AN INTERFACE FIRE HAZARD PLANNING MODEL:
A CASE STUDY OF THE DISTRICT OF LANGFORD
January, 2002

Dear Canadian friend:

A large fire swept right across us and pretty much everything around is devastated. It was really fierce with a very strong wind behind it. Our house is old and quite flammable so it was quite an effort. We lost everything else on the property, sheds, fences etc. and of course every tree in sight.

Our two closest neighbours, as well as others in the area lost their houses as they had bush trees right up to the house and didn’t stand a chance. There were no fire tankers or assistance of any kind from the fire fighting authorities. The fire just approached with such incredible speed and ferocity so we are fortunate to be personally safe and sound.

Unfortunately the danger is far from over. There are large fires burning in the area and we are praying the forecast of very high temperatures and high winds again today are wrong. We personally feel pretty safe now as there is almost nothing left to burn for many kilometers in every direction but we are busy assisting friends in case they should be hit in the next day or two. We are in limbo, not even being able to start cleaning up and getting organized until the weather changes and some normality returns. At present we are just being smothered with dust and soot daily from the very strong winds.

Say a prayer for rain for us - we need it!

Your Australian friend,

M.

Blue Mountains,

New South Wales, Australia

Excerpt of actual letter sent from a victim of the 2001 Australian wildfire disaster to a friend in Canada. It underscores the importance of community planning for the threat of Interface Wildfires.
EXECUTIVE SUMMARY

The hazard of interface wildfires is present in many communities, and it is the responsibility of local governments to prepare area residents and involved organizations for the threat of fire. This project sets out to address the wildland-urban interface fire hazard in Langford, and to use this information to establish a model process and menu of tools available to local governments in B.C.

At the time of development, there are tools that can be used by local governments to mitigate interface fires. Examples of these tools are found in several in communities in the province. Development Permits can control the design of buildings and landscaping on properties in Development Permit Areas, which can be implemented to indicate areas of different risk levels. Restrictive covenants can be used to manage how land is subdivided and built upon. Infrastructure planning can better facilitate fire suppression. Subdivision and servicing bylaws can also be used to address risk from interface fires. Building departments have the use of both the B.C. Building Code and local building bylaws to control building in areas at risk to interface fires. Fire departments are responsible for fire prevention and suppression in their communities, and special training and equipment are often necessary for fire suppression in interface areas. Local governments can use public education about interface fires to encourage its residents to modify their properties to minimize the risk of interface fires.

A number of government agencies are involved in both prevention of as well as response to interface fires. The Ministry of Forests (MoF), Office of the Fire Commissioner (OFC), the Ministry of Transport (MoT), and the Ministry of Water, Land, and Air Protection (MWLAP) are all responsible for various aspects of planning and fire control in areas at risk of interface fires. The creation of an Interface Fire Committee at the provincial level could determine the roles of government agencies and levels of government in the mitigation of interface fires, thereby clarifying the organization process for local governments.

Langford’s experience in creating its Interface Fire Hazard Plan commenced with the formation of a committee to conduct the process. Fire risk in the District was mapped, and a public open house was held to educate citizens about interface fires. After the open house and a presentation to the community’s fire department, the plan and associated mapping were amended in consideration of input from these two groups.

Consultation with and participation from a number of organizations and parties in the community is important in the formulation of a wildfire interface plan. In order to educate the public about interface fire hazard and inform citizens about any changes made to bylaws, it is important to include a communication strategy in the plan. The most important aspect of fire control is prevention, which can be carried out through public education and implementation of planning tools after Development Permit Areas are designated.
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ACKNOWLEDGEMENTS:

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A copy of this document can be downloaded from Langford’s website at:  
district.langford.bc.ca
INTRODUCTION

The purpose of this report is to discuss tools available to local governments in British Columbia for addressing interface fire hazards in their communities. The types of actions and activities that a local government has available to address the risks are examined in detail. Of particular interest are samples of bylaws, covenants and Development Permit (DP) guidelines that can be used by other local governments should they decide to address the risk. Chapter four summarizes in model form the process for preparing our interface fire hazard plan in the District of Langford.

Addressing the issues of wildfire in areas of human settlement is a significant issue. Although only a small fraction of wildfires ever intrude into areas of human settlement, the impact of wildfire is usually devastating to life and property. While there is no single solution to the problem of wildfires in the wildland-urban interface, several key actions have been identified that can help reduce the risk of loss due to wildfire. Local or regional governments, working in concert with firefighters and senior levels of government or their agencies, can play a lead role in reducing the risk of wildfire in the wildland-urban interface. Specifically, local or regional government can assist in: raising public awareness and preparedness; undertaking risk assessment and establishing mitigation techniques; establishing guidelines for land use and development; and establishing and maintaining an integrated emergency response and emergency management system. This report explores each of these in more detail, and provides an overview of the District of Langford’s experience in establishing guidelines for reducing fire risk in the wildland-urban interface.

BACKGROUND

The District of Langford, a community of approximately 20,000, is located west of Victoria, within the Capital Regional District. The District’s 4,146 hectare land base contains a mix of developed, forested and urban/rural interface areas.

Since incorporation in 1992, the District of Langford has established a number of policies and procedures that guide and control development. Among these, Council identified a need for a policy to specifically address wildland-urban interface fire. Despite the fact that a substantial body of knowledge has already been produced by various Provincial Ministries and agencies, a review of available material led Langford to conclude that the technical focus of the work undertaken at the Provincial level, the complexity of the issues, and the lack of any detailed work at the local government level would necessitate a considerable effort in order to adapt Provincial policies to suit local government needs and develop bylaws that specifically address wildland-urban interface fire hazard. For this reason, the District applied for, and received a grant from the (then) Ministry of Municipal Affairs (now the Ministry of Community,
Aboriginal and Women’s Services) to prepare a demonstration project on interface fire hazard. One of the principal goals of this project was to address the wildland-urban interface fire hazard in Langford. Equally important, however, was the goal of providing a model process and description of the range of tools available to local governments in BC. Langford’s experience is documented in chapter four of this report.

**Terminology**

Two terms are primarily used in this report to describe fires: “Interface Fire” and “Wildfire”. “Interface” refers to fires in the wildland-urban interface where residential and other types of development are found in close proximity to forested wildland areas. Interface fires consume developed and forested areas simultaneously. “Wildfire” refers to rapidly moving fires in forested areas. Wildfires can encroach into residential areas thereby becoming interface fires.

It should be noted that some of the literature cited and examples used do not make the distinction between a wildfire and a wildfire that has become an interface fire. It should be further noted that “wildland fire” is another term that is used interchangeably to describe both wildfires and interface fires.

**Other Publications**

There are number of reports and publications that have been written on the broad topic of interface fires covering the technical areas of fire prevention, fire fighting and emergency preparedness. As this matter is already well covered, this report focuses on action that can be taken by local government, the tools it can use, examples of what other local governments have done and the type of assistance it can expect from other agencies in the BC setting.

If more background material is desired, the reader is directed to the “Beware and Prepare Manual” prepared by the MOF and “FireSmart”, a publication available from the Canadian Forest Service. Appendix C in this report provides a comprehensive list of publications and websites on the topics of Wildfire and Interface fire.

**Study Process**

When Langford started this project, no other jurisdiction in BC had undertaken a comprehensive wildland-urban interface fire project or completed a detailed model of the way in which local governments could utilize available tools (e.g. draft bylaws) to address interface fire issues. In order for Langford to proceed with its interface fire project, it was necessary to prepare an overview of the issues and tools for local government to consider. The District appointed a Council member to act as chair of the District of Langford Interface Fire Committee to oversee the project. A community representative from an area considered to be at risk from interface fires was invited to sit on the committee, as was a local developer. Staff representatives from the Planning, Engineering, Building and Fire Department were also selected to sit on the Committee.
Rather than have only community volunteers and representatives of local groups work on the project, assistance was requested from representatives of various interest groups (e.g. Provincial Wildfire Committee, MOF, OFC, Home Builders Association, Provincial Emergency Program (PEP); Insurance Board of B.C.). These agencies and Committees all assisted in the preparation of this report by reading the early drafts and providing background information such as brochures and publications.

After completion of the first three chapters of this report, the Langford Interface Committee reviewed the report and decided which components would likely succeed in Langford and how best to implement these components in the community. Chapter Four in this report summarizes the methodology for addressing the interface fire risk in Langford.
Historical Perspective

Fire is a natural element in any forest. In the early days of the Province of B.C., the hazards of living in forested areas were recognized. The provincial government enacted legislation in 1874 to address bush fires that were being started through land clearing and logging activities. In 1905, the Province started appointing Fire Wardens who were responsible for communicating safe fire practices to settlers and loggers. In 1912, the newly created BC Forest Service became responsible for fighting forest fires. As the importance of timber to the economy of BC grew so did the fire-fighting efforts. Today, the Fire Protection Branch of the MOF takes the lead role in fighting wildfires.

There have been a number of serious interface fires in the history of the province. The 1886 fire in Vancouver was the result of a slash fire that grew out of control. In 1903, and then again in 1908, forest fires swept into Fernie, with the latter destroying the community in 90 minutes and leaving the 3,000 residents homeless. In 1994, the Garnet fire near Penticton destroyed 18 homes and caused 3,500 people to be evacuated.

The most recent forest fire in BC that has seriously impacted a community is the 1998 Silver Creek Forest Fire near Salmon Arm, which destroyed 40 homes and lead to 7,000 people being evacuated.

Present Local Government Measures

Today in BC there are numerous subdivisions that could be destroyed by uncontrolled wildfires on adjacent forest lands and the demand for development in or adjacent to forested areas remains high. Local governments have the ability to take preventative measures to address interface and wildfire concerns within the powers given by the Local Government Act and other enabling legislation. This chapter provides an overview of the type of tools that have been applied in BC.

Covenants

Section 219 of the Land Title Act permits local governments to obtain restrictive covenants in matters of public interest. One of the most popular methods for local governments in BC to address interface fire hazard concerns is to obtain a restrictive covenant at the time of either subdivision or rezoning. A number of communities in BC currently use this method including City of Kamloops, Central Okanagan Regional District, District of Salmon Arm and City of Vernon. Samples of these covenants can be found in Appendix A.

The covenants used by the City of Kamloops are obtained at the time of subdivision of a property that is located in an interface fire hazard area as determined by the MOF. There are five key elements in the covenant:
1. All wooden shake and shingle roofing materials must meet Class “B” fire rating requirements.
2. The City is not to be held liable in the event of a wildfire/interface fire.
3. Fuel reduced buffers around residential buildings are maintained.
4. All eaves, attics, decks and openings under floors are screened.
5. All wood burning appliances are installed with approved spark arresters. (A priority agreement is also obtained.)

Additional measures such as residential sprinkler systems may be required.

The Regional District of Central Okanagan requires that a wildfire report be prepared by a Registered Professional Forester (RPF) when a subdivision creates large lots or an eight hectare remainder is adjacent to a newly created lot that is one hectare or smaller in size. The report produced by the RPF addresses the risk of wildfire/interface fire for the proposed lots and recommends fuel reduction measures. This report is appended to a restrictive covenant that must be registered at the time of subdivision.

The covenant required by the District of Salmon Arm requires clearing in accordance with National Fire Protection Association (NFPA) standards, in particular, Standard 299 (See Appendix A).

The City of Vernon requires a covenant at the time of building permit. The purpose of this covenant is to ensure that the defensible space around the residence is defined and maintained.

DEVELOPMENT PERMITS
Despite changes in 1998 to the Local Government Act, this DP tool for wildfire hazards has not become well used by local government. The Central Okanagan Regional District has prepared a discussion paper on the topic.

A model DP bylaw is provided in this document for other communities to consider. The DP areas are defined as those that ranked as either high or extreme fire hazard areas. The bylaw also contemplates greater controls in larger developments.

BUILDING BYLAWS
It is possible to integrate fire suppression methods into Building bylaws by requiring additional improvements to new housing such as roof sprinklers, fire resistant building materials, and enclosures of open spaces where embers may land. The City of Vernon requires that any new residential structures, located in areas identified as having high risk for interface fires, be constructed using fire resistant materials on the exterior or else have an internal/external sprinkler system.

The BC Building Code 1998 does not address building standards for areas of high risk from interface fires.

Frequently, Building Departments refer to the NFPA standards and apply the Section 299 standard. However, the enabling tool is typically a covenant or a condition of subdivision approval as opposed to integration of the standards into the local building bylaw.

SERVICING AND ENGINEERING STANDARDS
Subdivision and/or servicing bylaws can contain specific requirements to address wildfire hazards. These measures include firebreaks,
evacuation routes, and fuel reduction through clearing driveways and around residential structures.

**FIRE PROTECTION MEASURES**

Most local fire departments focus their training and equipment towards fighting structural fires. When a forest fire threatens an incorporated area, the MOF Operation Guideline #1.06.01 allows for communities in BC to request the assistance of the Ministry in fighting forest fires.

**LESSONS FROM OTHER INTERFACE FIRES**

The Provincial Government and the MOF have expended considerable effort on reviewing their response to the Silver Creek fire. Local residents felt that the Silver Creek fire should have been extinguished before it reached Silver Creek and filed a complaint with the Ombudsman office. The report produced by the Ombudsman (“The Silver Creek Fire Review”, May 1999) could only review the administrative fairness of what occurred during the fire. The recommendations made included ensuring timely and adequate information be made available during firefighting and that reviews are done on all major fires but generally the report found that the MOF had acted in accordance with its mandate and responded to the fire appropriately.

In June of 2001, the office of the Auditor General released its report: “Managing Interface Fire Risk” which is an audit of how governments manage the interface fire risk in BC. The report gives an excellent overview of not only the role of the provincial government but of the role that local governments can play. This report is available at the Office of the Auditor-General’s website: www.bcauditor.com/AuditorGeneral

A key finding was that governments (local and provincial) need to be better prepared for interface fires. Although local firefighters and emergency responders were well aware of the risk from interface fires in their communities, there was an inadequate level of awareness by other key local government officials. The report noted that local firefighters require improved access to the training and equipment necessary to fight interface fires. The report cited several areas that communities were currently deficient in emergency planning such as a lack of evacuation plans, inadequate emergency plans, no testing of emergency plans and a lack of recovery plans.

The report recommends the creation of an Interface Fire Committee at the provincial level. This Committee should be tasked with clarifying the roles and responsibilities of the various government agencies and levels of government in addressing the interface fire hazard. It should also encourage self-assessment by individual communities of their interface fire risk, and for those communities with moderate to high risk, it should encourage community action to mitigate the risk from interface fires.
Tools used at the time of subdivision, planning, building and servicing are typically preventative measures applied by local government with the intent of saving lives and property. Public education and community involvement can also be useful tools that can lead to homeowners in interface fire risk areas undertaking their own preventative measures thus negating the need for local government intervention. Both of these types of tools will be reviewed in this chapter. Finally, there is discussion of fire protection and emergency measures that should be taken if an interface fire occurs.

PLANNING TOOLS

DEVELOPMENT PERMITS

Development Permits and designated Development Permit Areas are commonly used planning tools in B.C. A 1999 Survey by the (then) Ministry of Municipal Affairs (now the Ministry of Community, Aboriginal and Women’s Services) found that 90% of the responding municipalities and 83% of the responding regional districts make use of DP areas and DP’s. Since 1998, local governments have been able to establish DP areas for wildfires in their Official Community Plan (OCP). (For readers not familiar with the Local Government Act, it should be noted that DP areas must be designated in an OCP).

Section 919.1 (1) of the Local Government Act provides for the designation of DP areas for wildfires. For lands designated under this section, the Local Government Act gives local governments the authority to establish guidelines pertaining to siting and vegetation control amongst other things.

Before issuing a development permit under this section, a local government may require the applicant to provide, at the applicant’s expense, a report certified by a professional engineer with experience relevant to the applicable matter to assist the local government in determining what conditions or requirements under subsection 7.1 it will impose in the permit.

IMPLEMENTATION OF DEVELOPMENT PERMIT AREAS

Sec. 919.1 of the Local Government Act requires local governments to designate DP areas within an Official Community Plan. The OCP must describe the special conditions or objectives that justify the designation, and specify guidelines with respect to the manner by which the special conditions or objectives must be addressed. The MOF has developed an Interface Fire Hazard Assessment Form to use in assessing the risk of interface fires. It is a cumulative point rating system based on a number of determinants such as topog-
raphy and forest fuels. The total value of the points is broken into four classes of risk: Extreme, High, Moderate, and Low.

The MOF has assessed many parts of the province using this methodology and has prepared computerized mapping showing the hazard rating. Although the assessment is done on a broad scale that might not be applicable in incorporated areas, local governments can undertake an assessment of their community using the MOF methodology. It is recommended that the local government first consult with a representative from the MOF to ensure that the methodology is clearly understood. The local fire-fighting service should also be involved in the process to assist in rating the fire suppression determinants.

Once the hazard areas are mapped, local government then has to decide which classes of risk are to be included in the development permit areas, i.e. extreme, high, and/or moderate. The DP areas are then designated by map and supported with guidelines in the community’s OCP. The local government’s bylaws must reflect the guidelines in the OCP. Recent changes to the Local Government Act have made it possible to have the bylaws contained in the OCP. It is also up to the local government to determine what type of development will be subject to a DP process and what will be excluded. For example, a local government may choose to include all new single family dwellings in the development permit process but exclude renovations and additions to existing dwellings.

When someone approaches the local government for a building permit, subdivision application, or a rezoning application to undertake development on lands that are within the DP area, the local government then has the ability to request that a development permit be applied for. The development will then be subject to the terms and conditions that local government has specified in its bylaws and OCP for development in DP areas for interface fires. The Development Permit is attached to the title of the property.

Development Permit Areas are an effective tool in that the OCP guidelines are a clear articulation of the Council’s policy, and all types of development, e.g. subdivision, rezoning, and building, trigger the requirement for a development permit. The weaknesses of this tool are that it only addresses new development, and it places the onus on local government to develop guidelines and amend its bylaws for compatibility with these guidelines.

COVENANTS
Section 219 of the Land Title Act permits local governments, including regional districts, and local trust committees under the Islands Trust Act, to request Section 219 covenants, which may be positive or negative in nature and may be used to manage how land is subdivided and built upon.

Municipal governments usually make these covenants a condition of a development permit, subdivision approval and/or building permit. The covenants can be used to address interface fire protection measures such as the clearing of lands from around residential structures, the on-going maintenance of vegetation, types of building materials, construction design and criteria (e.g. Screening of all openings), and the installation of sprinklers. The approach used by the City of Kamloops is to require conformance with NFPA Standard 299: Standard for Protection of Life and Property from Wildfire at the time of building.

There are some limitations to the use of covenants. Lots and structures that currently exist
Example of Interface Community Fire Hazard Mapping

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are not subject to the covenants unless the owners approach local government for permission to make improvements that allow local government to request the covenants.

Covenants are difficult to enforce over time. This is of particular concern as there is a need for on-going vegetation control and fuel reduction in the area surrounding residences. There are a number of approaches that may assist in the ongoing success of this covenant tool:

1) Use a fining system, where the covenantor (i.e. the local government) can fine the covenantee (property owner) for every day that the covenant is violated. This is achieved by using a rent clause in the covenant.

2) Make adjacent properties party to the same covenant. While this method was used in the District of Saanich's Broadmead neighbourhood for the protection of trees, this approach may not appeal to all local governments as it encourages concerned neighbours to report on their neighbours.

3) Include a clause that requires reports on a regular basis on the status of the vegetation surrounding residential buildings. As an incentive, an annual rent charge is part of the covenant. This rent is suspended if the report is provided. (The rent charge can be applied to the property taxes if not paid.)

RURAL LAND USE BYLAWS

Rural Land Use Bylaws (RLUBS) are a planning tool that is available only to Regional District governments. While RLUBS cannot contain development permit areas, they do allow for the combining of zoning, subdivision control and servicing standards all in one bylaw.

However, RLUBS can only cover parking requirements, heights of buildings, lot coverage ratios, screening and fencing, floodplain, home occupations and signage. There is little of relevance to wildfire.
RECREATION PLANNING  
Local governments can use park planning and trail planning to minimize the risk of interface fires. By developing parks and trails at the interface instead of houses, firebreaks are provided. Also, by designing trails to accommodate fire response vehicles, fire department response to an interface fire can be facilitated.

Example of Community Planning using parks as buffers to interface wild fires.
ENGINEERING TOOLS

INFRASTRUCTURE PLANNING
When planning development in a high-risk area for interface fires, it is important that consideration is given to measures that will provide for the protection of lives and property in these areas should there be a fire. For example, roads not only provide access for fire fighters and their equipment but also allow for the safe evacuation of the residents. The suppression of fires requires considerable amounts of water from reliable sources. Overhead utilities can cause fires. This subject matter is dealt with in much greater detail in some of the publications found in Appendix B of this report and could be a valuable resource for directing development in the rural-urban interface.

SUBDIVISION AND SERVICING BYLAWS
It is possible for local governments to use their subdivision and servicing bylaws to address the risk from interface fires. Pursuant to Sec. 938 of the Local Government Act, local governments may regulate by bylaw the provision of works and services to lands that are being subdivided. This authority extends to standards for the location, dimensions, alignment and gradient of highways, and the types of servicing, including underground wiring, water distribution, and fire hydrants. The Approving Officer would request compliance with these standards as a condition of the approval of any subdivision.

Subdivision and servicing bylaws may also be different for different areas. If a local government identifies areas of high risk for interface fire, its development and subdivision bylaws could establish standards that were specific for subdivision in those areas. In addressing the interface fire risk, it is important when creating new subdivisions in high-risk areas that there be evacuation routes, fire breaks, underground wiring, and adequate water service.

BUILDING STANDARDS AND BYLAWS

BRITISH COLUMBIA BUILDING CODE
The BC Building Code 1998 does not contain any specific material on addressing construction in areas at risk for an interface fire. It should be mentioned that the BC Building Code cannot be varied by local governments, nor may they have any bylaws that are inconsistent with the BC Building Code (Sec. 692 (3) of the Local Government Act). If changes were made to the BC Building Code to include specific requirements for construction in high risk areas for interface fires, then any flexibility that local governments may now have by implementing their own bylaws in this regard would be nullified.

LOCAL BUILDING BYLAWS
Pursuant to the Local Government Act, it is possible for local governments to include in their own building bylaws specific to areas at high risk for interface fires. Section 694 (1) allows local governments to regulate the construction of buildings to be resistant to fires.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
In 1991, the NFPA, a US based organization, developed NFPA Standard 299: Protection of Life and Property from Wildfire. This standard was developed in response to wildfires that destroyed 1,400 homes and killed 44 people in the US in 1985.

The standard contains a methodology for analyzing the risk from wildfire in the rural-urban interface. Although similar, the methodology described in this standard is not as detailed or applicable to BC as the ones found in “Beware Prepare Community Planner” and
“FireSmart”. The NFPA standard also covers the topics of fuel modification planning, infrastructure planning, signage standards, emergency water supplies and structural design and construction techniques. There is also a section on Fire Prevention and Public Education. Again these topics are covered in greater detail in “Beware And Prepare” and “FireSmart”.

Local governments who do not wish to prepare detailed building bylaws could append the NFPA Standard 299 to their building bylaws and request compliance with the bylaw. It would still be necessary for high interface fire risk areas to be identified for those standards to be applied.

**Fire Prevention and Protection Measures**

**Firefighting**
While the mandate for fighting forest fires rests with the MOF, fires in incorporated areas are the responsibility of the local government authority and its fire fighting resources. It is the Local Government Act that authorizes municipal councils to establish fire departments with the responsibility for fire prevention and suppression. This act also provides Councils with the authority to inspect for conditions that may cause fires and to require the removal of fire hazards. Municipal councils also have the authority to enact bylaws that control the use of fire, e.g. outdoor burning.

The first line of defense a community has against interface fires is its own municipal fire department. However, local fire departments are typically trained and equipped to fight structural fires and traditionally suppress this type of fire with large volumes of water from hydrants or tankers. The access to the site of an interface fire can be a challenge, even impossible, for conventional urban fire fighting equipment. The size, heat and fast-spreading nature of wildfires can challenge a municipal fire department and compromise the safety of the fire fighters.

The MOF specializes in fighting wildfires and has the appropriate types of equipment, such as air tankers, helicopters and trained first attack teams. However, an interface fire can involve structural fires which present a variety of challenges for this type of fire fighting team such as domestic water supplies, pressurized gas lines, power lines, and hazardous materials.

In BC, if the Fire Chief responsible determines that an interface fire cannot be controlled with a department’s resources, the Chief can call upon the MOF for assistance in accordance with Sec. 89 of the Forest Practices Code of BC. Local fire departments, MOF, RCMP, BC Ambulance Service, OFC and PEP officials may all become involved. These agencies may form a unified command structure to determine objectives, identify strategies, establish communication links and assign tasks and functions to protect life and property.

**Operational Guidelines**
Operations Guideline #1.06.01 of the MOF identifies the roles and responsibilities of the Ministry and local fire fighting agency as well as compensation issues when there is a wildfire or interface fire. (Local governments may also have mutual aid agreements with nearby communities to provide mutual assistance when there is a fire beyond their department’s capabilities to fight.)
FIRE PREVENTION
Many fire departments have one officer who is responsible for the prevention of fires in the communities through fire safety inspections and public education. This officer can have a vital role in educating the community’s residents about the potential risk of interface fires.

PUBLIC EDUCATION AND COMMUNICATION TOOLS

Langford’s experience is summarized in Chapter 4 of this report and provides an example for other communities to use. However, it is each local government’s role to decide how to conduct a public education program based on the severity of the interface fire hazard risk in its community, the nature of the community and the resources available to the local government. Involving and informing the public of the interface fire risk is crucial in garnering public support for any measures that government may choose to enact as well as assisting in empowering individuals to undertake their own measures to protect their homes.

Example of Tools used for Public Education purposes

Clear understory of native vegetation away from home to protect from Interface Fire
Public education does not necessarily have to be expensive as a number of government agencies have excellent communication tools on interface fires that can be accessed at no cost by local governments. Appendix B contains a listing of the materials as well as the listings of a number of websites which contain valuable information on the interface fire hazard. Two of the websites (MOF in Penticton and in the US) allow individual homeowners to conduct an assessment of their homes for interface fire risks.

**Emergency Preparedness**

There are four key components in Emergency Planning:

- Prevention programs
- Preparedness programs
- Response programs
- Recovery and reconstruction programs

Local government has a role to play in all of these areas. Appendix B addresses this in more detail.
Due to the complex nature of interface fires, a multi-agency response is usually required both in prevention as well as response. The roles of the various agencies involved in fighting interface fires and those that can play a role in planning in high risk areas are described in Appendix B. The relationship of these agencies, including local governments, is shown in Figure 1.

As the figure illustrates, the issue of interface fires crosses departmental and governmental boundaries. To effectively address the hazard, coordinated and cooperative efforts are required. In addition, it is important to note that local government can access resources from provincial government agencies (see appendix B) to address the issue.
Figure 1 - Agencies involved in Interface Fire Issues

Provincial Government

- Ministry of Water, Land & Air Protection
  - Fuel Modification
  - Risk Mitigation

- Provincial Emergency Program
  - Emergency Preparedness
  - Recovery

- Ministry of Forests
  - Fire Hazard Mapping
  - Fire Fighting

- Ministry of Transportation
  - Subdivision approval in Regional Districts

- Ministry of Community, Aboriginal & Women's Services Office of the Fire Commissioner
  - Fire Safety Legislation
  - Public Education

Local Government

- Local Fire Department
  - Training
  - Public Education
  - Prevention
  - Fire Fighting

- Planning Department
  - Site Planning
  - Regulation (D.P. Areas, Covenants)
  - Public Education

- Engineering/Public Works Department
  - Site Servicing
  - Covenants
  - Public Education

Wildland Interface Fire
This chapter summarizes, in model format, the Langford Interface Fire Hazard Project (IFHP) so it may be used as a guide for other communities. It begins where the local Council authorizes the preparation of an interface fire hazard plan. The following figure labeled “Interface Fire Hazard Planning Model” identifies the major steps in the preparation of an interface fire plan. A brief discussion follows, for the purpose of elaborating on certain aspects of the process.

**Preparation**

Prior to commencing with committee work on the Interface Fire Hazard Project, staff conducted a considerable investigation, which included a literature review, internet review, and discussions with other local governments that have experience with interface fire hazard planning. Other communities may not need to undertake such extensive preparatory work; however, for those that are interested in reviewing this information a bibliography of key publications and websites is provided in Appendix C to this report.

It is recommended that local government staff establish a working relationship with the local MOF staff and the local fire departments prior to establishing a committee. Their support of the project throughout the process not only adds to the accuracy of the mapping, but also to its ongoing implementation.

**Committee Membership in Structure**

As with any planning project, it is important to have a process champion to work with staff. The chair of the Interface Fire Hazard Planning Committee is a good post for the champion to occupy. The champion should be a notable figure in the community, such as a Mayor, Councillor, Board Member, or Fire Chief. As there are a number of local government departments that may be included in implementing a plan, it is recommended that the Committee include staff from Planning, Engineering, Building, and Fire Departments. It is also recommended that residents from “high risk” interface fire hazard areas be invited to sit on the committee. It is also at this point in the process that communication plans should be established with Council and the public.

**Mapping the Hazard**

The Provincial Ministry of Forests has completed some interface fire hazard mapping at various locations throughout the province. These interface fire hazard maps exist to varying degrees of completeness, depending on the information that was used in their compilation and should not necessarily be taken as accurate. These maps are, however, appropriate as a starting point for mapping local fire hazard areas. The mapping is available in a digital format (from the Ministry) and was used to plot base cadastral and topographic mapping in Langford.
Direction from Council

Preparatory Work
- Identify key informants (ie: Ministry of Forests);
- Conduct literature review, internet review and commence discussion with key informants;
- Prepare a draft "Terms of Reference" for Interface Fire Hazard Committee

Establish Committee
- Appoint Chair;
- Invite Community/Public Representatives;
- Establish Terms of Reference;
- Establish communication plans with Council and Public

Mapping the Hazard
- Obtain Interface Fire Hazard Map from Ministry of Forests;
- Integrate community mapping and Ministry of Forests Information;
- Create/complete local interface fire hazard mapping

Communication and Education
- Gather educational material from key informants (ie: Office of Forest Protection Branch);
- Create display boards or other visuals for Public Open House (ie: 5 "W's" of Interface Fires, Homeowner Actions, Local Government Actions, Process Description);
- Present research and findings to Community's Fire Department;
- Present research and findings at a Public Open House;
- Integrate feedback from public and Fire Department by amending mapping and displays before Wildfire Plan is drafted

Formalize Interface Fire Hazard Plans
- Prepare amending bylaw to add Development Permit areas and Development Permit guidelines to Official Community Plan;
- Prepare Resource Package for Approving Officer and Building Inspections;
- Prepare Information Packages for Homeowners;
- Establish an Ongoing Education Strategy;
- Consider future planning exercises
Using the information from the MOF as well as their criteria for identifying the degree of hazard (see Appendix C), the local interface fire hazard areas can be identified with considerable accuracy, particularly when using a committee review process that uses local knowledge and members from the fire departments. The Ministry uses topography and forest cover to establish interface fire hazard area boundaries, however, in the settled area, the amount and type of development are also significant factors. The following criteria were used to augment the MOF criteria to establish interface fire hazard areas (fire hazard polygons):

1. Type of Development—Highly urbanized, suburbs, rural, isolated dwellings (significant man-made features such as the Trans Canada Highway were also used to delineate boundaries).
2. Topography—Flat, gently rolling, steep, gullied.
3. Vegetative Cover—Type: coniferous, deciduous, mixed (and density, sparse, heavily wooded).

A map scale of 1:10,000 using cadastral, topographic, and street information is useful for identifying the fire hazard polygons. Further, aerial photography was also found to be useful in developing and identifying the polygons.

Members of the Langford Interface Fire Committee examined the MOF evaluation sheets. Ratings were assigned for the consistent factors on each form. The Fire Department was also asked to evaluate their response time to each of the polygons and to provide information on fire history, availability of water for firefighting purposes, and access for emergency vehicles.

Staff members should liaise with MOF staff for more complete information on how to use the evaluation sheets for identifying the polygons. Prior to finalizing the interface fire polygons, it is recommended that each of the areas be “ground truthed” to ensure that the mapping is accurate.

Some discretion needs to be used in the precise location of boundaries. For example, some areas rated as “extreme” or “high” for fire hazard could be adjacent to existing urban areas. Because of the proximity of undeveloped areas to the urban areas and the fuel that some types of buildings can provide for wildfire, it was determined that the high risk fire hazard boundaries should be extended into the residential areas by 50 to 100 m if there were no significant roadways separating the high risk fire hazard areas and development. It is necessary in these circumstances to go and see the actual type of vegetative cover in the high-risk polygons and the type of buildings and spatial separations in the developed areas. The result of the mapping process in Langford is shown on Map 1.
COMMUNICATION AND EDUCATION

Educational materials and handouts for public use are available from the MOF. The OFC also has available a videotape on interface fire hazards. These materials were of value in the open house that Langford held on the interface fire hazard project. It is recommended that the open house also be staffed by local fire department representatives and a representative from the MOF, if possible. This not only adds credibility to the project, but also enables those experts to address specific concerns and questions that members of the public might have on fire hazard and prevention.

In the Langford case, prior to proceeding to the public open house, a test run of the presentation materials was given to the members of the District’s Volunteer Fire Department, whose feedback was valuable.

At an open house held in Langford on May 30, 2001, approximately 50 people from the areas identified as high to extreme risk fire hazard polygons attended. Staff made use of a comment sheet during the open house, and the results of those comments are attached as Appendix D. The results of the open house showed that there was community concern with the possibility of interface fires and that support was made clear for the District to address interface fire hazard in considering new development. It was also made clear that guidelines were not appropriate for existing residences in high to extreme risk areas as existing residents did not want to be burdened with regulations that compelled them to remove vegetative fuel around their properties or change building exterior materials to reduce risk. Residents were, however, very supportive of such actions for new development.

FORMALIZING INTERFACE FIRE HAZARD PLANS

Based on the information gathered throughout the process, staff prepared mapping for designating high and extreme risk interface fire hazard areas as DP Areas for protecting development from hazardous conditions. DP Guidelines and Objectives were also prepared (see Appendix E).

In order to support the success of the Development Permit Regulation, a resource package for the District’s Approving Officer and building inspectors was prepared and included items such as sample restrictive covenants and process suggestions to ensure that requirements in the covenants were enacted at the time of development within the hazardous areas.

In addition to the regulatory aspects, part of the plan implementation is to use ongoing public information strategies. This is being done in two principle ways:

1. Providing information from the MOF to homeowners in high-risk areas through the District’s Planning Department and the District’s Fire Department and raising awareness of the issue and options for addressing the hazard with the residents.

2. Providing a synopsis of the interface fire hazard issue and homeowner action in mass public mail outs (e.g., in the annual tax notices, or in local newspapers).

One significant challenge in protecting development from the interface fire hazard is how to rationalize that goal with environmental protection goals. Clearly, the type of development within or adjacent to high to extreme interface fire hazard areas plays a significant
role in how environments in those areas are impacted.

Rural or suburban sprawl, such as one- to five-acre residential subdivisions, not only requires a large number of roads per dwelling unit compared to more dense urban development, but also causes greater environmental damage particularly if interface fire hazard mitigation measures are followed such as the removal of vegetative fuel around buildings.

The resulting clearing of trees and ground cover fuel for each dwelling unit has a significantly greater environmental impact than the clearing required for more dense forms of residential development on a per dwelling unit basis. Therefore, methods such as clustering of housing in more dense developments rather than rural sprawl may be seen as an appropriate approach to balancing the need to protect development from hazardous conditions and the need to protect the environment.

**Example of Preventative Measures**

- Maintain a 3m. clearance between branches and powerlines.
- Clean combustible materials away from propane tanks.
- Remove debris from below slotted deck surfaces.
- Use fire resistant siding material.
- Enclose undersides of overhangs with non-combustible materials.
- Clear brush under taller trees.
- Regular general clean-ups.

Priority Zone 2

Priority Zone 1

Priority Zone 2

Example of Preventative Measures
ASSESSING THE RISK

Prior to local governments undertaking any initiatives to address the interface fire risk, it is imperative to determine the extent and severity of the risk. This determination could affect the type of measures, if any, that would be implemented. A good starting point for other communities is to contact the appropriate fire center of the MOF or to discuss the matter with the local fire department. If it appears there may be a risk, then a local government may assess the risk from interface fire in its community using the MOF Interface Fire Hazard Assessment Form. Although the Ministry has mapped much of the province for interface fire risks, the level of detail in the mapping for certain areas may not be adequate, and it may be necessary to redraw the mapping, using more detailed local information.

CONSULTATION

As with any matter, there are a number of parties within each community that can be consulted. Local government representatives, both elected and staff, have a good understanding of what consultative approach would best work in their community.

It is important in the consultation process to make the distinction between existing and new development as different tools and different approaches are applied to these two types of development.

PARTICIPATION

Given the complexity of interface fires and the multifaceted nature of the approach that needs to be examined in addressing the hazard, it is important to involve the broadest possible range of departments within the local government. The key departments are the Building, Engineering, Fire, and Planning. Representation from key interest groups such as the local PEP group, the MOF, the development community, Council members and residents who live in high-risk areas is also essential to ensure a comprehensive examination of the hazard.

COMMUNICATION STRATEGY

It is recommended that prior to any major decisions being made or bylaw drafted, that there is a dialogue with the members of the community. A strategy for communicating with the public needs to be decided upon depending on the extent and severity of the risk.

In communities where only a few homes are affected, it might be possible to have representatives of the Fire Department conduct individual assessments of properties to determine their risk from interface fires. Using material available from the MOF, the Fire Department representative can make recommendations on measures that individual homeowners can take to protect their homes.
Where there are greater numbers of properties involved, it is necessary to have the message more widely spread. There are a number of ways of inviting public comment: advertisements, focus groups, open houses, public information meetings, information letters mailed with tax notices to name a few.

Local governments should ensure that they have the appropriate materials on hand to distribute to interested members of the public. There are a number of publications available from the MOF and the OFC, including videos that can be borrowed.

**Planning Implications**

A major component of dealing with the interface fire risk is prevention. A number of techniques have been discussed in this report such as the use of Section 219 covenants, Development Permit Area designations and Permits, Building Bylaws, Subdivision Standards, etc. It is also appropriate to consider the location and form of development in or near high or extreme risk interface fire hazard areas. Councils may consider the use of development clustering policies in their OCPs and zoning bylaws to reduce the impact of planning to the environment that results from rural sprawl (e.g., small acreage subdivision) and to minimize the risk of interface fire damage to property and lives.

The Development Permit process has not been well used to mitigate the interface fire hazard in British Columbia. This report provides an example of DP guidelines in bylaw format for other communities to use.

Once cognizant of the interface fire hazard issue, local governments can use the site planning process to find ways of designing safe new neighbourhoods. For example, the placement of new parks and roadways may also act as effective firebreaks. The design of primary trails to accommodate smaller fire response vehicles may facilitate rapid response to interface fires before they become major fires.
## APPENDIX A

### SAMPLES OF BYLAWS AND OTHER LEGISLATIVE TOOLS FOR LOCAL GOVERNMENTS

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APPENDIX B

PROGRAMS, ROLES AND RESPONSIBILITIES

B.1 Emergency Planning Programs

Prevention Programs
Prevention programs are designed to prevent or mitigate the effects of emergencies and include measures such as building codes, zoning (e.g., clustering of development), land use and public education.

Preparedness Programs
The Province has legislation in place to ensure that all local governments have Emergency Preparedness Plans. An emergency plan must address the potential emergencies that could affect the community. The local government must have the capability of implementing its plan.

The British Columbia Inter-Agency Emergency Preparedness Council is an inter-agency committee created to oversee the province’s emergency planning activities. The lead agency in emergency planning is PEP, as part of the Public Safety and Regulatory Branch within the Ministry of the Attorney General. It has offices in Terrace, Prince George, Vernon, Kamloops, Nelson and Victoria. The enabling legislation is the Emergency Program Act 1996 supported by BC Regulations Emergency Program Management Compensation and the Financial Assistance Compensation Local Authority Emergency Management Regulation.

Response Programs
Under the Emergency Program Act, local governments must provide the initial response to most emergencies and provide overall direction and control of the situation. The Council or Mayor of a community can declare a state of emergency. Assistance may be requested from neighbouring communities or provincial government agencies. If an emergency is within provincial jurisdiction, beyond the capabilities of the local government or catastrophic in nature, then a provincial state of emergency is declared and the province takes the lead role.

In the event of a major disaster or emergency, PEP, in cooperation with other ministries, will open a provincial regional emergency operations center from which it will coordinate the provincial response and provide liaison with local governments and federal agencies. PEP also can assist in the coordination of recovery efforts. It administers the Disaster Financial Assistance Program, which replaces or restores items essential to a home, livelihood or community.

In the case of an “urban-rural” fire, the Ministry of Community, Aboriginal, and Women’s Af-
fairs through the OFC is responsible for coordinating fire fighting in a declared emergency. The MOF is responsible for providing personnel, equipment, supplies, telecommunications equipment, air support and weather information to assist in emergency response operations.

In the case of a “wildfire” which includes “interface fire”, the MOF is the key ministry with the primary responsibility for conducting the response operations. The Ministry is also responsible for preparing the emergency response plan for these types of emergencies in coordination with PEP. For more detailed information on Emergency Preparedness, visit the agency’s website (www.pep.bc.ca) or for a listing of its publications refer to Appendix B. Understanding the roles of each agency is important for a local government to understand its role in responding to an interface fire.

RECOVERY AND RECONSTRUCTION

Interface fires can have a serious impact on municipal infrastructure, cause service interruptions in other parts of the community and be costly to repair. Local governments bear the brunt of reconstruction of services after an interface fire.

The Disaster Financial Assistance (DFA) Program is administered by the Ministry of Public Safety and the Solicitor General through the PEP. Under the authority of the Compensation and Disaster Financial Regulation, the DFA program is intended to help the victims of all types of disasters including interface fires. The fund pays up to 80% of the cost of repairing the damage caused by a disaster up to a maximum of $100,000 with a $1000 deductible.

The coverage extends to the reconstruction of municipal infrastructure with the important exception that the DFA does not provide coverage for loss or damage for items for which insurance was reasonably available. Another important exception is that there is no coverage for structures that are not constructed or placed in accordance with any restrictive covenants that might be registered on the property. This exemption could affect property owners who do not comply with the terms of restrictive covenants local governments have had registered for the purposes of preventing damage from interface fires.

HOME INSURANCE

It has been suggested that adjustments to insurance company premiums are the key to encouraging more responsibility for addressing interface fire hazards. At present, each insurance company uses its own grading and rating criteria to determine risk and hence, insurance rates. Typically, coverage by a fire department and the distance to the nearest hydrant are the factors used by insurance companies. There is no consideration given for development in areas of high risk for interface fires. The Insurance Bureau of Canada is not aware of any discussion in the industry to change its rating methodology to include the risk of interface fires, * although the Interface Fire Report by the Office of the Auditor-General noted that the Insurance Bureau through the Institute for Catastrophic Loss Reduction is trying to develop an understanding of the wildland-urban interface fire problem in Canada.

*Telephone conversation with Lindsay Olsen of the Insurance Bureau of Canada (1-604-684-3655)
B.2 Roles and Responsibilities of Government Agencies

MINISTRY OF FORESTS (MOF)

The responsibility for fighting forest fires in B.C. has been with the MOF for nearly 90 years. The current mandate is derived from Sec. 4 (b) of the Forest Act:

*The purposes and functions of the ministry are, under the direction of the minister, to do the following:*

(a) encourage maximum productivity of the forest and range resources in British Columbia;
(b) manage, protect and conserve the forest and range resources of the government, having regard to the immediate and long term economic and social benefits they may confer on British Columbia;

This responsibility for fighting fires is further outlined in Sec. 89 of the Forest Practices Code of BC Act:

**89.** (1) The government may carry out a fire control and suppression operation

(a) on any land, wherever located, if a designated forest official determines that:

(i) the operation is necessary to control or extinguish a fire, and
(ii) forest resources on Crown land or private land are threatened by the fire, or

(b) on land within a local government’s jurisdiction if the local government or a person authorized by the local government requests that the operation be carried out.

(2) If the government causes fire control or suppression operations to be carried out on private land under subsection (1), the reasonable cost of the operations is a debt due the government by the owner of the land, payable on demand.

and supported by BC Regulation 269/95: Forest Fire Prevention and Suppression Regulation, which specify fire fighting and prevention requirements for wildfires.

The Protection Branch within the MOF takes the lead role in fighting wildfires throughout the province. There are personnel at the Provincial Headquarters in Victoria with Fire Protection Centers in Prince George, Smithers, Williams Lake, Kamloops, Castlegar and Parksville.
ASSISTANCE OFFERED TO LOCAL GOVERNMENTS BY MOF

In times of need, the MOF will assist local fire departments in fighting wildfires and interface fires. Local fire departments will respond in kind.

The Ministry has a number of publications relevant to local governments, which are available at District and Regional Offices of the Ministry of Forest. These include the “Beware and Prepare Community Planner”, the “Rural and Forest Home Wildfire Risk Meter” which allows homeowners to assess the risk to their home from a wildfire and a number of other brochures for the public.

INTERFACE FIRE MAPPING

The Fire Protection Centers throughout the Province compile the necessary baseline data to produce mapping which indicates the risk for Interface Community Fires throughout the Province. Using responses obtained from local governments on fire suppression capabilities, the Ministry prepares an interface community fire hazard form for each fire hazard area (polygon). Also included in the Interface Community Fire Hazard Form is information on thickness of litter and debris on the forest floor, topographical features, and recreational use. Other factors include frequent winds, south and western exposures, large-scale development, railway and utility activity in the interface area.

If a local government contacts the Fire Protection Center in its area, the Center can arrange for its interface fire mapping to be sent on a compact disk. At the current time, Autocad Map 2000 (AutoCAD with GIS functionality) is required to access the data.

OFFICE OF THE FIRE COMMISSIONER (OFC)

Part of the Ministry of Community, Aboriginal and Women’s Services (MCAW), the OFC is the senior fire authority in the province for fire safety and prevention. Its areas of responsibilities include fire safety legislation, public education, training and certification, fire reporting, services and information and emergency response.

The OFC has the legislated authority to issue and enforce evacuations of areas or buildings when wildfires threaten communities.

The Head Office is in Victoria with four regional offices in Kamloops, Prince George, Cranbrook and Victoria.

MINISTRY OF TRANSPORTATION (MOT)

In unincorporated areas of the province, the MOT is the approving agency for subdivisions with the recent exception of the Thompson-Nicola Regional District, which assumed responsibility for this function in its regional district as of January 1, 2001. Headquartered in Victoria, the Ministry has six regional offices and twenty-three District Offices throughout the province.
Each regional office has a Provincial Approving Officer who is the approving authority for subdivisions in unincorporated areas.

Typically, the Provincial Approving Officer, as part of the review process of any request for subdivision, makes referrals to interested provincial and federal agencies, the appropriate Regional District, any improvement Districts as may be necessary and the agency that will be responsible for fire-fighting. Where there is a volunteer fire department, it is given the opportunity to comment on the fire fighting aspects of the proposal. Where there is no coverage by a volunteer fire-fighting department, then the referral is sent to the MOF who are responsible.

If a Regional District were to request the Provincial Approving Officer to take the risk of interface forest fires into consideration, the Provincial Approving Officer may request the developer to enter into a covenant. However, this would only be done if the Regional District were willing to be party to the covenant, as it will end up being the agency responsible for enforcing the covenant. A covenant could cover safety aspects such as developing and maintaining a firebreak and the appropriate use of construction materials, which a Regional District through its authority over building construction could then monitor.

In an area where the MOF is responsible for fighting fires, the MOT will likely refuse an application that the MOF identifies as being at high risk from interface fires as neither provincial agency has the resources to enforce a covenant.

**MINISTRY OF WATER, LAND, AND AIR PROTECTION (MWLAP)**

The Ministry of Water, Land and Air Protection (MWLAP) is responsible for the management, protection and enhancement of British Columbia’s environment. This includes the protection, conservation and management of provincial wildlife, water, air and land resources; the management and allocation of Crown land; and the protection and management of provincial parks, recreation areas and ecological reserves.

The ministry’s mandate is derived from Sec. 4 of the Ministry of Environment Act, which lists the purposes and functions of the ministry including the following:

(a) **to encourage and maintain an optimum quality environment through specific objectives for the management and protection of land, water, air and living resources of British Columbia;**
(b) **to manage, protect and conserve all water, land, air, plant life and animal life, having regard to the economic and social benefits they may confer on British Columbia;**
(i) **to plan for, coordinate, implement and manage a program to protect the welfare of the public in the event of an environmental emergency or disaster.**
In terms of interface fires, the support of this Ministry can be critical for allowing the necessary clearing for fuel modification when the proposed building sites are in an environmental sensitive eco-system such as a riparian area. This type of clearing can be contrary to the goals and objectives of the Ministry, as it typically requires covenants to prevent the removal of any vegetation within 15 metres of water bodies. The approval of the Ministry would not be necessary when there are no environmental sensitive areas or habitat issues to be addressed.
APPENDIX C

REFERENCE MATERIAL

C.1 PUBLIC EDUCATION AND COMMUNICATION TOOLS ALPHABETICALLY BY AGENCY

Canadian Forest Service
Pacific and Northern Region

PUBLICATIONS:


Ministry of Forests
Fire Protection Branch
2nd Floor, 2957 Jutland Road
Mailing Address: P.O. Box 9502
Victoria, B.C. V8W 3E7
Phone: 387-5965 Fax: 387-5685
e-mail: Protection.Branch.Office@gems3.gov.bc.ca
Website: www.for.gov.bc.ca/protect

BROCHURES:

Beware and Prepare*
Campfires and Backyard Burning
Defensible Space Planning & Managing your Fire Safe Landscaping*
Evacuation Alerts - What to Do*
Fire Wise Construction*
How to Make Your Forest Home and Property Fire Safe
Individual House Wildfire Hazard Assessment*
Prescribed FIRE in Provincial Parks
Wildland Home Fire Risk Meter*

* Joint publication of MOF and the OFC.
PUBLICATIONS:


VIDEOS:

Office of the Fire Commissioner
Ministry of Community, Aboriginal and Women’s Services
800 Johnston Street
Mailing Address: PO Box 9490
STN PROV GOVT
Victoria, BC V8W 9N7
Phone: (250) 356-9000
Website: www.marh.gov.bc.ca
E-mail: firecomm@hq.marh.gov.bc.ca

BROCHURES:

Beware and Prepare*
Defensible Space Planning & Managing your Fire Safe Landscaping*
Evacuation Alerts - What to Do*
Fire Wise Construction*
Individual House Wildfire Hazard Assessment*
Wildland Home Fire Risk Meter*

* Joint publication of the OFC and the MOF
C.2 **Web sites**

**www.fpoa.bc.ca**
The Fire Protection Officers Association of BC Website – includes links to other interesting sites on topics like alarms, emergency Canada, Fire Prevention Canada

**www.denendch.com/flycolour/wildfire**
The Canadian Wildfire Network designed for people involved in forest fire fighting in Canada.

**www.partnersinprotection.ab.ca**
Developed by a coalition of professionals involved in emergency services, land-use planning, and forest/park management, this website has an interactive online hazard form and an interactive community planner called *FireSmart: Protecting Your Community From Wildfire* in PDF format.

**www.for.gov.bc.ca/protect/safety**
The Provincial Forest Protection Branch site explaining what a homeowner can do to protect their property.

**www.for.gov.bc.ca/protect/prevent/links**
Links to much of the legislation pertaining to fighting forest fires.

**www.smokeybear.com**
For kids aged 6 to 10.

**www.firewise.org**
Presented by the National Wildfire/Urban Interface Fire Organization (US), this site contains information on ordering training videos and interactive material intended to educate homeowners and developers of the wildfire problem. And second, to show homeowners and developers simple steps they can take to make homes built in the wildland safer and more likely to survive a wildfire

**www.fema.gov/nwz00/checklist**
The U.S. government’s Federal Emergency Management Agency’s site. There is a checklist for homeowners on ways to avoid wildfire damage.

**www.pep.bc.ca/management**
The web site of the Provincial Emergency Program

**www.for.gov.bc.ca/protect/Kamloops/Interface/HouseAssessment/IHWHA**
An interactive web page for homeowners to complete an “Individual House Wildfire Hazard Assessment”.

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www.ombud.gov.bc.ca/publications/reports/sc_fire/report_toc
PDF copy of the Ombudsman’s report on the Silver Creek Fire near Salmon Arm.

www.nofc.cfs.nrcan.gc.ca/fire/frn
Research into interface fires and related technical sites.

http://bcauditor.com
PDF format of the Auditor General’s Report “Managing Interface Fire Risks. Audit of the provincial government’s as well as local government’s performance in addressing the interface fire risk. Excellent overview of what each provincial agency is responsible for.
C.3 MINISTRY OF FORESTS INTERFACE FIRE HAZARD EVALUATION FORM

Following this page - 1 table
APPENDIX D

OPEN HOUSE RESULTS

Following this page - 2 pgs
1. JUSTIFICATION

The District of Langford has designated all lands shown as extreme or high hazard on Map 6 as a Development Permit Area pursuant to provisions in the Local Government Act. The justification for this designation is to ensure that Council has the ability to regulate development within high and extreme wildfire hazard risk areas in a way that minimizes the risk associated with these hazards.

2. OBJECTIVE

The objective of this Development Permit Area designation is to ensure that development within the interface fire hazard area is:

   a) Managed in a way that minimizes the risk of damage to property or people from interface fire hazards; and

   b) Managed in a way that mitigates interface fire hazards while still addressing environmental issues.

3. DEVELOPMENT PERMIT AREA GUIDELINES FOR INTERFACE FIRE HAZARDS

   a) Within the designated high and extreme risk interface fire hazard areas, Council may, by resolution, issue development permits.

   b) Every application for a development permit shall be accompanied by plans indicating the following:

      (i) Location of all existing and proposed buildings and structures;

      (ii) Siting of parking areas and driveways;

      (iii) Extent and nature of existing and proposed landscaping including details of trees and ground cover;

      (iv) The exterior materials of existing and proposed buildings (siding and roofs).

   c) Within the areas identified as high and extreme interface fire hazard areas, the following Development Permit Guidelines apply:
IFH1

For developments that only have one access route, exterior sprinkler systems on dwellings for protection against exposure fires are encouraged.

IFH2

A plan for the expedient removal of all land clearing debris (wood and vegetation) resulting from development must be submitted and complied with prior to the registration of any new subdivision plan. The approving officer may consider accepting security for the removal of the material within three (3) months of plan approval provided that the materials do not remain on site during high fire risk seasons.

IFH3

A Registered Professional Engineer's report for minimizing interface fire hazard may be required by the Municipal Planner and recommendations from that report for ongoing protection may form the basis of development permit conditions.

IFH4

The report may include recommendations for relaxations to restrictions on exterior building materials and roof sprinklers if resulting development changes the actual level of risk from extreme or high to moderate or low. All buildings within 30 m of a high or extreme wildfire risk area as identified by the Registered Professional Engineer must include fire resistant construction materials for exterior siding and roofing.

IFH5

Within high or extreme wildfire interface areas, a Section 219 covenant may be required, which prohibits any outdoor burning.

IFH6

In order to accommodate development within the high or extreme fire hazard areas, development is encouraged to be clustered and variances and density averaging may be considered in order to accommodate the clustering of residential densities.

IFH7

Because of the potential for interface wildfires to interfere with hydro service to developments, and thus interfere with residential sprinkler systems, all hydro servicing in new developments within high and extreme interface fire hazard areas is encouraged to be
underground and is required for developments of four (4) or more lots of urban density (i.e., lots less than 1,000 sq. m.).

IFH8

For new developments in high or extreme interface fire hazard areas, Council and the approving officer may consider requiring the development of a trail system around the developments, which would accommodate fire vehicle access for fighting wildfire in interface areas.

IFH9

In order to minimize the risk of damage to property and persons from interface fires, the following restriction may be imposed as development permit condition or in a 219 covenant as a condition of subdivision by the Approving Officer.

(i) All roofing material and insulation requirements meet the Class "B" fire rating requirements contained within the current B.C. Building Code.

(ii) Fuel reduced buffers around individual homes from the house to the property boundary or 10 m in distance, whichever is lesser. The area may contain natural tree cover in locations approved by the District of Langford, but the owner must landscape and maintain the area with the intent of eliminating the accumulation of combustible debris.

(iii) All eaves, attics, decks, and openings under floors are screened to prevent the accumulation of combustible material.

(iv) All wood burning appliances are to be installed with approved spark arresters.

(v) Building design and construction shall generally be consistent with the standards in the National Fire Protection Association Standard 299 (Standard for Protection of Life and Property from Wildfire).

IFH10

In order to ensure the ongoing restriction on wood fuel adjacent to residences (excluding enclosed, covered firewood piles) the approving officer may require a Section 219 covenant requiring property owners to ensure the 10 m fuel restriction zone around houses and buildings is maintained and that if they are not maintained, they may be required to pay a rent charge of $1,000 per year.

IFH11

In designing new subdivisions and neighbourhoods within the high to extreme fire hazard development permit areas, proponents shall consider the incorporation of fire breaks adjacent to residential areas. These may be in the form of cleared parkland, roads, or trails.