

THE COMMUNITY WILDFIRE PROTECTION PLAN UPDATE

for the City of Prince George and adjacent communities in the Regional District of Fraser Fort George





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The City of Prince George has a history of proactively managing wildfire risk through both policy and operations. In 2005, the City developed a Community Wildfire Protection Plan (CWPP), and over the next 7 years took advantage of Provincial funding to treat high risk forest areas close to urban development.

Since the original CWPP was developed, there has been substantial development growth and the surrounding forests have accumulated dead wood as a result of pine beetle infestations. In addition to these changes, we now have a better understanding of the expected impacts of climate change on wildfire, including longer and hotter summers with less precipitation. The updated CWPP was completed in 2018 and incorporates improved knowledge about our wildfire environment and standards for proactively managing this risk as the City and surrounding communities continue to grow.

The CWPP includes detailed technical analysis and mapping as well as numerous specific recommendations for mitigating wildfire risk. The purpose of this document is to provide a brief summary of the information contained in the CWPP as well as to provide advice on what residents can do to reduce risk around their homes.

The CWPP provides a framework to develop neighbourhoods that are designed for and prepared to defend against wildfires. The objectives of this project are to better understand wildfire risk in and around the community and make concrete recommendations to improve its resilience. Recommendations are prioritised in order to:

1. Reduce the likelihood of a wildfire entering the community;
2. Reduce the impacts and losses to property and critical infrastructure;
3. Reduce the negative economic and social impacts to the community.

THE CWPP STUDY AREA

The area included in this plan includes the City of Prince George as well as surrounding communities that lie within the Regional District of Fraser-Fort George. The study area is located within the traditional territory of the Lheidli T'enneh First Nation (LTFN) in the center of British Columbia. It is home to 75,000 people and plays an important role in supporting economic activity in the northern and eastern British Columbia.



Figure 1 The CWPP study area includes the City of Prince George as well as a buffer that includes adjacent communities





HOW CLIMATE CHANGE IS INFLUENCING WILDFIRE TRENDS

Wildfires are impacting our communities more than ever before. The 2018 fire season surpassed 2017 as the worst on record with more than 1.35 million hectares burned in the Province requiring the evacuation of 65,000 people. A Provincial State of Emergency was declared for the second year in a row.

Total Hectares Burned by Wildfires in BC

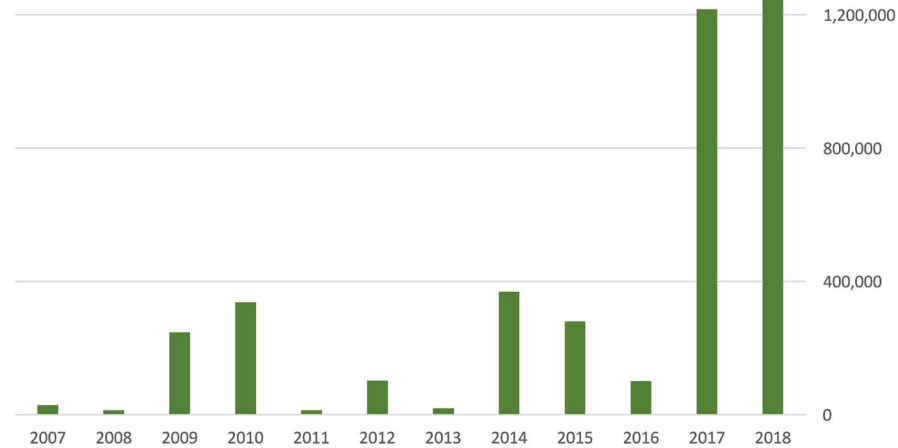


Figure 2 Total area (ha) burned by wildfires in BC by year over the past decade.

There have been no major fires in the past decade within the CWPP study area, although 91 fires have burned approximately 90 hectares. However, wildfires in adjacent areas have had major impacts on the Prince George region, causing poor air quality and influxes of evacuees.

Climate change models are predicting increases in temperatures and lower precipitation in the summer months. In 2018, a summary of climate change data was prepared for the City of Prince George. From 2018 to 2080, Prince George is expected to experience:

- An increase in temperature from a baseline of 3.9 to 7.6 Celsius
- increase from 1 to 18 very hot days (>30 Celsius)
- A 10% decrease in summer precipitation

These changes will increase the chance of wildfire ignitions and will extend the length of time over which fires will continue to burn. These changes also make forests more vulnerable to pest and diseases as well as drought stress, further increasing fuel loading with more dead and dry vegetation.

Transient stressors include: seasonal moisture deficit, drought and heat; extreme wind and rainfall; urban activity and air pollution; pests and disease; and wildfire and flood events.



Figure 3 Climate change is predicted to increase heat and drought, extreme wind and storm events as well as the impacts for pest and diseases all of which contribute to greater wildfire risk



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WHAT IS AT RISK FROM WILDFIRE

Wildfires can impact communities in a number of ways. They cause direct impacts through the loss of buildings and infrastructure. They also disrupt economic activity through evacuations of residents and slowing the movement of goods and services that are critical to the economies of the surrounding communities. Less direct impacts include smoke from nearby wildfires, which affects residents' health, can reduce tourism activity and impact agriculture production. Collectively these impacts can have a significant impact on the local economy.

The CWPP identifies the types of values that are at risk from wildfire including:

- Human life and safety
- Urban development and Infrastructure
- Industry (i.e. manufacturing plants and mills)
- Cultural values and archeological sites
- Environmental sensitive areas
- Species at risk
- Recreation
- Timber values

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Some specific features have been identified as "critical infrastructure." These are features that, if disrupted or destroyed, would cause serious impacts on the functioning of the government and important facilities that the public relies on. Examples include BC Hydro transmission lines and substations, railways, municipal water supply, waste treatment facilities, hospitals, schools, airports, municipal buildings, police and fire stations. These features are registered with the Province as being a priority to protect in the event of a wildfire.

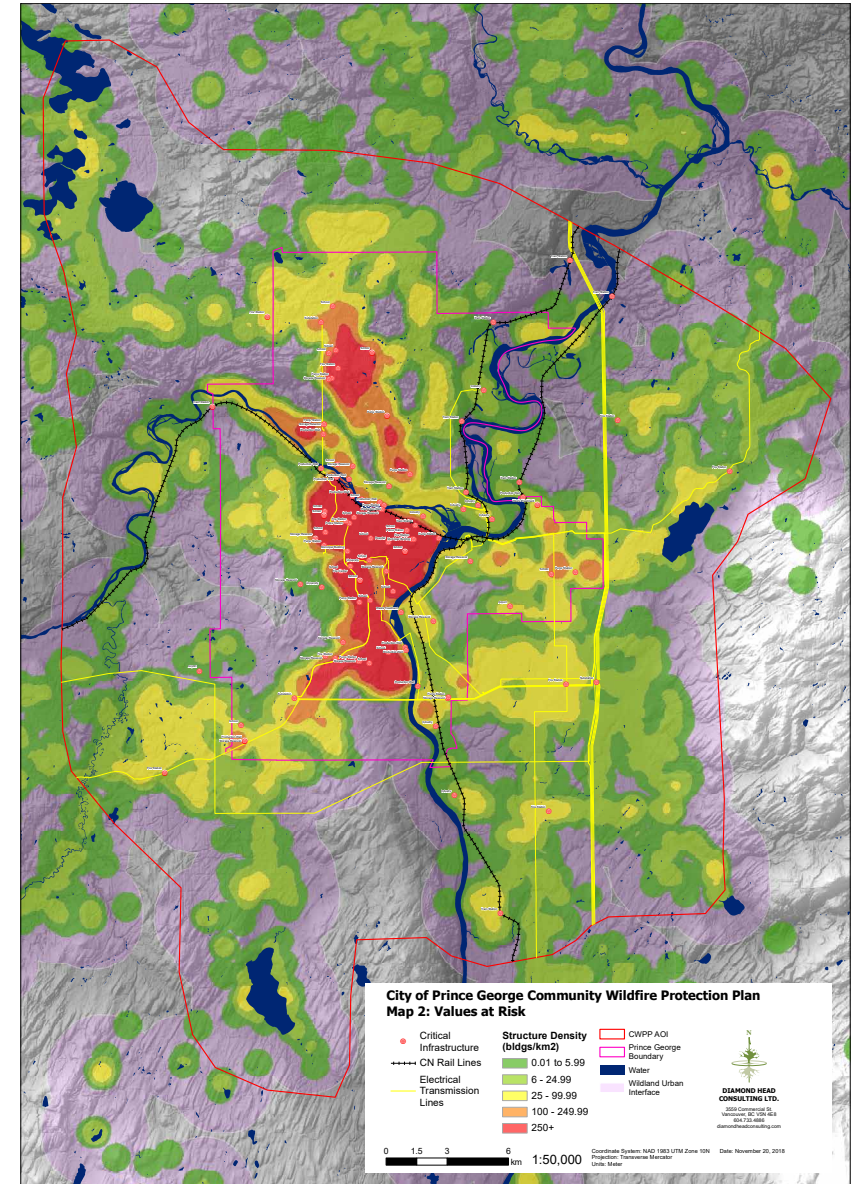


Figure 4 Map 2A of the CWPP illustrates the density of structures in the study area



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WHAT IS THE RISK FROM WILDFIRE?

The potential fire behavior in forests has been assessed using models that incorporate forest types, topography and worst case scenario summer weather conditions. This analysis was combined with the assessment of values at risk to produce a wildfire risk map. This map highlights areas of concern where there are volatile fuels that are adjacent to development. The findings from this analysis cannot be published for private lands.

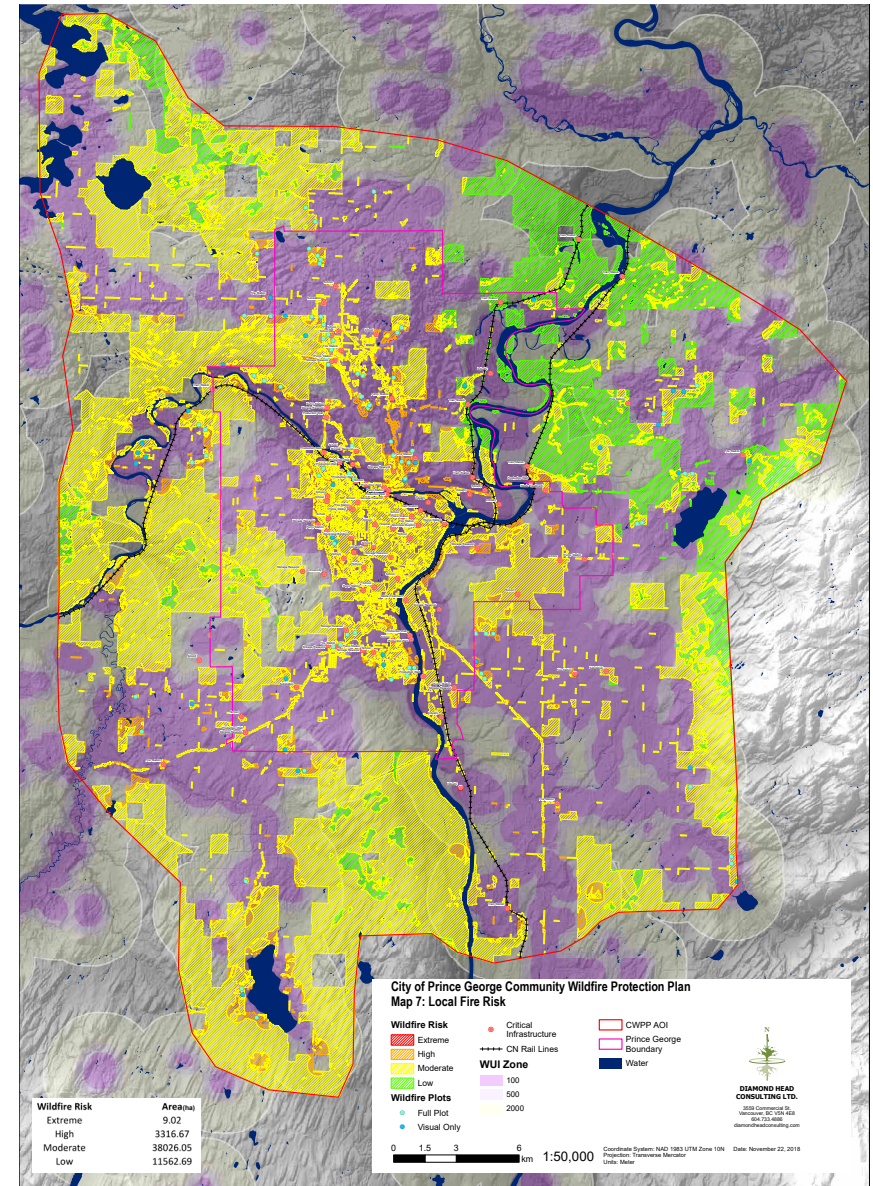


Figure 5 Map 4A of the CWPP illustrates the fire behavior potential (threat) from forests in the study area. Only the findings for public lands have been published.



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Photos illustrating forest conditions that would support a high intensity wildfire

HOW CAN THE RISK FROM WILDFIRE BE REDUCED?

The analysis of fire behavior potential was overlaid with the location of buildings and critical infrastructure to determine the wildfire risk within the study area. This analysis along with extensive ground truthing identified the forest areas that are a priority to be treated. These generally include dense forests dominated by conifer tree species that adjacent to urban development. The City of Prince George has applied for Provincial funding to treat fuel loading within 14 high risk forests that are next to established neighborhoods. In 2019, professional foresters will define the boundaries of these areas and develop treatment prescriptions for them.



Photos illustrating conditions of forests after they have been treated to reduce fuel loading



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WHAT YOU CAN DO TO PROTECT YOUR HOME

During a wildfire, homes are ignited as a result of:

- Sparks or embers landing and accumulating on roofs and decks or in nearby bushes, trees or woodpiles,
- Extreme radiant heat from flames near a home e e that melts or ignites siding, or breaks windows
- Direct flame against a structure from nearby flammable materials such as trees, bushes or woodpiles

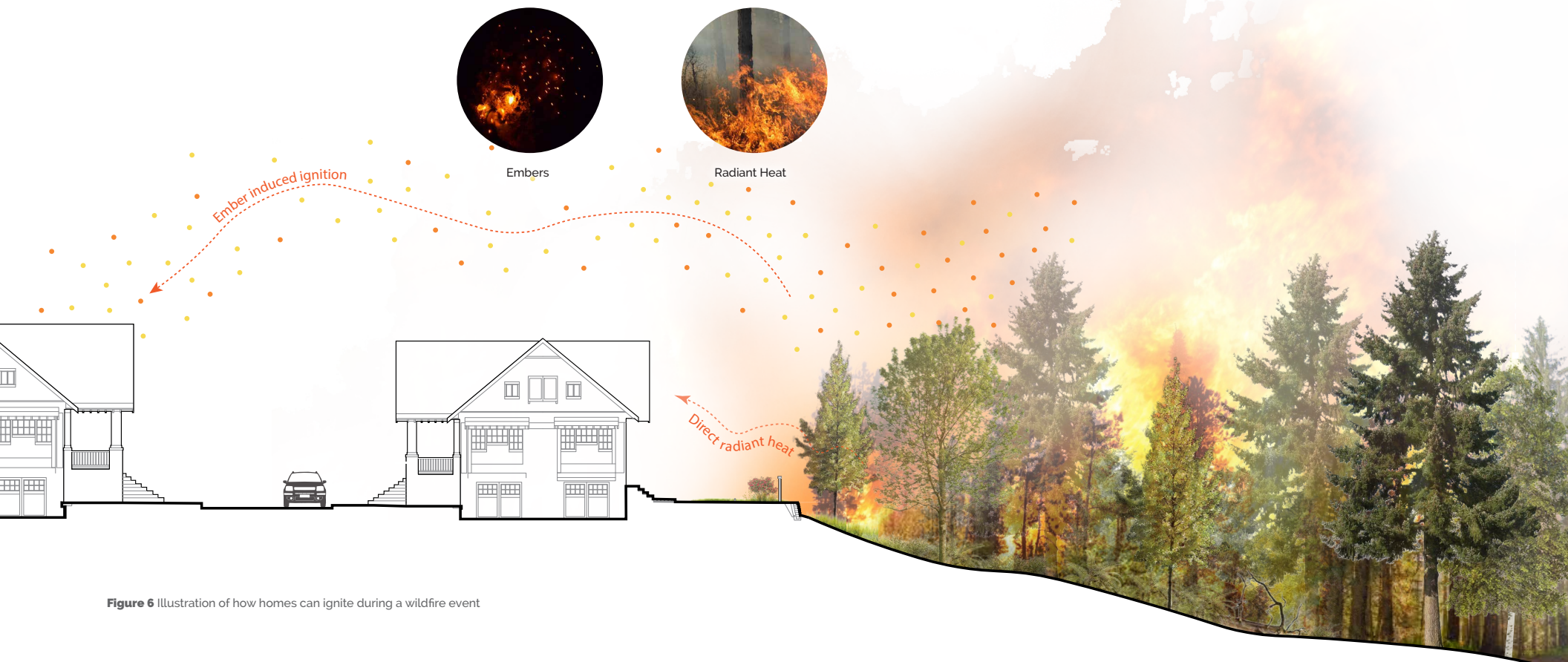


Figure 6 Illustration of how homes can ignite during a wildfire event



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Some factors that influence wildfires are beyond our control, such as weather and topography. For a home owner, the factors that can be managed include the fire resilience of the building and fuel conditions adjacent to the home. The CWPP provides advice to homeowners on how to reduce the risk to their homes. Recommendations are consistent with those provided in the Provincial FireSmart Program and are discussed by Priority Zone.

Zone 1 includes the building itself as well as the area directly within 10m of it. It has been shown through analysis of recent large scale wildfire events such as the 2016 Fort McMurray fire that mitigation factors in this area are the most important for reducing the risk from wildfire. The building itself is known as the Home Ignition Zone (1A) and should be constructed of fire resistant roofing and siding. All fuels should be removed from within 10m of the building to prevent direct contact from flames and to establish an effective defensible space for suppression crews.

Zone 2 includes the area between 10 m and 30 m from a building. In this area, there is still a risk from radiant heat, but also from ember transport associated with the wildfire. Fuels are generally treated aggressively in this area, which includes the removal of ground fuel accumulations and the selective removal and pruning of trees.

Zone 3 includes the area from 30m out to approximately 100m from a building. A wildfire in this area can produce embers that can land on or close to the building. Treatment of fuels in this area generally includes the selective removal of trees to prevent a crown fire but is generally not as aggressive as treatments in zone 2.



Figure 7 Illustration of the FireSmart priority zones used to discuss strategies for reducing the risk of wildfire to your home



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In the event that a wildfire does threaten your neighbourhood, the ability to fight the fire is improved by ensuring good access to the area between your house and the forest and ensuring there is a nearby water supply. Additional information on what you can do to protect your house and property is provided through the Provincial FireSmart Program.

Communities can apply for FireSmart Community Recognition status through FireSmart Canada. The City and Regional District encourage high risk neighbourhoods to establish wildfire awareness committees and apply for this status. This program provides resources for communities to establish a FireSmart Board and to designate Community Champions. Funding is available through FireSmart Canada to support activities aimed to reduce wildfire risk within these recognized communities.

The province provides additional information where residents can access wildfire awareness resources. These include:

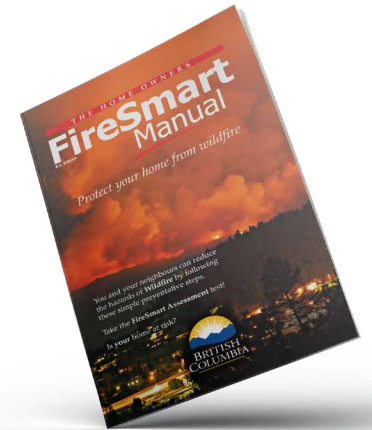
<http://www.bcwildfire.ca/Prevention/FireSmart.htm>

<https://www.FireSmartcanada.ca/>

<http://firesmartbc.ca/>

<https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prevention/for-your-home-community>

<https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/preparedbc/know-the-risks/wildfires>



If you see a wildfire, please report it to the Provincial Forest Fire Reporting Center in Victoria through their toll-free number:

1-800-663-5555 or *5555 on a cellphone.