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Bushfire Hazard Assessment Bushfire Management Report

Project No:	B5484
Address:	216 Learoyd Rd Willawong QLD 4110
Lot Plan:	Lot 6 RP69231
Local Government Area:	Brisbane City Council
Proposed Development:	Reconfiguring a lot – three (3) new lots
Maximum Radiant Heat Flux:	29 kW/m ²

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Document History				
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Report Expiry

Please be aware that the bushfire hazard assessment and BAL rating provided in this report are valid for 12 months from the date of issuance. It is advisable to consult with a qualified professional to confirm the accuracy of the assessment if this report is more than 12 months old. If any discrepancies are identified or if an update is necessary, a new report should be obtained.

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Legislation may impact vegetation clearing activities. It is strongly recommended that clients contact the relevant agencies to determine if their proposed vegetation clearing activity complies with local, state, and federal laws.

Practitioner Declaration

Name:	Henry (Hongxi) Liang
Position:	Senior Bushfire Consultant
<p>I hereby certify that I have undertaken the assessment of the above-mentioned site and determined the Bushfire Attack Level stated above in accordance with the requirements of AS 3959:2018 and/or the Bushfire Resilient Communities - Technical Reference Guide published by Queensland Fire and Emergency Services.</p> <p>I hereby declare that I am a suitably qualified bushfire consultant, holding AQF Level 8 qualifications and tertiary degrees below:</p> <ul style="list-style-type: none"> ▪ Graduate Certificate in Bushfire Protection ▪ Master of Business Administration ▪ Bachelor in Engineering 	
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Acronyms and Abbreviations

APZ	Asset Protection Zone
AEP	Annual Exceedance Probability
AS 3959:2018	Australian Standard 3959:2018 Construction of Buildings in Bushfire-Prone Areas (This Standard incorporates Amendment No. 1 (June 2019) and Amendment No. 2 (December 2020))
BCA	Building Code of Australia
BPA	Bushfire Prone Area
BMP	Bushfire Management Plan
BVG	Broad Vegetation Group
FDI	Fire Danger Index
FFDI	Forest Fire Danger Index
FWS	Fire Weather Severity
IMS	Interactive Mapping System
LMP	Landscape Management Plan
MCU	Material Change of Use
NCC	National Construction Code
QFES	Queensland Fire and Emergency Services
RH	Relative Humidity
RAL/ROL	Reconfigure A Lot/Reconfiguration of Lot
SPP	State Planning Policy 2017
SPP map input data	Statewide Map of Bushfire Prone Areas Input Data E.G. FFDI (5% AEP), Maximum Landscape and Vegetation Hazard Class
VHC	Vegetation Hazard Class
VMP	Vegetation Management Plan

Executive Summary

Project No:	B5484
Type of bushfire assessment:	Site-specific bushfire hazard assessment Bushfire attack level assessment Bushfire management plan
Location:	216 Learoyd Rd Willawong QLD 4110 Lot 6 RP69231
Site area:	10,120 sqm
Local Government Area:	Brisbane City Council
Client(s):	Tree Garden Pty Ltd ATF Natasa Family Trust C/- Town Planning Alliance
Proposed Development:	Reconfiguring a lot – three (3) new lots
Site plan by:	The Client(s)
Bushfire Management Zone:	Proposed
Maximum Radiant Heat Flux:	29 kW/m ²
Bushfire Attack Level:	BAL-29

1. Introduction

1.1 Purpose

Max Bushfire Protection Consulting was engaged by the client(s) to conduct a site-specific bushfire hazard assessment for the proposed development on the subject site.

The objective of this report is to assess the potential bushfire hazard and related risks concerning the proposed development, aligning with several regulatory frameworks such as the Queensland State Government State Planning Policy - Part E (SPP 2017), the Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), the local council planning scheme - bushfire hazard overlay code, and the Australian Standard – Construction in Bushfire Prone Areas (AS 3959:2018). These guidelines delineate the State and Council's concerns regarding bushfire hazard within the context of evaluating development applications.

The development shall be carried out on the lot referred to as the ‘Subject Site,’ and the dwelling shall be situated within the proposed building location envelope.

1.2 Subject site

- Site Address: 216 Learoyd Rd Willawong QLD 4110
- Lot Plan: Lot 6 RP69231
- Site Area: 10,120 sqm



1.3 The proposed development

The proposed development seeks a Development Permit to create three (3) residential lots on the southern portion of the subject site. Each new lot will include a suitable building envelope of approximately 330 m².

To enhance the ecological value of the site, a covenant area for vegetation rehabilitation will be established. In addition, to mitigate bushfire risk, a covenant area for bushfire management will be provided between the building envelopes and the vegetation rehabilitation zone.

1.4 Bushfire Prone Land

The Council's designation of land as "bushfire prone" carries two primary consequences:

- It mandates the formulation of a Bushfire Management Plan that conforms to the specifications delineated in the Planning Scheme. This includes strict adherence to the Bushfire Overlay Code stipulated within the planning scheme.
- It activates the application of the Building Code of Australia (BCA) and the National Construction Code (NCC), necessitating compliance with their performance objectives pertaining to bushfire mitigation. Furthermore, adherence to AS 3959:2018, which governs the construction of buildings in bushfire-prone regions, is imperative.

1.5 Scope and objectives

The scope and objectives of this assessment are to:

- Identify bushfire-related risk factors linked to the positioning of the development footprint. This includes the probable direction of bushfire attack, hazard ratings associated with existing and proposed vegetation on and around the subject site, and planning separation from potential hazards.
- Recommend suitable protective measures to alleviate the risk posed by the assessed BAL in alignment with the State Planning Policy (SPP 2017), AS 3959:2018, and the Bushfire Hazard Overlay Code of the Council Planning Scheme.
- Prepare a comprehensive site-specific bushfire management plan and conduct an assessment of compliance with the Bushfire Hazard Overlay Code to illustrate how adherence can be attained.

2. Assessment Methodology

2.1 Desktop Assessment and Legislative

A desktop assessment and legislative review was conducted to identify overlay mapping and requirements under the SPP 2017 and Brisbane City Council planning scheme. The review included:

- Planning Act 2016 (Planning Act)
 - Planning Regulation 2017 (Planning Regulation)
 - State Planning Policy (SPP 2017) mapping
 - State Assessment and Referral Agency (SARA) mapping (Department of Infrastructure, Local Government and Planning)
- Brisbane City Council Planning Scheme
 - Bushfire Hazard Overlay Code
 - Planning Scheme interactive mapping
- Queensland FIRE and Emergency Services
 - Catalyst interactive mapping
- Building Act 1975 (Building Act)
- National Construction Code 2022: Building Code of Australia (NCC 2022)
- AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas

2.2 Bushfire Hazard Assessment

A site-specific bushfire hazard assessment aims to identify and understand the bushfire hazards on the site. The site's vegetation and terrain characteristics were surveyed using a complete site examination, aerial photography, accessible databases, and relevant mapping. The site-specific assessment included:

- Recording the structure, composition, and condition of vegetation communities located in the development footprint and all land within 100m of the development footprint, extending to 150m-300m where necessary.
- Assessing site slope and effective slope.
- Determining the aspect of the site.
- Identifying waterway and wetland features within the assessment area.
- Calculating potential fire line intensity and Radiant Heat Flux.

Utilizing the recorded outcomes of the field survey, a Bushfire Hazard Assessment and subsequent BAL review were conducted in accordance with the Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire' (QFES 2019), which was prepared by the Queensland Fire and Emergency Services to provide technical guidance for the SPP 2017 guidance material. The method involves a quantitative assessment of the vegetation communities, fuel loads, slope, and other relevant factors.

2.3 Bushfire Attack Level Assessment

The determination of the site-specific Bushfire Attack Level (BAL) for the development footprint and classified vegetation was undertaken in accordance with the Bushfire Resilient Communities – SPP Technical Reference Guide and AS 3959:2018. This includes the identification of the following input values:

- FFDI (5% AEP fire weather event)
- Vegetation hazard class, surface and overall fuel load
- Site slope, effective slope, and whether the effective slope is upslope or downslope of the development
- Distance of the development footprint from classified vegetation

Radiant heat exposure was calculated using the Bushfire Asset Protection Zone calculator provided by the Sustainable Development Unit of Queensland Fire and Emergency Services and/or the AS 3959:2018 Method 2 Calculator.

AS 3959:2018 defines the Bushfire Attack Level as a method for measuring the severity of a building's potential exposure to ember attack, radiant heat, and direct flame contact, using increments of radiant heat expressed in kilowatts per square meter. This method serves as the basis for establishing construction requirements to improve the protection of building elements from bushfire attack. Consequently, the assessment results and accompanying BAL construction requirements only apply to proposed buildings or structures, not the entire development area.

3. Legislative Context

The following key legislation, policies and guidelines are relevant to the preparation of bushfire assessment:

- State Planning Policy (July 2017, QLD)
- National Construction Code 2022
- AS 3959:2018 Construction of Buildings in Bushfire-Prone Areas
- Local Council Planning Scheme
- Planning Act 2016 (Planning Act) and Building Act 1975 (Building Act)

3.1 State Planning Policy (July 2017)

Supporting the Planning Act 2016 (Planning Act) (Qld), the purpose of the SPP is to guide State and Local government in land-use planning and development by defining the Queensland Government's policies about matters of state interest, to which there are 17 state interests arranged under five broad themes:

- liveable communities and housing
- Economic growth
- Environment and heritage
- Safety and resilience to hazards
- Infrastructure

The SPP Interactive Mapping System includes bushfire hazard area (bushfire prone area) mapping based on the methodologies outlined in Leonard et al. (2014). Under the safety and resilience to hazards theme, the state's interest is to ensure that natural hazards are properly considered in all levels of the planning system. This includes the avoidance of natural hazard areas or the mitigation of risks to an acceptable or tolerable level. The SPP is supported by the SPP – State Interest Guideline – Natural Hazards, Risk and Resilience (April 2016), Technical Manual – Evaluation Report: Bushfire Hazards (April 2016), and Technical Manual – A 'Fit for Purpose' Approach in Undertaking Natural Hazard Studies and Risk Assessments (April 2016) by the Department of Infrastructure, Local Government and Planning. These documents identify the outcomes sought by the state and their application when planning development within a bushfire hazard area (bushfire prone area).

3.2 National Construction Code 2022: Building Code of Australia

The National Construction Code 2022: Building Code of Australia (NCC 2022) sets out technical requirements for the design and construction of buildings and other structures in Australia (The Australian Building Codes Board). NCC 2022 defines ten core building classes, along with various subclasses. It mandates that buildings constructed within designated bushfire prone areas must be designed and constructed to minimize the risk of ignition from bushfires.

3.3 AS 3959:2018 Construction of Buildings in Bushfire-Prone Area

Where development is proposed in designated bushfire prone areas, AS 3959:2018 provides construction requirements designed to enhance resistance against bushfire attack. These construction specifications are determined by specific heat flux exposure thresholds and are categorized into six Bushfire Attack Levels (BAL):

Bushfire Attack Level (BAL)	Radiant Heat Exposure (AS3959:2018)	Description of Predicted Bushfire Attack and Levels of exposures
BAL – Low	Insignificant	Minimal attack from radiant heat and flame due to the distance of the building from the vegetation, although some attack by burning debris is possible. There is insufficient threat to warrant specific construction requirements
BAL - 12.5	0 to 12.5kW/m ²	Attack by burning debris is significant with radiant heat (not greater than 12.5kW/m ²). Radiant heat is unlikely to threaten building elements (such as unscreened glass). Specific construction requirements for ember protection and accumulation of debris are warranted.
BAL - 19	12.5 to 19kW/m ²	Attack by burning debris is significant with radiant heat flux (not greater than 19kW/m ²) threatening some building elements (such as screened glass). Specific construction requirements for embers and radiant heat are warranted.
BAL – 29	19 to 29kW/m ²	Attack by burning debris is significant and radiant heat flux (not greater than 29kW/m ²) threatens building integrity. Specific construction requirements for ember and higher levels of radiant heat are warranted. Some flame contact is possible.
BAL – 40	29 to 40kW/m ²	Radiant heat flux and potential flame contact could threaten building integrity.
BAL - FZ	40kW/m ² plus (Flame Contact)	Significant radiant heat and significantly higher likelihood of flame contact from the fire front will threaten building integrity and result in significant risk to residents.

Table 1: AS3959:2018 Using BAL to determine construction requirements

3.4 Brisbane City Plan

The Bushfire Hazard Overlay, under the Council’s Planning Scheme reflects SPP State and Local level interests by identifying designated bushfire prone areas. Where assessable development is proposed on land mapped as containing bushfire hazard areas, a site-specific bushfire hazard assessment prepared in accordance with the planning scheme is required.

4. Bushfire Hazard Assessment

Several factors determine the likelihood and severity of bushfires in a landscape. Key factors include the type of vegetation and the amount of available fuel. Other considerations are topography and land use patterns around potentially hazardous vegetation. Additionally, connectivity between vegetation communities can influence the development and persistence of bushfires.

4.1 Current Bushfire Hazard Mapping

A review of the Bushfire Hazard Overlay Mapping indicates that the site contains bushfire hazard areas, as shown in Figure 4-1.

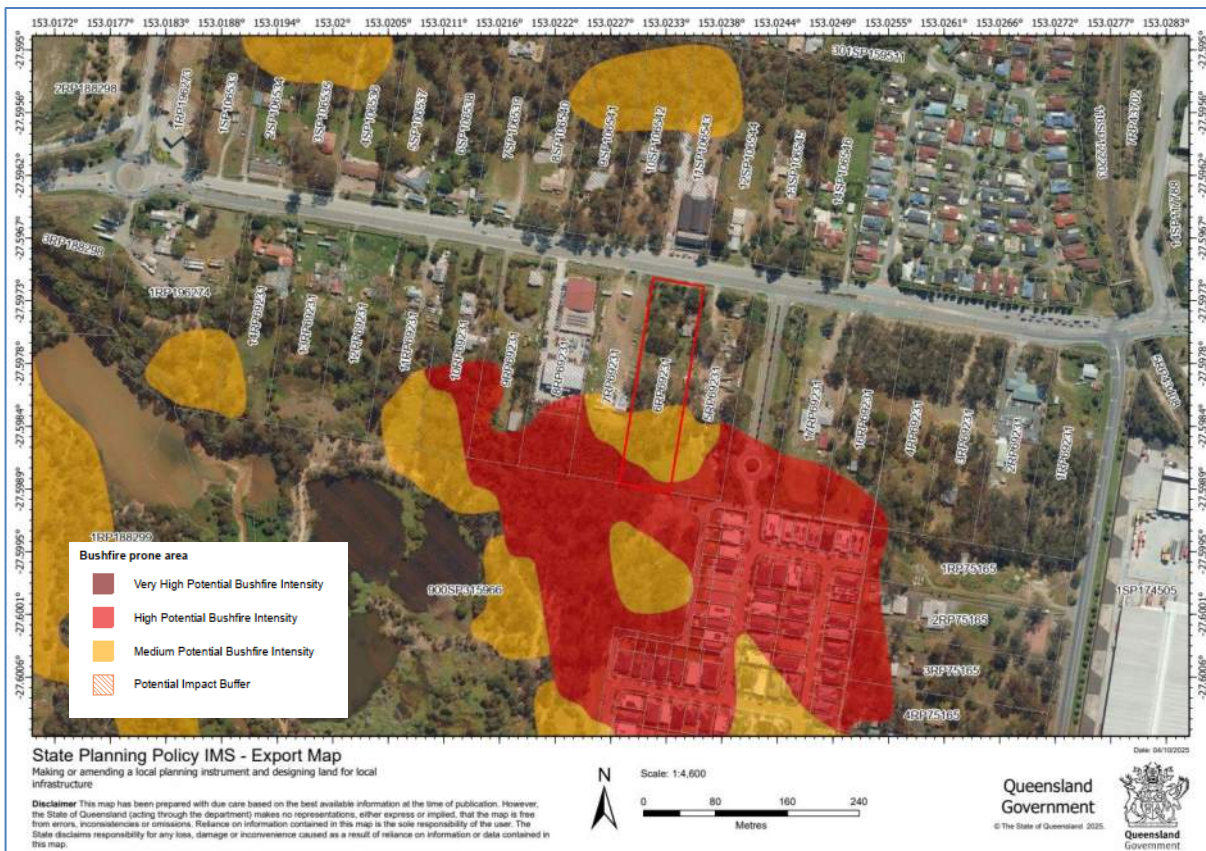


Figure 4-1: Bushfire Hazard Overlay Mapping

4.2 Local FFDI

The fire season in Queensland typically begins in the far north in July, advancing southward by spring and occasionally lasting until February in southern and far south-western regions. These timeframes vary annually due to fuel loads, long-term climate patterns, and short-term weather conditions, differing from other Australian states. In the far north and the northwest, warm, dry winters and springs, with dead grasses and dry fuels, heighten bushfire risks. In the south, the greatest danger follows dry winters and springs, with severe conditions arising when low-pressure

systems bring strong, hot, dry westerly winds to coastal areas. The season ends with the arrival of moist conditions, often influenced by tropical cyclones near the coast.

The Forest Fire Danger Index (FFDI) evaluates the likelihood of fire ignition, its propagation rate, intensity, and the difficulties encountered during suppression, amalgamating factors like air temperature, relative humidity, wind speed, and drought effects. This assessment is accessible through state mappings, revealing an annual exceedance probability FFDI of 55 at a 5% probability level for the subject site. Fire Danger Ratings (FDR) are determined by forecasted weather conditions, particularly the FFDI, offering insight into the level of bushfire threat on a given day. This FFDI corresponds to a high FDR, indicating hot, dry, and windy conditions. Under such circumstances, the ignition and spread of fires may present significant challenges for containment, especially in areas with extensive bushland vegetation.

4.3 Fire History

Fire history information from QFES reveals that between 2000 and 2024, there were recorded fires within a 2-kilometer radius of the location. Both the historical fire data and observations of fire scars suggest that it has been a substantial amount of time since the site was last exposed to a large-scale fire event. However, it is important to note that while this information does not guarantee the site will remain free from future fires, the likelihood of such events occurring appears to be decreasing due to the surrounding residential and commercial land development patterns.

In November 2009, there was record of a large-scale bushfire event affecting this site and the surrounding area.



Figure 4-2: Bushfire Hazard Overlay Mapping

4.4 Site-Specific Hazard Assessment

This Site-Specific Bushfire Hazard Assessment draws upon several key references and sources, including:

- Vegetation Hazard Classification and Potential Fire-line Intensity for Queensland, as outlined in "A new methodology for state-wide mapping of bushfire-prone areas in Queensland" by CSIRO, Australia (2014).
- The Bushfire Resilient Communities Technical Reference Guide (QFES, 2019).
- The Bushfire Attack Level (BAL), Building setback requirements, and Construction Standards as specified in the Australian Standard AS3959:2018 Construction of buildings in bushfire-prone areas.
- Bushfire Risk Mitigation Measures aligned with current industry best-practice assessment methodologies and compliance with Council's Planning Scheme.

This assessment will utilize factors such as vegetation composition and extent, slope, and industry-standard fuel load calculations to determine the potential bushfire hazard affecting the proposed development. Furthermore, this Bushfire Management Plan (BMP) will ensure compliance with the Council's Bushfire Overlay Code in relation to the proposed development.

The assessment involved an analysis of the site and its immediate 100 m radius surroundings to determine the typical bushfire risk characteristics. It included the application of Vegetation Hazard Classifications to vegetation located within 100 m of the site. Where necessary, it was expanded to cover an additional area ranging from 150 to 300 m.

According to AS3959:2018, the following vegetation shall be excluded from a BAL assessment, which is considered as low threat vegetation and/or non-vegetation areas:

- Vegetation of any type that is more than 100m from the site.
- Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.
- Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site, or each other or of other areas of vegetation being classified vegetation.
- Strips of vegetation less than 20 m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified vegetation.
- Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
- Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load. This includes grassland managed in a minimal

fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses (such as playing areas and fairways), maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens (and other non-curing crops), cultivated gardens, commercial nurseries, nature strips and windbreaks.

The assessment also takes into account the small and or isolated patches and corridor filtering process of Bushfire Resilient Communities:

- Sub-hectare areas of continuous fuel (i.e. surrounded by either no fuel or non-continuous fuel) those are further than 100 metres from any other continuous fuel greater than two hectares.
- Downgrade the effective fuel load of continuous vegetation patches measuring (a) 1 to 2 hectares (by 66 per cent), and (b) 2-3 hectares patches (by 50 per cent) if the patch is surrounded by either non-continuous fuel or a low-hazard vegetation or land use type, and if the patch is further than 100 metres from any other continuous-fuel vegetation patch greater than two hectares.
- Remove narrow corridors and areas of continuous fuel < 50 m in width that are not sufficiently wide to support a fully developed flame front.
- Small fragments are removed because of the varied quality of the vegetation mapping inputs.

It is noted that the client is actively undertaking vegetation management activities on the site, including the removal of invasive weeds, thinning of overgrown vegetation, and general landscape and property maintenance in accordance with the exemptions and NALL permit on garden vegetation.

4.4.1 Ground Truthed VHC

The locations of site assessment plots are shown on Figure 4-3. Table 2 presents a summary of observations and the features of site assessment points.

Aspect	Assessment Plot	Mapped VHC	Ground Truthed VHC
North	A	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
East	B	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
South	C	VHC 40.4 Continuous low grass or tree cover	VHC 40.4 Continuous low grass or tree cover
West	D	VHC 40.4 Continuous low grass or tree cover	VHC 40.4 Continuous low grass or tree cover

Table2: Ground truthed VHC

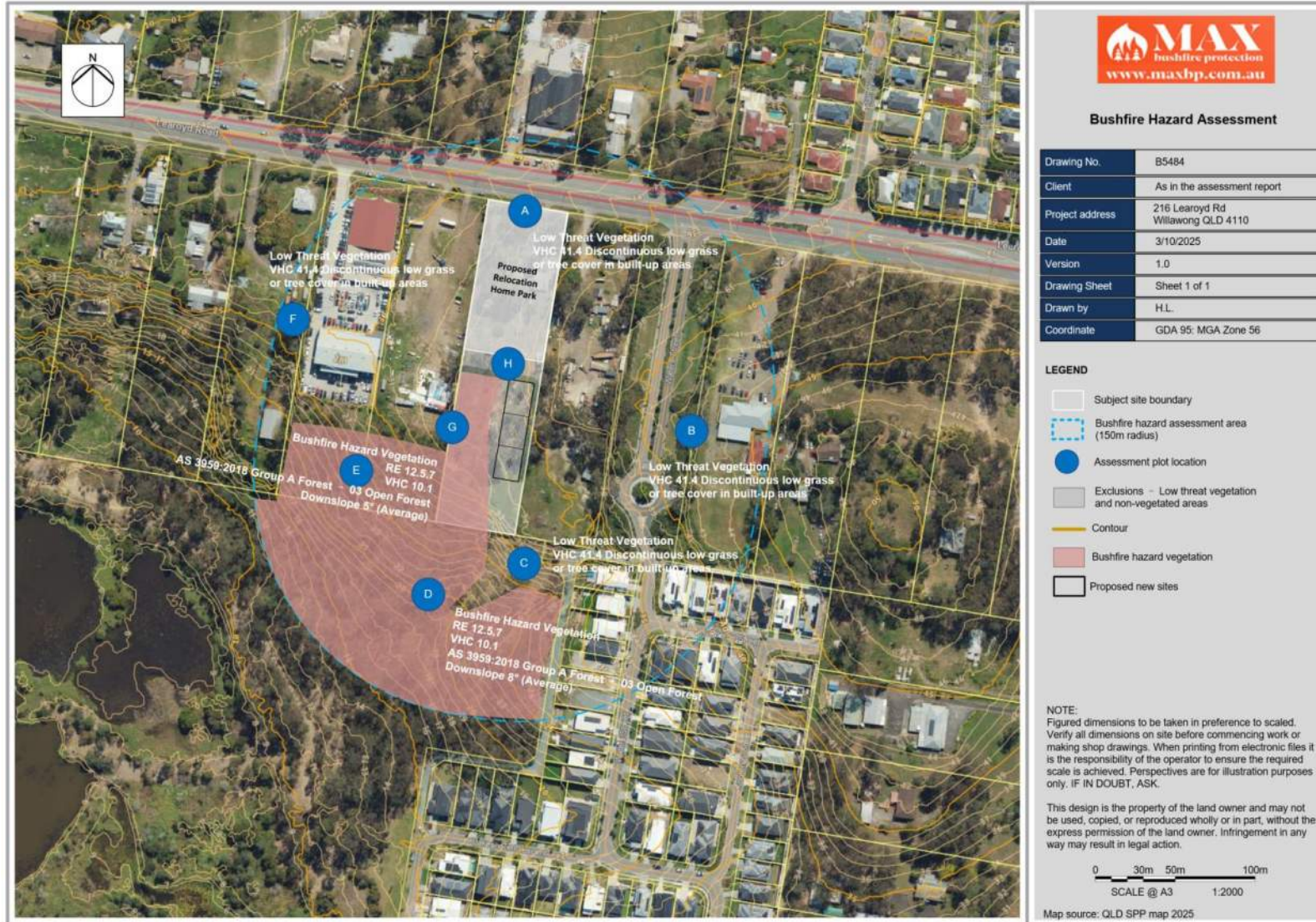


Figure 4-3: Ground truthed VHC and local Bushfire Prone Area map

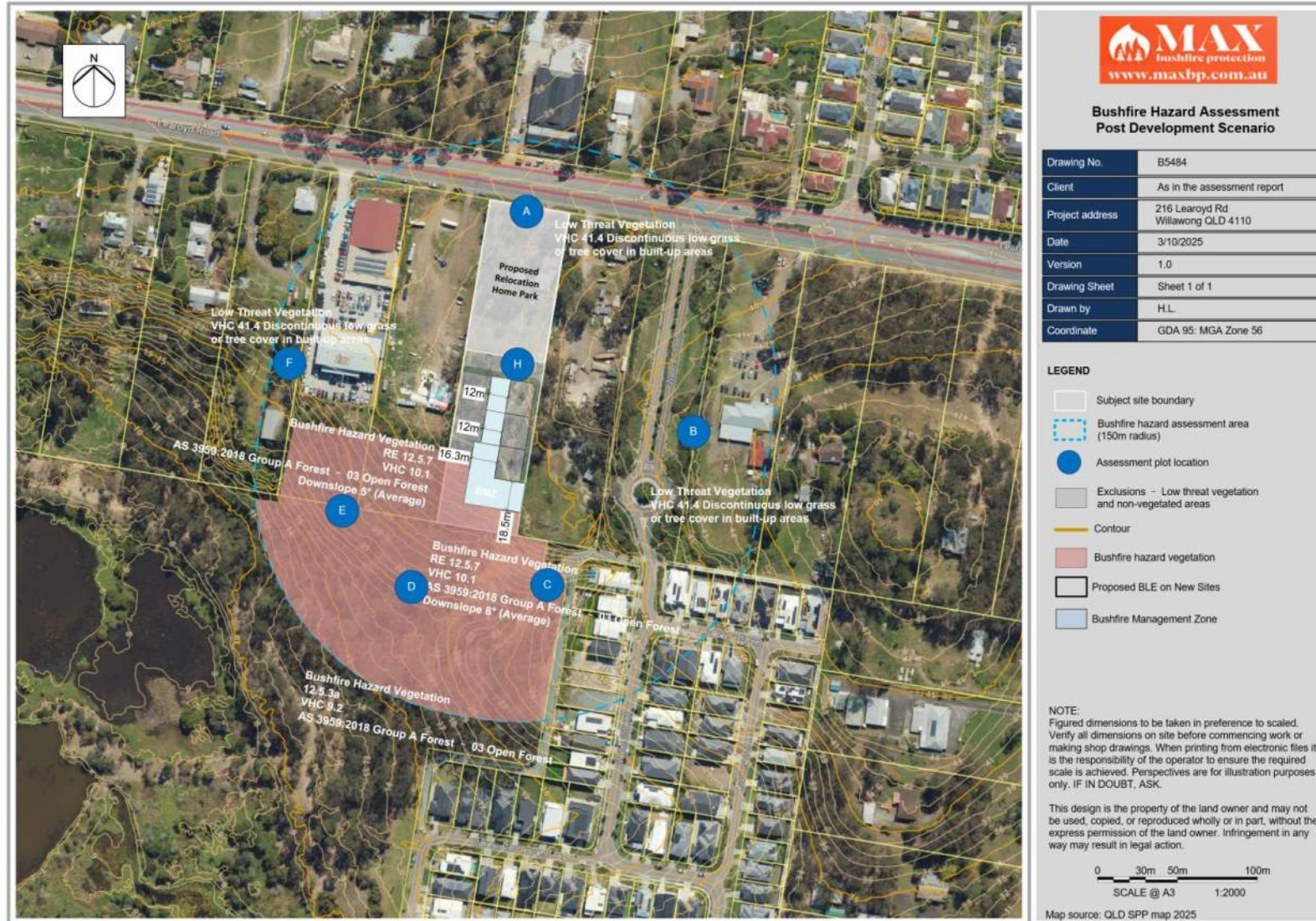


Figure 4-4: Post Development Bushfire Prone Area map

▪ **Classified vegetation conditions to South and West**

Land at assessment plot B, E and G, a continuous hazardous vegetation patch VHC 10.1 Spotted gum dominated open forests was found along the site boundary. This vegetation patch may contain RE 12.5.7c *Corymbia henryi* and/or *Eucalyptus fibrosa* subsp. *fibrosa* woodland +/- *C. citriodora* subsp. *variegata*, *E. major*, *E. carnea*, *E. tindaliae*, *E. siderophloia*, *Angophora leiocarpa*, *E. helidonica*, *E. portuensis*, *E. latisinensis*, *C. intermedia* and *E. moluccana*. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks. Limited regular maintenance activities have been carried out in this area.

Trees ranging from 10m to 30m in height, characterized by foliage cover 30% to 70%, are typically dominated by eucalypts. The understorey is sclerophyllous, comprising small trees, tall scrubs, or tall shrubs with hard leaves and short internodes. A diverse range of weeds and invasive plant species, including weedy grasses and *Lantana*, is widespread across the area, occurring under conditions varying from sparse to moderately dense. The predominant tree canopy reaches a height of approximately 25m.

Land at Assessment Area C has been designated as a vegetation rehabilitation zone. The revegetation works were recently established, and the planted vegetation has not yet matured.

To the west, within the southern portion of Lot 7 on RP68231, lies an area of non-remnant vegetation in the form of a relict hardwood plantation. This community is characterised by a canopy layer of uniformly planted exotic hardwood species, with a groundcover consisting of native and exotic grasses, and minor weed incursion observed across the area.

The potential fuel load of the bushfire hazard vegetation patch is determined as following:

Vegetation context	VHC 10.1 with RE 12.5.7c
Vegetation structure	Open Forest
AS3959:2018 Classification of vegetation	Group A Forest – Open Forest 03
Effective slope under the hazardous vegetation	Downslope 8° South (Average) Downslope 5° West (Average)
Slope Between Site and hazardous vegetation	Downslope 8° South (Average) Downslope 5° West (Average)
Surface fuel load	16.3 t/ha
Near-surface fuel load	3.0 t/ha
Elevated fuel load	1.5 t/ha
Bark fuel load	0.0 t/ha

Total fuel load	20.8 t/ha
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Table 3: Potential fuel load

- **Low hazard conditions to North and East**

Ground truthed VHC to the north and the east presents the characters VHC 41.4 Discontinuous low grass or tree cover. The area comprises managed gardens, residential houses, well-maintained lawns, with trees regularly trimmed, mowing, slashing, and weed removal conducted to minimize fuel load. As a result, it is classified as managed vegetation with a low bushfire hazard.

- **Vegetation Conditions within the proposed development**

Vegetation within the subject site mainly consists of garden vegetation with retained native trees. It has been intentionally planted and maintained within a formal garden and lawn setting for both food production and ornamental purposes. Some areas were observed to lack regular maintenance due to tenancy-related issues. Overall, the vegetation is expected to remain in a low-fuel condition, consistent with the characteristics of VHC 41.4 Discontinuous low grass or tree cover except the area near the western boundary.



Figure 4-5: Aerial view providing landscape context for the site (Sourced from QLD SPP mapping, captured 10/2025)



Figure 4-6: 1m interval contour map (Sourced from Queensland Globe mapping, captured 10/2025)

Regional ecosystem details for 12.5.7

Regional ecosystem	12.5.7
Vegetation Management Act class	Least concern
Wetlands	Not a Wetland
Biodiversity status	No concern at present
Subregion	8, 7, 10, 5, (6), (2), (4), (3)
Estimated extent¹	Pre-clearing 63000 ha; Remnant 2021 30000 ha
Short description	Corymbia citriodora subsp. variegata +/- Eucalyptus portuensis or E. acmenoides, E. fibrosa subsp. fibrosa open forest on remnant Tertiary surfaces. Usually deep red soils
Structure code	Open Forest
Description	<p>Corymbia citriodora subsp. variegata +/- Eucalyptus portuensis or E. acmenoides, C. intermedia, E. fibrosa subsp. fibrosa, C. trachyphloia, E. moluccana (lower slopes), E. crebra (drier sub coastal areas) or E. siderophloia, E. exserta open forest. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks. Usually deep red soils. Not a Wetland. (BVG1M: 10b).</p> <p>Vegetation communities in this regional ecosystem include:</p> <p>12.5.7a: Corymbia citriodora subsp. variegata +/- Eucalyptus portuensis +/- Lophostemon spp., C. intermedia, E. moluccana (lower slopes), E. crebra, E. exserta woodland. Occurs on coastal low relief Cainozoic and Mesozoic sediments. Not a Wetland. (BVG1M: 10b).</p> <p>12.5.7b: Eucalyptus moluccana +/- Corymbia citriodora subsp. variegata open forest. Other species include Eucalyptus siderophloia or E. crebra, E. tereticornis. Understorey generally sparse but can become shrubby in absence of fire. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks often on lower slopes. Not a Wetland. (BVG1M: 13d).</p> <p>12.5.7c: Corymbia henryi and/or Eucalyptus fibrosa subsp. fibrosa woodland +/- C. citriodora subsp. variegata, E. major, E. carnea, E. tindaliae, E. siderophloia, Angophora leiocarpa, E. helidonica, E. portuensis, E. latisinensis, C. intermedia and E. moluccana. Occurs on complex of remnant Tertiary surfaces and Tertiary sedimentary rocks. Not a Wetland. (BVG1M: 10b).</p>

Fire management guidelines

SEASON: Summer to winter. INTENSITY: Low to moderate. a: Plan for low to moderate. Unplanned occasional high intensity wildfire will occur. INTERVAL: 4-15 years a: 4-8 years maintains a healthy grassy system. 8-15 years for shrubby elements of understorey. INTERVAL_MIN: 4. INTERVAL_MAX: 15. STRATEGY: Aim for 40-60% mosaic burn. Burn with soil moisture and with a spot ignition strategy so that a patchwork of burnt/unburnt country is achieved. Variability in season and fire intensity is important. a: Aim for 40-60% mosaic burn. Needs disturbance to maintain RE structure (eucalypt overstorey with open understorey of predominantly non-rainforest species). Any moist sclerophyll that is relatively open with a mixture of grasses and shrubs should be a priority for fire management to retain RE structure. ISSUES: The fire regime should maintain a mosaic of grassy and shrubby understoreys. Control of weeds (e.g., Lantana camara) with fire might be required. a: Frequent fire is needed to maintain understorey integrity, keeping more mesic species low in the profile of the understorey so that other species can compete. It is essential that wildfires are not the sole source of fire in this ecosystem. High intensity fires occur periodically through time, however frequent low to moderate intensity fires will create the disturbance required to keep the understorey diverse. A follow-up burn soon after a high intensity wildfire can be considered to reduce germinating/resprouting mesic species. Frequent fire may promote weeds such as molasses grass Melinis minutiflora.

	<p>Condition class 1 Reference condition, mature and minimal disturbance</p> <ul style="list-style-type: none"> Tree canopy cover: > 70%; Tree height: > 26 m Tree sub-canopy cover: > 22%; Tree sub-canopy height: > 8 m Native shrub cover: 17-25% Large trees: > 6 eucalypts > 47 cm DBH Coarse Woody Debris: 28-40 m total length Species richness: Trees ≥ 5; Shrubs ≥ 6; Grass ≥ 12; Forbs and other ≥ 14 Ground cover: Perennial grass cover 23-50%; Organic litter cover > 48% Non-native plant species: < 2% cover Regeneration: > 4 tree species in regeneration phase
	<p>Condition class 2 Mature, some disturbance e.g. fire, grazing</p> <ul style="list-style-type: none"> Tree canopy cover: 90-70%; Tree height: 18-26 m Tree sub-canopy cover: 15-22%; Tree sub-canopy height: 5-8 m Native shrub cover: 10-17% Large trees: 3-6 eucalypts > 47 cm DBH Coarse Woody Debris: 10-28 m total length Species richness: Trees 3-4; Shrubs 2-4; Grass 9-11; Forbs and other 8-13 Ground cover: Perennial grass cover 10-23%; Organic litter cover 30-48% Non-native plant species: 2-15% cover Regeneration: 2-4 tree species in regeneration phase
	<p>Condition class 3 Advanced regrowth or moderate disturbance e.g. grazing, clearing</p> <ul style="list-style-type: none"> Tree canopy cover: 20-50%; Tree height: 10-18 m Tree sub-canopy cover: 10-15%; Tree sub-canopy height: 5-8 m Native shrub cover: 5-17% or > 50% Large trees: 2-3 eucalypt > 47 cm DBH Coarse Woody Debris: < 10 m or > 70 m total length Species richness: Trees < 3; Shrubs 2-4; Grass 5-9; Forbs and other 5-8 Ground cover: Perennial grass cover < 10% or > 50%; Organic litter cover 10-30% Non-native plant species: 15-25% cover Regeneration: 2-4 tree species in regeneration phase

Figure 4-7: Ecological Condition Profile of RE 12.5.7

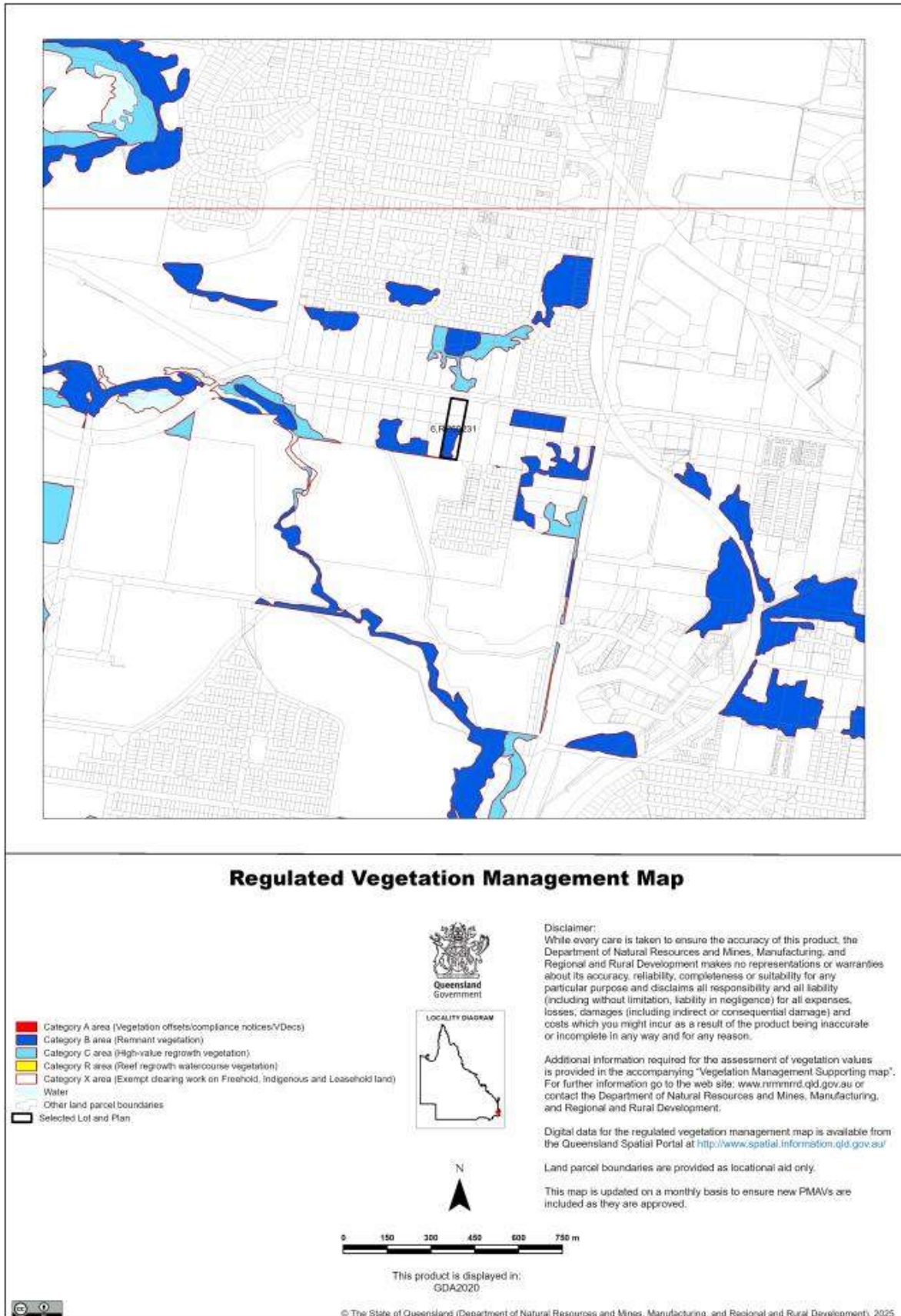


Figure 4-8 Regulated vegetation management map (sourced from Vegetation management report, Department of Resources, 2025)

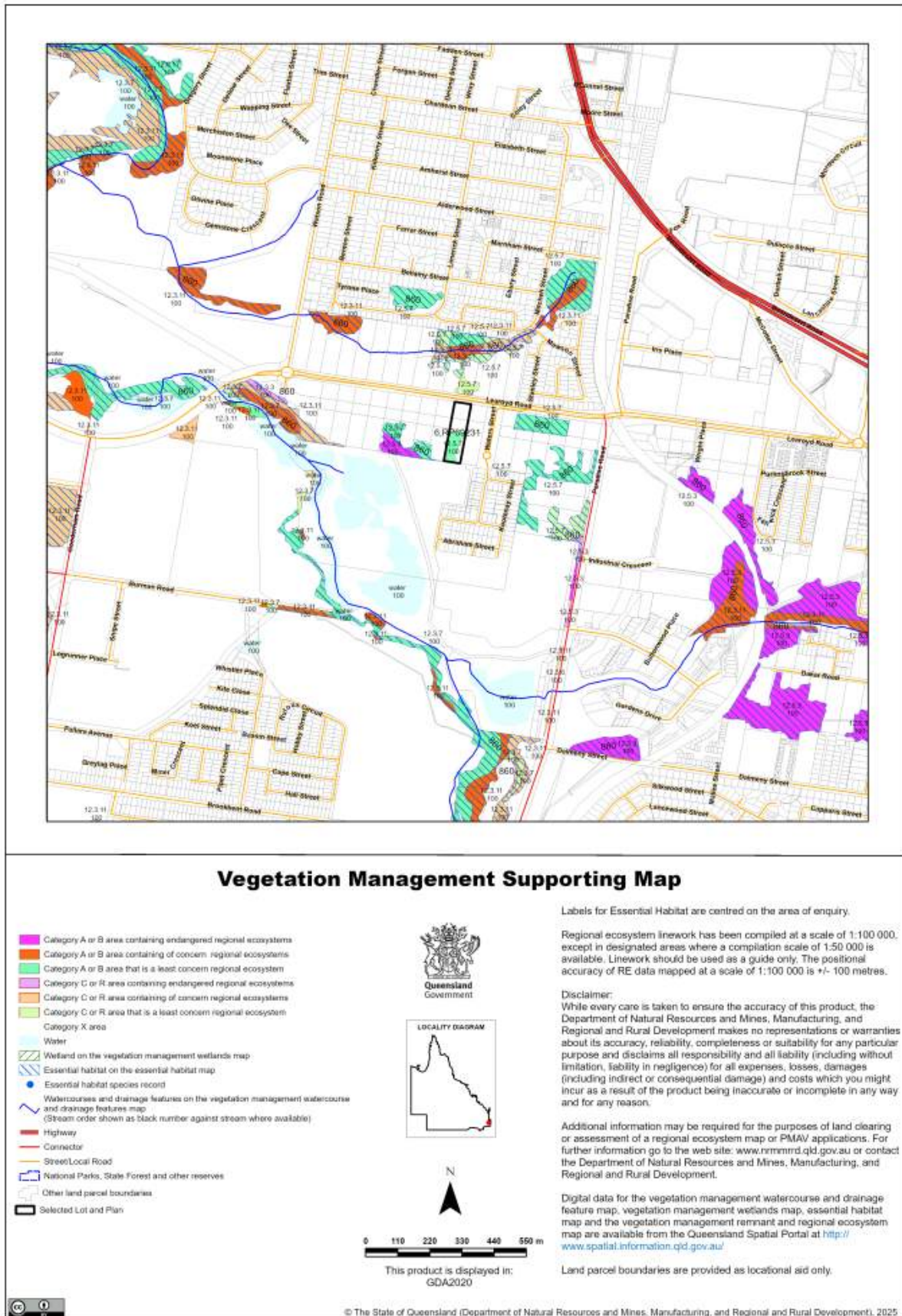


Figure 4-9: Vegetation Management Support Map providing RE context on the site (sourced from Vegetation management report, Department of Resources, 2025)



Photo 1: The proposed development area





Photo 2: Bushfire hazard vegetation VHC 10.1 to south and near western boundary

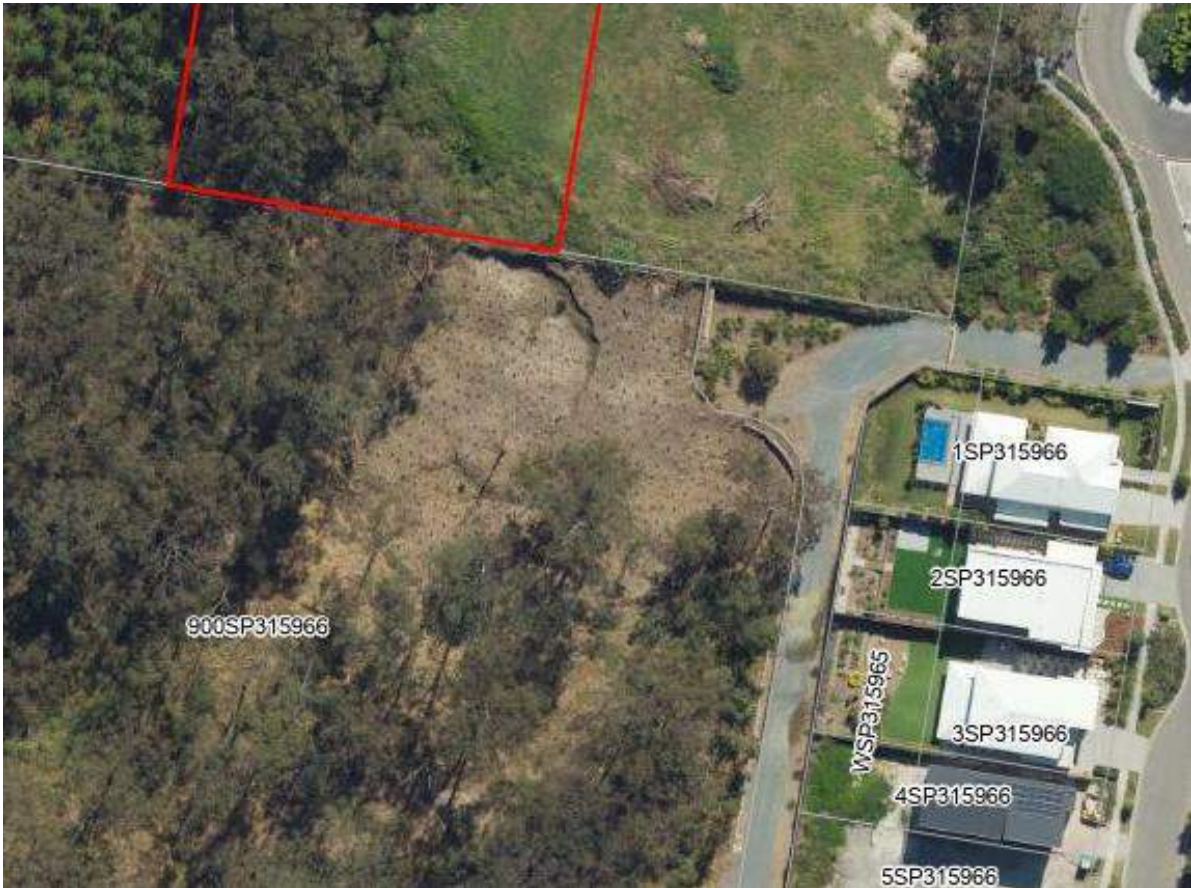


Photo 3: Vegetation rehabilitation area on Lot 900 SP315966



Photo 4: Nearby low hazard areas

4.4.2 Potential Bushfire Intensity Calculations

The Bushfire Resilient Communities Technical Reference Guide (QFES, 2019) defines bushfire hazard classes as follows:

- Very high potential bushfire intensity > 40,000 kW/m.
- High potential bushfire intensity 20,000-40,000 kW/m.
- Medium potential bushfire intensity 4,000-20,000kW/m.
- Grass fire hazard, generally less than 4,000kW/m.
- Potential impact buffer, where land is within 100m of a very high, high and medium potential bushfire intensity area.
- Low hazard, where potential bushfire intensity < 4,000kW/m and more than 100m to very high, high and medium potential bushfire intensity area.

Potential fireline intensity is a function of fire weather severity (Local FFDI), landscape slope and vegetation fuel load based on classified vegetation communities according to the method described by the CSIRO methodology as follow:

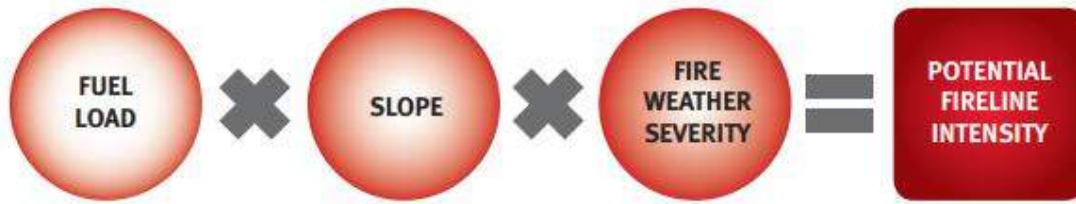


Figure 4-10: Method for calculation of potential fireline intensity (by CSIRO)

The results of the potential bushfire intensity calculations as presented in Table 4.

Local FFDI	Aspect	Ground Truthed VHC	Potential fuel load (t/ha)	Slope (°)	Potential bushfire intensity (kW/m)	Bushfire hazard class
55	North	VHC 41.4	3	Upslope 2	267	Low hazard
	East	VHC 41.4	3	Upslope 2	267	Low hazard
	South	VHC 10.1	20.8	Downslope 8	25622	High potential bushfire intensity
	West	VHC 10.1	20.8	Downslope 5	20831	High potential bushfire intensity

Table 4: Potential bushfire intensity calculation

Figure 4-2 presents a local bushfire hazard prone area map, which confirms the potential fireline intensity class of all identified Vegetation Hazard Classes (VHCs) in proximity to the site, taking into account the patch and corridor filtering process as defined by the Bushfire Resilient Communities Technical Reference Guide. This local bushfire prone area map can then replace the SPP map and the Council’s Bushfire Hazard Overlay map for the purposes of assessing the application.

4.5 Probable Direction of Bushfire Attack

The anticipated directions of bushfire threat to the proposed development are expected to originate from any direction, primarily in areas classified as having medium, high and very high bushfire hazard levels from the north and the west.

4.6 Building Envelope and Bushfire Management Zone

The proposed development seeks a Development Permit to create three (3) residential lots on the southern portion of the subject site. Each new lot will include a suitable building envelope of approximately 330 m², identified as the area for future Class 1a dwellings and associated structures. The location of each building envelope has been carefully determined to ensure compliance with bushfire protection measures and to maintain adequate separation from adjacent vegetated areas.

A Bushfire Management Zone (BMZ) will be established between the building envelopes and the vegetation rehabilitation zone, as illustrated in Figure 4-4 and Figure 4-12. This zone will function as a low-fuel buffer area, designed to reduce potential bushfire intensity and to protect habitable structures from direct flame contact, radiant heat, and ember attack.

The BMZ will be managed in accordance with the Bushfire Management Plan, as highlighted below:

- Within the BMZ, vegetation will be maintained as low-growing, discontinuous fuel (< 100 mm fine-fuel height) with regularly mown grass.
- Trees retained within this zone will be selectively spaced to prevent canopy connectivity, and all surface fuels will be managed in accordance with the Bushfire Management Plan maintenance schedule.

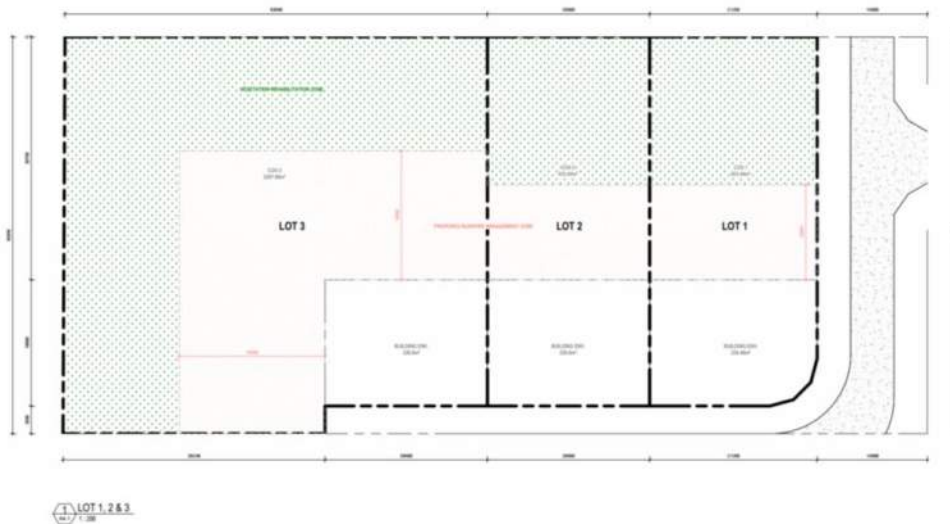


Figure 4-11: Proposed Bushfire Management Zone

4.7 Post Development Scenarios

Figure 4-4 illustrates the bushfire-prone area mapping under the post-development scenario. Following the completion of the proposed subdivision and establishment of the building envelopes, the site will consist of three residential lots located within the southern portion of the property. Each lot will contain a single Class 1a dwelling situated within the defined building envelope.

The bushfire management covenant area, located between the building envelopes and the vegetation rehabilitation zone, will be maintained as a low-fuel zone to ensure adequate separation between the dwellings and the rehabilitated vegetation area. Regular fuel management and vegetation maintenance within this zone will be required in accordance with the Bushfire Management Plan.

The vegetation rehabilitation zone is intended to be rehabilitated to a full-strata forest-type community, comprising an established canopy, mid-storey, and groundcover layer consistent with the target Regional Ecosystem RE 12.5.7 for the area. The rehabilitation area will progressively mature over time, enhancing the ecological value and habitat connectivity of the site. Native vegetation will be managed under the covenant to support long-term environmental outcomes while maintaining compliance with bushfire protection measures.

The vegetation between the non-vegetated area of Lot 7 on RP69231 and the subject site forms a narrow strip approximately 18m wide. This narrow area was excluded from classification by applying patch and corridor filtering in accordance with the Bushfire Resilient Communities (BRC) Policy. However, a 12-metre-wide Bushfire Management Zone (BMZ) has been provided as a separation buffer between the subject site and this vegetation strip to ensure adequate bushfire protection.

4.8 Radiant Heat Flux and Bushfire Attack Level Modelling

The radiant heat exposure outcome for residential development, as outlined in the SPP Bushfire Prone Area Code under the Natural Hazards, Risk and Resilience – State Planning Policy State Interest guidance material (DSDMIP 2019), is a radiant heat flux of $\leq 29 \text{ kW/m}^2$.

“The Radiant Heat Flux level was assessed using the AS 3959:2018 Method 2 Calculator, in accordance with the Technical Assessment Guide – Bushfire Reporting (Brisbane City Council, July 2025). The assessment was undertaken in line with AS 3959:2018 Appendix B, applying the following standard parameters:

- Fire Danger Index (Queensland): 40
- Understorey fuel load (Forest): 25 t/ha
- Total fuel load (Forest): 25 t/ha
- Flame width: 100 m
- Heat of combustion: 18,600 kJ/kg
- Flame temperature: 1,090K

Results in Figure 4-12 and Figure 4-13 show that all lots of the proposal will achieve a radiant heat flux of no more than 29 kW/m². Therefore, the proposed development is considered to meet the requirement of radiant heat flux level of the SPP bushfire prone area code, as well as Bushfire Overlay Code of Brisbane City 2014.

Bushfire Impact from South

Bushfire Attack Level calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	40	Rate of spread	2.08 km/h
Vegetation Classification	Forest	Flame length	17.74 m
Understorey fuel load	25 t/ha	Flame angle	69 °
Total fuel load	35 t/ha	Panel height	16.56 m
Vegetation height	n/a	Elevation of receiver	5.68 m
Effective slope	8 °	Fire intensity	37,686 kW/m
Site slope	8 °	Transmissivity	0.845
Distance to vegetation	18.5 m	Viewfactor	0.4498
Flame width	100 m	Radiant heat flux	28.92 kW/m ²
Windspeed	n/a	Bushfire Attack Level	BAL-29
Heat of combustion	18,600 kJ/kg		
Flame temperature	1,090 K		

Rate of Spread - Mcarthur, 1973 & Noble et al., 1980

Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

Elevation of receiver - Douglas & Tan, 2005

Flame angle - Douglas & Tan, 2005

Radiant heat flux - Drysdale, 1999, Sullivan et al., 2003, Douglas & Tan, 2005

Figure 4-12: Radiant Heat Flux Modelling and BAL Rating for Bushfire Impact from South

Bushfire Impact from West

Bushfire Attack Level calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	40	Rate of spread	1.69 km/h
Vegetation Classification	Forest	Flame length	15.21 m
Understorey fuel load	25 t/ha	Flame angle	67 °
Total fuel load	35 t/ha	Panel height	14 m
Vegetation height	n/a	Elevation of receiver	5.57 m
Effective slope	5 °	Fire intensity	30,640 kW/m
Site slope	5 °	Transmissivity	0.852
Distance to vegetation	16.3 m	Viewfactor	0.4476
Flame width	100 m	Radiant heat flux	29 kW/m ²
Windspeed	n/a	Bushfire Attack Level	BAL-29
Heat of combustion	18,600 kJ/kg		
Flame temperature	1,090 K		

Rate of Spread - Mcarthur, 1973 & Noble et al., 1980

Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

Elevation of receiver - Douglas & Tan, 2005

Flame angle - Douglas & Tan, 2005

Radiant heat flux - Drysdale, 1999; Sullivan et al., 2003; Douglas & Tan, 2005

Figure 4-13: Radiant Heat Flux Modelling and BAL Rating for Bushfire Impact from West

Figure 4-13: Radiant Heat Flux Modelling and BAL Rating

5. Bushfire Management Plan

This Bushfire Management Plan (BMP) identifies the bushfire protection measures that should be implemented as part of the proposed development to manage and to reduce the risk from bushfire to an acceptable level. It is important to understand the processes that influence bushfire behaviour and the sources of damage that threaten people and property.

5.1 Bushfire Behaviours

Understanding bushfire behaviour is crucial when planning development on bushfire-prone land to effectively mitigate the risks associated with bushfires. Three primary elements significantly influence bushfire behaviour, as follows:

5.1.1 Topography

The physical characteristics of the landscape significantly influence bushfire behaviour. It is well-established that fires tend to spread more rapidly when they move uphill. This is because flames can easily access unburnt fuel ahead of the fire, which is pre-heated by radiant heat, making it more combustible. Studies indicate that for every 10-degree increase in slope, the fire's speed can double. For example, if a fire is moving at a rate of 5 km per hour on flat ground, and it encounters a 10-degree slope, its speed can double to 10 km per hour uphill. As the fire gains momentum, it also increases in intensity, becoming even hotter.

Conversely, when a fire moves downhill, its speed decreases because the flames have less fuel to consume, and radiant heat pre-heats less fuel in front of the fire. For every 10-degree decrease in slope, the fire's speed is halved. It's important to note that fires typically move more slowly as the slope declines.

5.1.2 Weather Conditions

Weather conditions are a major factor in the behaviour and spread of bushfires. Hot, dry, and windy conditions can make fires more intense and difficult to control, while cooler and more humid conditions can slow their spread. Wind can also influence the direction and speed of the fire, and changes in wind direction can make it more difficult for firefighters to predict the fire's behaviour. Weather forecasting is a critical component of bushfire management, as it allows firefighters and other responders to anticipate changes in fire behaviour and take action to mitigate the risks. In addition, many communities now use tools like automated alert systems to warn residents of potential fire danger based on weather conditions.

The new Australian Fire Danger Rating System (AFDRS) improves and simplifies the reporting of fire danger. Fire danger ratings describe the potential level of danger should a bushfire start. It is a valuable information for taking actions to protect people and property. The AFDRS has four levels, each with a distinct title, colour and key message.

5.1.3 Vegetation

The amount and type of fuel available can greatly influence the behaviour of a bushfire. Vegetation is the source of fuel of a bushfire. Vegetation that is dry and dead, or that is densely packed, can create more intense and long-lasting fires. In contrast, areas with little fuel or sparse vegetation may not support a fire at all. The arrangement of fuel can also play a role, as fires that encounter a continuous "fuel ladder" from the ground up into the canopy can become more severe. The amount of fuel surrounding a building can directly impact a buildings survival. Vegetation management, landscaping for bushfire and breaking the continuity of vegetation can limit the spread of fire.

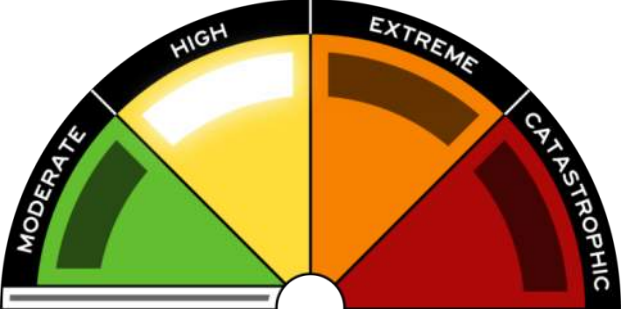

<p>Moderate: Plan and Prepare. Most fires can be controlled</p> <ul style="list-style-type: none"> Stay up to date and be ready to act if there is a fire.
<p>High: Be Ready to Act Fires can be dangerous</p> <ul style="list-style-type: none"> Decide what you will do if a fire starts. There's a heightened risk. Be alert for fires in your area. If a fire starts, your life and property may be at risk. The safest option is to avoid bushfire risk areas.
<p>Extreme: Take Action Now to protect your life and property Fires will spread quickly and be extremely dangerous</p> <ul style="list-style-type: none"> These are dangerous fire conditions. Check your bushfire plan and make sure your property is fire ready. If a fire starts, take immediate action. If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts. Reconsider travel through bushfire risk areas.
<p>Catastrophic: For your survival, leave bushfire risk areas If a fire starts to take hold, lives are likely to be lost</p> <ul style="list-style-type: none"> These are the most dangerous conditions for a fire. Your life may depend on the decisions you make, even before there is a fire. For your survival, do not be in bushfire risk areas. Stay safe by going to a safer location early in the morning or the night before. If a fire starts and takes hold, lives and properties are likely to be lost. Homes cannot withstand fires in these conditions. You may not be able to leave and help may not be available.

Table 4: Australian Fire Danger Rating

5.2 Potential Bushfire Impacts and Attack Mechanisms

Bushfire attack mechanisms are typically interconnected, rarely occurring in isolation. Both people and property often face a combination of bushfire attack

factors, each operating across different spatial scales. Nevertheless, strategies aimed at mitigating the impacts of direct flame contact, radiant heat exposure, and ember attack can be effectively addressed within the framework of land use planning and development assessments, conducted at manageable scales.

The main sources of direct bushfire attack that give rise to loss of life, and damage to property and infrastructure are as follows:

5.2.1 Direct Flame Contact

Direct flame contact occurs when flames from a bushfire come into direct contact with a building, structure, or individuals. When this happens, the flames can ignite any flammable material present and cause fires to spread rapidly. Direct flame contact can also cause burns and other heat-related injuries to people who are in the path of the flames.

Direct flame contact is a significant concern during a bushfire, especially for buildings and structures that are located in close proximity to the fire. The intensity of the flames and the duration of the exposure can have a significant impact on the severity of the damage.

To reduce the risk of direct flame contact during a bushfire, it's essential to create a defensible space around buildings and structures, clear flammable materials from the area, and use fire-resistant building materials when constructing or renovating buildings. Additionally, it's crucial to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.2.2 Radiant Heat Exposure

Radiant heat exposure is a significant danger during a bushfire. When a bushfire occurs, the heat generated by the flames causes the air surrounding the fire to heat up, and this heat energy is then radiated out in the form of electromagnetic waves. These waves can travel a considerable distance from the fire and can cause surfaces that are not in direct contact with the flames to heat up.

During a bushfire, radiant heat exposure can be intense, and the effects can be severe. Radiant heat can ignite flammable materials, such as dry vegetation or wooden structures, and cause them to catch fire. It can also cause buildings and structures to overheat, leading to structural damage or collapse. Additionally, people who are too close to the flames can suffer from heat stress, dehydration, and serious burns.

The risk of radiant heat exposure during a bushfire can be mitigated by creating a defensible space around buildings and structures, clearing flammable materials from the area, and using fire-resistant building materials when constructing or renovating buildings. It's also important to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.2.3 Ember Attack

Ember attack, often referred to as spot fires, represents a prominent hazard during bushfires. This phenomenon occurs when burning embers, also known as firebrands or spot fires, are carried by the wind and land in different locations, potentially igniting new fires.

In the midst of a bushfire, the combination of hot air and flames generates updrafts capable of lifting burning embers over considerable distances. These embers can alight on rooftops, in gutters, or on flammable materials near buildings and structures, leading to ignition and the potential initiation of new fires.

Ember attack poses a unique danger because it can manifest hours or even days after the primary fire front has passed, and it has the capacity to ignite fires in areas previously unaffected by the bushfire. Consequently, it is imperative to prepare for ember attack through measures such as establishing a defensible space around buildings and structures, removing flammable materials from the vicinity, and sealing gaps and openings in buildings to prevent ember ingress.

5.2.4 Wind and Smoke Attack

Strong winds can cause a bushfire to spread more rapidly and can also increase the likelihood of ember attack, as burning embers can be carried by the wind over long distances. Wind can also push flames and radiant heat towards buildings and structures, increasing the risk of direct flame contact and radiant heat exposure.

Smoke from a bushfire can also pose a danger to people's health, particularly for those with respiratory problems. Smoke can contain particulate matter, carbon monoxide, and other harmful pollutants that can irritate the lungs and worsen respiratory conditions. In addition to health effects, smoke can reduce visibility, making it more difficult for firefighters to contain the fire and for people to evacuate safely.

5.2.5 Convection and Conduction

Both convection and conduction can play a significant role in the spread and intensity of a bushfire. To reduce the risk of a bushfire spreading through convection and conduction, it's important to create a defensible space around buildings and structures, clear flammable materials from the area, and use fire-resistant building materials when constructing or renovating buildings. It's also crucial to follow evacuation orders and stay informed about the fire's behaviour and movement to ensure personal safety.

5.3 Bushfire Protection Measures

This section identifies the bushfire protection measures that will be implemented as part of the proposed development to comply with the requirements of both the State

and local council's Bushfire Prone Area code and to minimise the impact of potential bushfires on people and property.

The proposed measures are prepared in according with Queensland State Government State Planning Policy - Part E (SPP 2017), the Bushfire Resilient Communities Technical Reference Guide (QFES, 2019), the local council's Bushfire Overlay Code, and the Australian Standard (AS 3959:2018) for Construction of buildings in bushfire-prone areas.

The legislation mentioned above aims to protect individuals and buildings from bushfires by ensuring that new developments meet specific Performance Outcomes that are appropriate for the identified bushfire hazard. These Performance Outcomes are typically achieved by properly separating the development from the bushfire hazard, providing adequate access for firefighting vehicles, and constructing buildings to the appropriate standards. Additionally, the legislation includes other relevant factors that are deemed necessary for ensuring the safety of individuals and buildings during a bushfire emergency.

5.3.1 Bushfire Management Zone

The Bushfire Management Zone (BMZ) is one of the most important bushfire protection measures for the proposed development.

A BMZ is a designated area surrounding a building or structure that is actively managed to reduce the intensity and impact of bushfire attack. The BMZ provides:

- A buffer zone between bushfire hazard vegetation and habitable buildings.
- An area of reduced fuel loads that facilitates suppression of fire.
- A safe space for firefighting operations and potential backburning if required.
- A relatively safe area for emergency personnel and occupants to defend property during a bushfire event.

A correctly designed and regularly maintained BMZ reduces the risk of:

- Direct flame contact on buildings.
- Radiant heat damage to vulnerable building elements.
- Ember attack on habitable structures.

(1) Establishment of the BMZ

The intensity of a bushfire can be significantly reduced where available fuel is minimised. To effectively manage bushfire fuels within the BMZ, a combination of measures will be implemented to reduce, remove, or modify vegetation and ground fuels, including:

- Raking or manual removal of fine fuels and leaf litter at regular intervals.

- Mowing or grazing grass to maintain it short-cropped at no more than 100 mm in height.
- Pruning or selective removal of shrubs, understorey vegetation, and lower tree branches up to 3 metres above ground level.
- Slashing and trittering to minimise surface fuel accumulation.

The establishment of BMZ does not require complete vegetation removal, which could negatively affect the environment. Appropriately managed vegetation contributes positively to bushfire resilience by reducing wind speed, filtering embers, moderating radiant heat, and preventing soil erosion through groundcover retention.

Within the BMZ, non-flammable mulches such as scoria (lightweight volcanic stone), pebbles, or recycled crushed brick are to be used within 1.5 metres of any building.

All fencing will be constructed from non-combustible materials or durable timber species permitted under AS 3959:2018 – Construction of Buildings in Bushfire-Prone Areas.

Habitable buildings and flammable structures are excluded from the BMZ.

(2) Vegetation and Landscaping Management

Vegetation within the BMZ will be managed to maintain a low-fuel, discontinuous structure to slow the rate of fire spread and reduce radiant heat exposure.

- Trees will be smooth-barked, well-spaced, and maintained so that their canopies are separated by at least 5 metres at maturity. Trees must not overhang or touch the building.
- Lower limbs will be pruned up to a minimum height of 2–3 metres above the ground, depending on tree size, to avoid vertical fuel continuity.
- Shrubs will not be planted beneath tree canopies. Individual or clumps of shrubs will not exceed 5 m² in area and will be separated from other shrubs or clumps by at least 5 metres.
- Plants greater than 10 cm in height will not be placed within 3 metres of windows or glazed building elements.
- Planting close to the building will be limited, and low-flammability species will be preferred.
- Grass and groundcover will be kept low and discontinuous, maintained below 100 mm in height at all times.

These measures ensure the BMZ remains functional as a defensible space with minimal radiant heat exposure to buildings while maintaining ecological stability.

(3) Ongoing Maintenance and Access

The BMZ must be maintained in perpetuity to ensure its continued effectiveness in mitigating bushfire risk. Routine maintenance activities include:

- Removal of accumulated vegetation debris, bark, and fallen branches.
- Regular mowing and trimming to maintain fuel continuity breaks.
- Maintaining separation distances between tree canopies and structures.
- Ensuring unobstructed access is always available for firefighting operations.

5.3.2 Building Construction, Siting and Design

The appropriate design and construction of buildings enhance their survivability from bushfires. Construction measures should not be applied as a stand-alone mitigation solution but should form part of a suite of measures. This should also include APZ, appropriate access, water supply and landscaping. Building design needs to ensure adequate protection of vulnerable building elements. Construction standards are outlined in AS 3959:2018 and the NASH Standard to provide various levels of protection for different building elements.

The outcome of the BAL assessment is **BAL-29** in according with AS 3959:2018 and the Bushfire Resilient Communities.

It should be noted the Building Code of Australia only requires Classes 1, 2 and 3 and certain Class 9 buildings and Class 10a building associated with those buildings to comply with the bushfire provisions of the NCC 2022.

5.3.3 Access and Evacuation Arrangement

Developments in bushfire prone areas should be serviced by safe access/exit points for both site personnel and emergency services personnel in the event of an emergency. The local council’s Bushfire Hazard Overlay Code prescribes appropriate access for fire management an evacuation to be provided as below:

- Do not exceed an average gradient of 12.5%
- Have a minimum width of 4m and 6m of vegetation clearing, can be up to 10m.
- Have a minimum of 4.8m vertical clearance
- Accommodate turning areas for fire-fighting appliances in accordance with Qld Fire and Emergency Services’ Fire Hydrant and Vehicle Access Guidelines
- Passing bays for firefighting appliances are 20m long by 3m wide, with a minimum trafficable width of 7m at the passing bay
- Reversing bays for firefighting appliances are 6m wide and 8.5m deep to any gates, meeting above turning requirements
- Passing bays or turning intervals located every 200m with a maximum grade of 5%
- Compacted driveway to ensure all weather surfaces

The proposed development will provide with vehicular access that enables safe evacuation for occupants and easy access by firefighting appliances. Consequently, the proposed development is in compliance with the Council Bushfire Hazard Overlay.

5.3.4 Water Supply

An adequate supply of water is essential for firefighting purposes and suitable water supply arrangements shall be provided. The proposed development shall provide an appropriate water supply to support effective emergency services response includes reticulated water and/or appropriate static water supply.

It is noted that all lots will connect to reticulated water, the reticulated hydrant system shall be designed and constructed in accordance with 'QLD Fire and Emergency Services' Fire Hydrant and Vehicle Access Guidelines

5.3.5 Landscaping Management Plan

The type, location and ongoing maintenance of landscaping are considered a necessary bushfire protection measure. Landscaping management for bushfire is the process of designing, constructing, and maintaining a landscape in a way that reduces the risk of bushfire. The management strategies typically involve creating fire breaks, reducing fuel loads, and selecting vegetation that is less flammable.

Appendix A provides a list of less flammable plants.

The landscaping management shall be carried out as the requirements set out for Bushfire management Zone in Section 5.3.1.

5.3.6 Reducing Fuel Load and Weed Management

Removing excess ground fuels and combustible material is a crucial aspect of effective fire prevention and management. This process involves the careful clearance of various flammable materials, including long dry grass, accumulated dead leaves, and fallen branches. By systematically reducing these fuel sources, the risk of fire ignition and spread is significantly mitigated. Regular maintenance of such clearance efforts is essential to ensure ongoing fire safety and resilience within the environment.

Unmanaged invasive pest plants can swiftly amplify fuel loads, comprising fast-growing introduced grasses, dense woody weeds, and invasive climbing vines. These factors collectively escalate fuel loads, fostering a "laddering" effect, intensifying fire spread and allowing it to transition from ground to canopy. Effective

weed management markedly diminishes bushfire risk to the site and surrounding properties.

5.3.7 Importance of Ongoing Vegetation Management

Ongoing vegetation management is essential to maintain the effectiveness of bushfire protection measures and ensure the site continues to meet relevant performance requirements. Without regular maintenance, vegetation can quickly regenerate, resulting in increased fuel loads, higher flame heights, and elevated radiant heat exposure to buildings and access routes.

Routine activities such as mowing, slashing, mulching, weed control, and the removal of fallen branches or debris should be undertaken on a regular basis. The maintenance program should be implemented on an ongoing and scheduled cycle, taking into account seasonal growth patterns, rainfall, and local climatic conditions. Regular monitoring and prompt intervention are critical to ensure that vegetation conditions remain consistent with the prescribed bushfire protection objectives.

6. Conclusion

This bushfire hazard assessment confirms that the proposed minor change will not increase bushfire risk to people or property. Each lot includes a compliant building envelope maintaining radiant heat flux below 29 kW/m², with risk mitigated through appropriate siting, design, and management. Access, evacuation, and firefighting water supply provisions meet the requirements of the Bushfire Hazard Overlay Code of the Brisbane City Plan.

This assessment assumes that vegetation on the site will be maintained according to the client's outlined plans. Should the proposed development require the removal of site vegetation to meet specific BAL requirements set by either the developer or the client, it is the client's responsibility to comply with relevant regulations regarding native vegetation clearing.

Although emergency management arrangements are not a mandatory measure for the proposed development, it is recommended that residents in bushfire prone areas prepare a bushfire survival plan.



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8. Appendix

Appendix A Site Plan

Appendix B Low Flammability Plant Species List

Appendix C Summary of AS3959-2018 Construction Requirements for Bushfire Attack Level

Appendix D Bushfire Overlay Code Assessment

Appendix E BCC Factsheet – Bushfire Protection and Protected Vegetation

Appendix B Low Flammability Plant Species List

This list is intended as a general guide. It is essential to conduct independent research to identify fire-resistant species specific to the region of the subject site, as suitability varies across Queensland. Notably, all plants, whether native or exotic, will combust when exposed to extreme heat or flame; therefore, additional precautions may be required.

Ground covers and creeping plants
• <i>Casuarina glauca</i> prostrate, commonly known as grey she oak or marsh she oak
• <i>Anigozanthos</i> , commonly known as kangaroo paw
• <i>Carpobrotus glaucescens</i> , commonly known as pigface
• <i>Hardenbergia violacea</i> , commonly known as sarsaparilla or purple coral pea
• <i>Liriope muscari</i> , commonly known as lilyturf
• <i>Lomandra longifolia</i> , commonly known as spiny-headed mat-rush
• <i>Lomandra hystrix</i> , commonly known as mat-rush
• Varieties of <i>Brachyscome</i>
• Varieties of <i>Dampiera</i>
• <i>Dianella caerulea</i> , commonly known as blue berry lily
• Varieties of <i>Dianella prunina</i>
• <i>Dianella revoluta</i> , commonly known as blue berry lily or spreading flax lily
• <i>Dichondra repens</i> , commonly known as kidney weed
• <i>Einadia nutans</i> , commonly known as climbing saltbush
• <i>Hardenbergia violacea</i> , commonly known as false sarsaparilla, purple coral pea, happy wanderer, native lilac or waraburra
• <i>Scaevola aemula</i> , commonly known as fairy fan flower
• <i>Scaevola humilis</i> , commonly known as sandplain fan flower
• Varieties of <i>Cotyledon</i>
• <i>Myoporum insulare</i> , commonly known as boobialla, native juniper or blueberry tree
• <i>Eremophila glabra</i> , commonly known as kalbarri carpet
• <i>Eremophila debilis</i> , commonly known as winter apple
• <i>Elaeocarpus eumundi</i> , commonly known as eumundi quandong
• <i>Elaeocarpus prima donna</i> , commonly known as blueberry ash
• <i>Kennedia rubicunda</i> , commonly known as Dusky coral pea or red kennedy pea
• <i>Rhododendron hybrid</i> , commonly known as azalea
• Varieties of <i>Arctotis</i>
• Varieties of <i>Photinia</i>
• <i>Westringia fruticosa</i> , commonly known as native rosemary

Shrubs
• All varieties of Aloe
• Correa reflexa, commonly known as nativefuchsia
• Varieties of Acacia
• Nerium oleander, commonly known as oleander
• Varieties of Atriplex, commonly known as saltbushes
• Varieties of Escallonia
• Varieties of Maireana, commonly known as cottonbush
• Varieties of Eremophila, commonly known as emu bushes or fuchsia bushes
• Varieties of Grevillea
• Melaleuca nodosa, commonly known as prickly leaf paperbark
• Varieties of Syzygium
• Varieties of Photinia
• Varieties of Rhagodia
• Rhapsiolepis indica, commonly known as india hawthorn
• Strelitziaceae hutch
• Strelitzia banks
• Srelizia nicolai
• Sambucus australasica, commonly known as yellow elderberry or native elderberry
• Varieties of Coprosma
• Varieties of Plectranthus
• Senna artemisioides, commonly known as silver cassia

Deciduous trees
• Brachychiton acerifolius, commonly known as the flame kurrajong
• Ulmus parvifolia, commonly known as chinese elm
• Morus alba, commonly known as the mulberry tree
• Eriobotrya japonica, commonly known as loquat
• Gleditsia triacanthos, commonly known as honey locust
• Trees from the genus Prunus, including ornamental cherries, plums and peaches
• Trees from the genus Malus, including apples and crab apples

Evergreen trees
• Grevillea robusta, commonly known as silky oak
• Melia azedarach, commonly known as cape lilac, white cedar, persian lilac or chinaberry
• Lophostemon confertus, commonly known as brush box, queensland box, brisbane box or pink box
• Tristaniopsis laurina, commonly known as water gum, kanooka or kanuka
• Rapanea variabilis, commonly known as muttonwood
• Varieties of Acacia
• Varieties of Acmena
• Varieties of Magnolia
• Cupaniopsis anacardioides, commonly known as tuckeroo or beach tamarind
• Elaeocarpus reticulatus, commonly known as blueberry ash
• Alectryon subcinereus, commonly known as native quince
• Callicoma serratifolia, commonly known as black wattle
• Canthium coprosmoides, commonly known as supple jack or sweet susie
• Cassine australis, commonly known as red olive berry or red olive plum
• Croton insularis, commonly known as Queensland cascarilla, native cascarilla bark or silver croton
• Cuttsia viburnea, commonly known as native elderberry
• Varieties of Citrus
• Denhamia celastroides, commonly known as denhamia or orange boxwood
• Diospyros australis, commonly known as black plum or yellow persimmon
• Eupomatia laurina, commonly known as bolwarra, grey beech or native guava
• Glochidion ferdinandi, commonly known as the cheese tree or buttonwood
• Guioa semiglauca, commonly known as guioa or wild quince
• Hodgkinsonia ovatiflora, commonly known as golden ash
• Hymenosporum flavum, commonly known as native frangipani or Queensland frangipani
• Petalostigma triloculare, commonly known as quinine berry, forest quinine or bitter bark
• Podocarpus elatus, commonly known as she pine
• Rhodosphaera rhodanthema, commonly known as yellow cedar, tulip satinwood or deep yellow wood
• Sarcopteryx stipata, commonly known as corduroy
• Scolopia braunii, commonly known as scolopia or brown birch
• Stenocarpus sinuatus, commonly known as white silky oak, tulip flower, white beefwood Or wheel of flower tree
• Streblus brunonianus, commonly known as the whalebone tree, axehandle wood or white handlewood
• Symplocos stawellii, commonly known as white hazelwood
• Symplocos thwaitesii, commonly known as buff hazelwood
• Varieties of Ficus (fig trees)

Appendix C: Summary of AS3959-2018 BAL-29 construction requirements

Note: this is a summary of some portions of the standard - the building designer, builder and subcontractors should refer to AS3959-2018 in full prior to construction.

- **Subfloor supports**

The Standard does not provide construction requirements for sub-floor supports where the sub-floor is enclosed in accordance with wall that conforms to the requirements for walls listed below or is enclosed with corrosion resistant steel, bronze or aluminium mesh with a maximum aperture of 2 mm.

Where the subfloor space is unenclosed, the support posts, columns, stumps, piers and poles are to be of non-combustible material or bushfire resisting timber.

- **Floors**

The Standard does not provide construction requirements for concrete slabs on the ground.

Unenclosed subfloor space

The standard does not provide construction requirements for bearers, joists and floors if the underside element is greater than 400mm above finished ground level

- **External walls**

The exposed components of external walls shall be as follows:

- (a) made of non-combustible materials (e.g. full masonry, brick veneer etc.) with a minimum thickness of 90 mm, or
- (b) timber logs with a density of 680 kg/m³ and a minimum nominal thickness of 90mm; or
- (c) cladding that is fixed externally to a timber or metal frame and is:
 - (i) non-combustible; or
 - (ii) fibre cement a minimum of 6mm thick; or
 - (iii) bushfire-resisting timber.

- **Joints**

All joints in the external surface material of walls shall be covered, sealed, overlapped, backed or butt-jointed.

Vents and weepholes

Vents and weepholes in external walls are to be screened with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture of 2 mm.

External glazed elements, assemblies and doors

- **Screens for windows and doors**

Where fitted, screens for windows and doors shall have mesh or perforated sheet made of corrosion-resistant steel, bronze or aluminium with a maximum aperture of 2 mm, with framing made from metal or bushfire resisting timber.

- **Windows**

Frame material for windows are to be made from bushfire-resisting timber, metal or metal-reinforced uPVC.

Glazing is to be toughened glass with a minimum thickness of 5 mm.

The openable portions of windows shall be screened with a mesh with a max aperture of 2 mm made of corrosion resistant steel, bronze or aluminium.

- **Doors - side hung external doors, panel fold & sliding doors**

Doors- shall be completely protected externally by a screen with a mesh with a max aperture of 2mm made of corrosion resistant steel, bronze or aluminium, OR

Door panel material shall be:

- (a) non-combustible; or
- (b) solid timber, laminated timber or reconstituted timber, having a minimum thickness of 35 mm for the first 400 mm above the threshold; or
- (c) fully framed glazed door panels with framing made from metal, bushfire resisting timber or uPVC.

Door frames shall be made from metal bushfire resisting timber, metal or metal reinforced uPVC.

Where doors incorporate glazing, the glazing shall be toughened glass with a minimum thickness of 6mm.

Doors shall be tight fitting to the door frame and to an abutting door, if applicable.

Weather strips, draught excluders or draught seals shall be installed.

There is no requirement to screen the openable part of a door at this level.

- **Garage doors**

Vehicle access doors shall be made from:

- (i) non-combustible material; or
- (ii) bushfire-resisting timber; or
- (iii) fibre-cement sheet, a minimum of 6 mm in thickness; or
- (iv) a combination of any of items (i), (ii) or (iii) above.

All vehicle access doors to be protected with suitable weather strips, draught excluders, draught seals or brushes.

- **Roofs**

The following apply to all types of roofs and roofing systems:

- (a) roof tiles, roof sheets and roof covering accessories shall be non-combustible,
- (b) the roof/wall and roof/roof junction shall be sealed, or otherwise protected to prevent openings greater than 2mm,
- (c) roof ventilation openings, such as gable and roof vents, shall be fitted with ember guards made of non-combustible material or a mesh or perforated sheet with a max aperture of 2mm made of corrosion resistant steel, bronze or aluminium.
- (d) A pipe or conduit that penetrates the roof covering shall be non-combustible

Tiled roofs shall be fully sarked with the sarking covering the entire roof area including ridges and hips and extend into gutters and fascias.

Sheet roofs shall:

- (a) be fully sarked with sarking, except that foil backed insulation blankets may be installed over battens; OR
- (b) have any gaps sealed at the fascia, or wall line, hips and ridges by:
 - (i) a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium, or
 - (ii) mineral wool, or
 - (iii) other non-combustible material, or
 - (iv) -a combination of any of the above.

- **Roof penetrations**

The following apply to roof penetrations:

- (a) roof penetrations, including roof lights, roof ventilators, roof-mounted evaporative cooling units, aerials, vent pipes and supports for solar collectors, shall be sealed. Sealing material is to be non-combustible.
- (b) openings in vented roof lights, roof ventilators or vent pipes shall be fitted with ember guards made from a mesh or perforated sheet with a maximum aperture of 2 mm, made of corrosion-resistant steel, bronze or aluminium.
- (c) all overhead glazing shall be Grade A safety glass complying with AS 1288.
- (d) flashing elements shall be non-combustible.

- **Eaves linings, fascias and gables**

The following apply to eaves linings, fascias and gables:

- (a) gables shall comply with requirements for walls.
- (b) fascias and bargeboards shall be made from bushfire-resisting timber or metal.
- (c) eave linings shall be fibre-cement sheet with a minimum thickness of 4.5mm or bushfire resisting timber.
- (d) eave penetrations shall be protected as for roof penetrations.
- (e) eaves ventilation openings are to be fitted with ember guards and be made of corrosion resistant steel, bronze or aluminium.
- (f) joints in eave linings, fascias and gables may be sealed with plastic joining strips or timber storm moulds.

- **Gutters and downpipes**

The Standard does not provide material requirements for gutters and downpipes, with the exception of box gutters.

Box gutters are to be non-combustible and flashed at the roof junction with non-combustible material.

If installed, gutter and valley leaf guards are to be non-combustible.

- **Verandas, decks, steps, ramps and landings**

Decking may be spaced. There is no requirement to enclose the subfloor spaces of verandas, decks, steps, ramps or landings.

Decking, stair treads, trafficable surfaces of ramps and landings, balustrades and handrails are to be made from:

- (a) of non-combustible material; or
- (b) of bushfire-resisting timber; or
- (c) a combination of items (a) and (b) above.

Verandah posts shall be made from non-combustible material or bushfire-resisting timber.

- **Water and gas supply pipes**

Above ground, exposed water and gas supply pipes shall be metal. The metal pipe shall extend a minimum of 400mm within the building and 100mm below the ground.

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APPENDIX F
BUSHFIRE-RESISTING TIMBER
(Normative)

F1 GENERAL

Bushfire-resisting timber is timber that is in solid, laminated or reconstituted form and has been tested and is deemed to be acceptable to withstand exposure up to a BAL—29 condition.

Timber may be 'bushfire-resisting' by means of one or more of—

- (a) the inherent properties of the material itself;
- (b) being impregnated with fire-retardant chemicals; or
- (c) the application of fire-retardant coatings or substrates.

F2 TESTING

The following applies:

- (a) To satisfy the requirements for bushfire-resisting timber, timber shall be tested in accordance with AS/NZS 3837 and shall meet the following criteria:
 - (i) The maximum heat release rate shall be not greater than 100 kW/m².
 - (ii) The average heat release rate for 10 minutes following ignition shall be not greater than 60 kW/m² when the material is exposed to an irradiance level of 25 kW/m².
- (b) Where the timber has been altered by chemicals, the test samples shall be subjected to the regime of accelerated weathering described in Paragraph F3 except that where the timber is protected from the weather, as described in the AS 1684 series (for example, cladding protected by a veranda), accelerated weathering of the test samples is not required before being tested to AS/NZS 3837.

External timbers are deemed to be protected if they are covered by a roof projection (or similar) at 30 degrees or greater to the vertical and they are well detailed and maintained (painted or stained and kept well ventilated).

NOTE: The purpose of testing is to assess timber performance rather than to simulate a bushfire. The irradiance set for the test is not to be considered to be correlated to the BAL.

F3 ACCELERATED WEATHERING

Where accelerated weathering is required before testing to AS/NZS 3837, external fire-retardant-coated substrates shall be subjected to the ASTM D2898 Method B weathering regime, with the water flow rate modified to be the same as that within ASTM D2898 Method A.

NOTE: Accelerated weathering does not account for mechanical wear and tear within trafficable areas and care should be exercised when using coating materials.

F4 BUSHFIRE-RESISTING SPECIES

The species listed in Table F1 have been tested and have met the requirements of Paragraph F2.

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TABLE F1
BUSHFIRE-RESISTANT SPECIES

Standard trade name	Botanical name
Ash, silvertop	<i>Eucalyptus sieberi</i>
Blackbutt	<i>Eucalyptus pilularis</i>
Gum, red, river	<i>Eucalyptus camaldulensis</i>
Gum, spotted	<i>Corymbia maculata</i>
Ironbark, red	<i>Eucalyptus sideroxylon</i>
Kwila (Merbau)	<i>Intsia bijuga</i>
Turpentine	<i>Syncarpia glomulifera</i>

Appendix D Bushfire Overlay Code Assessment

Brisbane City Council

City Plan 2014

8.2.5 Bushfire overlay code

8.2.5.3 Performance outcomes and acceptable outcomes

Table 8.2.5.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Applicant Comments Prepared by Max Bushfire Protection Consulting
<p>Section A—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development</p>		
<p>PO1 Development: a. minimises the bushfire hazard; b. maximises the protection of life and property from bushfire; c. addresses the bushfire hazard determined by a bushfire hazard assessment; d. where not in compliance with an approved bushfire management plan or development footprint: i. achieves a bushfire attack level that is less than or equal to BAL-29; or ii. achieves a bushfire attack level that is less than or equal to BAL-12.5 if for vulnerable uses, difficult to evacuate uses, assembly uses, essential community infrastructure or involving the handling or storage of hazardous chemicals exceeding amount specified in Table 8.2.5.3.D; or</p>	<p>AO1.1 Development is designed and sited in compliance with: a. an approved bushfire management plan relevant to the full nature of the uses, which identifies the level of bushfire hazard and the location of hazardous vegetation affecting the development; or b. an approved development footprint identifying the development footprint plan and bushfire management footprint plan; or c. a bushfire hazard assessment and bushfire management plan prepared in accordance with the Bushfire planning scheme policy which: i. is undertaken by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation; ii. determines the relevant bushfire attack level for that</p>	<p>PO 1 Complied</p> <p>The site is separated from hazardous vegetation by a distance sufficient to achieve a rating of less than BAL-29, with a Bushfire Management Zone established and maintained.</p> <p>A site-specific assessment was conducted by Max Bushfire Protection in accordance with State Planning Policy. And the Bushfire Management Plan (BMP) identifies the bushfire protection measures that will be implemented as part of the proposed development to reduce the risk from bushfire to an acceptable level.</p>

<p>iii. if on a site of an existing premises and not a vulnerable use, difficult to evacuate use, assembly use, essential community infrastructure or involving the handling or storage of hazardous chemicals exceeding amounts specified in Table 8.2.5.3.D:</p> <ul style="list-style-type: none"> A. does not extend beyond the bounds of the existing development footprint; B. does not increase the GFA by 10% or 100m², whichever is the greater; C. does not involve a new use on the site; D. is supported by a bushfire risk assessment prepared by a suitably qualified person with technical expertise in the field of bushfire hazard identification and mitigation, which demonstrates that the bushfire risk is acceptable. <p>Note—Bushfire hazard is generally assessed based on the vegetation existing on site, adjacent and nearby to the site at the time of application. However, the level of bushfire hazard posed by any areas subject to revegetation or regrowth vegetation is assessed as if that area had reached its mature state. The Bushfire planning scheme policy provides advice about the sources of information to be consulted to determine areas subject to revegetation or regrowth vegetation and the hazard classification of that vegetation in its mature state.</p> <p>Note—Where a bushfire risk assessment is required it must be carried out in accordance with the State Planning Policy and the National Emergency Risk Assessment Guidelines prepared by the</p>	<p>part of the site in which development is proposed;</p> <p>iii. identifies the location of hazardous vegetation that poses a bushfire risk to the development.</p> <p>Note—Where a bushfire hazard assessment determines that the bushfire hazard for the part of the site in which development is proposed is 'low', no further assessment against this code is required.</p> <p>Note—A 'low' bushfire attack level must not be assumed for development in the Potential impact sub-category and in any areas subject to revegetation or regrowth vegetation even where the area is non-vegetated or vegetation is considered low threat in accordance with AS 3959 Construction of buildings in bushfire-prone areas. The Bushfire planning scheme policy provides advice about the sources of information to be consulted to determine areas subject to revegetation or regrowth vegetation and the hazard classification of that vegetation in its mature state.</p> <p>Note—A bushfire management plan is to be prepared having regard to any bushfire hazard assessment undertaken to prepare a neighbourhood plan.</p> <p>Note—Any bushfire management zone, asset protection zone or similarly defined area approved as part of a bushfire management plan used for bushfire management purposes is considered to be a bushfire management footprint plan. A building protection zone can compromise both the development footprint plan and the bushfire management footprint plan.</p> <p>AO1.2 Development where not in compliance with an approved bushfire management plan or development footprint identifying the development footprint plan and bushfire management footprint plan:</p> <ul style="list-style-type: none"> a. achieves a bushfire attack level that is less than or equal to: <ul style="list-style-type: none"> i. BAL-29; or ii. BAL-12.5 if for vulnerable uses, difficult to evacuate uses, assembly uses, essential community infrastructure or involving the handling or storage of hazardous 	
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<p>Australian Institute of Disaster Resilience.</p>	<p>chemicals exceeding the amount specified in Table 8.2.5.3.D.</p> <p>Note—Bushfire attack level (BAL) is the radiant heat flux that will be experienced during a bushfire and is a measure of heat energy impact expressed as kW/m². BAL is measured within the area of the nominated development footprint plan and excludes the area of any bushfire management footprint plan.</p>	
<p>If for development other than reconfiguring a lot</p>		
<p>PO2 Development other than an extension to an existing building is sited, designed and maintained taking account of all relevant factors affecting the bushfire hazard on the site, including site topography, aspect, location and type and structure of vegetation to:</p> <ul style="list-style-type: none"> a. minimise the number of buildings and people working, living or visiting a site exposed to bushfire risk; b. protect life during bushfire; c. increase the survival of buildings and structures during a bushfire; d. minimise bushfire risk from build-up of fuels around buildings and structures. <p>Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating achievement of this performance outcome.</p>	<p>AO2.1 Development is:</p> <ul style="list-style-type: none"> a. sited in compliance with an approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan relevant to the full nature of the use; or b. if there is no approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan, where on a lot greater than 10 hectares, located in the area of lowest risk from bushfire on the site; and c. if there is no approved development footprint identifying the development footprint plan and bushfire management footprint plan or bushfire management plan, where on a lot greater than 2,500m²: <ul style="list-style-type: none"> i. located away from ridgelines in compliance with Figure a; ii. located on land with a gradient less than 15%; iii. preferably located on east- to south-facing slopes and avoiding north- to west-facing slopes unless the slope is clear of vegetation 	<p>Not applicable for the proposed development.</p>

	<p>and is not located in the High hazard buffer area sub-category or the Medium hazard buffer area sub-category.</p> <p>AO2.2 Development is sited within a building protection zone extending a minimum of 20m from the outermost projection of the main building or any habitable structure or to the maximum extent possible on sites less than 2500m² where a building protection zone would extend into neighbouring properties; and</p> <ul style="list-style-type: none"> a. clusters buildings and structures in the building protection zone; b. designs the inner 10m of the building protection zone to maintain a very low fuel state in the first 10m, and a fuel-reduced state to the extent of the building protection zone, in compliance with Figure b and Figure c. <p>Note—The building protection zone includes the dwelling and all ancillary structures and may extend to a road or a building protection zone in an adjoining site.</p>	
<p>PO3 Development utilises fencing that:</p> <ul style="list-style-type: none"> a. does not contribute to the spread of bushfire; b. in an urban area or in proximity to accommodation uses, contributes to reducing bushfire hazard to a building; c. facilitates the safe movement of fauna. 	<p>AO3.1 Development for a fence within 20m of any building used for accommodation comprises non-combustible or fire retardant materials.</p> <p>AO3.2 Development for a fence:</p> <ul style="list-style-type: none"> a. incorporates gaps and spacing to allow the safe movement of fauna; or b. is designed to enable fauna to climb the fence. 	<p>Not applicable for the proposed development.</p>
<p>PO4 Development ensures that the location, siting, and design of development and associated driveways and access routes:</p> <ul style="list-style-type: none"> a. avoid potential for entrapment during a bushfire; b. facilitate safe and efficient emergency services to 	<p>AO4 Development ensures that:</p> <ul style="list-style-type: none"> a. the length of driveways or access routes does not exceed 70m between the most distant part of any occupied building and the nearest part of the public road; or 	

<p>access and egress the site during a bushfire; c. enables safe evacuation of the site during a bushfire for site occupants. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>	<p>b. where the length of the driveway or access route exceeds 70m: i. the driveway or private access route design meets the requirements of emergency vehicles in compliance with Table 8.2.5.3.C; ii. the driveway or access route provides all weather access for two-wheel-drive vehicles; iii. where relying on a private access route or driveway longer than 200m to reach a public road, a safe alternative access and egress route is provided.</p>	
<p>PO5 Development has adequate road access to the site for emergency vehicles and safe evacuation in a bushfire.</p>	<p>A05 Development has frontage to a constructed, all-weather public road capable of carrying emergency service vehicles.</p>	<p>Not applicable for the proposed development.</p>
<p>PO6 Development makes adequate provision for fire-fighting requirements, including water supply.</p>	<p>A06 Development ensures that: a. a reliable reticulated water supply and water pressure is available for fire-fighting requirements with water supply and pressure, which is in compliance with the standards specified by the relevant utilities provider; or b. where sufficient reticulated water supply is not available for: i. residential lots, there is a minimum water supply available and retained for fire-fighting purposes in compliance with Table 8.2.5.3.B, which may be in the form of a separate tank or a reserve section as part of a main water supply tank; or ii. development other than for residential</p>	<p>Not applicable for the proposed development.</p>

	<p>lots involving new premises or an existing premises with a gross floor area greater than 50m², on-site water storage is provided which is appropriate to the use, according to the standards specified by the relevant emergency services agency and is not less than 5,000 litres.</p> <p>Note—Water supply for fire fighting is in addition to water supply for household use. Where a non-reticulated supply of water is required, swimming pools, creeks and dams should not be used as a substitute for a dedicated static supply as these sources of water are not reliable during drought conditions.</p>	
<p>PO7 Development ensures that the water supply provided for fire-fighting is safely located and freely accessible for fire-fighting purposes at all times.</p>	<p>A07 Development, for which sufficient reticulated water supply is not available, provides:</p> <ul style="list-style-type: none"> a. a water supply outlet located away from any potential fire hazards, such as gas bottles; b. a hardstand area of 11m by 3.5m for fire-fighting vehicles within 2m of the water supply outlet; c. tanks on the bushfire hazard side of the buildings with adequate shielding for the protection of fire fighters; d. pumps which are shielded from bushfire hazard; e. an outlet pipe which is 50mm in diameter and fitted with a 50mm male camlock (standard rural fire brigade fitting); f. that any underground tank for fire-fighting purposes has an access hole of 200mm to allow a tanker to refill direct from the tank; g. that any above-ground water tank is made of concrete or metal and its stand is protected from bushfire hazard; h. that all above-ground water pipes external to 	<p>Not applicable for the proposed development.</p>

	<p>the building are metal, including and up to any taps. Note—Plastic tanks are not to be used.</p>	
<p>Additional performance outcomes and acceptable outcomes for all development in the Biodiversity areas overlay if on a site larger than 2,500m²</p>		
<p>PO8 Development through the siting, design, and construction of buildings, access routes and fire maintenance trails, and ongoing site management:</p> <ol style="list-style-type: none"> a. provides effective separation from sources of bushfire risk; b. responds to the bushfire risk in that location; c. maintains the safety and protection of people and property over time; d. maximises the protection of vegetation in areas of high biodiversity value. <p>Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome that ensures:</p> <ul style="list-style-type: none"> • ongoing site management, such as the bushfire risk to buildings, does not increase beyond the standard to which they have been designed and constructed; • appropriate design and maintenance of the site, and access routes and driveways. 	<p>AO8 Development locates building protection zones as shown on Figure b and Figure c, driveways and access routes and any fire maintenance trails:</p> <ol style="list-style-type: none"> a. outside of the Biodiversity areas overlay; or b. within the existing disturbed, degraded or cleared areas, using natural fire breaks to avoid vegetation clearing and to avoid or otherwise minimise fragmentation or incursions into a habitat area, fauna movement corridor or remnant vegetation. 	<p>Not applicable for the proposed development as the site is not larger than 2500m²</p>
<p>Section B—If for assessable development other than ROL</p>		
<p>PO9 Development:</p> <ol style="list-style-type: none"> a. provides for safe and efficient evacuation and emergency services access to the site during a bushfire; b. does not concentrate large numbers of people or locate significant worker or resident populations in an area of bushfire hazard; c. avoids locating the following uses in an area of bushfire hazard: <ol style="list-style-type: none"> i. vulnerable uses; ii. difficult to evacuate uses; iii. assembly uses. <p>Note—This includes consideration of appropriate alternative shelter for vulnerable uses, management of health and wellbeing requirements during evacuation, safe site operation, and</p>	<p>AO9.1 Development:</p> <ol style="list-style-type: none"> a. does not increase the number of people living, working on or visiting the site by more than 10%; or b. increasing the number of people living, working on or visiting the site, or vulnerable uses, difficult to evacuate uses or assembly uses by more than 10%, implements the recommendations of an approved bushfire management plan, which identifies measures that address the identified bushfire risk relevant to the development. <p>AO9.2</p>	<p>Not applicable for the proposed development.</p>

<p>access and egress arrangements in bushfire events. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>	<p>Development provides alternative access routes that meet the road design requirements of items 1—7 in Table 8.2.5.3.C, for the following:</p> <ul style="list-style-type: none"> a. an extension to existing premises which increases the number of people living, working on or visiting the site by more than 10%; b. the introduction of vulnerable, difficult to evacuate or assembly uses. 	
<p>Additional performance outcomes and acceptable outcomes if involving storage or handling on site of hazardous chemicals in quantities that would be equivalent to or exceed the threshold quantities set out in Table 8.2.5.3.D</p>		
<p>PO10 Development does not cause:</p> <ul style="list-style-type: none"> a. unacceptable risk to people, property and the environment due to the impact of bushfire on the storage or handling on site of hazardous chemicals; b. excessive danger or difficulty to emergency services for emergency response or evacuation. 	<p>AO10 Development for storage or handling of hazardous chemicals:</p> <ul style="list-style-type: none"> a. is not located within the bushfire overlay; or b. complies with an approved bushfire management plan prepared in accordance with the Bushfire planning scheme policy which identifies measures that ensure the development: <ul style="list-style-type: none"> i. mitigates the bushfire risk relevant to the development; ii. does not pose an unacceptable risk to people, public health and safety or risk environmental harm; iii. does not present significant difficulties to emergency services for emergency response or evacuation. <p>Note—Bushfire management plans and site-based risk assessments are prepared in accordance with the Bushfire planning scheme policy. Guidance on the preparation of a hazard and risk analysis is provided in the Industrial hazard and risk assessment planning scheme policy. Note—Any risk mitigation measures, including construction of underground tanks or fire-protected above-ground tanks or package stores, are in compliance with AS 1940-2004 The storage and handling of flammable and combustible liquids.</p>	<p>Not applicable for the proposed development.</p>

Additional performance outcomes and acceptable outcomes for essential community infrastructure		
<p>PO11 Development for essential community infrastructure is located, designed and sited to:</p> <ul style="list-style-type: none"> a. protect the safety of people during a bushfire; b. not create or increase the exposure of people to an unacceptable risk from a bushfire; c. minimise the risk to vulnerable populations from a bushfire; d. mitigate the impacts on the community and environment from the effects of a bushfire on the development. 	<p>AO11 Development for essential community infrastructure:</p> <ul style="list-style-type: none"> a. is ancillary to and not relied on for the provision of the essential service during a bushfire; or b. implements an approved bushfire management plan prepared in accordance with the Bushfire planning scheme policy which identifies measures that: <ul style="list-style-type: none"> i. ensure the development allows for safe and efficient emergency access and site evacuation during a bushfire; ii. do not pose an unacceptable risk to people on a premises during a bushfire; iii. ensure the development is not at risk of failure during a bushfire which results in health or safety risks or adverse environmental impacts; iv. enable people and property to be defended safely and effectively from a bushfire. 	<p>Not applicable for the proposed development.</p>
<p>PO12 Development for essential community infrastructure is able to function effectively during and immediately after bushfire events.</p>	<p>AO12 Development for essential community infrastructure:</p> <ul style="list-style-type: none"> a. is ancillary to and not relied upon for the provision of the essential service during a bushfire; or b. containing elements vital to the function of the essential service during a bushfire is not located in the Bushfire overlay area; or c. implements an approved bushfire management plan prepared in accordance with the Bushfire planning scheme 	<p>Not applicable for the proposed development.</p>

	<p>policy which identifies measures that ensure that:</p> <ul style="list-style-type: none"> i. essential community infrastructure is able to function during bushfire events; ii. access necessary to maintain safety or function of the development is not compromised by a bushfire; iii. mitigation measures are not unduly reliant on human activation to respond to a bushfire; iv. the safe storage of valuable records or items of cultural or historical significance, including storage of public records under the <i>Public Records Act 2002</i>, is able to be maintained during a bushfire event. 	
<p>Additional performance outcomes and acceptable outcomes if for landscaping or a park landscape plan is a requirement for development</p>		
<p>PO13 Development provides landscaping that does not create an unacceptable risk to people or property and provides for ongoing management of risk to the development and people from a bushfire.</p>	<p>AO13 Development is in compliance with a landscaping plan which:</p> <ul style="list-style-type: none"> a. is prepared in compliance with an approved bushfire management plan; b. preserves the requirements of any building protection zone; c. does not increase the exposure of a habitable building not located in a building protection zone to a bushfire hazard. <p>Note—The requirements of a building protection zone are shown in Figure b and Figure c.</p>	<p>Not applicable for the proposed development.</p>
<p>PO14 Development for a park is designed so that the park:</p> <ul style="list-style-type: none"> a. is practical to maintain and requires minimal resources to be restored to its designed function and condition after a bushfire; 	<p>AO14 Development provides a park landscape plan that complies with a bushfire management plan prepared in accordance with the Bushfire planning scheme policy.</p>	<p>Not applicable for the proposed development.</p>

<ul style="list-style-type: none"> b. provides for safe and efficient site evacuation and efficient emergency services access avoiding potential for entrapment during a bushfire; c. does not place unacceptable bushfire risk on an adjoining or nearby site, people and assets; d. provides efficient access for fire fighting; e. provides ongoing protection from bushfire for major park assets and buildings. <p>Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>		
<p>Section C—If for ROL</p>		
<p>PO15 Development does not materially increase the number of premises exposed to unacceptable risk during bushfire events.</p>	<p>AO15 Development does not materially increase the number of people living or working in the Bushfire overlay area.</p>	<p>PO15 Complied</p> <p>The site is located in potential impact buffer area, the development does not materially increase the number of premises exposed to unacceptable risk during bushfire events.</p> <p>A site-specific assessment was conducted by Max Bushfire Protection in accordance with State Planning Policy. And the Bushfire Management Plan (BMP) identifies the bushfire protection measures that will be implemented as part of the proposed development to reduce the risk from bushfire to an acceptable level.</p>
<p>PO16 Development is designed to:</p> <ul style="list-style-type: none"> a. mitigate the risk of bushfire hazard to each lot; b. limit the spread of bushfire; c. achieve and maintain sufficient separation distance between development and hazardous vegetation to minimise bushfire hazard to future buildings during a bushfire; d. allow for emergency services access; 	<p>AO16 Development requires that lot number, size, shape and layout allow for the siting of future buildings within the lowest hazard locations on the site being located:</p> <ul style="list-style-type: none"> a. within a building protection zone in accordance with Figure b and Figure c; b. away from ridgelines and hilltop sites in compliance with Figure a; c. on land with a gradient less than 15%; 	<p>PO16 Complied</p> <p>The development has been designed to reduce bushfire hazard risk for each lot, control the spread of bushfires and maintain adequate separation between the development and hazardous vegetation to minimize bushfire hazards for future buildings.</p> <p>The development provides emergency services access, and the new buildings will be</p>

<p>e. locate buildings within a building protection zone Note—Lot size, location, configuration, dimensions and building measures are balanced to achieve an acceptable level of risk to future occupants. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>	<p>d. preferably on east to south facing slopes and avoiding north to west facing slopes unless the slope is clear of vegetation and is not located in the High hazard buffer area sub-category or Medium hazard buffer area sub-category.</p>	<p>within a building protection zone. The proposed development will appropriate vehicular access that enables safe evacuation for occupants and access by fire fighting appliances in accordance with the relevant Australian Standards and guidelines.</p>
<p>PO17 Development promotes safe site access, avoids creating a potential entrapment situation and supports accessibility and manoeuvring for fire fighting during bushfires. Note—This includes easements and boundary realignments. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>	<p>AO17 Development provides a lot layout which: a. provides direct road access and egress for new lots to public roads, rather than the creation of easements; b. in an urban category, avoids creating a new lot less than or equal to 2,500m² which directly adjoins hazardous vegetation; c. in an urban category, locates a future building protection zone to avoid a driveway of longer than 70m from the road frontage to a habitable building; d. in a rural category, provides for an alternative access where the private access roads or driveways are longer than 200m to reach a public road.</p>	<p>PO17 Complied The development ensures safe site access, prevents potential entrapment situations, and facilitates accessibility and maneuverability for firefighting operations during bushfires.</p>
<p>PO18 Development ensures that the road layout and design provides: a. efficient emergency services access to sites and manoeuvring within the subdivision; b. safe and efficient movement of residents, workers and visitors out of the subdivision and away from an approaching bushfire; c. safe and efficient movement of emergency services into the subdivision; d. alternative egress routes considering the most likely bushfire scenarios;</p>	<p>AO18.1 Development involving a new road or fire maintenance trail is designed and constructed in compliance with: a. Table 8.2.5.3.C; or b. an approved bushfire management plan. AO18.2 Development has a road layout and design which: a. provides for alternative access routes to the subdivision, by public roads that meet the requirements in Table 8.2.5.3.C and are able to access the arterial road network;</p>	<p>PO18 Complied A site-specific assessment was conducted by Max Bushfire Protection in accordance with State Planning Policy. And the Bushfire Management Plan (BMP) identifies the bushfire protection measures that will be implemented as part of the proposed development to reduce the risk from bushfire to an acceptable level.</p>

<p>e. ongoing availability and maintenance of access and egress routes for the purposes of evacuation and emergency services access.</p> <p>Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.</p>	<p>b. excludes cul-de-sacs, except where a perimeter road with a cleared width of 20m isolates the development from hazardous vegetation;</p> <p>c. does not include dead-end roads or if a dead-end road is unavoidable, it is a maximum of 60m long, or 200m where located in the Environmental management zone, Conservation zone, Rural zone, or Rural residential zone, and an alternative emergency evacuation and egress route away from the most likely source of bushfire risk is provided for lots where multiple road access or exit points are not possible;</p> <p>d. links road within the subdivision to, or provides for future links to roads in adjacent subdivisions.</p> <p>Note—Where staged development occurs or development is in accordance with an approved master plan, a temporary perimeter road may be considered, subject to availability of reticulated water supply.</p>	
<p>PO19 Development involving new premises provides adequate infrastructure to support fire fighting.</p>	<p>AO19.1 Development involving new premises ensures that:</p> <p>a. lots have access to reticulated water supply and water pressure available for fire-fighting requirements with water supply and pressure that accord with the standards specified by the relevant utilities provider; or</p> <p>b. where reticulated water supply is not available for:</p> <p>i. residential lots, there is a minimum water supply available and retained for fire-fighting purposes in compliance with Table 8.2.5.3.B, which may be in the form of a separate tank or a reserve section as part of a</p>	<p>AO19.1 and AO19.2 Complied</p> <p>The developer will ensure compliance with AO19.1 and AO19.2.</p>

	<p>main water supply tank;</p> <p>ii. development other than residential lots, onsite water storage is provided which is appropriate to the proposed future use according to the standards specified by the relevant emergency services agency and is not less than 5,000 litres.</p> <p>Note—Water supply for fire-fighting is in addition to water supply for household use. Where a non-reticulated supply of water is required, swimming pools, creeks and dams should not be used as a substitute for a dedicated static supply as these sources of water are not reliable during drought conditions.</p> <p>AO19.2 Development provides fire hydrants in accordance with Central SEQ Distributor-Retailer Authority, Queensland Urban Utilities (incorporating Water Services Association of Australia) standards.</p>	
<p>Section D—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development where in Potential impact sub-category</p>		
<p>PO20 Development is designed and constructed to reduce vulnerability to bushfire attack and addresses the bushfire hazard by a bushfire hazard assessment that:</p> <p>a. utilises a fit for purpose methodology prepared in accordance with the State Planning Policy — State interest technical manual — Natural hazards, risk and resilience;</p> <p>b. includes the following measures and inputs:</p> <p>i. potential fuel loads for vegetation in its mature state from areas subject to revegetation or regrowth vegetation;</p> <p>ii. a published vegetation hazard classification dataset</p>	<p>AO20.1 Development is designed and sited in compliance with an approved bushfire management plan relevant to the full nature of the uses, which identifies the level of future bushfire hazard and the location of future hazardous vegetation affecting the development.</p> <p>Note—The Bushfire planning scheme policy provides advice about the sources of information to be consulted to determine areas subject to revegetation or regrowth vegetation and the hazard classification of that vegetation in its mature state.</p> <p>AO20.2 Development other than ROL determines bushfire attack level using:</p> <p>a. potential fuel loads for vegetation in its mature state from areas subject</p>	<p>Not applicable for the proposed development.</p>

<p>from the relevant fire authority;</p> <ul style="list-style-type: none"> iii. forest fire danger index of 54 (AEP 5%); iv. potential flame length; v. potential rate of fire spread. <p>c. is undertaken by a person suitably qualified and experienced with technical expertise in the field of bushfire hazard identification and mitigation, including protection of biodiversity values;</p> <p>d. determines the relevant bushfire attack level for that part of the site in which development is proposed.</p> <p>Note—The Bushfire planning scheme policy provides advice about the sources of information to be consulted to determine areas subject to revegetation or regrowth vegetation and the hazard classification of that vegetation in its mature state.</p>	<p>to revegetation or regrowth vegetation;</p> <p>Note—In the absence of an approved rehabilitation and revegetation plan refer to Figure d—Regional ecosystem vegetation communities.</p> <ul style="list-style-type: none"> a. a published vegetation hazard classification dataset from the Relevant fire authority; b. forest fire danger index of 54 (AEP 5%). <p>Note—Revegetation and regrowth vegetation may be planned within the Potential impact sub-category on both private and public lands. The level of bushfire hazard posed by any areas subject to revegetation or regrowth vegetation is to be assessed as if that area had reached its mature state. A 'low' bushfire attack level must not be assumed in these locations even where the area is non-vegetated or vegetation is considered low threat in accordance with AS 3959-2009 Construction of buildings in bushfire-prone areas. The Bushfire planning scheme policy provides advice about the sources of information to be consulted to determine areas subject to revegetation or regrowth vegetation and the hazard classification of that vegetation in its mature state.</p>	
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Appendix E: BCC Factsheet – Bushfire Protection and Protected Vegetation

Source:

<https://www.brisbane.qld.gov.au/content/dam/brisbanecitycouncil/corpwebsite/buildin-g-and-planning/documents/protected-vegetation-definitions.pdf.coredownload.pdf>

BUSHFIRE PREPARATION AND PROTECTED VEGETATION

Brisbane City Council's *Natural Assets Local Law 2003* (NALL) helps to protect our city's natural assets, including bushland areas, wetlands, waterway corridors and trees. Whilst many of us enjoy living in bushland areas, it is important to recognise the importance of being prepared for bushfire season and being mindful of the role fire plays in the environment.

This factsheet is intended to help guide you through situations where you may require a [NALL permit application](#), whether you will require further documentation to accompany your application, or whether exemptions are in place that will allow you to undertake works without a permit.

Vegetation clearing for fire management/essential management that may be considered exempted activity under the Queensland State Government *Planning Regulation 2017* may still require approval under NALL. If you are uncertain please contact Council on 3403 8888 to discuss prior to undertaking clearing works.

The Queensland Fire and Emergency Service (QFES) recommends a number of actions to prepare for bushfire season including:

- Reducing vegetation loads along access paths.
- Mowing your grass regularly.
- Removing excess ground fuels and combustible material (long dry grass, dead leaves and branches).
- Trimming low-lying branches two metres from the ground surrounding your home.

Many of these activities can be carried out without a permit. In addition, property wide weed management will help to reduce fuel loads and does not require a permit (find out more below).

Remember, vegetation management is only one part of bushfire preparedness, and embers from bushland areas can travel for hundreds of meters ahead of a fire. In 'catastrophic' fire danger conditions, even well-prepared and well-constructed homes will not be safe and leaving early is the only option for your survival. If you live in a bushfire prone area you are strongly encouraged to compile a Bushfire Survival Plan. Visit the QFES at www.qfes.qld.gov.au for guidance on developing a Bushfire Survival Plan.

Weed management

Invasive pest plants, if left unmanaged, can rapidly increase fuel loads. Fast growing introduced grasses, dense woody weeds and climbing invasive vines all help to increase elevated fuel loads, and create a 'laddering' effect that allows fires to increase in intensity and rate of spread, as well as allowing fire to spread from the ground into the canopy of trees.

You do not need a permit to manage pest plants, and in many instances, management of weed species can significantly reduce bushfire risk to you and to neighbouring properties. You must be mindful when managing pest plants that you do not impact protected vegetation or disturb soil in a way that could cause erosion.



Dedicated to a better Brisbane

Council’s Environmental Management Team have experts in protected vegetation and pest plants who can help guide with protected vegetation queries. You can contact Council on (07) 3403 8888 and ask for permit advice from a member of Council’s Environmental Management Team. Arranging a visit to your property with a Bushfire Safety Officer from QRFS is also recommended.

If you are handy with plant identification, or you know someone who is, you can start to identify pest plants on your property. Pest plants are those invasive plants listed in the ‘Biosecurity Plan for Brisbane’. Council also provides an online weed identification tool. To access these resources visit www.brisbane.qld.gov.au and search for ‘weed identification tool’ or ‘biosecurity plan’. It is also important to remember that in Queensland, the State Government’s *Biosecurity Act 2014* includes a ‘general biosecurity obligation’, which is a requirement for all landowners and managers to take all reasonable steps to manage invasive pest plants on land under their control.

Constructing new dwellings in ‘Bushfire-prone Areas’

In Queensland, the *Australian Standard for the Construction of Buildings in Bushfire-prone Areas AS3959 (2018)* covers the bushfire safety requirements of building in a bushfire prone area, as well as providing the methodology for calculating your Bushfire Attack Level (BAL). If you are proposing to remove protected vegetation for fire management in association with a new build, you will be required to submit a BAL assessment and recommendations with your NALL application. This report can be obtained from qualified consultants and may also be required as part of the certification process for your build.

Vegetation management and property development

Vegetation clearing associated with development in most bushland areas of Brisbane must demonstrate that proposed development works will protect Brisbane’s biodiversity network and comply with [Brisbane City Plan 2014](#). There are a number of ways to gain advice about planning and development in Brisbane. Find out more [here](#).

If your property is identified in the City Plan Bushfire Overlay, or the SPP Bushfire Prone Area and you are proposing assessable development under the Bushfire Overlay, a [Bushfire Hazard Assessment](#) will be required to assist in demonstrating compliance with the Bushfire Overlay Code.

Pruning protected vegetation for fire management

Pruning can be useful to help reduce fuel loads along access paths, to trim lower branches to help prevent fire entering tree canopies, and to prevent tree canopies from overhanging dwellings. Depending on the type of vegetation protection on your property, you generally won’t require a permit to undertake pruning works. To find out if your property has protected vegetation, and what categories are present on your property, you can [request a map and report online](#) or [contact Council](#). Once you know what type of vegetation protection categories are on your property, you can use the tables below to see whether you need a permit. Most properties in bushland areas will be protected under the SNV and WWV categories (explained below).

Proposed Work	Protection categories present*	Is a permit required?
Pruning or trimming vegetation for the purpose of maintenance or hazard management on your property.	WWV SNV SUV (except significant landscape trees)	<p>A permit is not required to prune if:</p> <ul style="list-style-type: none"> no more than 20% of the live foliage volume of a tree or shrub is removed in any 12month period; and the part removed is distributed evenly over the whole crown and the tree or shrub is not left lop-sided <p>Dead limbs may be removed without a permit so long as they are less than 20cm diameter and not providing habitat.</p> <p>Pruning means maintenance or remedial pruning in accordance with AS 4373-2007 Pruning of amenity trees.</p>
	Significant landscape trees	A permit is required
<p>WWV (<i>Wetland and waterway vegetation</i>) SNV (<i>Significant Native Vegetation</i>) SUV (<i>Significant Urban Vegetation</i>)</p> <p>Find out more about protected vegetation categories.</p>		

Removing protected vegetation

Some exemptions exist to remove protected vegetation in close proximity to dwellings. There are also exemptions to remove dead trees smaller than 20cm in trunk diameter that are not providing habitat. In most cases, a permit application will be required if you are planning to remove protected vegetation. Exemptions are described below. Most properties in bushland areas will be protected under the SNV and WWV categories.

Proposed Work	Protection categories present*	Is a permit required?
Removing a tree or part of a tree from around occupied dwellings and buildings	WWV SNV SUV (except significant landscape trees)	A permit is not required to remove a tree or part of a tree if: <ul style="list-style-type: none"> the whole trunk is located within 3m of an existing lawfully constructed and occupied dwelling on a property less than or equal to 4000m² in area. the whole trunk is located within 6m of an existing lawfully constructed and occupied dwelling on a property greater than 4000m² in area.
	Significant landscape trees	A permit is required
Removing a dead tree	WWV SNV SUV (except significant landscape trees)	Dead trees may be removed without a permit if the tree is— (i) smaller than 20cm in trunk diameter ; and (ii) is not providing habitat for native fauna;
	Significant landscape trees	A permit is required
Clear a firebreak	WWV SNV SUV	A permit is required unless the clearing is in accordance with a written (or oral, in emergency circumstances) direction to clear a firebreak given by a Fire Warden, the Queensland Fire and Emergency Services.
<p>WWV (<i>Wetland and waterway vegetation</i>) SNV (<i>Significant Native Vegetation</i>) SUV (<i>Significant Urban Vegetation</i>)</p> <p>Find out more about protected vegetation categories.</p>		

A permit application will be required for the following activities:

- Removing protected vegetation around dwellings that does not fall under an exemption under NALL.
- Managing native undergrowth (shrubs other than weeds) within fuel reduced areas.
- Carrying out prescribed burns and installing fire access lines (see more information about fire management below).
- Installing fire breaks (unless directed to do so by QFES).
- Removing vegetation, other than weed species, on overgrown fire management trails.

A bushfire management plan may be required to be submitted with a permit application for these activities. The Queensland Fire and Emergency Services (QFES), or other suitably qualified bushfire professional, can provide advice about the suitable location of firebreaks and fire management lines. Arranging a visit to your property with a Bushfire Safety Officer from QRES can be highly beneficial when considering vegetation management.

Fire management

Lighting a fire

The use of outdoor fires for burning green waste piles is regulated under Council's *Health, Safety and Amenity Local Law 2021*. Limited exemptions exist for burning waste in fire piles of less than 2m (length) x 2m (breadth) x 2m (height) if you live in an area zoned as Rural. If you plan to burn green waste in a Rural zoned area, you must ensure that it is located away from any protected vegetation, as fire piles can generate intense heat that can kill protected trees.

Prescribed burning

Whilst Council is supportive of prescribed burning for hazard reduction and vegetation management in bushland areas, a number of factors need to be satisfied before property owners undertake fire management. Applying for a permit is just one of the steps required. Consider the following tips before starting work.

- The South East Queensland Fire and Biodiversity Consortium (www.fireandbiodiversity.org.au) provides information and materials to assist in fire management planning, including a property bushfire planning kit.
- Apply for a permit to carry out works under NALL. A proposed burn plan must be included with an 'Application to Carry Out Works to (including interfere with) Protected Vegetation – long term permit'. Permits of up to 10 years, for ongoing work, are available.
- Apply for a '[Permit to Light Fire](#)' through your local fire warden.
- Council's approved NALL permit can be provided to support your '[Permit to Light Fire](#)' application.
- Following permission from QFRS, advise Council of your intent to undertake a controlled burn.
- It is also recommended that property owners talk to their neighbours about the intended work. You might also consider joint applications.

How to apply for a permit

Permits can be lodged with Council online or by mail, email or in person. For permit forms and more information visit www.brisbane.qld.gov.au and search 'protected vegetation permits', call (07) 3403 8888 or visit your nearest Council regional business centre.

Further information

For more information, visit www.brisbane.qld.gov.au or phone Council on (07) 3403 8888.

Visit the Queensland Fire and Emergency Service (QFES) www.qfes.qld.gov.au to find out more about preparing for fire season.

Brisbane City Council Information

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