3.2.7 CULTURAL VALUES

Cultural values have the potential to be impacted by wildfire through physical damage or alteration. Wildfire suppression techniques have the potential to disturb unidentified archaeological sites. If cultural values are inventoried and identified as sensitive sites, the possibility of protection and accommodation of these features in a wildfire incident is increased.

Archaeological sites and remains in BC that pre-date 1846 are protected from disturbance, intentional and inadvertent, by the *Heritage Conservation Act* (HCA), which applies on both private and public lands. Sites that are of an unknown age that have a likely probability of dating prior to 1846 (i.e., lithic scatters) as well as Aboriginal pictographs, petroglyphs, and burials (which are likely not as old but are still considered to have historical or archaeological value) are also protected. Under the HCA, protected sites may not be damaged, altered, or moved in any way without a permit. It is a best practice that cultural heritage resources, such as culturally modified tree (CMT) sites, be inventoried and considered in both operational and strategic planning.

The MFLNRORD Archaeology Branch confirms that there are known overlaps with archeological sites within the WUI. There is also potential for previously unidentified archeological sites to exist elsewhere in the WUI. Prior to stand modification for fire hazard reduction, and depending on treatment location, preliminary reconnaissance surveys and/or archeological impact assessments may be required to ensure that cultural heritage features are not inadvertently damaged or destroyed. Fuel treatment activities must include consultation with all identified First Nations at the site level and with sufficient time for review and input regarding their rights and interests prior to prescription finalization or implementation.

SECTION 4: WILDFIRE RISK ASSESSMENT

This section summarizes the factors that contribute to local wildfire risk in the Coquitlam WUI. The wildfire risk assessment provides a decision support tool to determine the most effective wildfire risk reduction actions and opportunities to increase community resilience.

The relationship between wildfire risk and wildfire threat is defined as follows:

Wildfire Risk = Consequence × Probability

Where:

Wildfire risk is the potential losses incurred to human life, property, and critical infrastructure within a community in the event of a wildfire.

Consequences are the repercussions associated with fire occurrence in an area (higher consequences are associated with densely populated areas, areas of high biodiversity, etc.).

Probability is the likelihood of fire occurring in an area and that area's ability to ignite, spread, and consume organic material in the forest – its *wildfire threat*. Wildfire threat is driven by three major components of the wildfire environment:

- Fuel - loading, size and shape, arrangement (horizontal and vertical), compactness, chemical properties, and fuel moisture.
- Weather – temperature, relative humidity, wind speed, and direction and rainfall.
- Topography - slope (increase/ decrease rate of spread), and aspect (fuel dryness)

4.1 WILDFIRE ENVIRONMENT AND FIRE HISTORY

The ecological context of wildfire and the role of fire in the local ecosystem under both current and historical conditions is an important basis for understanding the current and future wildfire threat to a community.

4.1.1 WILDFIRE ENVIRONMENT

Fuel

The Biogeoclimatic Ecosystem Classification system classifies the province into zones by vegetation, soils, and climate. Regional subzones are derived from relative precipitation and temperature. These subzones define the climate of the area, and are associated with a natural disturbance type, an indicator of the frequency and severity of disturbance events (see Section 4.1.2 for more details).

Table 11: BEC zones, subzones, and variants found within the WUI

Biogeoclimatic Zone	Natural Disturbance Type	Area (ha)	Percent of WUI (%)
CWHdm: Coastal Western Hemlock, Dry Maritime	NDT2	10,483.4	81%
CWHvm1: Coastal Western Hemlock, Very Wet Maritime	NDT1	1,088.8	8%
CWHvm2: Coastal Western Hemlock, Very Wet Maritime	NDT1	1,104.5	9%
MHmm1: Mountain Hemlock, Moist Maritime	NDT1	311.7	2%

Overall, Coquitlam's WUI is dominated by differing variants of dry to very wet Coastal Western Hemlock biogeoclimatic subzones (81%). Dry maritime subzones are present at lower elevations, but further north, at higher elevations above the Fraser and Pitt River valleys, subzones transition into Very Wet Maritime variants. At the highest elevations within the WUI, the Mountain Hemlock subzone is present.

Within stands observed in the WUI, forest health was generally robust and instances of abiotic and biotic disturbances were localized. Drought stress is present on some highly climate-influenced sites, such as rocky knolls and outcrops, especially along the Pitt River. At these sites western red cedar mortality was observed. Western hemlock dwarf mistletoe (*Arceuthobium tsugense*), a native parasitic plant, is also present within the WUI at moderate, endemic levels. Higher levels of mistletoe disturbance were found in stands dominated by hemlock or exclusively comprised of hemlock; however, throughout the WUI, mixed-stands generally were more common. Hemlock looper (*Lambdina fiscellaria*), a native defoliating insect, has produced wide-scale disturbances in areas of the WUI in the past (1960s and 2000s).[17] A new outbreak began on the south coast of BC in 2019, and has caused high mortality rates for western hemlock trees in neighboring municipalities in the Lower Mainland[18], although less so within the WUI areas of Coquitlam. The full extent of the impact of this outbreak within the Coquitlam WUI, however, may take several more years to identify. Overall, these forest health factors have implications for the level of surface fuel accumulation in affected stands, as well as access and working conditions for fire fighters in the event of wildfire.

The Canadian Forest Fire Behaviour Prediction (FBP) System outlines five major fuel groups and sixteen fuel types based on characteristic fire behaviour under defined conditions.[19] Fuel types (confirmed or updated by field work verification) for Coquitlam's WUI are shown below on Map 4. The main fuel type present that may be considered hazardous in terms of fire behaviour and spotting potential in the WUI is C-3, particularly if there are large amounts of woody fuel accumulations or denser understory ingrowth. C-5 fuel types have a moderate potential for active crown fire when wind-driven. An M-1/2 fuel type can sometimes be considered hazardous, depending on the proportion of conifers within the forest stand; conifer fuels include those in the overstory, as well as those in the understory. Most M-1/2 stands observed during field work did not contain a high proportion of conifers in the understory and were instead characterized by an understory of deciduous shrub.

Areas characterized as D-1/2 and O-1/b fuel type are present within the WUI as well. Some of these fuel type areas are naturally occurring, such as the deciduous- and mixed-forest stands in the lower Coquitlam River Valley. Some result from particular land use activities, such as transmission line right-of-way maintenance, sand and gravel quarry areas, and golf courses. These areas, if maintained to comprise the same low-flammability vegetation combination that currently occurs within them, have the potential to act as fuelbreaks. Proposed fuel treatment areas (Section 5.7) have been identified with this in mind.

Detailed fuel type descriptions and their associated wildfire risk can be found in Appendix A-1: Fire Risk Threat Assessment Methodology.

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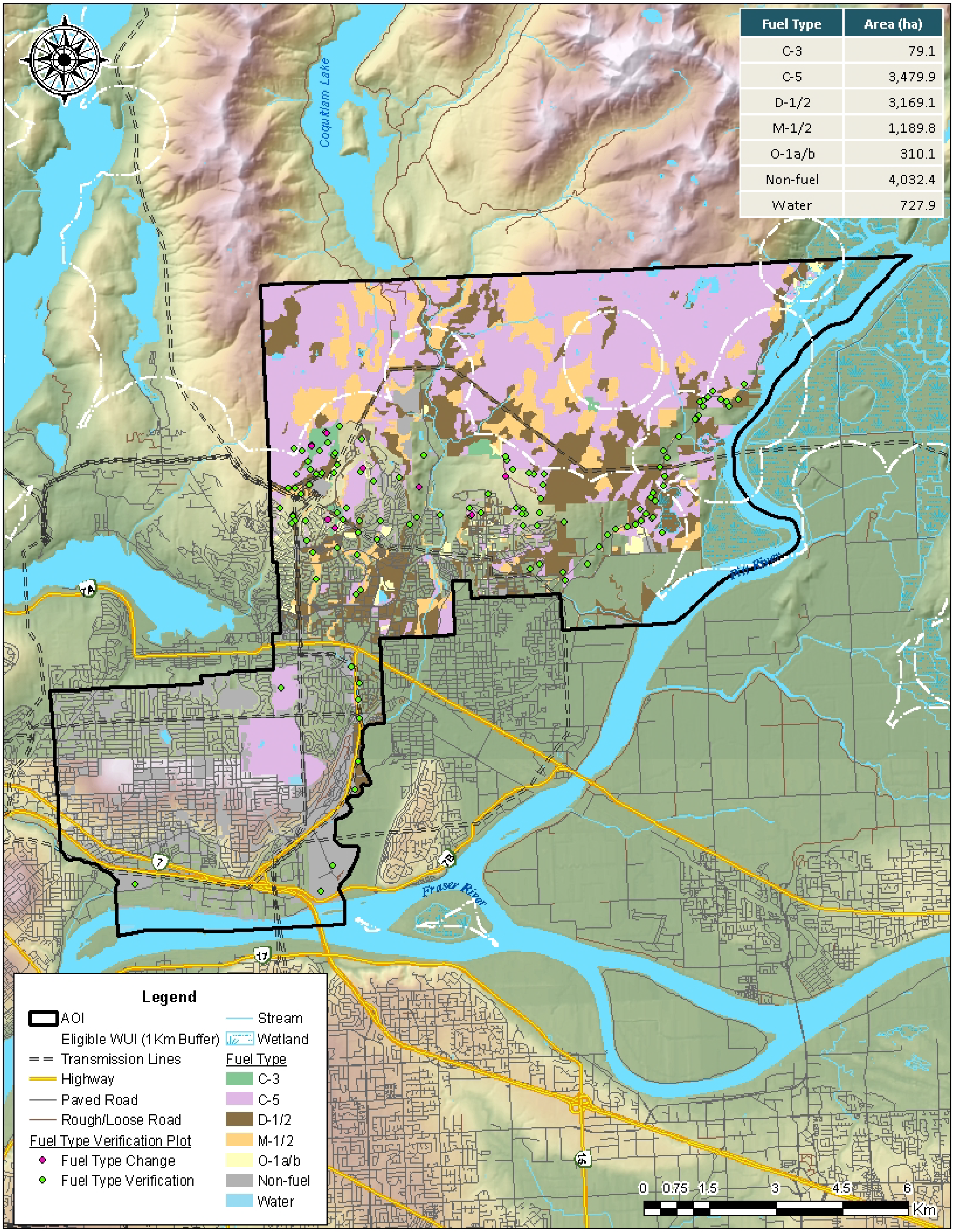
[17] Dunkley, D. (Kitchens, K.) (2019). *Potential effects of climate change on forest health in Metro Vancouver's water supply area: an investigation of biotic disturbances and management strategies.* https://www.sustain.ubc.ca/sites/default/files/2019-28_Potential%20Effects%20of%20Climate%20Change_Kitchens.pdf

[18] BC Data Catalogue. Retrieved from: https://catalogue.data.gov.bc.ca/dataset/tantalis-crown-tenures

[19] Forestry Canada Fire Danger Group. (1992). *Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3.*



Map 4: Fuel types present in Coquitlam's WUI

Weather

It is important for the development of appropriate prevention programs that the average exposure to periods of high fire danger is determined. 'High fire danger' includes Danger Class ratings of 4 (High) and 5 (Extreme) based on the Canadian Forest Fire Danger Rating System. Danger class days were summarized to provide an indication of the fire weather in Coquitlam's WUI. Since fire danger varies from year to year, historical weather data can provide information on the number and distribution of days when the WUI is typically subject to high fire danger conditions, which supports an assessment of overall wildfire risk.

Figure 3 below displays the average frequency of danger class days between the months of April and October. The data summarized comes from the UBC Research fire weather station, which provides a 10-year fire weather data collection interval for the WUI. According to Figure 3, fire weather in the WUI is the highest from July to September. 28 of the 92 days (30%) over those three months are either 'high' or 'extreme' danger class days. August has the most severe fire weather: it has both the most 'high' or 'extreme' danger class days, 23 'high' and five 'extreme'. There are historically 1 to 2 'high' danger class days each in June and October, demonstrating the potential for ignitions during warm and dry periods in the spring and fall.

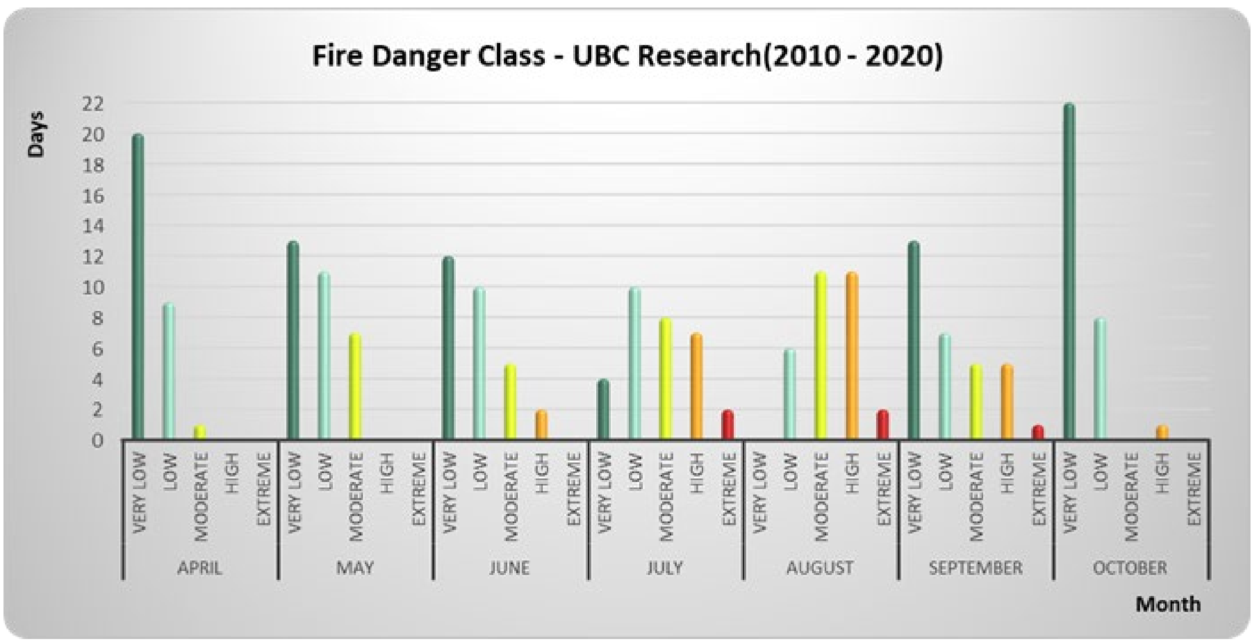


Figure 3: Average number of danger class days for the UBC Research fire weather station. Summary of fire weather data for the years 2010-2020.

Climate change is projected to contribute to changes in the fire regime, forest attributes, and fuel hazard across BC. Climate scientists expect that the warming global climate will trend towards wildfires that are increasingly larger, more intense, and more difficult to control. Furthermore, it is likely that these fires will be more threatening to WUI communities due to increased potential fire behaviour, fire season length, and fire severity.[20]

Wind speed, wind direction, and fine fuel moisture condition also influence wildfire trajectory and rate of spread. Summarized in an Initial Spread Index (ISI) Rose(s) from representative BCWS weather stations, the Initial Spread Index (ISI) is a numeric rating of the expected rate of fire spread that combines the effects of wind speed and fine fuel moisture. Wildfire that occurs upwind of a value poses a more significant threat to that value than one which occurs downwind. Figure 6 below displays the daily average ISI values for the UBC Research station, which represents wind speeds and directions for the WUI. The UBC Research Station is located in the Malcolm Knapp Research Forest, approximately 25 kilometers from Coquitlam.

During most of the fire season (April – October), predominant winds originate from the south, east, and west, with windspeeds highest in July and August (Figure 6). Predominant winds appear to slightly shift in September and October as wind frequency increased from the west and north; however, the data indicate these winds are frequent but not of high speed. An average of hourly wind readings for the fire season shows that winds are predominantly from the south, east and west, and gusting upwards of 10 km/hour (see Appendix A-3: Fire Spread Patterns).

Topography

Slope percentage (steepness) influences a fire's trajectory, rate of spread, and ability to gain momentum uphill. Table 12 shows the percent of the WUI by slope percent class and those classes' fire behavior implications. More than half of Coquitlam's WUI (68%) is on less than 20% slope and will likely not experience accelerated rates of spread. 12% of the WUI is likely to experience an increased rate of spread, 8% a high rate of spread, and 5% is likely to experience a very high or extreme rate of spread.

Table 12. Slope Percentage and Fire Behaviour Implications.

Slope	Percent of WUI	Fire Behaviour Implications
<20%	68%	Very little flame and fuel interaction caused by slope, normal rate of spread.
20-30%	12%	Flame tilt begins to preheat fuel, increase rate of spread.
30-45%	8%	Flame tilt preheats fuel and begins to bathe flames into fuel, high rate of spread.
40-60%	7%	Flame tilt preheats fuel and bathes flames into fuel, very high rate of spread.
>60%	5%	Flame tilt preheats fuel and bathes flames into fuel well upslope, extreme rate of spread.

When slope percentage is considered in context with a value's slope position, that value's risk to increased fire behaviour can change dramatically – i.e., a value located in the upper third of a steep slope (>40%) will be exposed to fires downslope travelling very quickly uphill towards it. Table 13 summarizes the fire

[20] BC Provincial Government. (2020). *Preliminary Strategic Climate Risk Assessment.* Retrieved from: https://www2.gov.bc.ca/gov/content/environment/climate-change/adaptation/risk-assessment

behaviour implications for slope position. A value located at the bottom of a slope is equivalent to a value on flat ground. A value on the upper third of the slope would be impacted by preheating and faster rates of spread. On the larger topographic scale, residential developments in the Coquitlam WUI are located in the middle of continuous slopes, and on slope bottoms or valley bottoms. In select locations, neighbourhoods are located at the upper third of slopes.

Table 13. Slope Position of Value and Fire Behaviour Implications.

Slope Position of Value	Fire Behaviour Implications
Bottom of slope / valley bottom	Impacted by normal rates of spread.
Mid-slope (bench)	Impacted by increase rates of spread. Position on a bench may reduce the preheating near the value. (Value is offset from the slope).
Mid-slope (continuous)	Impacted by fast rates of spread. No break in terrain features affected by preheating and flames bathing into the fuel ahead of the fire.
Upper third of slope	Impacted by extreme rates of spread. At risk to large continuous fire run, preheating and flames bathing into the fuel.

4.1.2 WILDFIRE HISTORY

Historic Fire Regime

The biogeoclimatic zone classification system has been used to classify BC into five Natural Disturbance Types. The Natural Disturbance Type classification is based on the frequency and severity of pre-European disturbance events (including, but limited to, wildfires) and provides an indication of historical fire regime.[21]

The lower elevation regions of Coquitlam's WUI are characterized as Natural Disturbance Type 2 - ecosystems with infrequent stand-initiating fires. These ecosystems would historically experience moderate sized (20 to 1000 ha) wildfires. Unburned areas would result from sheltering terrain features, higher site moisture or chance. Larger fires occurred after extended periods of drought. In Coastal Western Hemlock biogeoclimatic zones, which encompasses most of Coquitlam's WUI area, the mean return interval for these fires is around 200 years. Natural Disturbance Type 1 represents ecosystems with rare stand-initiating events. This Natural Disturbance Type characterizes the higher elevation regions of Coquitlam's WUI. When disturbances such as wildfires occurred, they were historically small. For these forest ecosystems, the mean return interval for wildfires is between 250 years (Coastal Western Hemlock zones) and 350 years (Mountain Hemlock zones).[21]

[21] Province of British Columbia. (1995). *Biodiversity Guidebook.*

The Natural Disturbance Type classification is useful for describing the historical disturbance pattern typical for an area; however, fire history is complex and highly variable across space and time for many ecosystems.[22]

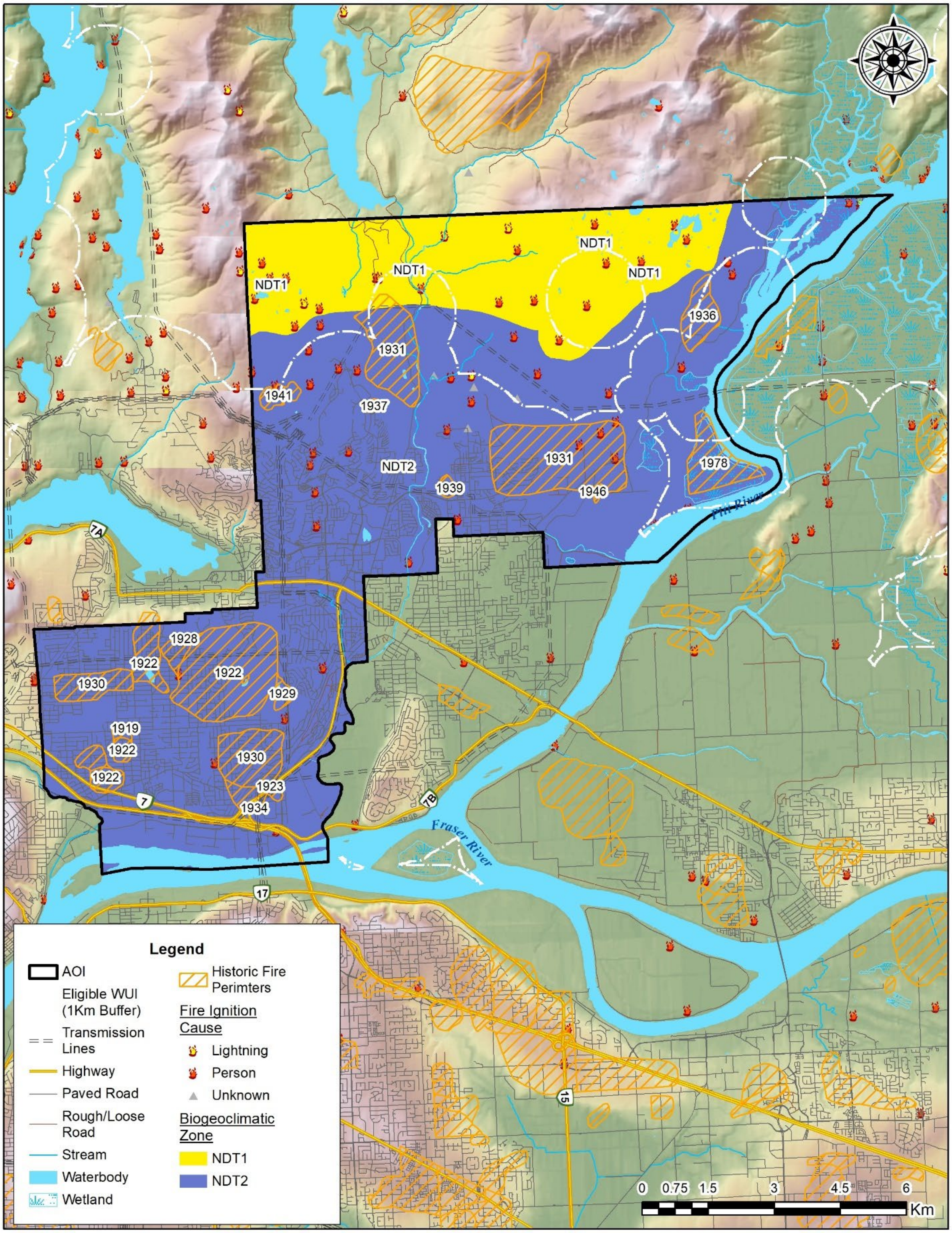
Historical Wildfire Occurrences

Historical fire ignition and perimeter data for the WUI are depicted below in Map 5. Fire ignition data is available from 1950-2021 and fire perimeter data is available from 1919-2021 for the WUI.

Based on the BCWS historical wildfire polygon dataset, wildfires in the WUI are extremely infrequent over the last 75 years; only one wildfire has occurred since 1947. This wildfire burned 150 hectares in 1978. Previous to 1947, especially in the 1920s and 1930s, there were 20 small to large sized fires that were most likely caused by post-logging slash-and-burn practices that escaped control. Three of these fires were over 150 hectares in size, while seven were less than 25 hectares in size.

Based on the BCWS historical fire ignition dataset, most historical ignitions with the WUI are human caused – out of 42 ignitions in the dataset, 93% (39) were from human or human activity. From 1950-1990, there was an average of 9 human-caused fires recorded per decade. From 1990-present, there has only been a total of 4 human-caused fires (average of 1 per decade).[23] This shows a clear trend of decreasing human-caused fires in the WUI on a per decade basis. This could be attributed to increased wildfire knowledge and improved wildfire risk reduction practices by primary industries. However, human caused fires still pose a substantial risk to Coquitlam and the surrounding WUI.

[22] Hall, E. (2010). *Maintaining Fire in British Columbia's Ecosystems: An Ecological Perspective*. Report submitted to the Wildfire Management Branch, Ministry of Forests and Range.



Map 5: Natural disturbance regimes and historical fire ignitions and occurrences within the WUI.

4.2 PROVINCIAL STRATEGIC THREAT ANALYSIS

The BCWS Provincial Strategic Threat Analysis (PSTA) evaluates multiple datasets to provide a coarse (high-level) spatial representation of approximate relative wildfire risks across BC. It provides a starting point to assess the local wildfire risk. Three inputs are combined using a sum process to create the PSTA wildfire risk analysis component:[24]

1) **Historic fire density** represents the ignition and fire spread potential based upon historic patterns and fire density weighted by fire size (larger fire perimeters were given a higher weight in order to reflect the greater cost and damage usually associated with larger fires).
2) **Spotting impact** represents the ability of embers or firebrands from a burning fire to be sent aloft and start new fires in advance of the fire front, or outside of the fire perimeter. Spotting is most associated with high intensity crown fires in coniferous fuels and structure losses. For the wildfire risk analysis, the spotting analysis is based on estimating the threat to a given point on the landscape from the fuels surrounding it, up to two kilometers. Spotting distances greater than two kilometers are rare and unpredictable.
3) **Head fire intensity (HFI)** represents the intensity (kW/m) of the fire front. HFI is correlated with flame length and fire behaviour. The greater the fire intensity (kW/m), or HFI and fire intensity class, the more extreme the fire behaviour is likely to be and the more difficult the fire will likely be to suppress. The HFI used in the wildfire risk analysis was developed using the 90th percentile fire weather index value.

The final wildfire risk analysis value was developed through an average weighting process of the three layers.[25] The weighting system integrates the three components of fire threat: fire occurrence, represented by fire density; suppression effort and fire impacts, represented by head fire intensity; and spotting. Values were then separated into 10 classes (1 – 10) which represent increasing levels of overall fire threat (the higher the number, the greater the fire threat); threat class 7 is considered the threshold. Threat classes of 7 and higher are locations where the threat is severe enough to potentially cause catastrophic losses in any given fire season, when overlapping with values at risk. Classes were grouped into the following general threat class descriptions: low (1 – 3); moderate (4 – 6); high (7 – 8); and, extreme (9 – 10).

There are considerable limitations associated with the PSTA wildfire risk analysis component based upon the accuracy of the source data and the modelling tools, the most notable being:

- Limited accuracy and variability of the fire history point data;
- Sensitivity to fuel type and the associated limitations of using fuel type approximations for fire behaviour modelling; and,

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[24] MFLNRORD, BCWS. (2021). *BC Wildfire PSTA Fire Threat Rating*. Retrieved from: https://catalogue.data.gov.bc.ca/dataset/bc-wildfire-psta-fire-threat-rating

[25] Weighting of the three PSTA wildfire threat analysis components: Fire density 30%; HFI 60%; spotting impact 10% (water bodies were automatically given a value of 'no threat' [-1])

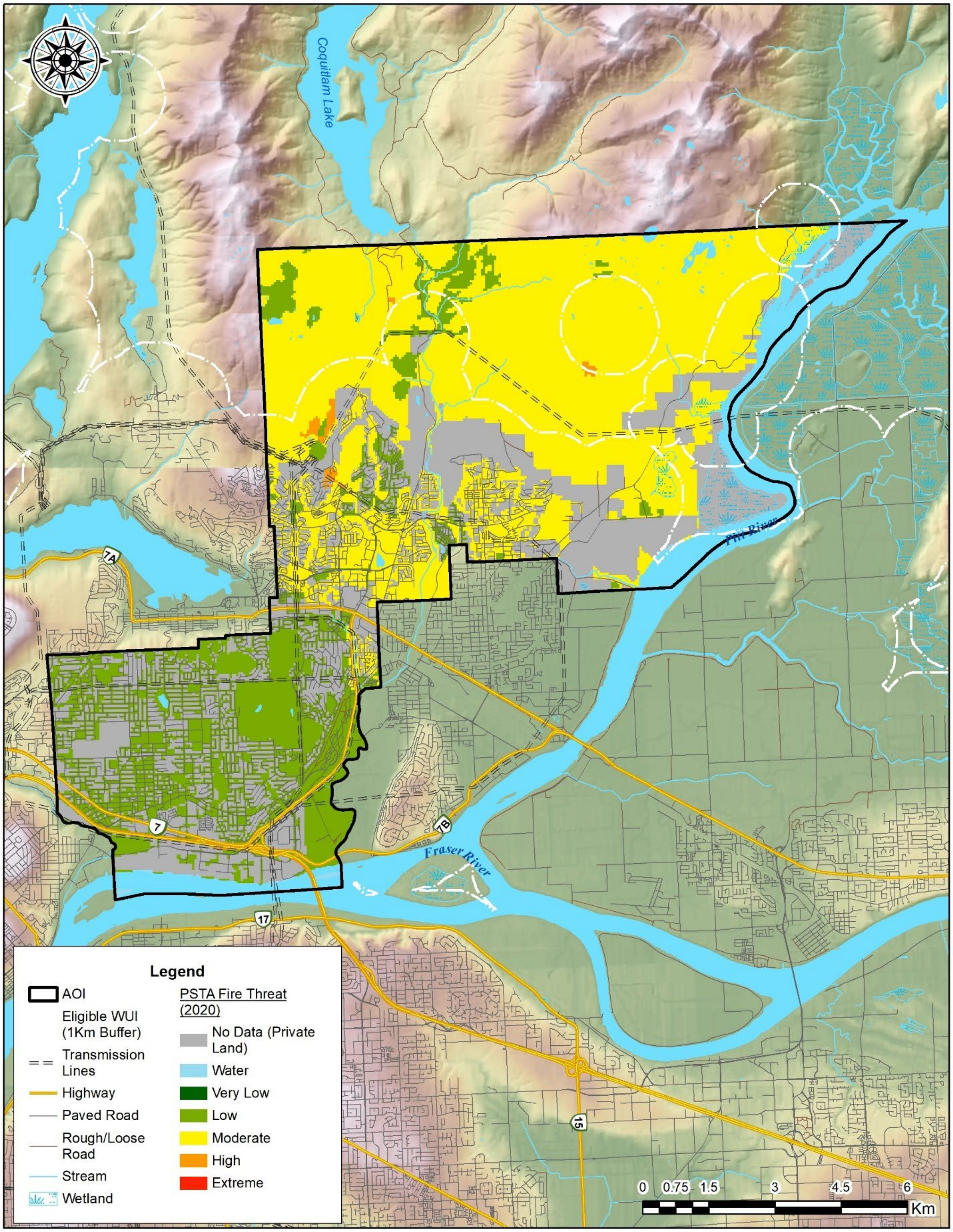
- 90th percentile rating for HFI, which represents a near worst-case scenario which may be artificial in some circumstances.

Consequently, in this report, the PSTA is complemented by a finer scale local wildfire risk analysis considering local factors to improve the wildfire risk assessment. The key steps to completing the local wildfire risk analysis and a detailed assessment of the local wildfire risk are described in Section 4.3 below and in Appendix A: Local Wildfire Risk Process.

The fire threat ratings from the 2020 PSTA are summarized for the WUI in Table 14 and displayed in Map 6. The majority of area in the WUI is moderate threat (47.2%). Low threat rating areas cover another 20.5% of the WUI. Approximately one quarter of the WUI is categorized as private land and has no data for wildfire risk in the PSTA dataset. There is negligible area rated as high (approximately 47 hectares in the entirety of the WUI), and no area rated as extreme threat. Areas of high threat are located to the northeast of Westwood Plateau neighbourhoods, around the BC Hydro Meridian substation, and at the southwest corner of Ridge Park.

Table 14: 2020 PSTA WUI Fire threat ratings

<table>
<tr><th>Threat Class</th><th>Area (ha)</th><th>Threat Class Description</th><th>Percent of WUI</th></tr>
<tr><td>-3</td><td>3,408.84</td><td>No Data (Private Land)</td><td>26.2%</td></tr>
<tr><td>-2</td><td>-</td><td>No Data (Private Managed Forest Land)</td><td>0.0%</td></tr>
<tr><td>-1</td><td>734.02</td><td>Water</td><td>5.7%</td></tr>
<tr><td>0</td><td>-</td><td>No Threat</td><td>0.0%</td></tr>
<tr><td>1</td><td>885.45</td><td rowspan="3">Low</td><td rowspan="3">20.5%</td></tr>
<tr><td>2</td><td>1,431.61</td></tr>
<tr><td>3</td><td>347.54</td></tr>
<tr><td>4</td><td>2,961.90</td><td rowspan="3">Moderate</td><td rowspan="3">47.2%</td></tr>
<tr><td>5</td><td>1,957.81</td></tr>
<tr><td>6</td><td>1,214.67</td></tr>
<tr><td>7</td><td>46.50</td><td rowspan="2">High</td><td rowspan="2">0.4%</td></tr>
<tr><td>8</td><td>-</td></tr>
<tr><td>9</td><td>-</td><td rowspan="2">Extreme</td><td rowspan="2">0.0%</td></tr>
<tr><td>10</td><td>-</td></tr>
<tr><td>Total</td><td>12,988.35</td><td>-</td><td>100%</td></tr>
</table>



Map 6: PSTA fire threat map

4.3 LOCAL WILDFIRE THREAT ASSESSMENT

The local wildfire threat assessment process includes several key steps as outlined in Appendix A: Local Wildfire Risk Process and summarized as follows:

- *Fuel type attribute assessment* – ground truthing/verification and updating as required to develop a local fuel type map (Appendix A-1: Fire Risk Threat Assessment Methodology, Map 4).
- *Consideration of the proximity of fuel to the community* – recognizing that fuel closest to the community usually represents the highest hazard (Appendix A-2: Proximity of Fuel to the Community).
- *Analysis of predominant summer fire spread patterns* – using wind speed and wind direction during the peak burning period using ISI Rose(s) from BCWS weather station(s) (Appendix A-3: Fire Spread Patterns).
- *Consideration of topography in relation to values* – slope percentage influences the fire's trajectory and rate of spread and slope position relates to the ability of a fire to gain momentum uphill.
- *Stratification of the WUI* – according to relative wildfire threat based on the above considerations, other local factors, and field assessment of priority wildfire risk areas.

Wildfire Threat Assessment plots were completed over a number of field days in June of 2021 in conjunction with verification of fuel types (see Appendix D: Wildfire Threat Assessment Plot Locations) to support development of priority treatment areas and to confidently ascribe threat to polygons which may not have been visited or plotted, but which have similar fuel, topographic, and proximity to structure characteristics to those that were.

Field assessment locations were prioritized based upon:

- *Proximity to values at risk*: Field assessments were clustered in the intermix and interface, as well as around critical infrastructure.
- *Prevailing fire season winds*: More field time was spent assessing areas upwind of values at risk, especially in potential locations for landscape-level fuel breaks.
- *Local knowledge*: Areas identified as hazardous, potentially hazardous, with limited access/egress, or otherwise of particular concern as vulnerable to wildfire, as communicated by local fire officials and community forest representatives.
- *Observations*: Additional areas potentially not recognized prior to field work were visually identified as hazardous and assessed during the week.
- *Verifying provincial classification*: areas classified as high threat in the provincial PSTA dataset, or with an uncommon fuel type, were assessed to ground-truth the fuel type and threat, even if they were relatively far from values.

A total of 30 Wildfire Threat Assessment plots were completed and 326 other field stops (e.g., qualitative notes, fuel type verification, and/or photograph documentation) were made across the WUI (see Appendix D: Wildfire Threat Assessment Plot Locations and Map 7) in areas that had road or trail access in order to build the most accurate assessment of local fire risk possible.

Using the verified and updated fuel types (Appendix A-1: Fire Risk Threat Assessment Methodology, Map 4) combined with field wildfire threat assessments and office-based analysis (Appendix A: Local Wildfire Risk Process), local wildfire threat for the WUI was updated. Using the Wildfire Threat Assessment methodology,[26] there are two main components of the threat rating system: the *wildfire behaviour threat class* (fuels, weather, and topography sub-components) and the *WUI threat class* (structural sub-component).

4.3.1 WILDFIRE BEHAVIOR THREAT CLASS ANALYSIS

Classes of the wildfire behaviour threat class analysis are as follows:

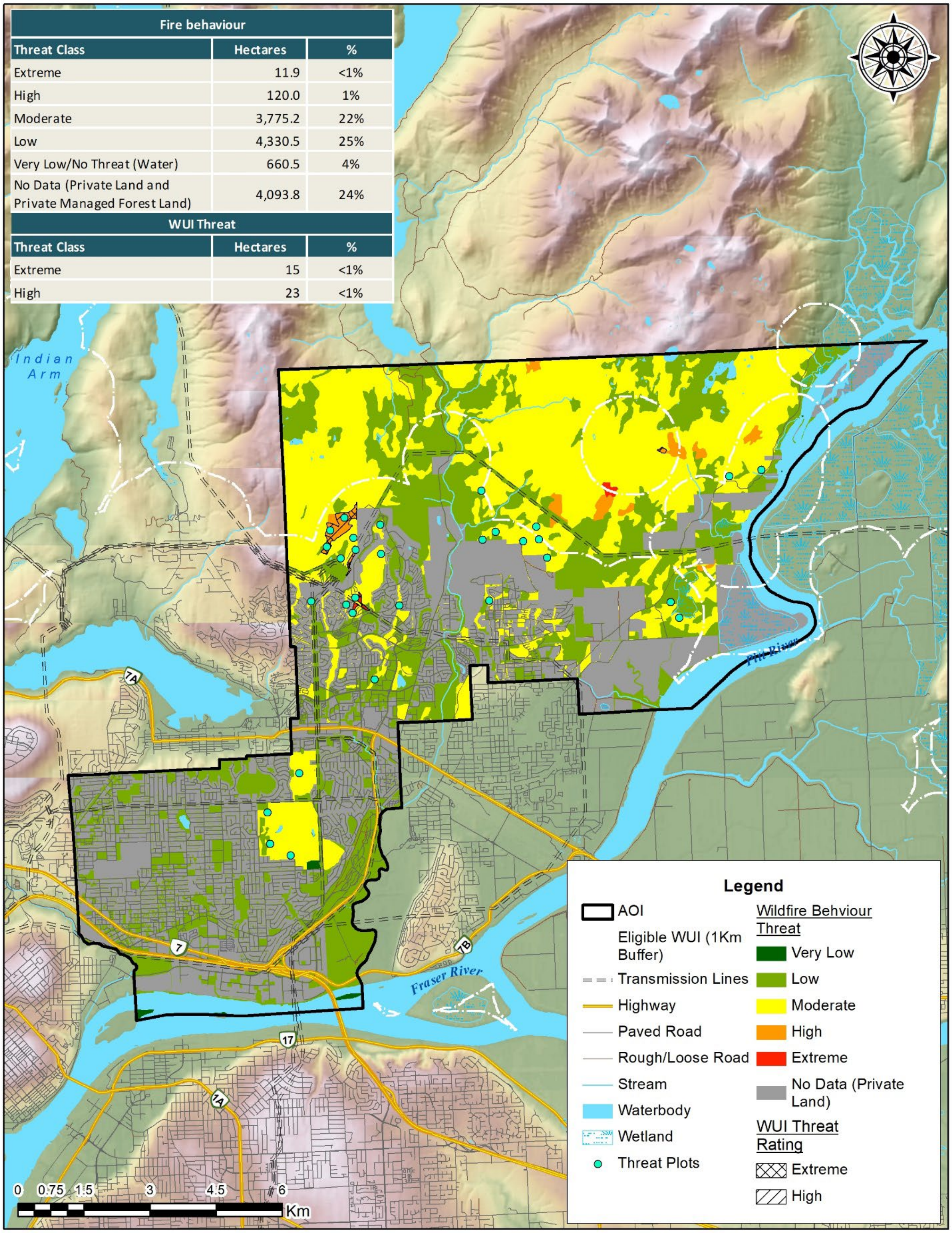
- <u>Very Low:</u> Waterbodies with no forest or grassland fuels, posing no wildfire threat;
- <u>Low</u>: Developed and undeveloped land that will not support significant wildfire spread;
- <u>Moderate</u>: Developed and undeveloped land that will support surface fires that are unthreatening to homes and structures;
- <u>High</u>: Landscapes or stands that are continuous forested fuels that will support candling, intermittent crown or continuous crown fires. These landscapes are often steeper slopes, rough or broken terrain and/or south or west aspects. High polygons may include high indices of dead and downed conifers; and
- <u>Extreme</u>: Continuous forested land that will support intermittent or continuous crown fires.

The results of the wildfire behaviour threat class analysis are shown on Map 7 and in Table 15 below. About 24% of the WUI is classified as private land and as such has not been allocated fire threat data. About 4% of the WUI is either water, or very low threat. About 1% of the WUI is extreme and high threat. *The majority of the WUI is rated as moderate or low threat.*

Table 15: Fire behavior threat summary for the WUI

Fire behaviour		
Threat Class	**Hectares**	**%**
Extreme	11.9	<1%
High	120.0	1%
Moderate	3,775.2	22%
Low	4,330.5	25%
Very Low/No Threat (Water)	660.5	4%
No Data (Private Land and Private Managed Forest Land)	4,093.8	24%

[26] UBCM. 2013. Wildland Urban Interface Threat Assessments in BC. Retrieved from: (https://www.ubcm.ca/assets/Funding~Programs/LGPS/SWPI/Resources/swpi-WUI-WTA-Guide-2012-Update.pdf



Fire behaviour		
Threat Class	Hectares	%
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Moderate	3,775.2	22%
Low	4,330.5	25%
Very Low/No Threat (Water)	660.5	4%
No Data (Private Land and Private Managed Forest Land)	4,093.8	24%
WUI Threat		
Threat Class	Hectares	%
Extreme	15	<1%
High	23	<1%

Map 7: Local fire behaviour

4.3.2 WUI THREAT CLASS ANALYSIS

WUI Threat classes are quantified when the Wildfire Behaviour Threat is assessed as high or extreme, causing the potential of unacceptable wildfire threats when near communities and developments. WUI Threat Classes are described below:

- **Low**: The high or extreme threat is sufficiently distant from developments, having no direct impact on the community and is located over 2Km from structures;
- **Moderate**: The high or extreme threat is sufficiently distant from developments, having no direct impact on the community and is located 500m to 2Km distance from structures;
- **High**: The high or extreme threat has the potential to directly impact a community or development and is located 200m to 500m from structures; and
- **Extreme**: The high or extreme threat has the potential to directly impact a community or development and is located within 200m from structures.

Table 16 below (and also displayed on Map 7) summarizes the WUI threat class ratings within Coquitlam's WUI. 15 hectares have an extreme threat class rating, 23 hectares have a high threat class rating, and 86 hectares have a moderate threat class rating.

Table 16: WUI threat class ratings

WUI Threat		
Threat Class	**Hectares**	**%**
Extreme	15	<1%
High	23	<1%
Moderate	86	1%
Low	8	<1%
N/A	8,766	67%
No Data (Private Land and Private Managed Forest Land)	4,090	31%

For detailed field data collection and spatial analysis methodology for the local threat assessment and classification, see Appendix F: Fire Risk Threat Assessment Methodology.

4.4 HAZARD, RISK, AND VULNERABILITY ASSESSMENT

The Hazard, Risk and Vulnerability Analysis (HRVA) that local governments undertake as part of the legislative requirements to develop a local Emergency Management Plan may provide additional locally derived information about critical infrastructure important to the community.[27] Emergency Management BC supports this by providing the Critical Infrastructure Assessment Tool.[28]

The purpose of a HRVA is to help a community make risk-based choices to address vulnerabilities, mitigate hazards, and prepare for responding to and recovering from hazard events. The HRVA process assesses sources of potential harm, their likelihood of occurring, the severity of their possible impacts, and who or what is particularly exposed or vulnerable to these impacts.[29]

An updated Hazard, Risk, and Vulnerability Analysis is scheduled to be completed by the City of Coquitlam in the next five years. This may provide a further refined inventory of critical infrastructure and values-at-risk within the municipality. It is recommended that, when it is complete, the information gathered from the Hazard, Risk and Vulnerability Analysis be incorporated into a CWRP update for the City of Coquitlam, and also be utilized in the creation of any other related emergency response plans.

[27] UBCM. 2020. *Community Wildfire Resiliency Plan Instruction Guide*. Retrieved from: Community Wildfire Resiliency Plan Instruction Guide (ubcm.ca)

[28] More information on the instruction guide can be found here: https://www2.gov.bc.ca/gov/content/safety/emergency-preparedness-response-recovery/local-emergency-programs/critical-infrastructure-assessment.

[29] Government of BC. 2020. *HRVA Example Report.* https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/local-government/hrva/hrva_forms-step_8-anytown_bc-sample_hrva_report.pdf.