



## District of Maple Ridge

**TO:** His Worship Mayor Ernie Daykin  
and Members of Council  
**FROM:** Chief Administrative Officer  
**DATE:** May 27, 2014  
**FILE NO:** 2012-036-CP  
**ATTN:** Council  
**SUBJECT:** **Draft Wildfire Development Permit Area Guidelines:  
Addendum to May 12, 2014 Council Workshop Report**

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### EXECUTIVE SUMMARY:

A number of questions and requests for further information were raised with respect to the proposed Wildfire Development (WFDP) at the May 12, 2014 Council workshop. This addendum to the May 12, 2014 Council report responds in detail to those questions and requests.

### RECOMMENDATIONS:

**That this report be received as an addendum to the May 12, 2014 Council Workshop report entitled "Draft Wildfire Development Permit Area Guidelines: Review of Proposed DP Area".**

### BACKGROUND:

At the May 12, 2014 Council workshop a number of questions were raised and staff were asked to address these. The questions and answer are as follows:

#### 1. Q: How much consultation took place during the Wildfire DP process?

A: The public process for the WFDP involved the following:

- **Public Open House:** Letters were mailed out to 2000 property owners located in the proposed WFDP area informing of the process and the open house. Additionally, the open house was advertised through the newspaper and on the Fire Department website. A total of 41 people attended the public open house and 17 questionnaires (which were also available online) were completed. Only one person responded that they did not agree that "taking measures to reduce the risk of wildfire hazard would help improve safety". Most of the comments from the public involved wanting to receive education and training in how to reduce wildfire risk on their property.
- **Builders' Focus Groups and Forums:** A builder's focus group meeting was held in May 2012 to gauge concerns about the proposed WFDP guidelines. The first Builders' Forum was held in September 2012 and 60 invitations were sent out to developers and builders – 10 people attended this event. A second Builders' Forum was held in November 2012 and again 60 invitations were sent out to developers and builders and six people attended this event. By the end of the second Builders' Forum event, there was a general understanding and appreciation for the risks associated with wildfire and the comments were positive with no further issues or concerns identified.

The Fire Department initiated a public education program after completion of the Community Wildfire Protection Plan with information on the municipal website and the electronic message board outside the Fire Hall. FireSmart information was available at the two open houses, discussed above. Two residents from two different neighbourhoods expressed interest in pursuing a FireSmart community project. Assistant Chief Juurakko met with them at a later time and shared details of the program and provided them with information to contact and recruit residents in their neighbourhoods. Neither one of these residents were able to generate any interest amongst their neighbours to participate. Public information is an ongoing project.

**2. Q: Will residents of Whonnock and Webster's Corners be consulted with?**

A: A mailout to the residents of Whonnock and Webster's Corners is proposed prior to First Reading of the WFDP Bylaw inviting them to a public open house at Firehall #1, additionally it would be advertised on the website and open to the entire community. The outcomes of the open house would be presented in the First Reading Council report.

**3. Q: Why does the WFDP reference the environment?**

A: The rationale behind the environmental language overlapping into the WFDP documents is that areas of environmental concern will often be areas that contain wildfire hazardous fuel types. Fire breaks that are part of a mitigation measure within a development may be integrated within a riparian setback area and as such the applicant will be asked to consider the objectives of the District's environmental regulations while assessing fire interface hazards and determining mitigation measures. A fire break is also equally likely to be integrated with a horse trail and/or utility corridor. As such, while the focus of the WFDP guidelines is life safety issues, the intent of the guidelines is to work in concert with environmental regulations, park planning and engineering servicing objectives.

**4. Q: Why do the delineation boundaries fall on the centreline of the road and not on all addresses on that road?**

A: The approach for centre roadway delineation was chosen initially by B.A. Blackwell in their work and was supported by Cambrian Consulting as the most efficient method for administrative purposes. Alternative methods add a layer of complexity to interpretation and implementation by splitting property parcels. Additionally, a wildfire event is most likely to be halted at a significant fuel or fire break, such as a roadway. Note that using the centreline is also consistent with zoning practice.

In situations where both sides of the street have wildfire risks, both sides are included in the Development Permit area.

**5. Q: What are the long-term implications to the District to maintain wildfire buffer areas? And who will oversee these areas to determine if maintenance is needed?**

A: Vegetation management is an important component of a wildfire mitigation program. As such, the Fire Department intends to work with other departments to develop a vegetation maintenance program on an ongoing basis.

When the initial treatment work has been completed, ongoing maintenance is only required every 10 to 15 years and has a much lower price-tag than initial treatment. The long-term

maintenance can be planned for through annual business planning. The District of North Vancouver has been doing this since 2008. Since that date, they have treated over 40 hectares out of a total of 72 identified. Most of the work has been paid for through the UBCM Operational Fuel Treatment Program, which is currently funding up to 90% of the work to a maximum of \$400,000 per municipality per calendar year. Under this program, a municipality could receive \$400,000 worth of wildland fuel treatment for a municipal cost of \$40,000. UBCM will also pay up to 75% of the costs to create a Fuel Management Prescription Program. With these funding options available to municipalities, a fairly modest annual budget will enable the District to treat a large number of hectares under the 90/10 percentage funding formula.

Note that the financial burden of a wildfire mitigation program is significantly lower than the financial burden associated with a significant wildfire event – which can reach well into the millions of dollars. This does not take into account the financial liability the municipality would face from private property owners and/or insurance companies if it chooses not to undertake the measures recommended in the “District of Maple Ridge Wildfire Protection Plan”.

Also note that a significant wildfire event would not just cause financial hardship to a municipality, but also the loss of environmental, recreational/tourism, and social benefits that healthy forests provide to a community.

**6. Q: What type of work is required to create these buffers?**

A: Site specific fuel treatment objectives are developed for each site and are achieved using the following strategies:

- Maximizing retention of dominant and co-dominant canopy trees to maintain a cool, moist, and dark understorey microclimate;
- Thinning from below (i.e. smallest trees first) to reduce ladder fuels and crown bulk density;
- Reduce crown continuity to a target of 40% crown closure to reduce the risk of crown fire spread;
- Reduce understorey conifer tree density to maximum 100 stems per hectare to minimize fuel laddering;
- Prune retained trees to a minimum height of 4 metres or maximum 60% of tree height to reduce ladder fuels and risk of a surface fire developing into a crown fire;
- Reduction of fine surface fuel loading and flammable understorey vegetation to reduce the risk and behaviour of surface fire;
- Retain and encourage deciduous tree species and shrubs to reduce fire behaviour and provide wildlife habitat;
- Minimize the creation of surface fuel by chipping or removal of treatment slash.

In essence we are aiming to reduce vertical and horizontal connectivity of flammable fuels (conifers and dead materials) and allow time and the maximum opportunity for fire suppression crews to extinguish a fire before it migrates to the crowns of trees in the forest. If it migrates to the crowns (crown fire) it becomes more difficult and dangerous to address.

**7. Q: How have other communities dealt with this issue? What policies do they have in place?**

A: A number of municipalities were looked at on the south coast of the Province. The table below identifies municipalities that have wildfire mitigation programs in place through Development Permit Areas, Fuel Treatment Programs<sup>1</sup>, and Public Education and Awareness Programs. Note that each program is unique in scope and comprehensiveness. Also note that there may be other south coast municipalities with wildfire mitigation programs that are not listed here.

<b>Municipality</b>	<b>WFDP</b>	<b>Fuel Treatment Program</b>	<b>Public Education</b>
City of Pitt Meadows	Yes	No	Yes
District of North Vancouver	Yes	Yes	Yes
City of Coquitlam	Yes	Yes	Yes
Resort Municipality of Whistler	Yes	Yes	Yes
City of Langford	Yes	No	Yes
City of Chilliwack	Yes	No	Yes

**8. Q: Will the Wildfire DP prohibit development in certain parts of the District?**

A: No, the proposed WFDP will not prohibit development in Maple Ridge.

**9. Q: What about property owners in the WFDP area who are dependent on well water? How is the District going to manage the risk of a house fire moving towards the forested area?**

A: All new construction in the District of Maple Ridge, including single-family residential, has required fire sprinklers since December 31, 2003. Property owners dependent on wells for water use a holding tank to store water and have a pump system to deploy water on demand if a sprinkler activates.

With respect to development constructed prior to 2003, it is noted in the May 12, 2014 Council report and backed up in the peer review that non-FireSmart homes located in areas that are supplied with municipal water are equally at risk in a wildfire as homes on well water.

With respect to a fire hydrant mitigating the effects of a wildland urban interface fire, it is noted in the report that non-FireSmart homes are equally at risk in areas with and without hydrants. A fire hydrant on its own is not a life safety device. Sprinklers and smoke detection/alarm systems are life safety devices. A sprinkler system protects life and property and prevents smoke and fire gases from developing to dangerous levels. A smoke detection/alarm system provides the basis for early warning. Houses continue to be constructed in non-hydrant areas throughout North America.

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<sup>1</sup> A Fuel Treatment Program is the manipulation or removal of fuels (vegetation) in a wildland urban interface area to reduce the likelihood of fire ignition. Treatments are intended to reduce the risk of a structure fire or forest fire from spreading to adjacent values at risk.

Implementing the principles of the WFDP will create the necessary defensible space in new development. Through public education, the Fire Department will continue to educate owners of existing homes on FireSmart principles and encourage home owners in implementing these FireSmart measures on their property.

**10. Q: How does flooding compare as a risk to wildfire in the District?**

A: Both flooding and wildfire are hazards that pose a risk to certain areas of the municipality. In a typical flood risk situation, residents are most often given a warning for potential evacuation at least a few days in advance. For a wildfire, often the warning time for evacuation is just a few hours notice.

In Maple Ridge, Council has already adopted regulations for mitigating flood risk in flood prone areas where development is proposed to increase safety and reduce property damage. The proposed WFDP is intended to implement development regulations that will also help to increase safety and reduce property damage.

**11. Q: How does the WFDP work on a subdivision example?**

A: At the second Builder's Forum event, various potential scenarios were discussed with the development community and no examples were identified where density would be lost. Through these scenarios alternative solutions were discussed where challenges appeared, such as fuel maintenance along a forest edge, the use of non-combustible building materials, and/or support for front yard setback variances, and it was found in each case no density would be lost due to wildfire risk mitigation. For example, in situations where an appropriate buffer between building and forest isn't practical, building hardening would be the focus. Those from the development community that attended the meeting expressed their satisfaction that their concerns had been addressed.

Subdivision applications located with the Wildfire DP area will require a Wildfire Development Permit to be approved by Council. If the lands are already pre-zoned a Wildfire Development Permit will still be required, similar to other Development Permit Areas.

**12. Q: What is the history of wildfire in Metro Vancouver?**

A: The information below is from the Maple Ridge Community Wildfire Protection Plan.

*The MOFR fire reporting system was used to compile a database of fires back to 1950 in the WRMS study area. Figure 12 shows the ignition locations within the District. The average number of fires per year by decade is as follows: 1950-59 - 4.6; 1960-69 - 5.7; 1970-79 - 1.6; 1980-89 - 3.0; 1990-1999 - 2.5. The most significant fire year in recent history was 1958 when 21 fires were reported in the study area.*

*Table 13 summarizes the fires that have occurred between 1950 and 1999 in the study area by size class and cause (lightning and human caused). The total number of fires during this period was 175, of which 89% were the result of human causes. The remaining 11% of fire ignitions were lightning caused. Eighty-seven percent of all fires that burned between 1950 and 1999 were smaller than four hectares, while only 16 fires were greater than 10 hectares.*

The largest fire within the District since 1950 occurred in 1965 and burned an area of 299 hectares.

Table 14 summarizes fire cause by decade and provides some interesting insight into the nature of fire within the study area. Through the time of record, human caused fires have far outnumbered those caused by lightning. From the '70s on there was a substantial drop in fire due to industrial causes. On average, there are 35 fires each decade (minimum 25 in the '90s and maximum 57 in the '60s). The majority of fires have been inconsequential in size.

**Table 13.** Fire history summary within the study area from 1950 - 1999.

Size Class (ha)	Total Number of Fires	% of Total	Lightning Caused	Human Caused
<4.0	152	87	19	133
4.0-10.0	7	4	-	7
>10.0	16	9	-	16
<b>Total Fires</b>	<b>175</b>			

**Table 14.** Summary of fire cause within the study area.

Decade	Lightning	Direct Human <sup>1</sup>	Industrial <sup>2</sup>	Total
1950-1959	2(4)	25(55)	19(41)	46
1960-1969	6(10)	22(39)	29(51)	57
1970-1979	2(12)	4(24)	11(64)	17
1980-1989	6(20)	21(70)	3(10)	30
1990-1999	3(12)	18(72)	4(16)	25
<b>Total Years</b>	<b>19</b>	<b>90</b>	<b>66</b>	<b>175</b>

<sup>1</sup> Campfire, smoker, incendiary, juvenile set, fire use

<sup>2</sup> Equipment, railway

Note: Numbers in parentheses ( ) indicate percentage of total fires for a given decade.

**13. Q: How would the WFDP affect existing areas that are already built?**

A: Education and training would be a large component of how this would affect existing areas.

Preventing wildfires is a community effort that is discussed in the Cambrian Consulting peer review study: "It is important that landowners across jurisdictions work toward common goals and objectives to reduce community-wide wildfire hazards..."

**14. Q: What is the cost to homeowners?**

A: As stated above, homeowners living within the WFDP area have the option to learn about how to protect their homes through the FireSmart principles recommended in the Fire Department's public education and awareness program. While homeowners will not be required to FireSmart their properties, there will be those who choose to follow the

recommendations of the education program to ensure they are reducing wildfire risk. The costs to homeowners who choose to FireSmart their property will vary depending on the circumstances of their specific situation. Most property owners will be able to minimize their risk through minor landscaping treatments alone. Others may have more fuel types located on their property, which would require additional work. Some properties may also have cedar shake roofs that will cause owners to consider options for reducing the risk associated with this type of roof material. However, this is part of an education and awareness program.

While the Fire Department can educate and provide recommendations, the mitigation measures undertaken by a property owner are voluntary. In some instances, just removing vegetation close to a building or overhanging a roof and removing woodpiles or similar flammable materials piled up against a building will help to reduce wildfire risk.

**15. Q: What is a fire retardant landscape that homeowners may need to consider using?**

A: A typical FireSmart landscape includes:

- Irrigated lawn in the defensible space zone (10m) - long meadow grasses are not desirable as they can easily ignite and carry fire.
- Landscaping is dominated by deciduous shrubs and trees but scattered and well-spaced coniferous trees are also tolerated. Large conifers can be retained through the development process and pruned to provide building separation.
- Traditional cedar hedges are not recommended unless they are located 10m away from structures.
- Use of non-flammable landscape mulches is recommended (lava rock or similar instead of bark mulch).

This excerpt is from the FireSmart landscaping brochure:

*What are Fire Resistant Plants?*

*Fire resistant plants are those that do not readily ignite from flame or other ignition sources. These plants can be damaged or even killed by fire; however, their foliage and stems do not significantly contribute to the fuel and fire intensity.*

*Characteristics of fire-resistant plants:*

- *Moist, supple leaves*
- *Little dead wood and tendency not to accumulate dead material*
- *Water-like sap with little or no odour*
- *Low amount of sap or resin material*

*Consider Xeriscaping:*

*Xeriscaping is a method of gardening that doesn't sacrifice beauty to conserve water. In fact, if a landscape isn't attractive, then it isn't a xeriscape. The principles of xeriscaping can be applied to any landscape style and can be as plain or as elaborate as desired.*

**16. Q: What are the implications to the Building Bylaw?**

A: The Wildfire Development Permit is enabled through S. 919(1)(b) of the Local Government Act for “protection of development from hazardous conditions”. The proposed Development Permit refers to the standards prescribed in the National Fire Protection Association guides for non-combustible building materials (NFPA-1144 and NFPA-1141). The NFPA is an international non-profit association, established in 1896, whose published fire safety standards are reviewed regularly by the Association and embedded in fire prevention legislation throughout the world.

The solicitor for Maple Ridge has reviewed the proposed Wildfire Development Permit and no concerns were raised with using the above standards.

**17. Q: Would like to see an implementation plan before moving forward on this.**

A: The recommendations laid out in the “District of Maple Ridge Community Wildfire Protection Plan” identify what steps need to be taken in order to create a comprehensive wildfire risk management program within Maple Ridge. Many of these recommendations have already been implemented, such as communication and education, emergency response, and training. Note that the proposed Wildfire DP is one component of the implementation plan.

The Plan’s recommendation of structure protection is contained within the proposed WFDP and the process is generally explained in the draft supporting documents. Implementation of the process will involve collaboration and application review amongst the Fire, Planning, Building, Engineering, Operations, and Parks Departments, which already occurs for most development within the community. As such, this process is not anticipated to add additional time to the processing of development applications located in the WFDP area.

**18. Q: Why is this not a Metro Vancouver issue, if it is such a concern?**

A: The risk varies across the Metro Vancouver region. Municipalities such as the City of North Vancouver, the City of Vancouver, and the City of New Westminister have much less risk than municipalities such as the District of North Vancouver, the City of Coquitlam, and the District of Maple Ridge.

Since the Province has the funding and resources to support communities in wildfire risk management, Metro Vancouver and other regional districts have not taken the lead in mandating or studying the risks in their regions. Essentially, it would represent duplication of effort for Metro Vancouver to get more involved.

Metro Vancouver is involved in partnering with communities where they have adjacent lands with high risk fuel types. Additionally, they have summer fire suppression crews and equipment and are willing to support communities with any fire suppression needs that may arise. There are numerous examples of cooperative efforts in the District of North Vancouver and the District of West Vancouver.

**NEXT STEPS:**

The next steps proposed in this process are to receive Council direction to prepare the Wildfire Development Permit Official Community Plan Amending Bylaw and the accompanying amendment to the Development Procedures Bylaw. Prior to presentation of the Bylaws for First Reading, a public



open house will be held at Firehall #1 with the outcomes presented in the First Reading Council report.

Once the above amending Bylaws are prepared, they will be brought back to Council for First Reading. The public will then have one final opportunity to comment on the amendment Bylaws, in written form or in person, at a Public Hearing prior to Council considering the Bylaws for Third and Final Readings.

**CONCLUSION:**

Wildfire risk is an issue that is taken very seriously by various other government organizations, as evidenced by the sample listing of local government programs contained in this report and the significant Provincial financial support for municipal governments to prepare Community Wildfire Protection Plans, Fuel Management Prescriptions, and Operations Fuel Treatments. Maple Ridge already has a Community Wildfire Protection Plan, which was adopted in principle by Council in 2007.

Taking advantage of the financial incentives created by the Province, the cost of creating a comprehensive municipal wildfire mitigation program, with development regulations, fuel treatment, and public education would be minimal. Not implementing a wildfire mitigation program involves inaction on an identified potential hazard and may result in significant financial, social, and environmental costs to the municipality.

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