rose Valley Community	15.7	49	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CAR LS PB	Both	Treat C-7 fuels to protect homes to E. Create fuel break with adjacent D-1/2 fuels
WUI47	Rose Valley Community	14.2		Monitor	Low	D-1/2	HTR	Both	CDAR LS	Both	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI48	Fintry Community	2.5	50	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR	Both	Treat to protect homes to E.
WUI49	Caesars Community	4.1		N/A	Moderate	C-7					Inoperable due to steep slopes (+60%).
WUI5	Fintry Community	0.8		Monitor	Low	O-1a/b	SFR	Manual	BB	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI50	Mount Boucherie	11.9		N/A	Low	O-1a/b					Inoperable due to steep slopes (+60%).
WUI51	Killiney Community	102.2	52	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to E anchors off of topo features. Landscape level break w WUI3
WUI52	Killiney Community	881.0		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	N/A. Change to a monitor FTU under the condition that area is intended to be developed

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WUI53	Ellison Community	63.0	38	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to S anchors off of top of stream slope
WUI54	KLO Creek	29.9		Monitor	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	N/A. Reassess prior to development
WUI55	Philpott Community	79.5	41	Fuel Break	Moderate	C-3	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to S anchoring off of cut blocks and road
WUI56	Philpott Community	23.2	56	Polygon Treatment Area	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	Treat to protect community to the S.
WUI57	Philpott Community	41.6	56	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	FB to protect community to W and S anchoring off of cut blocks and road
WUI58	Philpott Community	733.6		N/A	Moderate	C-7					N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI59	Philpott Community	733.9		N/A	Moderate	C-7					N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI6	Fintry Community	3.4		Monitor	Low	O-1a/b	HTR SFR	Manual	BB CDAR	Manual	Not currently considered a wildfire hazard. Monitor for hazard trees, surface fuel, and/or ingress
WUI60	Philpott Community	159.1		N/A	Moderate	C-5					N/A. Change to a monitor FTU under the condition that area is intended to be developed
WUI7	Fintry Community	4.6		Monitor	Moderate	C-6	HTR P SFR TFB	Both	CDAR	Both	Monitor for hazard trees, surface fuel &/or ingress. Treat prior to further development
WUI8	Caesar's Community	80.5	43	Fuel Break	Moderate	C-7	HTR P SFR TFB	Both	CDAR	Both	FB to protect community to E anchors off of topo features and administrative boundaries
WUI9	Caesar's Community	246.4		N/A	Moderate	C-7	HTR P SFR TFB	Both	CDAR PB	Both	N/A. Change to a monitor FTU under the condition that area is intended to be developed

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APPENDIX 2: WILDFIRE THREAT ASSESSMENT WORKSHEETS

Table 22: Wildfire Threat Assessment Worksheets

Plot #/ID	Location	Date	Assessor		Lat/Long	Crown Species Composition	Ladder Fuel Species Composition	Depth of Organic Layer (cm)	Surface Fuel Composition	Dead/Down Material Continuity (<7cm)	Ladder Fuel Composition	Ladder Fuel Horizontal Continuity	SPH (Understory)	Overstory Composition CBH	Crown Closure	Fuel Strata Gap	SPH (Overstory)	Dead/Dying (% dom/codom stems)	Total Score	Comments
1	Mill Creek	2020-04-14 16:54	KB SP KF	RPF	49° 58' 26.16" N 119° 21' 37.95" W	Fd9Cw1(EpAct)	Cw9Fd1	5 - <10 (5)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	3 - 6 (7)	401 - 600 (2)	Standing dead/Partial down <20% (2)	70	Adjacent to water, Fd dominate section, Py sections throughout, Jackpot areas
2	Mill Creek	2020-04-14 18:59	KB SP KF	RPF	49° 58' 23.71" N 119° 21' 36.07" W	Py6Fd4	Fd9Py1	10 - 20 (3)	Dead fines fuel (<1cm) (8)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	3 - 6 (7)	601 - 900 (3)	Standing dead/Partial down <20% (2)	64	Steep, rocky ground, basically untreatable.
3	Scenic Canyon	2020-04-17 7:00	KB SP KF	RPF	49° 50' 27.90" N 119° 22' 0.57" W	py9fd1	fd6py4	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Elevated Dead Fuel (7)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	48	
4	Scenic Canyon	2020-04-17 7:00	SP KF KB	RPF	49° 50' 23.46" N 119° 21' 23.23" W	8fd2py	10Fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	10 - 25% coverage (8)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with low CBH (<5m) (15)	>80% (4)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	65	mistletoe making up the ladder. untreated. manual only sfr tfb to trail or possibly 2m
5	Scenic Canyon	2020-04-17 20:02	KF	RFT	49° 50' 34.23" N 119° 20' 53.31" W	Cw7Ep3	Cw8Fd2	5 - <10 (5)	Moss, herbs, deciduous shrubs (4)	>50% coverage (15)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	1501 - 2500 (6)	Mixwood (75% conifer) (7)	61 - 80% (5)	<3 (10)	<400 (0)	Standing dead/Partial down <20% (2)	67	C7 upslope
6	Coldham	2020-04-30 7:00	SP	FIT	49° 49' 5.43" N 119° 45' 3.71" W	Fd8Py2	10Fd	1 - <2 (1)	Pinegrass (10)	26 - 50% coverage (12)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	66	Has been treated. very open C7.
7	Star	2020-04-30 7:00	SP	FIT	49° 47' 55.80" N 119° 43' 43.93" W	10Fd	10Fd	1 - <2 (1)	Pinegrass (10)	26 - 50% coverage (12)	Elevated Dead Fuel (7)	Sparse <10% coverage (2)	<900 (2)	Conifer with high CBH (>10m) (10)	20 - 40% (1)	>10 (0)	601 - 900 (3)	Standing dead/Partial down >75% (10)	58	Visual Assessment from Across Creek
8	Black Mountain-sntsk'il'ntən	2020-04-23 20:12	SP	FIT	49° 52' 31.38" N 119° 19' 46.17" W	9fd1py	10fd	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Mixwood (3)	Scattered 10 - 39% coverage (5)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	59	Low priority due to large o1 break between plot and value

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9	Kopje	2020-04-23 21:03	KF	RFT	50° 6' 22.85" N 119° 27' 39.53" W	10Py	10Py	1 - <2 (1)	Dead fines fuel (<1cm) (8)	Absent (0)	Spruce, Fir, Pine (10)	Uniform >60% (10)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	<400 (0)	Standing dead/Partial down <20% (2)	65	Currently typed at NF, but is a pocket of C2 with a very small strip of C7 below path
10	Sunset Ranch Park	2020-04-23 22:27	SP	FIT	49° 56' 3.28" N 119° 20' 34.02" W	8Act1Py1Fd	Fd +Alder	2 - <5 (3)	Moss, herbs, deciduous shrubs (4)	10 - 25% coverage (8)	Mixwood (3)	Patchy 40 - 60% coverage (8)	<900 (2)	Deciduous (<25% conifer) (0)	41 - 60% (2)	<3 (10)	901 - 1200 (4)	Standing dead/Partial down <20% (2)	46	mature decid dominant mixwood. no treatment required
11	Joe Rich Community Hall	2020-04-30 18:18	KF SP	FIT	49° 51' 48.97" N 119° 8' 28.96" W	6fd3cw1py	8cw2fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	1501 - 2500 (6)	Conifer with low CBH (<5m) (15)	>80% (4)	<3 (10)	601 - 900 (3)	Standing dead/Partial down 21 - 50% (5)	74	
12	Philpott WUI	2020-04-30 22:32	KF	RFT	49° 52' 30.24" N 119° 9' 13.84" W	Fd7Lt2Pl1	10Fd	2 - <5 (3)	Pinegrass (10)	26 - 50% coverage (12)	Elevated Dead Fuel (7)	Patchy 40 - 60% coverage (8)	901 - 1500 (4)	Conifer with high CBH (>10m) (10)	61 - 80% (5)	3 - 6 (7)	601 - 900 (3)	Standing dead/Partial down <20% (2)	71	Surface fuel is mixed from pinegrass/shrubs and dead fine. Area currently laid out for development by Tolko.
13	3 Forks Park	2020-04-30 22:33	SP	FIT	49° 52' 9.81" N 119° 9' 16.75" W	10Fd	10Fd	2 - <5 (3)	Dead fines fuel (<1cm) (8)	10 - 25% coverage (8)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	41 - 60% (2)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	62	50m to property line. fuel free grass area
14	Philpott Trail	2020-04-30 23:13	SP	FIT	49° 51' 59.86" N 119° 11' 59.25" W	10Fd	10Fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	10 - 25% coverage (8)	Other Conifer (5)	Uniform >60% (10)	<900 (2)	Conifer with low CBH (<5m) (15)	>80% (4)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	68	
15	Dave's Corridor	2020-05-01 0:08	SP	FIT	49° 52' 7.46" N 119° 16' 30.33" W	10Fd	10Fd	2 - <5 (3)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Elevated Dead Fuel (7)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with high CBH (>10m) (10)	41 - 60% (2)	<3 (10)	601 - 900 (3)	Standing dead/Partial down 21 - 50% (5)	67	Speculation of what it would look like in corridor
16	McCulloch buffer	2020-04-30 19:29	KF SP	FIT	49° 47' 48.25" N 119° 11' 38.93" W	7Sx3Pl	6Fd4Sx	2 - <5 (3)	Moss, herbs, deciduous shrubs (4)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Patchy 40 - 60% coverage (8)	2501 - 4000 (8)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	<400 (0)	Standing dead/Partial down <20% (2)	69	
17	McCulloch	2020-04-30 20:33	KF	RFT	49° 47' 9.83" N 119° 11' 6.03" W	Pl8Sx2(At)	Sx7Pl2Fd1	1 - <2 (1)	Pinegrass (10)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Uniform >60% (10)	2501 - 4000 (8)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	78	Young forest, adjacent C2.

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18	McCulloch	2020-04-30 20:33	KF	RFT	49° 46' 43.03" N 119° 10' 14.87" W	Sx6Pl4	Sx8Pl	2 - <5 (3)	Moss, herbs, deciduous shrubs (4)	26 - 50% coverage (12)	Elevated Dead Fuel (7)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	58	
19	Westshore Estates	2020-05-01 15:55	SP	FIT	50° 13' 37.01" N 119° 27' 37.55" W	6Fd4Py	10Fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	Scattered <10% coverage (4)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	6 - 9 (3)	601 - 900 (3)	Standing dead/Partial down <20% (2)	43	Open young stand.
20	Westshore Estates WUI	2020-05-01 15:59	KF	RFT	50° 13' 42.76" N 119° 27' 40.83" W	10Fd	10Fd	2 - <5 (3)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Sparse <10% coverage (2)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	3 - 6 (7)	401 - 600 (2)	Standing dead/Partial down <20% (2)	59	Smaller stems have low CBH, larger stems 6-9
21	Killiney Community Hall	2020-05-01 17:02	KF	RFT	50° 11' 30.68" N 119° 30' 20.06" W	Fd9Py1	Fd9Py1	2 - <5 (3)	Dead fines fuel (<1cm) (8)	Scattered <10% coverage (4)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	61 - 80% (5)	3 - 6 (7)	901 - 1200 (4)	Standing dead/Partial down <20% (2)	57	Firehall located downhill, Residential houses located uphill
22	Killiney Community Hall WUI	2020-05-01 17:27	KF	RFT	50° 11' 2.35" N 119° 30' 55.41" W	10Fd	10Fd	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	67	Assessment completed from roadside. High density C7/C3.
23	Fintry WUI	2020-05-01 18:02	SP	FIT	50° 7' 47.18" N 119° 30' 13.45" W	6Fd4Py	6Fd4Py	2 - <5 (3)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	63	
24	Cinnabar Creek WUI	2020-05-01 18:30	KF	RFT	50° 3' 31.80" N 119° 30' 17.69" W	Fd6Py4	Fd6Py5	1 - <2 (1)	Pinegrass (10)	10 - 25% coverage (8)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	<400 (0)	Standing dead/Partial down 21 - 50% (5)	63	C7 previously burned. Area heavy in rock. Not close to values. Completed from roadside (bear in the area).
25	Cinnabar Creek WUI	2020-05-01 18:41	SP	FIT	50° 1' 45.25" N 119° 29' 43.52" W	6fd4py	10Fd	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Elevated Dead Fuel (7)	Patchy 40 - 60% coverage (8)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	71	
26	Raymer Bay	2020-05-01 19:47	SP	FIT	49° 55' 3.06" N 119° 31' 57.40" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	<20% (0)	<3 (10)	<400 (0)	Standing dead/Partial down 21 - 50% (5)	56	minimal treatment required. spacious c7 on water

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27	Hardy Falls WUI	2020-05-01 21:28	KF	RFT	49° 44' 23.22" N 119° 46' 14.29" W	Py7Fd3	10Fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	52	Timber on ground recently cut and left. Very open, little to no treatment required.
28	Trepanier Greenway	2020-05-01 22:52	SP	FIT	49° 48' 24.67" N 119° 44' 32.89" W	10Fd	10Fd	1 - <2 (1)	Pinegrass (10)	26 - 50% coverage (12)	Elevated Dead Fuel (7)	Sparse <10% coverage (2)	<900 (2)	Conifer with high CBH (>10m) (10)	20 - 40% (1)	>10 (0)	901 - 1200 (4)	Standing dead/Partial down 51 - 75% (8)	57	fire has gone through
29	Bouleau WUI	2020-05-01 16:46	SP	FIT	50° 12' 31.08" N 119° 28' 52.38" W.	6Fd4Py	10Fd	5 - <10 (5)	Pinegrass (10)	>50% coverage (15)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	76	lots of downed CWD. w UT would be a c7
30	Jack Creek Linear Trail	2020-05-01 22:05	SP	FIT	49° 49' 27.19" N 119° 44' 54.01" W	5fd5py	10Fd	1 - <2 (1)	Pinegrass (10)	26 - 50% coverage (12)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	41 - 60% (2)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	66	c7
31	Hardy Falls	2020-05-05 23:08	KF	RFT	49° 44' 31.77" N 119° 45' 49.69" W	Act5Fd2Py1Ep2	Alder, Ep and shrubs	2 - <5 (3)	Moss, herbs, deciduous shrubs (4)	26 - 50% coverage (12)	Mixwood (3)	Uniform >60% (10)	<900 (2)	Deciduous (<25% conifer) (0)	61 - 80% (5)	6 - 9 (3)	<400 (0)	Standing dead/Partial down <20% (2)	44	This spot in particular has more conifer but is not representative of overall park.
32	Goats Peak	2020-05-07 16:55	SP	FIT	49° 48' 37.20" N 119° 38' 54.30" W	9Fd1Py	10Fd	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	1501 - 2500 (6)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	401 - 600 (2)	Standing dead/Partial down 21 - 50% (5)	74	dense patches of fire can be seen from ortho
33	Glen Canyon	2020-05-07 19:10	SP	FIT	49° 49' 11.12" N 119° 38' 0.19" W	8Fd2Ep	10Fd	5 - <10 (5)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	3 - 6 (7)	401 - 600 (2)	Standing dead/Partial down <20% (2)	55	might be an 80% conifer M1/2 but majority is a mature open c7 with some deciduous understory. pine grass surface fuel with some deciduous shrubs
34	Glen Canyon	2020-05-07 19:52	SP	FIT	49° 50' 0.83" N 119° 38' 49.01" W	6Py4Fd	8Fd2Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Uniform >60% (10)	1501 - 2500 (6)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	70	
35	Glen Canyon	2020-05-07 20:59	SP	FIT	49° 51' 3.75" N 119° 39' 57.64" W	10Fd	10Fd	1 - <2 (1)	Lichen, conifer shrubs (6)	Scattered <10% coverage (4)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with high CBH (>10m) (10)	41 - 60% (2)	6 - 9 (3)	401 - 600 (2)	Standing dead/Partial down <20% (2)	42	

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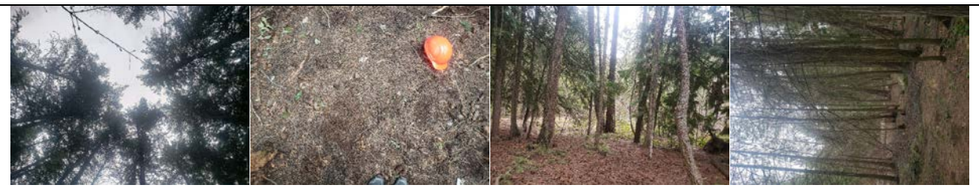
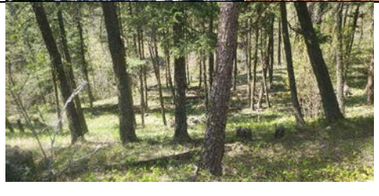
36	Kalamoir	2020-05-08 15:41	SP	FIT	49° 50' 33.68" N 119° 33' 10.65" W	7Py3Act	10Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	<900 (2)	Mixwood (75% conifer) (7)	20 - 40% (1)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	54	M1
37	Kalamoir	2020-05-08 16:22	SP	FIT	49° 51' 17.85" N 119° 32' 25.97" W	6fd4py	6fd4py	2 - <5 (3)	Lichen, conifer shrubs (6)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	41 - 60% (2)	<3 (10)	901 - 1200 (4)	Standing dead/Partial down <20% (2)	57	
38	Rose Valley	2020-05-08 17:09	SP	FIT	49° 52' 58.58" N 119° 33' 44.85" W	10Fd	10Fd	2 - <5 (3)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	>1200 (5)	Standing dead/Partial down <20% (2)	63	other than maybe TFB (unless screening was prescribed here) it fine
39	Rose Valley	2020-05-08 19:16	SP	FIT	49° 54' 11.52" N 119° 32' 42.66" W	8fd2py	8fd2py	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	63	c3
40	Stephen's Coyote Ridge	2020-05-09 20:46	SP	FIT	49° 57' 42.53" N 119° 26' 21.11" W	8fd2py	8fd2py	2 - <5 (3)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	59	young c7
41	Lebanon Creek	2020-05-12 17:24	SP	FIT	49° 47' 24.07" N 119° 31' 42.62" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	<3 (10)	<400 (0)	Standing dead/Partial down 21 - 50% (5)	61	
42	John's Family Nature Conservancy	2020-05-12 19:16	SP	FIT	49° 46' 34.21" N 119° 32' 27.89" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Absent (0)	<900 (2)	Conifer with high CBH (>10m) (10)	<20% (0)	>10 (0)	<400 (0)	Standing dead/Partial down >75% (10)	51	o1 with standing dead Py
43	Woodhaven WUI	2020-05-12 21:12	SP	FIT	49° 48' 42.12" N 119° 28' 2.44" W	5Fd3Py1Cw1Act	4Fd3Py3Cw	10 - 20 (3)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Other Conifer (5)	Uniform >60% (10)	<900 (2)	Conifer with low CBH (<5m) (15)	61 - 80% (5)	<3 (10)	901 - 1200 (4)	Standing dead/Partial down <20% (2)	46	transitional zone from c3 to c7
44	Mission Creek	2020-05-16 22:33	SP	FIT	49° 52' 16.68" N 119° 25' 51.49" W	9Py1Act	10Py	2 - <5 (3)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Patchy 40 - 60% coverage (8)	>4000 (10)	Conifer with high CBH (>10m) (10)	61 - 80% (5)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	69	Specific to L2-4 area

Plot #/ID	Location	Date	Assessor		Lat/Long	Crown Species Composition	Ladder Fuel Species Composition	Depth of Organic Layer (cm)	Surface Fuel Composition	Dead/Down Material Continuity (<7cm)	Ladder Fuel Composition	Ladder Fuel Horizontal Continuity	SPH (Understory)	Overstory Composition CBH	Crown Closure	Fuel Strata Gap	SPH (Overstory)	Dead/Dying (% dom/codom stems)	Total Score	Comments
45	Mission Creek	2020-05-16 23:02	SP	FIT	49° 52' 38.94" N 119° 25' 30.71" W	9py1fd	9py1fd	1 - <2 (1)	Dead fines fuel (<1cm) (8)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	901 - 1500 (4)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	601 - 900 (3)	Standing dead/Partial down <20% (2)	64	
46	KLO Creek	2020-05-16 19:24	SP	FIT	49° 49' 30.45" N 119° 22' 7.14" W	8Fd2py	10Fd	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Other Conifer (5)	Scattered 10 - 39% coverage (5)	2501 - 4000 (8)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	70	maybe should be c3
47	Kaloya	2020-05-06 19:03	SP	FIT	50° 7' 2.44" N 119° 22' 10.81" W	7Py3Fd	10Fd	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	46	
48	Bertram Creek	2020-05-12 19:27	SP	FIT	49° 47' 10.81" N 119° 33' 28.41" W	5Py5Fd	10Fd	1 - <2 (1)	Pinegrass (10)	Absent (0)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	42	
49	Gellatly Heritage	2020-05-07 19:38	SP	FIT	49° 48' 48.19" N 119° 38' 7.84" W	10Py	10Py	1 - <2 (1)	Moss, herbs, deciduous shrubs (4)	Absent (0)	Spruce, Fir, Pine (10)	Absent (0)	<900 (2)	Conifer with high CBH (>10m) (10)	20 - 40% (1)	6 - 9 (3)	<400 (0)	Standing dead/Partial down <20% (2)	33	surface fuel is actually manicured lawn. used option with lowest correlated value
50	Gellatly Nut Farm	2020-05-07 19:47	SP	FIT	49° 48' 38.08" N 119° 37' 36.32" W	deciduous nonnative trees	deciduous nonnative trees	1 - <2 (1)	Moss, herbs, deciduous shrubs (4)	Absent (0)	Deciduous (0)	Absent (0)	<900 (2)	Deciduous (<25% conifer) (0)	20 - 40% (1)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	22	
51	Shannon lake	2020-05-07 19:53	SP	FIT	49° 51' 18.26" N 119° 36' 45.67" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	52	
52	Antler Beach	2020-05-05 20:28	SP	FIT	49° 44' 15.02" N 119° 46' 0.84" W	8Py2Fd	8Py2Fd	1 - <2 (1)	Moss, herbs, deciduous shrubs (4)	Absent (0)	Other Conifer (5)	Sparse <10% coverage (2)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	<400 (0)	Standing dead/Partial down <20% (2)	41	surface fuel is absent mostly sand
53	Traders Cove	2020-05-01 19:42	KF	RFT	49° 56' 18.75" N 119° 30' 2.67" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	Absent (0)	Spruce, Fir, Pine (10)	Absent (0)	<900 (2)	Deciduous (<25% conifer) (0)	<20% (0)	>10 (0)	<400 (0)	Standing dead/Partial down <20% (2)	25	

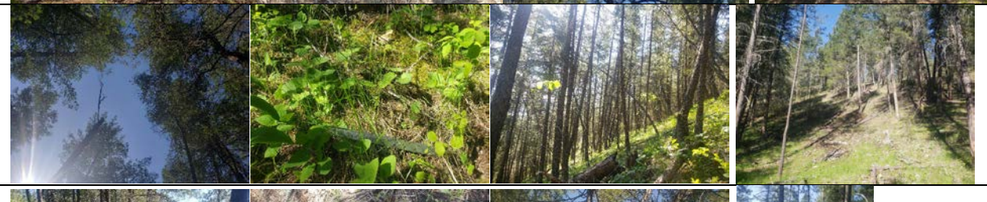
Plot #/ID	Location	Date	Assessor		Lat/Long	Crown Species Composition	Ladder Fuel Species Composition	Depth of Organic Layer (cm)	Surface Fuel Composition	Dead/Down Material Continuity (<7cm)	Ladder Fuel Composition	Ladder Fuel Horizontal Continuity	SPH (Understory)	Overstory Composition CBH	Crown Closure	Fuel Strata Gap	SPH (Overstory)	Dead/Dying (% dom/codom stems)	Total Score	Comments
54	John's Family Nature Conservancy	2020-06-01 17:26	SP	FIT	49° 46' 14.46" N 119° 32' 46.11" W	fdi90at1	fi90at10	1 - <2 (1)	Pinegrass (10)	Absent (0)	Mixwood (3)	Absent (0)	<900 (2)	Conifer with high CBH (>10m) (10)	<20% (0)	6 - 9 (3)	401 - 600 (2)	Standing dead/Partial down <20% (2)	33	highly variable polygon, but the densest area is year-round stream with significant deciduous component.
55	Scenic Canyon	2020-06-01 21:13	SP	FIT	49° 51' 17.37" N 119° 23' 18.04" W	Cw4Act4Fd2+Py	8Cw2Fd	2 - <5 (3)	Moss, herbs, deciduous shrubs (4)	26 - 50% coverage (12)	Mixwood (3)	Uniform >60% (10)	<900 (2)	Mixwood (75% conifer) (7)	61 - 80% (5)	<3 (10)	401 - 600 (2)	Standing dead/Partial down <20% (2)	60	dense mixed wood
56	Scenic Canyon	2020-06-01 22:00	SP	FIT	49° 51' 31.04" N 119° 23' 16.85" W	Cw5Fd3Py1Act1	Cw10	5 - <10 (5)	Dead fines fuel (<1cm) (8)	26 - 50% coverage (12)	Other Conifer (5)	Patchy 40 - 60% coverage (8)	<900 (2)	Conifer with low CBH (<5m) (15)	>80% (4)	<3 (10)	901 - 1200 (4)	Standing dead/Partial down <20% (2)	75	moist c3
57	Cinnabar Creek	2020-10-05 18:45	SP	FIT	50° 2' 31.19" N 119° 30' 1.42" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Sparse <10% coverage (2)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	<20% (0)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	50	
58	Killiney Beach	2020-10-05 20:22	SP	FIT	50° 11' 16.93" N 119° 29' 49.22" W	10Py	10Py	1 - <2 (1)	Moss, herbs, deciduous shrubs (4)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Patchy 40 - 60% coverage (8)	901 - 1500 (4)	Mixwood (75% conifer) (7)	41 - 60% (2)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	49	
59	Woodhaven WUI	2020-10-06 15:02	SP	FIT	49° 48' 16.15" N 119° 27' 11.75" W	PyFd	PyFd	2 - <5 (3)	Pinegrass (10)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	20 - 40% (1)	<3 (10)	<400 (0)	Standing dead/Partial down <20% (2)	64	
60	Mount Boucherie WUI	2020-10-06 15:32	SP	FIT	49° 51' 22.62" N 119° 33' 59.08" W	10Py	10Py	1 - <2 (1)	Pinegrass (10)	Scattered <10% coverage (4)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with moderate CBH (6 - 9m) (12)	20 - 40% (1)	3 - 6 (7)	<400 (0)	Standing dead/Partial down <20% (2)	54	
61	Glendora WUI	2020-10-06 15:37	SP	FIT	49° 50' 4.36" N 119° 40' 57.40" W	PyFd	PyFd	2 - <5 (3)	Dead fines fuel (<1cm) (8)	10 - 25% coverage (8)	Spruce, Fir, Pine (10)	Scattered 10 - 39% coverage (5)	<900 (2)	Conifer with low CBH (<5m) (15)	41 - 60% (2)	3 - 6 (7)	401 - 600 (2)	Standing dead/Partial down <20% (2)	61	

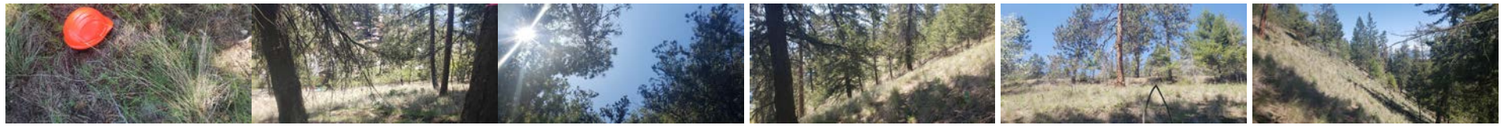
APPENDIX 3: WILDFIRE THREAT ASSESSMENT PHOTOS

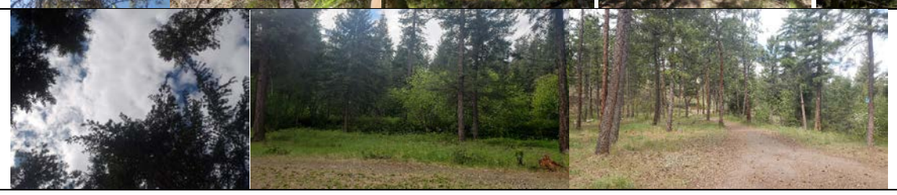
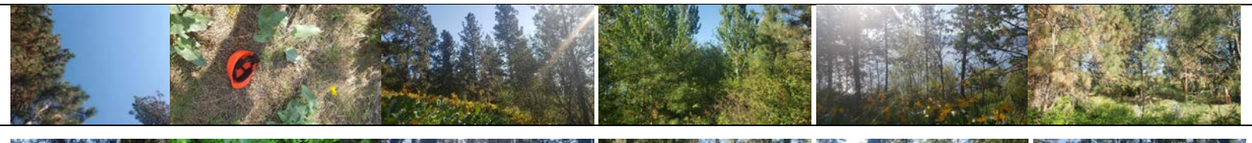
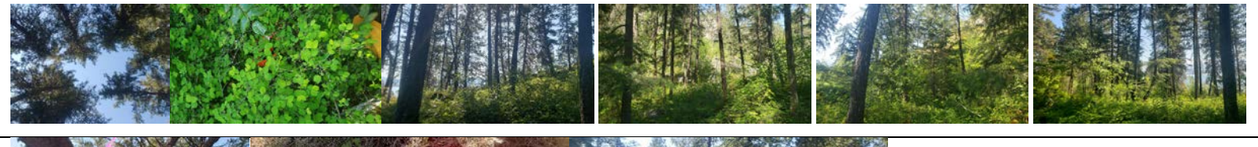
Table 23: Wildfire Threat Assessment Photos

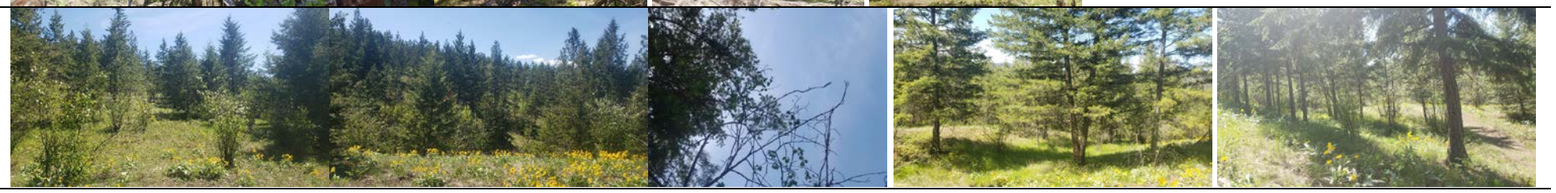
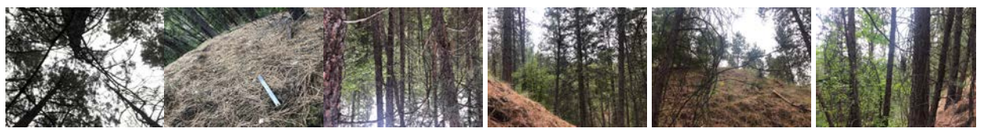
Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
1	Mill Creek	2020-04-14 16:54	KB SP KF	RPF	49° 58' 26.16" N 119° 21' 37.95" W	70	
2	Mill Creek	2020-04-14 18:59	KB SP KF	RPF	49° 58' 23.71" N 119° 21' 36.07" W	64	
3	Scenic Canyon	2020-04-17 7:00	KB SP KF	RPF	49° 50' 27.90" N 119° 22' 0.57" W	48	
4	Scenic Canyon	2020-04-17 7:00	SP KF KB	RPF	49° 50' 23.46" N 119° 21' 23.23" W	65	
5	Scenic Canyon	2020-04-17 20:02	KF	RFT	49° 50' 34.23" N 119° 20' 53.31" W	67	
6	Coldham	2020-04-30 7:00	SP	FIT	49° 49' 5.43" N 119° 45' 3.71" W	66	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
7	Star	2020-04-30 7:00	SP	FIT	49° 47' 55.80" N 119° 43' 43.93" W	58	
8	Black Mountain-sntsk'il'ntən	2020-04-23 20:12	SP	FIT	49° 52' 31.38" N 119° 19' 46.17" W	59	
9	Kopje	2020-04-23 21:03	KF	RFT	50° 6' 22.85" N 119° 27' 39.53" W	65	
10	Sunset Ranch Park	2020-04-23 22:27	SP	FIT	49° 56' 3.28" N 119° 20' 34.02" W	46	
11	Joe Rich Community Hall	2020-04-30 18:18	KF SP	FIT	49° 51' 48.97" N 119° 8' 28.96" W	74	
12	Philpott WUI	2020-04-30 22:32	KF	RFT	49° 52' 30.24" N 119° 9' 13.84" W	71	
13	3 Forks Park	2020-04-30 22:33	SP	FIT	49° 52' 9.81" N 119° 9' 16.75" W	62	
14	Philpott Trail	2020-04-30 23:13	SP	FIT	49° 51' 59.86" N 119° 11' 59.25" W	68	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
15	Dave's Corridor	2020-05-01 0:08	SP	FIT	49° 52' 7.46" N 119° 16' 30.33" W	67	
16	McCulloch buffer	2020-04-30 19:29	KF SP	FIT	49° 47' 48.25" N 119° 11' 38.93" W	69	
17	McCulloch	2020-04-30 20:33	KF	RFT	49° 47' 9.83" N 119° 11' 6.03" W	78	
18	McCulloch	2020-04-30 20:33	KF	RFT	49° 46' 43.03" N 119° 10' 14.87" W	58	
19	Westshore Estates	2020-05-01 15:55	SP	FIT	50° 13' 37.01" N 119° 27' 37.55" W	43	
20	Westshore Estates WUI	2020-05-01 15:59	KF	RFT	50° 13' 42.76" N 119° 27' 40.83" W	59	
21	Killiney Community Hall	2020-05-01 17:02	KF	RFT	50° 11' 30.68" N 119° 30' 20.06" W	57	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
22	Killiney Community Hall WUI	2020-05-01 17:27	KF	RFT	50° 11' 2.35" N 119° 30' 55.41" W	67	
23	Fintry WUI	2020-05-01 18:02	SP	FIT	50° 7' 47.18" N 119° 30' 13.45" W	63	
24	Cinnabar Creek WUI	2020-05-01 18:30	KF	RFT	50° 3' 31.80" N 119° 30' 17.69" W	63	No access – no photos
25	Cinnabar Creek WUI	2020-05-01 18:41	SP	FIT	50° 1' 45.25" N 119° 29' 43.52" W	71	
26	Raymer Bay	2020-05-01 19:47	SP	FIT	49° 55' 3.06" N 119° 31' 57.40" W	56	
27	Hardy Falls WUI	2020-05-01 21:28	KF	RFT	49° 44' 23.22" N 119° 46' 14.29" W	52	
28	Trepanier Greenway	2020-05-01 22:52	SP	FIT	49° 48' 24.67" N 119° 44' 32.89" W	57	
29	Bouleau WUI	2020-05-01 16:46	SP	FIT	50° 12' 31.08" N 119° 28' 52.38" W.	76	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
30	Jack Creek Linear Trail	2020-05-01 22:05	SP	FIT	49° 49' 27.19" N 119° 44' 54.01" W	66	
31	Hardy Falls	2020-05-05 23:08	KF	RFT	49° 44' 31.77" N 119° 45' 49.69" W	44	
32	Goats Peak	2020-05-07 16:55	SP	FIT	49° 48' 37.20" N 119° 38' 54.30" W	74	
33	Glen Canyon	2020-05-07 19:10	SP	FIT	49° 49' 11.12" N 119° 38' 0.19" W	55	
34	Glen Canyon	2020-05-07 19:52	SP	FIT	49° 50' 0.83" N 119° 38' 49.01" W	70	
35	Glen Canyon	2020-05-07 20:59	SP	FIT	49° 51' 3.75" N 119° 39' 57.64" W	42	Data upload failure
36	Kalamoir	2020-05-08 15:41	SP	FIT	49° 50' 33.68" N 119° 33' 10.65" W	54	
37	Kalamoir	2020-05-08 16:22	SP	FIT	49° 51' 17.85" N 119° 32' 25.97" W	57	
38	Rose Valley	2020-05-08 17:09	SP	FIT	49° 52' 58.58" N 119° 33' 44.85" W	63	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
39	Rose Valley	2020-05-08 19:16	SP	FIT	49° 54' 11.52" N 119° 32' 42.66" W	63	
40	Stephen's Coyote Ridge	2020-05-09 20:46	SP	FIT	49° 57' 42.53" N 119° 26' 21.11" W	59	
41	Lebanon Creek	2020-05-12 17:24	SP	FIT	49° 47' 24.07" N 119° 31' 42.62" W	61	
42	John's Family Nature Conservancy	2020-05-12 19:16	SP	FIT	49° 46' 34.21" N 119° 32' 27.89" W	51	
43	Woodhaven WUI	2020-05-12 21:12	SP	FIT	49° 48' 42.12" N 119° 28' 2.44" W	66	
44	Mission Creek	2020-05-16 22:33	SP	FIT	49° 52' 16.68" N 119° 25' 51.49" W	69	
45	Mission Creek	2020-05-16 23:02	SP	FIT	49° 52' 38.94" N 119° 25' 30.71" W	64	
46	KLO Creek	2020-05-16 19:24	SP	FIT	49° 49' 30.45" N 119° 22' 7.14" W	70	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
47	Kaloya	2020-05-06 19:03	SP	FIT	50° 7' 2.44" N 119° 22' 10.81" W	46	
48	Bertram Creek	2020-05-12 19:27	SP	FIT	49° 47' 10.81" N 119° 33' 28.41" W	42	
49	Gellatly Heritage	2020-05-07 19:38	SP	FIT	49° 48' 48.19" N 119° 38' 7.84" W	33	
50	Gellatly Nut Farm	2020-05-07 19:47	SP	FIT	49° 48' 38.08" N 119° 37' 36.32" W	22	
51	Shannon lake	2020-05-07 19:53	SP	FIT	49° 51' 18.26" N 119° 36' 45.67" W	52	
52	Antler Beach	2020-05-05 20:28	SP	FIT	49° 44' 15.02" N 119° 46' 0.84" W	41	

Plot #/ID	Location	Date	Assessor		Lat/Long	Total Score	Photographs
53	Traders Cove	2020-05-01 19:42	KF	RFT	49° 56' 18.75" N 119° 30' 2.67" W	25	
54	John's Family Nature Conservancy	2020-06-01 17:26	SP	FIT	49° 46' 14.46" N 119° 32' 46.11" W	33	
55	Scenic Canyon	2020-06-01 21:13	SP	FIT	49° 51' 17.37" N 119° 23' 18.04" W	60	Data upload failure
56	Scenic Canyon	2020-06-01 22:00	SP	FIT	49° 51' 31.04" N 119° 23' 16.85" W	75	
57	Cinnabar Creek	2020-10-05 18:45	SP	FIT	50° 2' 31.19" N 119° 30' 1.42" W	50	No access – no photos (in office assessment)
58	Killiney Beach	2020-10-05 20:22	SP	FIT	50° 11' 16.93" N 119° 29' 49.22" W	49	
59	Woodhaven WUI	2020-10-06 15:02	SP	FIT	49° 48' 16.15" N 119° 27' 11.75" W	64	No access – no photos (in office assessment)
60	Mount Boucherie WUI	2020-10-06 15:32	SP	FIT	49° 51' 22.62" N 119° 33' 59.08" W	54	In office assessment
61	Glendora WUI	2020-10-06 15:37	SP	FIT	49° 50' 4.36" N 119° 40' 57.40" W	61	In office assessment

APPENDIX 4: BIBLIOGRAPHY

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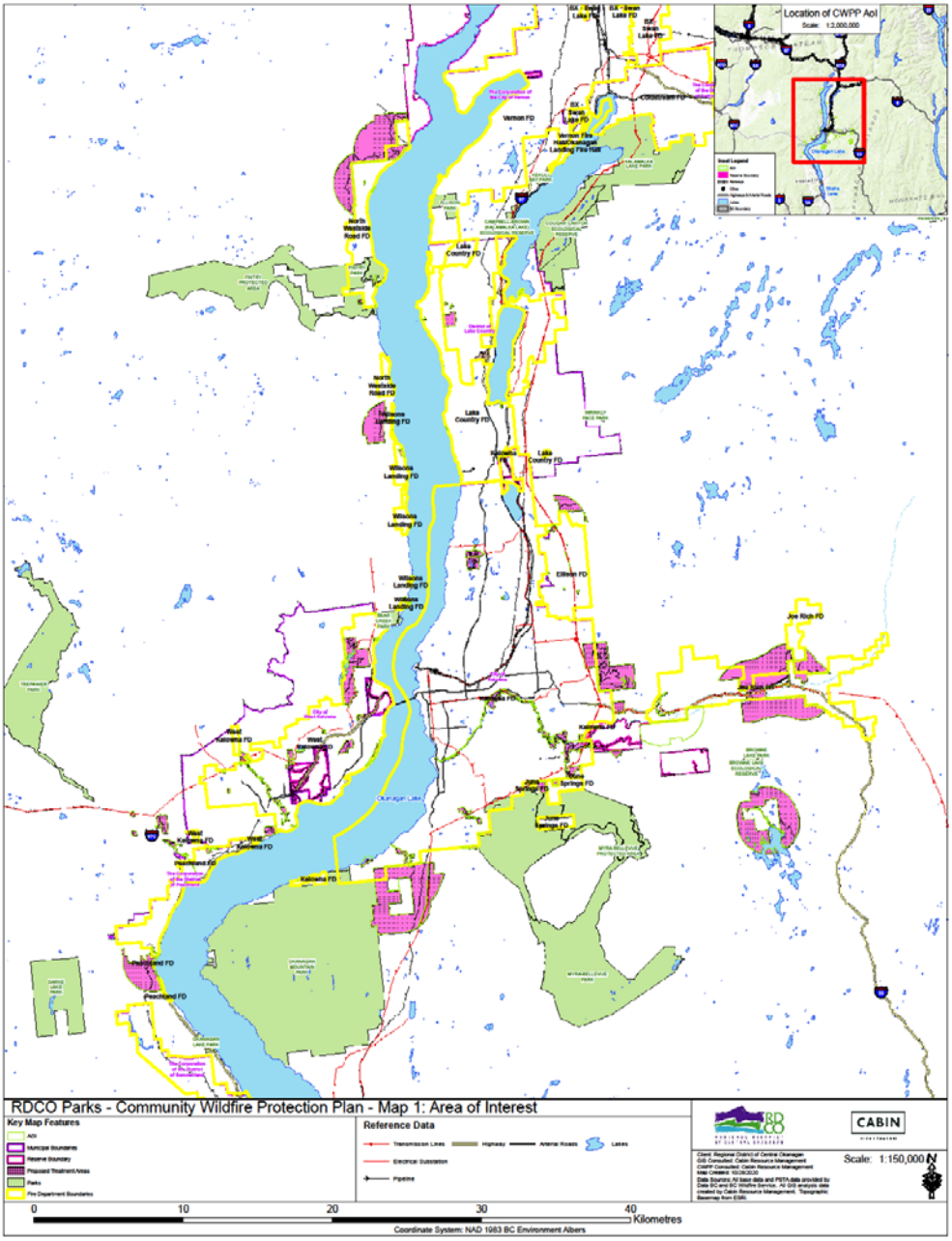
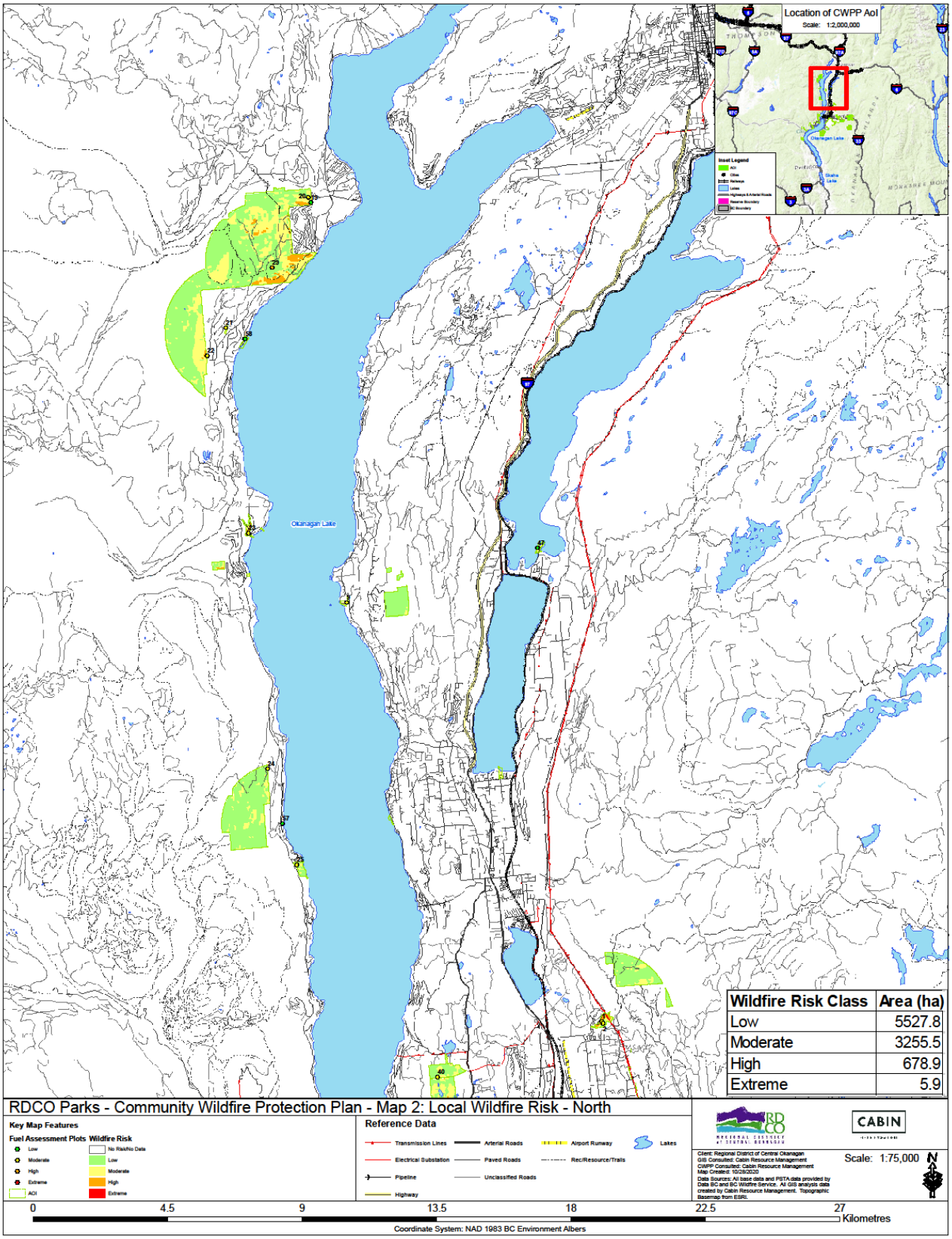
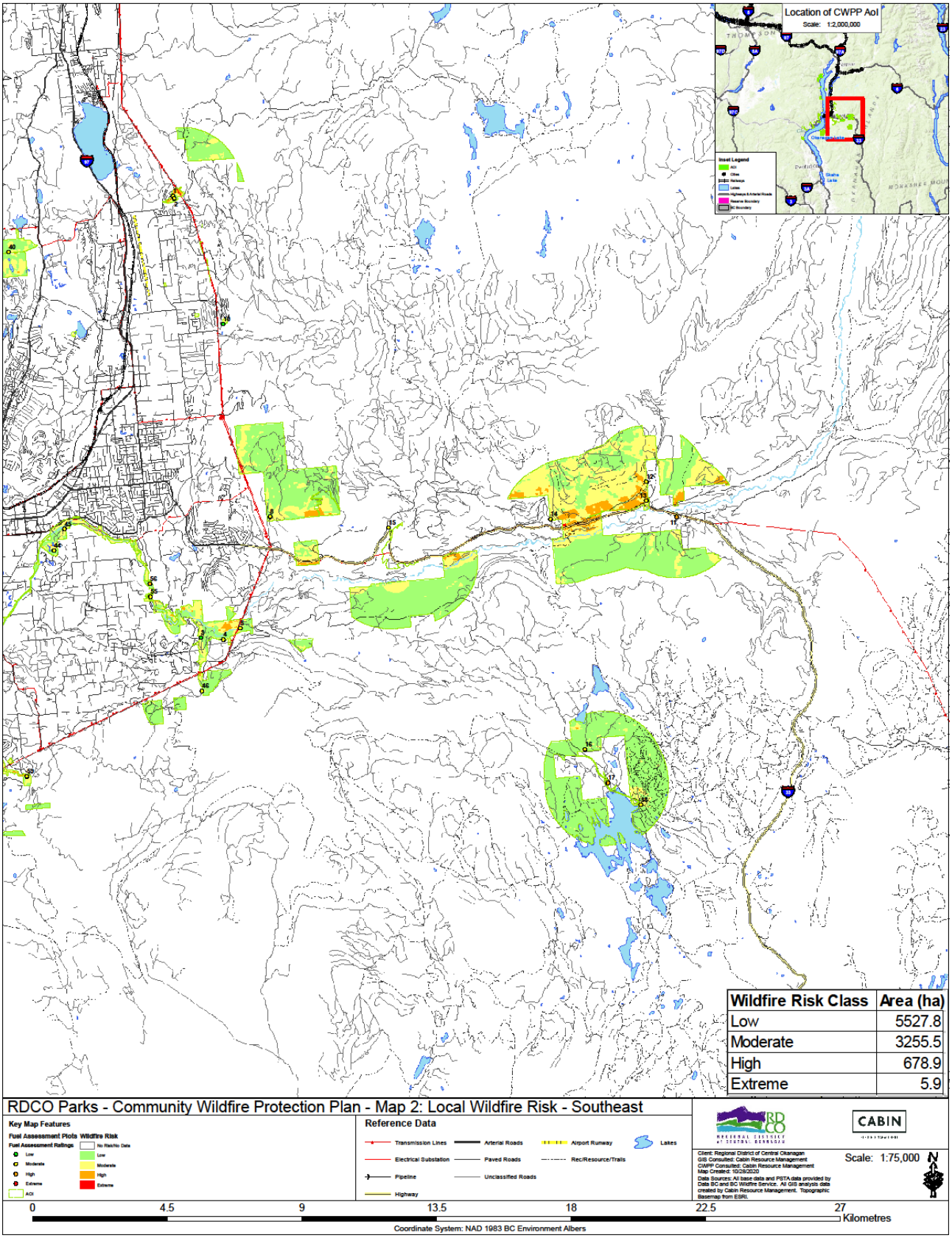
APPENDIX 5: MAPS

The following maps are compressed files for reference. Full-size high-resolution maps are supplied as additional items.




Location of CWPP AoI
Scale: 1:2,000,000
Okanagan Lake
Wildfire Risk Class | Area (ha)
Low | 5527.8
Moderate | 3255.5
High | 678.9
Extreme | 5.9
RDCO Parks - Community Wildfire Protection Plan - Map 2: Local Wildfire Risk - North
Key Map Features
Fuel Assessment Plots Wildfire Risk
Reference Data
Transmission Lines
Arterial Roads
Airport Runway
Lakes
Electrical Substation
Paved Roads
Rec/Resource/Trails
Pipeline
Unclassified Roads
Highway
CABIN
Scale: 1:75,000
0
4.5
9
13.5
18
22.5
27
Kilometres
Coordinate System: NAD 1983 BC Environment Albers



Wildfire Risk Class	Area (ha)
Low	5527.8
Moderate	3255.5
High	678.9
Extreme	5.9

RDCO Parks - Community Wildfire Protection Plan - Map 2: Local Wildfire Risk - Southeast

Key Map Features

Fuel Assessment Plots Wildfire Risk

Fuel Assessment Ratings

Low

Moderate

High

Extreme

No Risk/No Data

AOI

Reference Data

Transmission Lines

Electrical Substation

Pipeline

Highway

Arterial Roads

Paved Roads

Unclassified Roads

Airport Runway

Rec/Resource/Trails

Lakes

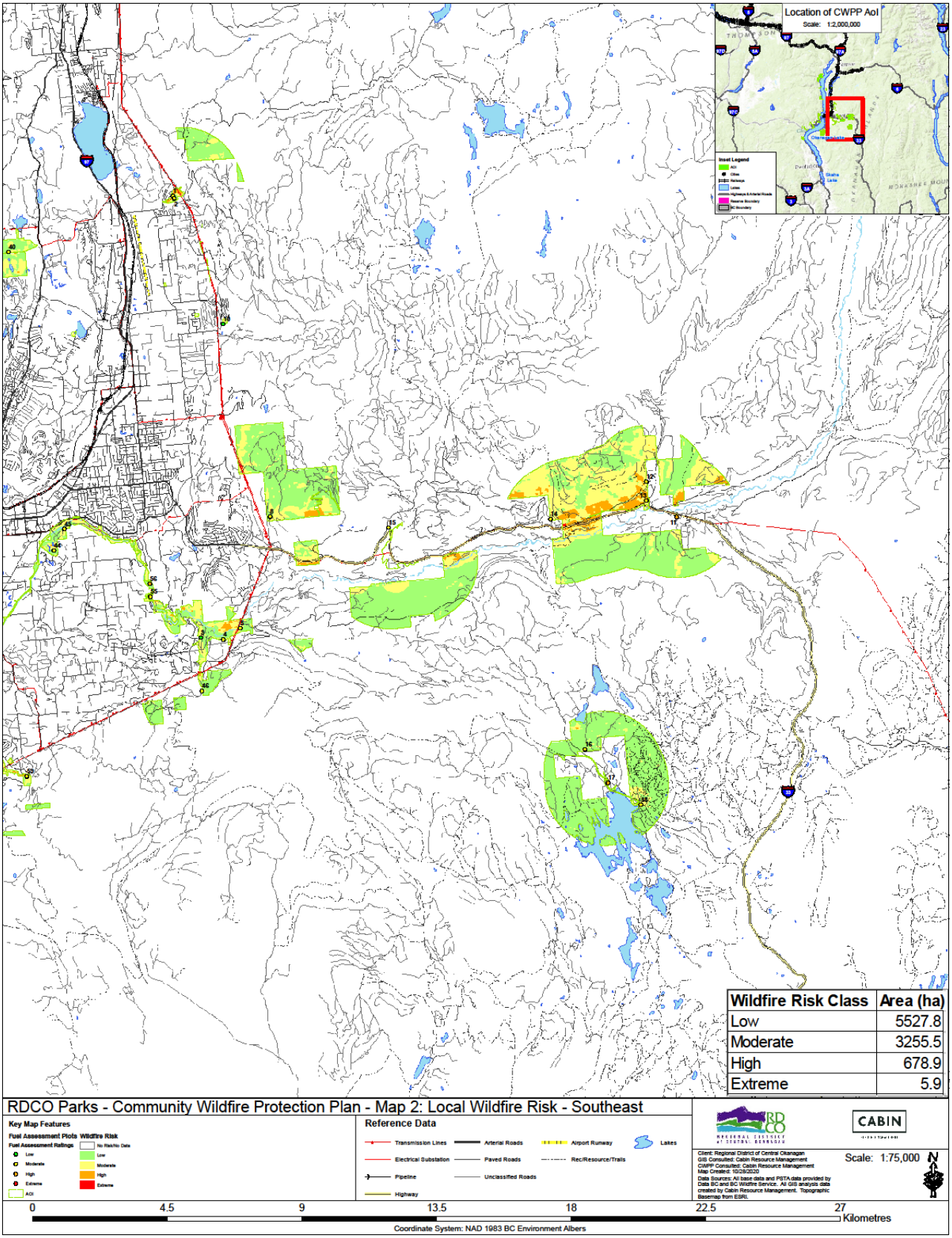
CABIN

Client: Regional District of Central Okanagan
GIS Consulted: Cabin Resource Management
CWPP Consulted: Cabin Resource Management
Map Created: 10/29/2020
Data Sources: All base data and PSTA data provided by Data BC and BC Wildfire Service. All GIS analysis data created by Cabin Resource Management. Topographic Basemap from ESRI.

Scale: 1:75,000

0 4.5 9 13.5 18 22.5 27 Kilometres

Coordinate System: NAD 1983 BC Environment Albers



Wildfire Risk Class	Area (ha)
Low	5527.8
Moderate	3255.5
High	678.9
Extreme	5.9

RDCO Parks - Community Wildfire Protection Plan - Map 2: Local Wildfire Risk - Southeast

Key Map Features

Fuel Assessment Plots Wildfire Risk

Fuel Assessment Ratings: Low, Moderate, High, Extreme, AOI; No Risk/No Data, Low, Moderate, High, Extreme

Reference Data

Transmission Lines, Arterial Roads, Airport Runway, Lakes, Electrical Substation, Paved Roads, Rec/Resource/Trails, Pipeline, Unclassified Roads, Highway

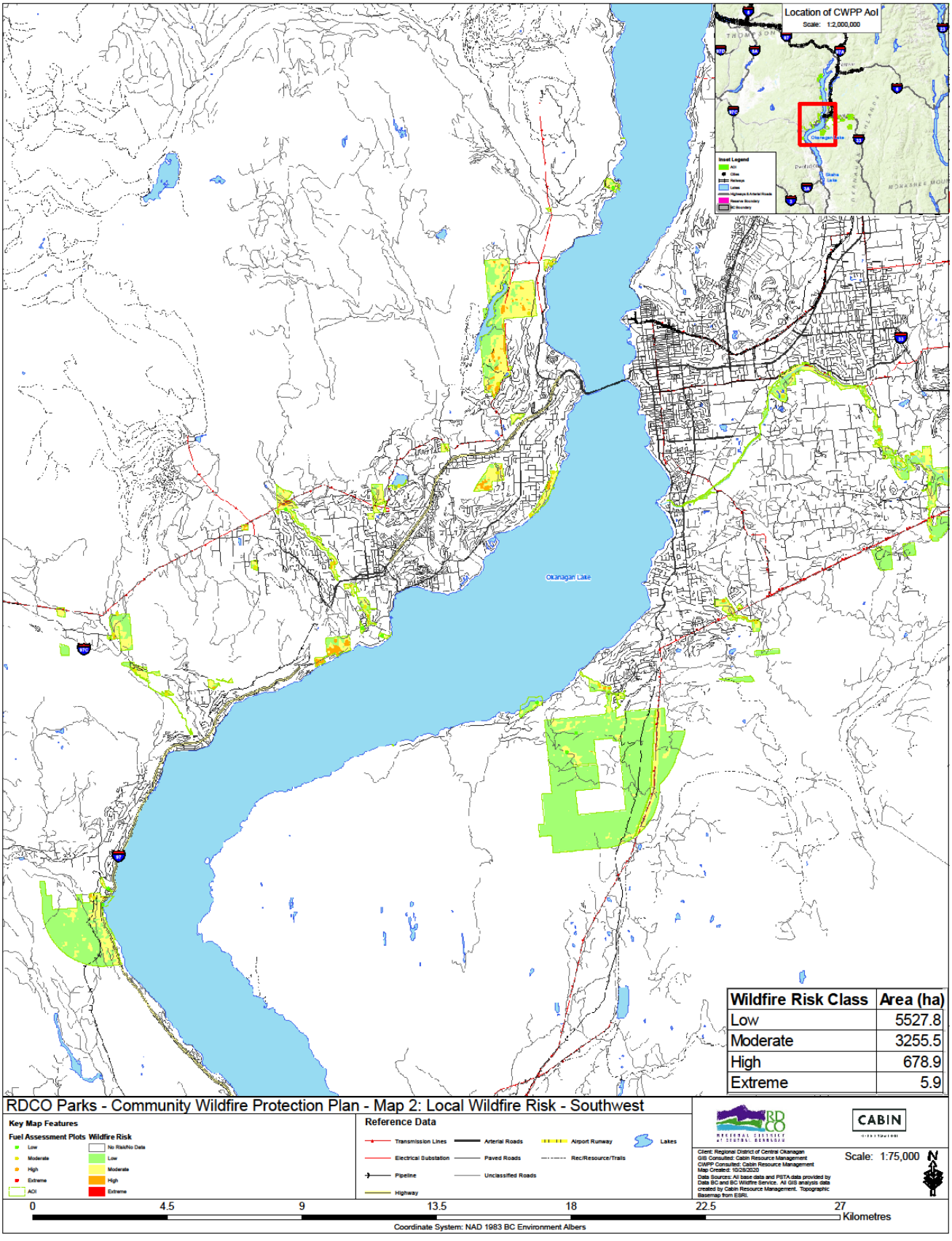
CABIN

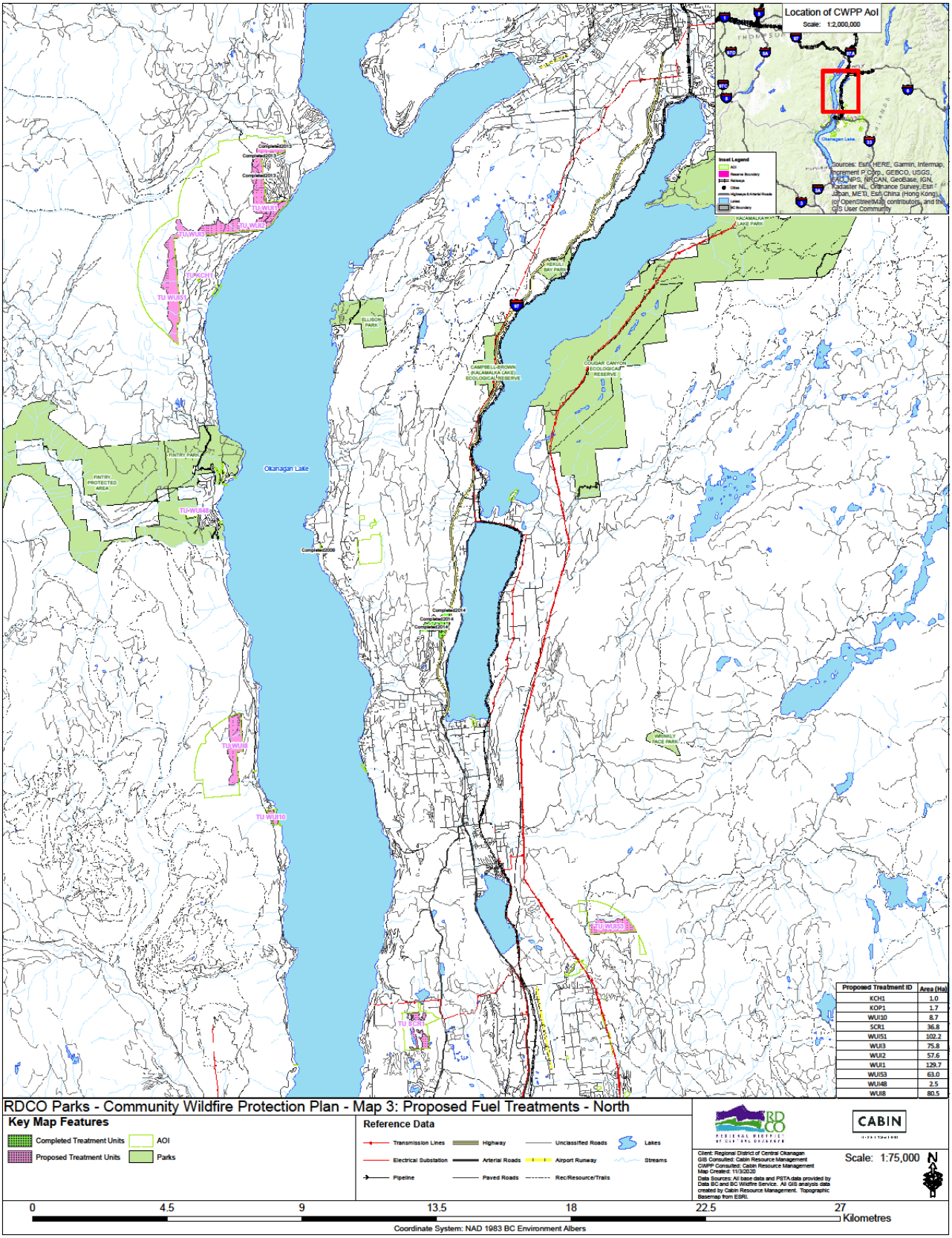
Client: Regional District of Central Okanagan
GIS Consulted: Cabin Resource Management
CWPP Consulted: Cabin Resource Management
Map Created: 10/28/2020
Data Sources: All base data and PSTA data provided by Data BC and BC Wildfire Service. All GIS analysis data created by Cabin Resource Management. Topographic Basemap from ESRI.

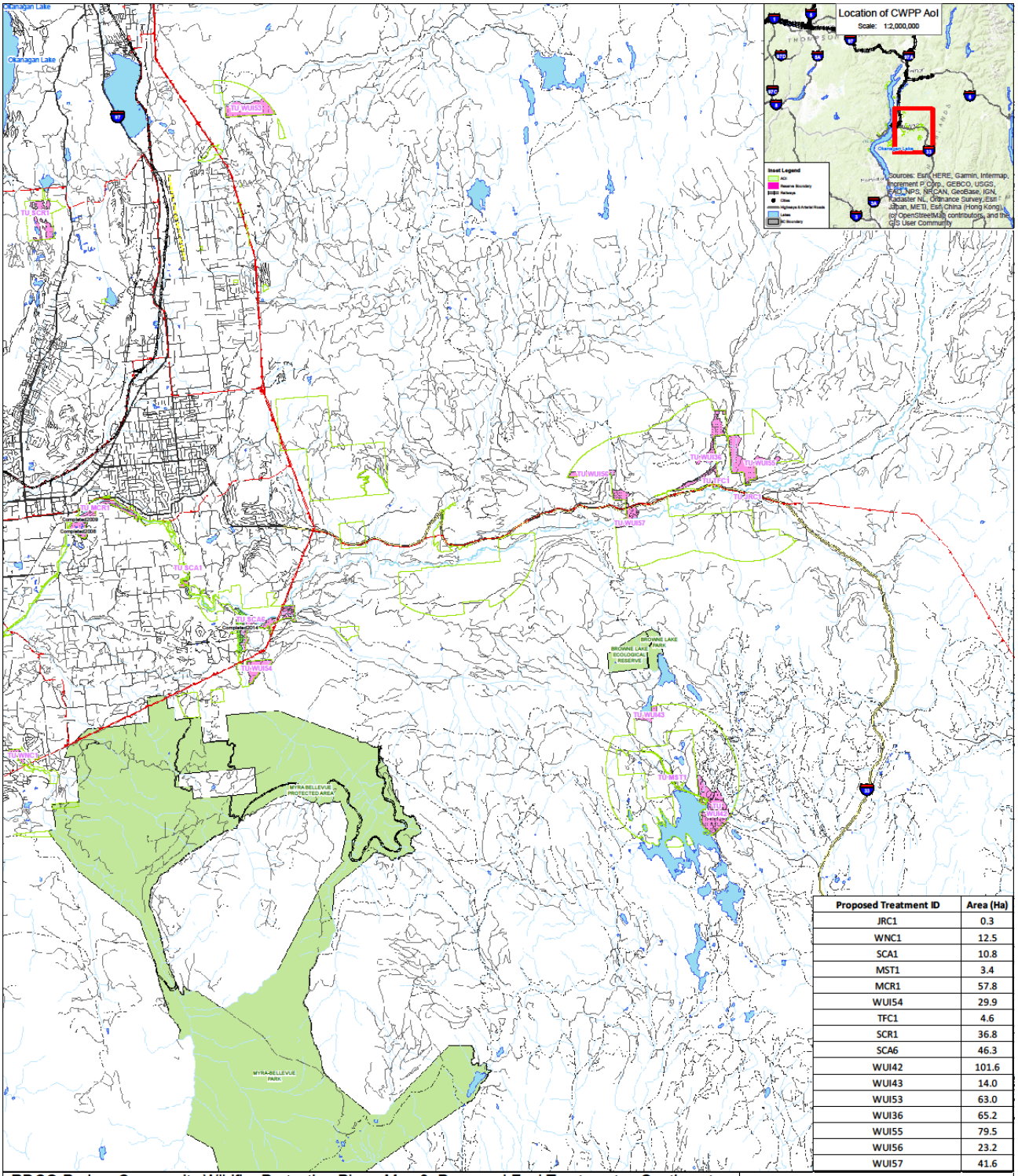
Scale: 1:75,000

0 4.5 9 13.5 18 22.5 27 Kilometres

Coordinate System: NAD 1983 BC Environment Albers


Location of CWPP AoI
Scale: 1:2,000,000
Okanagan Lake
Wildfire Risk Class | Area (ha)
Low | 5527.8
Moderate | 3255.5
High | 678.9
Extreme | 5.9
RDCO Parks - Community Wildfire Protection Plan - Map 2: Local Wildfire Risk - Southwest
Key Map Features
Fuel Assessment Plots Wildfire Risk
Low
Moderate
High
Extreme
AOI
No Risk/No Data
Reference Data
Transmission Lines
Electrical Substation
Pipeline
Highway
Arterial Roads
Paved Roads
Unclassified Roads
Airport Runway
Rec/Resource/Trails
Lakes
CABIN
Scale: 1:75,000
0
4.5
9
13.5
18
22.5
27
Kilometres
Coordinate System: NAD 1983 BC Environment Albers


Location of CWPP AoI
Scale: 1:2,000,000
Okanagan Lake
KALAMALKA LAKE PARK
KEKULI BAY PARK
ELLISON PARK
CAMPBELL-BROWN (KALAMALKA LAKE) ECOLOGICAL RESERVE
COUGAR CANYON ECOLOGICAL RESERVE
OKANAGAN MOUNTAIN PROVINCIAL PARK
ENTRY PROTECTED AREA
OKANAGAN RIVER CHANNEL PARK
TU-WUI1
TU-WUI2
TU-WUI3
TU-WUI8
TU-WUI10
TU-WUIS3
Proposed Treatment ID | Area (Ha)
KCH1 1.0
KOP1 1.7
WUI10 8.7
SCR1 36.8
WUIS1 102.2
WUI3 75.8
WUI2 57.6
WUI1 129.7
WUIS3 63.0
WUI4B 2.5
WUI8 80.5
RDCO Parks - Community Wildfire Protection Plan - Map 3: Proposed Fuel Treatments - North
Key Map Features
Completed Treatment Units
Proposed Treatment Units
AOI
Parks
Reference Data
Transmission Lines
Electrical Substation
Pipeline
Highway
Arterial Roads
Paved Roads
Unclassified Roads
Airport Runway
Rec/Resource/Trails
Lakes
Streams
CABIN
Scale: 1:75,000
0 4.5 9 13.5 18 22.5 27 Kilometres
Coordinate System: NAD 1983 BC Environment Albers



Proposed Treatment ID	Area (Ha)
JRC1	0.3
WNC1	12.5
SCA1	10.8
MST1	3.4
MCR1	57.8
WUI54	29.9
TFC1	4.6
SCR1	36.8
SCA6	46.3
WUI42	101.6
WUI43	14.0
WUI53	63.0
WUI36	65.2
WUI55	79.5
WUI56	23.2
WUI57	41.6

RDCO Parks - Community Wildfire Protection Plan - Map 3: Proposed Fuel Treatments - Southeast

Key Map Features

Completed Treatment Units
Proposed Treatment Units
AOI
Parks

Reference Data

Transmission Lines
Electrical Substation
Pipeline
Highway
Arterial Roads
Paved Roads
Unclassified Roads
Airport Runway
Rec/Resource/Trails
Lakes
Streams

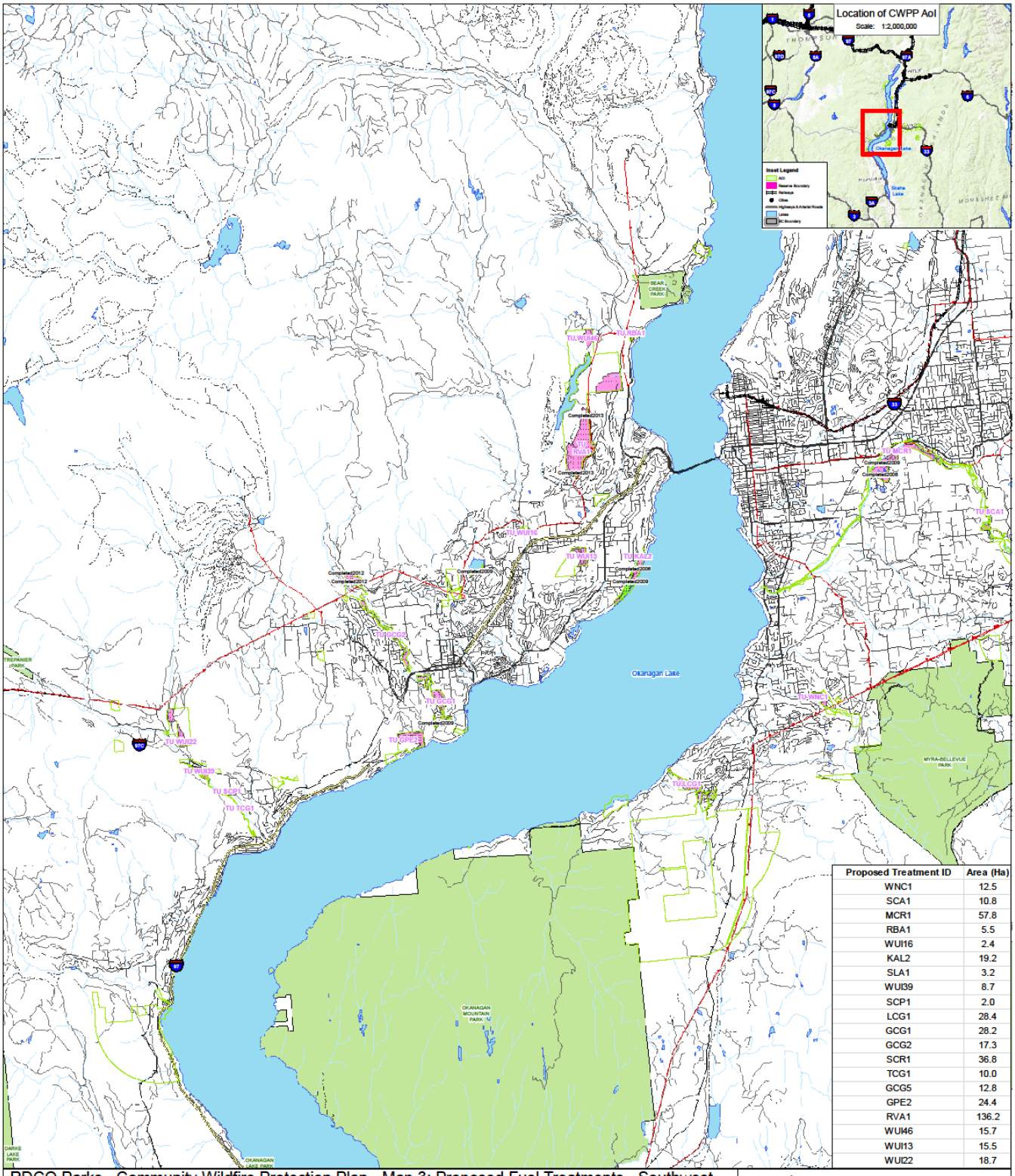
CABIN

Client: Regional District of Central Okanagan
GIS Consulted: Cabin Resource Management
CWPP Consulted: Cabin Resource Management
Map Created: 11/3/2020
Data Sources: All base data and PSTA data provided by Data BC and BC Wildfire Service. All GIS analysis data created by Cabin Resource Management. Topographic Basemap from ESRI.

Scale: 1:75,000

0 4.5 9 13.5 18 22.5 27 Kilometres

Coordinate System: NAD 1983 BC Environment Albers



Proposed Treatment ID	Area (Ha)
WNC1	12.5
SCA1	10.8
MCR1	57.8
RBA1	5.5
WUI16	2.4
KAL2	19.2
SLA1	3.2
WUI39	8.7
SCP1	2.0
LCG1	28.4
GCG1	28.2
GCG2	17.3
SCR1	36.8
TCG1	10.0
GCG5	12.8
GPE2	24.4
RVA1	136.2
WUI46	15.7
WUI13	15.5
WUI22	18.7

RDCO Parks - Community Wildfire Protection Plan - Map 3: Proposed Fuel Treatments - Southwest

Key Map Features

- Completed Treatment Units
- Proposed Treatment Units
- AOI
- Parks

Reference Data

- Transmission Lines
- Electrical Substation
- Pipeline
- Highway
- Arterial Roads
- Paved Roads
- Unclassified Roads
- Airport Runway
- Rec/Resource/Trails
- Lakes
- Streams

CABIN

Client: Regional District of Okanagan
GIS Consulted: Cabin Resource Management
CWPP Consulted: Cabin Resource Management
Map Created: 11/3/2020
Data Sources: All base data and PSTA data provided by Data BC and BC Wildfire Service. All GIS analysis data created by Cabin Resource Management. Topographic Basemap from ESRI.

Scale: 1:75,000

0 4.5 9 13.5 18 22.5 27 Kilometres

Coordinate System: NAD 1983 BC Environment Albers