

Figure 3.1

Classified Vegetation & Topography (Existing)

Lot 500
21 Berkshire Road
Forrestfield
City of Kalamunda

----- LEGEND -----

Subject Site

Cadastral

Photo and Direction

Childcare Centre

H

Hydrants

150m Assessment Area

100m Assessment Area

Classified Vegetation

Forest

Woodland

Excluded 2,2,3,2 (e and f)

0 10 20 30 40 50

Metres

----- LOCALITY -----

AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map by: 16-06-2025
SCALE (A3): 1 : 1500

The map shows an aerial view of a residential area with Lot 500 highlighted in orange. The subject site is outlined in purple. Surrounding areas are colored red for Forest, green for Woodland, and blue for Excluded. The map includes a legend, a scale bar, and a locality map. The legend defines symbols for the subject site, cadastral boundaries, photo and direction, childcare centre, hydrants, assessment areas, and classified vegetation. The scale bar shows distances from 0 to 50 metres. The locality map shows the site's location within the Forrestfield area. The map also displays 100m and 150m assessment areas, hydrants, and a childcare centre. The map includes a legend, a scale bar, and a locality map.

Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

250364 - FIG3.1 VEG 21 Berkshire Road Forrestfield.qgz

Figure 3.1.1
Classified Vegetation & Topography (POST DEVELOPMENT)
Lot 500
21 Berkshire Road
Forrestfield
City of Kalamunda

----- **LEGEND** -----

- Subject Site
- Cadastral
- Photo and Direction
- Childcare Centre
- Hydrants
- 150m Assessment Area
- 100m Assessment Area

Classified Vegetation

- Forest
- Woodland
- Excluded 2,2,3,2 (e and f)

0 10 20 30 40 50
Metres

----- **LOCALITY** -----

AERIAL IMAGERY: Landgate/SLIP

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map by: 11-06-2025
SCALE (A3): 1 : 1500

BUSHFIRE PRONE PLANNING



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Figure 3.2
BAL Contour Map

Lot 500
21 Berkshire Road
Forrestfield
City of Kalamunda

----- **LEGEND** -----

- Subject Site
- Cadastral
- Childcare Centre
- Hydrants
- 100m Assessment Area
- BAL VEG Edge and Label

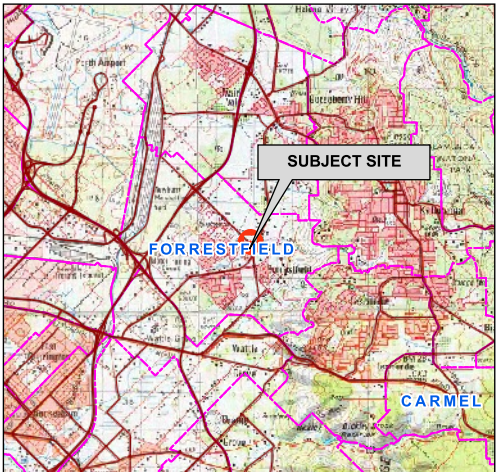
Bushfire Attack Levels

- BAL-FZ
- BAL-40
- BAL-29
- BAL-19
- BAL-12.5
- BAL-LOW



Metres

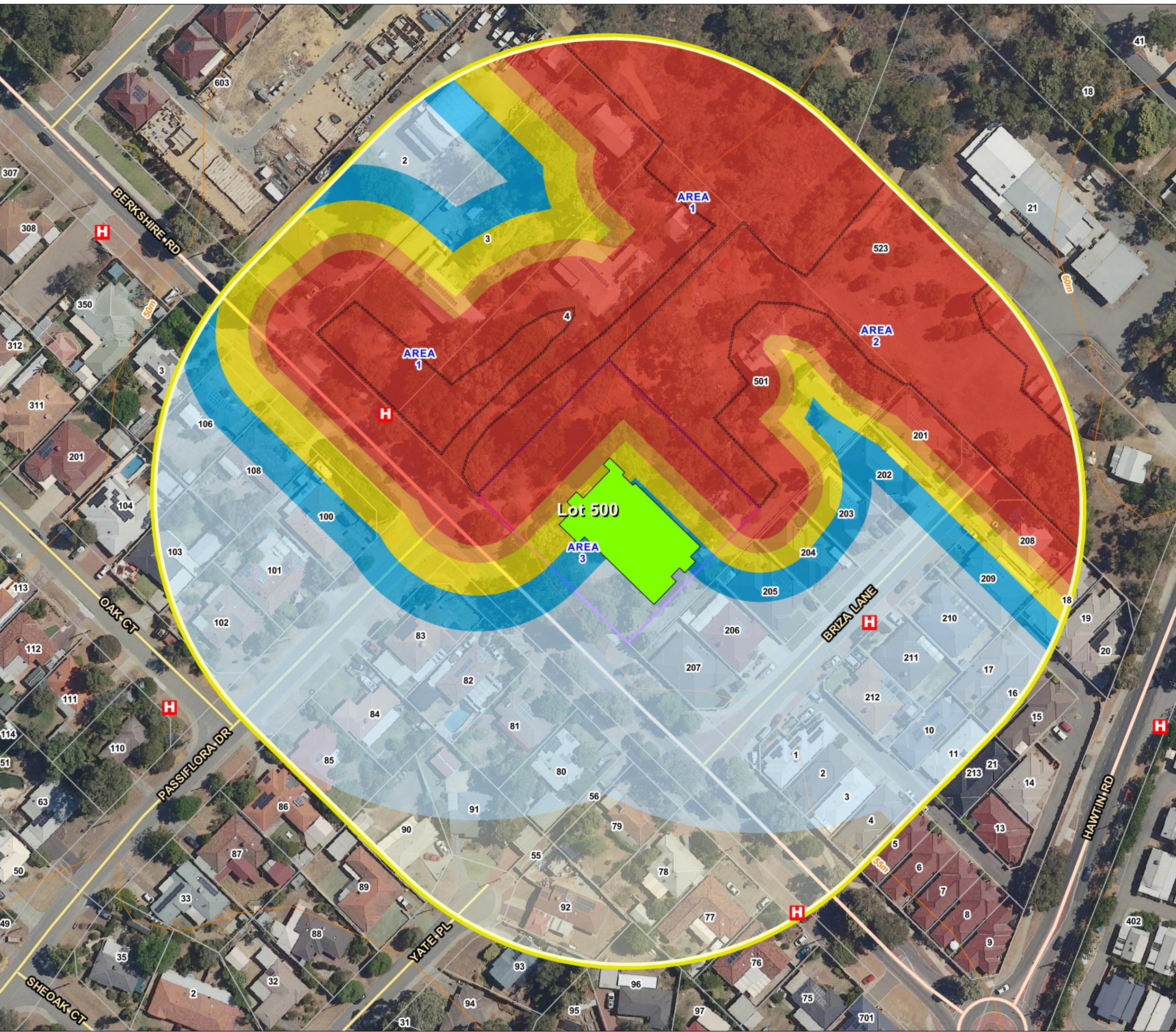
----- **LOCALITY** -----



AERIAL IMAGERY: Landgate/SLIP



Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map by: 11-06-2025
SCALE (A3): 1 : 1100



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

EXPLANATORY INFORMATION

Section Intent

1. To function as a concise initial reference point informing decision makers of key bushfire hazard issues specific to the planning proposal. This is achieved by providing context regarding:
 - (a) How the identified bushfire prone vegetation contributes to the level of risks to persons/property and infrastructure. With injury/death, damage/loss, and service disruption being the relevant risks associated with a bushfire event (i.e. 'bushfire risk'); and
 - (b) How likely the application of the relevant deemed to comply bushfire protection measures (i.e. the acceptable solutions of the BPC), will contribute to mitigating this bushfire risk to an acceptable or tolerable level.
2. To inform decision makers of any bushfire hazard issues that, in the opinion of the bushfire consultant, are likely to require specific consideration and are additional to a 'standard' review of the submitted BMP.
3. When necessary, to provide the bushfire consultant a location in the BMP where matters can be noted that would either not be considered or only be partially considered, under the assessments conducted in accordance with SPP 3.7/Guidelines. These include matters that would potentially reflect poorly on their professional integrity if ignored.

Achieving the Intent

1. Identify when environmental constraints are likely to limit a proposal's ability to apply effective bushfire protection measures that reduce bushfire hazard threat levels and/or persons/property exposure to those threats.
2. Identify if bushfire hazard threats and the level of those threats is significantly greater or lower than implied by the bushfire assessment methodologies applied in accordance with the Guidelines.
3. Stating when an outcomes-based approach has been applied as a justifiable alternative to compliance with the applicable acceptable solutions, and if the approach:
 - (a) Delivers an equivalent or lower level of residual bushfire risk than that intended to be derived from the application of those acceptable solutions; or
 - (b) Delivers higher level of residual risk and justifies why this can and should be tolerated.
4. Identifying when compliance with the BPC requires the establishment of vegetation management responsibilities - including formal management agreements when necessary – for vegetation on land adjoining a lot that is part of a planning proposal, but that land does or could have different legal ownership.
5. Identify other relevant issues as necessary. This may include the possible development, by the bushfire consultant, of required and/or recommended additional bushfire protection measures for consideration by the decision maker.

4.1 Environmental Considerations

BUSHFIRE PRONE VEGETATION WITHIN THE SUBJECT SITE (refer to detail in Section 2)		
Identified As	Relevance to the Planning Proposal	Implications for the Planning Proposal's Ability To Comply With The Bushfire Protection Criteria
Protected Vegetation	None	No Change
Required Removal of Native Vegetation	None	No Change
Planned Retention of Unprotected Native Vegetation	None	No Change
Planned Revegetation with Native Vegetation	None	No Change
<u>Assessment Supporting Details:</u> Existing exotic vegetation within the site will be removed. No trees to be within 6m of the building		

4.2 Bushfire Assessment – Bushfire Attack Level (BAL)

BUSHFIRE ATTACK LEVEL ASSESSMENT – IDENTIFIED ISSUES	
The following issues regarding the ability of current or future development sites to be located within a lot and subject to a radiant heat impact not exceeding 29 kW/m ² (BAL-29) may have been addressed in the BMP. When applicable to the subject planning proposal this is identified and discussed.	
For a lot(s) of land that are part of this planning proposal, compliance with the BPC requires the establishment of ongoing vegetation management responsibilities on adjoining land that has, or could in the future, different legal ownership. This has created the requirement develop a formal agreement(s) with a third party(s) to manage vegetation in a modified and/or low threat state in perpetuity. Evidence of the agreement is provided in this BMP.	X
<u>Assessment Supporting Details:</u> None required.	
The planning proposal is for a staged subdivision. Classified vegetation within a subsequent stage of a subdivision requires removal or modification to ensure that proposed lots within the current stage of the subdivision achieve a development site with a radiant heat impact not exceeding 29 kW/m ² (BAL-29). This has created the requirement to establish a responsibility for the developer of the subsequent stage	X
<u>Assessment Supporting Details:</u> None required.	
Area(s) of land within a lot(s) are subject to BAL-40/FZ but sufficient area remains for a development site(s). At the discretion of the decision maker, this may require considering the application of building envelopes or restrictive covenants, to ensure the location of future buildings within a lot cannot be subject to BAL-40/FZ.	✓
<u>Assessment Supporting Details:</u> None required.	

4.3 Additional Required and/or Recommended Bushfire Protection Measures

ADDITIONAL BUSHFIRE PROTECTION MEASURES	
<p>REQUIRED additional bushfire protection measures have been established via:</p> <ul style="list-style-type: none"> • Development of an outcomes-based approach; and/or • A Bushfire Risk Report; and/or • A Bushfire Emergency Plan. <p>These measures <u>have</u> been included in the Section 6 responsibility checklists.</p>	<p>A Bushfire Emergency Plan is required for this development.</p> <p>A Landscape Management Plan may be required for this development.</p>
<p>RECOMMENDED additional bushfire protection measures have been provided. These measures <u>have not</u> been included in the Section 6 responsibility checklists.</p>	<p>N/A</p>

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA (BPC)

EXPLANATORY INFORMATION

State Planning Policy 3.7 Bushfire (SPP 3.7) establishes policy outcomes (cl. 6) that "specify the role of planning and development in contributing to the overall objectives" of the policy. These policy outcomes are also incorporated within the four Elements of the bushfire protection criteria.

A planning proposal in a designated bushfire prone area is required to demonstrate that compliance with the bushfire protection criteria can be achieved.

The Planning for Bushfire Guidelines (Guidelines) establishes two pathways to demonstrate compliance with the bushfire protection criteria:

1. The deemed to comply pathway in which compliance with all relevant acceptable solutions associated with each Element, for a specific planning stage or use, is able to be demonstrated; or
2. When all relevant acceptable solutions cannot be fully achieved, the alternative pathway which utilises either the outcomes-based approach (established in SPP 3.7 cl. 6) alone, or a combination of the outcomes-based approach and the acceptable solutions (as established in the Guidelines s. 2.2.1).

Assessment of the planning proposal utilising the deemed to comply pathway is presented in this section of the BMP.

Notes:

1. *The additional primary bushfire protection measure of bushfire construction requirements that are to apply to certain classes of habitable buildings in WA (corresponding to their assessed Bushfire Attack Level) - is implemented through the process of applying the Building Code of Australia (Volumes 1 and 2 of the National Construction Code) in accordance with WA building legislation – not through any planning legislation].*
2. *The requirement to prepare a Bushfire Emergency Plan (BEP) for vulnerable land uses is an additional bushfire protection measure established by SPP 3.7. This is to be produced as a separate standalone operational document. However, some requirements identified in the BEP may necessarily incorporated into this BMP and the responsibilities it creates.*

5.1 Local Government Variations to Apply

EXPLANATORY INFORMATION	
<p>1. Local governments may add to or modify the acceptable solutions contained within the Guidelines, through regional or local variations that form part of a local planning strategy and/or local planning scheme to recognise special local or regional circumstances that reinforce the SPP 3.7 objectives and outcomes (via a scheme amendment or special control area).</p> <p>This could include acceptable solutions that address topography, vegetation or climate to the satisfaction of the Western Australian Planning Commission (WAPC) that the modifications comply with the corresponding SPP 3.7 objectives and outcomes. (Planning for Bushfire Guidelines, s. 3.4, 2024).</p> <p>2. Under the relevant state legislation (LPS Regulations 2015), SPP 3.7 does not apply to hosted or unhosted short-term rental accommodation. However, the local government under its Local Planning framework (i.e. Strategy / Scheme and Policy as applicable), may require that certain bushfire protection measures or variations to the measures (the bushfire protection criteria), established by SPP 3.7 and the Guidelines, are to be applied.</p>	
Endorsed regional or local variations to the acceptable solutions apply to the assessments against the Bushfire Protection Criteria for the planning proposal?	None known or identified
The proposed land use for hosted or unhosted short-term rental accommodation, and the local government requires certain bushfire protection measures, contained within the BPC, to be applied, that under the LPS Regulations 2015, would otherwise not be required?	N/A

5.2 Assessment Summary

HOW THE REQUIRED BUSHFIRE PLANNING OUTCOMES OF SPP 3.7 ARE ACHIEVED FOR THE PLANNING PROPOSAL		
DEVELOPMENT – VULNERABLE LAND USES (CERTAIN CLASS 9 BUILDINGS)		
The Bushfire Protection Criteria (BPC) Elements and Acceptable Solutions	Compliance Pathway Applied and Assessment Outcome	
	Deemed to Comply	Outcomes-Based Approach
	Requires Compliance with All Applicable Acceptable Solutions	Expert Opinion Identifies Achieving the Required SPP 3.7 Outcomes can be Demonstrated ¹
E2: SITING AND DESIGN	Fully Compliant	Not Required
A2.1 Siting and design	Fully Compliant	
A2.2 Asset Protection Zone (APZ)	Fully Compliant	
A2.3 Clearing of native vegetation	Fully Compliant	
A2.4 Landscape management plan	Fully Compliant	
A2.5 Onsite shelter (safer building) - schools	Not Applicable	
A2.6 Storage of hazardous, flammable and/or combustible materials	Not Applicable	
E3: VEHICULAR ACCESS	Fully Compliant	Not Required
A3.1 Public roads	Fully Compliant	
A3.2 Access routes	Fully Compliant	
A3.3a No-through roads	Not Applicable	
A3.3b No-through roads technical requirements	Not Applicable	
A3.4 Emergency access way	Not Applicable	
A3.5 Fire service access route	Not Applicable	
A3.6 Internal vehicular access & private driveways	Not Applicable	
A3.7 Signage	Not Applicable	
E4: WATER SUPPLY	Fully Compliant	Not Required
A4.1 Water supply	Fully Compliant	
Note 1: Assessment details addressing the criteria established by SPP 3.7 cl. 7.5, are provided in the following section when this compliance pathway is applied.		

5.3 BPC 8.1: Development – Vulnerable Land Uses (Certain Class 9 Buildings) - Acceptable Solutions Assessment

5.3.1 Element 2: Siting and Design

ELEMENT 2: SITING AND DESIGN (DEVELOPMENT –VULNERABLE LAND USES (CERTAIN CLASS 9 BUILDINGS))

All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended). When relevant, the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (DPLH, 2021 Rev B), is also referenced.

Note: The following will apply when the Class 9 bushfire provisions of NCC 2022 are adopted in WA or prior to that time if a proponent wishes to apply the provisions.

The Building Code of Australia (within the National Construction Code 2022) is applied under the WA Building Act 2011/Building Regulations 2012. The BCA is likely to establish requirements for certain Class 9 buildings to have minimum separation distances from bushfire prone vegetation that are significantly greater than the required minimum distances established by SPP 3.7/Guidelines (under the Planning and Development Act 2005).

This bushfire planning assessment (against the bushfire protection criteria) is therefore not required to determine the additional separation distances or assess a proposal's ability to comply with the BCA provisions.

However, in consideration of the relevant provision in the LPS Regulations 2015 (see below), and to inform decision makers, the BCA separation distances from classified vegetation, applicable to the subject planning proposal, are presented in this BMP as an addendum.

The relevant provision is Schedule 2, Part 10A – Bushfire risk management, cl. 78E (1) – “In considering an application for development approval for development to which this Part applies, the local government is to have regard to the bushfire resistant construction requirements of the Building Code”.

EXPLANATORY INFORMATION

(Additional Information in Appendix B3 of BMP)

The APZ and the Planning Assessment

The assessment is a 'planning assessment' being conducted for planning approval purposes. This is not an assessment conducted for building approval purposes.

The acceptable solutions and required assessment are aligned with the following bushfire planning policy and guidance which must be given due regard:

SPP 3.7 Bushfire, Policy Objectives, cl. 5.5 states – “Prioritise the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

SPP 3.7 Bushfire, Policy Outcomes, cl. 6.2 - establishes that clearing of native vegetation is to be avoided or minimised in managing or mitigating bushfire risk.

The Guidelines, Appendix B2, B.2.1 states - “clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported.”

To comply with the relevant acceptable solutions, the subject planning proposal must demonstrate that the required minimum sized asset protection zone (APZ) can be installed, to the required technical requirements, surrounding a habitable or specified building and applying the APZ location constraints and allowances established by the Guidelines.

The required minimum dimensioned APZ is that which ensures that the relevant existing and/or proposed buildings works will be subject to the BAL-29 level of radiant heat exposure. The only exceptions to this will be when a lower level of radiant heat exposure is a requirement of an acceptable solution, or a protection measure established by

the application of the outcomes-based approach (e.g. 10 kW/m²) in which case this is stated in the assessment and the responsibilities checklist.

Note that the derivation of 'determined' BAL ratings for future building works, to be used in building permit applications, is not an intended outcome of this planning assessment. However, in limited situations, these may be able to be determined.

Important APZ Installation Information

An approved BMP, unless stated otherwise, is only approving the installation of an APZ comprised of the minimum dimensions that ensures the radiant heat impact of a bushfire (on building works) does not exceed 29 kW/m² (BAL-29).

The 'minimum' dimensions of the approved APZ are also the 'maximum' approved dimensions when installation of the APZ will require the modification/removal of native vegetation. Installing a larger dimensioned APZ - to lower the determined BAL rating of specific building works - will need additional approval from the relevant authority (refer to the relevant local government) when modification/removal of native vegetation is required.

Refer to the bushfire protection measure implementation checklist in Section 6 for the dimensions applicable to this planning proposal.

O2	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved			
	SPP 3.7, 6.2: Ensure siting and design solutions: <ul style="list-style-type: none"> • Manage or mitigate the bushfire risk to people, property and infrastructure; and • Avoid, or where unavoidable, minimises the clearing of native vegetation. 			
E2	Statement for Compliance with Element E1 – The Deemed to Comply Pathway			
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.			
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes			
	N/A			
ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS				
Check Box Legend: ☒ Relevant & met ☒ Relevant & not met ☐ Not relevant				
A2.1 Siting and design		Applicable:	Yes	Compliant: Yes
☒ ☐ ☐ Every habitable building achieves a radiant heat impact not exceeding 29 kW/m ² (BAL-29).				
<u>Assessment Supporting Details:</u> The subject site will be managed in its entirety.				
A2.2 Asset Protection Zone (APZ)		Applicable:	Yes	Compliant: Yes
Where a habitable building(s) cannot be wholly within an area with a radiant heat impact not exceeding 29 kW/m ² (BAL-29) in its pre-development state, an indicative APZ is to be provided and meet the following requirements for width, location and management:				
☒ ☐ ☐ APZ Width: The APZ, when measured from any external wall or supporting post or column, is of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m ² (BAL-29) to any part of the building, in all circumstances.				

☒ ☐ ☐	APZ Location – Option 1: The indicative 'Planning BAL-29' APZ can be contained solely within the boundaries of the lot.
☐ ☐ ☒	APZ Location – Option 2: The indicative 'Planning BAL-29' APZ cannot be contained solely within the boundaries of the lot. However, the relevant vegetation on the adjoining land / lot(s) is, and will continue to be, on an ongoing basis in perpetuity, low threat as per: <ul style="list-style-type: none"> • Clause 2.2.3.2 of AS 3959 (including non-vegetated land such as a sealed or unsealed road, or a water body); or • The requirements of the Guidelines Appendix B.2, Table 9 – APZ technical requirements; or • The alternative standard in the local planning scheme (when it exists).
☒ ☐ ☐	APZ Management: The APZ is (or can and will be) managed in accordance with the requirements established in the Guidelines, Appendix B.2 or the alternative standard in the gazetted local planning scheme (when it exists).
<u>Assessment Supporting Details:</u> Native vegetation within the subject site will be managed to a low threat state.	
A2.3 Clearing of native vegetation Applicable: Yes Compliant: Yes	
☒ ☐ ☐	The development avoids, or where unavoidable, minimises the clearing of native vegetation.
<u>Assessment Supporting Details:</u> The site has native trees on site. Some of which will be retained.	
A2.4 Landscape management plan Applicable: Yes Compliant: Yes	
☒ ☐ ☐	A landscape management plan has been prepared to identify ongoing onsite vegetation management.
<u>Assessment Supporting Details:</u> A Landscape Management Plan can be provided at a later stage if required by the local government.	
A2.5 Onsite shelter (safer building) - schools Applicable: No Compliant: -	
☐ ☐ ☒	An on-site shelter (safer building) is provided in accordance with the Principal's guide to bushfire: Prepare your school for the bushfire season (Department of Education: October 2022).
<u>Assessment Supporting Details:</u> None required	
A2.6 Storage of hazardous, flammable and/or combustible materials Applicable: No Compliant: -	
☐ ☐ ☒	The proposed land use does not include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. Therefore, A2.6 is not applicable to the subject planning proposal.
☐ ☐ ☒	The proposed land use will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. These will be a quantity that trigger the requirement for a licence under the <i>Dangerous Goods Safety Act 2004</i> or the <i>Environmental Protection Act 1986</i> . Consequently, the requirements under the above legislation will establish the storage requirements and therefore A2.6 is not applicable to the subject planning proposal.

- | | | | |
|--------------------------|--------------------------|-------------------------------------|--|
| ☐ | ☐ | ☒ | The proposed land use will include the storage of hazardous, flammable and/or combustible materials as part of its ongoing day to day operations. These are not at a quantity that trigger the requirement for a licence under the <i>Dangerous Goods Safety Act 2004</i> or the <i>Environmental Protection Act 1986</i> . Consequently, the following established storage area requirements can and will be applied. |
| ☐ | ☐ | ☒ | The storage area is subject to a radiant heat impact not exceeding 29 kW/m ² (BAL-29); and |
| ☐ | ☐ | ☒ | The construction of the storage area is non-combustible and shields the materials to reduce their exposure to radiant heat from the bushfire to levels significantly lower than 29 kW/m ² and prevents the entry of debris and embers; and |
| ☐ | ☐ | ☒ | The construction of the storage area limits to the degree necessary and practical, the escape of sources of ignition from the stored materials into bushfire prone vegetation. |

Assessment Supporting Details:

None required.

5.3.2 Element 3: Vehicular Access

ELEMENT 3: VEHICULAR ACCESS (DEVELOPMENT – CERTAIN CLASS 9 BUILDINGS / VULNERABLE USES)					
<p>All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended). When relevant, the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (DPLH, 2021 Rev B), is also referenced.</p> <p>The technical construction requirements for access types and components are established in the Guidelines Appendix B.3, Table 10 (certain information is copied and presented in Appendix C of this BMP). The local government will advise the proponent where different requirements are to apply and when any additional specifications such as those for signage and gates are to apply. These are included as an appendix if requested by the local government.</p> <p>Note:</p> <p>The following understanding of what constitutes a 'road', and the stated definitions can be important considerations for assessments against an acceptable solution for Element 3.</p> <ul style="list-style-type: none"> Guidelines Appendix B3: Vehicular Access, identifies a 'road' as being either a public road (that includes a no-through road) or a perimeter road. All other access types (i.e. emergency access ways, fire service access routes, battle-axes and private driveways) are considered a different class of access i.e. they are not 'roads'. SPP 3.7 defines 'no-through road' as "a cul-de-sac or dead end road". SPP 3.7 defines 'two-way access' as "vehicular access from a site in two different directions to at least two different suitable destinations". This allows for required access to potentially be provided by an emergency access way. 					
O3	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved				
	<p>SPP 3.7, 6.3: Ensure the design and capacity of vehicular access and egress provide:</p> <ul style="list-style-type: none"> For efficient and effective evacuation to a suitable destination(s); and/or As a contingency measure for vulnerable land uses, an on-site shelter, where demonstrated appropriate, as a last resort option. 				
E3	Statement for Compliance with Element E1 – The Deemed to Comply Pathway				
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.				
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes				
	N/A				
ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS					
Check Box Legend: ☒ Relevant & met ☒ Relevant & not met ☐ Not relevant					
A3.1 Public roads		Applicable:	Yes	Compliant:	Yes
☒	☐	☐	Public roads meet (or can and will meet) the technical requirements for minimum vertical clearance (4.5 metres) and minimum weight capacity (15 tonnes - includes bridges, culverts).		
☒	☐	☐	Public roads meet (or can and will meet) the technical requirement <u>recommended</u> in the Guidelines in Appendix B3, B3.1 for a minimum horizontal clearance of 6 metres.		

☒ ☐ ☐	Public road technical requirements for minimum horizontal clearance, gradients and curves should be in accordance with the class of road as specified in the Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards, any applicable or relevant Main Roads standards, supplements, policies and any applicable or relevant local government standards or policies. The applicable class(s) of road and their technical requirements have been confirmed with the relevant local government/Main Roads WA. These are (or can and will) be complied with.
<u>Assessment Supporting Details:</u> No new public roads will be constructed as part of this development. The existing road is compliant with Main Roads standards.	
A3.2 Access routes	Applicable: Yes Compliant: Yes
☐ ☐ ☒	The subject site is in Area 1 (Urban) (Map of BPA). Public road access, with all-weather surfaces, is provided to at least one suitable destination.
☒ ☐ ☐	The subject site is in Area 2 (Map of BPA). Public road access, with all-weather surfaces, is provided in two different directions, to two different suitable destinations.
<u>Assessment Supporting Details:</u> Berkshire Road provides access and egress to two suitable destinations.	
A3.3a No-through roads	Applicable: No Compliant: -
☐ ☐ ☒	A3.3a is not applicable to the subject planning proposal because the planning proposal is sited in Area 1 (Urban) (Map of BPA), and there is no limitation on no-through road lengths.
☒ ☐ ☐	A3.3a is not applicable to the subject planning proposal because access to the subject site is via a private driveway from a public road providing two-way access. Consequently, vehicular access to the subject site does not have a no-through road component.
☐ ☐ ☒	The subject site is in Area 2 (Map of BPA): Access to the subject site is via a no-through public road that does not exceed the established maximum of 200 metres in length from the subject site boundary to an intersection where two-way access is provided.
☐ ☐ ☒	The subject site is in Area 2 (Map of BPA): Access to the subject site / lot(s) is via a no-through public road that exceeds the established maximum of 200 metres in length from the proposed lot(s) boundary to an intersection where two-way access is provided. It is demonstrated that there are site constraints and/or that there are no alternative design options to achieve the 200 metre maximum length. Compliant two-way access within 200 metres from the proposed lot(s) boundary will be established through the provision (or existence) of a compliant emergency access way through the application of acceptable solution A3.4: Emergency Access Way.
☐ ☐ ☒	The subject site is in Area 2 (Map of BPA): Access to the subject site / lot(s) is via a no-through public road that exceeds the established maximum of 200 metres in length from the proposed lot(s) boundary to an intersection where two-way access is provided. However, the additional road length can be considered to satisfy the acceptable solution as the following established requirements can be met:
☐ ☐ ☒	It is demonstrated that that an alternative access, including an emergency access way, cannot be provided due to site constraints; and

- ☐ ☐ ☒ The no-through road travels towards a suitable destination; and
- ☐ ☐ ☒ The balance of the no-through road that is greater than 200 metres from the subject site is:
- Wholly within a residential built-out area; or
 - Wholly within an area designated Area 1 (Urban) on Map of BPA; or
 - Potentially subject to radiant heat levels from adjacent bushfire prone vegetation not exceeding 12.5 kW/m² / BAL-LOW (Guidelines Figure 29).

Assessment Supporting Details: None required.

A3.3b No-through roads technical requirements

Applicable:

No

Compliant:

-

- ☒ ☐ ☐ A3.3b is not applicable to the subject planning proposal because the assessment against A3.3a has established that vehicular access to the site does not have a no-through road component.
- ☐ ☐ ☒ The no-through road meets (or can and will meet) the public road technical requirements for minimum vertical clearance (4.5 metres) and minimum weight capacity (15 tonnes - includes bridges, culverts).
- ☐ ☐ ☒ The no-through road meets (or can and will meet) the public road technical requirement recommended in the Guidelines in Appendix B3, B3.1 for a minimum horizontal clearance of 6 metres.
- ☐ ☐ ☒ The no-through road (i.e. public road) technical requirements for minimum horizontal clearance (excluding perimeter road), gradients and curves should be in accordance with the class of road as specified in the Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards, any applicable or relevant Main Roads standards, supplements, policies and any applicable or relevant local government standards or policies.
- The applicable class(s) of road and their technical requirements have been confirmed with the relevant local government/Main Roads WA. These are (or can and will) be complied with.
- ☐ ☐ ☒ The turnaround area/head meets (or can and will meet) the design requirements established by the Guidelines, Figure 30.

Assessment Supporting Details: None required.

A3.4 Emergency access way

Applicable:

No

Compliant:

-

- ☒ ☐ ☐ A3.4 is not applicable to the subject planning proposal because it has been assessed as compliant with A3.2 (and A3.3a and A3.3b when applicable), and an emergency access way is not required.
- ☐ ☐ ☒ A3.4 is applicable to the subject planning proposal because an emergency access way currently exists and has been part of the subject planning proposal's ability to comply with A3.2.
- Consequently, it will apply with regard to meeting (or being able to meet), the specified technical requirements and ongoing management requirements, rather than its installation.
- ☐ ☐ ☒ The requirements established for acceptable no-through road access to the subject site in A3.2 and A3.3a and/or A3.3b cannot be achieved. An emergency access way (EAW) is provided as the alternative access and can be considered as an acceptable solution, when the following established requirements are met:
- ☐ ☐ ☒ It is demonstrated that site constraints prevent the requirements of A3.2 and A3.3 being met; and

☐	☐	☒	The access way is no more than 500 metres in length, provides a through connection to a public road connecting to a public road network; and
☐	☐	☒	The access way meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum horizontal clearance (Map of BPA Area 1 (Urban) = 6 metres and Area 2 = 10 metres), minimum vertical clearance (4.5 metres), minimum weight capacity (15 tonnes - includes bridges, culverts) and minimum inner radius of road curves (8.5 metres); and
☐	☐	☒	The access way meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for crossfalls and gradients for different surfaces and dips; and
☐	☐	☒	The access way will be signposted and, if gated, gates will open for the whole carriageway width and remain unlocked; and
☐	☐	☒	The proponent has obtained consent from the local government, that it will accept care, control and management responsibilities for the emergency access way.

Assessment Supporting Details: None required.

A3.5 Fire service access route	Applicable:	No	Compliant:	-
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☒	☐	☐	A3.5 is not applicable to the subject planning proposal because the proposed lots only adjoin Class G Grassland (classified under AS 3959) or adjoin classified vegetation that is not Class G Grassland but for which firefighter access is currently available.
☐	☐	☒	The proposed lots adjoin classified vegetation that is not Class G Grassland (classified under AS 3959). A fire service access route is to be provided for firefighter access to this vegetation. It can and will meet the following established requirements:
☐	☐	☒	The access route is a through-route with no dead-ends, no further than 500 metres from a public road and will be signposted; and
☐	☐	☒	The access route meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum horizontal clearance (Map of BPA Area 1 (Urban) = 6 metres and Area 2 = 10 metres), minimum vertical clearance (4.5 metres), minimum weight capacity (15 tonnes - includes bridges, culverts) and minimum inner radius of road curves (8.5 metres); and
☐	☐	☒	The access route meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for crossfalls and gradients for different surfaces and dips; and
☐	☐	☒	When gated, gates will open the whole carriageway width and can be locked by the local government and/or the emergency services, when keys are provided for each gate; and
☐	☐	☒	The proponent has obtained consent from the local government, that it will accept care, control and management responsibilities for the fire service access route (unless it is a Crown reserve managed by another entity).

Assessment Supporting Details:

None required.

A3.6 Internal vehicular access and private driveways	Applicable:	No	Compliant:	-
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☒ ☐ ☐	A3.6 is not applicable to the subject planning proposal because the proposal does not contain internal vehicular access and private driveways longer than 70 metres.					
☐ ☐ ☒	There are internal vehicular access and private driveways longer than 70 metres and the subject site meets (or can and will meet) all the following established requirements:					
☐ ☐ ☒	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum horizontal clearance (6 metres) or where not required to comply with the Guidelines width, it meets the requirements of the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision; and					
☐ ☐ ☒	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for minimum vertical clearance (4.5 metres), minimum weight capacity (15 tonnes - includes bridges, culverts) and minimum inner radius of road curves (8.5 metres); and					
☐ ☐ ☒	The private driveway meets (or can and will meet) the technical requirements (Guidelines Appendix B3, Table 10) for the gradients of different surfaces and dips; and					
☐ ☐ ☒	Passing bays are (or can and will be) installed every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of 2 metres i.e. the combined carriageway width of the passing bay and constructed private driveway will be a minimum 6 metres; and					
☐ ☐ ☒	The turnaround area/head meets (or can and will meet) the design and location (within 30m of main habitable building) requirements established by the Guidelines (refer to Figures 30 and 38).					
<u>Assessment Supporting Details:</u> None required.						
<table border="1"> <tr> <td>A3.7 Signage</td> <td>Applicable:</td> <td>No</td> <td>Compliant:</td> <td>-</td> </tr> </table>		A3.7 Signage	Applicable:	No	Compliant:	-
A3.7 Signage	Applicable:	No	Compliant:	-		
☐ ☐ ☒	Signage can and will be provided within the subject site, advising of where each access route travels to and the distance and general information on what to do in the event of a bushfire.					
<u>Assessment Supporting Details:</u> None required.						

5.3.3 Element 4: Water Supply

ELEMENT 4: WATER SUPPLY (DEVELOPMENT – CERTAIN CLASS 9 BUILDINGS / VULNERABLE USES)			
All details of acceptable solution requirements are established in the Planning for Bushfire Guidelines (Guidelines) – WA Department of Planning, Lands and Heritage (DPLH, as amended). When relevant, the 'Bushfire Management Plan Guidance for the Dampier Peninsula' (DPLH, 2021 Rev B), is also referenced.			
O4	State Planning Policy 3.7 Bushfire - Outcomes to be Achieved		
	SPP 3.7, 6.4: Ensure that sufficient water is available and accessible for emergency services, to enable people, property and infrastructure to be defended from bushfire.		
E4	Statement for Compliance with Element E1 – The Deemed to Comply Pathway		
	The planning proposal is fully compliant with all applicable acceptable solutions and therefore achieves the required outcomes of this element.		
	Alternative Pathway Applied to Achieve SPP 3.7 Outcomes		
	N/A		
ACCEPTABLE SOLUTIONS - ASSESSMENT STATEMENTS			
Check Box Legend: ☒ Relevant & met ☒ Relevant & not met ☐ Not relevant			
A4.1 Water supply		Applicable:	Yes
		Compliant:	Yes
☒	☐	☐	Evidence is provided that a reticulated water supply, available for firefighting purposes, exists or can be provided. Hydrant connection(s) will be provided in accordance with the specifications established by the relevant water supply authority (refer also to hydrant location information in Appendix D of this BMP).
☐	☐	☐	The BPC Explanatory Notes in Appendix B.4: Water Supply introduce additional measure as best practice but voluntary. The following measure is adopted by the planning proposal: The subject site will have a <u>reticulated</u> water supply but is in an area designated as Area 2 on the Map of BPA and/or the local government area has known issues with water supply or pressure. Water supply tank(s) and fittings dedicated to firefighting purposes (noting that combining drinking and firefighting uses of water is not recommended and may be contrary to relevant provisions), that satisfy the construction and design requirements established in the Guidelines, Appendix B4: Water Supply, will be provided.
☐	☐	☐	The BPC Explanatory Notes in Appendix B.4: Water Supply introduce additional measure as best practice but voluntary. The following measure is adopted by the planning proposal: The subject site is serviced by reticulated water. However, the distance from the public road (along which the fire hydrant is located) to the farthest part of the habitable building is greater than 70 metres, exceeding the reach of a hose reel. A water supply tank will be installed within the lot.
Assessment Supporting Details: The nearest hydrant to the subject site is 35m to the north along Berkshire Road and every 200m thereafter.			

6 RESPONSIBILITY CHECKLISTS

EXPLANATORY INFORMATION

This section of the BMP sets out the responsibilities of the relevant entity or person for:

- The initial implementation of the required bushfire protection measures and their timing; and
- The ongoing maintenance of the required bushfire protection measures to ensure their continued effectiveness.

Note: Protection measures that may be recommended by the bushfire consultant in the BMP section titled 'Additional Recommended Bushfire Protection Measures' are not be included in the Responsibility Checklists. Their application is at the discretion of the decision maker and/or the proponent.

6.1 Bushfire Protection Measures - Implementation Checklist

TABLE 6.1 PROPONENT/LANDOWNER RESPONSIBILITIES PRIOR TO SALE/OCCUPANCY/OPERATION																																												
No.	IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES Measures Established Under SPP 3.7 / Guidelines																																											
1	Install the Asset Protection Zone (APZ) surrounding habitable buildings. It must:																																											
	1. Be located within the boundaries of the lot except for any allowable variances allowed and discussed in the assessment against the bushfire protection criteria Section 5, Element 2: Siting and design, and the relevant APZ acceptable solution.																																											
	2. Consist of non-vegetated areas and low bushfire threat vegetation, able to be maintained in perpetuity in a low threat state, by complying with the established APZ technical requirements (Guidelines Appendix B2).																																											
	3. Have dimensions equal to the minimum distances corresponding to the BAL-29 rating (and no greater if modification/removal native vegetation would be required), as these are the distances approved for implementation when this BMP is approved by the decision maker (refer to the table below for dimensions). An exception to this dimension limitation can only exist when it does not require the modification/removal of native vegetation.																																											
	IMPORTANT:																																											
	1. IF A BAL RATING LOWER THAN BAL-29 CAN BE ACHIEVED BY PROPOSED BUILDING WORKS BUT NATIVE VEGETATION IS REQUIRED TO BE MODIFIED OR REMOVED TO ESTABLISH THE ASSOCIATED LARGER APZ, ENSURE PRIOR APPROVAL HAS BEEN RECEIVED FROM THE RELEVANT AUTHORITY BEFORE INSTALLING.																																											
	2. REFER TO APPENDICES B3, B4 AND B5 (OF THIS BMP) FOR APZ TECHNICAL REQUIREMENTS AND DIMENSION GUIDANCE.																																											
	THE MINIMUM (SITE SPECIFIC) VEGETATION SEPARATION DISTANCES ESTABLISHING APZ DIMENSIONS ¹																																											
	<table><tr><th rowspan="2">Building</th><th colspan="2">Vegetation Classification ²</th><th colspan="5">Minimum Distances (metres) Corresponding to Potential Bushfire Impact</th></tr><tr><th></th><th>Area / Class</th><th>BAL-29</th><th>BAL-19</th><th>BAL12.5</th><th>10 kW/m²</th><th>2 kW/m²</th></tr><tr><td rowspan="3">Childcare Centre</td><td>1</td><td>(A) Forest</td><td>21</td><td>31</td><td>42</td><td>-</td><td>-</td></tr><tr><td>2</td><td>(B) Woodland</td><td>14</td><td>20</td><td>29</td><td>-</td><td>-</td></tr><tr><td>3</td><td>Excluded cl 2.2.3.2(e & f)</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></tr></table>							Building	Vegetation Classification ²		Minimum Distances (metres) Corresponding to Potential Bushfire Impact						Area / Class	BAL-29	BAL-19	BAL12.5	10 kW/m ²	2 kW/m ²	Childcare Centre	1	(A) Forest	21	31	42	-	-	2	(B) Woodland	14	20	29	-	-	3	Excluded cl 2.2.3.2(e & f)	-	-	-	-	-
	Building	Vegetation Classification ²		Minimum Distances (metres) Corresponding to Potential Bushfire Impact																																								
		Area / Class	BAL-29	BAL-19	BAL12.5	10 kW/m ²	2 kW/m ²																																					
Childcare Centre	1	(A) Forest	21	31	42	-	-																																					
	2	(B) Woodland	14	20	29	-	-																																					
	3	Excluded cl 2.2.3.2(e & f)	-	-	-	-	-																																					
Note 1: Will include the application of the radiant heat barrier when applicable to the proposal.																																												
Note 2: Refer to the Vegetation and Topography Map in Section 3.1.4																																												
2	In accordance with the City of Kalamunda Firebreak Notice maintain a fuel reduced zone around all buildings which extends 20 metres from the outermost point of the building or asset. Trees over 5 metres in height within the20 metres zone to be pruned up to 2m.																																											
	A purchaser, occupier and/or operator of the site must be made aware of the existence of this approved BMP and provided with access to a copy and be informed of their ongoing responsibilities it contains.																																											

3	The development is a 'vulnerable use', and a Bushfire Emergency Plan (BEP) has been produced for site operations. Complete all relevant actions contained within the 'Site Preparation Procedure'.
4	The development is a 'vulnerable use', and a Landscape Management Plan (LMP) will be prepared (if required by the local government) for site operations. Ensure the purchaser, occupier and/or operator of the site is made aware of the existence of the LMP and provided with access to a copy.
<p style="text-align: center;">IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES</p> <p style="text-align: center;">Measures Established by a Local Government's Section 33 Notice Under the Bush Fires Act 1954</p>	
5	Install the required firebreaks, providing emergency access within the lot, to the stated specifications established by the City of Kalamunda Firebreak Notice.
<p style="text-align: center;">IMPLEMENTATION OF BUSHFIRE PROTECTION MEASURES</p> <p style="text-align: center;">Measures Established by the Building Code of Australia (Vol. 1 and 2 of the National Construction Code)</p>	
6	<p>Inform builders engaged to construct dwellings/additions and/or other relevant structures on the lot of the existence of this approved Bushfire Management Plan (BMP).</p> <p>The BMP identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may be required to confirm determined ratings and will be required when stated ratings are only indicative. BAL certificates will need to be produced to accompany building applications.</p> <p>The BMP may also establish, as a 'Required Additional Bushfire Protection Measure', that bushfire construction requirements to be applied must be those corresponding to a specified higher BAL rating.</p> <p>Compliance with the current Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks) and certain Class 9 buildings. Other classes of buildings may also be required to comply with these construction when established by the relevant authority or if identified as a 'Required Additional Bushfire Protection Measure' bushfire protection measure within the BMP.</p> <p>The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).</p>

6.2 Bushfire Protection Measures - Maintenance Checklist

TABLE 6.2 LANDOWNER/OCCUPIER – MAINTENANCE OF BUSHFIRE PROTECTION MEASURES	
No.	MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established Under SPP 3.7 / Guidelines
1	Annually review and enact the following maintenance responsibilities established in this approved BMP for the development site prior to the bushfire season.
2	The site's use is a 'vulnerable use', and a Bushfire Emergency Plan (BEP) has been produced for site operations. Complete all relevant actions contained within the 'Site Preparation Procedure' annually prior to the bushfire season.
3	<p>Maintain the Asset Protection Zone (APZ) surrounding all habitable buildings by applying:</p> <ol style="list-style-type: none"> The Maintenance Technical Requirements: The APZ must consist of non-vegetated areas and low bushfire threat vegetation maintained in perpetuity in the low threat state by complying with the established APZ technical requirements (Guidelines Appendix B2); and The Maintenance Dimensions: These must be either: <ol style="list-style-type: none"> Those corresponding to the determined BAL rating(s) applicable to each habitable building. This ensures the building's constructed bushfire resistance continues to align with its calculated potential exposure to flame contact and radiant heat; or In the absence of an applicable determined BAL rating, the dimensions should be no greater than the minimum distances corresponding to the BAL-29 rating and are approved for implementation by this BMP. <p>IMPORTANT:</p> <ol style="list-style-type: none"> REFER TO THE SITE SPECIFIC APZ DIMENSIONS CORRESPONDING TO BAL RATINGS IN TABLE 6.1. REFER TO APPENDICES B3, B4 AND B5 FOR APZ TECHNICAL REQUIREMENTS AND DIMENSION GUIDANCE.
4	Maintain the private driveways / internal vehicular access to comply with the technical requirements stated and/or referenced in Section 5.3 of the BMP at Element 3: Vehicular access, A3.1 Private driveways or A3.6 Internal vehicular access and private driveways or A3.7 Internal vehicular access and private driveways.
5	When the property changes ownership or occupancy, to assist with the ongoing maintenance of the implemented bushfire protection measures, ensure that the relevant person(s) is aware of the BMP, and the responsibilities it contains. Provide access to a copy of the BMP and the Bushfire Emergency Plan (BEP).
MAINTENANCE OF BUSHFIRE PROTECTION MEASURES Measures Established by the Building Code of Australia (Vol. 1 and 2 of the National Construction Code)	
7	<p>Prior to any future building work, inform the builder of the existence of this approved Bushfire Management Plan (BMP).</p> <p>The BMP identifies that the development site is within a designated bushfire prone area and states the indicative (or determined) BAL rating(s) that may (or will) be applied to buildings/structures. A BAL assessment report may</p>

be required to confirm determined ratings and will be required when stated ratings are only indicative. BAL certificates will need to be produced to accompany building applications.

The BMP may also establish, as a 'Required Additional Bushfire Protection Measure', that bushfire construction requirements to be applied must be those corresponding to a specified higher BAL rating.

Compliance with the current Building Code of Australia (Volumes 1 and 2 of the National Construction Code), will require certain bushfire resistant construction requirements be applied to residential buildings in bushfire prone areas (i.e., Class 1, 2 and 3 and associated Class 10a buildings and decks) and certain Class 9 buildings. Other classes of buildings may also be required to comply with these construction when established by the relevant authority or if identified as a 'Required Additional Bushfire Protection Measure' bushfire protection measure within the BMP.

The deemed to satisfy solutions that will meet the relevant bushfire performance requirements are found in AS 3959 – Construction of Building in Bushfire Prone Areas (as amended) and the NASH Standard - Steel Framed Construction in Bushfire Areas (as amended).

APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

A1: BAL Assessment Inputs Common to the Method 1 and Method 2 Procedures

A1.1: FIRE DANGER INDICES (FDI/FDI/GFDI)

When using Method 1 the relevant FDI value required to be applied for each state and region is established by AS 3959:2018, Table 2.1. Each FDI value applied in Tables 2.4 – 2.7 represents both the Forest Fire Danger Index (FFDI) and a deemed equivalent for the Grassland Fire Danger Index (GFDI), as per Table B2 in Appendix B. When using Method 2, the relevant FFDI and GFDI are applied.

The values may be able to be refined within a jurisdiction, where sufficient climatological data is available and in consultation with the relevant authority.

Relevant Jurisdiction:	WA	Region:	Whole State	Method 1	Applied FDI:	80
				Method 2	Applied FFDI:	N/A
					Applied GFDI:	N/A

A1.2: VEGETATION ASSESSMENT AND CLASSIFICATION

Vegetation Types and Classification

In accordance with AS 3959:2018 Clauses 2.2.3 and C2.2.3.1, all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted. The maximum excess distance is established by AS 3959: 2018 Clause 2.2.3.2 and is an additional 100 metres.

Classification is also guided by the Visual Guide for Bushfire Risk Assessment in WA (WA Department of Planning February 2016) and any relevant FPA Australia practice notes.

Modified Vegetation

The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if they consist of low threat vegetation (refer to Appendix B) and that any required active management can be expected to continue in perpetuity, and this can be adequately justified.

The Influence of Ground Slope

Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 Clauses 2.2.5 and C2.2.5.

THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE

Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site:

None

Assessment Statement: No vegetation types exist close enough, or to a sufficient extent, within the relevant area to influence classification of vegetation within 100 metres of the subject site.

VEGETATION AREA 1						
Classification	A. FOREST					
Types Identified	Open forest A-03					
Exclusion Clause	N/A					
Effective Slope	Measured	flat 0 degrees		Applied Range (Method 1)		Upslope or flat 0 degrees
Foliage Cover (all layers)	30-70%	Shrub/Heath Height		1-2m	Tree Height	6-8m
Dominant & Sub-Dominant Layers	Mixed eucalyptus and exotic species including tuart and pine.					
Understorey	Tall native and exotic shrubs.					
Justification Comments:	Not Required.					
Post Development Assumptions:	Vegetation with the subject site to be managed to a low threat state in perpetuity.					
<div><div><p>-31.98223, 116.01617, 37.0m, 6° 29/05/2025 12:56:57</p></div><div><p>-31.98213, 116.01584, 30.0m, 85° 29/05/2025 13:00:52</p></div></div>						
PHOTO ID: 1				PHOTO ID: 2		
<div><div><p>-31.98183, 116.0154, 29.0m, 99° 29/05/2025 13:02:16</p></div><div><p>-31.98195, 116.01558, 30.0m, 13° 29/05/2025 13:01:53</p></div></div>						
PHOTO ID: 3				PHOTO ID: 4		

VEGETATION AREA 2					
Classification	B. WOODLAND				
Types Identified	Woodland B-05				
Exclusion Clause	N/A				
Effective Slope	Measured	flat 0 degrees	Applied Range (Method 1)		Upslope or flat 0 degrees
Foliage Cover (all layers)	10-30%	Shrub/Heath Height	-	Tree Height	6-8m
Dominant & Sub-Dominant Layers	Mixed eucalyptus species and exotic species as part of an open semi managed lot.				
Understorey	Long pastoral grasses and scattered weeds.				
Justification Comments:	Not Required.				
Post Development Assumptions:	None required.				
<div><div><p>-31.98192, 116.01646, 39.0m, 55° 29/05/2025 12:58:02</p></div><div><p>-31.98192, 116.01645, 34.0m, 54° 29/05/2025 12:58:46</p></div></div>					
PHOTO ID: 5			PHOTO ID: 6		
<div><div><p>-31.98192, 116.01648, 35.0m, 91° 29/05/2025 12:58:49</p></div><div><p>-31.98229, 116.01689, 34.0m, 9° 29/05/2025 13:06:54</p></div></div>					
PHOTO ID: 7			PHOTO ID: 8		



PHOTO ID: 9



PHOTO ID: 10

VEGETATION AREA 3	
Classification	N/A
Types Identified	N/A
Exclusion Clause	2.2.3.2 (e) Non-vegetated areas and (f) Low threat vegetation - minimal fuel condition.
Justification Comments:	Areas include managed lawns and verges. Exotic vegetation
Post Development Assumptions:	No trees to be within 6m of the building. The entirety of the subject site to remain managed in perpetuity.
 <p>-31.98213, 116.0163, 36.0m, 57° 29/05/2025 12:57:17</p>	
PHOTO ID: 11	
 <p>-31.98235, 116.01667, 52.0m, 200° 29/05/2025 12:54:53</p>	
PHOTO ID: 12	
 <p>-31.98255, 116.01717, 30.0m, 62° 29/05/2025 13:09:22</p>	
PHOTO ID: 13	
 <p>-31.98226, 116.01588, 29.0m, 243° 29/05/2025 13:05:05</p>	
PHOTO ID: 14	

A1.3: EFFECTIVE SLOPE

EXPLAINING THE ASSESSMENT METHODOLOGY APPLIED BY BUSHFIRE PRONE PLANNING

DEFINITION: Effective slope is "the slope under that classified vegetation which most influences the bushfire attack" (AS 3959:2018, Clause 1.5.11).

"The effective slope under the classified vegetation is not the same as the average slope for the land surrounding the site of the proposed building. The effective slope is that slope which most significantly influences bushfire behaviour" (AS 3959:2018, Clause CB4).

The slope is described as upslope, flat or downslope when viewed from an exposed element (e.g., building) and looking towards the vegetation. It is measured in degrees.

[Note: Additional relevant guidance provided by AS 3959:2018 and NSW RFS, Planning for Bushfire Protection (2019) is incorporated into the applied assessment methodology and is presented at the end of this explanation.]

COMPOUND SLOPES UNDER VEGETATION AND DETERMINING SLOPE SIGNIFICANCE

Non-Linear Slopes: When the slope of ground under the vegetation out to the distance to be assessed (100 m or further if necessary), is not a straight line or nearly straight line slope, then it is made up of several different slopes i.e., it is a compound slope. The different slope angles and lengths must be factored into the determination of the effective slope value to be applied. Different slopes will potentially influence the bushfire rate of spread and intensity, both increasing and decreasing it.

Significant Slope: The AS 3959:2018 bushfire attack level determination methodology, with default inputs, models a fully developed bushfire. Therefore, a 'significant' slope is one that will significantly influence bushfire behaviour. To be 'significant' the length of the slope must be 'sufficient' to support a fully developed fire on that slope. The angle of a significant slope could be the determined effective slope for the area of classified vegetation if it is the one that 'most influences the bushfire attack'.

Sufficient Slope Length: Is a slope that will, as a minimum, allow the entire flame depth (flaming zone) of a fully developed fire (100m flame width) to exist on that slope.

The expected flame depth of a fully developed bushfire is a function of the length of time the flaming phase will exist on a section of the fuel bed (the 'residence time') and the bushfire's 'rate of spread'. For a given rate of spread, longer residence times result in greater flame depths. Greater flame depths are correlated with greater flame temperatures and greater flows of radiant heat.

The primary factors that will increase the residence time are:

- Heavier fine fuel loads of grass, leaf litter, twigs, bark etc less than 6mm in width and existing within the surface and near surface layers (and elevated fuel layers when contiguous with the base layers); and
- A greater percentage of larger fine fuels within the fuel load.

The primary factors that increase the rate of spread (apart from fire weather factors), include finer fuels, drier fuels, horizontal continuity of fuel and steeper upward ground slope in the direction of fire travel.

Example values:

- Residence Time: Grassfire 5 – 15 seconds, Forest fire 25 -50 seconds.
- Rate of Spread: Grassfires of a few km/hr are considered fast moving, 5-10 km/hr is common and fastest in the order of 25km/hr. Forest fire typically recorded in metres/hour with 1-1.5 km/hr being considered fast moving and fastest in the order of 3-4 km/hr.
- Flame Depth: More typically, a few metres for grasses to tens of metres for forest fires.

An Isolated Slope: For scenarios where there is a single significant slope (based on the above criteria) additional consideration would need to be given to the time and distance consumed by a bushfire still in its 'developing' phase. This will require due consideration be given to how it is potentially ignited i.e., from a single or multiple points, as this will influence the time and distance required to fully develop. For such scenarios, a normally significant slope may not be sufficiently long. It may be necessary to determine the potential bushfire impact more accurately by

justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width (using short fire run modelling).

Determined Effective Slope: Only a 'significant' slope can potentially be the effective slope by itself. In which case, for a defined area of classified vegetation area, the worst significant slope under that vegetation is to apply.

The table below presents Bushfire Prone Planning's considerations applied to assessing short and/or compound slopes in determining the effective slope.

Slope Length (m)	Considered a Significant Slope	Considerations in Determining the Effective Slope
< 5	No	Where these short slopes exist as part of a compound slope under an area of classified vegetation, they can be ignored as they will not influence the fire behaviour in that vegetation.
5-20	Will Vary	These slopes will have a range of influence on fire behaviour from very little to a degree of influence that must be accounted for to some extent by the effective slope value that is applied (i.e., with a greater length - apply to a greater extent). But the actual slope of these shorter slopes is less likely to be applied as it is not a 'significant' length.
20-30	Possibly - Likely	<p>The same considerations applied to the 5-20m slope lengths should be applied here. However, more justification would need to be presented to support an assessment of not 'significant'.</p> <p>For these slope lengths, consideration must be given more broadly to the potential level of risks associated with a bushfire event in this location. The risk level will be a function of the bushfire hazard threat levels (direct attack mechanisms) within the immediate and broader assessment area as influenced by local topography, vegetation extents and types and the exposure and vulnerability of persons and/or buildings/structures to these threats. Higher consequent risk levels require greater precaution meaning these length slopes should be considered 'significant', and vice versa.</p> <p>Consider the potential for a bushfire on adjoining or nearby land be a source of ignition and/or pre-heating to vegetation on the subject slope.</p> <p>Consider if vegetation on the slope is likely be ignited by a single ignition point or is multipoint ignition possible from bushfire an adjoining slopes or the surrounding area. Single point ignition will require a fire to travel further before being fully developed (DFES considers less than 100m fire runs may be considered a short fire run for forest, woodland and scrub vegetation classifications, RFS NSW applies 150m).</p> <p>Isolated slopes of this length are less likely to be considered significant as compared to when part of a compound slope.</p>
>30	Yes	Likely to always be a significant slope unless isolated (i.e., exists alone) – in which case, justifying the application of a lesser effective slope, or a lower threat vegetation classification, or calculating a reduced head fire width, are approaches that may justifiably be applied.

BPP Approach - Slope Variation Within Areas of Vegetation

When multiple 'significant' slope lengths with large differences in degrees of effective slope (or different applicable slope ranges when AS 3959:2018 Method 1 is applied), exists under a single vegetation classification, these will be delineated as separate vegetation areas of classified vegetation to account for the difference in potential bushfire behaviour and impact, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.

Effective Slope Variation Due to Multiple Development Sites

When the effective slope, under a single area of bushfire prone vegetation, will vary significantly relative to multiple proposed development sites (exposed elements), then the effective slopes corresponding to each of the different

locations, are separately identified. The relevant (worst case) effective slope is determined in the direction corresponding to the potential directions of fire spread towards the subject building(s).

AS 3959:2018 EFFECTIVE SLOPE DETERMINATION - GUIDANCE

The Standard presents a broad set of guidance statements that indicate the intent of deriving an effective slope value for use in calculations, rather than detailing the 'in the field' determination process. These include:

- Highlighting the importance of the value by stating "The slope of the land under the classified vegetation has a direct influence on the rate of fire spread, the severity of the fire and the ultimate level of radiant heat flux" (Clause C2.2.5). [Note: A common rule of thumb is that for every 10 degrees of upslope, a fire will double its rate of spread if moving in the direction of the prevailing wind].
- "It may be necessary to consider the slope under the classified vegetation for distances greater than 100 m in order to determine the effective slope for that vegetation classification) ... (i.e. the vegetation within 100 m) (Clause C2.2.5).
- "Where there is more than one slope within the classified vegetation, each slope shall be individually assessed, and the worst case Bushfire Attack Level shall apply" (Clause 2.2.5).

NSW RFS 2019, PLANNING FOR BUSHFIRE PROTECTION - APPENDIX A1.5 - ADDITIONAL DETERMINATION GUIDANCE

- "In identifying the effective slope - it may be found that there are a variety of slopes covering different distances within the vegetation. The effective slope is considered to be the slope under the vegetation which will most significantly influence the bushfire behaviour for each aspect. This is usually the steepest slope. In situations where this is not the case, the proposed approach must be justified".
- "Vegetation located closest to an asset may not necessarily be located on the effective slope".

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

The effective slopes determined from the site assessment are recorded in Table 3.2 of this Bushfire Management Plan.

A1.4: SEPARATION DISTANCE

Measuring

The separation distance is the distance in the horizontal plane between the receiver (building/structure or area of land being considered) and the edge of the classified vegetation (AS 3959:2018, clause 2.2.4)

The relevant parts of a building/structure from which the measurement is taken is the nearest part of an external wall or where a wall does not exist, the supporting posts or columns. Certain parts of buildings are excluded including eaves and roof overhangs.

The edge of the vegetation, for forests and woodlands, will be determined by the unmanaged understorey rather than either the canopy (drip line) or the trunk (AS 3959:2018, clause C2.2.5).

Measured Separation Distance as a Calculation Input

If a separation distance can be measured because the location of the building/structure relative to the edge of the relevant classified vegetation is known, this figure can be entered into the BAL calculation. The result is a determined BAL rating.

Assumed Separation Distance as a Calculation Input

When the building/structure location within the lot is not known, an assumed building location may be applied that would establish the closest positioning of the building/structure relative to the relevant area of vegetation.

The assumed location would be based on a factor that puts a restriction on a building location such as:

- An established setback from the boundary of a lot, such as a residential design code setback or a restrictive covenant; or
- Within an established building envelope.

The resultant BAL rating would be indicative and require later confirmation (via a Compliance Report) of the building/structure actual location relative to the vegetation to establish the determined BAL rating.

Separation Distance as a Calculation Output

With the necessary site specific assessment inputs and using the AS 3959:2018 bushfire modelling equations, the range of separation distances that will correspond to each BAL rating (each of which represents a range of radiant heat flux), can be calculated. This has application for bushfire planning scenarios such as:

- When the separation distance cannot be measured because the exact location of the exposed element (i.e., the building, structure or area), relative to classified vegetation, is yet to be determined.

In this scenario, the required information is the identification of building locations onsite that will correspond to each BAL rating. That is, indicative BAL ratings can be derived for a variety of potential building/structure locations; or

- The separation distance is known for a given building, structure or area (and a determined BAL rating can be derived), but additional information is required regarding the exposure levels (to the transfer of radiant heat from a bushfire), of buildings or persons, that will exist at different points within the subject site.

The calculated range of separation distances corresponding to each BAL rating can be presented in a table and/or illustrated as a BAL Contour Map – whichever is determined to best fit the purpose of the assessment.

For additional information refer to the information boxes in Section 3 'Bushfire Attack Levels (BAL) - Understanding the Results and Section 3.2. 'Interpretation of the BAL Contour Map'.

SITE ASSESSMENT DETAILS - EXPLANATION & JUSTIFICATION

For the subject development/use the applicable separation distances values are derived from calculations applying the assessed site data. They are an output value, not an input value and therefore are not presented or justified in this appendix.

The derived values are presented in Section 3, Table 3.1 and illustrated as a BAL contour map in Figure 3.2.

APPENDIX B: GUIDANCE – BUSHFIRE ATTACK LEVELS AND ASSET PROTECTION ZONES

B1: Bushfire Attack Level (BAL) - Understanding the Results

UNDERSTANDING A BAL RATING

The potential transfer (flux/flow) of radiant heat from a bushfire to a receiving object is measured in kW/m². The AS 3959:2018 Bushfire Attack Level (BAL) determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level. These are identified in increasing levels of flux as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

The bushfire performance requirements for certain classes of buildings are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). The BAL will establish the bushfire resistant construction requirements that are to apply in accordance with AS 3959:2018 - *Construction of buildings in bushfire prone areas* and the NASH Standard – *Steel framed construction in bushfire areas (NS 300 2021)*, whose solutions are deemed to satisfy the NCC bushfire performance requirements.

DETERMINED BAL RATINGS

A BAL can only be classed as 'determined' for an existing or future building/structure when:

1. The building/structure final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or
2. The building/structure will always remain subject to the same BAL regardless of:
 - (a) The retention of all existing classified vegetation either onsite or offsite; and
 - (b) Its design or position on the lot - including, as relevant and necessary, accounting for any regulatory or enforceable building setbacks from lot boundaries (i.e. R-codes, restrictive covenants and defined building envelopes).

A BAL Certificate can be issued for a determined BAL. If the BMP derives determined BAL(s), the BAL Certificate(s) required for submission with building applications can be provided, using the BMP as the supporting assessment data.

INDICATIVE AND CONDITIONAL BAL RATINGS

An indicative BAL indicates the highest BAL rating that exists for the applied set of assessment parameters (which may vary resulting in the inability to be considered 'determined').

A conditional BAL establishes the BAL rating that will be considered as a 'determined' rating once the stated required conditions are approved by the relevant authority and confirmed as being met.

The possible variables of the 'conditions' include:

- The future development sites being either identified accurately or modified; and/or
- Classified vegetation being modified or removed to establish the required vegetation separation distances.

A BAL Certificate cannot be issued for an indicative or conditional BAL rating.

B4: BAL /APZ and Planning vs Building Approval Requirements

BAL RATINGS AND APZ DIMENSIONS - PLANNING VERSUS BUILDING APPROVAL REQUIREMENTS

Statement: It is not the purpose of this 'planning' BMP to derive a 'determined' BAL rating that will apply to an existing or future habitable or specified building to establish its bushfire resistant construction requirements in accordance with the Building Code of Australia (although in limited situations this can be done – refer to Appendix B1).

Planning Applications: To be compliant, a planning proposal must demonstrate it will be possible to install the required minimum sized asset protection zone (APZ), to the required technical requirements, surrounding a habitable or specified building, while applying APZ location constraints and allowances established by the Guidelines.

The Minimum Sized APZ: Is one whose dimensions ensure the potential radiant heat impact on the relevant buildings does not exceed 29 kW/m² from fire in any surrounding types of classified vegetation. This is the upper limit of the range of radiant heat flux corresponding to the BAL-29 rating. The dimensions of this 'BAL-29 APZ' will vary dependent on the site specific conditions.

Building Permit Applications: Require a determined BAL rating for proposed buildings works (stated on a BAL Certificate). The lower the BAL rating the greater the size of the corresponding APZ that would need to be installed and maintained in a low bushfire threat state to ensure the building's exposure to bushfire threats continues to be matched to the bushfire resistant construction applied.

APZ Dimensions: A larger APZ, potentially requiring the modification/removal of additional native vegetation, is required to subject a building to a lower BAL rating. However, bushfire planning policy does not support such an approach as evidenced by the following guidance to which due regard must be given:

SPP 3.7 Bushfire, Policy Objectives, cl. 5.5 states – "Prioritise the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity."

SPP 3.7 Bushfire, Policy Outcomes, cl. 6.2 - establishes that clearing of native vegetation is to be avoided or minimised in managing or mitigating bushfire risk.

The Guidelines, Appendix B2, B.2.1 states "clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported."

Additional Assessment and Reporting: The implication of the planning policy's guidance is if developers/landowners desire to lower the BAL rating to which future building works are subjected – by modification or removal of native vegetation greater than the BAL-29 dimensioned APZ - additional site assessment and reporting would be required to be submitted to the relevant authority for approval to modify/remove that vegetation.

Consequently, the determination of a BAL rating for building permit application purposes is likely to require a separate assessment as:

- It will potentially have implications regarding the obtaining of approvals for native vegetation modification and/or removal – the retention of which is an objective of State Planning Policy 3.7 Bushfire; and/or
- The precise location of a future building/structure within a lot and relative to any bushfire hazard may not be known at the time of producing this BMP.

Dimensions of the APZ to be Installed and Maintained by the Landowner: The dimensions of the APZ that will be the responsibility of a landowner to implement and maintain around a habitable or specified building (to align the building bushfire resistance to its level of exposure to flames, radiant heat and embers), will be those corresponding to the building's 'determined' BAL rating and the site specific conditions.

The dimensions of the 'BAL-29 APZ' identified in this BMP for planning assessment purposes, will not necessarily be the APZ that is to be implemented and maintained by a landowner in perpetuity.

B2: BAL Contour Map Interpretation

THE BAL CONTOUR MAP

Caution! Future building works require a 'determined' BAL rating for building permit applications. When a BAL contour map is being used for planning assessment purposes, (as opposed to a building assessment purpose), the required 'determined' BAL rating typically is not able to be derived from the map (there are only limited scenarios where this is possible).

The BAL ratings identified from the map will more likely be only 'indicative' of what can be achieved – with planning compliance for this factor being achieved when BAL-29 is indicated.

Otherwise, an additional assessment of the site data for building application purposes is required, and potentially approval will need to be obtained for native vegetation modification and/or removal from the relevant authority.

The Bushfire Attack Level (BAL) contour map, when used, is a diagrammatic representation of the results of the bushfire attack level assessment that has been conducted. It presents different coloured contours extending out from the different areas of classified vegetation.

Each contour represents a set range of radiant heat, corresponding to the BAL rating as defined by the AS 3959:2018 BAL determination methodology. When an exposed element (building, person or other defined element), is fully or partly located within a specific contour, it is potentially subject to the corresponding level of radiant heat transfer.

The width of each coloured BAL contour is dependent on both the BAL rating it represents, and the relevant site specific calculation inputs and will vary. It represents the minimum and maximum vegetation separation distances that correspond to each BAL rating for that site.

For post development BAL contour maps, the areas of classified vegetation applied to the production of the BAL contours, are those that will remain at the intended end state of the subject development once earthworks, clearing and/or landscaping and/or re-vegetation have been completed.

B3: The Asset Protection Zone (APZ)

THE APZ – DESCRIPTION, DIMENSION AND TECHNICAL REQUIREMENTS

DESCRIPTION AND PURPOSE

An asset protection zone (APZ) is an area surrounding a habitable or specified building that is not vegetated and/or supports retained or planted vegetation that can be considered to present a low bushfire threat as a result of flammability and/or moisture content characteristics and/or minimal fuel loads (either naturally or as a result of continual maintenance).

The primary objectives of establishing an APZ are to ensure:

1. A reduction in the exposure of the building/structure to bushfire direct attack mechanisms (threats) of flame contact, radiant heat transfer and ember attack, by establishing appropriate separation from each area of classified vegetation. [The required APZ dimensions will be dependent on site specific conditions and the use of the site and are measured from the nearest part of an external wall and/or supporting posts of building parts without external walls]; and
2. A reduction in the exposure of the building/structure to bushfire indirect attack mechanisms (threats) by:
 - Preventing surface fire spreading to the building/structure;
 - Minimising the potential for tree strike; and
 - Limiting the potential for consequential fire to impact the building/structure by eliminating, reducing and/or shielding consequential fire fuels. These fuels include accumulated debris, stored combustible/flammable items and constructed combustible items. Consequential fire, typically ignited by embers, is the primary cause of building loss in a bushfire event; and
3. To provide a defensible space for firefighting activities.

DIMENSIONS

Established by the Guidelines

No APZ dimensions are established by the Planning for Bushfire Guidelines, DPLH/WAPC (as amended). The Guidelines are intended to inform the application of State bushfire planning policy. For planning approval purposes, it only needs to be demonstrated that a BAL-29 dimensioned APZ can be appropriately established, surrounding a building/structure for the specific development site conditions.

For certain vulnerable land uses, evidence of the ability to implement a larger APZ may be required to inform planning decisions. These include dimensions corresponding to radiant heat impact levels of 10 kW/m² and/or 2 kW/m² and calculated using a flame temperature of 1200 K rather than 1090 K.

Established by the 'Determined' BAL Rating

The dimensions of the APZ that will be the responsibility of a landowner to implement and maintain around a habitable or specified building - to align the building's bushfire resistance construction level, to its level of exposure to flames, radiant heat and embers - will be those corresponding to the building's 'determined' BAL rating.

This rating will account for the relevant physical characteristics of a specific site and the applicable building's separation distance from classified vegetation, the type of vegetation it is exposed to and the slope of the ground supporting that vegetation.

Variations to these dimensions (i.e. vegetation separation distances) will only exist as the result of either:

- A requirement presented within an associated Bushfire Management Plan to increase the size of the APZ as part of a required additional protection measure; or
- A directive of the relevant Local Government through their annual notice, issued under s.33 of the Bushfires Act 1954 (see below), that results in a larger dimension.

Established by the Relevant Local Government

To satisfy the local governments requirements, a required APZ dimension may be stated in the notice issued annually by the relevant local government under s.33 of the Bushfires Act 1954 (e.g. Bushfire Risk Reduction Notice or Firebreak and Hazard Reduction Notice etc).

For certain vegetation/sites, based on environmental considerations, a maximum allowable dimension may be established, typically that corresponding to a BAL-29 rating for the relevant building – which will vary in response to the site specific conditions.

The existence of any such restrictions is information that would need to be sought from the relevant local government planning department.

TECHNICAL REQUIREMENTS

Established by the Guidelines

The relevant technical requirements for an APZ are established in the Planning for Bushfire Guidelines (DPLH/WAPC) (as amended), Appendix B2: Siting and design and available online at [Planning WA - SPP 3.7 Bushfire](#)

Established by the Relevant Local Government

Refer to the notice issued annually by the relevant local government under s33 of the Bushfires Act 1954 (e.g. Bushfire Risk Reduction Notice or Firebreak and Hazard Reduction Notice etc). It may state technical requirements that vary from and/or are additional to those established by the Guidelines to be complied with. Refer to the ratepayer notice and/or the local government's website for the current version.

The local government's technical requirements may be established by their gazetted local planning scheme.

B5: Vegetation Excluded from Classification – Ensure Continued Low Threat Status

MAINTAINING THE LOW THREAT STATUS OF EXCLUDED VEGETATION

When applying AS 3959:2018 BAL determination methodology, vegetation adjoining or adjacent to the subject site can be excluded from classification based on being a 'low bushfire threat'. To maintain this status, certain requirements must continue to be met in accordance with the below extract from AS3959:2018. Refer to the 'Classified Vegetation and Topography Map' for the relevant low threat areas associated with the subject site.

Determination of 'low threat' vegetation is based on factors such as - proximity to the subject site / small areas of vegetation / low flammability / higher moisture content / low fuel load.

Aside from a naturally occurring low fuel load, vegetation maintained in a minimal fuel condition through active management can be excluded. The associated key requisite is that the active management can be expected to continue in perpetuity, and this can be adequately justified.

Acceptable forms of justification typically involve supportable evidence or the existence of an enforceable mechanism. Examples of enforceable mechanisms include:

- Requirements established by a Section 33 (Bush Fires Act 1954) notice issued by a local government;
- An appropriate and enforceable agreement between relevant parties (which may involve additions to land titles); and
- For public open space or crown land, written evidence that the land manager e.g. local government or a State Government department, agrees to maintain the designated area of land in a low threat state in perpetuity.

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AS 3959:2018

2.2.3.2 Exclusions—Low threat vegetation and non-vegetated areas

The following vegetation shall be excluded from a BAL assessment:

- (a) Vegetation of any type that is more than 100 m from the site.
- (b) Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified vegetation.
- (c) 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.
- (d) 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.
- (e) Non-vegetated areas, that is, areas permanently cleared of vegetation, including waterways, exposed beaches, roads, footpaths, buildings and rocky outcrops.
- (f) 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.

NOTES:

- 1 Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm).
- 2 A windbreak is considered a single row of trees used as a screen or to reduce the effect of wind on the leeward side of the trees.

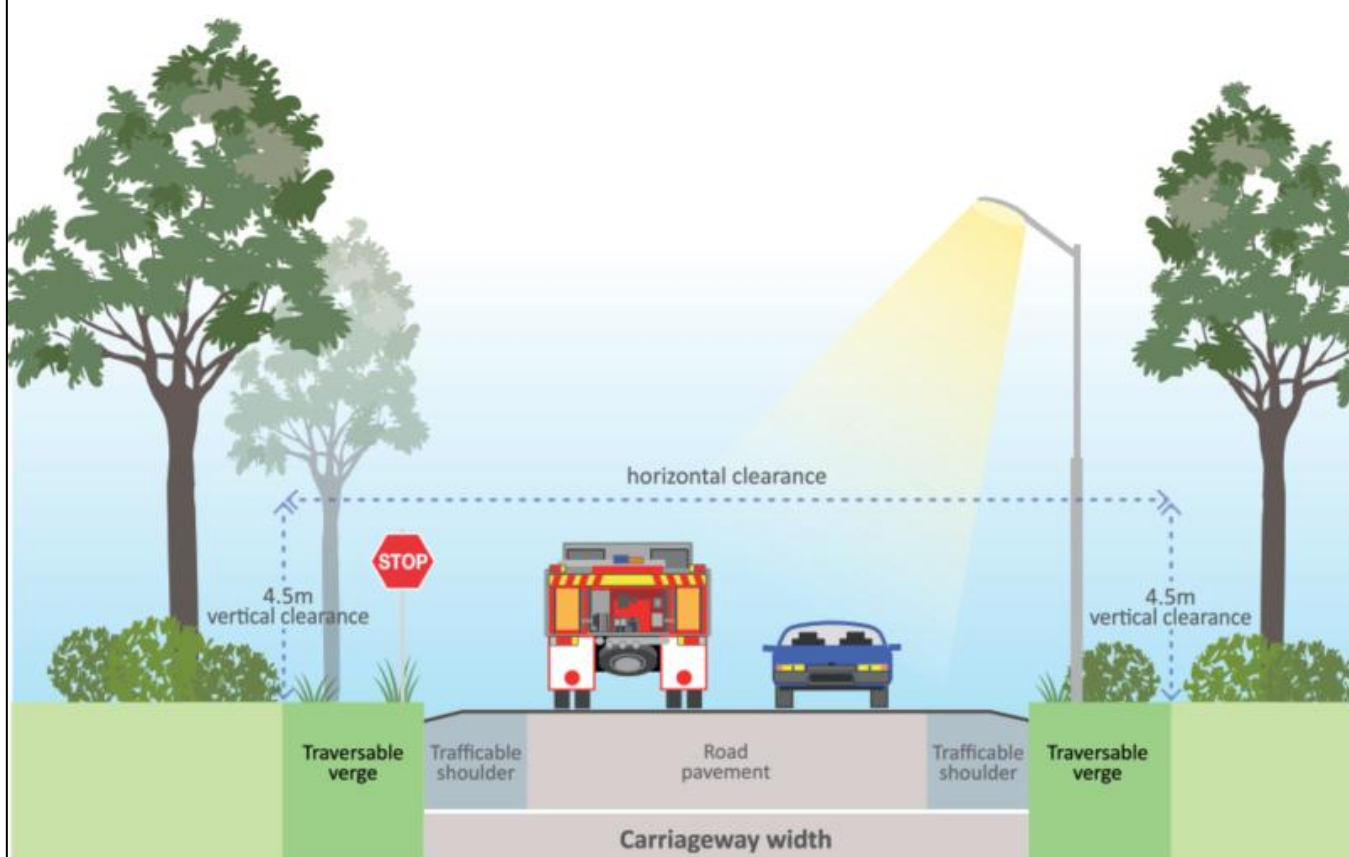
APPENDIX C: GUIDANCE - TECHNICAL REQUIREMENTS FOR VEHICULAR ACCESS

The relevant technical requirements are established in the Planning for Bushfire Guidelines (DPLH/WAPC) (as amended), Appendix B3: Vehicular access and available online at [Planning WA - SPP 3.7 Bushfire](#)

The following excerpts are presented here as a quick reference to applicable terminology and design requirements applied in the assessment against the bushfire protection criteria, Element 3: Vehicular access in this BMP.

C1: Road Component Terminology

Figure 26: Area encompassing horizontal clearance and vertical clearance



Horizontal clearance: The carriageway width (including the road pavement and trafficable shoulder) and traversable verge that provides for the movement and parking of vehicles and area required by emergency services to operate. Infrastructure and vegetation within the traversable verge should be frangible, however, non-frangible items can occur providing they do not restrict vehicular movement in the event of an emergency.

C2: Vehicular Access Technical Requirements

Table 10: Vehicular access technical requirements

	1		2		3		4		5	
TECHNICAL REQUIREMENTS	PERIMETER ROADS		PUBLIC ROADS		EMERGENCY ACCESS WAY ³		FIRE SERVICE ACCESS ROUTE ³		BATTLE-AXE & PRIVATE DRIVEWAYS ¹	
MAP OF BUSH FIRE PRONE AREAS DESIGNATION	Area 2	Area 1	Area 2	Area 1	Area 2	Area 1	Area 2	Area 1	Area 2	Area 1
Minimum horizontal clearance (metres)	12	8	See note 5		10	6	10	6	6	
Minimum vertical clearance (metres)	4.5									
Minimum weight capacity (tonnes)	15									
Maximum grade unsealed road ²	See note 5		See note 5		1:10 (10% or 6°)					
1:7 (14.3% or 8°)										
1:10 (10% or 6°)										
8.5										
Maximum grade sealed road ^{2,4}										
Maximum average grade sealed road										
Minimum inner radius of road curves (metres)										

Notes:

¹ Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.

² Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.

³ To have crossfalls between 3 per cent and 6 per cent.

⁴ For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.

⁵ As outlined in the Institute of [Public Works Engineering Australasia \(IPWEA\) subdivision guidelines](#), [Liveable Neighbourhoods](#), [Austroads Standards Main Roads standard](#), supplement, policy or guideline and/or any applicable or relevant local government standard or policy.

Figure 30: Design requirements for a turn-around area

