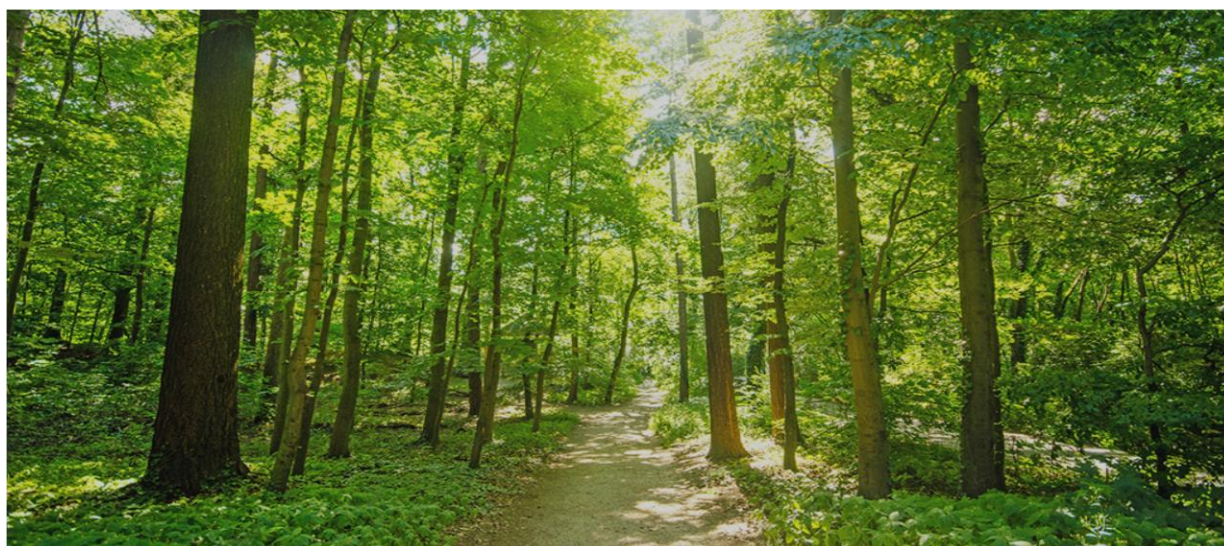


Bushfire Hazard Assessment Bushfire Management Report



Project No:	B6800
Address:	50 PRITCHARD ST LYTTON QLD 4178
Lot Plan:	Lot 1 SP 282377
Local Government Area:	Brisbane City Council
Proposed Development:	Formalise the approval and utilisation of the existing demountable buildings

Document History

Version	Description	Date	Author	Approved by
1.0	Report - Draft	7/08/2026	LL, HL	HL
2.0	Report - Final	14/08/2026	LL, HL	HL
2.1	Report - Final	25/08/2026	LL, HL	HL

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
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. I hereby declare that I am a suitably qualified bushfire consultant, holding AQF Level 8 qualifications and tertiary degrees below: ▪ Graduate Diploma in Bushfire Protection ▪ Graduate Certificate in Bushfire Protection ▪ Master of Business Administration ▪ Bachelor in Engineering	
Signature:	<i>H. LIANG</i>
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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:	B6800
Type of bushfire assessment:	Site-specific bushfire hazard assessment Bushfire attack level assessment Bushfire management plan
Location:	50 PRITCHARD ST LYTTON QLD 4178 Lot 1 SP 282377
Site area:	1,886,000 sqm
Local Government Area:	Brisbane City Council
Client(s):	Queensland Planning and Survey Pty Ltd
Proposed Development:	Formalise the approval and utilisation of the existing demountable buildings
Site plan by:	The Client(s)
BCC DA:	A006944952
Asset Protection Zone:	Established
Bushfire Attack Level:	BAL-19
Building Class	Class 5

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,'

1.2 Subject site

- Site Address: 50 PRITCHARD ST LYTTON QLD 4178
- Lot Plan: Lot 1 SP 282377
- Site Area: 1,886,000 sqm

1.3 The proposed development

The proposed development seeks a development approval to formalise the utilisation of the existing demountable Class 5 buildings.

Class 5 buildings are office buildings used for professional or commercial purposes.

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.

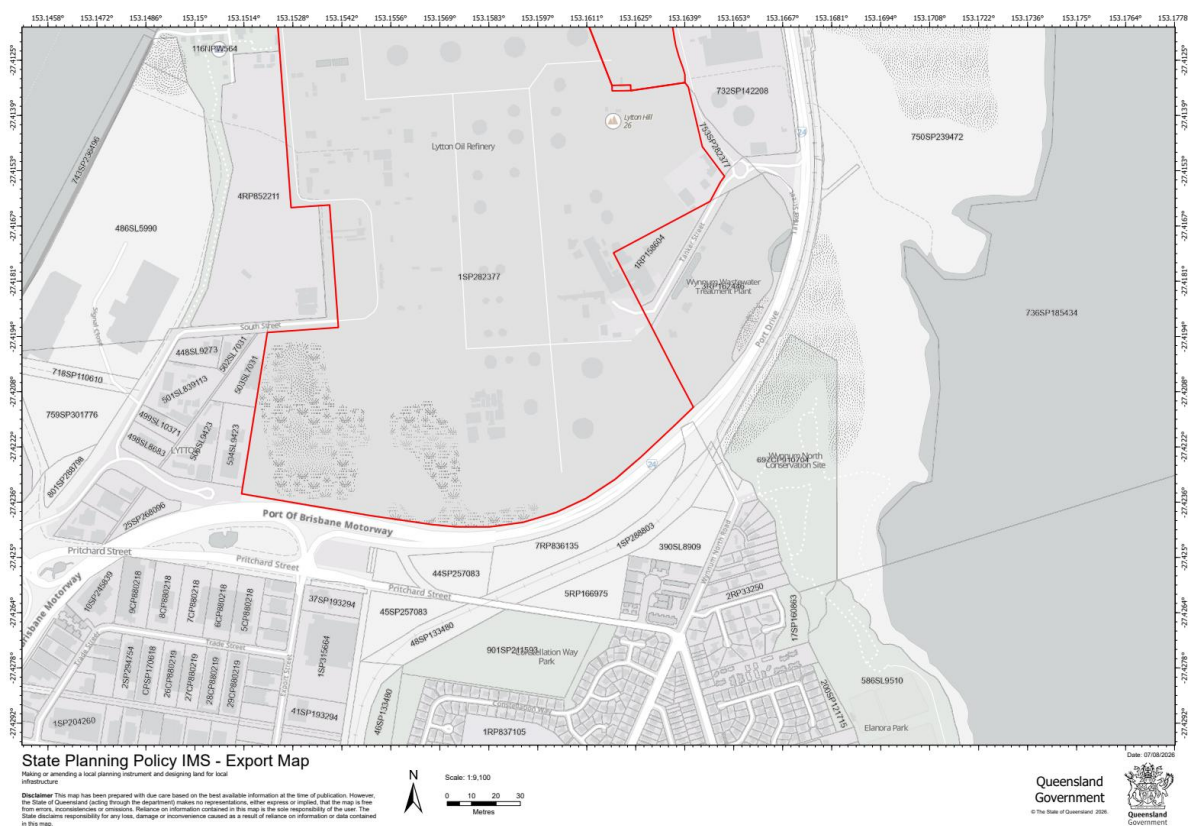


Figure 1-1: Subject Site

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 Assessment and Legislative

Assessment and legislative review were 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/BRC 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.

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 metre. 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 minimise the risk of ignition from bushfires.

3.3 AS 3959 Construction of Buildings in Bushfire-prone Areas

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 Exposure
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 3-1: AS3959:2018 Using BAL to determine construction requirements

3.4 Brisbane City Council Planning Scheme

Relevant bushfire provisions of the Council's Planning Scheme reflect 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 applicable Bushfire Hazard Overlay Mappings indicate that portions of the subject site are identified as being potentially affected by bushfire hazard,

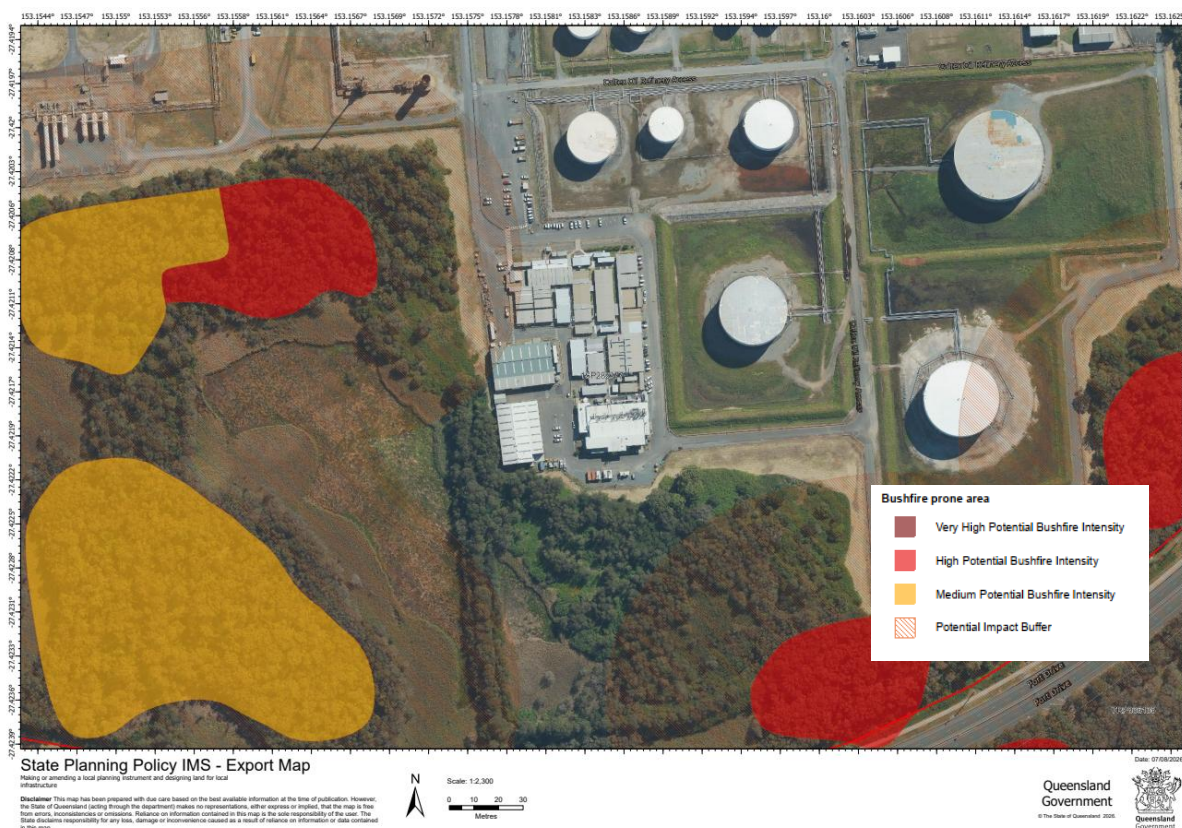


Figure 4-1: Bushfire Hazard Overlay Mapping

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 54 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 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 m 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 m 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.

4.3.1 Ground-Truthed VHC

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

Aspect	Assessment Plot	Mapped VHC	Ground-Truthed VHC
North	A	Low Hazard - VHC 42.6 Nil to very low vegetation cover	Low Hazard - VHC 42.6 Nil to very low vegetation cover
East	B	Low Hazard - VHC 42.6 Nil to very low vegetation cover	Low Hazard - VHC 42.6 Nil to very low vegetation cover
South	C	VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps	VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps
West	D	VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps	VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps

Table 4-1: Ground-Truthed VHC

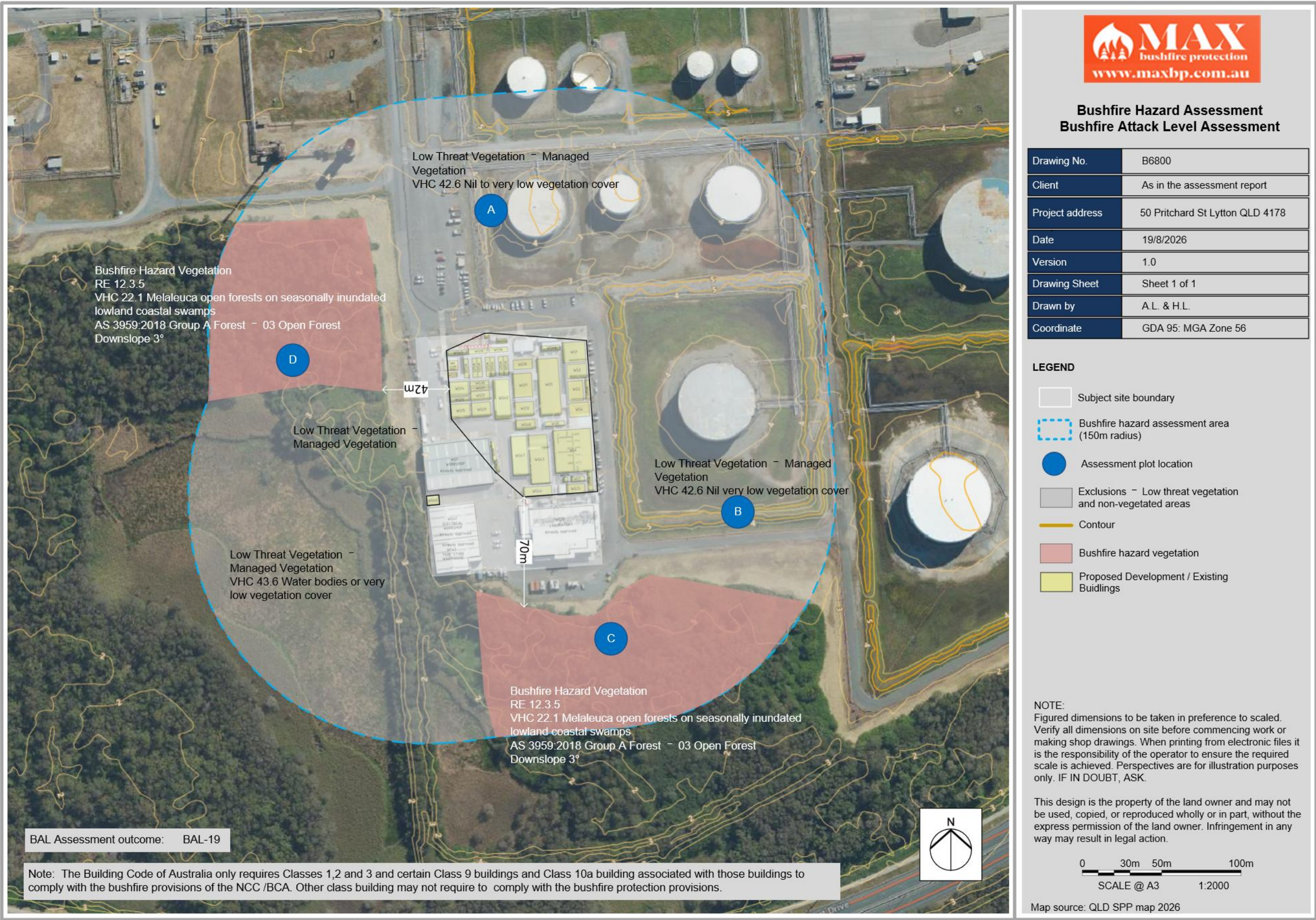


Figure 4-2: Ground-Truthed VHC and local Bushfire Prone Area map

▪ Classified vegetation conditions to South and West

Land at assessment plot C and D, a large continuous patch of hazardous vegetation VHC 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps was identified approximately 42 m from the proposed development area to the west and 70m to the south, where the designed Asset Protection Zone was applied.

This vegetation patch may contain RE 12.3.5 Melaleuca quinquenervia open forest on coastal alluvium. Limited regular maintenance activities have been carried out within this hazardous vegetation patch.

Over the past 10 years, Google historical satellite images presented that the vegetation patch has become increasingly dense.

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 20m.

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

Vegetation context	VHC 22.1 with RE 12.3.5
Vegetation structure	Open Forest
AS3959:2018 Classification of vegetation	Group A Forest – Tall Open Forest 01
Effective slope under the hazardous vegetation	Downslope 3° South. West
Slope Between Site and hazardous vegetation	Downslope 3° South. West
Understorey fuel load	23.4 t/ha
Total fuel load	28.4 t/ha

Table 4-2: Potential fuel load

▪ Low hazard conditions to North and West

Well managed vegetation to the north and the west presents the characters VHC 42.6 Nil to very low vegetation cover. The area comprises managed gardens, well-maintained lawns, with trees regularly trimmed, mowing, slashing, and weed removal conducted to minimise fuel load. As a result, it is classified as managed vegetation with a low bushfire hazard.

- **Vegetation conditions within the proposed development**

Within the proposed development area, vegetation conditions will be consistently maintained in a low-fuel state, aligning with the characteristics of VHC 42.6 Nil to very low vegetation cover.



Figure 4-4: Aerial view providing landscape context for the site (Sourced from QLD SPP mapping, captured 08/2026)



Figure 4-5: 1m interval contour map (Sourced from Queensland Globe mapping, captured 08/2026)

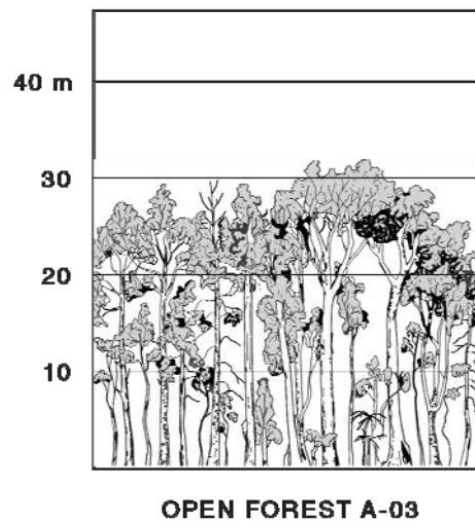


Figure 4-6: AS 3959:2018 Classification of vegetation

Regional ecosystem details for 12.3.5

Regional ecosystem	12.3.5
Vegetation Management Act class	Least concern
Wetlands	Palustrine
Biodiversity status	No concern at present
Subregion	8, 4, 9, (10), (3), (7), (2), (11.14)
Estimated extent ¹	Pre-clearing 45000 ha; Remnant 2021 20000 ha
Short description	Melaleuca quinquenervia open forest on coastal alluvium
Structure code	Open Forest
Description	Melaleuca quinquenervia open forest to woodland. Understorey depends upon duration of water logging; sedges and ferns, especially <i>Blechnum indicum</i>, in wetter microhabitats and grasses and shrubs in drier microhabitats. Ground layer species include the grasses <i>Leersia hexandra</i> and <i>Imperata cylindrica</i>, the sedges/rushes, <i>Machaerina rubiginosa</i>, <i>Gahnia sieberiana</i>, <i>Lepironia articulata</i>, <i>Schoenus brevifolius</i> and <i>Schoenus scabripes</i> and the fern <i>Lygodium microphyllum</i>. Other tree species that may be present as scattered individuals or clumps include <i>Lophostemon suaveolens</i>, <i>Eucalyptus robusta</i>, <i>E. tereticornis</i>, <i>E. bancroftii</i>, <i>E. latissinensis</i>, <i>Corymbia intermedia</i>, <i>Melaleuca salicina</i>, <i>Livistona australis</i>, <i>Casuarina glauca</i>, <i>Endiandra sieberi</i>. <i>Melastoma malabathricum</i> subsp. <i>malabathricum</i>, <i>Glochidion sumatranum</i> and <i>Melicope elleryana</i> are often in understorey. Occurs on Quaternary alluvium in coastal areas. Palustrine. (BVG1M: 22a).
Fire management guidelines	SEASON: Late summer to mid-winter (after rain). INTENSITY: Planned and occasional unplanned burns (typically of higher intensity) influence the ecology of melaleuca ecosystems. INTERVAL: Heath 8-12 years, Sedge 12-20 years, Mixed grass/shrub 6-20 years. INTERVAL_MIN: 6. INTERVAL_MAX: 20. STRATEGY: Aim for a 25-70% burn mosaic (in association with surrounding ecosystems, as melaleuca ecosystems often just occur in patches or along natural drainage lines). Fires may, depending on the conditions and type of vegetation, burn areas larger than just the melaleuca ecosystem. Ensure secure boundaries from non fire-regime adapted ecosystems. Consider the needs of melaleuca ecosystems based on understorey (i.e., heath dominated, sedge dominated or mixed grass/shrub) when planning burns. High soil moisture (or presence of water on the ground) is required, as avoidance of peat-type fires must be maintained. ISSUES: Fire regimes for melaleuca ecosystems require further fire research. Melaleuca forests are fire-adapted, but too high an intensity or frequent fire will slow or prevent regeneration and lead to lower species richness (since these communities contain numerous obligate seed regenerating species that require sufficient fire intervals to produce seed). High intensity fires may kill trees and lead to whipstick regeneration. Too frequent fire may result in a net loss of nutrients over time from an already nutrient poor system. Fire associations are significantly influenced by understorey composition. Melaleuca communities with a heath understorey should burn in a similar way to coastal heath (8-12 years). Sedge understorey communities will burn in association with the surrounding ecosystems (so will often burn with them but sometimes not, such that these communities have a slightly less fire frequency). Mixed understorey communities burn in a similar way to dry sclerophyll, in association with the surrounding dry sclerophyll, though somewhat less frequently due to the additional moisture present in melaleuca communities.
	 Condition class 3 Advanced regrowth and/or moderate disturbance e.g. logging, grazing, clearing, frequent low intensity burning • Tree canopy cover: 40-60%; Tree height: 7-11 m • Native shrub cover: < 1% or > 12% • Large trees: 5-10 non-eucalypts > 33 cm DBH • Coarse Woody Debris: 20-60 m or > 200 m total length • Species richness: Trees 0-1; Shrubs 0-1; Grass 3-8; Forbs and other 3-8 • Ground cover: Perennial grass cover 0-2%; Organic litter cover 5-20% • Non-native plant species: 15-25% cover • Regeneration: 0-1 tree species in regeneration phase  Condition class 4 Cleared, some regrowth and/or high disturbance e.g. frequent moderate to high intensity burning, gravel scrapes • Tree canopy cover: < 40%; Tree height: 2-7 m • Native shrub cover: < 1% or > 12% • Large trees: < 5 non-eucalypts > 33 cm DBH • Coarse Woody Debris: < 20 m total length or > 200 m total length • Species richness: Trees 0-1; Shrubs 0-1; Grass 3-8; Forbs and other 3-8 • Ground cover: Perennial grass cover < 2% or > 30%; Organic litter cover < 5% • Non-native plant species: > 25% cover • Regeneration: 0-1 tree species in regeneration phase

Figure 4-7: Ecological Condition Profile of RE 12.3.5

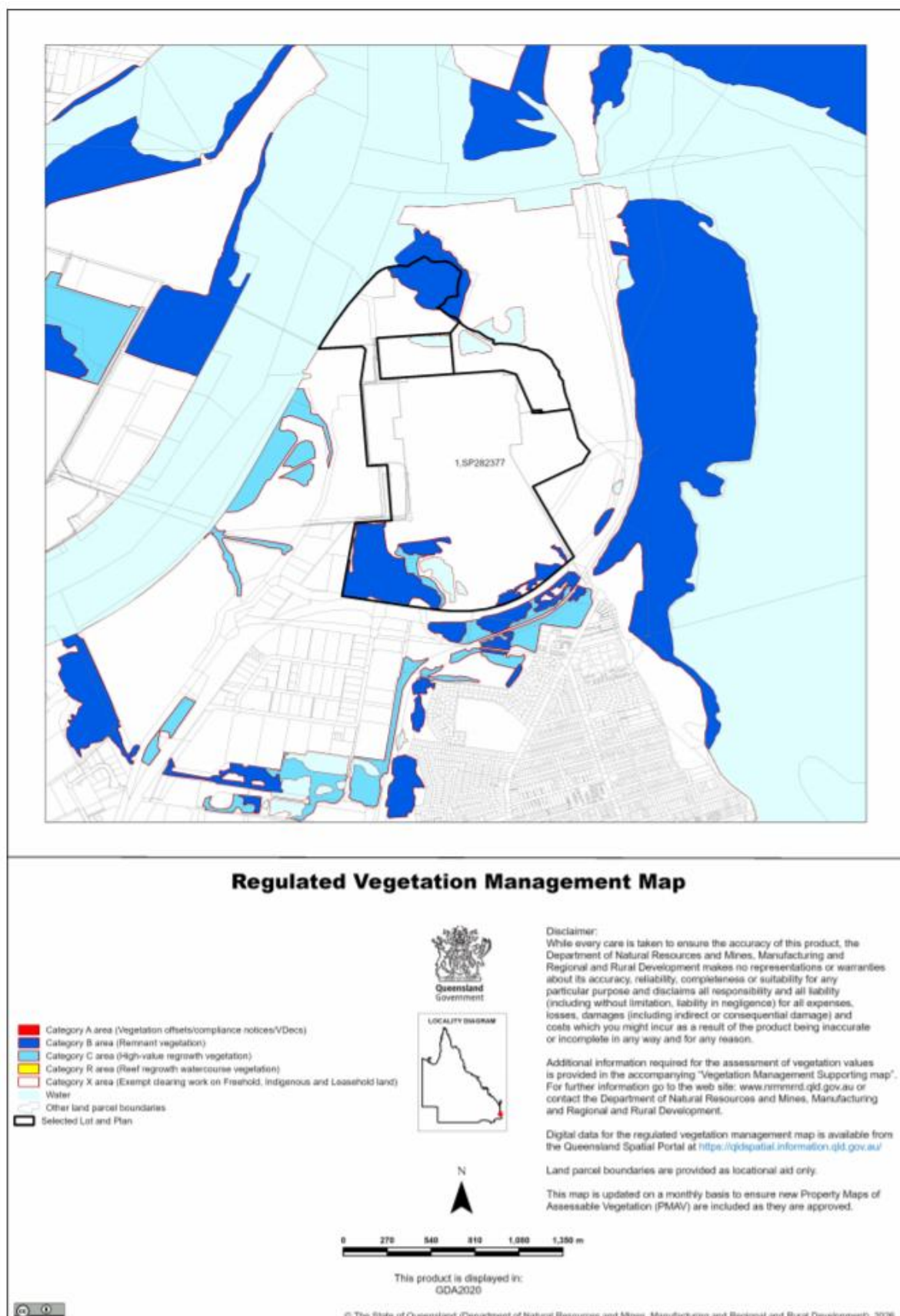


Figure 4-8: Regulated vegetation management map (sourced from Vegetation management report, Department of Resources, 2026)

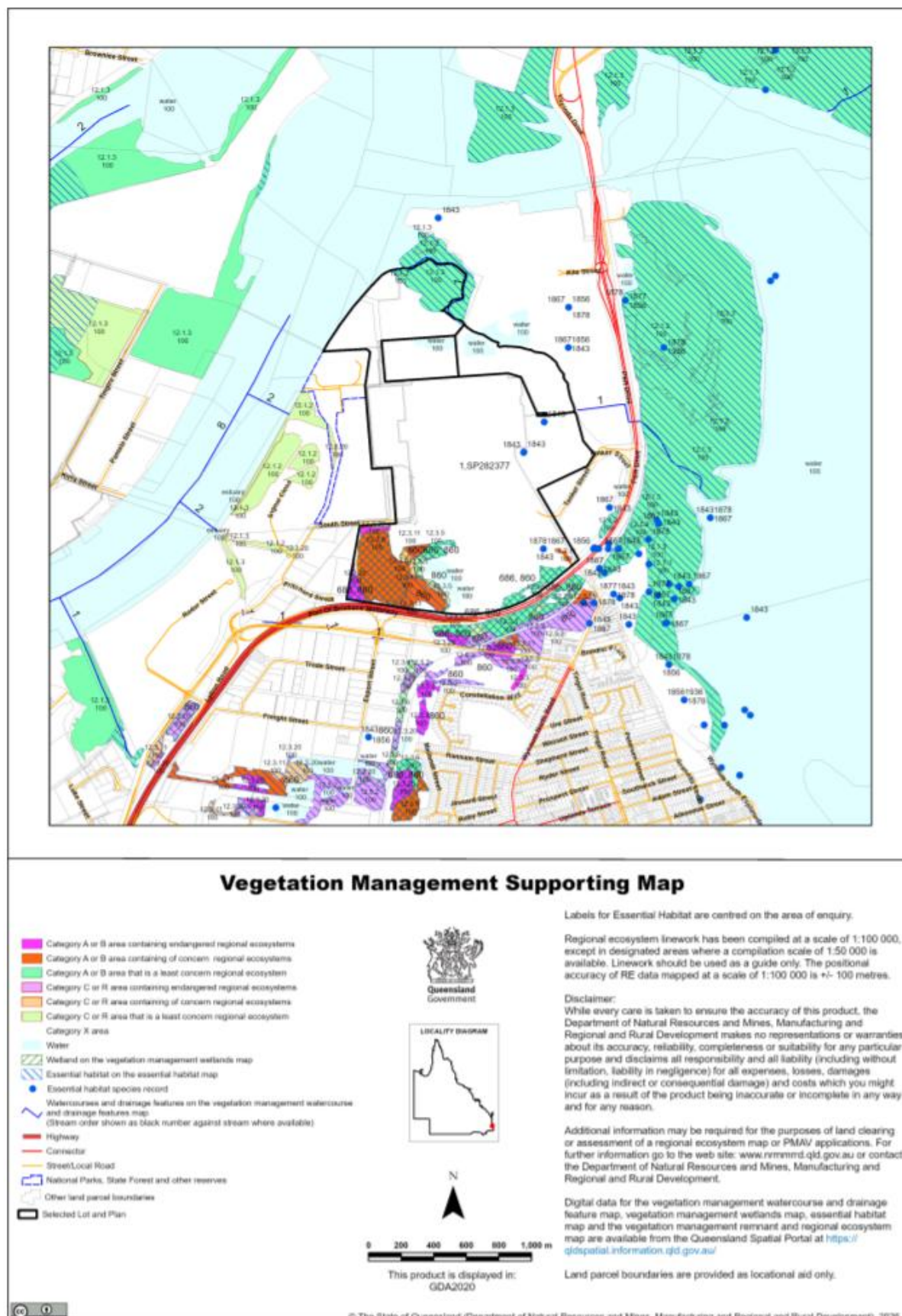


Figure 4-9: Vegetation Management Support Map providing RE context on the site (sourced from Vegetation management report, Department of Resources, 2026)



Photo 1: The proposed development area



Photo 2: Site entrance



Photo 3: Bushfire hazard vegetation nearby





Photo 4: Low hazard areas

4.3.2 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 $4,000 - 20,000$ kW/m.
- Grass fire hazard, generally less than $4,000$ kW/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 $< 4,000$ kW/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 follows:

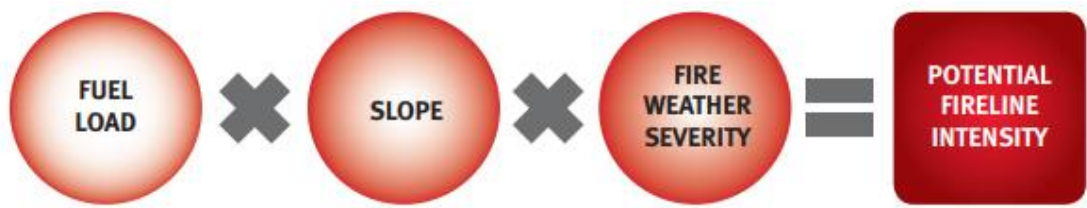


Figure 4-10: Method for calculation of potential fireline intensity (by CSIRO)

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
54	North	VHC 42.6	3	Flat	301	Low hazard
	East	VHC 42.6	3	Flat	301	Low hazard
	South	VHC 22.1	28.4	Downslope 3	33214	High potential bushfire intensity
	West	VHC 22.1	28.4	Downslope 3	33214	High potential bushfire intensity

Table 4-3: 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.

4.4 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.

4.5 Fire History

Although no large-scale bushfire events have been recorded within a 1 km radius of the site in recent years, the absence of recent fire activity should not be interpreted as an indication that the site will remain unaffected by future bushfire events.

Bushfire risk is influenced by a range of variables, including vegetation characteristics, fuel accumulation, topography, prevailing weather conditions and surrounding land-use patterns. Accordingly, appropriate bushfire protection measures should still be incorporated into the proposed development to mitigate potential impacts on life, property and emergency response operations.

4.6 Asset Protection Zone

The Asset Protection Zone (APZ) will need to be maintained on the subject site to ensure adequate separation from hazardous vegetation.

The current vegetation management practices are deemed adequate for the APZ. The client should continue to maintain the current vegetation management practices. Unmanaged vegetation will increase the bushfire risk.

It is critically important to note that failure to maintain the Asset Protection Zone (APZ) will compromise its effectiveness, leading to an elevated bushfire risk to the proposed development.

4.7 Bushfire Attack Level and Construction Requirements

Where considering the application of the existing managed vegetation area, the overall Bushfire Attack Level (BAL) for the proposed development has been assessed as being BAL-19. BAL-19 is primarily concerned with protection from ember attack and radiant heat greater than 12.5 kW/m² up to and including 19 kW/m².

Under the Building Code of Australia (BCA) and AS 3959:2018, the bushfire provisions of the NCC apply mandatorily only to Class 1, 2, and 3 buildings, as well as specific Class 9 buildings and their associated Class 10a structures. Given that the existing buildings are classified as Class 5, they fall outside the scope of these mandatory bushfire protection requirements. Consequently, construction compliance with AS 3959:2018 is not obligated for these structures.

SPP Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	VARIABLE	UNITS	VALUE
<i>Input Values</i>			
FIRE WEATHER SEVERITY	FDI		54.00
VEGETATION HAZARD CLASS	VHC	-	22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps
REMANT STATUS	-	-	Non-Remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	ST	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	eSlope	degrees	3.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	θ	degrees	3.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	d	m	42.00
<i>Advanced Input Values</i>			
FLAME WIDTH	W_f	m	100.00
FUEL MOISTURE FACTOR	mf	-	5.00
FUEL AGE	age	y(years)	20.00
HEAT OF COMBUSTION	hc	kJ/kg	18600.00
FLAME TEMPERATURE	Tf	K	1200.00
AMBIENT TEMPERATURE	Ta	K	308.00
RELATIVE HUMIDITY	RH	%	25.00%
FLAME EMISSIVE POWER	ϵ	-	0.95
WIND SPEED	V	km/h	45.00
<i>Output Values</i>			
SURFACE FUEL LOAD	-	t/ha	15.40
NEAR SURFACE FUEL LOAD	-	t/ha	8.00
BARK FUEL LOAD	-	t/ha	3.00
ELEVATED FUEL LOAD	-	t/ha	2.00
PRONE TYPE	-	-	1.00
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	eSlope	°	3.00
AVERAGE HEIGHT OF CLASSIFIED VEGETATION	VH	m	0.00
TOTAL OVERALL FUEL LOAD	W	t/ha	28.40
TOTAL SURFACE FUEL LOAD	w	t/ha	23.40
FORWARD RATE OF SPREAD	R	km/h	1.52
FORWARD RATE OF SPREAD ADJUSTED FOR EFFECTIVE SLOPE	R_{slope}	km/h	1.87
POTENTIAL FIRE LINE INTENSITY	I	kW/m	27366
FLAME LENGTH	L_f	m	15.53
FLAME EMISSIVE POWER	E	-	111.69
FLAME ANGLE	a	°	79
VIEW FACTOR	ϕ	-	0.1604
ELEVATION OF RECEIVER	h	m	5.42
ATMOSPHERIC TRANSMISSIVITY	τ	-	0.793
RADIANT HEAT FLUX	q	kW/m ²	14.21
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	BAL	-	BAL 19

Figure 4-10: 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 is 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.

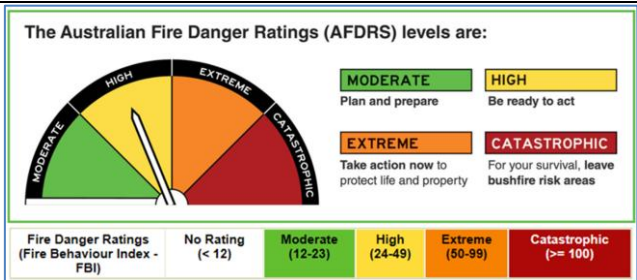
 The Australian Fire Danger Ratings (AFDRS) levels are: MODERATE Plan and prepare HIGH Be ready to act EXTREME Take action now to protect life and property CATASTROPHIC For your survival, leave bushfire risk areas Fire Danger Ratings (Fire Behaviour Index - FBI) No Rating (< 12) Moderate (12-23) High (24-49) Extreme (50-99) Catastrophic (>= 100)	
Moderate: Plan and Prepare Most fires can be controlled Stay up to date and be ready to act if there is a fire.	
High: Be Ready to Act Fires can be dangerous - 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.	
Extreme: Take Action Now to protect your life and property Fires will spread quickly and be extremely dangerous - 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.	
Catastrophic: For your survival, leave bushfire risk areas If a fire starts to take hold, lives are likely to be lost - 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 5-1: 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 accordance 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 Asset Protection Zone (APZ)

An Asset Protection Zone (APZ) is the most important bushfire protection measure. An APZ is a designed area surrounding a building or structure that has been well managed to reduce the risk of a bushfire impacting the building or structure. An APZ provides:

- A buffer zone between a bushfire hazard and an asset
- An area of reduced bushfire fuel that allows suppression of fire
- An area from which backburning may be conducted
- An area which allows emergency services access and provides a relatively safe area for firefighters and homeowners to defend their property.

A correctly designed and regularly maintained APZ will reduce the risk of:

- Direct flame contact on the asset
- Damage to the build asset from intense radiant heat
- Ember attack on the asset

An APZ is typically designed and created by removing vegetation and other combustible materials from around the building or structure, reducing the fuel available for a bushfire. The width of the APZ and the level of vegetation removal required depend on a number of site-specific factors, including the slope of the land, the hazardous vegetation type, and the intensity of the bushfire hazard. The property owner is responsible for creating and maintaining regularly the designed APZ.

(1) Creating APZ by reducing bushfire fuel

The intensity of bush fires can be greatly reduced where there is little to no available fuel for burning. To effectively manage bushfire fuels, there are several approaches to reduce, remove, or change the condition of the fuel.

- Raking or manual removal of fine fuels
- Mowing or grazing of grass
- Removal or pruning of trees, shrubs and understorey
- Slashing and trittering

It is important to note that reducing fuel does not always require removal of all vegetation, which would cause environmental damage. Trees and plants also provide protection against bushfires by mitigating the impact of strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns. Some ground cover vegetation is also needed to prevent soil erosion.

(2) Ongoing management for APZ

The creation of an Asset Protection Zone (APZ) establishes a controlled fuel-managed area that serves to reduce the potential impact of direct flame contact and radiant heat on property development, effectively acting as a defensible space. It is crucial to emphasize that the management of vegetation and landscaping within the APZ is of paramount importance and should maintain a minimal fuel load.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bushfires, and maintenance of the APZ should be regularly undertaken, especially in advance of the bushfire season. The requirements are set out as follows.

Where establishing and maintaining the APZ, the following requirements apply:

- General
 - Recommend a 1m wide area, suitable for pedestrian traffic, to be provided around the immediate curtilage of the building
 - Planting is limited in the immediate vicinity of the building
 - All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period
 - Planting should not provide continuous connection to the building
 - Plants greater than 10 cm in height are not recommended to be located within 3 m of glazed element of the building
 - Low flammability vegetation species are used
- Trees
 - Tree canopy cover should be less than 15% at maturity
 - Trees at maturity should not touch or overhang the building
 - Lower limbs should be removed up to a height of 2 m above the ground
 - Tree canopies should be separated by 2 to 5 m
 - Preference should be given to smooth barked and evergreen trees

- Shrubs
 - Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided
 - Shrubs should not be located under trees
 - Shrubs should not form more than 10% ground cover
 - Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation
- Grass
 - Grass should be kept mown regularly (as a guide grass, should be kept to no more than 100 mm in height)
 - Leaves and vegetation debris should be removed regularly

5.3.2 Building Construction, Siting and Design

Bushfire provisions under the BCA and AS 3959:2018 apply exclusively to Classes 1,2 and 3, certain Class 9, and associated Class 10a. Given that the existing buildings are classified as Class 5. Class 5 buildings are therefore not subject to these requirements.

5.3.3 Access and Egress Arrangement

Access and driveway design and construction are critical components of bushfire risk management. In a bushfire hazard area, vehicular access, including public roads, private driveways and internal accessways, should be designed to mitigate bushfire risk by ensuring adequate access and egress for:

- (a) fire-fighting and other emergency vehicles; and
- (b) the safe evacuation of residents, occupants and emergency personnel during a bushfire event.

The design and construction of the accessway are to comply with the State Government's Fire Hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial Lots (QFES, 2015), together with the relevant requirements of the local council planning scheme and applicable guidelines.

These guidelines identify key design considerations, including trafficable width, horizontal and vertical clearance, all-weather access, load-bearing capacity, grades, dips, exit angles, turning areas and passing bay requirements. These matters should be addressed having regard to both the relevant Acceptable Outcomes and Performance Outcomes.

Where necessary, the accessway should be designed or certified by a suitably qualified person, such as a RPEQ civil engineer, traffic engineer or pavement

engineer, and constructed in accordance with the relevant Australian Standards and applicable authority requirements.

5.3.4 Water Supply

In related to the project, the Ampol fuel facility is provided with a reliable firefighting water supply that meets the requirements of the bushfire overlay code. The existing system is configured to deliver adequate flow and pressure to all on-site hydrants and firefighting equipment, with storage capacity and pumping arrangements designed to sustain the required duration of operation under fire conditions.

5.3.5 Emergency Response Procedures

A site-based fire management and evacuation strategy should be developed, maintained and made available for implementation in the event of an emergency.

In the event of an actual or imminent fire emergency, the strategy should be activated immediately, and emergency assistance should be obtained by calling 000.

5.3.6 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 Asset Protection Zone in Section 5.3.1.

5.3.7 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.

5.3.8 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

A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire and Brisbane City Council's bushfire policy.

This assessment has confirmed that a satisfactory APZ exists around the development and that this APZ is deemed to comply with the abovementioned legislation, policies and guidelines.

The Bushfire Management Plan (BMP) identifies the bushfire protection measures that will be implemented as part of the project to reduce the risk from potential bushfire impact to an acceptable level for the use of the existing class 5 buildings. It is recommended that the development adopts the general provisions of the BMP for the ongoing maintenance of this area.

Based on the applicable provisions, the project is considered to satisfy the bushfire overlay code of the Brisbane City Council City Plan 2014.



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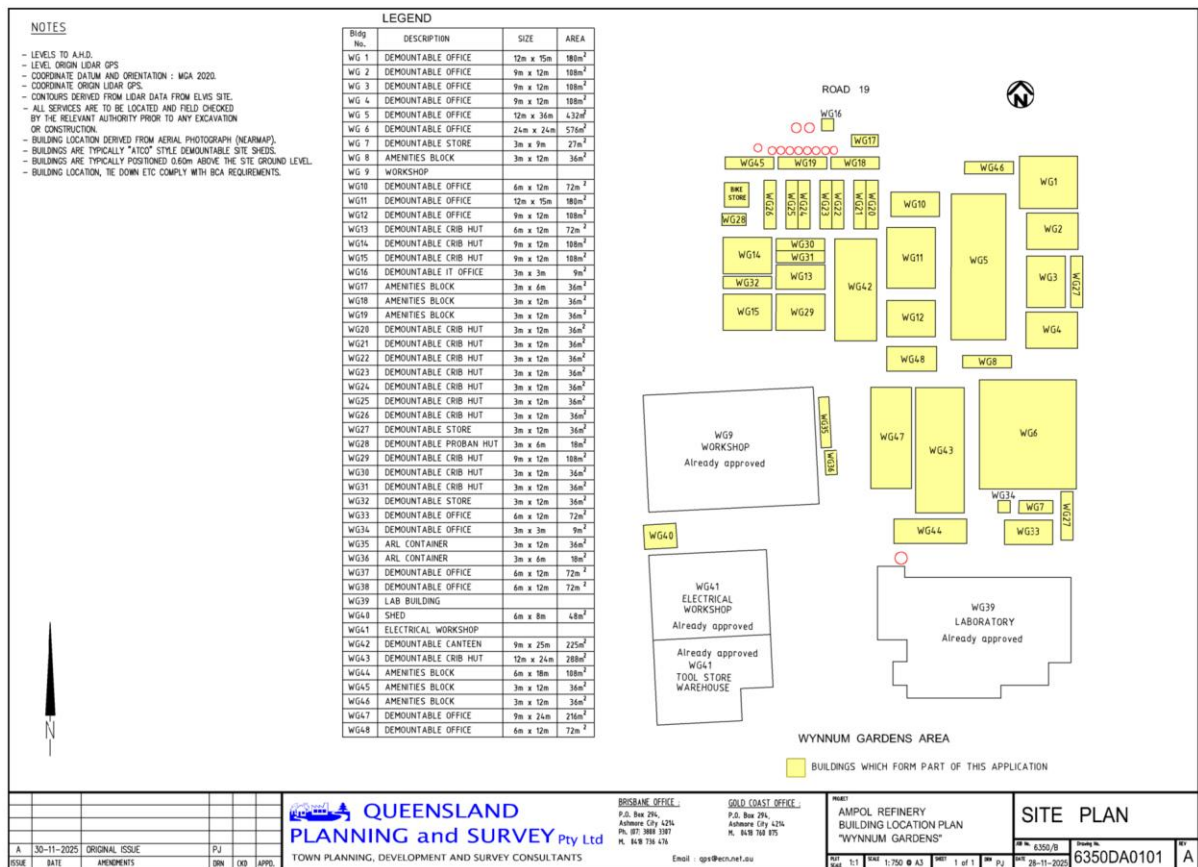
8. Appendix

Appendix A: Site Plan

Appendix B: Low Flammability Plant Species List

Appendix C: Bushfire Overlay Code Compliance – Brisbane City Plan 2014: v36

Appendix A: Site Plan



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
• Rhamphilepis indica, commonly known as india hawthorn
• Strelitziaceae hutch
• Strelitzia banks
• Strelitzia 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 semiglauc, 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: Bushfire Overlay Code Compliance – Brisbane City Plan 2014: v36

8.2.5 Bushfire overlay code

Project Site Address: 50 PRITCHARD ST LYTTON QLD 4178

Table 8.2.5.3.A—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments by Max Bushfire Protection Consulting
Section A—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development		
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	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	Complies with PO1 and AO 1.2 A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire. The location of the existing Class 5 buildings achieves a bushfire attack level – BAL-19, which is less than BAL-29.

amount specified in Table 8.2.5.3.D; or 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: 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. 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. Note—Where a bushfire risk assessment is required it must be carried out in accordance with the State Planning Policy and the	hazard identification and mitigation; ii. determines the relevant bushfire attack level for that part of the site in which development is proposed; iii. identifies the location of hazardous vegetation that poses a bushfire risk to the development. 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. 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. Note—A bushfire management plan is to be prepared having regard to any bushfire hazard assessment undertaken to prepare a neighbourhood plan. 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. A01.2 Development where not in compliance with an approved bushfire management plan or development footprint identifying the development footprint plan and bushfire management footprint plan: a. achieves a bushfire attack level that is less than or equal to:	
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National Emergency Risk Assessment Guidelines prepared by the Australian Institute of Disaster Resilience.	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 chemicals exceeding the amount specified in Table 8.2.5.3.D. 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.	
If for development other than reconfiguring a lot		
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: 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. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating achievement of this performance outcome.	AO2.1 Development is: 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 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 plan, where on a lot greater than 2,500m²:	Complies with PO1, AO 2.1 and AO2.2 A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire. 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 for the use of the existing class 5 buildings.

	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 and is not located in the High hazard buffer area sub-category or the Medium hazard buffer area sub-category. 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 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. 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.	
PO3 Development utilises fencing that: a. does not contribute to the spread of bushfire;	AO3.1 Development for a fence within 20m of any building used for accommodation comprises non-combustible or fire retardant materials. AO3.2	Complies with PO3, AO3.1 and AO3.2 Non-combustible fencing to be used.

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.	Development for a fence: a. incorporates gaps and spacing to allow the safe movement of fauna; or b. is designed to enable fauna to climb the fence.	
PO4 Development ensures that the location, siting, and design of development and associated driveways and access routes: a. avoid potential for entrapment during a bushfire; b. facilitate safe and efficient emergency services to 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.	AO4 Development ensures that: 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 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.	Complies with PO4 A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire. Suitable access and driveways are provided within the subject site.
PO5 Development has adequate road access to the site for emergency vehicles and safe evacuation in a bushfire.	AO5 Development has frontage to a constructed, all-weather public road capable of carrying emergency service vehicles.	Complies with PO5 and AO5. A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire.

		Suitable access and driveways are provided within the subject site.
PO6 Development makes adequate provision for fire-fighting requirements, including water supply.	AO6 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 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. 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.	Complies with PO5 and AO5. A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire. The subject site provides adequate provision for fire-fighting requirements, including water supply and access.

PO7 Development ensures that the water supply provided for fire-fighting is safely located and freely accessible for fire-fighting purposes at all times.	AO7 Development, for which sufficient reticulated water supply is not available, provides: 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 the building are metal, including and up to any taps. Note—Plastic tanks are not to be used.	Complies with PO5 and AO5. A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire. The subject site provides adequate provision for fire-fighting requirements, including water supply and access.
Additional performance outcomes and acceptable outcomes for all development in the Biodiversity areas overlay if on a site larger than 2,500m²		
PO8 Development through the siting, design, and construction of buildings, access routes and fire maintenance trails, and ongoing site management: a. provides effective separation from sources of bushfire risk;	AO8 Development locates building protection zones as shown on Figure b and Figure c, driveways and access routes and any fire maintenance trails: a. outside of the Biodiversity areas overlay; or	Not applicable.

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. 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: - 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.	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.	
Section B—If for assessable development other than ROL		
PO9 Development: 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: i. vulnerable uses; ii. difficult to evacuate uses; iii. assembly uses. Note—This includes consideration of appropriate alternative shelter for vulnerable uses, management of health and wellbeing requirements during evacuation, safe site operation, and 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.	AO9.1 Development: 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. AO9.2 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: 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.	
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		
PO10 Development does not cause: 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.	AO10 Development for storage or handling of hazardous chemicals: 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: 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. 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.	Not applicable.
Additional performance outcomes and acceptable outcomes for essential community infrastructure		
PO11 Development for essential community infrastructure is located, designed and sited to:	AO11 Development for essential community infrastructure:	Not applicable.

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.	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: 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.	
PO12 Development for essential community infrastructure is able to function effectively during and immediately after bushfire events.	AO12 Development for essential community infrastructure: 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	Not applicable.

	scheme policy which identifies measures that ensure that: 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.	
Additional performance outcomes and acceptable outcomes if for landscaping or a park landscape plan is a requirement for development		
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.	AO13 Development is in compliance with a landscaping plan which: 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. Note—The requirements of a building protection zone are shown in Figure b and Figure c.	
PO14 Development for a park is designed so that the park:	AO14	Not applicable.

a. is practical to maintain and requires minimal resources to be restored to its designed function and condition after a bushfire; 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. Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.	Development provides a park landscape plan that complies with a bushfire management plan prepared in accordance with the Bushfire planning scheme policy.	
Section C—If for ROL		Not applicable.
PO15 Development does not materially increase the number of premises exposed to unacceptable risk during bushfire events.	AO15 Development does not materially increase the number of people living or working in the Bushfire overlay area.	Not applicable.
PO16 Development is designed to: 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; 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.	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: 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%; 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	Not applicable.

Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.	area sub-category or Medium hazard buffer area sub-category.	
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.	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.	Not applicable.
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; e. ongoing availability and maintenance of access and egress routes for the purposes of evacuation and emergency services access.	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; b. excludes cul-de-sacs, except where a perimeter road with a cleared width of	Not applicable.

Note—A bushfire management plan prepared in accordance with the Bushfire planning scheme policy can assist in demonstrating compliance with this performance outcome.	20m isolates the development from hazardous vegetation; 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; d. links road within the subdivision to, or provides for future links to roads in adjacent subdivisions. 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.	
PO19 Development involving new premises provides adequate infrastructure to support fire fighting.	AO19.1 Development involving new premises ensures that: 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 b. where 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	Not applicable.

	reserve section as part of a main water supply tank; 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. 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. AO19.2 Development provides fire hydrants in accordance with Central SEQ Distributor-Retailer Authority, Queensland Urban Utilities (incorporating Water Services Association of Australia) standards.	
Section D—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development where in Potential impact sub-category		
PO20 Development is designed and constructed to reduce vulnerability to bushfire attack and addresses the bushfire hazard by a bushfire hazard assessment that: - utilises a fit for purpose methodology prepared in accordance with the State Planning Policy — State interest technical manual — Natural hazards, risk and resilience; - includes the following measures and inputs: - potential fuel loads for vegetation in its mature state from areas subject	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. 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. AO20.2	Complies with PO20 and AO20.1 A site-specific assessment was conducted by Max Bushfire Protecting Consulting in accordance with the Bushfire Resilient Communities Guide for the State planning policy State interest 'Natural Hazards, Risk and Resilience — Bushfire.

to revegetation or regrowth vegetation; ii. a published vegetation hazard classification dataset from the relevant fire authority; iii. forest fire danger index of 54 (AEP 5%); iv. potential flame length; v. potential rate of fire spread. 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; d. determines the relevant bushfire attack level for that part of the site in which development is proposed. 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.	Development other than ROL determines bushfire attack level using: a. potential fuel loads for vegetation in its mature state from areas subject to revegetation or regrowth vegetation; Note—In the absence of an approved rehabilitation and revegetation plan refer to Figure d—Regional ecosystem vegetation communities. a. a published vegetation hazard classification dataset from the Relevant fire authority; b. forest fire danger index of 54 (AEP 5%). 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.	
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Table 8.2.5.3.B—Dedicated water supply requirements for residential lots without access to reticulated water supply

Development type	Water requirement
Lot less than 1,000m ²	5,000L per lot
Residential lot between 1,000m ² and 9,999m ²	10,000L per lot
Residential lot greater than 1ha	20,000L per lot
Multiple dwelling	5,000L per unit up to a maximum of 20,000L

Table 8.2.5.3.C—Road design requirements for emergency vehicle access

Item	Requirements	Public road	Private access roads or driveways	Fire maintenance trails
1	Horizontal clearance	6m total: minimum carriage way width of 4m with additional 1m wide strip on each side (clear of bushes and long grass) Note—Roads should provide sufficient width to allow fire-fighting vehicle crews to work around the vehicle with fire-fighting equipment.	A minimum formed width of 4m. Note—Gates must also provide for this clearance.	A minimum clearance width of 6m. A minimum formed width of 4m.
2	Vertical clearance	Minimum vertical clearance of 4m to any overhanging obstructions including tree branches.	Minimum vertical clearance of 4m to any overhanging obstructions including tree branches. 5m clearance to all powerlines	
3	Vegetation clearing	Maintained cleared vegetation 10m on either side of centre-line	Maintained cleared vegetation with minimum 6m cleared width	
4	Maximum grade	Maximum gradient of 12.5%	A maximum gradient of 12.5% where exceeding a distance of 70m from the road	A maximum gradient of 12.5% with adequate drainage to prevent soil erosion and minimise ongoing trail maintenance
5	Cross fall	Cross fall does not exceed 10 degrees	—	—
6	Surface rating	Minimum 15t rated surface for urban appliances, which do not operate on unsealed roads or trails; Minimum 6.5t rating for rural fire-fighting appliances.		
7	Pavement type	All weather		
8	Turning	For both public and private roads and fire maintenance trails: 6m inner radius 12m outer radius		
9	Access, passing and reversing	Reversing bays using the access to properties to reverse fire tankers, which are 6m wide and 8m deep to any gates, meeting above turning requirements; and/or A passing bay every 200m, 20m long by 3m wide, making a minimum trafficable width of 7m at the passing bay.	Fire maintenance trails provide areas for vehicles to pass or turn at intervals of not more than 400m with a maximum grade of 5%. Fire maintenance trails have vehicular access at each end. Fire maintenance trails are either located on public land or within an access easement that is granted in favour of Brisbane City Council and Queensland Fire and Rescue Service.	



		Note—Some short constrictions in the access may be accepted where they are not less than the minimum 3.5m and extend for no more than 30m and where obstruction cannot be reasonably avoided or removed.	
Note—Urban appliances do not operate on unsealed roads or trails. Urban appliances require 15 tonne rated surfaces. Rural appliances are typically 6.5t Gross Vehicle Mass (GVM)(4x4).			