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# FireWise Management

## Lake Country Interface Community Fire Hazard

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**District of Lake Country**

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### Introduction

The Wildland/Urban Wildfire Interface has become an increasingly hot topic in British Columbia in recent years. The developed area and values at risk to fire are constantly increasing as are the potential for fire starts in these once wildland only areas. This Fall there have been two Interface fires in Lake Country alone: the "Oyama" fire and the Finch Road fire. **(It was only because of late Fall weather that in the latter case the structural fire did not cause a potentially catastrophic wildfire.)**

The Auditor General's Report of June 28<sup>th</sup>, 2001, on Managing Interface Fire Risks, asks the question, "Why are British Columbia residents at significant risk?" The answer is as follows, and is fully applicable to residents of Lake Country.

*Two main factors are contributing to the growth in the interface fire problem in our province.*

*First, years of successful fire suppression by the Ministry of Forests has allowed tree stand density to increase and vegetation to accumulate, increasing the availability of fuels for future fires. Insect and disease infestations also add to the increasing fuel problem.*

*Second, the number of people choosing to live in the more rural areas of the province (attracted by the natural environment and lower property costs) is continuing to rise. More people living near our forests means a greater number of human-caused fires. It also means greater chance of wildfire affecting people. Migration to the countryside is a significant phenomenon on Vancouver Island and the Sunshine Coast and in the Fraser Valley, Cariboo, Prince George, Kootenays and Okanagan-Shuswap regions.*

*By moving into and near the forest, we have disrupted the historical occurrence of frequent low-intensity fires that removed flammable undergrowth without significantly damaging larger trees. Because this normal cycle has been disrupted through fire suppression activities to protect life and property, vegetation is accumulating. This situation, combined with two to three weeks of hot, dry and windy weather, can elevate even a rain forest into the "extreme risk of wildfire" category.*

Unfortunately, many residents today do not recognize the risk of wildfire, or assume that "it won't happen to me." This "head in the sand" syndrome is only exceeded by the "911" syndrome - of people saying that, if there is a fire, all they have to do is dial 911. However, the reality of fire department response times in rural areas, plus the speed and intensity of wildfires in the interface is badly underestimated. **Planning, prevention and preparedness are our most effective tools for combating the occurrence of destructive interface fires.**

Lake Country, despite its lakes and orchards, has all the features of a Wildland/Urban environment, complete with steeper slopes and high hazard pine/grassland fuel types. In some years weather patterns keep the forests at low hazard with little risk of a major fire. However, during some years the local forests can dry to the point where a fire can ignite and move very quickly. The community and its residents should be prepared for these times.

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**Mitigation of wildfire risk begins with identifying the problem areas within the community. To do this an Interface Fire Hazard Assessment is carried out.**

Currently in British Columbia, there are two sources for hazard assessment tools. The first choice, and most commonly utilized, are the two forms produced by the BC Ministry of Forests. The second is the National Fire Protection Association's Code 299. A comparison of the two assessments reveals that the Ministry of Forests is consistent with many of the NFPA 299 guidelines. This is especially true on infrastructure items such as water supply, road widths and evacuation options.

FireWise Management utilizes the Ministry of Forests very latest 2001 version – in particular, the interface assessment specifically designed for subdivisions. (There is a separate hazard assessment form for individual houses). The methodology, to carry out a district wide assessment, is based on visiting all areas within the District of Lake Country and performing an assessment on each subdivision and/or geographically unique area. Digital photographs are taken to visually illustrate areas or items of concern, and are integrated into the report. Only a number of key photos and their accompanying descriptions are reproduced in the hard copy of the report, for brevity; however, all photos are included on the disc, in digital format, for further study.

It is up to the community as a whole to make choices about the mitigation of risk. In the creation of new subdivisions the ideal, as covered in the Auditor General's report, is to adhere to the new standards such as the NFPA 299. [The City of Vernon, for example, boldly introduced new interface guidelines for subdivision development in the year 2000.] A proposed subdivision such as the Pollards Pond area is a viable proposition with proper road access and infrastructure, vegetation management and building code by-laws specifically for interface homes.

Existing subdivisions, however, present a different set of challenges:

First - the homeowners need to be informed of the severity of the risk.

Second - they must examine the appropriate steps needed to reduce the risk.

In the future, the adoption of standards and the issue of compliance and enforcement, or insurance incentives, will need to be considered. Some of these are going to be addressed in March 2002 in Penticton, at the Thompson-Okanagan Interface Symposium.

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### 1.0 GENERAL DISCUSSION OF AREA

Lake Country is an interesting mix of residential and recreational properties, orchards and vineyards, light industrial and commercial. Planes fly low overhead inbound to Kelowna International and a railroad line traverses the district from north to south. A major BC autoroute recently upgraded to four lanes, Highway 97, parallels the railroad bringing increased road traffic [and increased opportunity for fire starts].

The residential population has seen growth well above the Canadian average, partly due to retirees responding to articles featuring the benefits of the Okanagan. These same warm weather benefits also bring increased fire danger due to the multitude of new homes in the interface; and a significant percentage of Lake Country is very definitely a forested interface environment. This environment has a natural high-to-extreme fire potential based on its steep and gullied topography, its Ponderosa/Grasslands biogeoclimatic subzone and its many south and west facing slopes. **Every interface home, therefore, that is not "Fire Wise" with building design and construction, as well as with vegetation management, is part of the problem.** The magnitude of this problem represents a large part of the district wide interface hazard assessment.

#### 1.1 Location of Lake Country Fire Protection Boundaries

The northern boundary begins on the west side of Ellison Ridge just north of Juniper Cove, south of Ellison Provincial Park area. It angles across Commonage Road and includes the Charolais Subdivision. On Highway 97 the northern boundary is just north of Crystal Waters resort area. The eastern boundary runs north-south below the ridge and power lines, just above the existing subdivisions [see map]. The southern boundary is at the end of Finch Road, on the Okanagan Lake side, and runs straight east intersecting Glenmore Road. It then zigzags according to boundary changes made by the city of Kelowna [see map]. The western boundary is Okanagan Lake. The population is a mix of urban residential and light commercial in the valley bottom. The suburban population has seen extensive spread up the slopes, on both sides of the valley, with houses intermixed with forests and grasslands.

#### 1.2 Lake Country Fire History and Fuels Present

A Wildland/Urban Wildfire Interface Hazard Assessment begins with understanding the fuel types present, the wildfire return intervals, and the amount of fuel available. [See Appendix 2 for completed assessments]

Tree species throughout Lake Country are predominantly Ponderosa Pine, with more easterly and northerly aspect slopes intermixed to a lesser degree with Douglas Fir. [The effect on growing conditions of hot dry summers is noticeable above Highway 97 where the hillsides, despite an east aspect, are mainly Ponderosa Pine.] It should be noted that in the assessment process, **Factor 5 – Forest Stand Description: "Dense Pine Stands"** have the highest risk rating due to their fire potential.

The Ponderosa Pine/Grasslands biogeoclimatic subzone is also a higher fire threat in terms of surface fuels. The dry grassland supports rapid fire spread into the open stands, where heavy accumulations of pine needles add to the fuel build-up. Gradually the open stands become a denser, closed canopy and the grasses tend to be intermixed with low-to-moderate height shrubs. This herbaceous growth,

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combined with immature pines, provides a ladder for wildfire to climb up from the surface to create a potentially devastating, running crown fire. Under a fully closed canopy, on dry sloping sites, the forest floor can be devoid of grasses and shrubs, but a deep duff layer of pine needles supports fire spread.

Wildfire normally plays a natural role in our forests and grasslands by recycling nutrients, thinning tree stands, cracking seed cases, and creating a diversified wildlife habitat. However, due to man's suppression of fire there are now larger accumulations of forest fuels available for consumption. The naturally occurring wildfire cycle in the Lake Country/Okanagan area, before European settlement, was comprised of low intensity surface fires, approximately every 5 – 15 years. Due to the frequency of these fires, there was little build up of fuels to support large, high intensity crown fires. Today, the occurrence of a fire in this area, given dry, windy conditions could be very detrimental due to today's large accumulations of forest fuels.

### 2.0 2001 SEASON INTERFACE FIRES

#### 2.1 Oyama Fire

On September \_\_\_\_\_ the Oyama fire began as an escape from an illegal burning barrel, which was compounded by an absentee owner. The resulting fire expanded to a total of 10 hectares and involved both Lake Country and BC Forest Service. The incident was a prime example of how fast fire can spread in an interface environment. The recipe for disaster was a common one, with a careless and illegal ignition source, a build up of vegetation, as well as the associated command and control problems of a multi-agency incident. Future discussions should address the issues of illegal burning, of homeowner responsibilities regarding vegetation build-up and of the need for continuous review and practice of the Incident Command System for all agencies involved.

#### 2.2 Finch Road Fire

On October \_\_\_\_\_ a structural fire in the Finch Road subdivision spread uphill into the forest. Given the lack of vegetation management, compounded with access problems for the responders, the wildfire consequence of this house fire was a foregone conclusion. The mediating element that prevented a major interface forest fire was the weather. If this event had occurred three weeks earlier when it was hotter, and significantly drier, the community could have been looking at a disastrous, possibly uncontrollable wildfire. This fire should be a wake-up call for the neighborhood and the District of Lake Country. All the issues are here: building construction materials, vegetation management and defensible space, access issues for responding emergency vehicles, moral issues of putting responders lives at risk with poorly planned and developed subdivisions that fall far short of NFPA 299 construction and development codes.

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### 3.0 OBJECTIVES AND GOAL

#### 3.1 Objectives

1. Assess the Wildland/Urban Interface Fire Hazard of the community using established procedures. The accumulated point totals will put areas into one of four hazard classifications:

**Low** Consists of urban, suburban and farm areas with modified forest fuels, generally flat terrain, no readily combustible vegetation, and low risk to adjacent development.

**Moderate** Partially modified forest fuels, scattered mixed forest in suburban areas, moderate-to-good water availability, homes and structures are threatened.

**High** Areas of little or no fuel modification, continuous ground fuels, sloping terrain with/without gullies present, moderate to low water availability, some areas are hard to access.

**Extreme** Areas of little or no fuel modification, continuous ground fuels, rolling and gullied terrain, rock outcrops may be present, low or no water availability, some inaccessible areas, heavy use areas, direct threat to homes and structures.

2. Identify areas of public and private lands where fuel modification could be carried out. [See Appendix Four]
3. Help to develop a Fire Wise attitude in the residents within the community. To this end FireWise Management personnel will be available to meet with the public and discuss relevant issues arising from the assessment.

#### 3.2 Goal

The goal of the assessment process is to heighten awareness of the concern that wildfire may one day have a significant impact on the community. This is done through the community emergency responders, the planners, elected officials, and the residents themselves. Copies of this report will be available to the local fire departments and to the governing body for the community - the District of Lake Country.

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### 4.0 STANDARDS AND DEFINITIONS

1. **Wildland/Urban Interface Zone:** – the zonal line between the forest and urban/rural community. It includes wildland or forested areas where wildfires can occur, and where developments such as homes and structures exist. The level of development in an interface zone may be completely urban, where only a perimeter fire hazard exists, to isolated dwellings where wildfire can pose a threat throughout the area.
2. **NFPA 299:** - the National Fire Protection Association code 299 which sets out one set of standards for home construction and fuel modification, plus road and infrastructure design parameters for subdivisions. Many of the BC Ministry of Forest standards are the same.

### 5.0 COMMUNITY FIRE HAZARD ASSESSMENT FACTORS

1. **Fire Weather Potential** – takes into account the percentage of days during previous fire seasons that were Danger Class Three (moderate) and above, as well as the precipitation history for the area. [See Appendix 3] The Fintry weather station was chosen as being most representative of Okanagan weather.
2. **Area Description** – describes the extent of the development within the interface area, general structure density, and the proximity of the development to wildland.
3. **Thickness of Duff and/or litter** – the duff and litter represent the decomposed, semi-decomposed and freshly fallen material that make up the upper layers of the forest floor. This includes fallen twigs, leaves, needles, cured grasses, herbs, and any other combustible materials present.
4. **Fine and Coarse Debris** – this represents the amount of all types of ground fuels, including all combustible and woody material, even rotten wood, and their distribution. Debris ranges in size from branches and tree tops, to logs and fallen trees.
5. **Forest Stand Description** – reflects the general composition of the surrounding area forest and the density of the upper canopy. Also referred to as fuel type.
6. **Other Vegetation** – refers to fuels in the area other than mature trees. It includes grasses, shrubs, brush, and immature trees that are not part of the canopy.
7. **Topographic Features** – the general topography of an area includes the slope of the ground measured from the horizontal and whether the slope is even or gullied.
  - Even slopes – have a smooth or gently rolling texture
  - Gullied slopes – have cuts running up the slope which can provide funnels for upslope, wind driven fire spread.
8. **Values Protected** – considers the values at risk, including both structural and timber values, if a fire were to ignite and spread. [Proximity to wildland is assumed.]



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9. **Recreational Use** – recreational use levels are determined by old fire pits, well tramped trails, signs of 4x4, ATV, or motorcycle use, local knowledge, and the size of the local population.
  
10. **Fire Potential On Adjacent Lands** – considers the risk of accidental ignition by such land usage as nearby schools, garbage dumps, campgrounds, parks, industry or airports. An area fire history should approximate the number of human caused fires in the past.
  
11. **Fire Protection** – refers to the type and size of fire department that serves an area, and the extent of the fire protection boundary.
  
12. **Available Water** – the distance to available water is measured from the actual location that the forested area meets the development, to the first accessible location of the available water source.
  - Water source must be present year round, and be accessible to fire fighters.
  - Fire hydrants and/or standpipes must be in working condition with adequate fireflow.
  - High volume community wells or irrigation systems can be considered if they have back up power systems and are accessible for quick hook-up by firefighters.
  - Residential wells are not normally considered
  - Seasonal creeks are not considered.
  
13. **Mutual Aid** – refers to any agreement that may exist between fire departments in the area and/or between fire departments and the BC Forest Service. Local knowledge of interagency agreements was provided by the Lake Country Fire Department's chief training officer.
  
14. **Response Time to Fire** – considers the time to the fire from the nearest Fire Hall.
  
15. **Access for Emergency Vehicles** – refers to the ease of accessibility for emergency equipment to respond to an incident.
  - **Tank Truck** – very limited in their mobility, normally limited to paved or major gravel roads. Most full tank trucks have trouble negotiating adverse grades over fifteen percent and hesitate to cross pipelines. Loaded trucks will also have trouble negotiating curves with a radius of less than thirty metres – where the curve occurs in conjunction with a gradient over ten metres. Accessibility is considered good where the truck can get within 100 metres of the fire. Bridge weight limits are a serious concern for these vehicles.
  - **Mini-Pumper** – Able to handle secondary gravel roads in good two wheel drive condition and limited to grades of less than twenty-five percent. To be effective, it must be able to drive within fifty metres of the fire location.
  - **Air/Foot** – Ground crews or air attack should be considered the type of access where vehicles can not travel to within one hundred metres of a fire location.

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**16. Fire History of Area** – based on local fire department knowledge plus records from the BC Forest Service Protection Branch.

**Other Factors** – rated on a scale from 0 – 6 points.

**17. Frequent High Winds Over 30 km/h** – the stronger the wind, the faster the spread of fire.  
**Extensive Areas of Steep, South or West Exposure Slopes**

- Southern aspects receive the most direct sun, are the driest, and provide the best conditions for fires to ignite and spread.
- Western aspects receive direct sunlight during the heat of the day, creating good afternoon burning conditions.
- The steepness of a slope can also effect fire spread.
  1. Wind currents are normally uphill and this tends to push heat and flames into new fuels.
  2. Convected heat rising along a slope causes a draft that further increases the rate of spread of fire.

**18. Large Scale Industrial Project Anticipated**

- Creates disturbance of the land and increases the risk of accidental ignition by machinery and increased human activity.
- Examples: Industrial park expansion, new garbage dump site, highway construction.

**19. Large Scale Recreational Activity Project Anticipated**

- Increased risk of accidental ignition due to the increase in human activity in the immediate area, and on adjacent lands.
- Examples: Parkland development, new campsite, increased tourist development through such activities as fishing and hunting.

**20. Fuel Loading Increase Due To Logging Or Land Clearing Activity**

- Increased risk of accidental ignition due to equipment use.
- Increased ground fuel accumulations due to slash.

**21. Railway Activity Within The Interface Zone** – railways through the Interface zone can be a fire hazard risk if they are active and there are homes nearby.

**22. Utilities In Area** – considers Hydro right-of-ways, overhead wires, gas/oil pipelines, etc., within the Interface area or adjacent area.. [Trees falling onto power lines are a common ignition point]

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### 6.0 COMMUNITY INVOLVEMENT

The community should be made aware of the assessment process and the results should be communicated to the residents. This can be done through community meetings and through the media. In addition, local authorities including administrators, planning officers and fire chiefs should be familiar with modern standards such as the NFPA 299, and should have appropriate by-laws and regulations in place. As well, private industry involvement should be considered, such as the Safeco Insurance Company sponsored fuel modification program in Bend, Oregon. (Now into year three.) Finally, the BCFS Protection Branch has several pamphlets available on Interface fire issues, including building construction tips, fuel modification and emergency evacuation planning and preparedness.

#### 6.1 Community Composting

A community may consider a community-composting program as an alternative to carrying out prescribed burning on individual properties and on nearby or adjoining crown lands. Establishment of a centralized composting area, on a suitable piece of crown or private land within the neighborhood, run by volunteers or a community organization can:

- Minimize individual costs,
- Reduce landfill use,
- Reduce backyard burning,
- Provide some nutrient recycling options.

Community composting will decrease the accumulation of grass, leaves, and other fuels in residents' backyards thereby helping to reduce the risk of fire. [see Appendix 5 re Safeco/Bend, Oregon]

#### 6.2 Disposing of Forest Fuel Accumulations

Forest litter accumulates on a regular basis and must be removed from homes, yards and adjacent forestland on an annual or semi-annual basis. Needle drop, dying vegetation, and wind blowdown are constantly adding dry fuel to the forest environment. Accepted methods of disposing of these fuels are:

- Hauling the material away to an authorized landfill site,
- Composting the material, or
- Prescribed burning of the material conducted on-site (controversial due to smoke production, but becoming more accepted considering the alternative – a catastrophic wildfire).

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### 7.0 FUEL MODIFICATION

Fuel modification is the reduction of flammable forest vegetation to decrease the intensity and the rate at which a wildfire will spread. It is used to reduce the amount of combustible material around homes and communities.

There is valuable information available on how to establish and maintain fuel breaks using fuel modification. The main objective is that there are logical land units identified and available for such a project. (The BC Forest Service may be available to assist in constructing a fuel break, if the land is publicly owned.)

A fuel modification project should deal with all levels of forest fuels:

- **Surface fuels** – grass and other vegetation lying on or growing close to the ground.
- **Ladder fuels** – this is the next higher level of forest fuels that include immature trees and other woody debris surviving in the understory. It also includes any live or dead material attached to the larger overstory of the forest.  
*[Important - Ladder fuels allow a fire to progress from the ground up into the crowns of the larger trees.]*
- **Crown fuels** - the upper branches and needles or leaves of the trees.

The objective of a fuel modification project is to limit the opportunity of a ground fire evolving into a much more dangerous crown fire.

### 8.0 REDUCING FIRE HAZARD IN DEVELOPMENTS AND INDIVIDUAL HOMES

Wildfire has varying levels of intensity and behaviour and can therefore have an indirect threat on a structure even when the fire front is located a few kilometres away. Burning embers and firebrands can be carried by the wind allowing them to land on roofs or collect in low points around a house, such as under decking and in adjacent vegetation. Open eaves can allow these embers to be drawn into an attic or through open, unscreened windows and vents.

When a wildfire is close enough its radiant heat and flames can cause combustible material such as decks, siding, fences, and roofs to ignite; this is called a direct threat. The intensity of the heat may also melt plastics and break plate glass windows. A home's chance of survival can be greatly improved through careful design, location, and maintenance.

#### 8.1 Future Developments

In areas of High and Extreme Hazard, regulating agencies should consider establishing guidelines for developments that occur. The guidelines or regulations should consider, as per NFPA 299 code:

- Good road access for fire fighters and equipment, **minimum two**,
- Adequate water supply for fire suppression,
- Reasonable road grades — to a maximum of 8%.
- Road name and house number signs placed in prominent locations and comprised of heat resistant materials,
- Bridges capable of supporting large fire apparatus,
- Fire resistant exterior building components,
- Disposal of cleared slash concurrent with road and subdivision developments,
- Fuel or firebreak establishment and maintenance around high hazard developments.

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### 9.0 VEGETATION MANAGEMENT

Reduction of fire hazard in fuels capable of supporting fast-spreading, high intensity fires often requires significant intervention – removal, reduction, or conversion of on-site fuels. However, these fuel-management recommendations must be applied with discretion. The community must decide what level of treatment is both permissible and desirable, before the esthetic and wilderness values are threatened

**Interface residents should meet and decide on appropriate levels of hazard reduction. Fire officials can support this dialogue by organizing meetings and providing unbiased information on the pros and cons of various strategies.**

#### 9.1 Establishing Priority Zones and Defensible Space

Fire needs fuel to burn and a continuous sequence of vegetation in order to carry flames from the forest to the home. Interrupting this chain of flammable material is the goal of the “priority zone management system”

1. **Priority Zone 1** – extends all around the structure for a minimum of 10 m./30 ft. on flat ground. On sloping ground, this distance must be increased on the downslope side. This is called a *Defensible Space*, an area that will help firefighters prevent a wildfire from igniting the structure; or prevent a house fire from spreading into the surrounding forest. Within this defensible space, combustible materials are removed and/or reduced from around all structures. This includes ground and ladder fuels, woodpiles, building materials, propane/fuel tanks, and solvents. Suitable vegetation for a defensible space include:
  - Mowed and watered grass throughout the warm months. Creeping shrubs kept less than 0.5 metres in height.
  - Deciduous trees and well-spaced and pruned coniferous trees.
  - Pea gravel or other non-combustible material instead of bark mulch as a decorative ground cover.

Trees should be spaced at least three metres apart and placed furthest from the house. Shrubs should be removed from below the trees and tree branches pruned to a height of at least 2.5 metres above ground.

There are fire resistant plants available to use for landscaping. Many of the fire resistant plants are common and may already be found in your garden. Information is also available on the Internet, at the library, or at the local garden centre.

2. **Priority Zone 2** - This area begins 10 metres from the building and extends outwards to 30 metres. The main objective of fuel management within this zone is to create an environment that will only support fires of lower intensity and rate of spread. Tree crowns should be 3 metres apart and branches pruned a minimum of 2.5 metres. Branches, twigs and other downed materials, and needle build-up, should be cleaned up or prescribed burned. **This should be a mandatory obligation for people choosing to live in the wildland/urban interface zone.**

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3. **Priority Zone 3** – This area begins at 30 metres and extends to 100 metres or further (on sloping sites) from the building. Fuel management in this area may only be needed in specific cases, when high hazard levels resulting from heavy continuous forest vegetation and steep topography are not reduced enough by fuel management in Priority Zone 2.

### 10.0 INDIVIDUAL HOME FIRE EQUIPMENT

Every home should be prepared to deal with a small wildfire or escaped burn pile. Part of the preparation includes having adequate tools at hand. Every home should have:

- One shovel,
- One steel rake,
- One axe,
- Adequate hose to reach all parts of the exterior of the house, roof, and pile burning location. If water delivery is via an electric pump, from a well, a back-up generator should be considered.

### 11.0 EVACUATIONS

**An evacuation alert** is issued to advise the residents that there is great potential for loss of life or property from a wildfire. When an alert is issued, one should be prepared for worsening conditions, which may require a person to leave their home with very short notification of an evacuation order being issued.

**An evacuation order** is issued in response to imminent forest fire danger to the involved area by authorities that may have jurisdiction. These orders are issued in the interest of life and safety. Members of the R.C.M.P., Ministry of Forests, and local fire departments, Office of the Fire Commissioner and Provincial Emergency Program personnel will be involved in an evacuation through door-to-door contact or via the media. This would allow for effective communications for the evacuation team and will facilitate contact by friends or family!

**Note: In areas of HIGH to EXTREME fire hazard levels, where there are large acreages with only single, switchback access roads, there is a possibility that emergency responders would not be allowed to go door-to-door to evacuate some homeowners.**

#### 11.1 Preparing for Potential Evacuation

The time may come when an evacuation order may be required. It is beneficial if an evacuation plan can be put together prior to the need to implement it. Evacuation routes, marshalling points, a registration centre, and an evacuation implementation procedure are all points that need to be considered when formulating a plan. Registration of evacuees is crucial for Emergency Social Services volunteers to be able to pass on accurate information about evacuees.

An inventory of all valuable or personal possessions kept at home should be completed. From this inventory, a short list of items to be taken during an evacuation should be decided upon. Ensure that essential items such as medications, eyeglasses, valuable papers, and valuable keepsakes are not forgotten. These items should be available for immediate access for a quick departure. Remember – one key rule is - no more than one armload of gear per family member and no repeat trips.

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It is important to keep track of all family members and determine a planned meeting place in case evacuation is called while separated. It is important for everyone involved that residents remain prepared and organized, continue to monitor the changes of the situation, and take action in a timely manner.

If time permits, the house should be left as follows:

- Close all windows and blinds to reflect the radiant heat created by the fire.
- Close all internal doors to slow fire movement through the house. Turn off electricity and/or natural gas.
- Close garage and other exterior doors.
- Leave sprinklers on the fireside of house if possible and on the roof.
- Collect entire family, pets, and other valuables on a pre-determined list.
- Depart immediately. The most valuable item in the house is the lives of the residents. Always leave together on a pre-determined route by the best mode of transportation available or as directed by authorities on site.
- Remain calm; do not panic.
- Move away from the wildfire, never towards it. If confused use the primary evacuation route.
- Drive carefully; make way for pedestrians and emergency vehicles.
- Follow all instructions of authorities. Stop at pre-determined safe marshalling points.
- Report in to identified authorities and await for further instructions.
- Alert officials before departure.
- Do not return to house until permitted to do so by fire officials.

Neighborhoods should prepare a list of residents in the community. The list should include:

- Surname of owner or occupant(s),
- Number of occupants, and
- House address.

### 12.0 TRAINING

Along with living in the wildland/urban interface comes responsibilities that go beyond using fire safe building materials and vegetation management. Residents should also have rudimentary training in wildfire fighting techniques, including the role of aircraft. In addition to helping homeowners take action before, and along with, fire fighters, the training would help homeowners not to inadvertently interfere with fire fighting activities.

**A classic example of unintentional interference is where bystanders not familiar with the warning siren of the birddog (the lead aircraft), fail to stand clear and directly abort or impede the effectiveness of air tanker retardant drops.**

(A customized version of the BC Forest Service S-100 Basic Fire Suppression course, for homeowners, would be an ideal choice.)

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### 13.0 WATER SYSTEMS

During extreme wildfire situations, electrical power is intermittent and water supplies are very limited due to fire fighting needs. Homeowners with individual water supplies (i.e. wells, lakes, swimming pools) should consider an alternate method of pumping water onto houses for fire protection. A small water pump and hose system hooked to a well or lake will provide a quality water supply independent of that required by fire authorities. Placing a running sprinkler on the roof or fireside of the house before evacuating could reduce the wildfire hazard to the house.

New subdivisions should only be allowed on the condition that a water reservoir meet minimum NFPA 299 guidelines for capacity, to provide adequate fireflow at the hydrants. Existing subdivisions not already equipped should install reservoirs and hydrants as recommended in the guidelines.

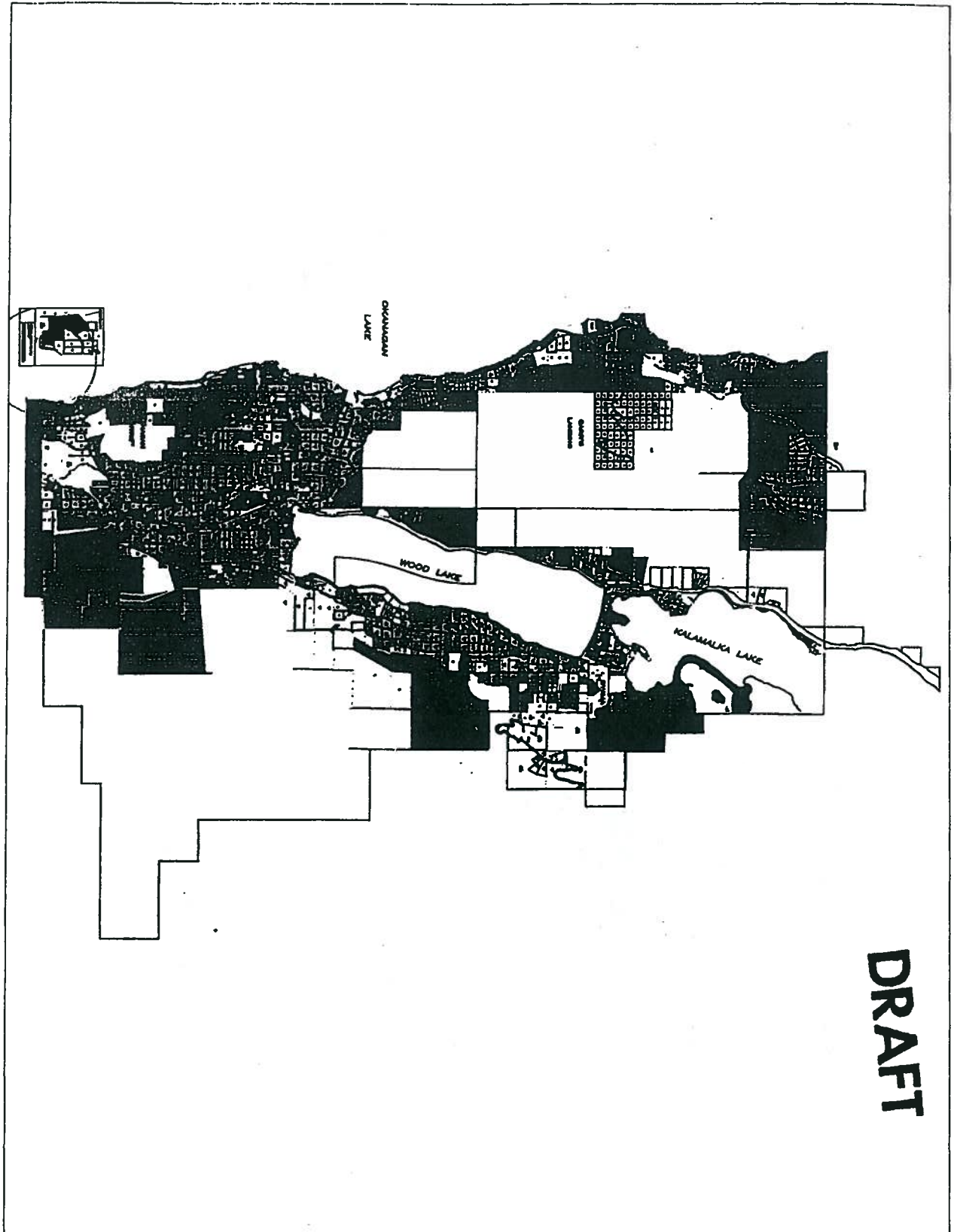
### 14.0 CONCLUSION

The goal of every homeowner and community official should be, as the BC Forest Service says, to be “working towards a Fire Safe Community”. A wildfire in all its fury can be a frightening thing, as seen many times in the media, with California’s wildfires as a prime example. However, wildfire is a community problem that can be dealt with by a community solution, through expanded awareness of the responsibilities and actions that can and should be taken.

Residents should be aware that in large interface fires the firefighting resources could be stretched to the limit and beyond. When this happens the responders may have to make decisions as to which properties can be saved and which would be allowed to burn. In all cases, the fire suppression priorities always put life before property. In extreme wildfire situations, an evacuation would therefore take priority over trying to save homes and property.

The alternative is to prevent wildfires from being a disaster – through well designed subdivisions, proper building materials and screened chimneys, and finally, a commitment to vegetation management by all property owners, whether there is a structure in place or





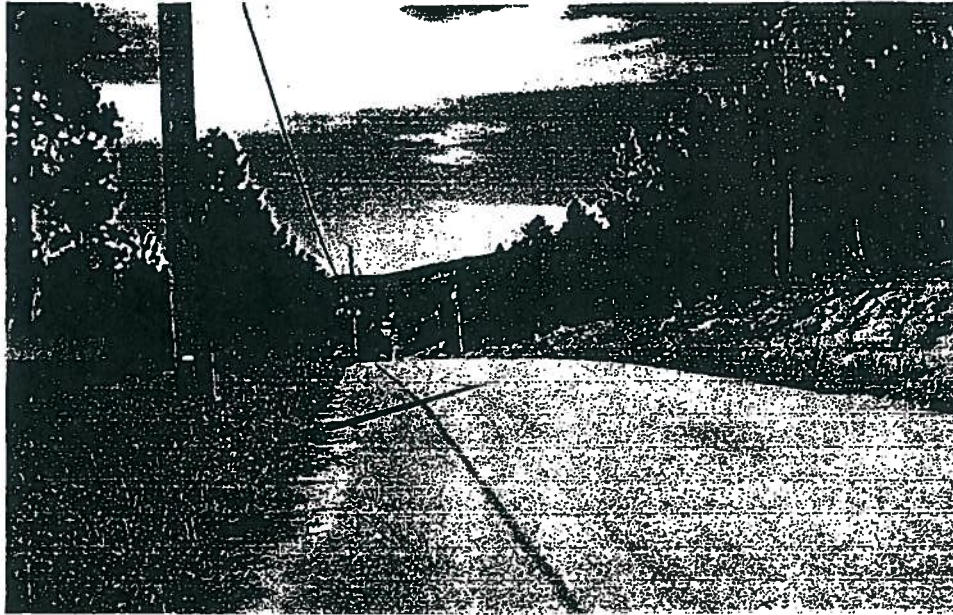
**DRAFT**

**FireWise Management**  
**Lake Country Interface Community Fire Hazard**

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Map # 672  
Hare Road (*Rating: High*)



Hare Road View North (Power lines, Only one way in and out, Evacuation plan needed)



11800 Hare Road South end (Structures, Dead-end road, Steep slopes, Gullied)

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# FireWise Management

## Lake Country Interface Community Fire Hazard

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Map #816  
Juniper Cove Road (*Rating: High/Extreme*)



Juniper Cove Road  
(Single lane, with no turn around for emergency vehicles)



Juniper Cove Road  
(Single lane, Steep slopes, and unstable road construction for heavy emergency vehicles)

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# FireWise Management

## Lake Country Interface Community Fire Hazard

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Map # 841  
Charolaise Road subdivision (*Rating: Moderate*)



Angus Road (Charolaise Subdivision) North East boundary looking South

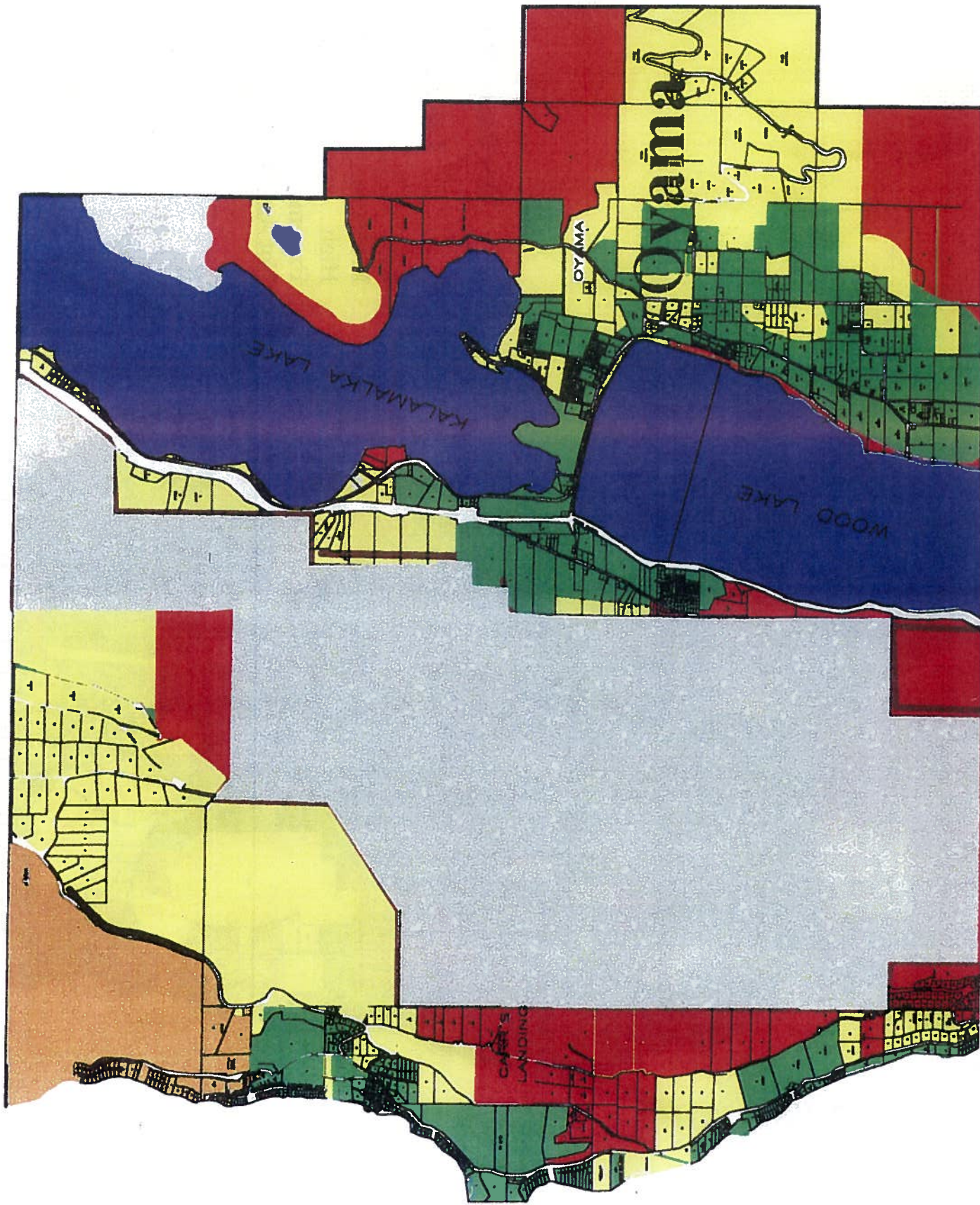


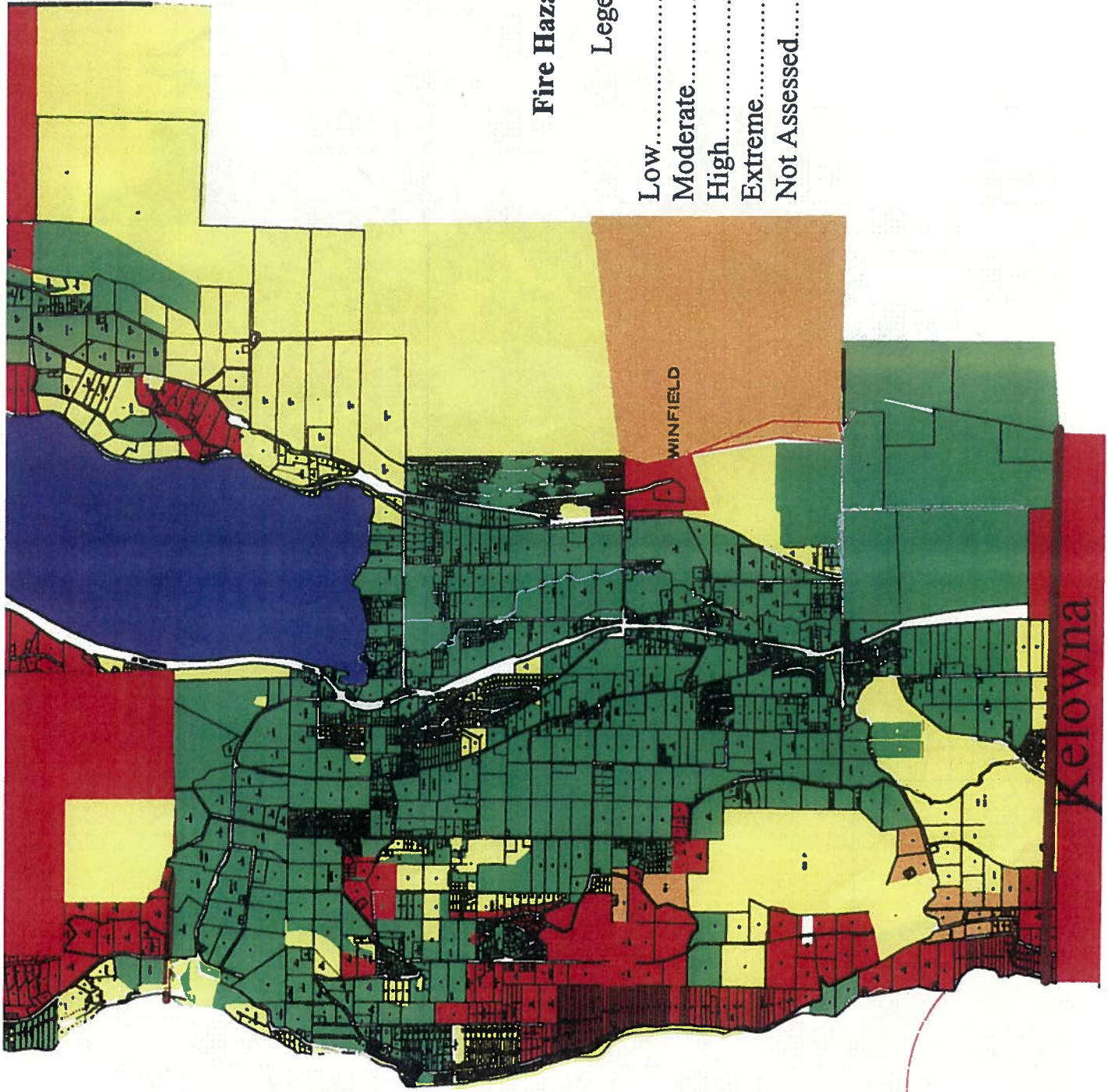
Charolais Road (Private driveway, house within immature tree stand)

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*District of Lake Country  
Fire Hazard Map*





**Fire Hazard Rating**

**Legend**

- Low.....Green
- Moderate.....Yellow
- High.....Orange
- Extreme.....Red
- Not Assessed.....Gray

OKANAGAN  
LAKE

WINFIELD

Kelowna