Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site address / Plan reference:	Emu Point District Structure Plan				
Suburb:	Albany	State:	WA	Postcode:	6330
Local government area:	City of Albany				
Description of the planning proposal:	Development of a Structure Plan				
BMP / Reference number:	241764	Version:	C	Date of issue:	01/04/2026
Client / Business name:	Department of Planning, Lands and Heritage				

Reason for referral to DFES[1]	Yes	No
Has the BAL been calculated by a method other than Method 1 as outlined in AS3959? (Tick *No* if AS3959 Method 1 has been used to calculate the BAL)	☐	✔
Have any of the bushfire protection criteria elements been addressed through the use of an outcomes-based approach?	☐	✔
Strategic planning proposal (including rezoning applications)	✔	☐
Local planning scheme amendment containing supplementary provisions, additional to the deemed provisions for bushfire risk management	☐	✔
Where a bushfire local planning policy, or variation to the acceptable solutions or the APZ is proposed	☐	✔
Where there is a conflict of opinion between the decision maker and proponent	☐	✔
Expert technical advice on bushfire behaviour, emergency management, or other occasions where bushfire technical advice is required to support planning decision-making	☐	✔
Expert technical advice on bushfire matters referred to State Administrative Tribunal (SAT) or Development Assessment Panel (DAP)	☐	✔
Comments on future buildings' compliance with FES Commissioner's operational requirement guidelines	☐	✔
Decision maker discretionary referral, (e.g. renewable energy, hazardous materials, vulnerable land use)	☐	✔

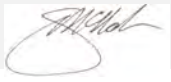
If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Gary McMahon	Level 3	35078	Nov 2026
Company		**Contact No.**	
Ecosystem Solutions Pty Ltd		08 9759 1960	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct.

Signature of Practitioner  Date 01/04/2026

[1] For more information please refer to DFES Referral to DFES Checklist

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Emu Point Precinct Structure Plan

Bushfire Management Plan

1 April 2026

Prepared for:
Department of Planning, Lands and Heritage
Att: Melinda Lyons



Limitations Statement

This report has been prepared in accordance with the Agreement between Ecosystem Solutions Pty Ltd and The Department of Planning, Lands and Heritage ("Client"). It has been solely prepared for a Bushfire Management Plan of the Emu Point Precinct Structure Plan ("Site").

Information

In undertaking this work the authors have made every effort to ensure the accuracy of the information used. Unless otherwise stated in the report, Ecosystem Solutions Pty Ltd has not independently verified such information and cannot guarantee its accuracy or completeness.

Conclusions

Within the limitations imposed by the scope of work, preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable bushfire consultants under similar circumstances. No other warranty, expressed or implied, is made.

Reliance

This report is solely for the use of the Client and any reliance on this report by third parties will be at such party's sole risk. This report must only be presented in full and may not be used to support any other purpose than those set out in the report and the Agreement, except where prior written approval with comments are provided by Ecosystem Solutions Pty Ltd. All intellectual property rights in documents created by Ecosystem Solutions Pty Ltd remain the property of Ecosystem Solutions Pty Ltd.

Other parties should not rely on the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters. Ecosystem Solutions Pty Ltd accepts no Liability, or responsibility whatsoever for or in respect of any use or reliance upon this report and its supporting material subsequently used by others. Please note that the contents of this report may not be directly applicable towards another organisation's needs and may not contain sufficient information for purposes of other parties or for other uses.

Ecosystem Solutions Pty Ltd will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of this report.

Other limitations

The measures contained in this report cannot guarantee that a structure or building will not be damaged or would survive a bushfire event on every occasion. This is due to the degree of vegetation management, the

unpredictable nature of fire behaviour (knowledge in this field continues to develop) and the unpredictable nature of extreme weather conditions.

The growth, planting or removal of vegetation, poor maintenance of any fire prevention/mitigation measures, addition of structures not included in this report, or other activity can and will change the bushfire threat to all properties detailed in this report. The implementation of fire precautions will depend on the actions of the landowner or occupiers of the land, over which Ecosystem Solutions Pty Ltd has no control. Should changes be made to the Site, a new Bushfire Management Plan is required.

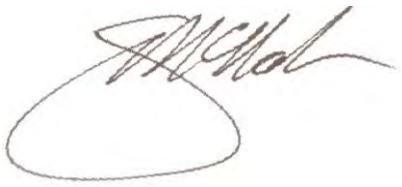
Ecosystem Solutions Pty Ltd accepts no Liability, including Liability for any Loss in connection with:

- a Claim, damage, or injury to property, or persons caused by fire;
- further growth, planting or removal of vegetation on the Site;
- poor maintenance of any fire protection measures;
- additional structures not included in this assessment; or
- any other activity that may change the bushfire threat level.

The Client and owner of the Site each acknowledge that they have been made aware of the exclusions above and that such exclusion of Liability is reasonable in all the circumstances.

This report is valid for a period of two years only from the date of its issue. All BAL ratings identified in this report are indicative and are required to be verified at the time of construction of individual buildings to ensure appropriate setbacks identified in the Site/building have been achieved.

STATEMENT OF CONFORMITY – PLANNING AND DEVELOPMENT ACT 2005





Gary McMahon
B.Sc. M. Env Mgmt. PG Dip Bushfire Protection. C.EnvP, BPAD Level 3 (35078)

The signatory declares that this Bushfire Management Plan meets the requirements of State Planning Policy 3.7 and the Planning for Bushfire Guidelines (WAPC, 2024).

DISCLAIMER

**All capitalised terms used in the Limitations Statement above that are not defined are defined in the Agreement between Ecosystem Solutions Pty Ltd and the Client.*

*** The limitations above are subject to any relevant rights or remedies that the Client may be entitled to under legislation, including Schedule 2 of the Competition and Consumer Act 2010 (Cth).*

Document Control

Client - Department of Planning, Lands and Heritage

Site - Bushfire Management Plan

Version	Revision	Purpose	Author	Reviewer	Submitted	
					Form	Date
Report	Rev A	Initial Report	DC (Level 2 BPAD-48409)	GM (Level 3 BPAD-35078)	Electronic (email)	23/01/2025
Report	Rev B	DPLH Feedback	DC (Level 2 BPAD-48409)	GM (Level 3 BPAD-35078)	Electronic (email)	14/11/2025
Report	Rev C	Inc Draft PSP	DC (Level 2 BPAD-48409)	GM (Level 3 BPAD-35078)	Electronic (email)	01/04/2026

Filename: Y:\PROJECTS\241764 Emu Point, Albany BHL BMP\Reports\Emu Point Precinct Structure Plan BMP Rev C.docx

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1 Introduction

This Bushfire Hazard Level (BHL) Assessment Bushfire Management Plan (BMP) has been prepared by Ecosystem Solutions Pty Ltd for the Emu Point Precinct Structure Plan (hereafter referred to as the 'Site') as defined by the Department of Planning, Lands & Heritage. This report has been prepared by Dani Cuthbert (Dip.TM, Dip BM., BPAD Level 2 48409) with review provided by Gary McMahon (B.Sc. M. Env Mgmt. Grad Dip Bushfire Protection, BPAD Level 3 35078).

The proposal is to develop a Structure Plan that will consider the appropriate use and zoning of land in areas proposed for future development. The draft Emu Point Precinct Structure Plan is provided in Figure 2.

The Site is located within the City of Albany, with the structure plan area boundary provided in Figure 1.

The majority of the Site is within a bushfire prone area, as declared by *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (Figure 3) and includes areas of remnant vegetation and areas that have previously been cleared for residential, rural residential, industrial and agricultural purposes.

The purpose of this BMP is to inform how future development could generally be sited to ensure the bushfire protection criteria can be achieved at subsequent stages of the planning process in accordance with *State Planning Policy 3.7* (SPP 3.7, Nov 2024) and the *Planning for Bushfire Guidelines* ('the Guidelines', Nov 2024).

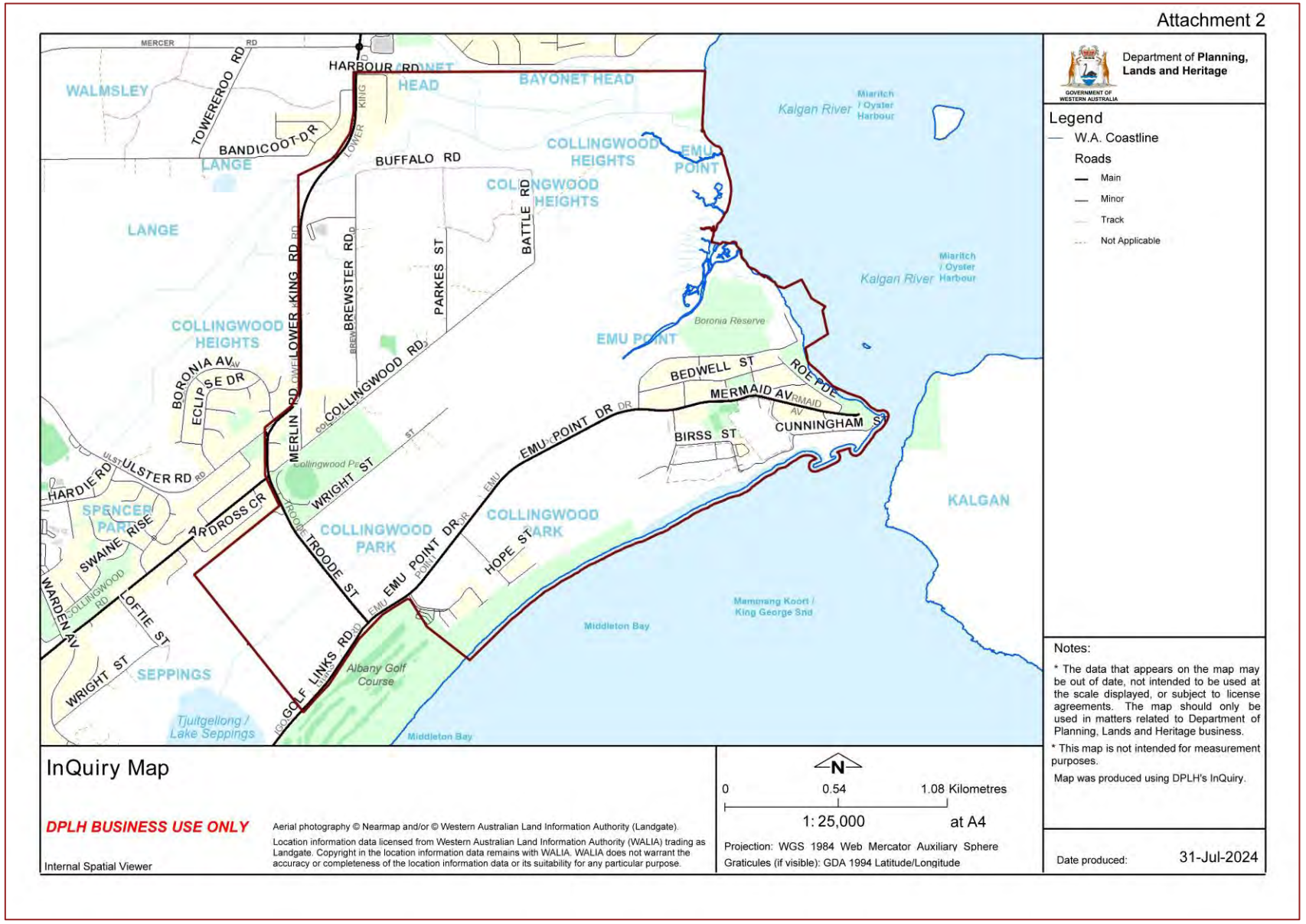


Figure 1 Emu Point Precinct Structure Plan boundary

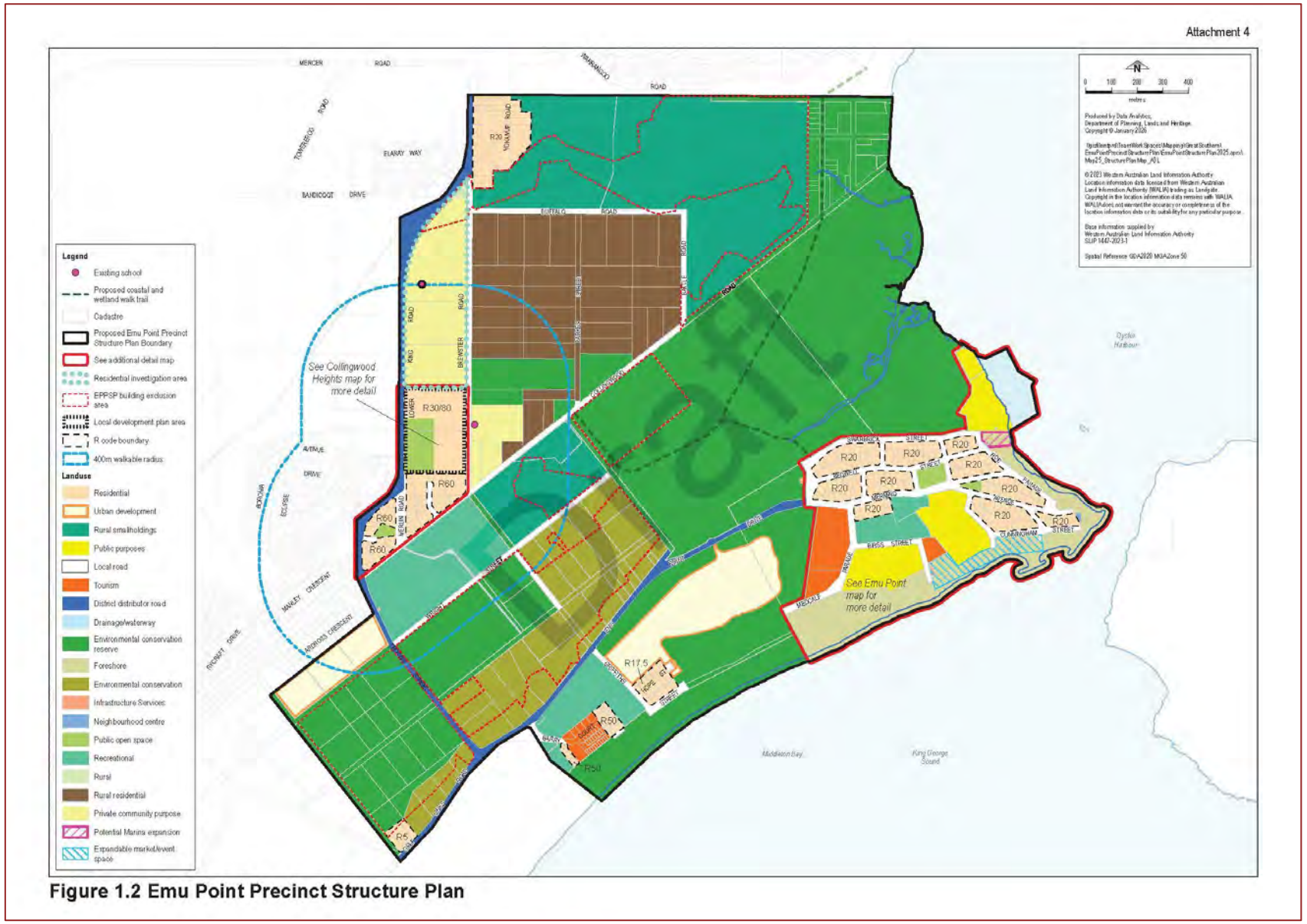


Figure 2 Draft Emu Point Precinct Structure Plan



Figure 3 - Map of Bushfire Prone Area
Emu Point Precinct Structure Plan

Project:	241764
Report:	BMP
Revision:	A
Assessment Date:	15/11/2024
Prepared By:	D. Cuthbert
Accreditation Level:	Level 2
Accreditation Number:	48409
Accreditation Expiry:	Feb 2025

GDA2020 / MGA zone 50

Legend

Precinct Structure Plan Boundary

Bush Fire Prone Areas 2024 (OBRM-021)

Main Roads

mapclassification, roadsurface, fcsubtype

Minor, Sealed

Minor, Unsealed

0 250 500 m

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Figure 3 Extract Map of Bushfire Prone Area for the Precinct Structure Plan Area

2 Environmental Considerations

2.1 Native Vegetation - Modification and Clearing

The Site holds a number of environmental values, including large areas of high value remnant vegetation, various threatened ecological communities, and priority ecological communities, threatened flora, threatened fauna or fauna habitat and water ways. An Environmental Assessment of the Site has also been completed (Ecosystem Solutions, 2025) and should be read on conjunction with this report.

Policy objective 5.4 of State Planning Policy 3.7 (SPP 3.7) aims for developments to priorities the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

The Site has significant environmental, biodiversity and conservation values. Land use intensification should be directed to areas where bushfire risk management can be balanced with these values. This includes prioritising development in locations where a low or moderate bushfire hazard level can be achieved without vegetation modification. Under the bushfire planning framework, vegetation clearing may be considered in areas of low environmental value - such as weed-infested or degraded land - particularly where necessary for bushfire risk mitigation.

The Site and the surrounding 1km buffer have been assessed for environmental values using a simple desktop review utilising the Protected Matters Search Tool, DBCA Datasets and SLIP data (Table 1). The Protected Matters Search Tool identifies matters of national significance protected under *the Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Table 1 Environmental valued areas within and adjacent to the Site

Environmental Value	Yes or No	If Yes - describe
Conservation Covenants	No	No Conservation Covenants were identified on the Protected Matters Search Tool within the Site.
Bush Forever Sites	No	No Bush Forever Sites were identified in the Site (SLIP, DPLH-019).
Conservation Category Wetlands and Buffer	No	No Geomorphic Wetlands were identified in the Site.
Threatened Ecological Communities (TECs)	Yes	Two Threatened Ecological Communities are likely to occur within the area, they are: • Empodisma peatlands of southwestern Australia (EN) • Subtropical and Temperate Coastal Saltmarsh (VU) One Threatened Ecological Community may occur within the area: • Proteaceae Dominated Kwongkan Shrublands of the Southeast Coastal Floristic Province of Western Australia (EN) Data supplied by DBCA show that three Threatened Ecological Communities are known to occur within the Site, they are: • *Astartea scoparia* Swamp Thicket • *Banksia coccinea* Shrubland/*Eucalyptus staeri* /Sheoak Open Woodlands • Subtropical and Temperate Coastal Saltmarsh.
Threatened Flora	Yes	Data supplied by DBCA show a number of threatened flora species that are known to occur within close proximity to the Site. The Protected Matters Search Tool identified 10 threatened flora species that were likely to occur within the area (15/11/2024).
Threatened Fauna	Yes	Data supplied by DBCA show a number of threatened fauna species that are known to occur within the Site. The Protected Matters Search Tool identified a number of threatened fauna that were known to occur within the area. This includes the Western Ringtail Possum (Critically Endangered) and three Black Cockatoo species (Vulnerable/Endangered).

3 Bushfire Hazard Level Assessment Inputs

This BHL Assessment has been prepared in accordance with the *Planning for Bushfire Guidelines* (**'the Guidelines',** Nov 2024 – Appendix A), with the current extent of the vegetation, classified as per Australian Standard 3959-2018 (AS3959-2018).

3.1 Fire Danger Index

The default Fire Danger Index for Western Australia (Table 2.1 – AS 3959-2018) of 80 was utilised in this assessment.

3.2 Vegetation Classification

Vegetation within the Site and the surrounding 150m assessment area has been classified in accordance with Table 2.3 of AS3959-2018 *Construction of buildings in bushfire prone areas.*

Vegetation was initially mapped utilising the Native Vegetation Extent (DPIRD-005) mapping available on SLIP Data.

A site inspection of publicly accessible vegetated areas and areas of private property where permission to enter was granted within the Site to ground truth and confirm the vegetation classifications, particularly in those areas where some discrepancy could occur. This site inspection was completed by accredited Bushfire Practitioners over multiple days. Vegetation that is located on private property, where permission to enter was not granted, has been classified as Class A Forest as a worst-case scenario. The vegetation mapping was refined further with detailed aerial imagery analysis. Figure 3 shows the vegetation classification throughout the Site, and within the 150m assessment area.

A BHL is a 'broad-brush' assessment; therefore, some areas of excludable vegetation may have been classified in the vegetation assessment, but may be considered low threat in a detailed, site-specific assessment.

Plot	1	Vegetation Classification or Exclusion Clause - Current Extent	Class A Forest



Photo ID: 1



Photo ID: 2



Photo ID: 3



Photo ID: 4



Photo ID: 5



Photo ID: 6

Description / Justification for Classification:	Trees 10 to 30 m high with more than 30% canopy cover over an introduced grass, scrub and shrub understory. Areas that were inaccessible at the time of the survey have been classified as Class A Forest, as a worst-case scenario.

Plot	2	Vegetation Classification or Exclusion Clause - Current Extent	Class D Scrub



Photo ID: 7



Photo ID: 8



Photo ID: 9



Photo ID: 10



Photo ID: 11



Photo ID: 12

Description / Justification for Classification:	Scrub vegetation under 6 metres in height. This plot incudes scattered trees greater than 6 metres in height, with a canopy cover of less than 10%.

Plot	3	Vegetation Classification or Exclusion Clause - Current Extent	Class C Shrubland



Photo ID: 13



Photo ID: 14



Photo ID: 15



Photo ID: 16

Description / Justification for Classification:	Low shrubland vegetation under 2 metres in height. This Plot contains scattered trees and scrub over 2 metres in height, with a canopy cover under 10%.

Plot	4	Vegetation Classification or Exclusion Clause - Current Extent	Class G Grassland



Photo ID: 17



Photo ID: 18



Photo ID: 19



Photo ID: 20

Description / Justification for Classification:	Open unmanaged grassland, including scattered trees with a canopy cover less than 10%.

Plot	5	Vegetation Classification or Exclusion Clause - Current Extent	Class Excluded S 2.2.3.2 (e) or (f)



Photo ID: 21



Photo ID: 22



Photo ID: 23



Photo ID: 24



Photo ID: 25

Description / Justification for Classification:	Non-vegetated areas including roads, buildings and water bodies have been excluded under S 2.2.3.2 (e). Low threat vegetation has been excluded under S 2.2.3.2 (f) and includes single lines of trees, reticulated gardens and lawns.



Figure 4 Vegetation Classification

3.3 Slope and Topography

The slope of the land dramatically influences the fire behaviour in a bushfire event. The slope refers to the slope of the land under any classified vegetation in relation to a specific site. Due to the large scale of the Site, and undulating landscape, individual slope categories were not practical to be measured for every aspect. Also, the variation over the landscape makes property specific assessments complex and unreliable, as areas of vegetation may have one slope category in one section, and a different slope category in another.

To assess slope, a Digital Elevation Model (DEM) of the Site was developed (Figure 5) utilising QGIS software (QGIS 3.36.3) and the known contour lines over the entire Site. From this, a slope model was produced in intervals of 0-5, >5-10, >10-15, >15-20 and greater than 20 degrees. This provided the ability to overlay the vegetation classification analysis over the slope analysis and identify those areas over 10 degrees slope which impacts on the BHL classification as described in Table 1 below.



Figure 5 Slope Category Map

4 Bushfire Hazard Level Assessment Outputs

A BHL is a decision-making tool to inform the suitability of future development by providing a 'broad brush' means of determining the potential intensity of a bushfire over a landscape.

A BHL Assessment categorises land within a designated bushfire prone area as having a low, moderate or extreme bushfire hazard level. These categories are based on the vegetation type, as determined by AS3959-2018 and topography of the area, as per Table 1 below.

The Guidelines (Nov 2024) defines the assessment area for the BHL as the subject site and all land within 150m of the external boundary of the Site.

All areas that have been classified as Class A Forest, Class D Scrub, or any vegetation classification with a slope greater than 10 degrees, have been allocated an extreme BHL, with any areas of grassland and shrubland being allocated a moderate BHL. An area within 100m of an extreme or moderate BHL are allocated a moderate BHL. Areas that are excluded from classification, which are not within 100m of vegetation that achieved an extreme or moderate BHL have been allocated a low BHL.

The BHL Assessment for the current site conditions has been prepared based on the vegetation mapping (Figure 4) and slope category (Figure 5) above to allocate the appropriate hazard level (Table 1, Figure 6).

Table 1 BHL and classified vegetation (as per AS3959 and the Guidelines)

Hazard Level	Characteristics
Extreme	• Class A: Forest • Class B: Woodland (05) • Class D: Scrub • Any classified vegetation with a greater than 10-degree slope
Moderate	• Class B: Low woodland (07) • Class C: Shrubland • Class E: Mallee / Mulga • Class G: Grassland, including sown pasture and crops. • Vegetation that has a low hazard level but is within 100 metres of vegetation classified as a moderate or extreme hazard, is to adopt a moderate hazard level.
Low	• Low threat vegetation may include areas of maintained lawns, golf courses, public recreation reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks. • Managed grassland in a minimal fuel condition (insufficient fuel is available to significantly increase the severity of the bushfire attack). For example, short-cropped grasses to a nominal height of 100 millimetres. • Non-vegetated areas including water ways, roads, footpaths, buildings and rock outcrops.

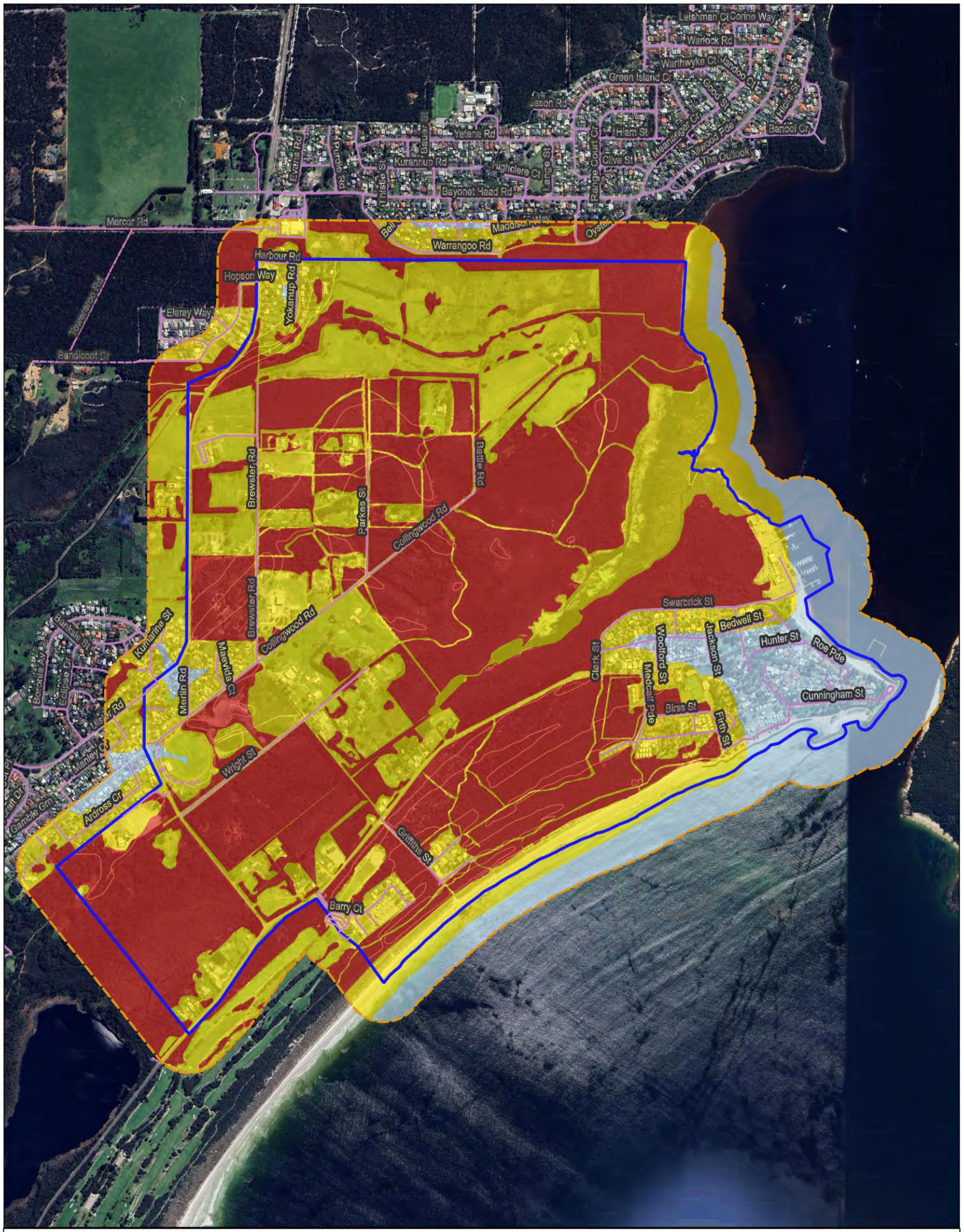


Figure 6 - Bushfire Hazard Level Assessment
Emu Point Precinct Structure Plan

Project:	241764
Report:	BHL
Revision:	A
Assessment Date:	21/01/2025
Prepared By:	D. Cuthbert
Accreditation Level:	Level 2
Accreditation Number:	48409
Accreditation Expiry:	Feb 2025

GDA2020 / MGA zone 50

Legend

- 150m Assessment Area
- Precinct Structure Plan Boundary
- Main Roads
  - mapclassification, roadsurface, fcsubtype
  - Minor, Sealed
  - Minor, Unsealed
- Contour (AHD m)
- Bushfire Hazard Level
  - Extreme
  - Moderate
  - Low

0 250 500

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Figure 6 Bushfire Hazard Level Assessment Map



Figure 7 Bushfire Hazard Level Assessment Map with Draft EPPSP overlayed

5 Assessment against the Bushfire Protection Criteria 5 : Structure plans and subdivision applications

5.1 Compliance table

Element 1 - Location	
Outcomes: Avoid broader landscapes that present an unacceptable bushfire risk to people, property and infrastructure.	
Acceptable Solution	Assessment Statements
A1.1 Location *A1.1a Broader Landscape Type A* *The subject site is located in an area that is a Broader Landscape Type A. The location satisfies the policy outcome for Element 1 : Location and no additional consideration is required.*	The Broader Landscape Assessment (Figure 8, Table 2) determined that the subject site is located in a Broader Landscape Type A.

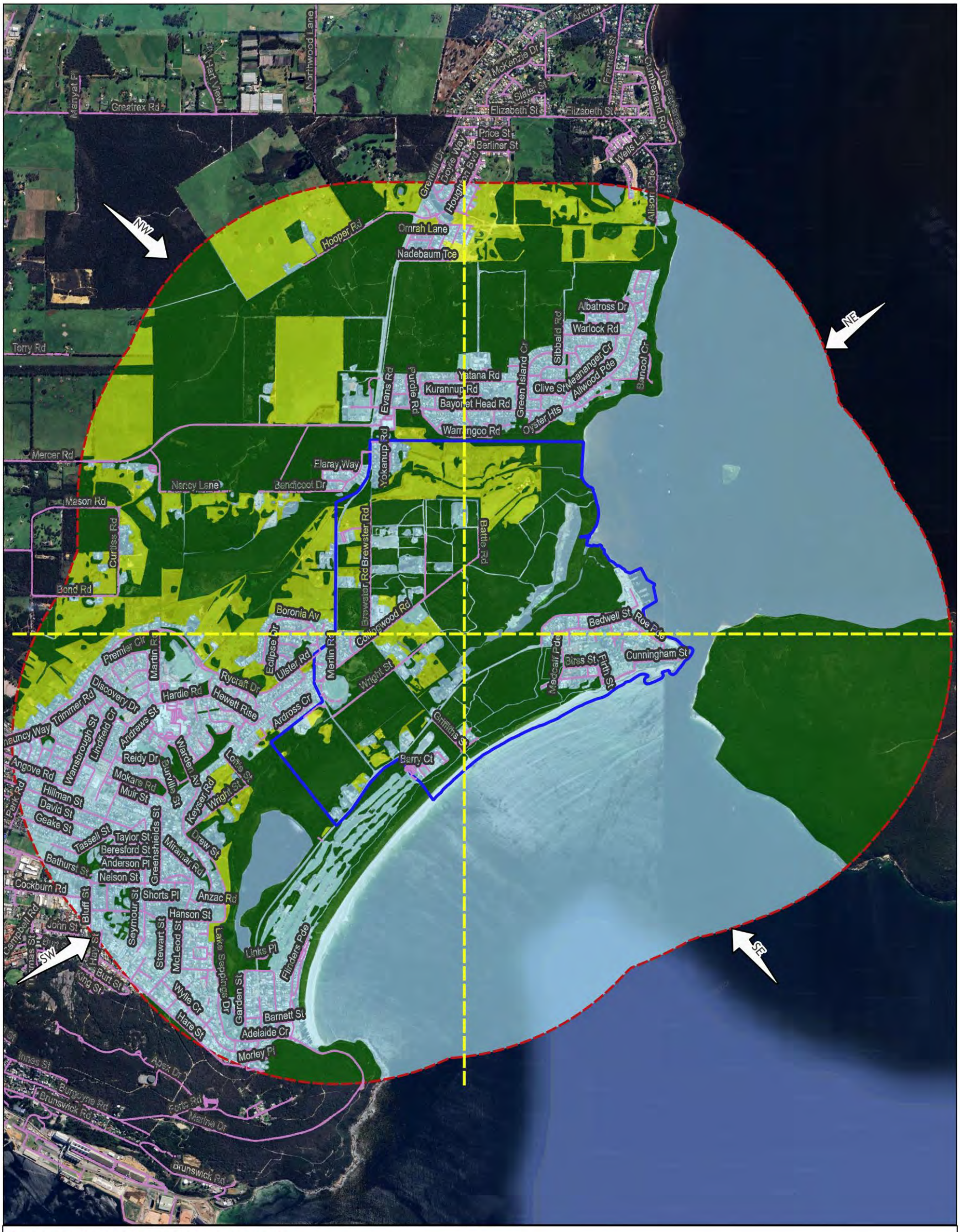


Figure 8 - Broader Landscape Assessment
Emu Point Precinct Structure Plan

Project:	241764
Report:	BMP
Revision:	A
Assessment Date:	21/01/2025
Prepared By:	D. Cuthbert
Accreditation Level:	Level 2
Accreditation Number:	48409
Accreditation Expiry:	Feb 2025

GDA2020 / MGA zone 50

Legend

- 2km Assessment Area
- Precinct Structure Plan

Main Roads

mapclassification, roadsurface, fcsubtype
- Minor, Sealed
- Minor, Unsealed

Broader Landscape Vegetation

- Classified Vegetation
- Grassland
- Excluded S 2.2.3.2 (e) or (f)

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Figure 8 Broader Landscape Assessment Map

Table 2 Point-based system for determining the broader landscape type

Criteria	Comments	Points
Proximity of the planning proposal to a suitable destination is:	An area of the Precinct Structure Plan is not declared bushfire prone, therefore is considered a suitable destination.	1
The road pattern from the planning proposal to a suitable destination is:	Mixed road patterns, including simple/direct and indirect routes.	2
The predominant vegetation pattern is:	Mosaic pattern of remnant vegetation, and cleared areas including residential, rural residential and rural lots.	2
Exposure of the planning proposal to an identified external bushfire hazard (excluding Class G Grassland) is from:	Nil or one aspect only. The predominant bushfire threat within 2km of the precinct is from the northwest.	1
	Total Points	6
	Broader Landscape Type	BLT A

Element 2 - Siting and Design of Development	
Outcomes: Ensure siting and design solutions: • Manage or mitigate the bushfire risk to people, property and infrastructure; and • Avoid, or where unavoidable, minimise the clearing of native vegetation.	
A2.1 Siting and Design *Ensure that each proposed and existing lots(s) contains a sufficient development site(s) that can achieve a radiant heat impact not exceeding 29kW/m^2 (BAL-29).*	The BHL Map (Figure 6) shows areas of the Site that currently achieve a low or moderate BHL, which are most suitable for land intensification. Where an extreme BHL is achieved, the land is not considered suitable for development intensification. Prior to subdivision or development application, a site-specific Bushfire Management Plan or BAL Assessment will need to be undertaken to ensure that the proposed development can accommodate the appropriate setbacks and have the capacity to achieve a BAL-29 or lower rating.
A2.2 Asset Protection Zone (APZ) *Where a development site cannot be wholly located within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29) in its pre-development state, an indicative APZ is to be provided and meet the following requirements:* • *Width - the APZ is to be measured from the development site, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29kW/m2 (BAL-29) in all circumstances.* • *Location - the APZ is to be contained solely within the boundaries of the lot, except in instances where:*	Any future habitable building, every future proposed lot, and any other structure at the discretion of the Local Government, that is located within a Bushfire Prone Area (Figure 3), must have an Asset Protection Zone (APZ) to achieve a BAL-29 or lower rating in perpetuity, managed to the standards in the Planning for Bushfire Guidelines (Appendix A). The width of an APZ varies with the slope and vegetation type and should be the appropriate width to ensure that the potential radiant heat impact of a bushfire does not exceed 29 kW/m^2

- *The vegetation on the adjoining lot(S) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS3959 or the requirements of Appendix B.3, Table 9 - APZ technical requirements, or an alterative standard in a local planning scheme, on an ongoing basis in perpetuity as agreed upon via a substantiated management agreement between the applicable landowners and the local government; or*
- *The adjoining land is, and will remain in perpetuity, non-vegetated such as a sealed or unsealed road, or a water body.*

- *Management - the APZ is managed in accordance with the requirements of Appendix B.3, Table 9 - APZ technical requirements, or an alternative standards in a gazetted local planning scheme.*

A2.3 Clearing of native vegetation *The strategic planning proposal avoids, or where unavoidable, minimises the clearing of native vegetation.*	Any future habitable building and associated APZ should aim to minimise the clearing of vegetation. Any future subdivision or development within the Site should be designed to minimise the removal and modification or remnant vegetation. An Environmental Assessment Study (Ecosystem Solutions, 2025) has been completed of the Emu Point Precinct Structure Plan area and should be read in conjunction with this report. Further site-specific surveys should be conducted for any development that is impacting on remnant vegetation. These surveys need to meet the appropriate guidelines, including survey methodology approved by the Australian Government and guidelines in line with the EP Act. Where the clearing or modification of native vegetation is proposed, it should be demonstrated why the proposal cannot be re-designed or relocated to avoid such clearing and/or modification. Design solutions should also be considered to minimise impact, such as reduced lot yield, clustering of development, and amending roadways and paths to avoid significant trees.

Element 3 - Vehicle Access	
Outcome: Ensure the design and capacity of vehicular access and egress provide: • For efficient and effective evacuation to a suitable destination(s) and/or • As a contingency measure for vulnerable land use, an on-site shelter, where demonstrated appropriate as a last resort.	
A3.1 Public Roads *Public roads, including perimeter roads should meet the technical requirements in Appendix B.3, Table 10 of the Guidelines (Appendix A).*	Any new public roads proposed within the Site and existing public roads must be constructed as outlined in the Institute of Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroad standards, and applicable or relevant Main Roads standards, supplements, policies and any applicable or relevant local government standards or policies.
A3.2 Access routes *Public road access should be provided in two different directions, to two different suitable destinations, with an all-weather surface.*	Any subdivision or development must be provided with public road access to at least two suitable destinations in two different directions. There are existing no-through roads within the Site that are greater than 200m and travel through moderate and extreme BHL, therefore public roads and/or emergency access ways would be required to be constructed to provide multiple access routes for any future development or subdivision. The most eastern area of Emu Point is not Bushfire Prone (Figure 2), therefore can be considered a suitable destination under the definition in SPP 3.7, therefore, whilst Emu Point Road is a no through road it does provide access in two different directions to two suitable destinations. Public roads are preferred, and emergency access ways can only be considered when a public road cannot be provided due to site constraints, or where an alternative design option does not exist.

Element 3 - Vehicle Access	
A3.3a No-through roads *If the public road access to the subject site is via a no-through road which cannot be avoided due to the demonstrated site constraints, the public road access is to be a maximum of 200 metres from the subject site boundary to an intersection where two-way access is provided.* *The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints, and the following requirements are met:* • *The no-through road travels toward a suitable destination; and* • *The balance of the no-through road that is greater than 200 metres from the subject site is wholly within BAL-LOW, or is within a residential built out area or within Area 1 (Figure 29 of the Guidelines)*	There are existing non-compliant no-through roads within the Site that are greater than 200m, travel through moderate and extreme BHL and do not provide access in two different destinations to two suitable locations, therefore public roads and/or emergency access ways would be required to be constructed to provide multiple access routes for any future development or subdivision. The most eastern area of Emu Point is not Bushfire Prone (Figure 3), therefore can be considered a suitable destination, therefore, whilst Emu Point Road is a no through road it does provide access in two different directions to two suitable destinations.
A3.3b No-through road requirements *A no-through road is to meet all the following requirements:* • *Requirements of a public road (Appendix B.3, Table 10, Column 3 of the Guidelines); and* • *Turn-around area/head (Figure 30 of the Guidelines)*	Any no-through roads that are proposed in accordance with the requirements of A3.3a are required to be constructed to the requirements of a public road (Appendix B.3, Table 10, Column 3 of the Guidelines, Appendix A of this BMP), including a turnaround area (Figure 30 of the Guidelines, Appendix A of this BMP).

A3.4 Emergency access way

Where it is demonstrated that A3.2 and A3.3 cannot be achieved due to site constraints or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solutions.

An emergency access way is to meet the following requirements:

- *The requirements of Appendix B.3, Table 10, Column 3;*
- *Provides a through connection to a public road;*
- *Is no more than 500 metres in length;*
- *Connects to a public road network;*
- *The proponent obtaining consent from the local government, that will accept care, control and management for the access way; and*
- *Is signposted and, if gated, gates must open for the whole carriageway width and remain unlocked.*

There are a number of existing non-compliant no-through roads within the Site. The selective installation of emergency access way(s) within the Site would improve the egress option for developments on existing noncompliant no-through roads. Any emergency access way must be constructed in accordance with the Guidelines and provide through connection to a public road.

Notably, Emu Point Drive is an existing non-compliant no-through road, which provides access and egress to a large number of residential properties and developments. As such, a feasibility assessment of a potential emergency access way connecting Firth Street or Medcafe Parade to Griffith Street (Figure 9) has been completed. Both options would provide a secondary egress route for the existing residential lots and developments that are located on Emu Point Drive, or its associated local roads. Both EAW options would be non-compliant, as they will be greater than 500 m in length. The EAW would travel through an extreme bushfire risk area and would result in extensive clearing of native coastal vegetation to establish the required 10m horizontal clearance. The vegetation that would be impacted by an EAW has been determined to be in excellent condition (Environmental Assessment Study, Ecosystem Solutions June 2026); therefore, this impact would not meet SPP3.7 Policy Objective 5.4 - Prioritising the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

Any EAW in this area would require an outcomes based approach, due to the non-compliant length. An outcomes based approach may also vary the width of

Element 3 - Vehicle Access	
	the EAW to protect the environmental values of the area. If an EAW is to eventuate in this area it should not be used as justification for further land use intensification on properties located on Emu Point Drive, or the associated roads. Alternatively, there is an area of Emu Point that is not designated bushfire prone, which may provide a suitable destination to shelter in, if evacuation via Emu Point Drive is not possible. Further detailed investigation into the suitability and safely of this area would be required.

Element 3 - Vehicle Access

A3.5a Perimeter roads

A perimeter road is a public road and is to be provided for greenfield or infill development where 10 or more lots are proposed (including as part of a staged subdivision) with the aim of:

- *separating areas of permanent classified vegetation under AS 3959 which adjoin the subject site, from the proposed lot(s); and*
- *removing the need for battle-axe lots that back onto areas of classified vegetation.*

A perimeter road is to meet the requirements contained in Appendix B.3, Table 10, Column 1. A perimeter road may not be required where:

- *the adjoining classified vegetation is Class G Grassland;*
- *lots are zoned for rural living or equivalent;*
- *it is demonstrated that it cannot be provided due to site constraints; or*
- *all lots have frontage to an existing public road.*

Future development within the site, where 10 or more lots are proposed should be provided with a perimeter road to separation the lots from classified vegetation and remove the need for battle-axe lots. A perimeter road would be required to be constructed in accordance with the Guidelines, including a 12m horizontal clearance and 4.5m vertical clearance.

If it is determined that a perimeter road is not required, consideration should be given to a Fire Service Access Road (Refer 3.5b below).

A3.5b Fire service access route

Where proposed lots adjoin classified vegetation under AS 3959 (excluding Class G Grassland), and a perimeter road is not required in accordance with A3.5a, a fire service access route is to be provided to provide firefighter access, where access is not available to the classified vegetation.

A fire service access route is to meet the following requirements:

- *requirements of Appendix B.3, Table 10, Column 4;*
- *be through-routes with no dead-ends;*
- *must be signposted;*
- *no further than 500 metres from a public road;*
- *the proponent obtaining consent from the local government that it will accept care, control and management; and*
- *if gated, gates must open the whole carriageway width and can be locked by the local government and/or the emergency services, if keys are provided for each gate.*

Where a Perimeter Road is not required, consideration should be given to a Fire Service Access Road (FSAR).

Whilst a FSAR is not designed to provide a secondary egress route for residence or the public, there are a number of existing non-compliant no-through roads within the Site, and the selective installation of FSAR(s) within the Site would improve the access for emergency services for developments on existing noncompliant no-through roads. Any FSAR must be constructed in accordance with the Guidelines and provide through connection to a public road.

Notably, Emu Point Drive is an existing non-compliant no-through road, which provides access and egress to large number of residential properties and developments. As such, a feasibility assessment of a potential FSAR way connecting Firth Street or Medcafe Parade to Griffith Street has been completed. Both options would provide a secondary access route for emergency services to access existing residential lots and developments that are located on Emu Point Drive, and its associated local roads. A FSAR may also provide access for emergency services to classified vegetation for firefighting and fire management.

The FSAR options would be non-compliant, as they will be greater than 500 m in length. The FSAR would travel through an extreme bushfire risk area and would result in extensive clearing of native coastal vegetation to establish the required 10m horizontal clearance. The vegetation that would be impacted by an FSAR has been determined to be in excellent condition (Environmental Assessment Study, Ecosystem Solutions June 2026); therefore, this impact would not meet SPP3.7 Policy Objective 5.4 -

Element 3 - Vehicle Access	
	Prioritising the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity. Any FSAR in this area would require an outcomes based approach, due to the non-compliant length. An outcomes based approach may also vary the width of the FSAR to protect the environmental values of the area. A FSAR is not intended to provide residents with emergency egress and is therefore not a suitable secondary access, or substitute for a public road. Alternatively, there is an area of Emu Point that is not designated bushfire prone, which may provide a suitable destination to shelter in, if evacuation via Emu Point Drive is not possible. Further detailed investigation into the suitability and safely of this area would be required.

Element 3 - Vehicle Access

A3.6 Battle-axe access legs

Where it is demonstrated that a battle-axe access leg cannot be avoided due to site or design constraints, it can be considered as an acceptable solution.

There are no battle-axe technical requirements where the point of the battle-axe access leg joins the effective area of the battle-axe lot, is less than 50 metres from a public road in a reticulated water area.

In circumstances where the above acceptable solution is not met, or the battle-axe lot is in a non-reticulated water area, the battle-axe leg is to meet the following requirements:

- *requirements in Appendix B.3, Table 10, Column 5;*
- *passing bays every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of two metres (i.e. the combined carriageway width of the passing bay and constructed private driveway to be a minimum six metres); and*
- *turn-around area/head (Figure 30).*

Battle-axe lots should be avoided, unless there are demonstrated site constraints.

Battle-axe legs that are greater than 50m in length or are within a non-reticulated water supply area, are required to be constructed in accordance with the Guidelines, including a 6m horizontal clearance, to allow the establishment of a compliant private driveway.

Element 4 - Water

Outcome: Ensure that sufficient water is available and accessible to emergency services, to enable people, property and infrastructure to be defended from bushfire.

A4.1 Water Supply

Evidence that a sufficient and accessible reticulated or non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Appendix B4: Water Supply dedicated for firefighting.

Where the provision of a strategic water tank(s) is required, a suitable area should be identified as a Crown reserve on the structure plan, to the satisfaction of the WAPC on advice from the local government.

The Site includes areas of reticulated and non-reticulated water supply.

Any subdivision and/or development application is required to be provided with a water supply.

This can be achieved by the connection to a reticulated water supply in accordance with Water Corporation's No. 63 Water Reticulation Standards, with fire hydrants installed in accordance with the Water Corporations Requirements.

If a connection to a reticulated water supply cannot be achieved, strategic water tank(s) can be provided, and should be identified as a Crown reserve of a structure plan.



Figure 9 Possible Emergency Access Way or Fire Service Access Route Alignment

6 Responsibilities and Bushfire Measures

Development within the Site may occur over an extended period of time with responsibilities determined with the creation of any Bushfire Management Plan (BMP).

While this BMP does not propose any subdivision, any subdivision application is to be accompanied by the following information in accordance with the Guidelines and in accordance with Section 5.5: Information to accompany a structure plan or subdivision application of the Guidelines, in the form of a BMP or an amendment to an existing plan where one has previously been endorsed.

- An assessment of the broader landscape;
- Identification of any environmental, biodiversity or conservation values on the subject site;
- BAL Contour Map to determine the indicative acceptable BAL rating;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BPC 5: Structure Plan and Subdivision, demonstrating compliance via either the acceptable solutions, or through an outcomes-based approach.

Any development application for a residential application is to be accompanied by the following information in accordance with Section 6.4: Information to accompany the development application (Residential) of the Guidelines in the form of a BMP or an amendment to an existing Plan where one has previously been endorsed, if the pre-development BAL Assessment indicated that the proposed habitable building(s) will have a potential radiant heat impact exceeding 29kW/m^2:

- Identification of any environmental, biodiversity or conservation values on the subject site(s);
- BAL Assessment OR BAL Contour Map;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BCP 6: Development - Residential, demonstrating compliance with either the acceptable solutions or through an outcomes-cased approach.

Any development application for a Commercial or Industrial application is to be accompanied by the following information in accordance with Section 7.2: Information to accompany the development (Commercial or Industrial):

- Identification of any environmental, biodiversity or conservation values on the subject site(s);
- BAL Assessment OR BAL Contour Map;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BCP 7: Development - Commercial and Industrial demonstrating compliance with either the acceptable solutions or through an outcomes-cased approach.

Any development application for a Vulnerable Land Use is to be accompanied by the following information in accordance with Section 8.3: Information to accompany the development (Vulnerable Land Use):

- Identification of any environmental, biodiversity or conservation values on the subject site(s);
- BAL Assessment OR BAL Contour Map;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BCP 8: Development - Vulnerable Class 9 buildings or BPC 8: Development - Vulnerable tourism land uses, demonstrating compliance with either the acceptable solutions, or through an outcomes-based approach.
- Preparation of a Bushfire Emergency Plan.

A building permit issued by the Local Government is required for the construction of a structure with an accompanied BAL Assessment or BAL Contour map from a previous approved proposal, for structures in a bushfire prone area. If the BAL Assessment or BAL Contour Map identifies the structure to be within BAL-40 or BAL-FZ, a development application and planning approval is required. It is recommended to apply these requirements on lots 1,100m^2 or greater.

Building construction standards are mandatory for Class 1a, Class 1b, Class 2, Class 3 residential buildings and associated Class 10a buildings in bushfire prone areas to meet the requirements of AS 3959. It is recommended that this building standard applies to all new structures in bushfire prone areas where planning approval is required, which is at the discretion of the Local Government for building classes that are not mandatory.

A BMP Compliance report may be required at the discretion of the Local Government following the completion of works required in an approved BMP, to allow the issue of a building permit or sale of lots.

7 Limitations

This BHL assessment and BMP has been prepared with reliance on the Native Vegetation Extent (DPIRD-005) mapping available on SLIP Data, local knowledge, and field validation where access was available. A number of site visits were conducted to confirm the vegetation classification on areas where uncertainty existed and where access to the Site could occur. Slope classifications were conducted using desktop analysis of contour information and DEM and slope analysis tools of Geographical Information System (QGIS 3.36.3). Given the scope of this project, this was deemed appropriate and prudent due to the 'broad-brush' nature of a BHL Assessment.

8 Conclusion

This report provides a BHL assessment and BMP for the Emu Point Precinct Structure Plan Area. The information contained within this BHL assessment and BMP will assist the Department Planning, Lands and Heritage in formulating a planning mechanism to guide and manage zoning, subdivision, and development of the Site into the future, by providing a 'broad-brush' means of determining the potential intensity of a bushfire.

This BHL spatially illustrated areas that have an extreme, moderate or low BHL. Land that achieves a low or moderate BHL are the most suitable for land use intensification. Land intensification in an area that achieves a low or moderate BHL will also reduce the impact to remnant vegetation within the Site, that provides environmental and biodiversity values.

Any future development within the Site will be subject to assessment against the requirements of *State Planning Policy 3.7* and the relevant *Planning for Bushfire Guidelines,* to ensure that future developments avoid an increase in the threat of bushfire to people, property, or infrastructure.

9 References

Department of Fire and Emergency Services, 2024, *Map of Bush Fire Prone Areas,* Government of Western Australia

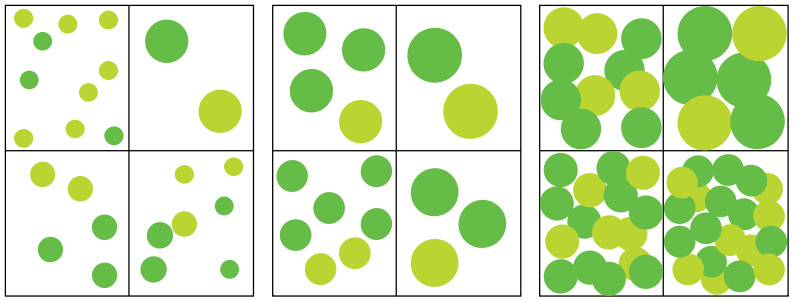
Standards Australia, 2018, *Construction of buildings on bushfire prone areas, AS3959-2018,* SAI Global, Sydney

Western Australian Planning Commission, 2024, *State Planning Policy 3.7 Planning in Bushfire Prone Areas* WAPC, Perth

Western Australian Planning Commission, 2024, *Planning for Bushfire Guidelines, including appendices)*, WAPC, Perth

Appendix A Technical Standards of the Planning for Bushfire Guidelines

Table 9: Asset Protection Zone (APZ) technical requirements

OBJECT	REQUIREMENT
Fences within the APZ	Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (combustible, dead vegetation matter less than 6 mm in thickness)	• Should be managed and removed on a regular basis to be maintained as low threat vegetation • Should be maintained at less than two tonnes per hectare (on average) • Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch more than five millimetres in thickness.
Trees* (more than 6 m in height)	• Trunks at maturity should be a minimum distance of six metres from all elevations of the building • Branches at maturity should not touch or overhang a building or powerline • Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. • Canopy cover within the APZ should be less than 15 per cent of the total APZ area • Tree canopies at maturity should be at least 5 m apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided the total canopy cover within the APZ does not exceed 15 per cent and is not connected to the tree canopy outside the APZ. Tree canopy cover – ranging from 15 to 70 per cent at maturity  15% 30% 70%

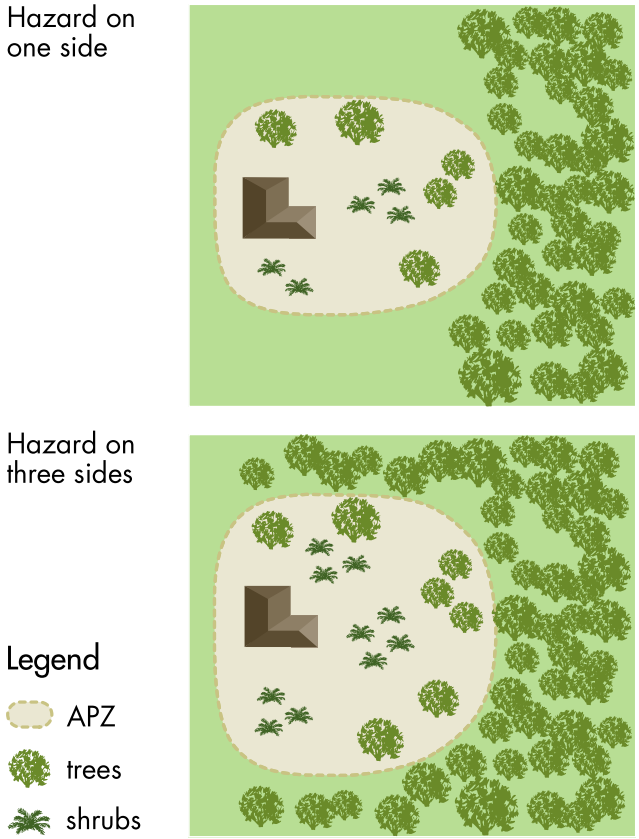
OBJECT	REQUIREMENT
Shrub* and scrub* (0.5 m to 6 m in height). Shrub and scrub more than 6 m in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings • Should not be planted in clumps more than five square metres in area • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground cover*(less than 0.5 m in height. Ground cover more than 0.5 m in height is to be treated as shrub)	• Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above • Can be located within two metres of a structure but three metres from windows or doors if more than 100 mm in height.
Grass	• Grass should be maintained at a height of 100 mm or less, at all times • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	Within three metres of each wall or supporting post of a habitable building; the area is kept free from vegetation but can include ground cover, grass and non- combustible mulches as prescribed above.
Liquid petroleum gas cylinders	• Should be located on the side of a building farthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building • The pressure relief valve should point away from the house • No flammable material within six metres from the front of the valve • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

Notes:
** Plant flammability, landscaping design and maintenance should be considered – refer to following explanatory notes*

Fine fuel load is the combustible, dead or dry vegetation matter on the ground, near ground, or elevated. Fine fuel includes grass, leaves, bark and twigs less than six millimetres in diameter that ignite readily and are burnt rapidly when dry.

Fine fuel should be maintained at less than 2t/ha. 100gm/m² equates to 1t/ha. To estimate a fuel load (in t/ha), collect the dry fine fuel from a representative one square meter and weigh (in grams using kitchen scales) and multiply the weight by 0.01.

Figure 25: Design of an Asset Protection Zone



Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, it should be noted that fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation is unsafe.

B.2.4 PLANT FLAMMABILITY

There are certain plant characteristics that are known to influence flammability, such as moisture or oil content and the presence and type of bark. Plants with lower flammability properties may still burn during a bushfire event but may be more resistant to burning and some may regenerate faster post-bushfire.

There are many terms for plant flammability, which should not be confused, including:

- **Fire resistant** – plant species that survive being burnt and will regrow after a bushfire and, therefore, may be highly flammable and inappropriate for a garden in areas of high bushfire risk.
- **Fire retardant** – plants that can absorb more of the heat of the approaching bushfire without burning, compared to more flammable plants.
- **Fire wise –** plants that have been identified and selected based on their low flammability properties and linked to maintenance advice and planting location within a garden.

Although not a requirement of the Guidelines, local governments may develop their own list of fire wise or fire-retardant plant species that suit the environmental characteristics of an area. When developing a recommended plant species list, local governments should consult with ecologists, land care officers or environmental authorities to ensure the plants do not present a risk to threatened ecological communities, threatened or endangered species or their habitat.

When selecting plants, private landholders and developers should aim for plants within the APZ that have the following characteristics:

- grow in a predicted structure, shape and height
- are open and loose branching with leaves that are thinly spread
- have a coarse texture and low surface-area-to-volume ratio
- will not drop large amounts of leaves or limbs that require regular maintenance
- have wide, flat and thick or succulent leaves
- trees that have bark attached tightly to their trunk or have smooth bark
- have low amounts of oils, waxes and resins (which will often have a strong scent when crushed)
- do not produce or hold large amounts of fine dead material in their crowns
- will not become a weed in the area.

B.3: VEHICULAR ACCESS

State Planning Policy outcome for Element 3: Vehicular access

Ensure the design and capacity of vehicular access and egress provide:

- **for efficient and effective evacuation to a suitable destination(s) and/or**
- **as a contingency measure for vulnerable tourism land uses, an on-site shelter, where demonstrated appropriate, as a last resort option.**

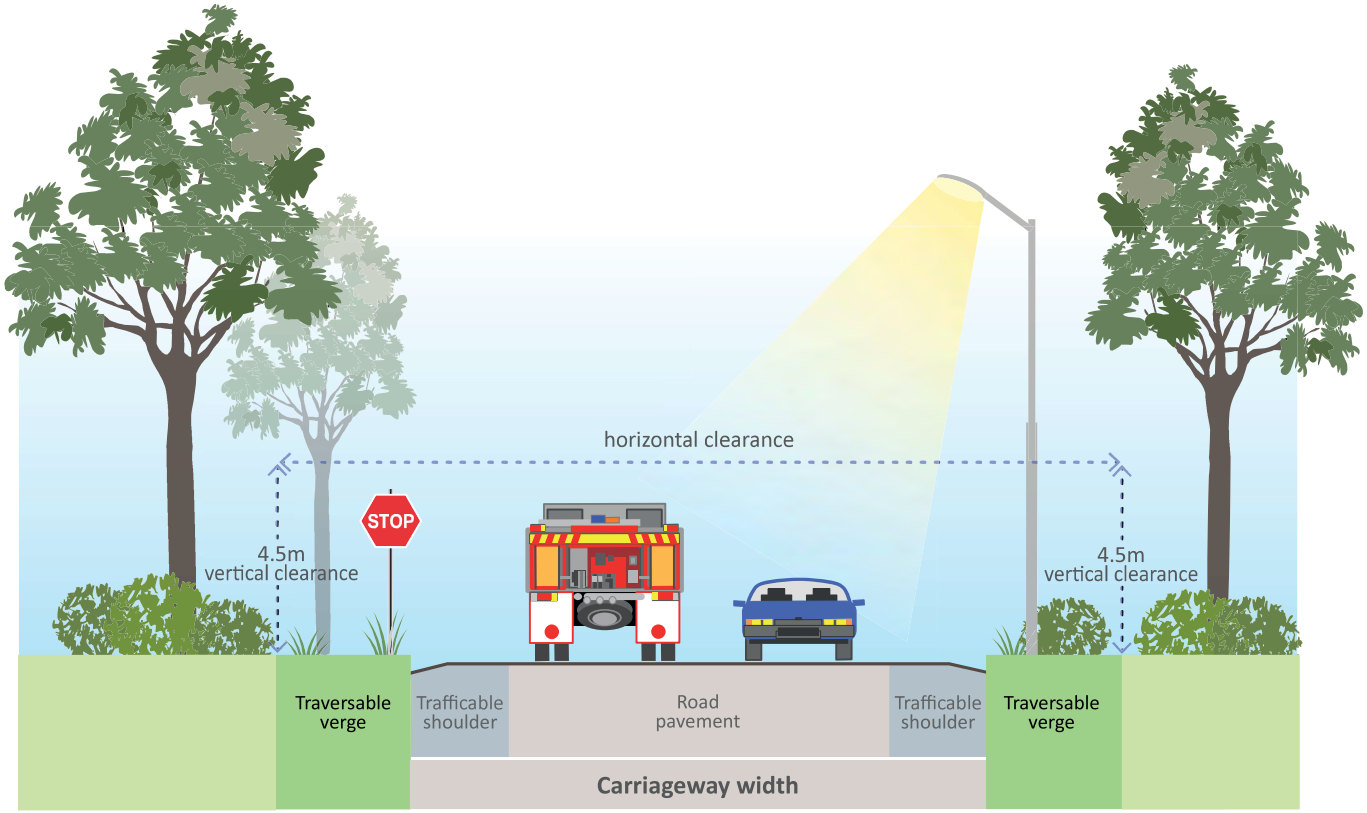
B.3.1 PUBLIC ROADS

The Guidelines do not prescribe values for the carriageway width or the horizontal clearance for public roads (except for perimeter roads). Public roads 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.

However, it is important that public roads (and other forms of access) in bushfire prone areas, allow for emergency services vehicles to stop and operate on the side of the public road, specifically where the public road traverses large areas of classified vegetation.

It is, therefore, recommended that public roads achieve a minimum six metres horizontal clearance. Perimeter roads require additional width.

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.**

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°)					
Maximum grade sealed road[2,4]					1:7 (14.3% or 8°)					
Maximum average grade sealed road					1:10 (10% or 6°)					
Minimum inner radius of road curves (metres)					8.5					

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.

Where local or state government roads are proposed to be widened or modified by the proponent, as part of the structure planning process or at the subdivision stage, approval is required from the relevant government authority.

B.3.2 ACCESS TO A SUITABLE DESTINATION(S)

Public vehicular access in at least two different directions to at least two different suitable destinations should always be the goal within bushfire prone areas. The more options available for evacuation and for emergency services to respond to the bushfire, the better the bushfire resilience of a development and/or a community.

A suitable destination is likely to be an urban area, townsite or similar. This also includes any evacuation centre, dedicated by the local government, for use during a bushfire event.

Where a planning proposal, such as a structure plan or subdivision, proposes a large number of lots, or where the structure plan or subdivision adjoins an urban area or townsite, this could potentially result in land that is more than 100 metres from classified vegetation (BAL-LOW). In this instance, an argument could be made that the suitable destination is within the subject site or within the adjoining urban area or townsite. For example, where coastal communities are limited to one public road servicing the community, there may be an existing managed area large enough to provide an area suitable for people to locate to before, during and after a bushfire event.

There is no prescribed distance to a suitable destination as it is assumed that in the event of a bushfire, a person would travel any necessary distance to evacuate.

A suitable destination should not be confused with an on-site shelter provided for tourism land uses. On-site shelters are a last resort option, purpose built and designed, and are supported in limited circumstances to facilitate tourism within remote and/or heavily vegetated areas.

On-site shelters are not supported for residential land-uses.

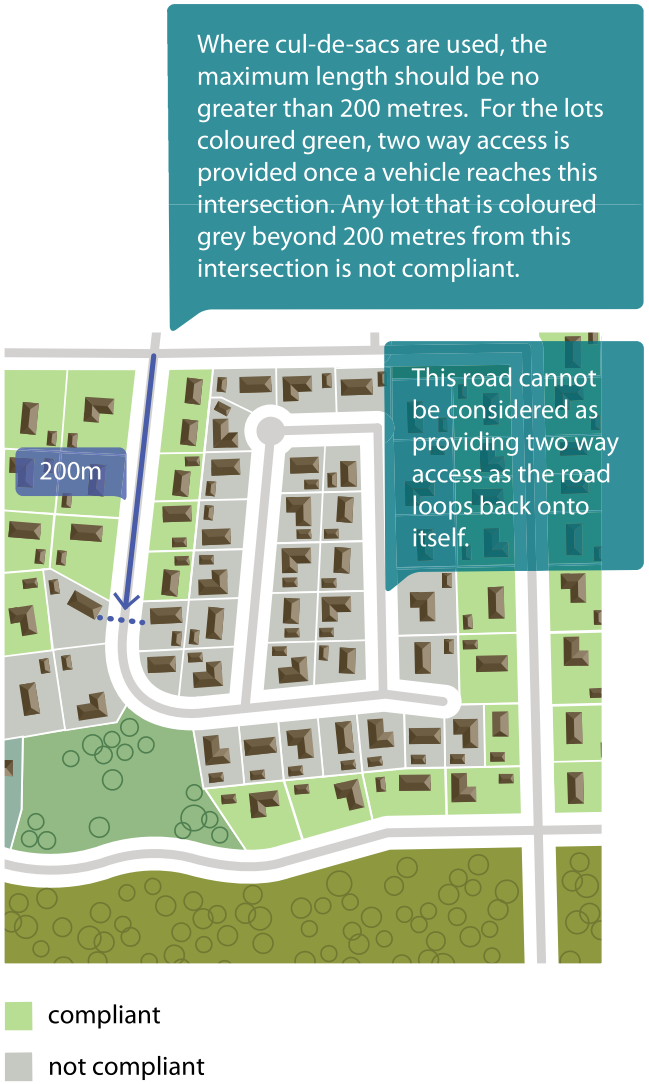
Suitable destination: An area that is not designated as bushfire prone on the *Map of Bush Fire Prone Areas* or is greater than 100 metres from classified vegetation or 50 metres from Class G Grassland, as per AS 3959, and can provide protection during and after a bushfire event.

A suitable destination is located within an urban area, townsite or similar. This also includes any evacuation centre, dedicated by the local government, for use during a bushfire event.

B.3.3 NO-THROUGH ROADS

No-through roads reduce the legibility of a road network and options available for access and egress in the event of a bushfire emergency. The inclusion of new no-through roads within subdivision or structure plan designs, in the first instance, should be avoided in bushfire prone areas.

Figure 27: Example of compliant and non-compliant two-way access



However, where it is demonstrated, to the satisfaction of the decision-maker that a no-through road cannot be avoided due to site or design characteristics, the inclusion of a new no-through road is to be treated as an acceptable solution, if it satisfies the prescribed maximum road length. Where this is not demonstrated, a decision-maker is able to request a redesign to remove the no-through road.

The acceptable solution for no-through roads in areas shown as Area 2 on the *Map of Bush Fire Prone Areas* includes a maximum of 200 metres from the lot(s) boundary to an intersection where two-way access is provided (**Figure 28**). There is no prescribed maximum length for no-through roads in areas shown as Area 1 (Urban) on the *Map of Bush Fire Prone Areas*.

B3.3.1 Outcomes-based approach – no-through roads

It becomes more challenging to comply with the acceptable solutions where the proposal includes existing no-through roads that exceed 200 metres. The 200 metres is a nationally accepted standard and support for development on existing no-through roads longer than the prescribed 200 metres, particularly within vegetation classified as Forest, should be considered carefully. They should be the exception to the rule where it is demonstrated through an outcomes-based approach that the hazards and the road network within the broader landscape are such that, in the event of a bushfire, evacuation to a suitable destination is possible.

An outcomes-based approach should demonstrate the increase in length, and/or the proposed additional lots, on an existing non-compliant no-through road and should consider:

- the broader landscape
- size and scale of the development
- whether the no-through road travels away from the source of the bushfire hazard
- evacuation in the event of a bushfire scenario
- the vegetation within and adjoining the road reserve
- legibility of the broader road network
- whether the no-through road is straight and provides a line of sight
- any improvements to the bushfire resilience of the area, including improvements to the existing road network
- the precedent within the broader area that would be set by supporting development on a non-compliant no-through road.

Figure 28: Demonstration of a lot achieving two-way access within 200 metres



B.3.4 EMERGENCY ACCESS WAY

An emergency access way is not a preferred alternative to public road access. It should be considered acceptable only where it has been demonstrated that public road access cannot be achieved due to site characteristics or environmental values; and that it will provide for the safety and performance needs of emergency services and the community.

The principal function of the emergency access way is to provide a contingency (second) public evacuation route and simultaneously provide access for emergency services in the event of a bushfire. Where an emergency access way traverses classified vegetation, it performs the secondary function of providing access for emergency services to the hazard (vegetation).

Figure 29: Example of a site on a no-through road greater than 200 metres but within 200 metres of BAL-LOW

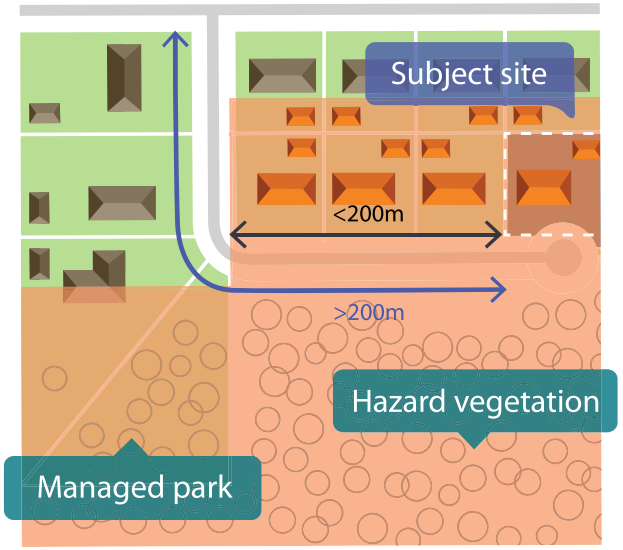
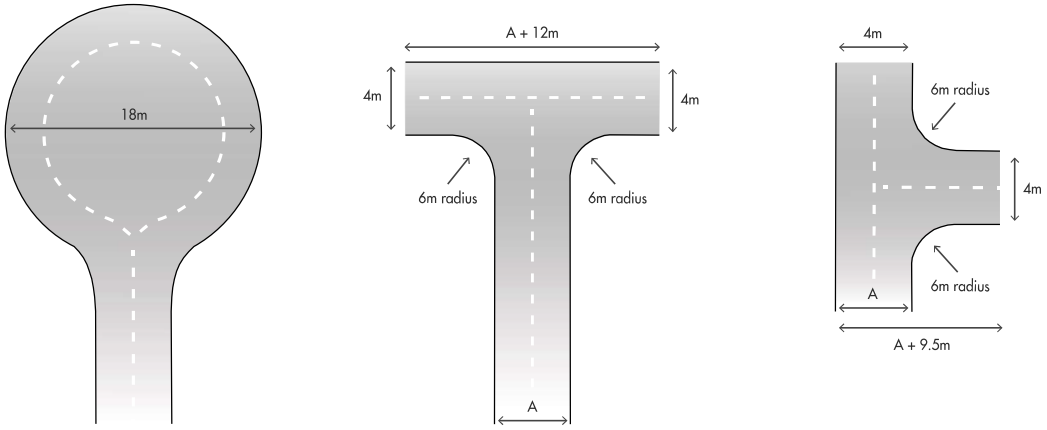


Figure 30: Design requirements for a turn-around area



Where the emergency access way is located within an area shown as Area 2 on the *Map of Bush Fire Prone Areas*, a horizontal clearance of 10 metres should be provided. The 10 metres is to provide access for emergency services to any classified vegetation, including grassland, adjoining the easement (**Figure 31**).

A six metre horizontal clearance should be provided within an area shown as Area 1 (Urban) on the *Map of Bush Fire Prone Areas*.

Emergency access ways should connect to a public road. An emergency access way should not exceed 500 metres in length as there are often issues of legibility and safety. Emergency access ways are generally not part of the formal road network and many are not identified on various online or other mapping platforms, which may limit emergency services and/or the community finding their way through the network in an emergency.

B.3.4.1 Outcomes-based approach emergency access way (width and/or length)

An outcomes-based approach may be used to demonstrate to the satisfaction of the decision-maker that a reduction in the width and/or an extension of the length of the emergency access way provides for the efficient and effective evacuation to a suitable destination(s).

Figure 32 and **Figure 33** are examples where the width of an emergency access way could potentially be reduced. **Figure 32** depicts classified vegetation on one side of the easement and **Figure 33** depicts an easement with lots on either side. An outcomes-based approach could be used to demonstrate that the reduced width satisfies the policy outcome and policy measure 7.5 of SPP 3.7.

Figure 31: Example of a 10 metre wide emergency access way

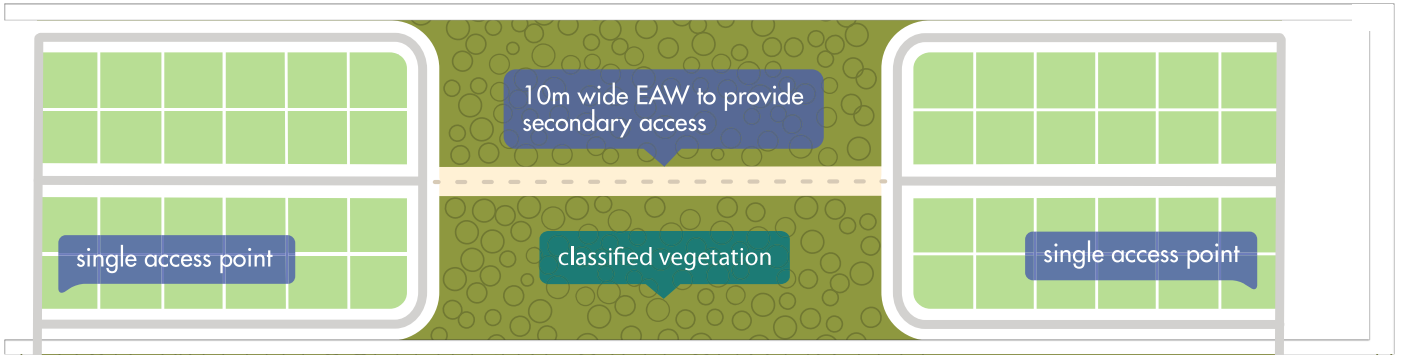


Figure 32: Example of a reduced emergency access way



Figure 33: Example of a 6 metre wide emergency access way



B.3.4.2 Permanent public emergency access way

A public emergency access way can be provided as either a public easement in gross or a right-of-way.

In both approaches, the care, control and management of the emergency access way should be the responsibility of the local government as the grantee of the easement or management body of the right-of-way (ceded to the Crown).

If the emergency access way is provided as an easement, it should be provided as a public easement in gross under sections 195 and 196 of the *Land Administration Act 1997* in favour of the local government and/or public authority, to ensure accessibility by fire emergency services and the public at all times. If the emergency access way traverses an adjoining private lot(s), support will be necessary from the adjoining lot owner(s).

To be provided as a right-of-way, the emergency access way should be vested as such in the Crown under section 152 of the *Planning and Development Act 2005*. Such land should be ceded free of cost and without any payment or compensation by the Crown.

The proponent should obtain written consent from the local government that it will accept care, control and management of the easement or right-of-way.

This should be provided to the decision-maker prior to granting planning approval. Consultation with the Department of Planning, Lands and Heritage (Land Use Management division) should also be undertaken if the land is to be ceded to the Crown.

If gates are used to control traffic flow during non-emergency periods, these will be managed by the local government and should not be locked. They should be double gates wide enough to access the whole carriageway width and accommodate type 3.4 fire appliances with the design and construction to be approved by the relevant local government.

B.3.4.3 Right-of-carriageway emergency access way

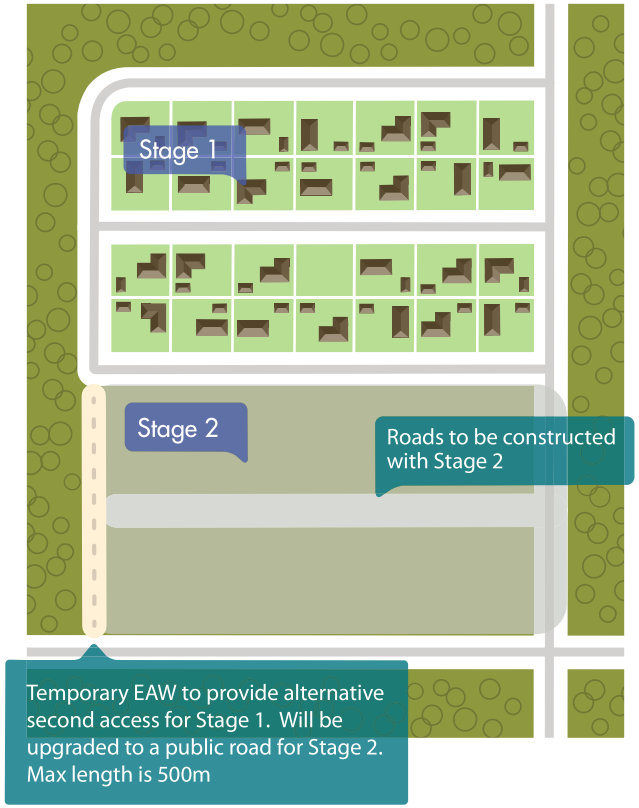
There may be instances where a proposed development is limited to secondary access through the adjoining lot(s). A right-of-carriageway easement can be provided under section 195 of the *Land Administration Act 1997*, which restricts the use of the emergency access way to the lot owner(s) and emergency services and is not available to the public.

Written support is required from the adjoining lot owner(s). Approval for the use of these types of right-of-carriageway is on a case-by-case basis and at the discretion of the decision-maker. The easement is to be granted to the local government and its management should be agreed to by all parties and included within the deed. If gated, the easement area can be locked to restrict day-to-day vehicular access.

B.3.4.4 Temporary emergency access way

A temporary emergency access way may be proposed to facilitate the staging arrangements of a subdivision. The provision of two public roads may not be possible or feasible in the first stage of the subdivision and an emergency access way can be provided as an interim access route, until the second public road is constructed in the subsequent stage of the subdivision (**Figure 34**).

Figure 34: Example of where an emergency access way may be provided



B.3.4.5 Restricted public emergency access way

Emergency access ways should not be gated, or where they are gated should not be locked. However, there may be instances where the local government or Main Roads Western Australia will request that the gate be locked and public vehicular access restricted, except during an emergency. This is usually due to concern regarding the additional vehicular movements onto an existing local or state road. If the emergency access way is locked to restrict access, a common key system should be used. Keys should be available to emergency services and designated fire officers within the local government area and/or surrounding district.

In this scenario, the emergency access way can be provided as an easement under section 195 of the *Land Administration Act 1997*, as public access in the event of a bushfire emergency, or vested in the Crown as a reserve under section 152 of the *Planning and Development Act 2005*. Where vested, such land is to be ceded free of cost without any payment or compensation by the Crown.

The proponent should obtain written consent from the local government accepting care, control and management of the proposed easement or reserve and agree to the terms of the Management Order Conditions (if applicable); this should be provided to the decision-maker prior to granting development approval.

The reserve should be for a public purpose specified in the condition related to the subdivision, for example, for emergency access only or for emergency access and recreation. A reserve for emergency access and recreation optimises the land-use by providing vehicular access in the event of a bushfire emergency and daily access by the public (on foot) as a recreation link. Appropriate signage can ensure the public is aware of the purpose of the reserve.

B.3.5 PERIMETER ROADS

Hazard separation should be provided in the form of a perimeter road where a strategic planning proposal or subdivision application includes the creation of 10 or more lots adjacent to each other, which adjoin classified vegetation under AS 3959 with the exception of Class G Grassland, as part of a greenfield development or large urban infill site.

The creation of 10 or more lots includes cumulative subdivision applications where the subdivision application may be part of a staged subdivision.

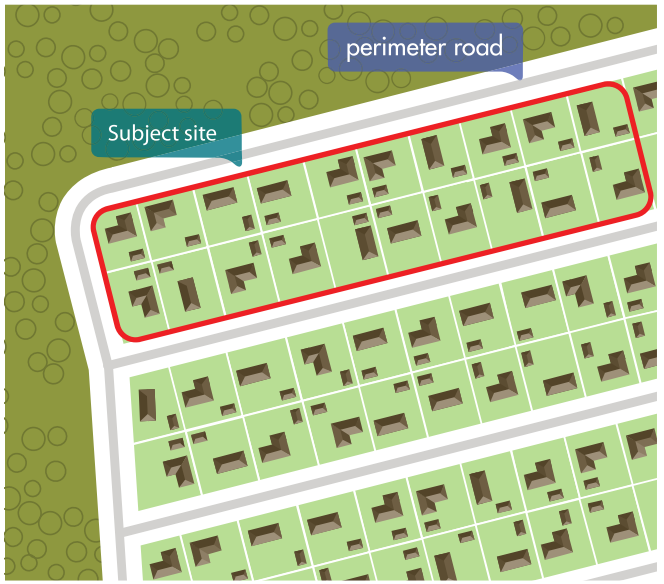
As the road is likely to function as a key neighbourhood distributor or similar, it is important to provide additional width to allow emergency services vehicles to stop and operate on the side of the perimeter road, whilst simultaneously providing for community evacuation. This is reflected in **Table 10**, Column 1 requirements.

When designing a strategic planning proposal and/or subdivision, there are many benefits in creating a large setback between classified vegetation and proposed lots with a perimeter road and orientating habitable buildings to front rather than back onto areas of vegetation.

They include:

- passive surveillance
- defendable space for firefighting and emergency management purposes
- reducing the radiant heat that may impact a habitable building in a bushfire event
- reducing the need for battle-axe lots
- unconstrained public access/egress for the community in the event of a bushfire.

Figure 35: Example of a perimeter road



In developments where no perimeter road exists, property defence in a bushfire event is difficult and can be impossible. Where proposed lots have frontage to an existing public road and abut the hazard at the rear or side, it may be an undesirable planning outcome to create lots that front the existing public road and back onto a perimeter road. In this instance, consideration should be given to a fire service access route.

B.3.6 FIRE SERVICE ACCESS ROUTE

Where a planning proposal adjoins classified vegetation (excluding Class G Grassland) and where a perimeter road is not appropriate and/or not required, there may be a need to provide access for emergency services vehicles to classified vegetation for firefighting and fire management purposes.

This route is not intended to provide residents and the public with emergency egress and, therefore, is not a suitable second access or substitute for a public road.

Where the fire service access route is within an area shown as Area 2 on the *Map of Bush Fire Prone Areas*, a minimum horizontal clearance of 10 metres should be provided to allow access for emergency services to any classified vegetation adjoining the fire service access route. A minimum six metres horizontal clearance should be provided where the area is shown as Area 1 on the *Map of Bush Fire Prone Areas*.

A fire service access route can be provided as either an easement in gross over private or Crown land or ceded to the Crown as a reserve. In both approaches, the management of the fire service access route is by the local government as the grantee of the easement or management body of the reserve. Determining which approach to take depends on the intended tenure of the fire service access route, which is explained below. The proponent should obtain written consent from the local government that it will accept care, control and management of the easement or reserve and agree to the terms of the Management Order Conditions (if applicable). This should be provided to the decision-maker prior to granting approval. The approach taken is at the discretion of the decision-maker and/or the local government. Consultation with Land Use Management Division of the Department of Planning, Lands and Heritage should also be considered if the land is to be ceded to the Crown or if the local government is uncertain of which approach to take.

Where gates are used, they should be double gates wide enough when open to allow vehicles to access the whole carriageway width and accommodate type 3.4 fire appliances. The design and construction are to be approved by the relevant local government.

Gates on fire service access routes may be locked to restrict access provided a common key system is used. Keys are to be available to emergency services and designated fire officers within the local government area and/or surrounding district. Gates should be installed where fences intersect or cross over with fire service access routes. If an easement in gross is proposed, such arrangements for gates should be included in the deed of easement and be agreed to by the local government.

B.3.6.1 Fire service access route to remain in private ownership of multiple landowners

Where a fire service access route will traverse multiple private lots intended to remain in multiple private ownership, it should be provided as an easement in gross under section 195 of the *Land Administration Act 1997*, to ensure accessibility for fire emergency services and not for use by the public. The easement is to be granted to the local government and/or public authority for firefighting and emergency management purposes.

B.3.6.2 Fire service access route to be created under State ownership

Where a fire service access route is proposed to traverse multiple private lots but the decision-maker and/or local government prefer for it in a single parcel for management purposes, the route can be vested in the Crown under section 152 of the *Planning and Development Act 2005* as a reserve. Such land is to be ceded free of cost without any payment or compensation by the Crown. The reserve should be for a public purpose specified in the condition related to the subdivision, for example, for vehicular access for emergency services and the local government only, or for vehicular access for emergency services and the local government and recreation. A reserve for emergency services access and recreation optimises the land-use by providing vehicular access for emergency services and daily access by the public (on foot) as a recreation link.

Appropriate signage will ensure the public is aware of the purpose of the reserve. The approach taken is at the discretion of the decision-maker and/or local government.

Figure 36: Example of a fire service access route (FSAR)

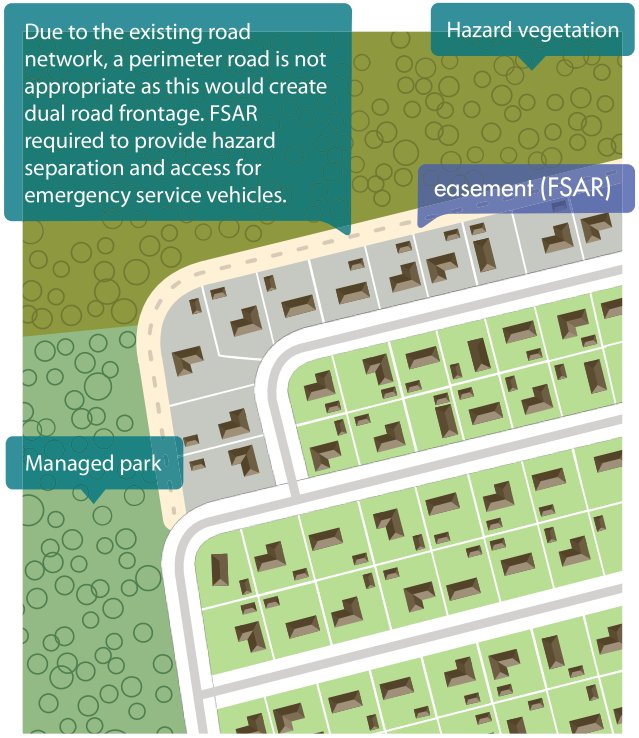
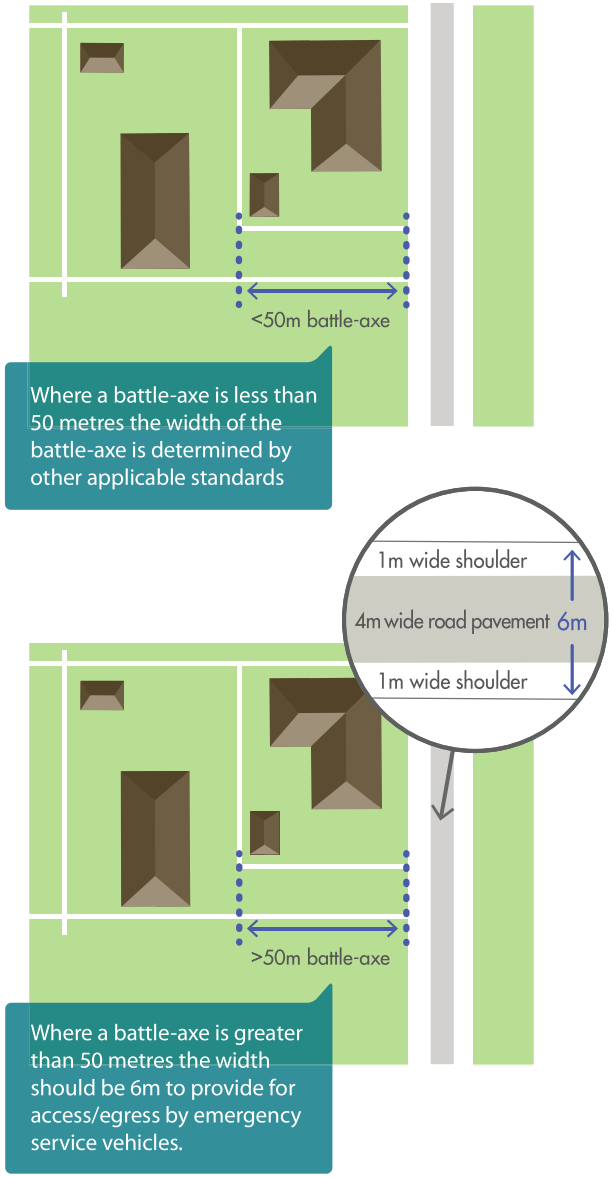


Figure 37: Battle-axe design requirements



3.7 BATTLE-AXE ACCESS LEG

In bushfire prone areas, lots with battle-axe access legs should be avoided because they:

- do not enable the habitable building to be located close to a public road where it is visible to emergency services
- result in longer than necessary access routes for evacuation and the response by emergency services
- may be blocked by falling trees or debris
- may not provide certainty for emergency services regarding the width, length and ability to turn around emergency services vehicles
- In some instances, battle-axe access legs may be appropriate to overcome specific site or design constraints created by the existing road network or lot layout
- The BMP should provide justification for proposed battle- axe access leg(s) and the decision-maker should determine whether the justification is valid
- Where the use of battle-axe access legs is considered appropriate, the measurement should be from the edge of the public road to where the access leg joins the effective area of the battle-axe lot. Effective lot area means that part of the battle-axe lot that is capable of development and excludes the access leg and associated truncations for vehicle maneuverability
- The battle-axe lot should allow safe access and egress for type 3.4 fire appliances to attend the future development site.

B.3.8 PRIVATE DRIVEWAYS

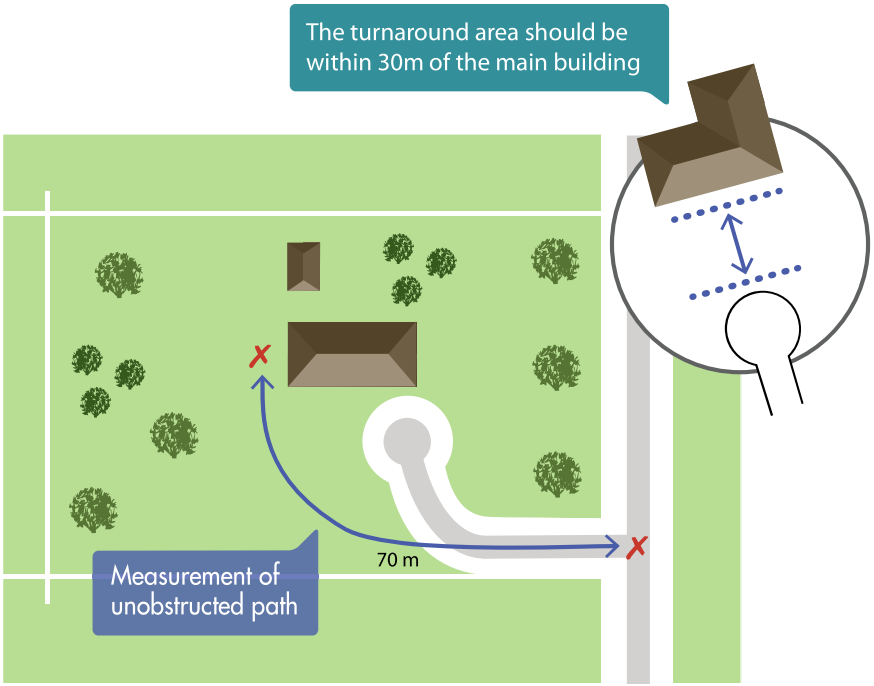
Emergency services vehicles typically operate from the street frontage in areas serviced by reticulated water and where the distance from the public road to the farthest part of the habitable building is no greater than 70 metres.

In the event the habitable building cannot be reached by hose reel from the public road, emergency services vehicles will need to gain access via the driveway to the property. Emergency services vehicles will also need to gain access to the property where access to water is provided by onsite water tanks. In these situations, the driveway and battle-axe access leg (if applicable) will need to be wide enough for access by an emergency services vehicle and a vehicle to evacuate.

It is acceptable for a private driveway to have a carriageway width of four metres with a traversable verge of one metre on either side of the carriageway.

Turn-around areas (**Figure 38**) should be available for conventional two-wheel drive vehicles and type 3.4 fire appliances and should be located within 30 metres of habitable buildings. Circular and loop driveway design may also be considered.

Figure 38: Design requirements for a private driveway where required



B.4: WATER SUPPLY

State Planning Policy outcome for Element 4: Water Supply

Ensure that sufficient water is available and accessible for emergency services use, to enable people, property and infrastructure to be defended from bushfire.

B.4.1 CONSTRUCTION AND DESIGN

An above-ground tank and associated stand should be constructed of non-combustible material.

Below-ground tanks should have a 200 millimetres diameter access hole to allow tankers or emergency services vehicles to refill direct from the tank, with the outlet location clearly marked on the surface.

Above and below ground tanks may need to comply with AS/NZS 3500.1:2018.

An inspection opening may double as the access hole provided that the inspection opening meets the requirements of AS/NZS 3500.1:2018.

Where an outlet for an emergency services vehicle is provided, then an unobstructed, hardened ground surface is to be supplied within four metres of any water supply.

B.4.1.1 Pipes and fittings

All above-ground, exposed water supply pipes and fittings should be metal. Fittings should be located away from the source of bushfire hazard and be in accordance with the applicable section below, unless otherwise specified by the local government.

B.4.1.2 Fittings for above-ground water tanks:

- Commercial land uses: 125 millimetres Storz fitting; or
- Strategic water tanks: 50 millimetres or 100 millimetres (where applicable and adapters are available) male camlock coupling with full flow valve; or
- Standalone water tanks: 50 millimetres male camlock coupling with full flow valve; or
- Combined water tanks: 50 millimetres male camlock coupling with full flow valve or a domestic fitting, being a standard household tap that enables an occupant to access the water supply with domestic hoses.

B.4.1.3 Remote outlets

In certain circumstances, it may be beneficial to have the outlet located away from the water supply. In instances in which a remote outlet is to be used, the applicant should consult the local government and DFES on their proposal.

B.4.2 USE OF WATER SUPPLY

Water supply for firefighting in the event of a bushfire can be provided on a lot for use by emergency services or for use by the landowner, if their **Bushfire Survival Plan** is to stay and defend their property.

The combination of drinking water and water for firefighting purposes is not recommended, as stagnant water may alter the quality of the drinking water and the emergency services, by law, may not be able to take water from the water supply to suppress a bushfire.

Combining drinking water and water for firefighting purposes is contrary to provisions within clause 4.2.3 of AS/NZS 3500.1:2021.

B.4.3 INDEPENDENT WATER AND POWER SUPPLY

Bushfires can directly impact a water service provider's equipment or pipes. As such, a reticulated water supply may not be reliable due to a reduction in water pressure or loss of supply. Where development is in an area shown as Area 2 on the *Map of Bush Fire Prone Areas* and/or where the local government area has known issues with water supply or pressure, it is recommended that the landowner consider providing a water tank in accordance with **Table 11**, Water supply dedicated for bushfire firefighting purposes.

In non-reticulated water supply areas, it is recommended that any pumping equipment be powered by means other than the electricity network. The pumping equipment could be a diesel or petrol-powered pump, or an electric pump if there is an onsite generator or backup power supply independent of the electricity network grid.

It is recommended that combustion pumps should be a minimum five hp or three kW diesel or petrol-powered pump and should be shielded against bushfire attack.

Where an electric pump is used, a backup power supply independent of the electricity network grid should be provided. A 3.7 kW/12k W/h sized battery (14.8 kW/h reserved solely for bushfire will power a 3.7 kW system for four hours) with blackout protection or a generator should be provided.

Table 11: Water supply dedicated for bushfire firefighting purposes

SECTIONS FROM THE PLANNING FOR BUSHFIRE GUIDELINES					
SECTION 5[2] STRUCTURE PLANS AND SUBDIVISION APPLICATIONS		**SECTION 6[2] DEVELOPMENT – RESIDENTIAL**	**SECTION 7[2] DEVELOPMENT – COMMERCIAL & INDUSTRIAL**	**SECTION 8[2] – DEVELOPMENT – VULNERABLE LAND USES**	
One additional lot	10,000 litre water tank per lot	10,000 litre water tank per habitable building	For each habitable building - 10,000 litre per 1,500 m^2 of floor space up to 50,000 litre. Provided in a water tank	Camping ground	At the discretion of the local government
Three to 24 lots	10,000 litre water tank per lot[1] **or** 50,000 litre strategic water tank				
25 lots or more	50,000 litre per 25 lots or part thereof, provided as a strategic water tank(s) **and/or** 10,000 litre water tank per lot			Other vulnerable land uses	For each habitable building - 10,000 litre per 500 m^2 of floor space up to 50,000 litre. Provided in a water tank

Notes:

[1] Evidence that the identified water supply amounts in either column denoted is to be provided at the relevant planning stage.

[2] where more than one habitable building is proposed, strategic water tanks are to be provided in accordance with Section 5 requirements and at the discretion of the Local Government.

B.4.4 STRATEGIC WATER SUPPLIES

Many local governments have a well-developed network of strategic water tanks for firefighting within their local government area. Given this, it is at the discretion of the local government to determine if the water supply within a locality is sufficient to cater for an increasing population when a subdivision is proposed. Local governments are encouraged to work with local emergency services to ensure the water supply needs for firefighting are understood.

Where a structure plan or subdivision proposes to create more than three but fewer than 24 lots, it is at the discretion of the local government whether it requires a strategic water tank or for each lot to be provided with a 10,000-litre tank.

A strategic water tank should preferably be located no more than 10 minutes from the farthest development site (20 minute turnaround time at a maximum). The turnaround time is the time it takes an emergency services vehicle to travel at legal road speeds from a lot to the water supply and back to the lot. Where a strategic water tank has been provided at the subdivision stage, the local government should consider whether the tank has the capacity to serve applications for development approval.

A landowner should enquire with their local government to determine whether a private water tank on their lot will be required.

When there is fragmented ownership of a structure plan area, or when staging of a subdivision is to occur and the local government has determined that a strategic water tank is required, then the first stage should include arrangements for the installation of a strategic water tank and the identification of land to be ceded. This should occur free of cost, without any payment or compensation by the Crown, as a Crown reserve for 'strategic water supply for firefighting purposes' (if applicable). Where local planning scheme provisions provide for developer contributions for public infrastructure and the local government is supportive, then a cash-in-lieu arrangement may be established for the provision of a strategic water tank.

B.4.5 LOCATION OF WATER TANKS AND HYDRANTS

Surrounding vegetation should be considered when locating a water tank. Avoid locations where the tank will be situated underneath existing vegetation or where vegetation will grow against or overhang the tank, (**Figure 39**). Where a tank is on the bushfire hazard side of a building, sufficient shielding for the protection of firefighters should be provided. In addition to the tank location, the fitting should be positioned and/or shielded from the bushfire hazard to allow access by emergency services.

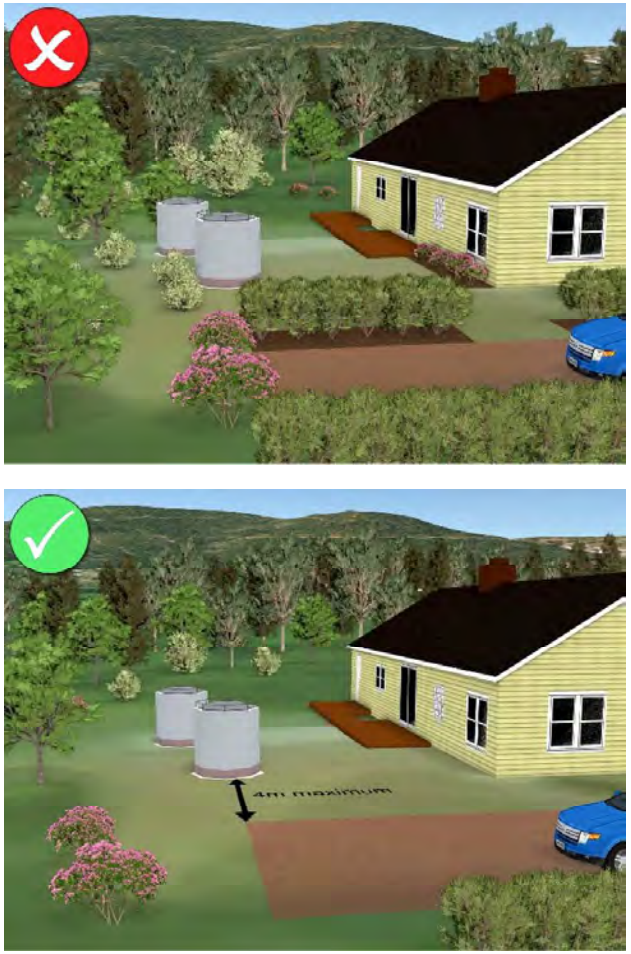
In areas serviced by reticulated water, where the distance from the public road to the farthest part of the habitable building is greater than 70 metres, emergency services vehicles will need to gain access within the property and be provided with a water supply for firefighting purposes. This is because access to reticulated water (fire hydrants) is not possible further than 70 metres, due to the length of the hose reel.

B.4.6 OUTCOMES BASED APPROACH

A dam, river or other source may be considered a firefighting water source for emergency services if it complies with **DFES guidelines for acceptable sources of water**, and it can be demonstrated that the water level will be maintained above the top of the highest fire brigade suction point.

Approval for the use of these types of water supplies is on a case-by-case basis and at the discretion of the decision-maker, in consultation with emergency services and local government.

Figure 39: A good and bad example of landscaping around a water tank



Appendix B BAL Contour Plan for Lots 22 & 23 Lower King Road, Collingwood Park

Bushfire Attack Level Contour Report

Prepared by a BPAD Accredited Practitioner

Fire Protection Association Australia Life Property Environment



AS 3959 BAL Contour Assessment Report

This report has been prepared by an Accredited BPAD Practitioner using the Simplified Procedure (Method 1) as detailed in Section 2 of AS 3959 – 2018. FPA Australia makes no warranties as to the accuracy of the information provided in the report. All enquiries related to the information and conclusions presented in this report must be made to the BPAD Accredited Practitioner.

Property Details and Description of Works

Address Details	**Unit no**	**Street no**	**Lot no**	**Street name / Plan Reference**	
		22 & 23		Lower King Road	
	Suburb			**State**	**Postcode**
	Collingwood Heights			WA	6330
Local government area	City of Albany				
Main BCA class of the building	Select Class	**Use(s) of the building**		N/A	
Description of the building or works	N/A				

Report Details

Report / Job Number	Report Version	Assessment Date	Report Date
241764	A	29 October 2025	14 November 2025

BPAD Accredited Practitioner Details

Name
Dani Cuthbert

Company Details

ecosystem solutions

www.ecosystemsolutions.com.au
Phone: (08) 9759 1960

BPAD Bushfire Planning & Design Accredited Practitioner Level 2 BPAD48409

Reliance on the assessment and determination of the Bushfire Attack Level contained in this report should not extend beyond a period of 12 months from the date of issue of the report. If this report was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated report issued.

Site Assessment

The assessment of this site / development was undertaken on 29 October 2025 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level Contour Map in accordance with AS 3959 - 2018 Simplified Procedure (Method 1).

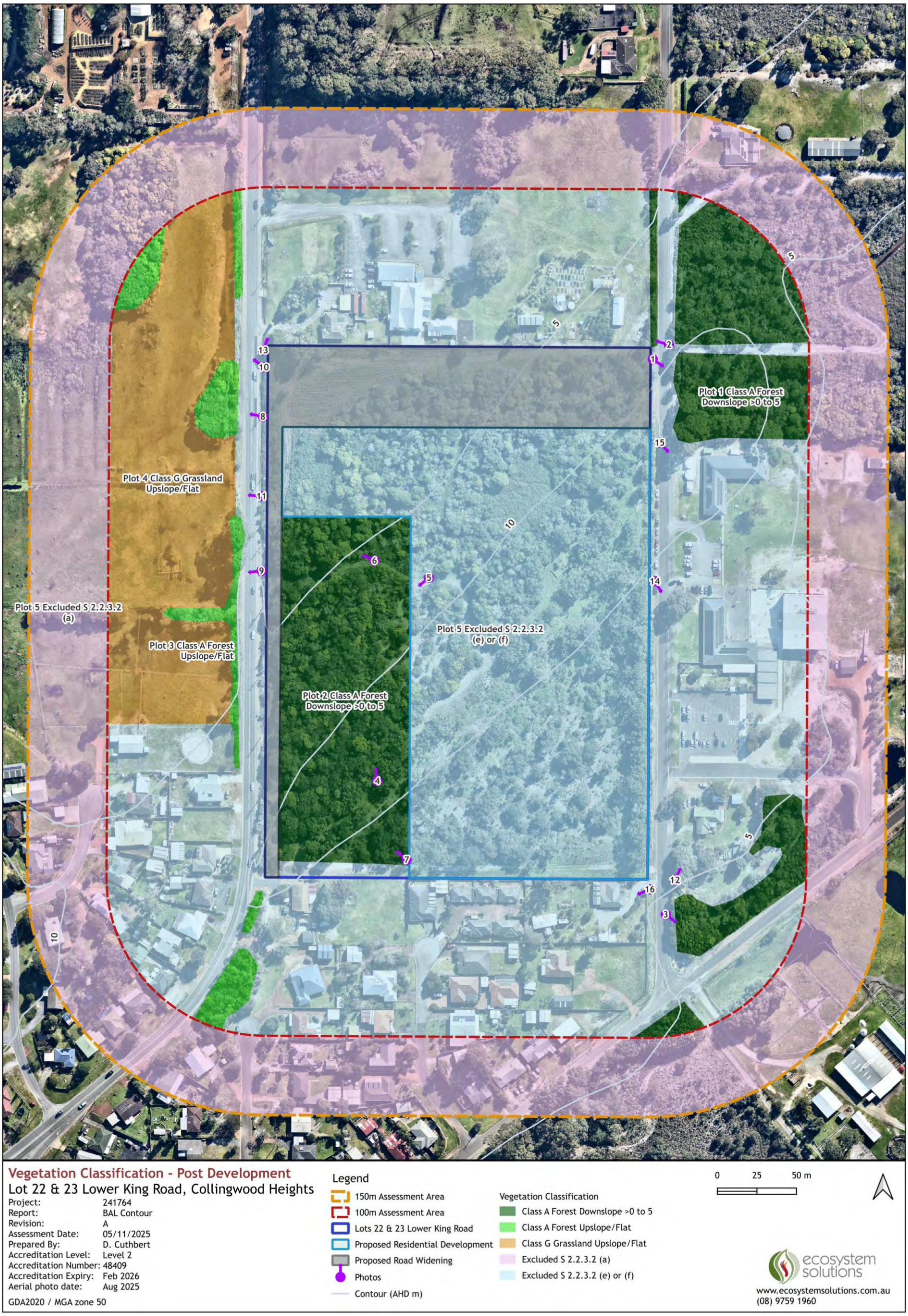


Figure 1: Vegetation Classification for Lot 22 & 23 Lower King Road, Collingwood Heights

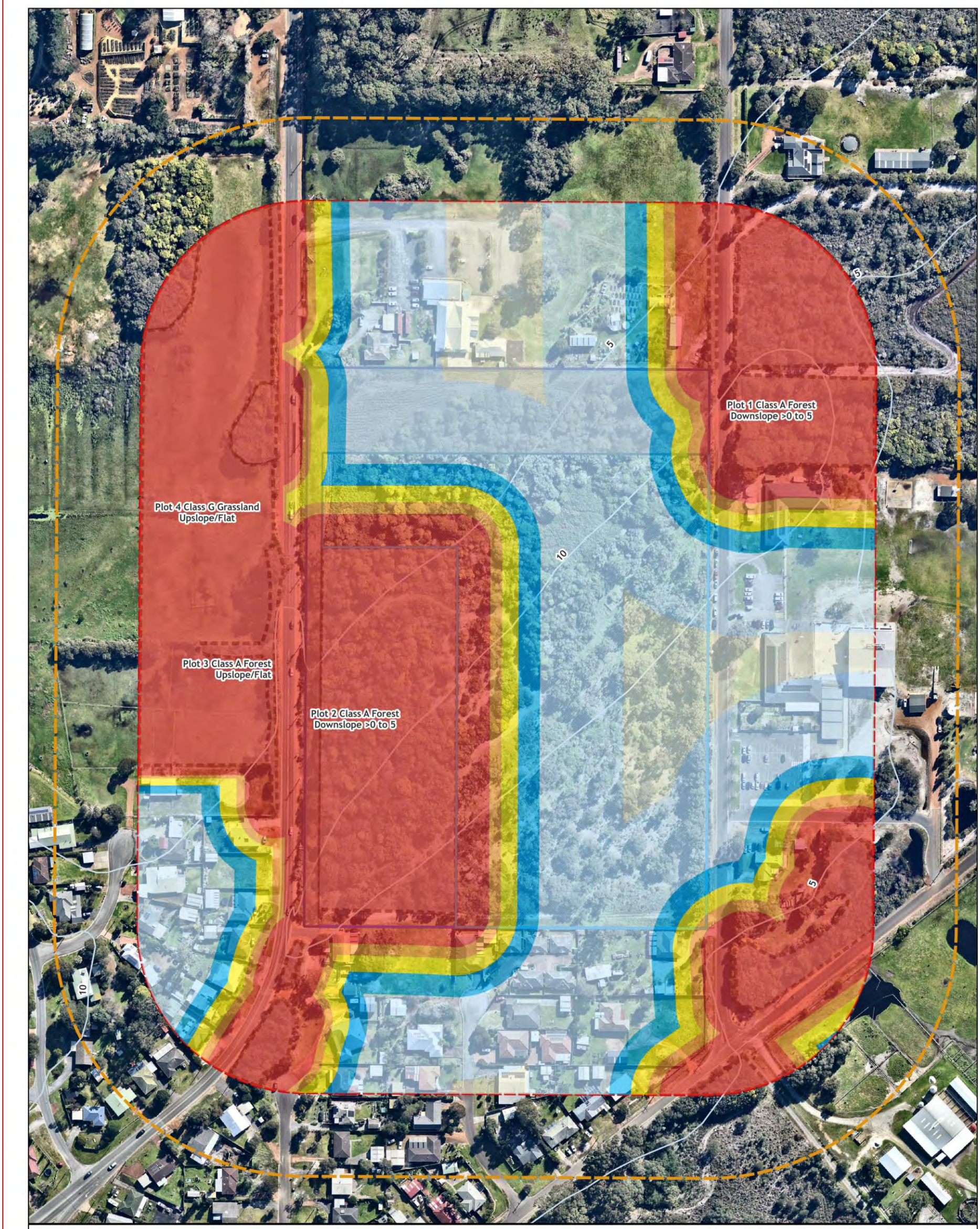


Figure 2: BAL Contour Map of Lot 22 & 23 Lower King Road, Collingwood Heights

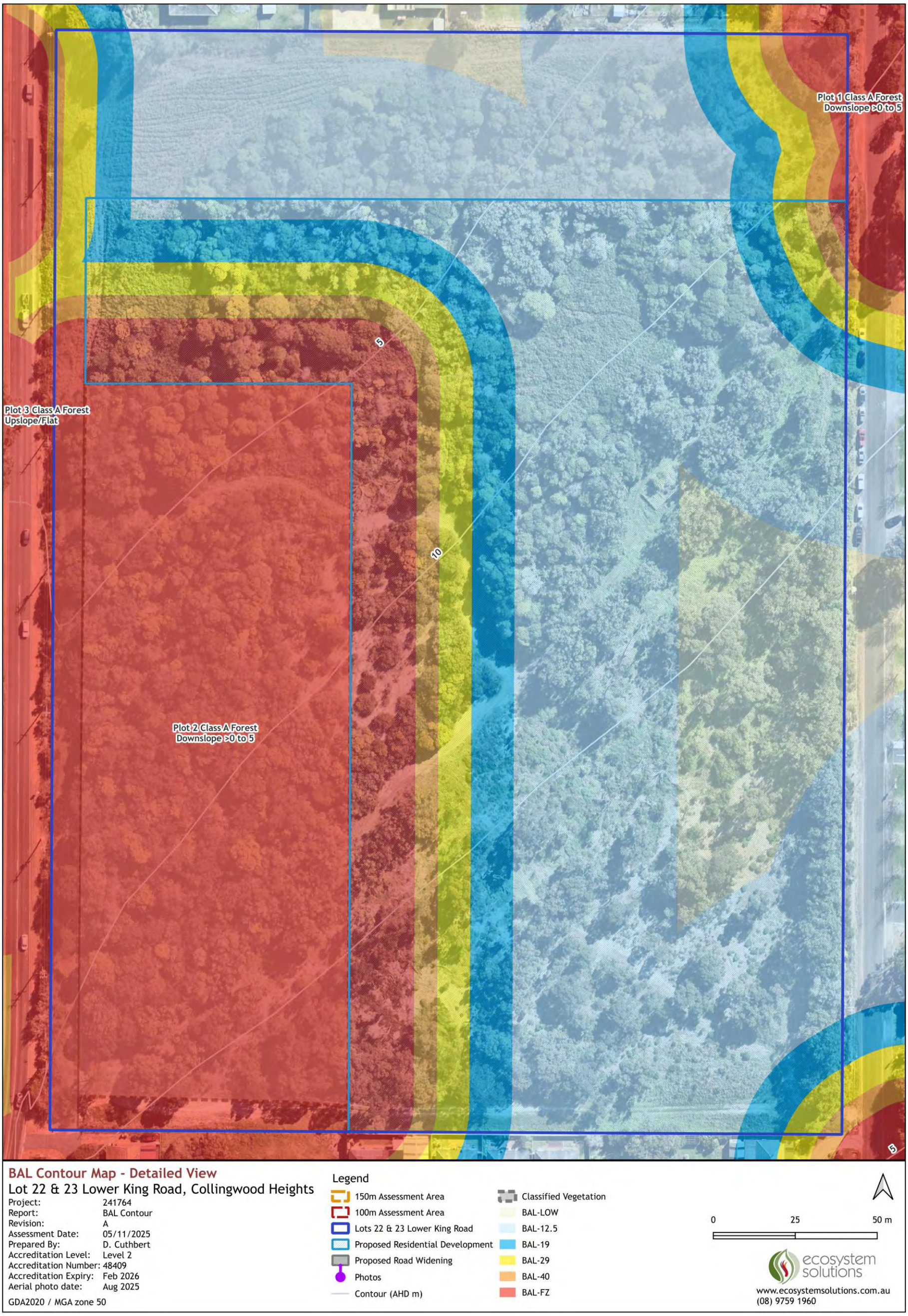


Figure 3: BAL Contour Map – Detailed View of Lot 22 & 23 Lower King Road, Collingwood Heights

Vegetation Classification

All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Photo ID:	1	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation within this plot is located outside of the subject site. Vegetation is Downslope >0 to 5 degrees.			



Photo ID:	2	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation within this plot is located outside of the subject site. Vegetation is Downslope >0 to 5 degrees.			



Photo ID:	3	Plot:	1

Vegetation Classification or Exclusion Clause

Class A Forest - Open forest A-03

Description / Justification for Classification

Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%.
Vegetation within this plot is located outside of the subject site.
Vegetation is Downslope >0 to 5 degrees.



Photo ID:	4	Plot:	2

Vegetation Classification or Exclusion Clause

Class A Forest - Open forest A-03

Description / Justification for Classification

Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%.
Vegetation within this plot is located inside the subkect site, and has been idenified for retention, therefore has been classified as Class A Forest as a worst case scenario.
Vegetation is Downslope >0 to 5 degrees.



Photo ID:	5	Plot:	2
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation within this plot is located inside the subkect site, and has been idenified for retention, therefore has been classified as Class A Forest as a worst case scenario. Vegetation is Downslope >0 to 5 degrees.			



Photo ID:	6	Plot:	2
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation within this plot is located inside the subkect site, and has been idenified for retention, therefore has been classified as Class A Forest as a worst case scenario. Vegetation is Downslope >0 to 5 degrees.			



Photo ID:	7	Plot:	2

Vegetation Classification or Exclusion Clause

Class A Forest - Open forest A-03

Description / Justification for Classification

Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%.
Vegetation within this plot is located inside the subkect site, and has been idenified for retention, therefore has been classified as Class A Forest as a worst case scenario.
Vegetation is Downslope >0 to 5 degrees.



Photo ID:	8	Plot:	3

Vegetation Classification or Exclusion Clause

Class A Forest - Open forest A-03

Description / Justification for Classification

Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%.
Vegetation within this plot is located outside of the subject site.
Vegetation is Upslope/Flat.



Photo ID:	9	Plot:	3

Vegetation Classification or Exclusion Clause

Class A Forest - Open forest A-03

Description / Justification for Classification

Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%.
Vegetation within this plot is located outside of the subject site.
Vegetation is Upslope/Flat.



Photo ID:	10	Plot:	4

Vegetation Classification or Exclusion Clause

Class G Grassland – Sown pasture G-26

Description / Justification for Classification

Open grassland vegetation, including scattered trees, with a canopy cover less than 10%.
Vegetation is Upslope/Flat.



Photo ID:	11	Plot:	4

Vegetation Classification or Exclusion Clause

Class G Grassland – Sown pasture G-26

Description / Justification for Classification

Open grassland vegetation, including scattered trees, with a canopy cover less than 10%. Vegetation is Upslope/Flat.



Photo ID:	12	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).
It is assumed that areas within the proposed residential development area and proposed road widening area will be managed in a low fuel state, or become non-vegetated as a result of the development, therefore these areas have been excluded under S 2.2.3.2 (e) or (f) post development.



Photo ID:	13	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).
It is assumed that areas within the proposed residential development area and proposed road widening area will be managed in a low fuel state, or become non-vegetated as a result of the development, therefore these areas have been excluded under S 2.2.3.2 (e) or (f) post development.



Photo ID:	14	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).
It is assumed that areas within the proposed residential development area and proposed road widening area will be managed in a low fuel state, or become non-vegetated as a result of the development, therefore these areas have been excluded under S 2.2.3.2 (e) or (f) post development.



Photo ID:	15	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).
It is assumed that areas within the proposed residential development area and proposed road widening area will be managed in a low fuel state, or become non-vegetated as a result of the development, therefore these areas have been excluded under S 2.2.3.2 (e) or (f) post development.



Photo ID:	16	Plot:	5

Vegetation Classification or Exclusion Clause

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description / Justification for Classification

Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).
It is assumed that areas within the proposed residential development area and proposed road widening area will be managed in a low fuel state, or become non-vegetated as a result of the development, therefore these areas have been excluded under S 2.2.3.2 (e) or (f) post development.



Relevant Fire Danger Index

The fire danger index for this site has been determined in accordance with Table 2.1 or otherwise determined in accordance with a jurisdictional variation applicable to the site.

Fire Danger Index			
FDI 40 ☐	FDI 50 ☐	FDI 80 ☒	FDI 100 ☐
Table 2.7	*Table 2.6*	*Table 2.5*	*Table 2.4*

Assessment Outputs

The results from the Site assessment are provided in Table 1. The Determined Bushfire Attack Level (highest BAL) for the Site has been determined in accordance with clause 2.5 of AS 3959- 2018 with BAL Contour map (Figure 2 & 3) provided based on the Vegetation Classification Post Development, shown in Figure 1.

Table 1 Site Assessment Result

Method 1 BAL Determination				
Fire Danger Index - 80 (AS 3959-2018 Table 2.1)				
Plot	Vegetation Classification	Maximum effective Slope Under the Classified Vegetation (degrees)	Required Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	Downslope >0 to 5	27m*	BAL-29
2	Class A Forest	Downslope >0 to 5	27m*	BAL-29
3	Class A Forest	Upslope/Flat	21m*	BAL-29
4	Class G Grassland	Upslope/Flat	8m*	BAL-29
5	Excluded S 2.2.3.2 (a), (e) & (f)	N/A	N/A	BAL-LOW
Determined Bushfire Attack Level				BAL-29**

* This separation distance must be managed to meet the standards in the Planning for Bushfire Guidelines as an Asset Protection Zone.

** A lower BAL rating can be achieved based on an increased separation distance from the classified vegetation, depending on the location of the development within the Lot. This determination is found using the worst-case scenario. A detailed assessment will be required prior to any development within the Lot.

Appendix C BAL Contour Plan for a portion of Collingwood Park

Bushfire Attack Level Contour Report

Prepared by a BPAD Accredited Practitioner

Fire Protection Association Australia Life Property Environment



AS 3959 BAL Contour Assessment Report

This report has been prepared by an Accredited BPAD Practitioner using the Simplified Procedure (Method 1) as detailed in Section 2 of AS 3959 – 2018. FPA Australia makes no warranties as to the accuracy of the information provided in the report. All enquiries related to the information and conclusions presented in this report must be made to the BPAD Accredited Practitioner.

Property Details and Description of Works

Address Details	**Unit no**	**Street no**	**Lot no**	**Street name / Plan Reference**	
	Suburb Collingwood Heights			**State** WA	**Postcode** 6330
Local government area	City of Albany				
Main BCA class of the building	Select Class	**Use(s) of the building**	N/A		
Description of the building or works	N/A				

Report Details

Report / Job Number	Report Version	Assessment Date	Report Date
241764	A	29 October 2025	18 March 2026

BPAD Accredited Practitioner Details

Name
Dani Cuthbert

Company Details

ecosystem solutions

www.ecosystemsolutions.com.au
Phone: (08) 9759 1960

BPAD Bushfire Planning & Design Accredited Practitioner Level 2 BPAD48409

Reliance on the assessment and determination of the Bushfire Attack Level contained in this report should not extend beyond a period of 12 months from the date of issue of the report. If this report was issued more than 12 months ago, it is recommended that the validity of the determination be confirmed with the Accredited Practitioner and where required an updated report issued.

Site Assessment

The assessment of this site / development was undertaken on 29 October 2025 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level Contour Map in accordance with AS 3959 - 2018 Simplified Procedure (Method 1).



Figure 1: Vegetation Classification for Collingwood Heights

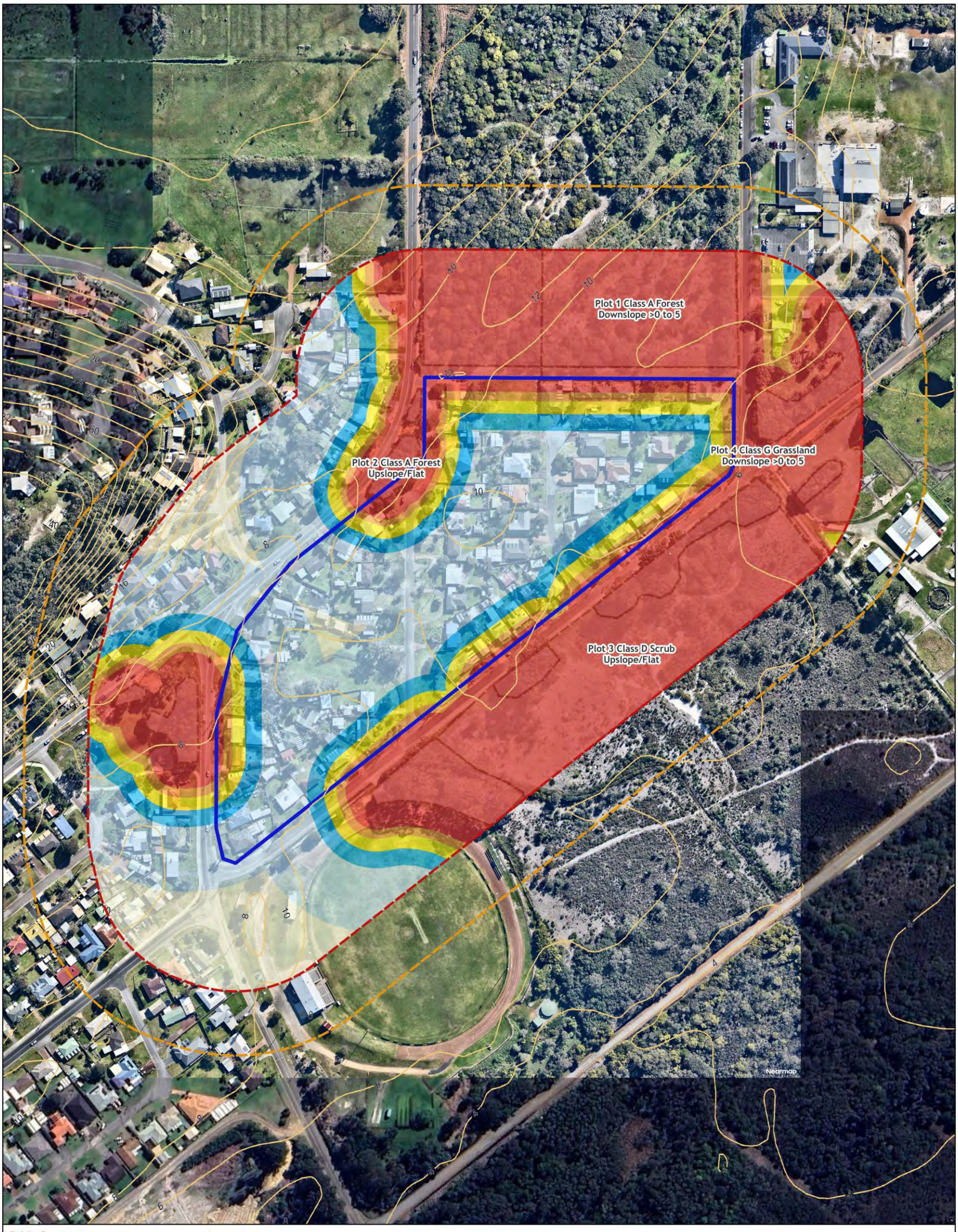


Figure 2: BAL Contour Map of Collingwood Heights

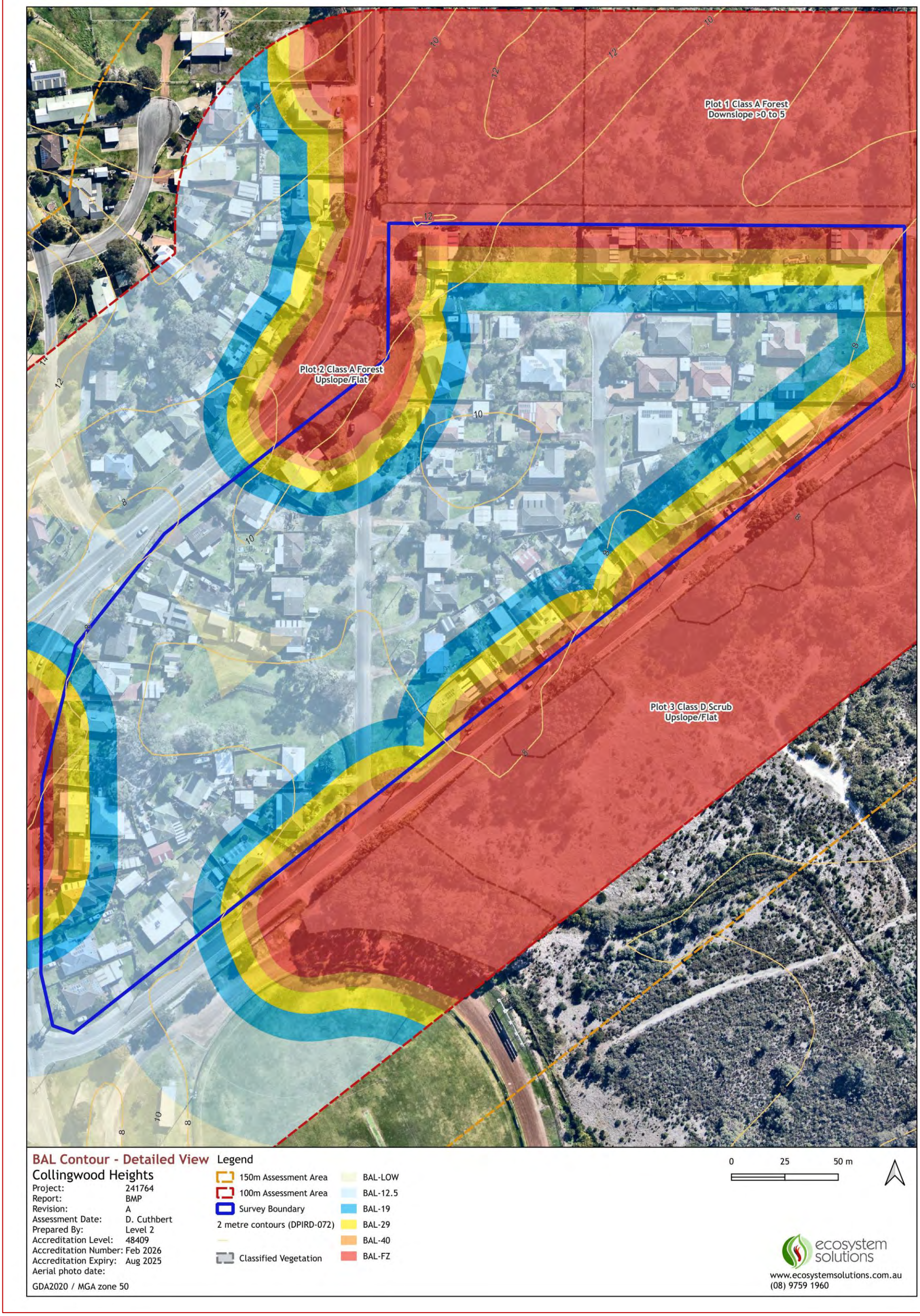


Figure 3: BAL Contour Map – Detailed View of Collingwood Heights

Vegetation Classification

All vegetation within 150m of the site / proposed development was classified in accordance with Clause 2.2.3 of AS 3959-2018. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below.

Photo ID:	1	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	2	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	3	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	4	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	5	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	6	Plot:	1
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	7	Plot:	2
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation is Upslope/Flat.			



Photo ID:	8	Plot:	2
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation within this plot is located outside of the subject site. Vegetation is Upslope/Flat.			



Photo ID:	9	Plot:	2
Vegetation Classification or Exclusion Clause			
Class A Forest - Open forest A-03			
Description / Justification for Classification			
Open forest vegetation of trees that grow 10 – 30 metres in height, with canopy cover over 30%. Vegetation is Upslope/Flat.			



Photo ID:	11	Plot:	3
Vegetation Classification or Exclusion Clause			
Class D Scrub - Open scrub D-14			
Description / Justification for Classification			
Low scrub vegetation, up to 6m in height. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	12	Plot:	3
Vegetation Classification or Exclusion Clause			
Class D Scrub - Open scrub D-14			
Description / Justification for Classification			
Low scrub vegetation, up to 6m in height. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	13	Plot:	3
Vegetation Classification or Exclusion Clause			
Class D Scrub - Open scrub D-14			
Description / Justification for Classification			
Low scrub vegetation, up to 6m in height. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	14	Plot:	3
Vegetation Classification or Exclusion Clause			
Class D Scrub - Open scrub D-14			
Description / Justification for Classification			
Low scrub vegetation, up to 6m in height. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	10	Plot:	4
Vegetation Classification or Exclusion Clause			
Class G Grassland – Sown pasture G-26			
Description / Justification for Classification			
Unmanged grasses, including scattered trees with a canopy cover less than 10%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	15	Plot:	4

Vegetation Classification or Exclusion Clause

Class G Grassland – Sown pasture G-26

Description / Justification for Classification

Unmanged grasses, including scattered trees with a canopy cover less than 10%.
This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.



Photo ID:	16	Plot:	4

Vegetation Classification or Exclusion Clause

Class G Grassland – Sown pasture G-26

Description / Justification for Classification

Unmanged grasses, including scattered trees with a canopy cover less than 10%.
This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.



Photo ID:	17	Plot:	4
Vegetation Classification or Exclusion Clause			
Class G Grassland – Sown pasture G-26			
Description / Justification for Classification			
Unmanged grasses, including scattered trees with a canopy cover less than 10%. This plot is undulating and has been classified as Downslope >0 to 5 degrees as a worst case scenario.			



Photo ID:	18	Plot:	5
Vegetation Classification or Exclusion Clause			
Excludable - 2.2.3.2(f) Low Threat Vegetation			
Description / Justification for Classification			
Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).			



Photo ID:	19	Plot:	5
Vegetation Classification or Exclusion Clause			
Excludable - 2.2.3.2(f) Low Threat Vegetation			
Description / Justification for Classification			
Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).			



Photo ID:	20	Plot:	5
Vegetation Classification or Exclusion Clause			
Excludable - 2.2.3.2(f) Low Threat Vegetation			
Description / Justification for Classification			
Areas over 100m from the Site are excluded under S 2.2.3.2(a). Non vegetated areas including roads and existing buildings are excluded under S 2.2.3.2 (e). Low threat vegetation including managed vegetation and grasses around existing buildings and single lines of trees are excluded under S 2.2.3.2 (f).			



Relevant Fire Danger Index

The fire danger index for this site has been determined in accordance with Table 2.1 or otherwise determined in accordance with a jurisdictional variation applicable to the site.

Fire Danger Index			
FDI 40 ☐	FDI 50 ☐	FDI 80 ☒	FDI 100 ☐
Table 2.7	*Table 2.6*	*Table 2.5*	*Table 2.4*

Assessment Outputs

The results from the Site assessment are provided in Table 1. The Determined Bushfire Attack Level (highest BAL) for the Site has been determined in accordance with clause 2.5 of AS 3959- 2018 with BAL Contour map (Figure 2 & 3) provided based on the Vegetation Classification, shown in Figure 1.

Table 1 Site Assessment Result

Method 1 BAL Determination				
Fire Danger Index - 80 (AS 3959-2018 Table 2.1)				
Plot	Vegetation Classification	Maximum effective Slope Under the Classified Vegetation (degrees)	Required Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	Downslope >0 to 5	27m*	BAL-29
2	Class A Forest	Upslope/Flat	21m*	BAL-29
3	Class D Scrub	Downslope >0 to 5	15m*	BAL-29
4	Class G Grassland	Downslope >0 to 5	9m*	BAL-29
5	Excluded S 2.2.3.2 (a), (e) & (f)	N/A	N/A	BAL-LOW
Determined Bushfire Attack Level				BAL-29**

* This separation distance must be managed to meet the standards in the Planning for Bushfire Guidelines as an Asset Protection Zone.

** A lower BAL rating can be achieved based on an increased separation distance from the classified vegetation, depending on the location of the development within the Lot. This determination is found using the worst-case scenario. A detailed assessment will be required prior to any development within the Site.

Appendix D Assessment of a portion of Collingwood Park Against Bushfire Protection Criteria 5

1 Introduction

This BAL contour and assessment against Bushfire Protection Criteria 5: Structure Plans and subdivision applications (WAPC, 2024) , prepared by Ecosystem Solutions Pty Ltd for a portion of Collingwood Heights, which has been identified for potential intensification (hereafter referred to as the 'Site') as defined by the Department of Planning, Lands & Heritage (Figure 1). This report has been prepared by Dani Cuthbert (Dip.TM, Dip BM., BPAD Level 2 48409) with review provided by Gary McMahon (B.Sc. M. Env Mgmt. Grad Dip Bushfire Protection, BPAD Level 3 35078).

The majority of the Site is within a bushfire prone area, as declared by *State Planning Policy 3.7: Planning in Bushfire Prone Areas* (Figure 2) and includes existing residential lots, public open space, and public roads.

The purpose of this assessment is to inform how future development could generally be sited to ensure the bushfire protection criteria can be achieved at subsequent stages of the planning process in accordance with *State Planning Policy 3.7* (SPP 3.7, Nov 2024) and the *Planning for Bushfire Guidelines* ('the Guidelines', Nov 2024). Further assessments will be required for any proposal that may eventuate within the Site.



Figure 1.3 Emu Point Precinct Structure Plan - Collingwood Heights detail

Figure 1 Emu Point Precinct - Collingwood Heights Structure Plan boundary

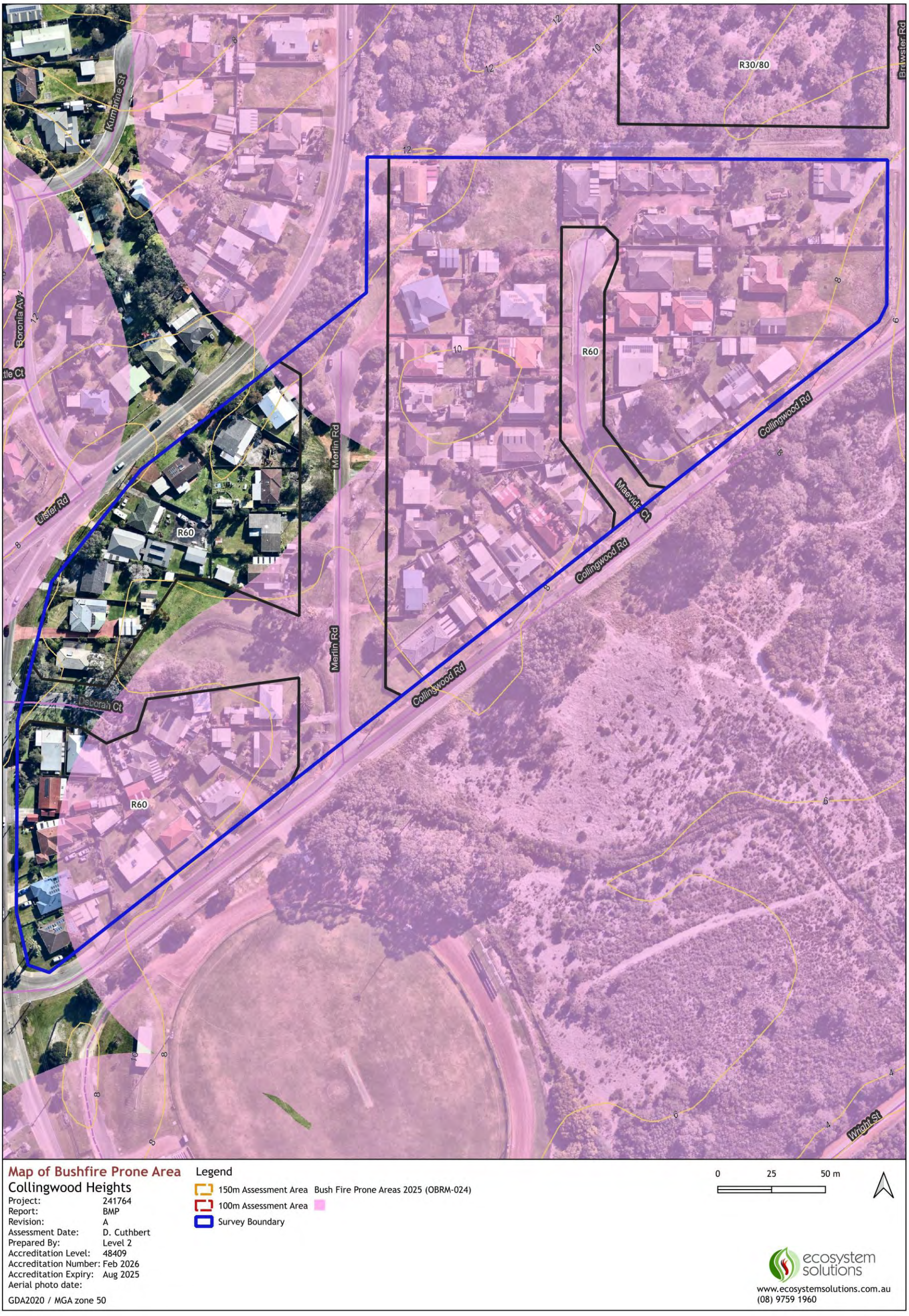


Figure 2 Extract Map of Bushfire Prone Area for the Site

Assessment against the Bushfire Protection Criteria 5 : Structure plans and subdivision applications

1.1 Compliance table

Element 1 - Location	
Outcomes: Avoid broader landscapes that present an unacceptable bushfire risk to people, property, and infrastructure.	
Acceptable Solution	Assessment Statements
A1.1 Location *A1.1a Broader Landscape Type A* *The subject site is located in an area that is a Broader Landscape Type A. The location satisfies the policy outcome for Element 1 : Location and no additional consideration is required.*	The Broader Landscape Assessment has determined that the site is located in a Broader Landscape Type A, which satisfies the outcome for Element 1 and no additional consideration is required.

Element 2 - Siting and Design of Development	
Outcomes: Ensure siting and design solutions: • Manage or mitigate the bushfire risk to people, property, and infrastructure; and • Avoid, or where unavoidable, minimise the clearing of native vegetation.	
A2.1 Siting and Design *Ensure that each proposed and existing lots(s) contains a sufficient development site(s) that can achieve a radiant heat impact not exceeding 29kW/m^2 (BAL-29).*	The BAL Contour for the Site (AS3959 BAL Contour Assessment Report, Figure 2 & 3) shows areas of the Site where a BAL-29 or lower rating can be achieved. Areas available for the construction of a habitable building within the Site are confined to areas that are BAL-29 or a lower rating.
A2.2 Asset Protection Zone (APZ) *Where a development site cannot be wholly located within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29) in its pre-development state, an indicative APZ is to be provided and meet the following requirements:* • *Width - the APZ is to be measured from the development site, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29kW/m2 (BAL-29) in all circumstances.* • *Location - the APZ is to be contained solely within the boundaries of the lot, except in instances where:* - *The vegetation on the adjoining lot(S) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS3959 or the requirements of Appendix B.3, Table 9 - APZ technical requirements, or an alternative standard in a local planning scheme, on an ongoing basis*	Any future habitable building within every future proposed lot, and any other structure at the discretion of the Local Government, which is located within a Bushfire Prone Area, must have an Asset Protection Zone (APZ) to achieve a BAL-29 or lower rating in perpetuity, managed to the standards in the Planning for Bushfire Guidelines (Appendix A). The width of an APZ varies with the slope and vegetation type and should be the appropriate width to ensure that the potential radiant heat impact of a bushfire does not exceed 29 kW/m^2. Asset Protection Zones surrounding each habitable building that eventuates within the proposed lots will be established and maintained in perpetuity to meet the criteria of the Guidelines with the following distances required to achieve BAL-29: - 27m to the Class A Forest Downslope >0 to 5 degrees, or to the lot boundary, whichever is closer;

in perpetuity as agreed upon via a substantiated management agreement between the applicable landowners and the local government; or - *The adjoining land is, and will remain in perpetuity, non-vegetated such as a sealed or unsealed road, or a water body.* • *Management - the APZ is managed in accordance with the requirements of Appendix B.3, Table 9 - APZ technical requirements, or an alternative standards in a gazetted local planning scheme.*	- 21m to the Class A Forest Upslope/Flat, or to the lot boundary, whichever is closer; and - 9m to the Class G Grassland Downslope >0 to 5 degrees, or to the lot boundary, whichever is closer. All grasses within proposed residential lots will be established and maintained by the Developer under 10 cm in height, until lots are sold, when the ongoing maintenance will become the responsibility of the individual landowner. The final BAL rating of any dwelling will depend on the housing design, orientation, and location within the lot. Once the building design has been finalised, a separate BAL Assessment or Bushfire Management Plan is required to be completed and a certificate from a qualified Bushfire Consultant submitted at the building application stage.
A2.3 Clearing of native vegetation *The strategic planning proposal avoids, or where unavoidable, minimises the clearing of native vegetation.*	The Site includes native vegetation within the north of Collingwood Heights,, defined by DPIRD (2026). Any future habitable building and associated APZ should aim to minimise the clearing of vegetation. Any future subdivision or development within the Site should be designed to minimise the removal and modification or remnant vegetation. Where the clearing or modification of native vegetation is proposed, it should be demonstrated why the proposal cannot be re-designed or relocated to avoid such clearing and/or modification. Design solutions should also be considered to minimise impact, such as reduced lot yield, clustering of development, and amending roadways and paths to avoid significant trees.

Element 3 - Vehicle Access	
Outcome: Ensure the design and capacity of vehicular access and egress provide: • For efficient and effective evacuation to a suitable destination(s) and/or • As a contingency measure for vulnerable land use, an on-site shelter, where demonstrated appropriate as a last resort.	
A3.1 Public Roads *Public roads, including perimeter roads should meet the technical requirements in Appendix B.3, Table 10 of the Guidelines (Appendix A).*	Any new public roads proposed within the Site and existing public roads must be constructed as outlined in the Institute of Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroad standards, and applicable or relevant Main Roads standards, supplements, policies and any applicable or relevant local government standards or policies. Existing public roads in proximity to the Site are in good condition.
A3.2 Access routes *Public road access should be provided in two different directions, to two different suitable destinations, with an all-weather surface.*	The Site contains three existing no through roads, which are under 200m in length to where a choice of egress becomes available. Any additional public roads that are proposed within the Site should be designed to ensure all lots are within 200m to where a choice of egress becomes available.

Element 3 - Vehicle Access	
A3.3a No-through roads *If the public road access to the subject site is via a no-through road which cannot be avoided due to the demonstrated site constraints, the public road access is to be a maximum of 200 metres from the subject site boundary to an intersection where two-way access is provided.* *The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints, and the following requirements are met:* • *The no-through road travels toward a suitable destination; and* • *The balance of the no-through road that is greater than 200 metres from the subject site is wholly within BAL-LOW, or is within a residential built out area or within Area 1 (Figure 29 of the Guidelines)*	There are three existing compliant no-through roads within the Site that are less than 200m. If any additional no-through roads are proposed within the Site, they are required to be less than 200m in length to where a choice of egress becomes available and must comply with the requirements of A3.3b below.
A3.3b No-through road requirements *A no-through road is to meet all the following requirements:* • *Requirements of a public road (Appendix B.3, Table 10, Column 3 of the Guidelines); and* • *Turn-around area/head (Figure 30 of the Guidelines)*	The existing no-through roads within the Site are well constructed public roads, each no-through road has a compliant turn around head, suitable for a fire appliance. Any no-through roads that are proposed are required to be constructed to the requirements of a public road, in accordance with the requirements of A3.3a, (Appendix B.3, Table 10, Column 3 of the Guidelines, Appendix A of the BMP), including a turnaround area (Figure 30 of the Guidelines, Appendix A of the BMP).

Element 3 - Vehicle Access	
A3.4 Emergency access way	Not applicable to this Site.
A3.5a Perimeter roads *A perimeter road is a public road and is to be provided for greenfield or infill development where 10 or more lots are proposed (including as part of a staged subdivision) with the aim of:* • *separating areas of permanent classified vegetation under AS 3959 which adjoin the subject site, from the proposed lot(s); and* • *removing the need for battle-axe lots that back onto areas of classified vegetation.* *A perimeter road is to meet the requirements contained in Appendix B.3, Table 10, Column 1. A perimeter road may not be required where:* • *the adjoining classified vegetation is Class G Grassland;* • *lots are zoned for rural living or equivalent;* • *it is demonstrated that it cannot be provided due to site constraints; or* • *all lots have frontage to an existing public road.*	The Site abuts public roads to the east, south and west and grassland to the north; therefore, a perimeter road is not required.
A3.5b Fire service access route	Not applicable to this Site.

Element 3 - Vehicle Access

A3.6 Battle-axe access legs

Where it is demonstrated that a battle-axe access leg cannot be avoided due to site or design constraints, it can be considered as an acceptable solution.

There are no battle-axe technical requirements where the point of the battle-axe access leg joins the effective area of the battle-axe lot, is less than 50 metres from a public road in a reticulated water area.

In circumstances where the above acceptable solution is not met, or the battle-axe lot is in a non-reticulated water area, the battle-axe leg is to meet the following requirements:

- *requirements in Appendix B.3, Table 10, Column 5;*
- *passing bays every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of two metres (i.e. the combined carriageway width of the passing bay and constructed private driveway to be a minimum six metres); and*
- *turn-around area/head (Figure 30).*

Battle-axe lots should be avoided unless there are demonstrated site constraints.

If a battle-axe leg eventuates within the Site, it is likely to be under 50m in length and will be located within a reticulated water supply area; therefore, no technical requirement will be required.

If a battle-axe leg, greater than 50m in length is proposed within the Site, it must meet the technical requirements of B.3, Table 10, Column 5.

Element 4 - Water	
Outcome: Ensure that sufficient water is available and accessible to emergency services, to enable people, property, and infrastructure to be defended from bushfire.	
A4.1 Water Supply *Evidence that a sufficient and accessible reticulated or non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Appendix B4: Water Supply dedicated for firefighting.* *Where the provision of a strategic water tank(s) is required, a suitable area should be identified as a Crown reserve on the structure plan, to the satisfaction of the WAPC on advice from the local government.*	The Site is within a reticulated water supply area. Reticulated water will be required to be supplied in accordance with the Water Corporation's No. 63 Water Reticulation Standards by the developer.

2 Responsibilities and Bushfire Measures

Development within the Site may occur over an extended period of time with responsibilities determined within the creation of any Bushfire Management Plan (BMP).

While this assessment does not propose any subdivision, any subdivision application is to be accompanied by the following information in accordance with the Guidelines and in accordance with Section 5.5: Information to accompany a structure plan or subdivision application of the Guidelines, in the form of a BMP or an amendment to an existing plan where one has previously been endorsed.

- An assessment of the broader landscape;
- Identification of any environmental, biodiversity or conservation values on the subject site;
- BAL Contour Map to determine the indicative acceptable BAL rating;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BPC 5: Structure Plan and Subdivision, demonstrating compliance via either the acceptable solutions, or through an outcomes-based approach.

Any development application for a residential application is to be accompanied by the following information in accordance with Section 6.4: Information to accompany the development application (Residential) of the Guidelines in the form of a BMP or an amendment to an existing Plan where one has previously been endorsed, if the pre-development BAL Assessment indicated that the proposed habitable building(s) will have a potential radiant heat impact exceeding 29kW/m^2:

- Identification of any environmental, biodiversity or conservation values on the subject site(s);
- BAL Assessment OR BAL Contour Map;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BCP 6: Development - Residential, demonstrating compliance with either the acceptable solutions or through an outcomes-cased approach.

Any development application for a Vulnerable Land Use is to be accompanied by the following information in accordance with Section 8.3: Information to accompany the development (Vulnerable Land Use):

- Identification of any environmental, biodiversity or conservation values on the subject site(s);

- BAL Assessment OR BAL Contour Map;
- Identification of any bushfire hazard issues arising from the assessment; and
- An assessment against the bushfire protection criteria within BCP 8: Development - Vulnerable Class 9 buildings or BPC 8: Development - Vulnerable tourism land uses, demonstrating compliance with either the acceptable solutions, or through an outcomes-based approach.
- Preparation of a Bushfire Emergency Plan.

A building permit issued by the Local Government is required for the construction of a structure with an accompanied BAL Assessment or BAL Contour map from a previous approved proposal, for structures in a bushfire prone area. If the BAL Assessment or BAL Contour Map identifies the structure to be within BAL-40 or BAL-FZ, a development application and planning approval is required. It is recommended to apply these requirements on lots 1,100m^2 or greater.

Building construction standards are mandatory for Class 1a, Class 1b, Class 2, Class 3 residential buildings, and associated Class 10a buildings in bushfire prone areas to meet the requirements of AS 3959. It is recommended that this building standard applies to all new structures in bushfire prone areas where planning approval is required, which is at the discretion of the Local Government for building classes that are not mandatory.

A BMP Compliance report may be required at the discretion of the Local Government following the completion of works required in an approved BMP, to allow the issue of a building permit or sale of lots.

3 Conclusion

This report provides a BAL Contour and assessment against Bushfire Protection Criteria 5: Structure Plans and Subdivision Applications. The information contained within this assessment will assist the Department Planning, Lands and Heritage in formulating a planning mechanism to guide and manage zoning, subdivision, and development of the Site into the future.

This BAL Contour spatially illustrated areas that have a BAL-29 or lower rating. Land that achieves a BAL-29 or lower rating are the most suitable for land use intensification. Land intensification in an area that achieves a BAL-29 or lower rating predevelopment will also reduce the impact to remnant vegetation within the Site, which provides environmental and biodiversity values.

Any future development within the Site will be subject to assessment against the requirements of *State Planning Policy 3.7* and the relevant *Planning for Bushfire Guidelines,* to ensure that future developments avoid an increase in the threat of bushfire to people, property, or infrastructure.

Appendix E BAL Contour Map of Final Post Development results of Lots 22 & 23 Lower King Road & Portion of Collingwood Park

This map has been prepared based on the final Post Developement Vegetation Classification of the survey area, to illustrate the final development result.

BAL Contour

Area of Intensification Investigation

Project:	241764
Report:	BMP
Revision:	A
Assessment Date:	D. Cuthbert
Prepared By:	Level 2
Accreditation Level:	48409
Accreditation Number:	Feb 2026
Accreditation Expiry:	Aug 2025
Aerial photo date:	

GDA2020 / MGA zone 50

Legend

- 150m Assessment Area
- 100m Assessment Area
- Survey Boundary
- 2 metre contours (DPIRD-072)
- Classified Vegetation
- BAL-LOW
- BAL-12.5
- BAL-19
- BAL-29
- BAL-40
- BAL-FZ

0 25 50 m

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