



District of Maple Ridge

TO: His Worship Mayor Ernie Daykin
and Members of Council
FROM: Chief Administrative Officer
DATE: May 12, 2014
FILE NO: 2012-036-CP
ATTN: Workshop
SUBJECT: Draft Wildfire Development Permit Area Guidelines:
Review of Proposed DP Area

EXECUTIVE SUMMARY:

At the January 7, 2013 Council Workshop, a report was presented on the outcomes of the public consultation for the Draft Wildfire Development Permit Area Guidelines. Participants in the process included both residents and the development community and the majority recognized the importance of wildfire risk mitigation (note that discussions with the development community were primarily with those involved in development projects in the forest interface area). At Workshop, issues were raised with regard to the extent of the area covered by the proposed Development Permit Area boundaries (Appendix D) and the potential costs that will be incurred by the development community. At this meeting, the following resolution was passed:

That the staff report dated January 7, 2013 titled "2012-036-CP, Update on Public Consultation for Draft Wildfire Development Permit Area Guidelines" be referred back to staff.

With the technical concerns raised around the boundaries of the proposed wildfire development permit area, former Fire Chief Grootendorst engaged Cambrian Consulting to undertake a peer review of the proposed Wildfire Development Permit Area boundaries that were recommended by B.A. Blackwell & Associates. The peer review report was completed in March 2013 and is attached as Appendix A.

In addition to the above, a letter was received from the Manager of the BC Wildfire Management Branch, dated March 14, 2013 (Appendix C), expressing the importance of "proactive wildfire risk reduction" and also offering their support for this initiative.

The purpose of this report is to update Council on the findings of the peer review by Cambrian Consulting and include correspondence received from the BC Wildfire Management Branch. Also contained in this report is an update on the process and discussion regarding the early and ongoing consultation requirements outlined in the *Local Government Act*.

RECOMMENDATIONS:

- 1) Whereas Council has considered the requirements of Section 879 of the *Local Government Act* that it provide, in respect of an amendment to an Official Community Plan, one or more opportunities it considers appropriate for consultation with persons, organizations and authorities it considers will be affected and has specifically considered the matters referred to in Section 879(2) of the *Act*;
- 2) Whereas Council considers that the opportunities to consult proposed to be provided by the District in respect of an amendment to an Official Community Plan constitute appropriate consultation for the purposes of Section 879 of the *Act*;
- 3) Whereas, in respect of Section 879 of the *Local Government Act*, requirement for consultation during the development or amendment of an Official Community Plan, Council must consider whether consultation is required with specifically:
 - a. The board of the Regional District in which the area covered by the plan is located, in the case of a Municipal Official Community Plan;
 - b. The Board of any Regional District that is adjacent to the area covered by the plan;
 - c. The Council of any municipality that is adjacent to the area covered by the plan;
 - d. First Nations;
 - e. School District Boards, greater boards and improvement district boards, and
 - f. The Provincial and federal governments and their agencies;
- 4) That the only additional consultation to be required in respect of this matter beyond the early posting of the proposed Maple Ridge Official Community Plan Amending Bylaw (Wildfire Development Permit Area Guidelines) on the District's website, together with an invitation to the public to comment, is referral to:
 - a. the Agricultural Land Commission,
 - b. neighbouring Municipalities of Pitt Meadows and Mission,
 - c. UBC Malcolm Knapp Research Forest,
 - d. School District 42,
 - e. Metro Vancouver,
 - f. Department of Fisheries & Oceans,
 - g. The Provincial Ministries of: Forests, Lands, and Natural Resources; Environment; and Transportation and Infrastructure, and
 - h. Katzie and Kwantlen First Nations.
- 5) That the two additional areas recommended in the March 2013 consultant report entitled, District of Maple Ridge Wildfire Development Permit Area Regulations Peer Review, be included in the proposed Wildfire Development Permit Area boundaries map;
- 6) That the Wildfire Development Permit Area Guidelines Official Community Plan Amending Bylaw be prepared, along with an amendment to Development Procedures Bylaw 5879-1999;

BACKGROUND:

In 2006, an application was made to the Union of British Columbia Municipalities (UBCM) for a financial grant. UBCM agreed to fund 50% of the costs to produce a Wildfire Protection Plan and Risk Assessment for the District of Maple Ridge and B.A. Blackwell & Associates were retained to complete this work. The benefit of a wildfire risk assessment is that it can indicate, at any given location and under specific conditions, the probability of a wildfire occurring and for given wildfire behavior, what the potential consequences on resources may be. The assessment culminated in the report entitled, "District of Maple Ridge Community Wildfire Risk Management System". The following statement is found early in the report:

Historically the mid to low elevation stands of timber in this area have been exposed to high severity stand replacement wildfires that has the potential to significantly alter the forests adjacent to and within the District. The probability of large wildfires within this community is considered low to moderate and the consequences associated with a large wildfire could be devastating.

The findings in the risk assessment report were incorporated into the Maple Ridge Community Wildfire Protection Plan, also prepared by B.A. Blackwell in 2006. The Plan states that:

The District of Maple Ridge is embedded within the forest; approximately 60% of the community is forested. This region of the Province is susceptible to both lightning and human caused fires. Overall, the community could be classified with a fire risk profile described by a low to moderate fire probability and high to extreme consequences based on the values at risk.

The Maple Ridge Community Wildfire Protection Plan contains twenty-one (21) recommendations that focus on communication and education, structure protection, emergency response, training and post fire rehabilitation. Several of these recommendations have already been implemented by the Fire Department.

On July 10th, 2007, the following resolution was passed by Council:

That the recommendations contained in the Community Wildfire Protection Plan be adopted in principle pending the development of a detailed implementation plan with an associated financial plan which will be brought back to Council for their consideration and adoption; and

That staff be instructed to make application to the Union of British Columbia Municipalities for grant funding to develop an implementation plan for the Community Wildfire Protection Plan recommendations.

A technical working group was formed in 2007, made up of District staff from Fire, Planning, Engineering, Operations, Building, and Parks & Leisure Services. The group worked together for several months on draft Development Permit Area Guidelines (WFDP) and a Development Procedures Checklist (both attached to this report as Appendix E and F). These drafts were

developed using the information and recommendations made in the 2007 District of Maple Ridge Wildfire Risk Management System (WRMS) study and the 2007 District of Maple Ridge Community Wildfire Protection Plan (CWPP), the standards set in the National Fire Protection Association's guidelines (NFPA-1144) and input from the technical working group.

PEER REVIEW OF PROPOSED WILDFIRE DEVELOPMENT PERMIT AREA BOUNDARIES:

Subsequent to the January 7, 2013 Council Workshop, wherein concerns were raised about the extent of the proposed Wildfire Development Permit Area Boundaries and cost to the development community, former Fire Chief Grootendorst hired Cambrian Consulting to undertake a peer review of B.A. Blackwell & Associates' recommendations on the proposed Wildfire Development Permit Area boundaries. The WFDPA boundaries were derived from the Maple Ridge Community Wildfire Protection Plan and the Maple Ridge Wildfire Risk Management System (WRMS), prepared by B.A. Blackwell & Associates.

Cambrian Consulting completed a report entitled "District of Maple Ridge: Wildfire Development Permit Area Regulations Peer Review", dated March 2013 (Appendix A). It is stated in the report findings that B.A. Blackwell's work:

represents a comprehensively researched and science-based platform from which the District of Maple Ridge will be able to improve community resilience, protect values at risk and minimize exposure to liability and demand for additional services and resources.

The peer review states that:

no areas are proposed for removal from the regulations at this time

and also identified two additional areas recommended to be added to the proposed Wildfire Development Permit Area. These two additional areas are the forested lands around Whonnock Lake and Webster's Corners (Appendix B) and are discussed in the peer review finding's below.

In the review of the lands proposed for inclusion in the WFDP Area, Cambrian made some initial observations:

Extensive areas of contiguous hazardous fuel-types are inter-woven with both old and newly established neighbourhoods, the way in which the community has historically developed into the surrounding forest has created a significant legacy of homes (values at risk) which would be extremely difficult to protect in the event of a wildland urban interface (WUI) forest fire. A large number of homes have become embedded in forests containing hazardous fuel types often with inadequate access for evacuation or deployment of emergency response vehicles, limited water supply, vulnerable power supply and lack of defensible space.

Further, Cambrian recognizes that a WFDP is intended to reduce wildfire risk and protect the environmental, economic and social/cultural values that reside within the existing forest interface areas:

The optimal goals for the WFDPA regulations will be to both reduce wildfire risk to the built environment of Maple Ridge and conserve the valuable forest ecosystems which define its cultural heritage and have the potential to provide millions of dollars in quantifiable goods and services for generations to come.

The findings of the March 2013 peer review report are as follows:

1. Review of Wildfire Development Permit Area Regulations

1.1 Hazardous Fuel Type Mapping

The review first looked at how the hazardous fuel type mapping resources were applied by B.A. Blackwell and found that it was “consistent with both Provincial (Hawkes et. Al. 1995) and Canadian Fire Behaviour Prediction (FBP) fuel type classification standards (Taylor et. Al. 1997)” and further found that the “fuel types have been verified by ground-truthing and aerial photography review”.

1.2 Isolated Forest Polygons

The approach used by B.A. Blackwell to delineate the boundaries of the WFDP Areas was parcel based, rather than a meandering buffer approach that would result in boundaries drawn through parcels, which is recommended by Cambrian Consulting due to its “ease and efficiency of administration”. Cambrian Consulting also recommends this approach:

Based on our review of the prevailing conditions, landscape features, road access and availability of water supply applying the 20 hectare minimum isolated polygon size is recommended and consistent with associated program guidance documentation.

Cambrian gives an example of the proposed Thornhill polygon area, which is “in excess of 580 hectares and the forest area contains a majority of hazardous fuel types”. The slopes in Thornhill contain “a significant inventory of critical telecommunications infrastructure”, which if exposed to a wildfire event similar to that in the Kelowna wildfire of 2003, would potentially cause a loss of power supply, become inoperable, and present “major challenges for emergency response and regional communication systems”. The risk to private property and ecosystem values would also be at great risk in such a wildfire event. To reduce the risk of such losses, Cambrian points to the value of having a WFDPA in place:

Under the guidance of qualified professionals and the WFDPA regulations judicious community planning, structure protection and vegetation management initiatives will put in place the necessary preventative measures to protect values at risk and guide sustainable and disaster resilient community development.

1.3 Areas of Fragmented Hazardous Fuel Type

Cambrian provides additional support for their recommendation of the “isolated forest polygons” approach that was undertaken by B.A. Blackwell & Associates in determining the WFDP Area boundaries:

In reality when the forest cover is continuous including a range of fuel types a wildland fire is only likely to be halted at a significant fuel or fire break. In a wildfire both deciduous and mixed forest cover is vulnerable to ignition and wildfire propagation from ember showers. It is therefore prudent to include rather than exclude small areas of less hazardous fuel types and to adopt a well-defined WFDPA administrative boundary. In this case the boundary delineator chosen corresponds with the centerline of the nearest public road, this provides clarity and parcel based WFDPA administration.

1.4 Protecting Ecosystem Values

A WFDPA is intended to align with ecosystem conservation principles and as such helps protect the benefits “provided by native forests”, according to Cambrian Consulting. It is noted in their report that proposed development in WFDP Areas will, in most circumstances, require a review by a Registered Professional Forester who is trained in the management and sustainability of healthy and productive forests.

1.5 Community Planning

Cambrian Consultants has characterized eco-cluster development, common in the forest interface area of Silver Valley, as:

complimentary to the goals and objectives of the WFDPA regulations. Subject to careful community planning, subdivision layout, architectural design and building standards these new residential subdivisions have the potential to embrace the FireSmart principles, conserve urban forest and ecosystem values providing sustainable development and livable community opportunities for both present and future generations.

1.6 Municipal Water Supply

Some of the lands in the proposed WFDPA are supplied with municipal water and some are on private wells or using other sources. In Cambrian’s review they note that in B.A. Blackwell’s work on the Wildfire Risk Management System there was:

No bias to weigh a private water supply risk more heavily than municipal supply.

From Cambrian's perspective this is an appropriate approach:

Non FireSmart homes located in both areas of the community are likely to be at equal peril in the event of a large WUI [wildland urban interface] fire.

Cambrian concludes their discussion on water supply as follows:

The presence of less vulnerable FireSmart development in the WUI is anticipated to reduce overall dependency on limited water resources and thereby supporting a self-sufficient and disaster resilient community profile. There is often a temptation to rely on emergency response resources rather than to take the initiative to implement preventative measures and this WFDPA represents an excellent opportunity to reverse that trend.

1.7 Surrounding Land Use

There are a number of surrounding land uses surrounding the proposed WFDPA. To the north is the UBC Research Forest, BCIT and other private Woodlot holdings, which are all regulated under the *Wildfire Act* and Regulation. Other uses include BC Hydro, recently undertaking vegetation removal to twin transmission lines, as well as residential and agricultural. Cambrian discusses the need for landowners to work cooperatively in an effort to prevent wildfire hazards:

It is important that landowners across jurisdictions work toward common goals and objectives to reduce community-wide wildfire hazards, in this instance there is an opportunity to optimize the value of a landscape scale community fire break, however in the absence of a coordinated effort increased fire hazard could be a short-term or medium-term outcome.

1.8 Wildfire Development Permit Area Delineation Parameters

The approach taken by B.A. Blackwell & Associates to delineate the WFDPA boundaries was to use the "public road centerlines located in the closest proximity to the adjacent hazardous fuel types". Cambrian Consulting notes that a wildland urban interface boundary line tends to meander across a landscape and individual properties and these are not always practical locations for applying boundary lines. Because of the "ease and efficiency" of administration, the approach applied by B.A. Blackwell & Associates is the one also recommended by Cambrian Consulting.

1.9 Proposed Additional Areas for Inclusion in WFDP Area Map

Discussed in the review is the approach taken in the B.A. Blackwell study to use a baseline minimum threshold of 20 hectares for identifying WFDP Areas, with the rationale that areas of this size "would be large enough to create ember showers and spotting potential into the surrounding community if it became engaged". Cambrian Consulting found this approach to be sound and the one they would also recommend: "Based on our review of the prevailing conditions, landscape features, road access and availability of water supply applying the 20 hectare minimum isolated polygon size is recommended and consistent with associated program guidance documentation".

Based on the above, Cambrian Consulting recommends adding the following two areas to the proposed WFDP Area map:

- i. The forests around Whonnock Lake, south of Dewdney Trunk Road from 272nd Street south to 122nd Avenue and joining the existing WFDP boundary proposed along 280th Street, with an area of 326.4 hectares (Appendix B);
- ii. The forest area referred to locally as Websters Corners, between 252nd Street and 261st Street North of Dewdney Trunk Road tying into the existing WFDP proposed boundary, with an area of 155.5 hectares (Appendix B).

The review includes a rationale for the two proposed additional areas above, in that they are each:

- extensive areas, greater than 20 hectares, containing hazardous fuel types that are contiguous with forest fuels in the current wildland urban interface forests;
- areas of environmental and private/public values, which are at risk; and
- challenged with access/egress for emergency response, including emergency vehicles and limited water supply, and evacuation of residents.

2. Conclusions and Recommendations

Cambrian Consulting's initial conclusion on the proposed WFDPA, prepared by B.A. Blackwell & Associates is that it is:

a comprehensively researched and science-based platform from which the District of Maple Ridge will be able to improve community resilience, protect values at risk and minimize exposure to liability and demand for additional services and resources.

Cambrian Consulting goes on to say that:

no areas are proposed for removal from the regulations at this time.

and describes the WFDP as a living document.

As the community grows it may be appropriate to amend the WFDPA boundary at that time; however the WRMS [Maple Ridge Wildfire Risk Management System, 2006] has demonstrated that there is risk to a large proportion of the community created by ember showers, therefore maintaining the existing WFDPA boundary is considered prudent for the foreseeable future.

The peer review report concludes with a figure depicting three common elements of a community wildfire implementation plan:

1. Operational Measures
 - a. Vegetation management/protective measures

- b. Emergency response & preparedness/training/equipment upgrades/improve suppression capabilities
2. Regulatory Measures
- a. Structure protection (building bylaws)
 - b. Tree bylaws/regulations/policies
 - c. Wildfire DP Area/OCP Amendment
3. Preventative Measures
- a. Education/Outreach
 - b. Assessments and community involvement
 - c. Infrastructure upgrades (water supply, access)
 - d. Evacuation plans, mutual aid agreements, alternate EOC locations, command vehicles

All three elements are covered in more detail in the recommendations from the B.A. Blackwell 2006 documents and to date many of these have already been implemented by the Maple Ridge Fire Department.

Letter of Support from BC Wildfire Management Branch

The manager of the BC Wildfire Management Branch, Lyle Gawalko, drafted a letter dated March 14, 2013 (Appendix C) to the District of Maple Ridge. It was received on March 18, 2013 and distributed to Mayor and Council, as well as senior management. The letter discusses wildfire risk throughout the Province and identifies a number of other municipalities that have adopted Wildfire Development Permit Areas. In his letter, Mr. Gawalko states the importance of using Development Permit Areas to reduce wildfire risk:

The importance of proactive wildfire risk reduction through community wildfire protection planning, fuel management treatments, and the application of “FireSmart” building and infrastructure designs through a wildfire development permit process cannot be overemphasized for prevention of losses to communities. In particular, the wildfire development permitting process is seen as an essential requirement to all new development planning in wildland urban interface areas and the WMB and province fully support initiatives such as this to protect community development.

The letter also discusses some best practices for FireSmart design and these have all been addressed through the draft Wildfire Development Permit Area Guidelines and checklist attached to this report.

Mr. Gawalko also offers encouragement and support for adopting a proactive approach to wildfire risk mitigation through the development process.

OFFICIAL COMMUNITY PLAN AMENDMENT PROCESS:

Section 919.1 of the *Local Government Act* permits the designation of Development Permit Guidelines for development areas at risk to hazardous conditions, such as wildfire. Development Permit Areas are designated by an Official Community Plan and as such, an Official Community Plan Amending Bylaw is also required.

Highlights of Wildfire Development Permit Area Guidelines

The intent of Wildfire Development Permit Area Guidelines is to minimize the risk to property and people in areas at risk. Further, the aim has been to create these Guidelines so that they work in concert with all related regulations, guidelines and bylaws. The Guidelines contain four “Key Guideline Concepts”, which will be applied to assess Wildfire Development Permit Area applications:

1. Locate development on individual sites so that when integrated with the use of mitigating construction techniques the risk of wildfire hazards is reduced;
2. Mitigate interface fire hazards without compromising environmental conservation objectives and while respecting other hazards in the area;
3. Ensure identified hazard areas are recognized and addressed within each stage of the land development process; and
4. Proactively manage potential fire behavior, thereby increasing the probability of successful fire suppression and containment and minimizing adverse impacts.

There are four subsequent sections of the Guidelines document that provide guidance on achieving the above “Key Guidelines Concepts” and these are:

1. Design and Construction;
2. Building Design and Siting;
3. Hazard Mitigation through Design;
4. Landscaping Open Spaces.

Generally, the highlights of the draft Wildfire Development Permit Area Guidelines are as follows:

- **Buffer from Forest Edge:**
Where buildings face a forest edge, the guidelines propose a 10m buffer, which may include a rear yard setback, public trail and/or public road. Additionally, FireSmart landscaping standards are proposed for application within rear yards to ensure minimal fuel loading within the buffer area.
- **Forest Edge Mitigation Measures:**
A Wildfire Mitigation Assessment report, is to be prepared by a Registered Professional Forester and the recommendations implemented.
- **Construction Materials:**
Appropriate construction materials and details are prescribed in the NFPA-1144 document, which is the National Fire Protection Association’s standards for reducing structure ignitions

from wildland fire and/or equivalencies meeting the intent as acceptable to the District's Fire Chief.

- **Exemptions:**

Public works and services and maintenance activities carried out by or on behalf of the District are exempt. Interior renovations within an existing legally constructed building are also exempt. Partial exemptions permitted for:

- a) small renovations;
- b) subdivisions resulting in no more than two residential lots;
- c) properties being actively farmed.

Clause 8.12.2(A)(2) of the draft Development Permit document states:

If the above-mentioned NFPA standards and the guidelines in this Section 8.12.2 cannot be adhered to, the District of Maple Ridge Fire Chief may consider alternate solutions that meet the intent of these guidelines and are acceptable to the District.

Sections 879 & 881 of the Local Government Act

An amendment to the Official Community Plan Bylaw requires consideration of public consultation in compliance with the provisions in Sections 879 and 881 of the *Local Government Act*, which are provided below. As such, Council must consider that these provisions have been met. Note that the recommendations in this report have been presented in a manner for Council do so formally.

“Consultation during OCP development Section 879

(1) During the development of an official community plan, or the repeal or amendment of an official community plan, the proposing local government must provide one or more opportunities it considers appropriate for consultation with persons, organizations and authorities it considers will be affected.

(2) For the purposes of subsection (1), the local government must:

- a. *Consider whether the opportunities for consultation with one or more of the persons, organizations and authorities should be early and ongoing, and*
 - i. *The board of the regional district in which the area covered by the plan is located, in the case of a municipal official community plan,*
 - ii. *The board of any regional district that is adjacent to the area covered by the plan,*
 - iii. *The council of any municipality that is adjacent to the area covered by the plan,*
 - iv. *The council of any municipality that is adjacent to the area covered by the plan,*
 - v. *First nations,*
 - vi. *School district boards, greater boards and improvement district boards, and*

vii. *The Provincial and federal governments and their agencies.*

(3) *Consultation under this section is in addition to the public hearing required under section 882(3) (d).*

In addition, Section 881 of the Act requires consultation with the School Board during the preparation of an Official Community Plan amendment:

(1) *If a local government has adopted or proposes to adopt or amend an official community plan for an area that includes the whole or any part of one or more school districts, the local government must consult with the boards of education for those school districts*

a. *At the time of preparing or amending the community plan, and*

b. *In any event, at least once in each calendar year.*

Formal Referrals

The draft Wildfire Development Permit Area Guidelines will be sent to the following organizations for comment in accordance with Section 879 of the *Local Government Act*.

- **Neighbouring Municipalities:**
A copy of the draft Wildfire Development Permit Area Guidelines will be referred as an information item to the City of Pitt Meadows and the District of Mission.
- **UBC Malcolm Knapp Research Forest:**
Representatives from the Malcolm Knapp Research Forest attended the Public Open House session on October 3, 2012. A copy of the draft Wildfire Development Permit Area Guidelines will be referred as an information item to the Malcolm Knapp Research Forest after First Reading.
- **Agricultural Land Commission:**
There are properties located in the Agricultural Land Reserve that will be impacted by the WFDP. Therefore, it is recommended that the draft Development Permit be referred to the Commission for comment prior to First Reading.
- **Metro Vancouver Parks:**
Formal consultation with Metro Vancouver is not required. However, the Regional Parks division is interested in acquiring more parkland further north up along Kanaka Creek. Therefore, a copy of the proposed Wildfire Development Permit Area Guidelines will be referred as an information item to Metro Vancouver Regional Parks division after First Reading and a copy will be forwarded to Metro Vancouver upon Bylaw adoption.
- **School District 42:**
As discussed above, section 881 of the *Local Government Act* requires consultation with the local school board during the preparation of an amendment to an official community plan. In order to satisfy this requirement, a copy of the draft Wildfire Development Permit will be referred to the School District for comment prior to First Reading.

- **Federal and Provincial governments and their agencies:**
A formal referral of the Wildfire Development Permit Bylaw will be sent to the federal Department of Fisheries and Oceans and provincial Ministries of Environment and Transportation following First Reading of the bylaw by Council.
- **First Nations:**
A copy of the draft Wildfire Development Permit will be forwarded as information to both the Katzie and Kwantlen First Nations.

Summary of Public Consultation Process and Outcomes

As stated above, establishing a Wildfire Development Permit Area requires an amendment to the Official Community Plan. A public consultation process commenced with Council's direction from the July 10, 2012 Council meeting:

That staff be directed to undertake the proposed public consultation process for the Wildfire Development Permit Area Process as part of the early and ongoing consultation requirements of the Local Government Act.

The consultation process was undertaken in addition to the legislative requirements prescribed for bylaw adoption in Section 879 of the *Local Government Act*. Public input on the draft WFDP was received through two builders' forums, a public open house, and an on-line questionnaire. The key elements of these guidelines were presented on the following dates:

- Builders' Focus Group Meeting held at Fire Hall No. 1 – May 8, 2012
- Builders' Forum held at Fire Hall No. 1 – September 12, 2012
- Public Open House held at Fire Hall No. 1 – October 3, 2012
- 2nd Builders' Forum held at Fire Hall No. 1 – November 27, 2012

Given that the process included discussion with industry experts, residents, developers, and the public, the process is deemed to be appropriate.

The outcomes of the public consultation process were presented at the January 7, 2013 Council workshop and are detailed in the January 7, 2013 Council report. As mentioned above, a public questionnaire was provided at the public open house and online. From the residents who chose to participate, 11 out of 12 respondents who completed the questionnaire support taking measures to reduce the risk of wildfire hazard. Additionally, during the first workshop held with the development community there were concerns raised with the cost of risk prevention measures. After working through these issues with the development community, comments received at the end of the second builders' forum were positive and no further issues or concerns were identified.

More recently, a live-streamed public Budget Q&A session was held on April 28, 2014, to provide financial plan information, receive feedback and answer questions from the public on the 2014-2018 Financial Plan. One five-part question related to funding provisions for water infrastructure and brush clearing on road allowances.

- The Wildfire Risk Management System took the approach that the presence of a public water system and fire hydrants would not change any of the proposed guidelines for the Wildfire Development Permit Area. This is further confirmed in the peer review report. Funding to provide a water system has not been allocated nor have grant applications been made.
- As for brush clearing on road allowances, the development of a fuel break network is also one of the recommendations in the Community Wildfire Protection Plan; funding is not currently in the financial plan and will be considered alongside the implementation plan for that issue.

INTERDEPARTMENTAL IMPLICATIONS:

The technical working group will continue to work on implementation of the Wildfire Development Permit Area Guidelines as the internal processing of development applications will involve continued participation amongst Fire, Planning, Engineering, Building, Operations, and Parks & Leisure Services Departments. It is anticipated that assistance may be required from Information Services to update the Look-Up mapping program.

FINANCIAL IMPLICATIONS:

The Fire Department has submitted confirmation of the WFDP project work to UBCM, as required for payment of the \$23,000 in grant funds. To date, UBCM has reported that they have received the information, but it has not yet been processed.

NEXT STEPS:

The next step in this process is the preparation of an amendment to the Official Community Plan that will bring the Wildfire Development Permit Area Guidelines through the bylaw adoption process, including the referrals discussed above. The document has been reviewed by the District Solicitor and has also been reviewed by staff at the Agricultural Land Commission (ALC). While a formal referral will be made to the ALC after First Reading of the Bylaw, ALC staff have stated that the proposed WFDP guidelines comply with ALC regulations.

ALTERNATIVES:

There are three possible alternative resolutions for Council to consider, as follows:

1. That Council direct staff not to proceed with preparation of the Wildfire Development Permit Area Guidelines Official Community Plan Amending Bylaw or the amendment to Development Procedures Bylaw 5879-1999.

This resolution is not recommended as an alternative.

2. That Council direct the two additional areas recommended for inclusion in the Wildfire Development Permit Area, by Cambrian Consulting, and outlined in this report not be incorporated into the draft Wildfire Development Permit Area map, prior to staff preparing

the Wildfire Development Permit Area Guidelines Official Community Plan Amending Bylaw and an amendment to Development Procedures Bylaw 5879-1999.

This resolution is recommended as an alternative.

3. That Council direct the draft Wildfire Development Permit Area Guidelines be integrated into a Natural Hazards Development Permit document, as part of the work currently underway on the Environmental Management Strategy.

And that Council pass a resolution that the draft Wildfire Development Permit Area Guidelines be required for development applications within the proposed Wildfire Development Permit Area.

This resolution is not recommended as an alternative.

4. That Council direct the two additional areas identified for inclusion in the Wildfire Development Permit Area, by Cambrian Consulting, and outlined in this report be incorporated into the draft Wildfire Development Permit Area map.

And that the draft Wildfire Development Permit Area Guidelines be integrated into a Natural Hazards Development Permit document, as part of the work currently underway on the Environmental Management Strategy.

And that Council pass a resolution that the draft Wildfire Development Permit Area Guidelines be required for development applications within the proposed Wildfire Development Permit Area.

This resolution is not recommended as an alternative.

CONCLUSION:

The peer review of B.A. Blackwell & Associates' work, related to the draft Maple Ridge Wildfire Development Permit Area, found the approach and methodology to be sound and consistent with both the Provincial and Federal fuel type classification standards. The peer review also confirmed that the WFDP Area boundary delineation approach was the most appropriate for administrative ease and efficiency. No areas were recommended for removal from the proposed WFDP Area. One area that the peer review diverged was a recommendation for additional forested lands to be included in the WFDP Area boundaries map: 1) Whonnock Lake; and 2) Websters Corners. It is recommended that these areas be included in the proposed Wildfire Development Permit Area map.

The application of the draft Wildfire Development Permit is intended to mitigate the risks associated with forest interface development. These are desirable areas to live and recreate and they will continue to generate a demand for community development. As stated above, the intent of the public process was to create an awareness of the risks, listen to concerns, and identify options that will reduce impacts to key stakeholders. After working through this process and identifying

alternatives to areas of concern, no further issues have been raised and it is recommended that this process proceed to bylaw preparation for an amendment to the Official Community Plan.

“Original signed by Lisa Zosiak”

Prepared by: Lisa Zosiak
Planner

“Original signed by Dane Spence”

Approved by: Dane Spence
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"Original signed by Charles R. Goddard" for

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Director of Planning

"Original signed by Frank Quinn"

Approved by: Frank Quinn, MBA. P.Eng
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"Original signed by J.L. (Jim) Rule"

Concurrence: J. L. (Jim) Rule
Chief Administrative Officer

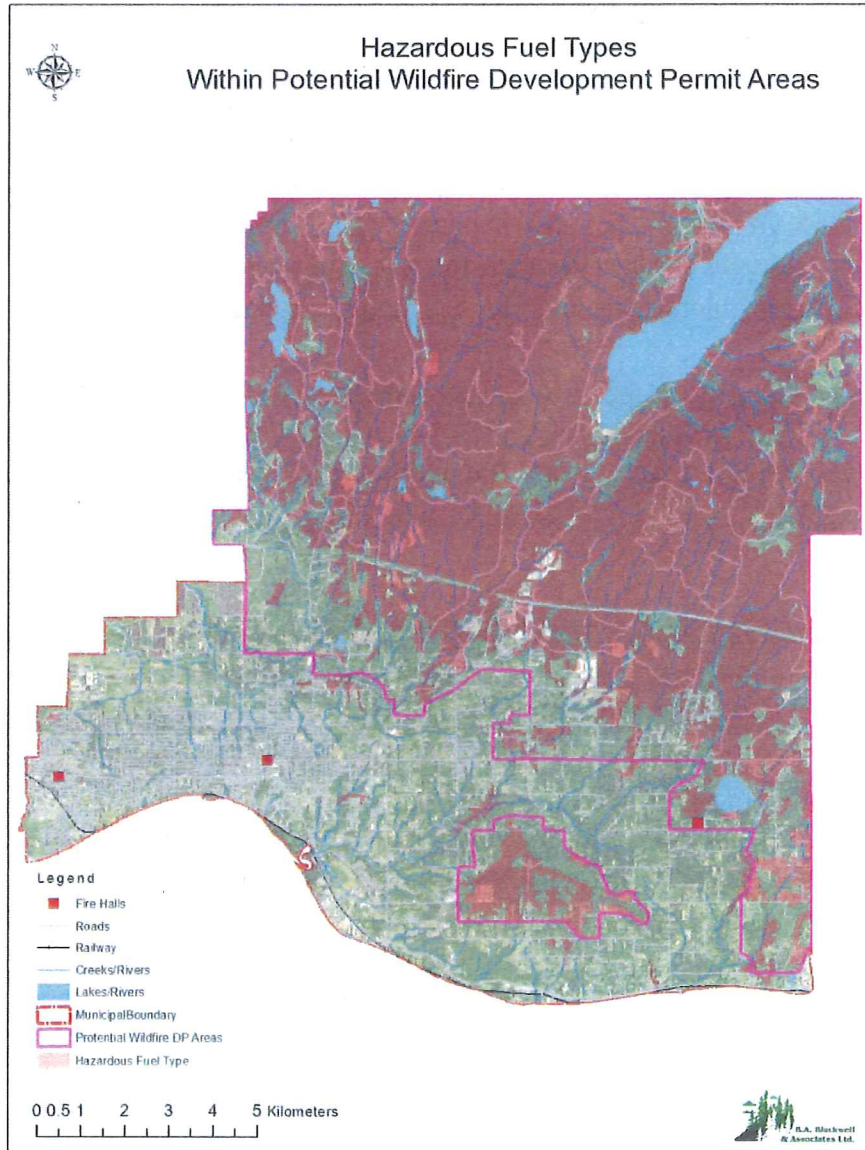
The following appendices are attached hereto:

- Appendix A – Cambrian Consulting, District of Maple Ridge Wildfire Development Permit Area Guidelines Peer Review Report (March 2013)
- Appendix B – Maps of Additional DP Areas, identified by Cambrian Consulting
- Appendix C – Letter from BC Wildfire Management Branch (March 14, 2013)
- Appendix D – Draft Wildfire Development Permit Area map
- Appendix E – Draft Wildfire Development Permit Area Guidelines
- Appendix F – Draft Wildfire Development Permit Area Checklist

District of Maple Ridge

Wildfire Development Permit Area Regulations

Peer Review



Submitted by:
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V0N 1T0

EXECUTIVE SUMMARY

The proposed Wildfire Development Permit Area (WFDPA) Regulations for the District of Maple Ridge provides a science based regulatory framework that will ensure that all new development is managed to reduce risk from wildfire hazards. The proposed regulations minimize the risk of a structural fire spreading to neighbouring homes and to the adjacent forest, implementation will reduce potential for associated post-fire landslides, debris flow hazard, flood and erosion. The WFDPA regulations are intended to protect people, property, environmental values and contribute to sustainable community growth.

Extensive areas of contiguous hazardous fuel-types are interwoven with both old and newly established neighbourhoods, the way in which the community has historically developed into the surrounding forest has created a significant legacy of homes (values at risk) which would be extremely difficult to protect in the event of a wildland urban interface (WUI) forest fire. A large number of homes have become embedded in forests containing hazardous fuel types often with inadequate access for evacuation or deployment of emergency response vehicles, limited water supply, vulnerable power supply and lack of defensible space.

The delineation and supporting rationale for the proposed WFDPA is consistent with Provincial standards, the decision matrix used to develop the regulations is supported by the best available science and designed to be administered in a fair and equitable review process. The WFDPA regulations will not conflict with existing Municipal, Provincial or Federal regulations, they have been developed to provide synergy and complement existing legislation.

The WFDPA regulations should be viewed as a living document which will evolve with the community as it develops further into the WUI forest areas. Both the upland and the WUI forests are considered a dynamic and valuable resource to the community, however in the absence of pro-active ecosystem restoration and forest management based on sound ecological principles it is predictable that species composition and stand structure will change creating additional areas of hazardous fuel-types.

The WFDPA regulations are expected to complement the District's desire to develop eco-cluster residential subdivisions, under these regulations the surrounding forest areas will be managed to optimize environmental benefits and innovative community planning will provide for efficient structure protection and evacuation. As new housing stock is built to FireSmart¹ building and landscape standards these new eco-cluster subdivisions are expected to attract residents with a desire to live in balance with nature, reduce environmental footprints and a passion for the outdoors.

The optimal goal for the WFDPA regulations will be to both reduce wildfire risk to the built environment of Maple Ridge and conserve the valuable forest ecosystems which define its cultural heritage and have the potential to provide millions of dollars in quantifiable environmental goods and services for generations to come.

¹

Table of Contents

EXECUTIVE SUMMARY.....	2
1 Review of Wildfire Development Permit Area Regulations.....	4
1.1 Hazardous Fuel Type mapping.....	4
1.2 Isolated Forest Polygons.....	4
1.3 Areas of Fragmented Hazardous Fuel Type.....	4
1.4 Protecting Ecosystem Values.....	5
1.5 Community Planning.....	5
1.6 Municipal Water Supply.....	6
1.7 Surrounding Land Use.....	6
1.8 WFDPA Delineation Parameters.....	6
1.9 Proposed Additional Areas.....	8
1.9.1 Additional Areas Rationale.....	9
2 Conclusions and Recommendations.....	10
3 Wildfire Development Permit Area Map.....	11
4 Photo Documentation.....	12
5 BIBLIOGRAPHY.....	15

1 Review of Wildfire Development Permit Area Regulations

1.1 Hazardous Fuel Type mapping

The current hazardous fuel type mapping resources provided in the Community Wildfire Protection Plan (CWPP) (Blackwell, 2007) and the Wildfire Risk Management System (WRMS) (Blackwell, 2006) are consistent with both Provincial (Hawkes et. al. 1995) and Canadian Fire Behaviour Prediction (FBP) fuel type classification standards (Taylor et. al. 1997). The fuel types have been verified by ground-truthing and aerial photography review. The pattern of hazardous fuel types across the landscape forms a complex mosaic of both contiguous and fragmented forest stands intermixed with residential, commercial development and critical municipal infrastructure. The spatial distribution of the hazardous fuel type polygons together with limitations for access/egress, water supply and inadequate defensible space creates significant challenges to both emergency preparedness and response programs. These factors precipitate the need for well-defined regulations to guide future development standards and achieve a reduced WUI risk profile.

1.2 Isolated Forest Polygons

Isolated (non-contiguous) forest polygons containing hazardous fuel types that occur within the community have the potential to present a wildfire risk to homes situated in the interface and intermixed zones, particularly where these forested areas exceed a minimum size threshold. A baseline minimum size threshold (20 hectares) would be consistent with the minimum polygon threshold applied in the WRMS report for a forest that would be large enough to create ember showers and spotting potential into the surrounding community if it became engaged (Blackwell, 2006). Based on our review of the prevailing conditions, landscape features, road access and availability of water supply applying the 20 hectare minimum isolated polygon size is recommended and consistent with associated program guidance documentation.

An example under this scenario would be Thornhill which is located almost 2 kilometers distance from the nearest hazardous fuel types located to the north of Dewdney Trunk Road. The area of the Thornhill WFDPA polygon is in excess of 580 hectares and the forest area contains a majority of hazardous fuel types. A small proportion of the forested area consist of north facing slopes however the majority of the conifer dominated forests are south facing, and the crest of Thornhill is occupied by a significant inventory of critical telecommunications infrastructure. These communication towers are serviced by a power supply and communication cables mounted on vulnerable wooden poles which are embedded in hazardous fuels. In the event of a wildfire similar to the Kelowna firestorm (2003) it is entirely conceivable that the communication towers could lose power supply and become inoperable, presenting major challenges for emergency response and regional communication systems. In addition to this significant multiple private residential property and ecosystem values would be at risk of loss with significant long-term foreseeable impacts to the community.

Under the guidance of qualified professionals and the WFDPA regulations judicious community planning, structure protection and vegetation management initiatives will put in place the necessary preventative measures to protect values at risk and guide sustainable and disaster resilient community development.

1.3 Areas of Fragmented Hazardous Fuel Type

The WUI forests are diverse in many attributes including, topography, elevation, species composition, age class, stand density and as such the incidence and spatial distribution of hazardous fuel types across the landscape can

be fragmented and discontinuous in nature. In reality when the forest cover is continuous including a range of fuel types a wildland fire is only likely to be halted at a significant fuel or fire break. In a wildfire both deciduous and mixed forest cover is vulnerable to ignition and wildfire propagation from ember showers. It is therefore prudent to include rather than exclude small areas of less hazardous fuel types and to adopt a well-defined WFDPA administrative boundary. In this case the boundary delineator chosen corresponds with the centerline of the nearest public road, this provides clarity and parcel based WFDPA administration.

1.4 Protecting Ecosystem Values

The proposed WFDPA regulations are expected to contribute significantly to the conservation of highly significant ecosystem values provided by native forests. Forest areas within the municipal boundary that have been protected from development consist of riparian areas, forests situated on steep hillsides and in precipitous ravines. The implementation of the WFDPA regulations is expected to contribute to long-term conservation and pro-active management of these areas based on sound ecological principles. The logic to this seemingly bold statement is predicated on the fact that the WFDPA regulations will require the prescription of a Qualified Professional (QP) fire hazard and tree management report. In this instance, Registered Professional Foresters (RPF) are considered the QP and bound by a comprehensive code of ethics the first of which *“to advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society”*.

Wildfire hazard mitigation measures are therefore not expected to result in wholesale clearing of land adjacent to the WUI, more appropriate management strategies are likely to include stand thinning, species conversion, ecosystem restoration, pruning and retention of mature trees. Managing these areas to mitigate wildfire hazards is expected to include thinning out of understory ladder fuel and reduction of surface fuels while judicious thinning of dense overstory tree canopy is expected to be beneficial to the long-term stand dynamics and help guide forests back to the natural successional trajectory. Management objectives will vary from site to site but the overall principles are expected to encapsulate at least one common theme outlined below.

“To sustain long-term stable native plant communities which continue to deliver valued ecosystem goods and services assigned by society”.

Furthermore conservation of these valuable forest ecosystems through the implementation of the proposed WFDPA will support wildlife, species at risk, wetlands and aquatic habitat values. Managed forests will continue to sequester carbon and offset greenhouse gas emissions. Wildfire hazard reduction measures implemented responsibly must be compatible with habitat conservation and long-term ecosystem restoration.

1.5 Community Planning

The District of Maple Ridge are employing innovative ways to allow for development into the WUI forests whilst conserving the ecosystem goods and services for the benefit of present and future generations. Eco-cluster and similar style developments are considered to be complementary to the goals and objectives of the WFDPA regulations. Subject to careful community planning, subdivision layout, architectural design and building standards these new residential subdivisions have the potential to embrace the FireSmart principles, conserve urban forest and ecosystem values providing sustainable development and livable community opportunities for both present and future generations.

1.6 Municipal Water Supply

A significant proportion of the community does not currently have access to municipal water mains and the homes and businesses in these areas are solely reliant on private water supply from wells and other sources. No bias to weigh a private water supply risk more heavily than municipal supply has been applied in the WRMS and this appears appropriate based on our review of the available literature and dialogue with municipal staff. Non FireSmart homes located in both areas of the community are likely to be at equal peril in the event of a large WUI fire.

By contrast FireSmart homes situated with defensible space and landscapes which conform to the proposed WFDPA regulations are likely to be at less risk of ignition potential from ember showers and convective heat. The presence of less vulnerable FireSmart development in the WUI is anticipated to reduce overall dependency on limited water resources and thereby supporting a self-sufficient and disaster resilient community profile. There is often a temptation to rely on emergency response resources rather than to take the initiative to implement preventative measures and this WFDPA presents an excellent opportunity to reverse that trend.

1.7 Surrounding Land Use

The UBC Research Forest, BCIT and other private Woodlot holdings to the north of Maple Ridge include elements of industrial forest operations and as such they are regulated under the Wildfire Act and Regulation. Adjacent to these managed forest lands BC Hydro is currently in the process of twinning the Transmission lines which crosses the northern portion of the community. It is predictable that unless the transmission corridor is proactively re-vegetated with a deciduous low growing stable plant community the land clearing activities have the potential to allow the disturbed land to regenerate with dense conifers and/or pioneer invasive species such as Scotch broom (*Cytisus scoparius*) which are both highly flammable. It is important that landowners across jurisdictions work toward common goals and objectives to reduce community-wide wildfire hazards, in this instance there is an opportunity to optimize the value of a landscape scale community fire break, however in the absence of a coordinated effort increased fire hazard could be a short-term or medium-term outcome.

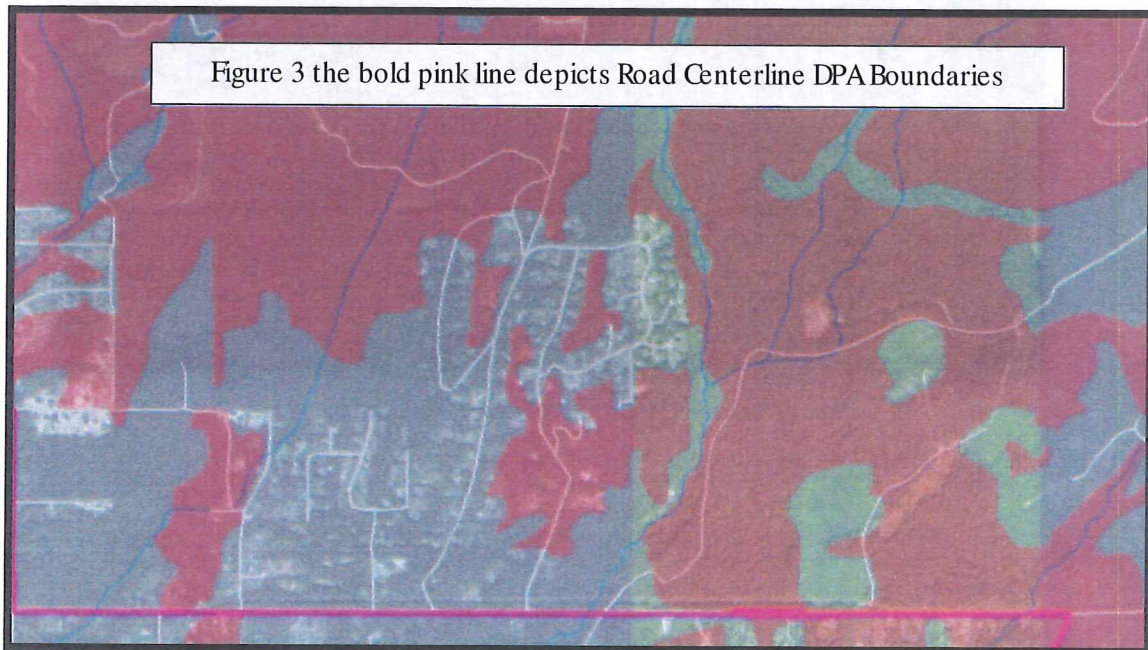
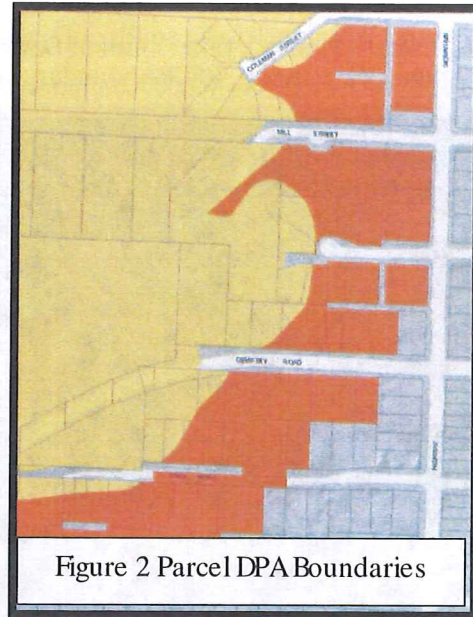
1.8 Wildfire Development Permit Area Delineation Parameters

The proposed WFDPA boundary is currently aligned along public road centerlines located in the closest proximity to the adjacent hazardous fuel types. Delineation utilizing the public road centerlines ensures that the WFDPA is parcel based and allows for relative ease and efficiency of administration. There are alternatives available to a community in delineating the WFDPA, but based on our review they do not appear to represent a good fit for the District of Maple Ridge.

Alternatives are briefly described as follows and illustrated in the following figures:

1. Buffer style delineation may be used to define the areas covered by the WFDPA regulations. Typically the buffer width from WUI is determined based on subject matter expert recommendations arising from analysis of predominant fuel types, topography, wind direction, aspect, access and emergency response/suppression capabilities. The fundamental predicament arising from buffer style delineation is that they are more likely to split property parcels and this adds a layer of complexity to interpretation and implementation.

- 2. Parcel based, in contrast to the buffer style of delineation ensures whole parcels are included. In reality the WUI boundary has a tendency to meander across the landscape following the boundary of the hazardous fuel types and this adds a layer of complexity to administration and implementation by splitting neighborhood's and subdivisions where species composition and stand density characteristics are highly variable as in the case of the District of Maple Ridge.



1.9 Proposed Additional Areas

It is recommended that consideration be given to the addition of two distinct forest areas:

1. The forests around Whonnock Lake, south of Dewdney Trunk Road from 272nd Street south to 122th Avenue and joining the existing WFDPA boundary at 280th street, approximate area of 320 Hectares.

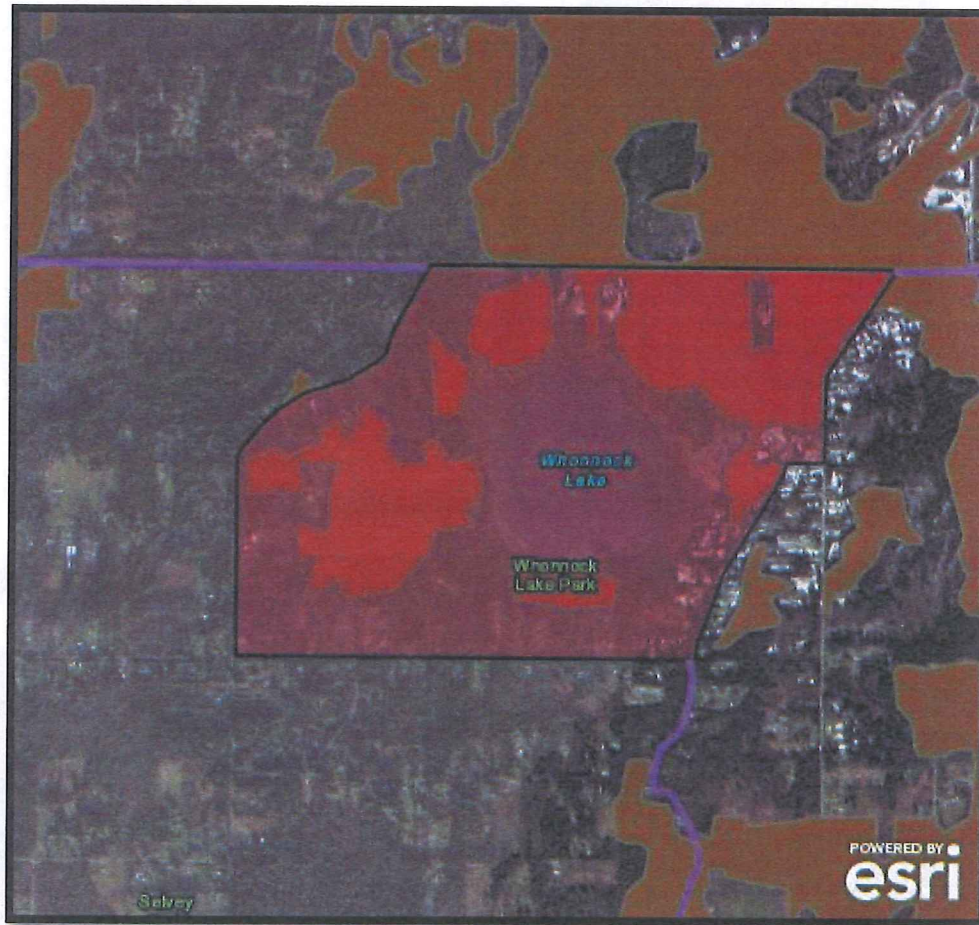


Figure 1 Proposed Additional Area - Whonnock Lake

2. The forest area referred to locally as Websters Corners, between 252nd Street and 261st Street North of Dewdney Trunk Road tying into the existing WFDPA boundary, approximate area of 155 Hectares.

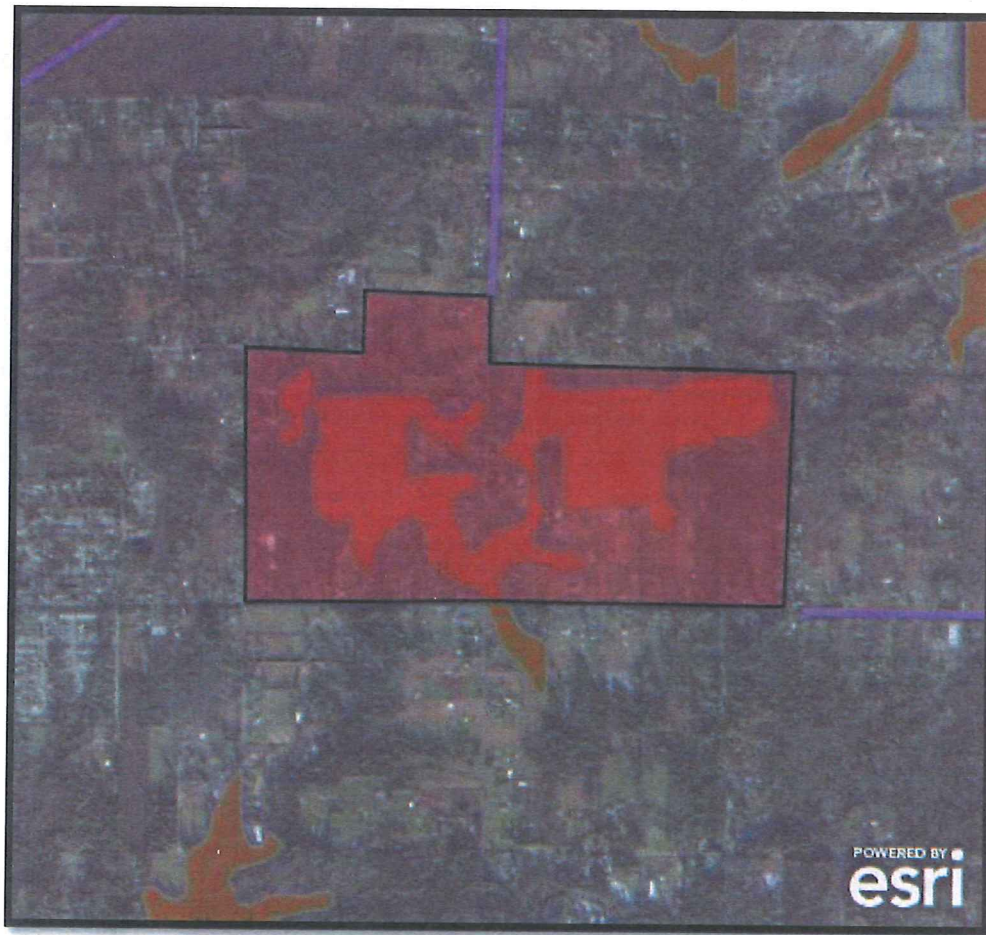


Figure 2 Proposed Additional Areas - Websters Corners

1.9.1 Additional Areas Rationale

The two proposed additional areas detailed above, Whonnock Lake and Websters Corners, include extensive areas (>20 hectares) of hazardous fuel types (brown shaded areas) which are contiguous with forest fuels in the current WUI forests. In addition both areas include environmental and private/public values at risk which will be better protected through the provisions of the WFDPA regulations. Proposed additional areas exceed the minimum threshold area of 20 hectares and significant access/egress challenges exist for emergency response resources and for the evacuation of residents.

2 Conclusions and Recommendations

The existing WFDPA regulation represents a comprehensively researched and science-based platform from which the District of Maple Ridge will be able to improve community resilience, protect values at risk and minimize exposure to liability and demand for additional services and resources.

Two additional areas are proposed to help protect values at risk consistent with the rationale provided in the body of this report; no areas are proposed for removal from the regulations at this time. As the community develops further into the WUI area under the proposed WFDPA regulations new subdivisions will be built to FireSmart standards. As the community grows it may be appropriate to amend the WFDPA boundary at that time; however the WRMS has demonstrated that there is risk to a large proportion of the community created by ember showers therefore maintaining the existing WFDPA boundary is considered prudent for the foreseeable future.

Development Permit Regulations are one of many initiatives which a comprehensive implementation plan should include. The District of Maple Ridge has demonstrated its commitment to emergency response measures, education outreach and science based research. It is recommended that the District further demonstrate corporate leadership in wildfire vegetation management and in this way provides a demonstration treatment area where residents, developers, stakeholders and municipal staff can study the application of techniques to reduce wildfire risk, provide opportunities for ecosystem restoration, integrated vegetation management and enhanced biodiversity.

The diagram below (Figure 3) provides an overview of the common elements which are included in a community wildfire implementation plan; District of Maple Ridge staff will quickly recognize where progress has already been achieved and which elements may need increased emphasis in the coming months.

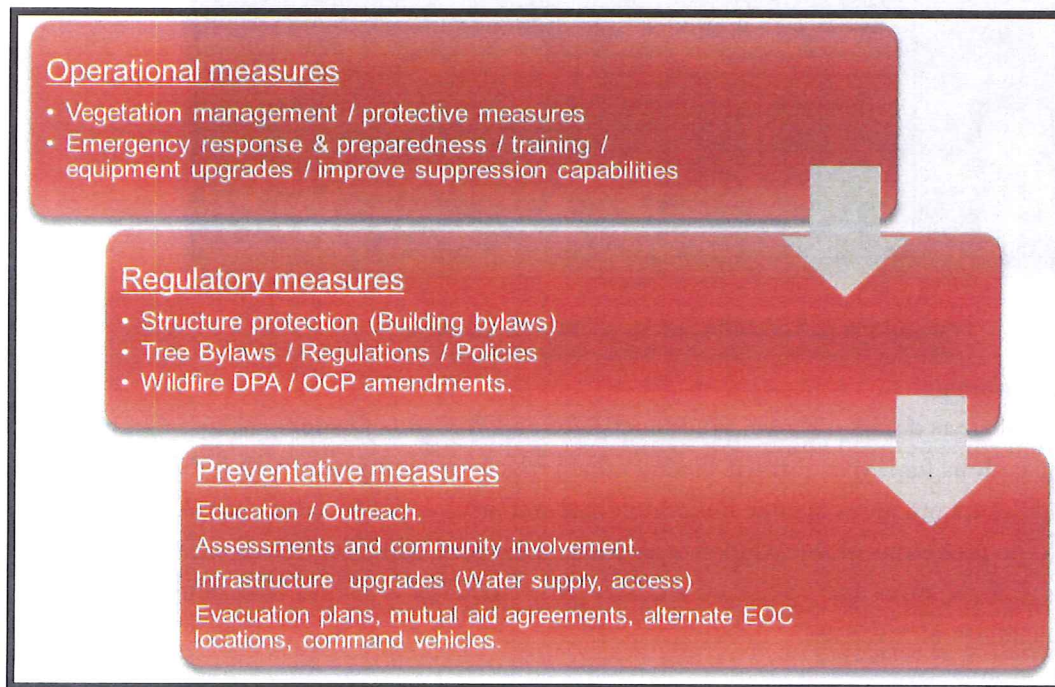


Figure 3 Common elements typically included in a community wildfire implementation plan

3 Wildfire Development Permit Area Map

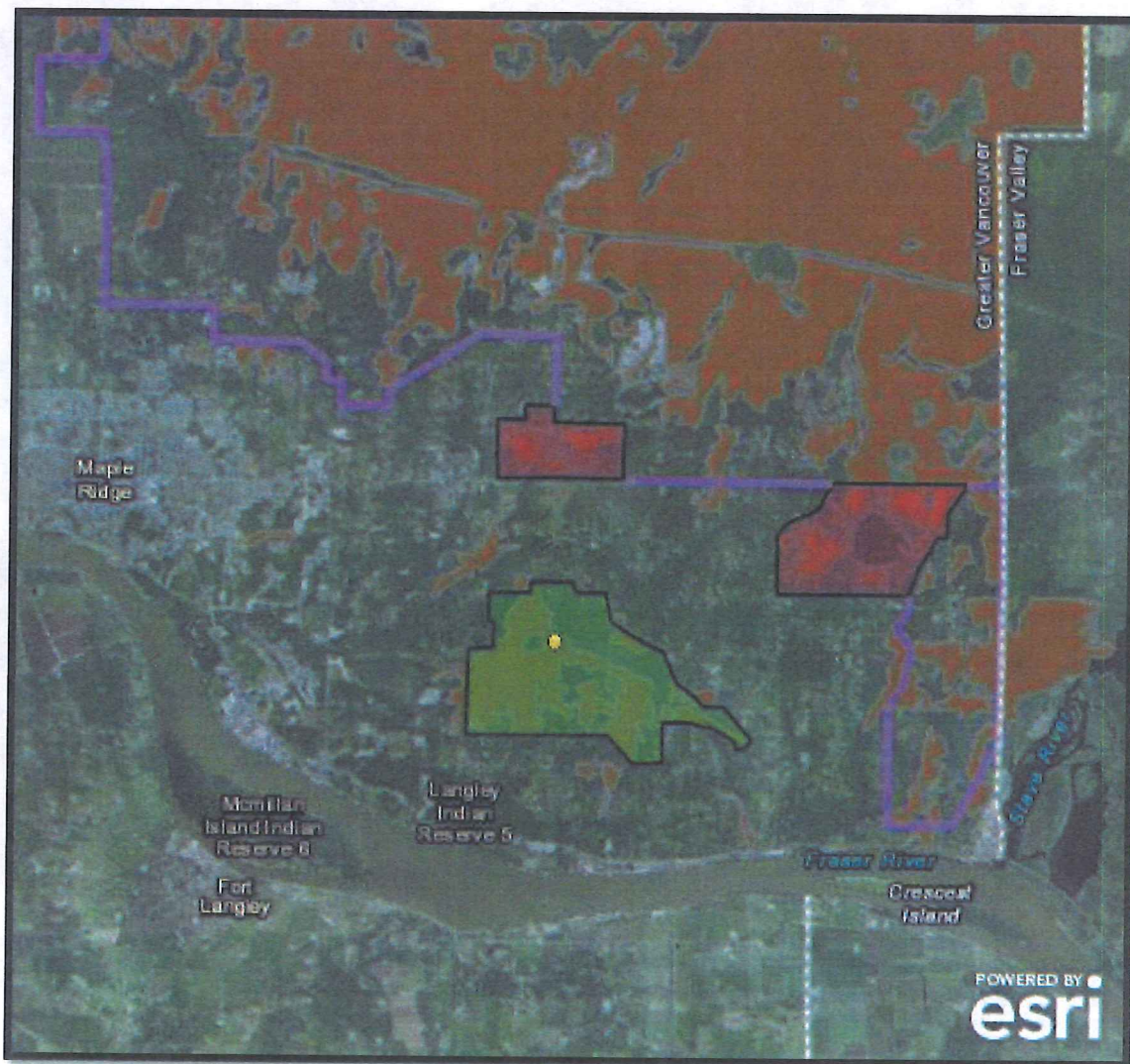


Figure 4 Proposed additional areas (shaded red) and revised WFDPA boundary (purple line). The brown shaded areas are mapped hazardous fuel types (Blackwell, 2007).

4 Photo Documentation



Figure 5 Example of a vulnerable wood pole power supply to critical infrastructure communication towers located on Thornhill, narrow road access and lack of water supply increase infrastructure vulnerability. Vegetation management and replacement with concrete poles could significantly improve the wildfire risk profile.



Figure 6 Residential home at the base of Thornhill embedded in hazardous fuel types, judicious pruning and thinning of trees around this home will provide defensible space and thereby reduce wildfire vulnerability.



Figure 7 Residential home embedded in the Whonnock Lake hazardous fuels, lack of defensible space present increased structure vulnerability to wildfire and poor access creates challenges to emergency response and suppression.



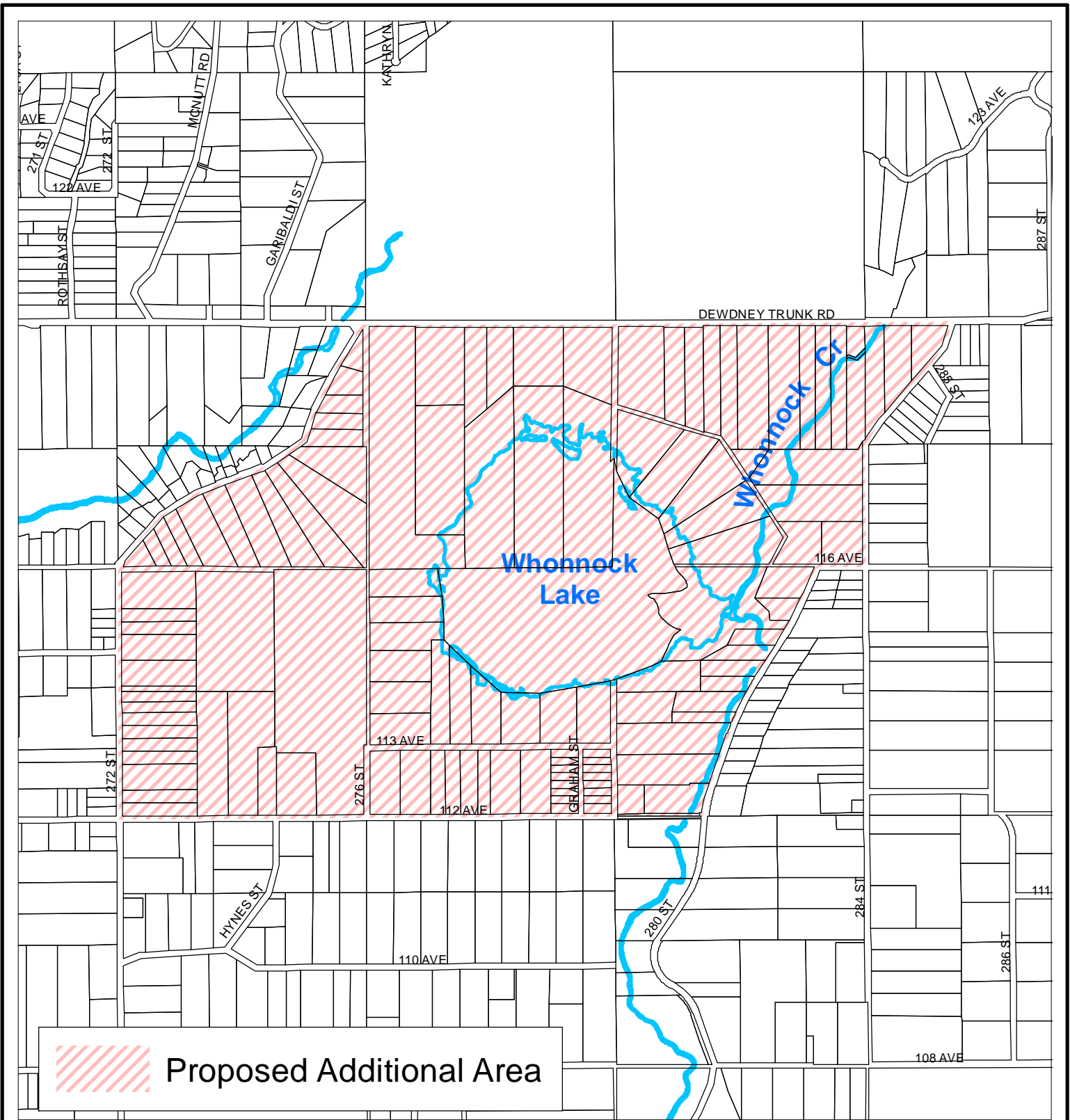
Figure 8 Recent tree falling for BC Hydro transmission line twinning project – potential community fuel break or short-term fuel hazard depending on proposed vegetation management regime. This highlights the need for inter-agency communication and collaboration.


5 BIBLIOGRAPHY

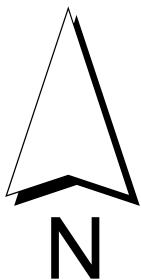
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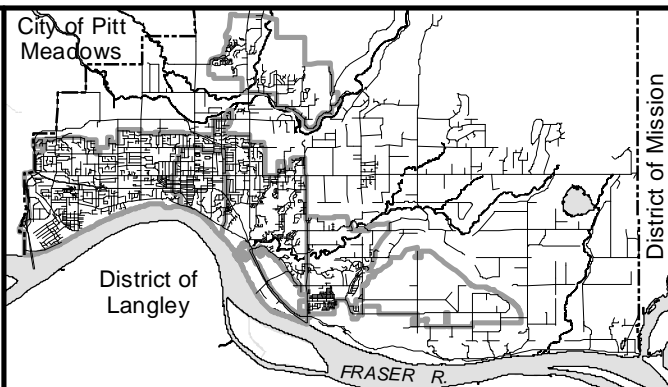
Blackwell B.A., 2006. District of Maple Ridge Wildfire Risk Management System. *An Assessment of Risk in Terms of the Probability and Consequence of Wildfire Occurrence within the District of Maple Ridge*



 Proposed Additional Area



Scale: 1:17,000



Proposed Additional Area for
W FDP - Whonnock Lake



**CORPORATION OF
THE DISTRICT OF
MAPLE RIDGE**
PLANNING DEPARTMENT

DATE: Mar 28, 2014
FILE: AdditionalAreas4WildfireDP.mxd

BY: DT



RECEIVED
MAR 18 2013

MAYOR

File: FOR-14390-20

March 14, 2013

Mayor Ernie Daykin
11995 Haney Place
Maple Ridge BC
V2X-6A9

M&C CAO GM
Other P. Goodfellow
Action: File

Dear Mayor Daykin:

RE: Wildfire Development Permit Process for Maple Ridge

I have been informed that Maple Ridge Municipal Council is considering a wildfire development permit process to mitigate wildfire risks in municipal developments that extend into the wildland urban interface. Wildfire Management Branch (WMB) of the Ministry of Forests, Lands and Natural Resource Operations, strongly supports this initiative.

British Columbia experiences an average of 2,000 wildfires annually and, although only a small percentage of wildfires are interface, there may be significant impacts on affected communities or associated infrastructure. The impacts to Barrier and Kelowna in 2003 were truly significant events and every fire season, wildfires threaten communities and structures. In 2010 there were approximately 27 wildfires in BC that were significant interface wildfires, resulting in 11 evacuation orders and 16 evacuation alerts. These types of incidents occur throughout the province from the southern interior to the northern interior and include the coast. During the 2009 fire season, even "coastal" communities such as Bella Coola were threatened by wildfires and people were evacuated.

As you may be aware, use of wildfire development permits has been recently implemented in the communities of Langford and North Vancouver. In addition, the following local governments have adopted wildfire DPAs to manage interface fire risk (this is not an exhaustive list):

- District of Metchosin
- District of Highlands
- Regional District of Central Okanagan
- District of West Kelowna
- Regional District of East Kootenay
- Capital Regional District
- City of Williams Lake
- City of Prince George
- City of Pitt Meadows
- District of Saanich

The importance of proactive wildfire risk reduction through community wildfire protection planning, fuel management treatments, and the application of "FireSmart" building and infrastructure designs through a wildfire development permit process cannot be

overemphasised for prevention of losses to communities. In particular, the wildfire development permitting process is seen as an essential requirement to all new development planning in wildland urban interface areas and the WMB and the province fully support initiatives such as this to protect community developments.

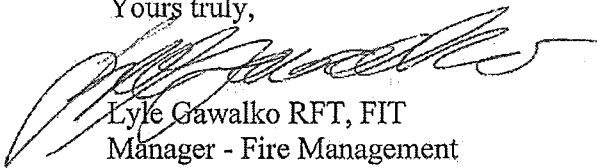
From our perspective a good development permit process would include community planning to ensure good emergency egress from more than one road and a separation of properties from the wildland urban interface using a road, park or green space that is managed to reduce wildfire risk from a fuel management perspective. Other important features include use of fire resistant materials in construction and use of fire resistant landscape management options. Finally, a strong wildfire prevention program is key to preventing human caused wildfire starts that account for 50 percent of the province's wildfires.

Some other elements of an effective DPA could be identified:

- "Clustered" subdivision design
- Roof-top sprinkler systems for buildings
- Management of fuels through 'Defensible Space'
- A demarcated year-round water supply for fire-fighting and clear access to it
- Clear driveway access to houses, and staging sites throughout the subdivision.

We know that climate change will result in more severe fire seasons in the near future and every effort to reduce wildfire risks to communities in the coming decades will be important. WMB would like congratulate the Maple Ridge Municipal Council for having the foresight to embark on a process of a risk analysis and development of the Community Wildfire Protection Plan as far back 2007 and for this new proactive initiative to protect Maple Ridge from wildfire. If we can supply any information or support this initiative in any fashion, please do not hesitate to contact myself (250 387 5782) or Phil Taudin-Chabot, the Coastal Fire Centre Manager (250 951 4208).

Yours truly,



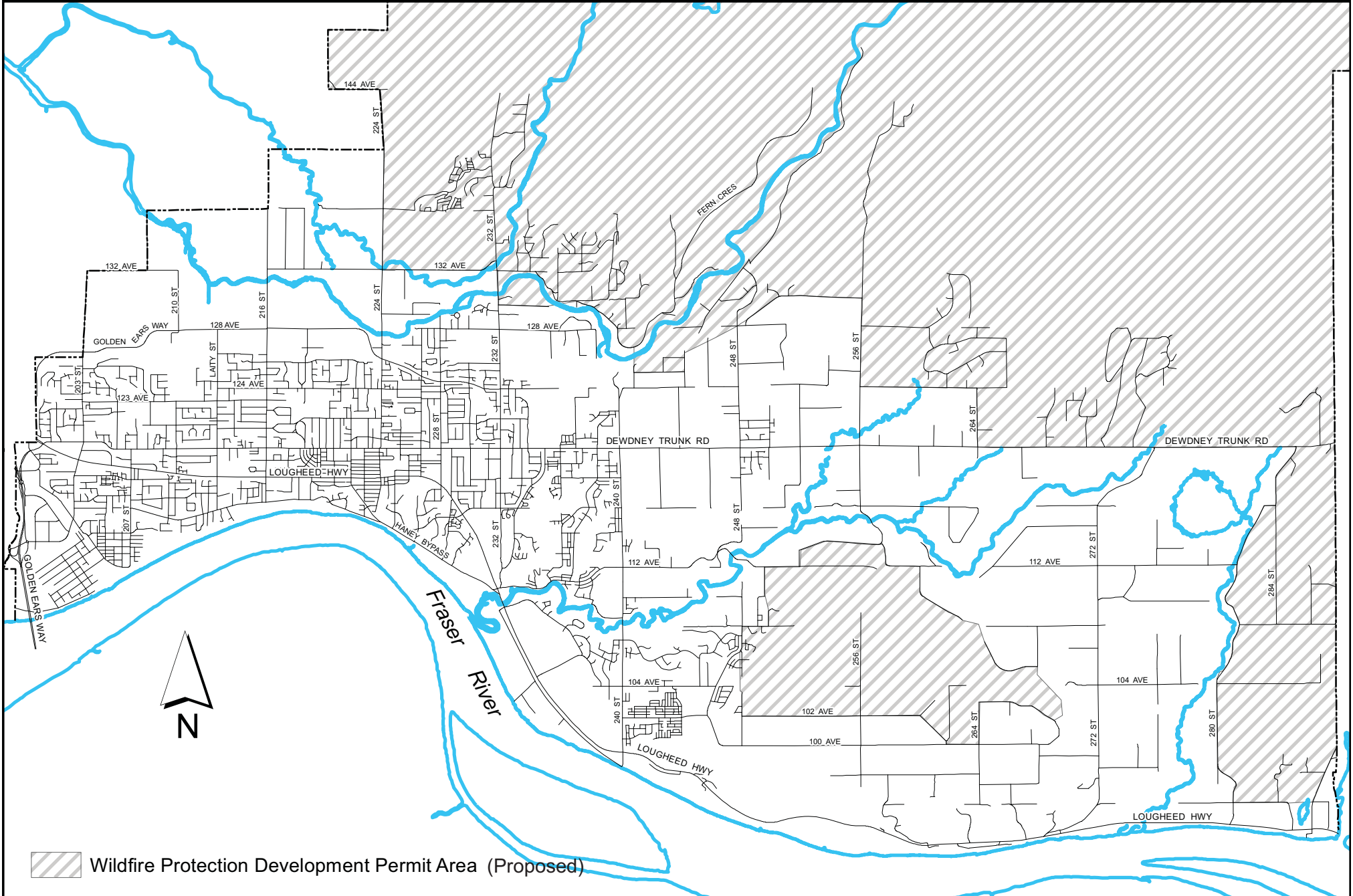
Lyle Gawalko RFT, FIT
Manager - Fire Management
Wildfire Management Branch
Email: Lyle.Gawalko@gov.bc.ca

"Excellence in Wildfire Management and Response Services"

cc: Fire Chief Peter Grootendorst
22708 Brown Avenue
Maple Ridge BC V2X 9A2

Phil Taudin-Chabot
Coastal Fire Centre Manager

Proposed Wildfire Protection Development Permit Areas



8.12 Wildfire Areas and Objectives

The Wildfire Hazard Development Permit Area Guidelines are intended for the protection of life and property in designated areas that could be at risk for wildland fire and where this risk, in some cases, may be reasonably abated through implementation of appropriate precautionary measures.

A Development Permit is required for all development and subdivision activity or building permits for areas identified as wildfire hazard risk areas identified in Figure 9 of Appendix E. A Development Permit may not be required under certain circumstances indicated in the Development Permit Exemptions, Section 8.4, Items 4 and 5.

These Development Permit Guidelines are to work in concert with all other regulations, guidelines and bylaws in effect.

8.12.1 Key Guideline Concepts

The intent of the Key Guideline Concepts is to ensure that development within the wildfire hazard risk areas is managed to minimize the risk to property and people from wildland-urban interface fire hazards and to further reduce the risk of potential post-fire landslides and debris flows.

Applications for Wildfire Development Permits will be assessed against the following key guideline concepts:

1. Locate development on individual sites so that when integrated with the use of mitigating construction techniques the risk of wildfire hazards is reduced;
2. Mitigate interface fire hazards, while respecting environmental conservation objectives and other hazards in the area;
3. Ensure identified hazard areas are recognized and addressed within each stage of the land development process; and
4. Proactively manage potential fire behavior, thereby increasing the probability of successful fire suppression and containment and minimizing adverse impacts;

8.12.2 Guidelines

A. Design and Construction

1. The design and construction of buildings and structures located within the boundaries of the Wildfire Hazard Development Permit Areas shall be in accordance with this guidelines document, entitled 8.12 Wildfire Areas and Objectives. Specific details can be found in the standards set forth in the latest editions of the NFPA-1144 (Standard for Reducing Structure Ignition Hazards from Wildland Fire) and NFPA - 1141 (Standard for Fire Protection Infrastructure for Land Developments in Suburban and Rural Areas); and
2. The District of Maple Ridge Fire Chief may consider alternative design and construction solutions to the NFPA-1144 and 1141 standards if the alternate solution adheres to the intent of the guideline. See Wildfire Development Permit Application Checklist for details.

B. Building Design and Siting

1. NFPA-1144 (Standard for reducing structure ignition hazards from Wildland Fire) building guidelines are to be used for all new development;
2. Fire resistant building materials and methods;
 - a) Class A or B rated roofing material on new roofs and >50% roof replacements
 - b) All vents are screened with metal screens
 - c) Non combustibile soffits
 - d) Overhanging projections protected
 - e) Overhanging buildings protected
 - f) Exterior vertical wall clad with ignition resistive material
 - g) Non combustibile window screens
 - h) Non combustibile 20 minute rated exterior doors
 - i) Spark arrestors on all wood burning appliances
 - j) Laminated or multi-paned windows
3. Buildings adjacent to the crest of a vegetated slope may require special mitigation measures determined by the fire department; and
4. Accessory buildings located within the Wildfire Development Permit buffer area must meet the same building standards as the house.

C. Hazard Mitigation through Design

1. The development building face should be located a minimum of 10 metres away from the adjacent high risk wildfire areas. 10 meter fire breaks must be created between all sides of the foundation and the forest interface (vegetation shall be modified to mitigate hazardous conditions within 10 meters of the foundations prior to the start of construction). The fuel break may include treating fuel on the existing parcel or developing a trail as a part of the fuel break, or included in an environmental and geotechnical setback if such treatment is mutually beneficial to the intent of the setback areas and FireSmart principles.
2. 10 metre fire breaks may incorporate cleared parks roads or trails;
3. Locate building sites in the flattest areas on the property and avoid gullies or draws that accumulate fuel and funnel winds;
4. To minimize the hazard to residential buildings in Wildfire Development Permit Areas, FireSmart standards should be incorporated taking into account: (1) siting form; (2) exterior design; and (3) finish of buildings and structures (see Wildfire Development Permit Area Guidelines security policy);
5. Steep roofs, hidden gutters around roofs and screens to cover attic vent openings are preferred in order to prevent the collection of leaves or needles and to reduce the risk of ember shower accumulation;
6. Fire Hydrants must be fully functional prior to construction above the foundation level;

7. Where appropriate, if a trail system is planned for a subdivision and a park it should be capable of emergency vehicle access with 1.5 m trail base and a minimum of 2 m cleared vegetation and pullouts for passing and turnaround every 500 m (in areas where a 30 m environmental setback is required, the District may consider including the trail within the 30 m setback); and
8. Two means of access are preferred for subdivisions in a Wildfire Development Permit Area. If two access points are not possible then the single access must have the capability of accommodating two fire trucks - each with a width of 2.9 metres - safely passing each other.

D. Landscaping and Open Spaces

1. FireSmart landscaping standards should be incorporated. Landscaping should be designed so as to create minimal fuel loading within the landscaped areas, provide ongoing protection from the interface fire hazard and the type and density of fire resistive plantings incorporated within landscaped areas should help mitigate the interface fire hazard;
2. Removal of all debris (wood and vegetation) after land clearing for development must be completed prior to the registration of any new subdivision plan;

SECTION 8.4, DEVELOPMENT PERMIT AREA EXEMPTIONS, OF THE OFFICIAL COMMUNITY PLAN.

4. A Wildfire Development Permit is not required for the following and will be confirmed in writing by the District:
- a) Where a renovation or addition to an existing structure is less than 50% of the market value of the current structure a Wildfire Development Permit will not be required.
 - b) If a subdivision results in the creation of no more than two residential lots, and all the principles and guidelines contained in the Wildfire Development Permit are adhered to by the Developer or Builder, a Wildfire Development Permit will not be required.
 - c) On lands where a farm use, as defined by the Agricultural Land Commission, is being practiced and where the Building Design for residential buildings comply with the NFPA-1144 (latest edition) building guidelines, a Wildfire Development Permit will not be required. Non-residential farm buildings are exempt from all Wildfire Development Permit requirements, as long as they are sited at least 10m away from all residential buildings.
 - d) Public works and services and maintenance activities carried out by, or on behalf of, the District of Maple Ridge;
 - e) Any construction of a building or structure or any alteration of land that does not require a permit from the District;
 - c) Interior renovations to an existing lawfully constructed or legally non-conforming building or structure wholly contained within and not projecting beyond the foundation.

APRIL 2014



DISTRICT OF MAPLE RIDGE PLANNING DEPARTMENT

Development Application Submission Checklist

Schedule J WILDFIRE DEVELOPMENT PERMIT APPLICATION

The District will provide the opportunity for applicants to meet with staff from the appropriate departments early in the application process. Applications for Wildfire Development Permits are to be made to the Planning Department, and must include the first five items listed below, as the initial step in the process;

- 1) Site information based on a survey plan prepared by a certified B.C. Land Surveyor;
- 2) Current state of title certificate and copies of all restrictive covenants registered on title, including relevant schedules and attachments;
- 3) Location map;
- 4) Map or plan of the property including topography, natural features, existing structures, infrastructure, surface drainage, parcel boundaries, adjacent streets and rights of way;
- 5) Detailed site plan and/or air photo overlay indicating the intended location of all proposed new lots, structures, approved environmental protection setback areas for watercourses, wetlands, and steep slopes, sewage disposal systems, storm water detention, drainage works, driveways, parking areas or impervious surfaces, servicing infrastructure. Also include details on the extent of the proposed site clearing;

Subsequent to a meeting with Planning, Fire, and Engineering staff, the following will be required:

- 6) Assessment of fire interface hazards and mitigation measures by a Registered Professional Forester, qualified by training or experience in fire protection engineering, with at least two years of experience in fire protection engineering and with assessment and mitigation of wildfire hazards in British Columbia;
- 7) A description of the methodology, criteria and assumptions used to undertake the assessment;
- 8) The results of the assessment must include:
 - a) Identification of hazardous C2, C3 and C4 fuels at the wildland-urban interface edges of the planned subdivision and map these edges based on the drip-line of the trees at the wildland edge;
 - b) Recommendations for FireSmart fuel removal and fuel reduction zones to be completed for the whole development prior to Development Permit approval;
 - c) Recommendations for establishing defensive space around all buildings by spacing of all coniferous trees and maintaining and pruning of all remaining trees;

- d) Recommendations for the type and placement of trees and other vegetation in proximity to the development;
 - e) Recommendations for the clean up and proper disposal of combustible material remaining from construction as soon as construction is complete;
 - f) Recommendations for mitigation of wildfire hazard on any wildland/ green spaces to be handed over to the District;
 - g) Results of an assessment of Wildland Fire Risk and Hazard Severity in the Structure Ignition Zone as per NFPA 1144(latest edition);
 - h) Recommendations for the removal and proper disposal of dead trees and continued efforts to keep the land free of accumulation of any dead trees;
 - i) Recommendations for removal and proper disposal of all tree limbs and shrubs that may overhang roofs or grow under building eaves and to continually maintain this condition;
 - j) Recommendations for the removal and disposal of all needles, dead twigs and branches, and to maintain the lands free of such accumulation;
- 9) A written synopsis demonstrating that the proposed development is consistent with the applicable Development Permit Guidelines as provided by the District, and NFPA-1144 (latest edition) (Standard for reducing structure ignition hazards from “Wildland Fire) and NFPA – 1141(latest edition) (Standard for Fire Protection Infrastructure for Land Developments in Suburban and Rural Areas) identifying any mitigation or compensation measures that may be specified as development permit or rezoning conditions;
- a) if alternative solutions are being proposed for the consideration of the Maple Ridge Fire Chief, as noted in Section 8.12.2 of the Development Permit Area Guidelines, the alternative solutions must be provided by either a Fire Protection Engineer and/or a Registered Professional Forester registered with the Association of BC Forest Professionals and other professionals as deemed necessary by the District. Note: The Registered Professional Forester must have at least two years experience with assessment and mitigation of wildfire hazards in British Columbia. The qualifications of the Registered Professional Forester must be acceptable to the District of Maple Ridge Fire Chief;
- 10) Conclusions of a qualified professional (as discussed in 9(a) above), accompanied by supporting rationale;
- 11) The District may solicit a peer review by another qualified professional and/or ask for other additional information the District deems necessary.

FURTHER CONSIDERATIONS:

1. All wood, vegetation and construction debris identified in the Registered Professional Forester’s report should be removed within three months of development permit issuance, or immediately during high fire risk seasons, and the District may require security in connection with such removal.
2. Coordination amongst all relevant consultants of record is recommended for final wildfire interface mitigation measures. Mitigation measures for wildfire areas must take place outside of approved environmental protection areas and geotechnical setback areas where possible, unless approved by the Fire Chief, Chief Building Official, and/or the District’s Approving Officer.

3. The applicant may be required to submit written “Terms of Reference” indicating the scope of work and professional expertise to be used for the preparation of development approval information. The Terms of Reference must be approved by the District prior to the information being prepared.
4. Where hazards are identified on the site, the District may require the submission of plans and reports in electronic format for inclusion in the District’s hazard database. Where the District deems any report or information submitted to be incomplete, a permit will not be issued until complete information is received, reviewed, and approved by District staff.
5. All reports and information shall be prepared in a digital format, compatible with municipal GIS mapping program, as well as three paper copies and provided at the applicant’s cost. All reports, opinions and plans shall be signed and sealed by the appropriate qualified professional.

References:

- National Fire Protection Association 1144 (Standard for Reducing Structure Ignition Hazards from Wildland Fire);
- National Fire Protection Association 1141 (Standard for Fire Protection Infrastructure for Land Developments in Suburban and Rural Areas);
- The Home Owner’s FireSmart manual – Protecting Your Home From Wildfire;
- FireSmart – Protecting Your Community From Wildfire.