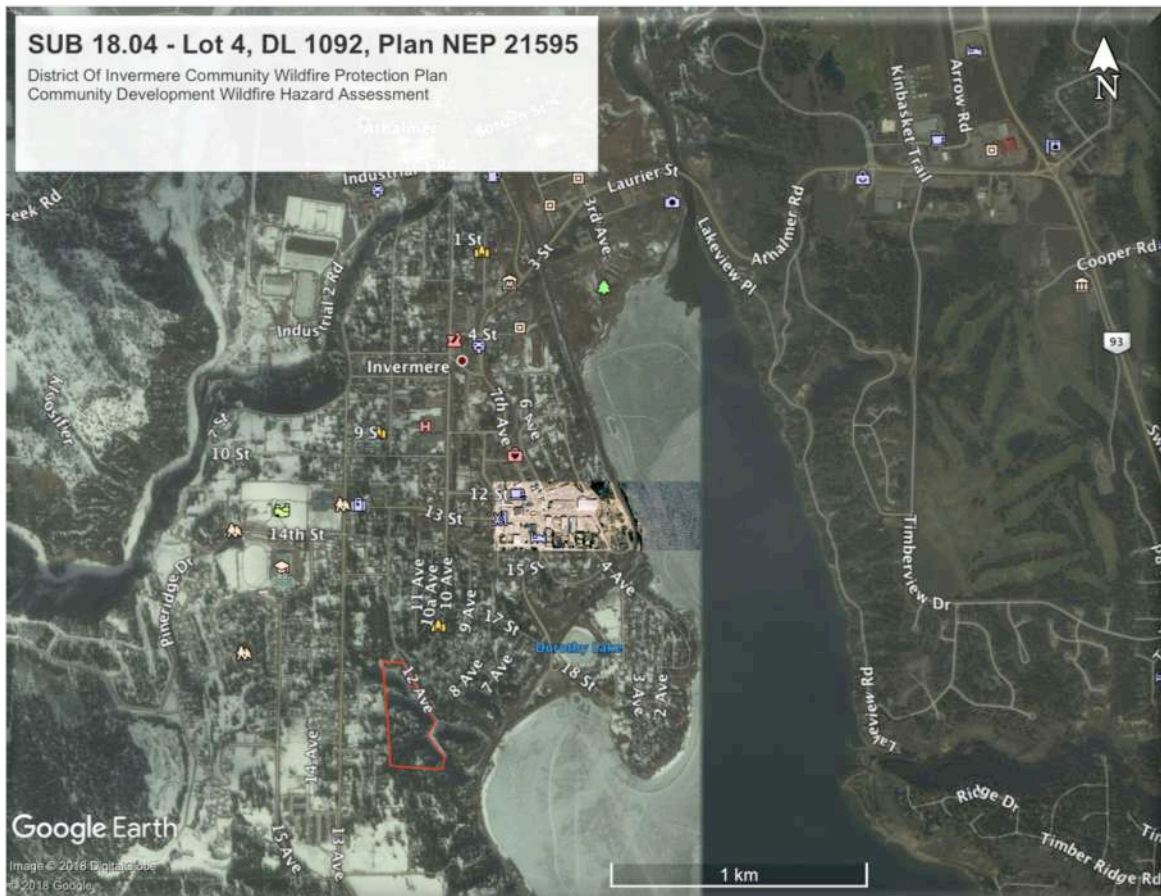


District Of Invermere  
Community Wildfire Protection Plan  
Community Development Wildfire Hazard Assessment

For:

TAYNTON BAY, INVERMERE BC  
SUB 18.04 - LOT 4, DISTRICT LOT 1092 KOOTENAY  
DISTRICT PLAN NEP21595

December 15, 2018



Assessment Completed by:



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## 1.0 SUMMARY

This report provides the findings and recommendations of a FireSmart Wildfire Hazard and Risk Assessment completed for the proposed Sub 18.04 – Lot 4, DL 1092, Plan NEP21595 within Invermere, B.C. in December of 2018. Brad Munroe of Wildlands Eco-Forestry Inc completed the assessment and report.

Newly constructed access roads were utilized to access and assess the property. Two plots were established, one in the SE and the other in the NW of Lot 4. Access road and building lot clearing operations have commenced in this property. The remainder and perimeter of Lot 4 was surveyed with the results added to this assessment.

As it is understood by Wildlands Eco-Forestry Inc. that the District of Invermere requires a FireSmart Homeowners Assessment and report addressing the requirements contained within the Districts Official Community Plan Hazardous Lands Development Permit Area – Section 4.6 Wildfire Protection D.P.A. prior to issuance of a building permit. The purpose of the assessment is to determine the FireSmart home and yard interface risk rating and to address the Wildfire Protection DPA requirements outlined in section 4.6.3 (3) of the OCP.

This FireSmart based Home And Yard Assessment and/or Wildfire Hazard and Risk Assessment has been additionally conducted for the Homeowner/Property Developer to provide a tool for understanding and implementing FireSmart strategies to further protect the property from the threat of approaching wildfire.

## 2.0 PROPERTY DESCRIPTION

The assessed property is situated within the District of Invermere on terrain upslope of the west shore of Lake Windermere (Figure 7-2). The legal address of the site is SUB 18.04 - LOT 4, DISTRICT LOT 1092 KOOTENAY DISTRICT PLAN NEP21595.

Lot 4 is located on and at the foot of the western bench lands above Lake Windermere and in proximity to both private and Crown forested lands. Lot 4 is further within an interface community intermixed with dense stands of Douglas fir Ingrowth on undeveloped lots, cleared lots and ones that have been developed and built upon.

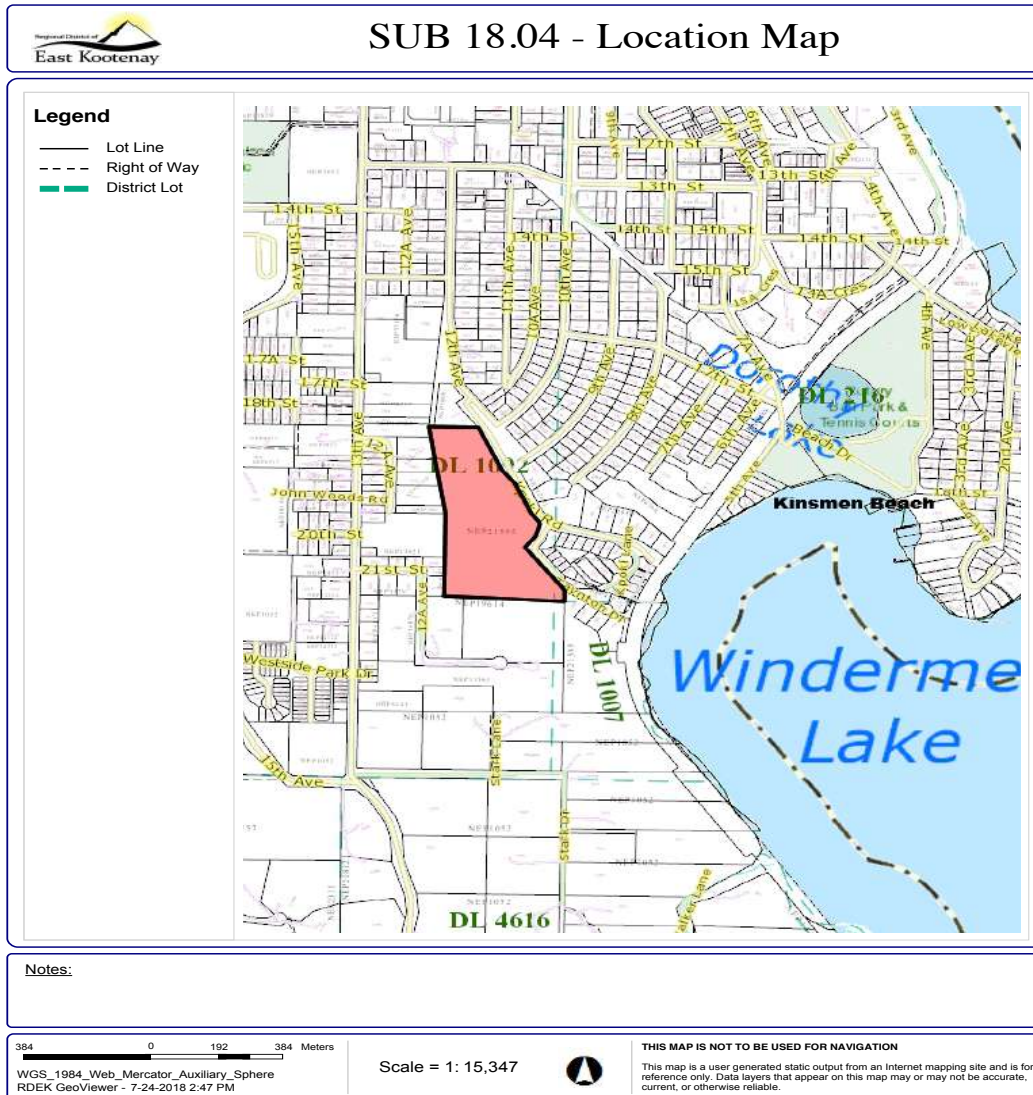
The property has several different terrain features including upper bench-lands, kettle holes and dry u-shaped gullies with steep side slopes throughout the property with slopes ranging from 0 to +65% and North-Northeast facing to variable aspects.

The forested landscape in Lot 4 is classified as the Interior Douglas fir Biogeoclimatic Zone and dominated by Douglas fir, mosses and both native and non-native grasses, with very low diversity of shrubs and native herbs. The age of the stand ranges from <50 years to 150 years – from the “Kpockl Road Lot 4 Invermere BC Biophysical Assessment”, Katernine Enns, B.Sc., M.Sc.

There are newly constructed access roads from the Southeast of the property at Kpockl Road that provide vehicle access to the property. Slopes: ~5-12% on access roads into the development entering Photos of the site are found in Section 8-1 Appendix 1.

There is a CPR railroad and its right of way <1km to the East of the property with Lake Windermere adjacent to the east of the railroad tracks. The majority of the right of way is located at the base of steep embankments or sudden cliffs with light to moderate upslope vegetation. The adjacent lands are privately owned with multiple residences bordering the property boundaries in the North, west and south and proposed developments adjacent to the East.

Figure 7.1 Sub 18.04 Location Map



### 3.0 DESCRIPTION OF FORESTED LANDS

The proposed development is located in the Interior Douglas fir (IDF) Biogeoclimatic zone in the Ministry of Forests and Range Biogeoclimatic Ecosystem Classification (BEC) system that naturally maintains attributes associated with open forest types by way of frequent, low intensity wildfires. Under the BC classification system this area falls with the open forest Natural Disturbance Type – NDT-4. Suppression and management activities both within the Columbia Valley lands and the adjacent private lands have altered this cycle creating forests with greater fuel loads than if left in a natural process.

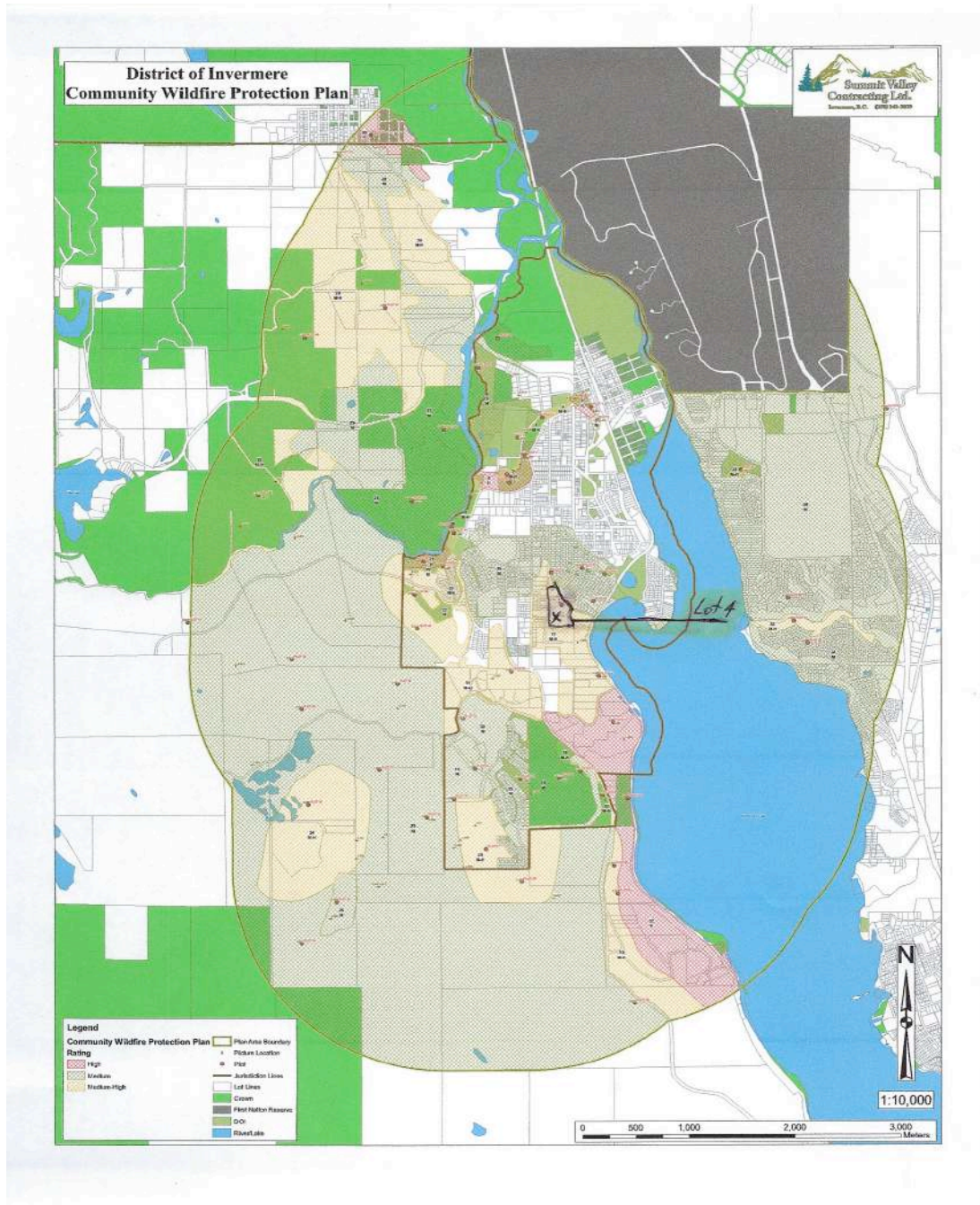
There is suppressed and decadent Douglas fir in all forest stand layers. The understory consists of uninterrupted ground and ladder fuels of dense Douglas fir regeneration and suppressed trees, Goats beard, and Douglas fir branches extending to the ground as well as Rocky Mountain juniper and Common juniper. There is crown continuity of the overstorey layer allowing the potential for fires to reach crown height and rapidly spread throughout the surroundings.

## 4.0 COMMUNITY WILDFIRE PROTECTION PLANNING

The District of Invermere has adopted and acted upon a Community Wildfire Protection Plan addressing the community internally and a 2 km treatment area surrounding the District's boundary. A critical component of this CWPP development was an overview evaluation of the Wildfire risk, establishing risk rating zones and using this information to lead the Wildfire DPA designation.

The surrounding risk generated in this evaluation process to Sub 18.04 – Lot 4, DL 1092, Plan NEP21595 is inserted below and indicates a number of Medium-High risk polygons within the plan area. This assessed property falls within a **Medium – High** DOI CWPP rating.

Figure 7.2 District of Invermere Community Wildfire Protection Plan Map



## 5.0 WILDFIRE HAZARD AND RISK ASSESSMENT

The following assessments are summarized from field data collected.

### I. Wildland Urban Interface Wildfire Threat Assessment Worksheet

**Plot 1** Total Wildfire Threat Score: 122

- Wildfire Behaviour Threat Class Score: **High** (96)
- Wildland Urban Interface Threat Score: **Moderate** (26)

**Plot 2** Total Wildfire Threat Score: 134

- Wildfire Behaviour Threat Class Score: **Moderate** (27)
- Wildland Urban Interface Threat Score: **Extreme** (45)

Plot 1 2800sph dense suppressed Douglas fir, Rocky Mountain Juniper on steep slopes, open clearings on bench

Plot 2 ~800sph on slopes above plot, open grassland in gully bottom with roadway cleared.

Variable aspects, gullied terrain with several large sinkholes with 1800-2000sph and 5-55+% slopes.

Soil throughout property appears to be silty soils with clay. Dominant - mature Douglas fir with younger D. fir (<20m tall, 10cm DBH) and Juniper (<10m high) in sub-canopy. Some old growth and dead standing wildlife trees are present as well as evidence of past fire.

### II. FireSmart, Wildfire Hazard Assessment System, Area Hazard Assessment Form

Plot Kpockl #1 Score: 70, Area Hazard Level: E – **Extreme**

Plot Kpockl #2 Score: 40, Area Hazard Level: E – **Extreme**

There are currently no structures within the proposed development.

## 6.0 RECOMMENDATIONS / CONSIDERATIONS

There are 4 lots proposed for development subdividing within the property. The recommendations contained within this report will assist in reducing the risk of catastrophic loss from a wildfire event. The hazard rating will be reduced to an acceptable standard by addressing the current dense ingrowth of Douglas fir conifers and by the introduction of adequate access and water sources that are currently under development on the property. Upon completion of the development, it is suggested that there be an alternative escape route from the property to compliment the access road off of Kpockl road.

A 30-meter community fuelbreak along the Southern boundary at the top of the slope adjacent to the property line and neighbours residences beyond is recommended. A 10 to 30-meter community fuelbreak along the western boundary utilizing existing openings; from development and natural openings, is recommended as well. Fuelbreaks are barriers to fire spread built by clearing or significantly thinning fuels on a strip of strategically located land.

A fuel management strategy should consist of the removal of fine fuels in the form of dry grasses and immature suppressed trees. Reducing the stand density and increasing intercrown spacing through thinning according to FireSmart guidelines and reducing ladder fuels in the form of low branches, pruning of mature trees to a minimal crown to base height of 2 meters is recommended as well. The reduction of surface fuels and ladder fuels combined with increasing the intercrown spacing through prescribed thinning will contribute to lowering the High to Extreme WUI hazard into a more preferable Moderate to high rating. Thinning of stems on steep slopes should be conducted sparingly due to vegetation contributing to slope stabilities. Combining Fuelbreaks at the top and bottom of slopes is an effective alternative in these situations.

Forest fuel management within Lot 4 should consider the recommendations outlined in the ‘Summary of Impacts of the proposed Road Development’ from the “Kpockl Road Lot 4 Invermere BC Biophysical Assessment”, Katernine Enns, B.Sc., M.Sc. The property contains several high value wildlife value features.

There are several large veteran Douglas fir wildlife trees and it is strongly recommended to avoid removing nest trees, and retain these large wildlife trees as habitat where safe to do so; as per the Provincial Wildlife Act and the Federal Migratory Birds Convention Act. Ungulate winter range habitat impacts are predicted to be minimal and it is recommended to follow the timing of any fuel management treatments with the recommendations outlined in the Biophysical Assessment.

Fire suppression in the form of a community “hut” with fire hose, suppression equipment, etc along with community member training may be a resource to consider locating near proposed hydrant locations within the property. This would be done in cooperation and under supervision with the local fire department.

It is recommended that following FireSmart guidelines be adopted upon commencement of construction activities.

### **6.1 FireSmart Priority Zones:**

Zone 1 – Area within 10 meters of a building.

The goal of vegetation management in Priority Zone 1 is to create a fuel modified area in which flammable vegetation surrounding buildings is eliminated or converted to less flammable species. This fuel-free zone is immediately adjacent to a given building and extends outward in all directions for a recommended minimum of 10 meters in flat terrain.

Zone 2 – Area 10-30 meters from a building.

The goal of vegetation management in Priority Zone 2 is to further extend the fuel modified area by reducing flammable vegetation with a variety of thinning and pruning actions.

Zone 3 – Area 30-100 meters from a building.

This area begins 30 meters from the building and extends to 100 meters or farther from the building. The strategies and standards for vegetation management in Priority Zone 3 are similar to those applied in Priority Zone 2.

### **6.2 Area Considerations:**

Building envelopes will significantly reduce or eliminate Zone 1 (0-10m) vegetation/fuels

Zone 2 (10-30m) fuel management treatment; thinning of residual stand, pruning of ladder fuels and reduction of ground fuels to FireSmart recommended guidelines.

Remainder of Lot Parcel - Zone 3 fuel management with fuel breaks at lot perimeters

### **6.3 Structural Considerations:**

Spark Arrestors on chimney caps  
Rated Hardy board siding  
Enclosed decks  
“Class A” ranked roofing materials only  
Street signs clearly visible for fire department:

#### **Important Numbers:**

**Police: 911**

**Report Wildfire: 1 800 663-5555 or \*5555 from a cell phone**

**DOI Fire Department: (250) 342-3200**



**Legend**

- Lot Line
- - - Right of Way
- District Lot

**Notes:**

PID: 018-930-760

125 0 63 125 Meters  
 WGS\_1984\_Web\_Mercator\_Auxiliary\_Sphere  
 RDEK GeoViewer - 7-24-2018 1:02 PM

Scale = 1:5,000



**THIS MAP IS NOT TO BE USED FOR NAVIGATION**  
 This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Figure 7.3 Lot 4, DL 1092, Plan NEP21595

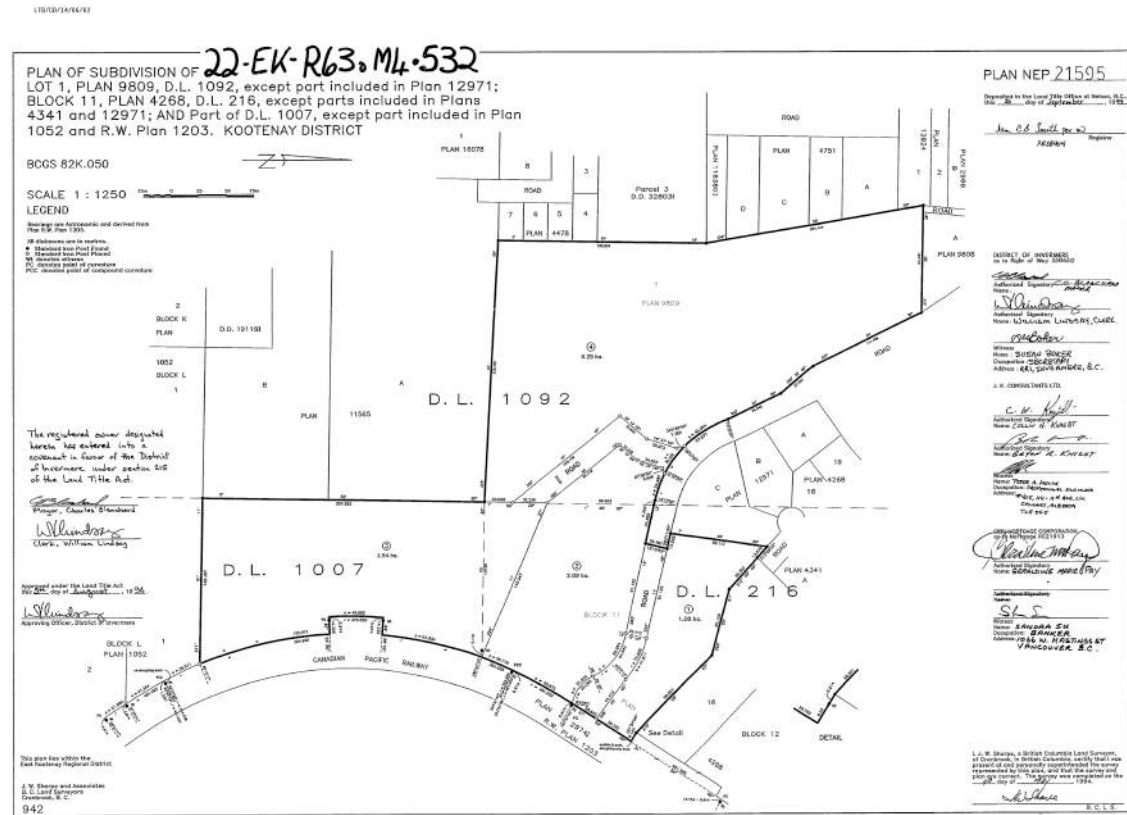


Figure 7.4 Lot 4, Plan of Subdivision



Wildlands Eco-Forestry Inc. accepts no responsibility of liability for any loss or damage to wildfire as the result of the information or recommendations provided in this report. The FireSmart manual utilized in reference has been used to assess and recommend actions throughout British Columbia for several years. The FireSmart manual only provides guidelines and is not a legislative or regulatory requirement.

Wildlands Eco-Forestry Inc. is a fully insured, BC Forest Safety Council member with a 100% accident free safe work record as well as a comprehensive **Occupational Health & Safety** program.



**BC Forest Safety Council certified (#5130066)**  
(Certification attached)

Wildlands Eco-Forestry Inc. has an active **District of Invermere Business License** – (#1296)

## APPENDIX 1: PHOTOS

### Plot #1 Photo 1

Upper slope in south portion of property (East view) of plot #1 displaying access clearing and gullied terrain



### Plot #1 Photo 2

Upper slope in south portion of property. Top of slope displaying dense levels of suppressed Douglas fir, Ingrowth and Rocky mountain juniper



Plot #2 Photo 1

Plot #2 looking south onto slopes above displaying suppressed Douglas fir



Plot # 2 Photo 2

Plot #2 looking North to Northeast with open forest and transition to adjacent properties



Reference Photo #1

Example of gullied terrain/kettle holes with steep sided slopes and dense Douglas fir.



Reference Photo #2

Upper East heading access road bisecting property, gullied terrain, looking west.



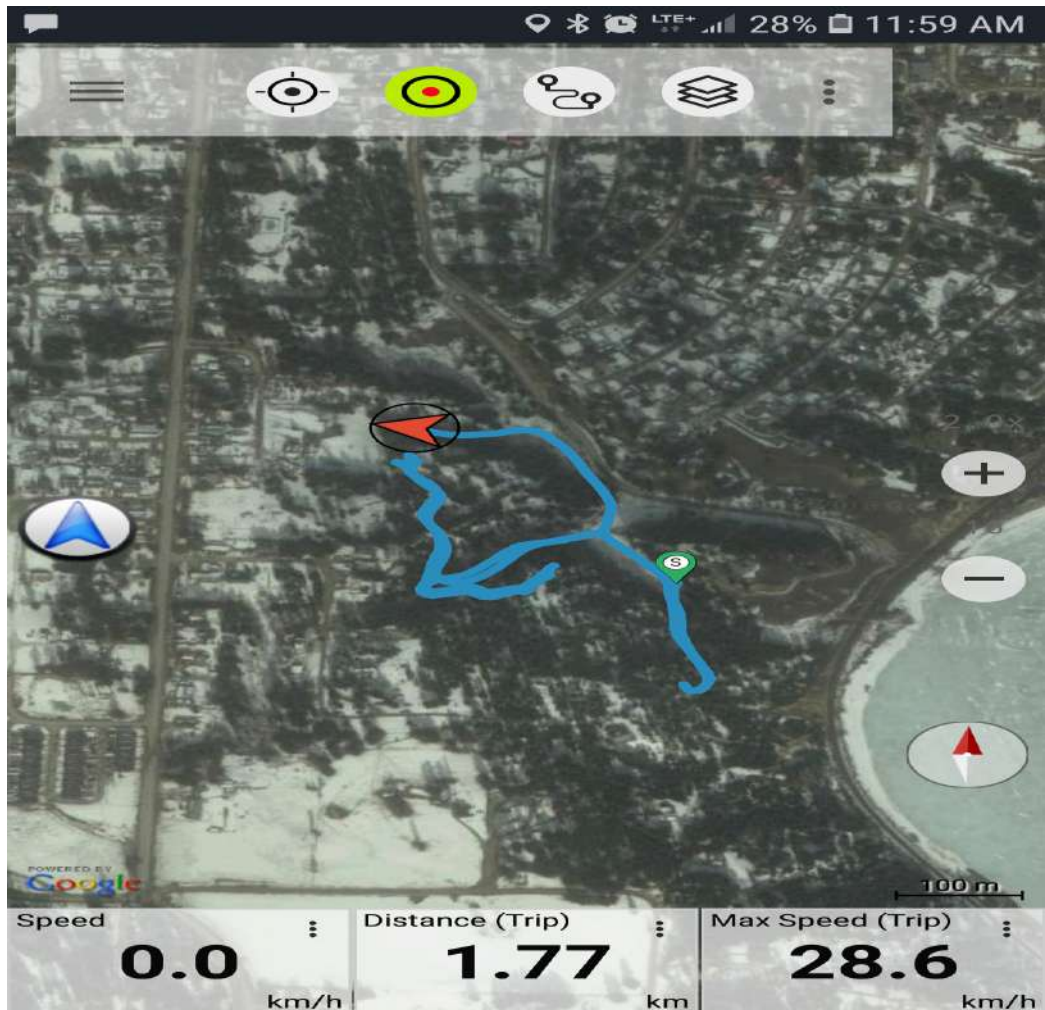
Reference Photo #3

Residences adjacent to Lot 4 property, north portion looking west upslope.



Reference Photo #4

GPS track of newly constructed access roads into Lot 4 property.



Access Road:  
(East view)

New, paved access road towards Lake Windermere and end of road cul-de-sac. Street lighting lamp posts visible.

**East of Lot 4 access point**



Access Road:  
(West view)

New, paved access road with ~10% grade. Fire hydrant visible in lower left corner near termination of road at cul-de-sac.

**East of Lot 4 access point**



APPENDIX 2: Wildland urban Interface Wildfire Threat Assessment Worksheets

**WILDLAND URBAN INTERFACE WILDFIRE THREAT ASSESSMENT WORKSHEET**  Pre-treatment  Post-treatment

Plot #: Kpool #1 Community: District of Invermere Kpool  
 Assessor: B. Howard Geographic Location/Street Name: 12 Ave & Kpool Rd.  
 Date: 25/12/2018 GPS/UTM: 568554 E 5594162 N  
 Photos:  II  I,  E Lead Ownership:  Crown  Private  LR Other (specify)

COMPONENT / Subcomponent	LEVELS				
	A	B	C	D	E
<b>Fuel</b>					
1 Duff Depth and Moisture Regime (cm)	1- <u>2</u> 3	2- <u>5</u> Dry Zonal Wet 5 1	5- <u>10</u> Dry Zonal Wet 10 6 2	10- <u>20</u> Dry Zonal Wet 12 6 4	> <u>20</u> Dry Zonal Wet 15 10 5
2 Surface Fuel Continuity (% cover)	< <u>20</u> 0	20- <u>40</u> 2	41- <u>60</u> 3	61- <u>80</u> 4	> <u>80</u> 5
3 Vegetation Fuel Component	Moss, Herbs, Irrigated Grp., Low Flammability Woods 1	Herbs, Deciduous Shrubs 2	Lichens, Conifer Shrubs 3	Pinegrass, Juniper 4	Sagebrush, Rosinweed, Antelope Brush, Scotch Broom 5
4 Fine Woody Debris Continuity (<=7cm) (% cover)	<1 coverage 1	Scattered, <10 coverage 5	10-25 coverage 7	>25 coverage, <10 coverage 10	>25 coverage, >10 cm deep 15
5 Large Woody Debris Continuity (>7cm) (% cover)	<1 coverage 1	Scattered, <10 coverage 2	10-25 coverage 5	>25 coverage, not elevated 7	>25 coverage, partially elevated 10
6 Live and Dead Coniferous Crown Closure (%)	<20 2	20- <u>40</u> 5	41- <u>60</u> 10	61- <u>80</u> 15	>80 20
7 Live Deciduous Crown Closure (%)	>80 or <40% coniferous crown closure 5	61- <u>80</u> 2	41- <u>60</u> 3	20- <u>40</u> 4	<20 5
8 Live and Dead Conifer Crown Base Height (m)	5+ or <10% conifer crown closure 9	3- <u>5</u> 5	2- <u>3</u> 7	1- <u>2</u> 10	<1 15
9 Live and Dead Suppressed and Understorey Conifers (stems/ha)	0-500 2	501-1000 5	1001-2000 10	2001-4000 20	>4000 30
10 Forest Health (% of dominant and co-dominant stems)	Standing Dead and Partly Dead <5 or <25 stems/ha 5	Standing Dead and Partly Dead 5-25 5	Standing Dead and Partly Dead >25-50 10	Standing Dead and Partly Dead >50-75 20	Standing Dead and Partly Dead >75-90 30
11 Coniferous Forest/Slash Cover within 20m (%)	0-20 0	21- <u>40</u> 5	41- <u>60</u> 5	61- <u>80</u> 7	>80 10
Sub Total					<b>49 /155*</b>
<b>Weather</b>					
12 Biopoclimate Zone	AT, Irrigated 1	CW1, CDF, W1 Dry Zonal Wet 5 3 1	KS, S5, ESSF Dry Zonal Wet 10 7 3	HS, MS, SPS, CH1, d1, B, d2, BWS, SW1 Dry Zonal Wet 15 10 5	P0, B6 15
13 Historical Wildfire Occurrence (by WMB Fire Zone)	05, R1, R2, G4, V5, R6, V6, V7, R5, R6, V7 1	G3, G8, R2, R4, V6, G1, G4, V8 5	G7, G5, G4, G4, V1, C1, N6 8	F1, K3, K3, C2, C3, N5, N6, N6, K7, R2 10	N7, K4, R2, N1 15
Sub Total					<b>20 /30</b>
<b>Topography</b>					
14 Aspects (>15% slope)	North 6	East 5	<16% slope all aspects 10	West 12	South 15
15 Slope (%)	<16 1	16-29 and max score for North slopes 5	30-44 10	45-54 12	>55 15
16 Terrain	Flat 1	Rolling 3	Sloped terrain, minor low relief draws 5	Consistent slope, deep draws or shallow gullies 7	Consistent slope, deep gullies 10
17 Landscape/Topographic Limitations to Wildfire Spread	<5 ha isolated forest land 1	North and/or east aspects dominant, wildfire spread restricted from South and/or West 2	Mountainous terrain, broken topography, regular aspect and slope changes, multiple restrictions to wildfire spread large north-facing 5	Rolling terrain, minor water bodies, minimal aspect and slope changes, minor restrictions to wildfire spread 7	Continuous, consistent topography No restriction to wildfire spread 10
Sub Total					<b>27 /55</b>
<b>FUEL, WEATHER AND TOPOGRAPHY WILDFIRE BEHAVIOUR THREAT SCORE</b>					
Sub Total					<b>96 /240**</b>
<b>Structural</b>					
18 Position of Structure/Community on Slope	No Structures Values within 2 km 0	Bottom of slope, valley bottom 5	Mid-slope benchland, elevated valleys, <16% slope 10	Mid-slope continuous, >15% slope 12	Upper 1/3 of slope 15
19 Type of Development	No Structures Values within 2 km 0	Perimeter interface, no inclusions 3	Perimeter interface, with inclusions 5	Interior > 1 structure/ha 8	Interior < 1 structure/ha 10
20 Position of Assessment Area Relative to Values	No Structures Values within 2 km 0	Above >500-200-500 <200 m 10 20	Stable >500-200-500 <200 m 1 12 25	Flat/Rolling >500-200-500 <200 m 1 12 25	Below >500-200-500 <200 m 1 15 30
WILDLAND URBAN INTERFACE WILDFIRE THREAT SCORE					<b>26 /55</b>
TOTAL WILDFIRE THREAT SCORE					<b>122 /295</b>



**WILDLAND URBAN INTERFACE WILDFIRE THREAT ASSESSMENT WORKSHEET**  Pre-treatment  Post-treatment

Plot #: Kpockl #2 Community: District of Invermere Kpockl  
 Assessor: B. Henderson Geographic Location/Street Name: 12 ave + Kpockl Rd  
 Date: 25/12/18 GPS/UBM: 568423 E 5594388 N  
 Photos:  I  II #: 3, 4 Land Ownership:  Crown  Private  LR Other (specify)

COMPONENT / Subcomponent	LEVELS				
	A	B	C	D	E
1 Fuel Depth and Moisture Regime (cm)	1-2 3	2-5 Dry Zonal Wet 5 1	5-10 Dry Zonal Wet 10 6 2	10-20 Dry Zonal Wet 12 8 4	>20 Dry Zonal Wet 15 10 5
2 Surface Fuel Continuity (% cover)	<20 0	20-40 2	41-60 3	61-80 4	>80 5
3 Vegetation Fuel Composition	Moist, Herb, Irigated Crop, Low Flammability Weeds 1	Herb, Deciduous Shrubs 2	Lichen, Conifer Shrubs 3	Pinegrass, Juniper 4	Sagebrush, Bush grass, Akelepe Branch, Scotch Broom 5
4 Fine Woody Debris Continuity (<=7cm) (% cover)	<1 coverage 1	Scattered, <10 coverage 5	10-25 coverage 7	>25 coverage, <10 cm deep 10	>25 coverage, >10 cm deep 15
5 Large Woody Debris Continuity (>7cm) (% cover)	<1 coverage 1	Scattered, <10 coverage 5	10-25 coverage 5	>25 coverage, not elevated 7	>25 coverage, partially elevated 10
6 Live and Dead Coniferous Crown Closure (%)	<20 2	20-40 3	41-60 10	61-80 15	>80 10
7 Live Deciduous Crown Closure (%)	>80 or <60% coniferous crown closure 6	61-80 2	41-60 3	20-40 4	<20 5
8 Live and Dead Conifer Crown Base Height (m)	5+ or <20% conifer crown closure 0	3-5 5	2-4 7	1-2 10	<1 15
9 Live and Dead Suppressed and Understorey Canopies (stem/ha)	0-500 2	501-1000 5	1001-2000 10	2001-4000 20	>4000 30
10 Fuel Pileup (% of dominant and co-dominant trees)	Standing Dead and Partly Down <5 or <20 stem/ha 0	Standing Dead and Partly Down >25 5	Standing Dead and Partly Down >25-50 10	Standing Dead and Partly Down >50-75 20	Standing Dead and Partly Down >75-30 30
11 Coniferous Forest/Slack Cover within 2km (%)	0-20 0	21-40 3	41-60 5	61-80 7	>80 10
Sub Total					42 /155*

Weather	A	B	C	D	E
12 Biogeoclimatic Zone	AT, Irigated 1	CWH, CWF, MFI Dry Zonal Wet 5 3 1	ICH, SFS, ESF Dry Zonal Wet 10 7 3	IP, IS, SWS, CWH d1 & d2, BWS, SWS Dry Zonal Wet 15 10 5	PE, BC 15
13 Historical Wildfire Occurrence (by WMA Fire Zone)	G5, R1, R2, G4, V3, B9, V5, V3, B5, B6, V7 1	G3, G8, R3, R4, V6, G1, G9, V8 5	G7, F5, F4, F4, V1, C1, W4 8	R1, R5, R3, C2, C3, B5, R6, R4, G7, R2 10	N7, K4, K2, N1 15
Sub Total					20 /38

Topography	A	B	C	D	E
14 Aspect (>15% slope)	North 0	East 5	<16% slope all aspects 10	West 12	South 15
15 Slope (%)	<16 1	16-29 and max score for North-slopes 5	30-44 10	45-54 12	>55 15
16 Terrain	Flat 1	Rolling 3	Sloped terrain, minor low relief draws 5	Consistent slope, deep gullies or shallow gullies 10	Consistent slope, deep gullies 15
17 Landscape/Topographic Limitations to Wildfire Spread	<5 ha isolated forest land 1	North and/or east aspects dominant, wildfire spread restricted from South and/or West 2	Mountainous terrain, broken topography, regular aspect and slope changes, multiple restrictions to wildfire spread, large water bodies 5	Rolling terrain, minor water bodies, minimal aspect and slope changes, minor restrictions to wildfire spread 10	Continuous, consistent topography, no restriction to wildfire spread 15
Sub Total					27 /55

FUEL, WEATHER AND TOPOGRAPHY WILDFIRE BEHAVIOUR THREAT SCORE	A	B	C	D	E
18 Position of Structure/Community on Slope	No Structures Values within 2 km 0	Bottom of slope, valley bottom 5	Mid-slope-benchmark, elevated valley, <16% slope 10	Mid-slope continuous, >15% slope 12	Upper 1/3 of Slope 15
19 Type of Development	No Structures Values within 2 km 0	Perimeter interface, no inclusions 3	Perimeter interface, with inclusions 5	Intermix > 1 structure/ha 8	Intermix < 1 structure/ha Intermix > 10 10
20 Proximity of Assessment Area Relative to Values	No Structures Values within 2 km 0	Above >500 200-500 <200 m 1 10 20	Sideline >500 200-500 <200 m 1 12 25	Flat/Rolling >500 200-500 <200 m 1 12 25	Below >500 200-500 <200 m 1 15 30
Sub Total					89 /240**

\*Proceed only if Fuel sub total is >29.  
 \*\* Proceed to Structural component only if Wildfire Threat Behaviour Score is >95 for untreated polygons.  
**WILDLAND URBAN INTERFACE WILDFIRE THREAT SCORE** 45 /55  
**TOTAL WILDFIRE THREAT SCORE** 134 /295

**Wildfire Behaviour Threat Class** (check applicable class)

Low 0-40   
 Moderate 41-95   
 High 96-149   
 Extreme >149

**Wildland Urban Interface Threat Class** (check applicable class)

Low 0-13   
 Moderate 14-26   
 High 27-39   
 Extreme >39

Last Update: January 24, 2013





**APPENDIX 3: FireSmart Wildfire Hazard Assessment System- Area Hazard Assessment**

FIRESMART – WILDFIRE HAZARD ASSESSMENT SYSTEM

*Plot - Kpockl #1*

**AREA HAZARD ASSESSMENT FORM**

Factor	Page reference	Characteristics and point ratings				Score	
12 Forest vegetation (overstory)	2-18	Deciduous	Mixed wood		Coniferous		
		0	15	Separated	Continuous	15	
13 Surface vegetation	2-18	Lawn or non-combustible material	Wild grass or shrubs		Dead and down woody material		
		0	5	Scattered	Abundant	5	
14 Ladder fuels	2-18	Absent	Scattered		Continuous		
		0	5			10	
15 Slope	2-19	0 - 10%	10 - 25%		>25%		
			Even	Gullied	Even	Gullied	
16 Position on slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope		
		0	3			5	
<b>Total Score for Factors 12 - 16</b>						<b>70</b>	
<b>Area Hazard Level</b>						<b>E</b>	

Hazard Level    Low <21 points    Moderate 21-29 points    High 30-35 points    Extreme >35 points

Remarks

*Plot located @ south end of property on upper slope*

*Plot - Kpockl #2*

**AREA HAZARD ASSESSMENT FORM**

Factor	Page reference	Characteristics and point ratings				Score
12 Forest vegetation (overstory)	2-18	Deciduous	Mixed wood	Coniferous		
		0	15	Separated (15)	Continuous (30)	
13 Surface vegetation	2-18	Lawn or non-combustible material	Wild grass or shrubs	Dead and down woody material		
		0	5	Scattered (5)	Abundant (15)	
14 Ladder fuels	2-18	Absent	Scattered	Continuous		
		0	5	(10)		
15 Slope	2-19	0 - 10%	10 - 25%		>25%	
		0	Even (4)	Gullied (5)	Even (8)	
16 Position on slope	2-20	Valley bottom or lower slope	Mid-slope		Upper-slope	
		(0)	3		5	
<b>Total Score for Factors 12 – 16</b>					<b>40</b>	
<b>Area Hazard Level</b>					<b>E</b>	

Hazard Level    Low <21 points    Moderate 21-29 points    High 30-35 points    Extreme >35 points

Remarks

*Plot located @ North end of property @ base of slope bottom of gully.*

## 4.6 Wildfire Protection DPA

### 4.6.1 Area Designation

Invermere is located within the Rocky Mountain trench, an area that historically experienced periodic wildfires resulting in open forest / grassland type ecosystems. In the past 100 years, fire suppression has enabled the local forest land to become overly dense, creating a high risk of intense wildfire threatening the community.

Structures located within these areas of forest land are prone to a significant threat from forest wildfire. In areas identified as having a Moderate-High, High or Extreme risk rating, treatments which reduce the fuel loading may be necessary to reduce the threat of wildfire to structures.

The areas outlined on the facing map, (and those shown on the District of Invermere Community Wildfire Protection Plan) are hereby designated as a Hazardous Area Development Permit Area under the Local Government Act. For development to occur on these sites, all applicants shall comply with the requirements contained within this chapter. In addition, subdivision and building plan schemes should incorporate "FireSmart" principles as outlined in FireSmart, Protecting Your Community from Wildfire (July 2003).

### 4.6.2 Justification & Objectives

There are areas within the community that contain a significant risk to wildfire due to excessive forestland fuel loading. It is in the District's and the public's interest to ensure that areas identified as containing a Moderate-High, High or Extreme classification have fuel loading reduced to lower the risk of property damage or loss of life from wildfire.

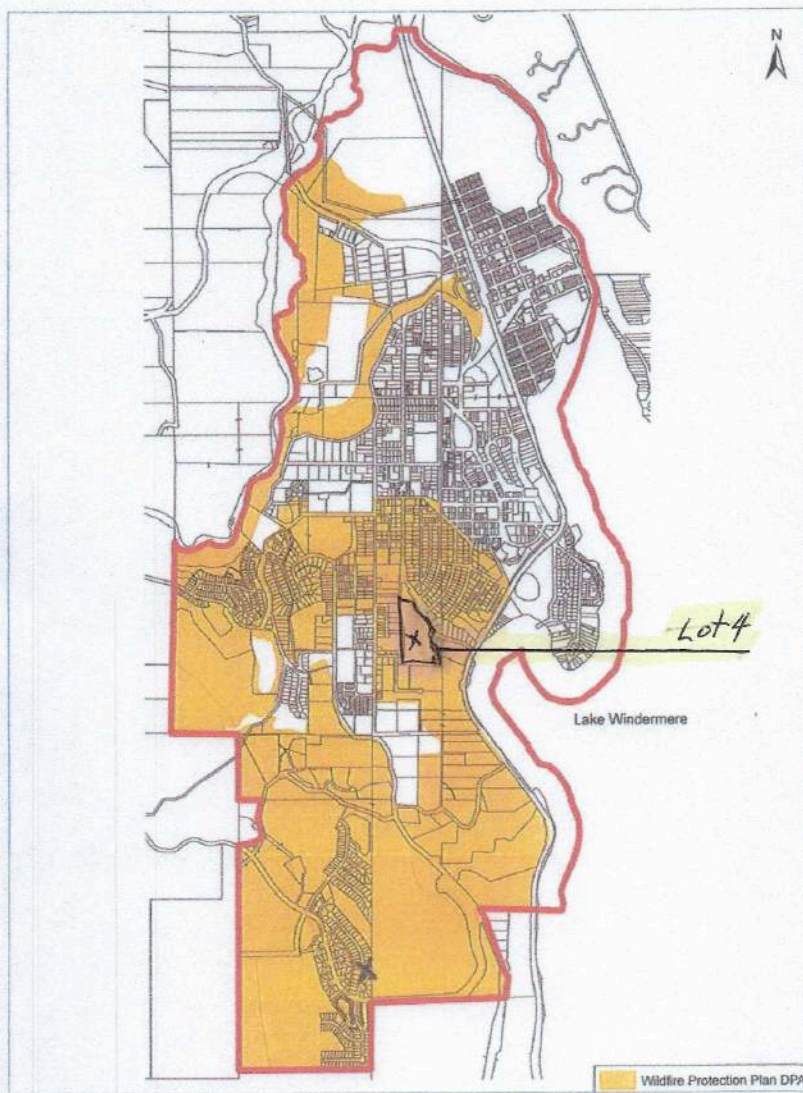
The objectives are as follows:

- To regulate development in the community in such a manner that protects against injury to persons and damage to property from wildfire.
- To restore forest land to its natural (open) state.
- To notify the public of the areas of higher wildfire risk within the District of Invermere.

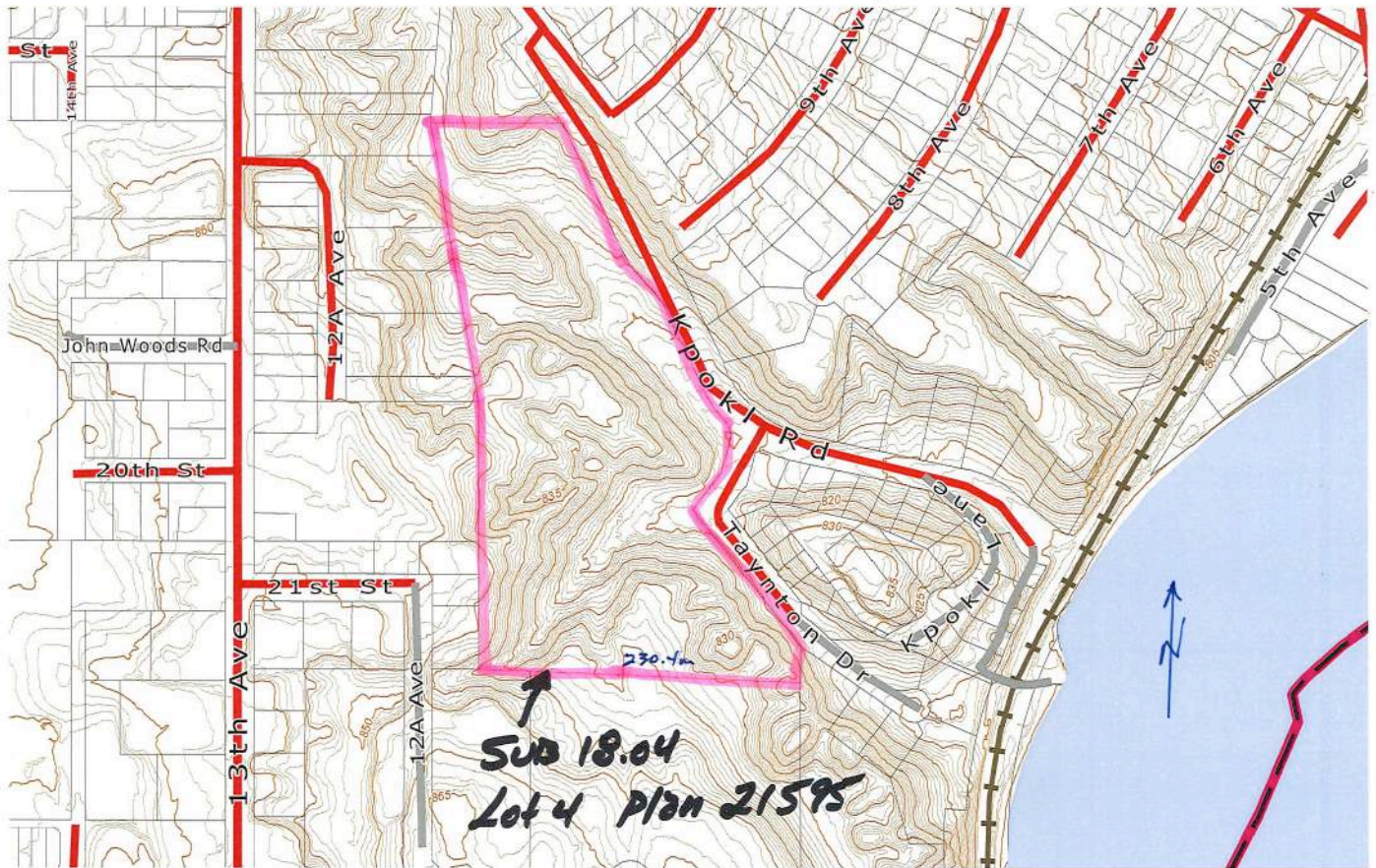


### 4.6.3 Guidelines

1. Public areas and parkland in proposed subdivisions will have fuel reduction treatments completed as a condition of subdivision approval.
2. Established residences will be encouraged to complete modifications to property vegetation and structures to reduce the hazards posed by interface fire.
3. Prior to issuance of a development permit, the District will require that the applicants submit, at their expense, a detailed assessment that outlines and demonstrates adherence to the following:
  - a) Identification of the wildfire hazards.
  - b) Mitigation requirements to reduce wildfire hazards. This will include architectural controls as necessary to reduce the hazards.
  - c) The proposed use of the subject lot or building.
  - d) The location of buildings and other structures in relation to one another within the subject lot and in relation to buildings and structures on adjacent lots.
  - e) Landscaping, including buffering and screening where provided.
  - f) Access and internal traffic circulation.
  - g) Proposed exterior building materials.
  - h) The location of existing and proposed fire suppression infrastructure.



APPENDIX 5: Contour Map and Reference Attachments



Scale - @ 1:100, 1 unit = 3.6m

1m Contours.