

# 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:** Lots 41 & 9072 Commonage Road

**Suburb:** Dunsborough

**State:** WA

**P/code:** 6281

**Local government area:** City of Busselton

**Description of the planning proposal:** Subdivision into 158 residential lots

**BMP Plan / Reference Number:** 19791

**Version:** Rev E

**Date of Issue:** 09/06/2021

**Client / Business Name:** Urban Quarter

Reason for referral to DFES	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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Is the proposal any of the following special development types (see SPP 3.7 for definitions)?</b>		
Unavoidable development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Strategic planning proposal (including rezoning applications)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Minor development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High risk land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vulnerable land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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.)?

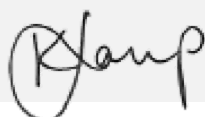
**Note:** The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

## BPAD Accredited Practitioner Details and Declaration

<b>Name</b> Kelly Lamp	<b>Accreditation Level</b> Level 2	<b>Accreditation No.</b> 38253	<b>Accreditation Expiry</b> 02/2022
<b>Company</b> Ecosystem Solutions		<b>Contact No.</b> (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 09/06/2021



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# Bushfire Management Plan

Lots 41 & 9072 Commonage Road, Dunsborough

9 June 2021

Prepared for:  
Urban Quarter  
Att: David Barham



# Limitations Statement

This report has been prepared in accordance with the Agreement between Ecosystem Solutions Pty Ltd and Urban Quarter (Client"). It has been solely prepared for a subdivision at Lots 41 & 9072 Commonage Road, Dunsborough ("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 Guidelines for Planning in Bushfire Prone Areas V1.3.

### 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 - Urban Quarter

Site - Lots 41 & 9072 Commonage Road, Dunsborough

Version	Revision	Purpose	Author	Reviewer	Submitted	
					Form	Date
Draft Report	Rev A	Draft Bushfire Advice	KL (BPAD38253 - Level 2)	GM (BPAD35078 - Level 3 -	Electronic (email)	5/11/2019
Report	Rev B	Update Lot Layout	DC (BPAD48409 - Level 1 -	KL (BPAD38253 - Level 2)	Electronic (email)	19/12/2019
Report	Rev C	Update to BMP & DFES Comments	KL (BPAD Level 2 - 38253)	GM (BPAD35078 - Level 3) -	Electronic (email)	4/08/2020
Report	Rev D	DFES and CoB comments	KL (BPAD Level 2 - 38253)	GM (BPAD35078 - Level 3)	Electronic (email)	22/10/2020
Report	Rev E	Update Lot Layout	DC (BPAD48409 - Level 1)	GM (BPAD35078 - Level 3)	Electronic (email)	9/06/2021

Filename: Z:\PROJECTS\19791 Lots 41 & 9069 Dunsborough Lakes, Dunsborough Significance Survey\Reports\Lots 41 and 9072 Commonage Road BMP Rev E.docx

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Appendix B	Asset Protection Zone standards



# Proposal

This Bushfire Management Plan (BMP) has been prepared for Lots 41 & 9072 Commonage Road, Dunsborough, (hereafter referred to as the 'Site') by Ecosystem Solutions Pty Ltd - Kelly Lamp (B.Sc. Hons. Nat Rs Mgmt, BPAD 38253 - Level 2) with review provided by Gary McMahon (B.Sc. M. Env Mgmt. PG Dip Bushfire Protection, BPAD35078 - Level 3). An assessment of the proposal against the requirements for *State Planning Policy (SPP) 3.7* and *Guidelines for Planning in Bushfire Prone Areas* (WAPC, V 1.3 December 2017) is included.

The proposal is to subdivide Lots 41 and 9072 for the purpose of residential housing, with proposed subdivision layout provided in Figure 1.

The Site is located within the City of Busselton, with the Dunsborough town centre approximately 3 km to the north of the Site. The Site is located within a bushfire prone area, as declared by State Planning Policy 3.7: Planning in Bushfire Prone Areas (Figure 2).

Vegetation within the Site currently includes grassland with scattered remnant trees, cleared previously for grazing purposes, with some areas of vegetation that will be removed as part of the development process.

The Site is bordered by Commonage Road to the south, with areas of development to the east. To the north is an area of Public Open Space, with rural residential lots to the west.

The purpose of this BMP is to detail the fire management methods and requirements that will be implemented within and around the Site to reduce the threat to residents and fire fighters in the event of a fire.



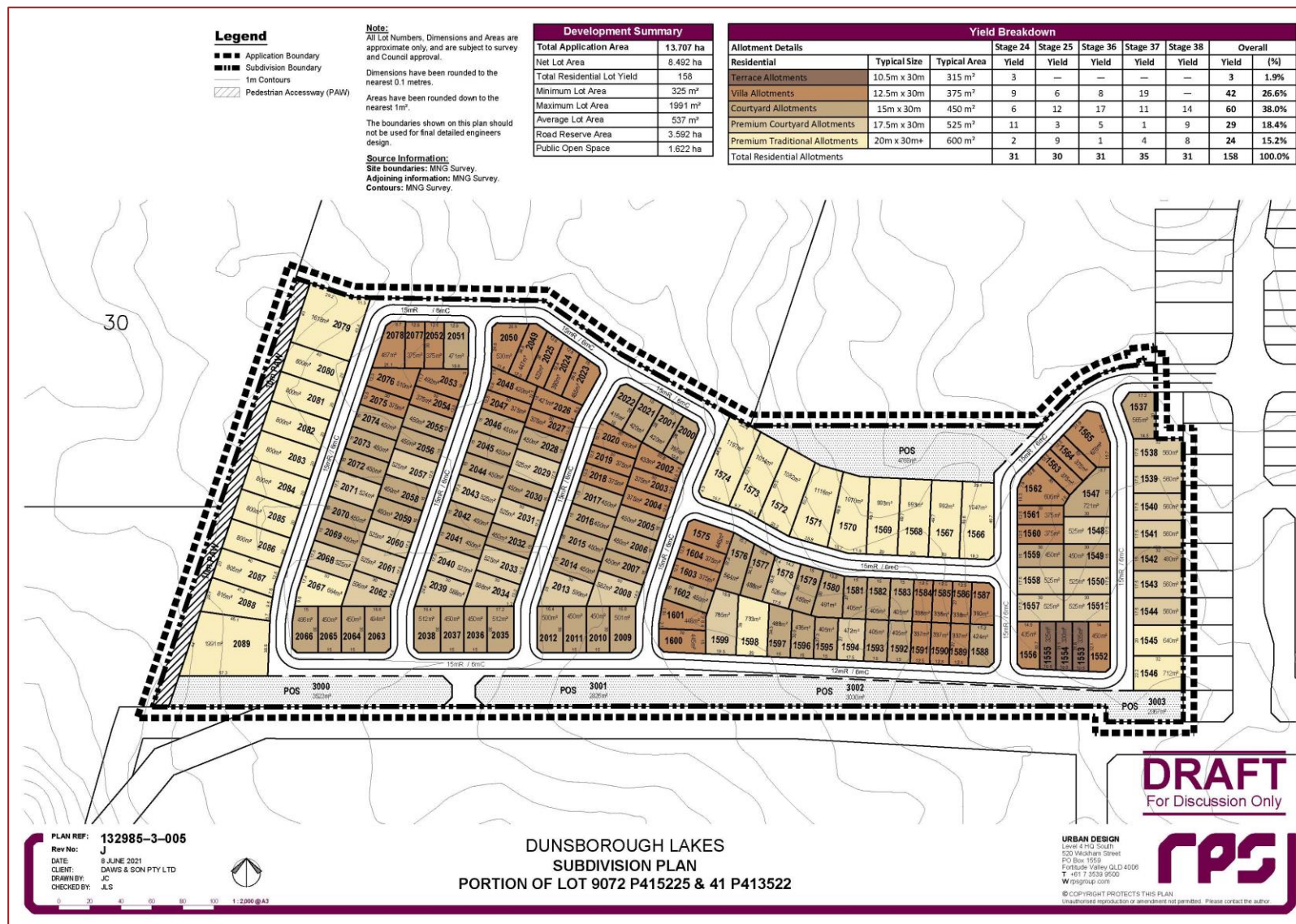


Figure 1 Subdivision Plan for Lots 41 & Lot 9072 Commonage Road, Dunsborough



Figure 2 Map of Bushfire Prone Areas for Lots 41 & 9072 Commonage Road, Dunsborough, within the blue polygon

# Bushfire Assessment Results

## 2.1 Assessment Inputs

The Site assessments were conducted on 4th November 2019 and 27 July 2020 by a BPAD Accredited Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959-2018.

All vegetation within 150 m of the Site was classified and the slope under the vegetation determined in accordance with Clause 2.2.3 & 2.2.5 of AS 3959-2018, shown in the photos below with maps provided in Figure 3 and 4.



Plot 1

## Vegetation Classification or Exclusion Clause

Class A Forest - Upslope / Flat



Photo ID: 1



Photo ID: 2



Photo ID: 3



Photo ID: 4

## Description / Justification for Classification:

Canopy of >30% including *Corymbia calophylla*, *Eucalyptus marginata* subsp. *marginata* and *Agonis flexuosa* with an understorey including *Xanthorrhoea preissii*, *Acacia* spp. and *Banksia* sp. Some areas that are currently Class B - Woodland have been classified as Class A - Forest in the Post Development vegetation classification map, due to the potential for revegetation works within the Public Open Space.

Plot	2	Vegetation Classification or Exclusion Clause
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Photo ID: 5

Description / Justification for Classification:

Class G Grassland Flat/Upslope



Photo ID: 6

Open paddock grassland that has been previously been used for grazing, with less than 10% trees. Some areas of Class G - Grassland have been excluded in the Post Development vegetation map, as these will be managed in a low fuel state in perpetuity once development has commenced.



Plot

3

### Vegetation Classification or Exclusion Clause

### Class B Woodland Flat/Upslope



Photo ID: 7



Photo ID: 8



Photo ID: 9



Photo ID: 10

### Description / Justification for Classification:

Canopy cover of less than 30% including *Eucalyptus patens*, *Corymbia calophylla* and *Melaleuca preissiana*, currently with an understorey of *\*Zantedeschia aethiopica* (Arum Lily), however these will die back during the summer months and be replaced with an understorey dominated by annual grasses. Some areas that are currently Class B - Woodland have been classified as Class A - Forest in the Post Development vegetation classification map, due to the potential for revegetation works within the Public Open Space. The remaining areas of Class B - Woodland will be modified to a low fuel state as part of the development process and are excluded in the Post Development vegetation classification map. No areas of Class B- Woodland will remain post development, and therefore this plot has been excluded from Table 1 - Site Assessment Results.











Plot	4	Vegetation Classification or Exclusion Clause	Excluded S 2.2.3.2 (a), (e) & (f)
		<div> <div> DIRECTION 342 deg(T) 33.63875°S 115.10741°E ACCURACY 5 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:59:48+08:00 </div> </div>	<div> <div> DIRECTION 38 deg(T) 33.63955°S 115.11100°E ACCURACY 59 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:50:56+08:00 </div> </div>
		<div> <div> DIRECTION 12 deg(T) 33.63893°S 115.10387°E ACCURACY 8 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:52:50+08:00 </div> </div>	<div> <div> DIRECTION 267 deg(T) 33.63787°S 115.10734°E ACCURACY 4 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 13:00:46+08:00 </div> </div>
		<div> <div> DIRECTION 12 deg(T) 33.63893°S 115.10387°E ACCURACY 8 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:59:48+08:00 </div> </div>	<div> <div> DIRECTION 38 deg(T) 33.63955°S 115.11100°E ACCURACY 59 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:50:56+08:00 </div> </div>
		<div> <div> DIRECTION 12 deg(T) 33.63893°S 115.10387°E ACCURACY 8 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 12:52:50+08:00 </div> </div>	<div> <div> DIRECTION 267 deg(T) 33.63787°S 115.10734°E ACCURACY 4 m DATUM WGS84 </div>  <div> Commonage Road, Dunsborough 2020-07-27 13:00:46+08:00 </div> </div>

Photo ID: 11

Photo ID: 12

Photo ID: 13

Photo ID: 14

#### Description / Justification for Classification:

Areas greater than 100 m from the Site have been excluded under S 2.2.3.2 (a). Non vegetated areas including existing or proposed roads are excluded under S 2.2.3.2 (e). Low threat vegetation including reticulated lawns and gardens, areas that will become residential lots (photo 11 and 14) that will be established and maintained in a low fuel state in perpetuity, are excluded under S 2.2.3.2 (f). Grasses across the entire Site will be maintained under 10 cm in height by the developer until individual lots are sold, ensuring that all areas of this land can be excluded as low threat vegetation for the duration of the development process. Managed gardens, single lines of trees and grasses within adjacent properties to the west (Rural Residential lots, Category 6 on the City of Busselton's Firebreak and Fuel Hazard Reduction Notice), have also been excluded under S 2.2.3.2 (f), with grasses to be maintained at under 10 cm in height and all dead material to be removed from the lot.



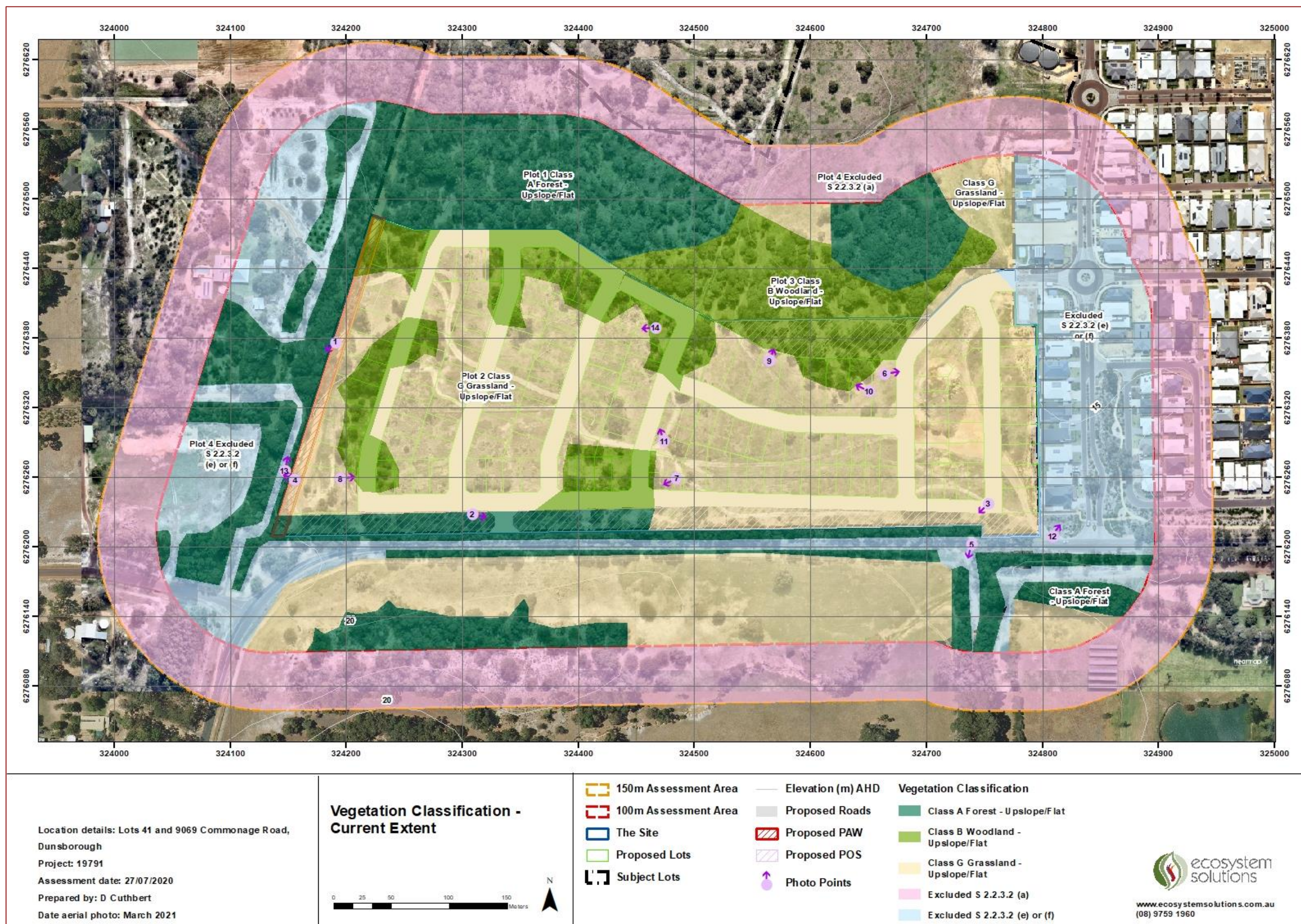


Figure 3 Vegetation Class and Effective Slope - Current Extent



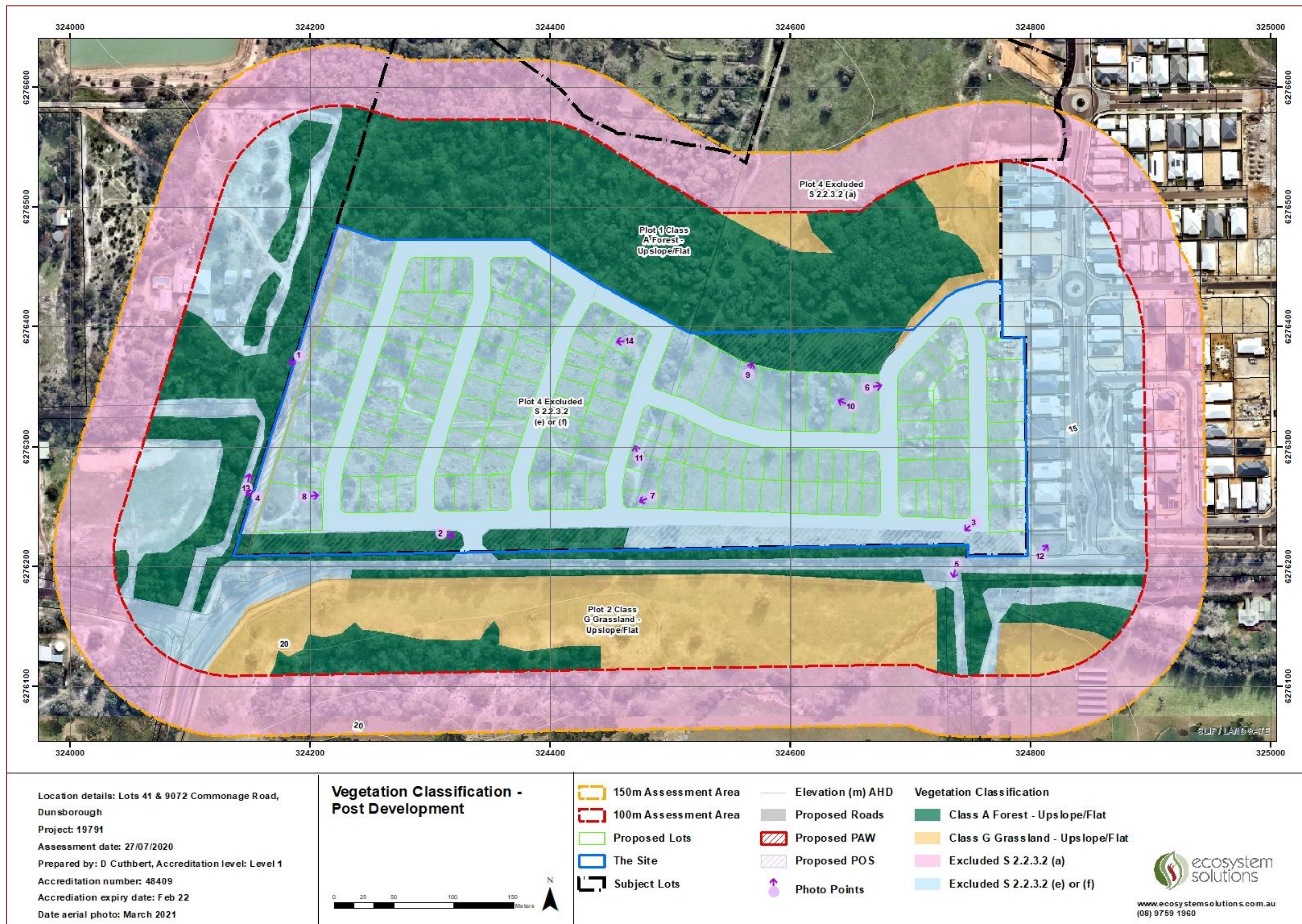


Figure 4 Vegetation Class and Effective Slope - Post Development



## 2.2 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 2.2.6 of AS3959-2018 with map provided in Figure 4 and detailed map provided in Figure 5.

*Table 1 Site Assessment Results*

Method 1 BAL Determination				
Fire Danger Index - 80 (AS3959-2018 Table 2.1)				
Plot	Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classification Vegetation (metres)	Bushfire Attack Level
1	Class A Forest	Upslope / Flat	Min 21 m	BAL-29
2	Class G Grassland	Upslope / Flat	Min 9 m	BAL-29
3	Class B Woodland	Upslope / Flat	N/A - none remaining post development	N/A - none remaining post development
4	Ex. S. 2.2.3.2 (a), (e) & (f)	N/A	N/A	BAL-LOW
Determined Bushfire Attack Level				BAL-29



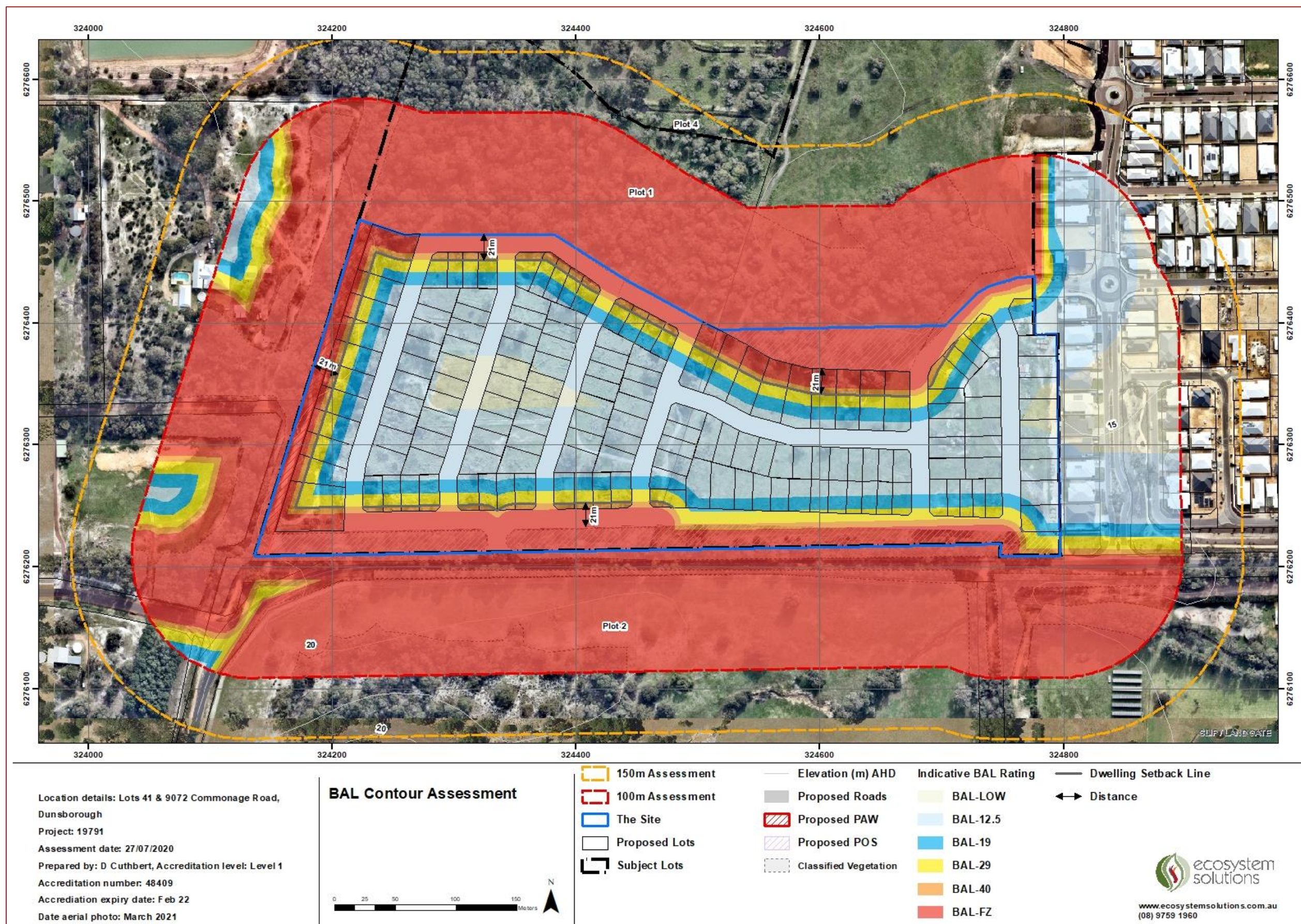


Figure 5 Map of Bushfire Attack Level Assessment



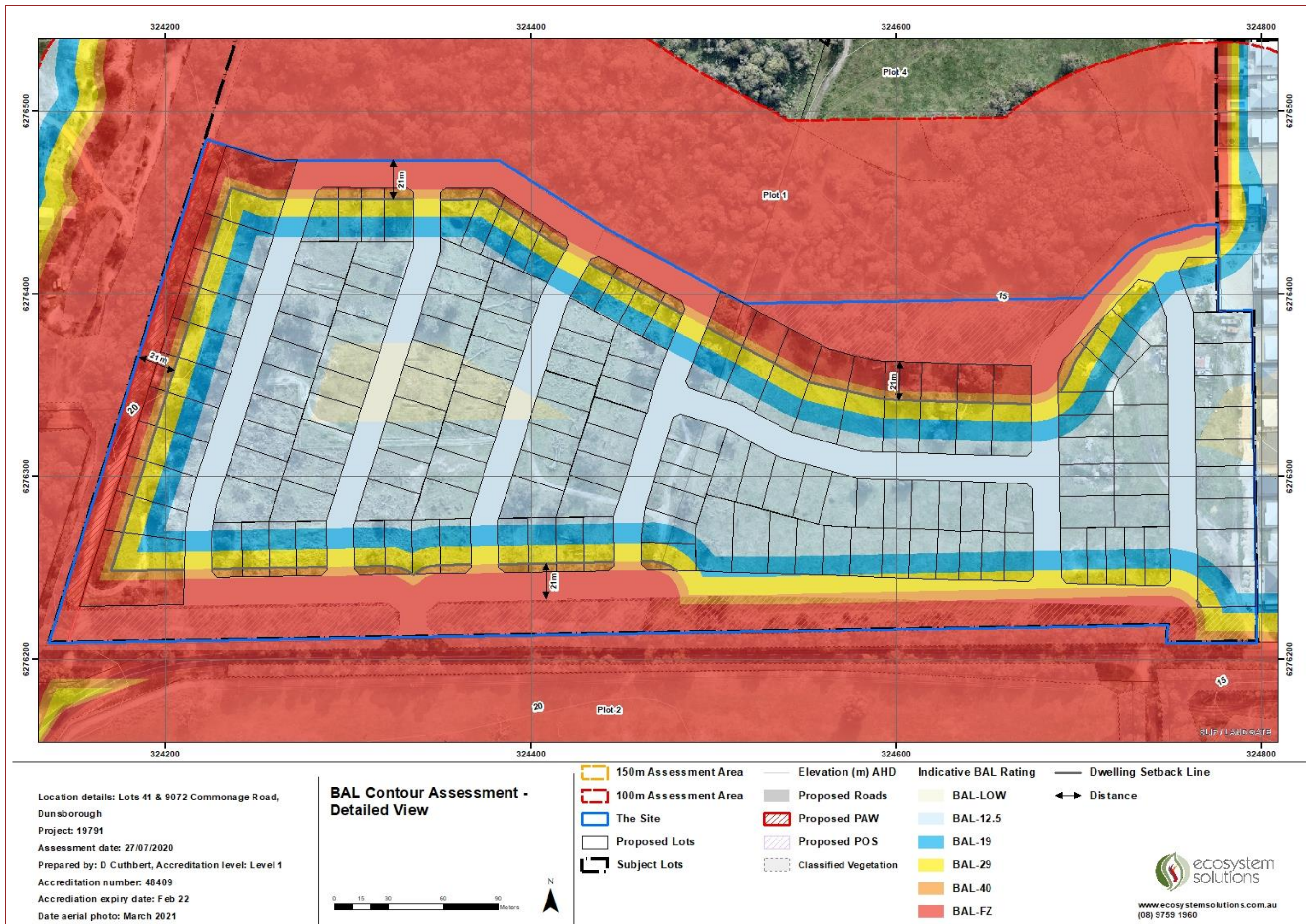


Figure 6 Map of Bushfire Attack Level Assessment - Detailed View



# Environmental Considerations

## 3.1 Native Vegetation - modification and clearing

Lots 41 and 9072 Commonage Road, Dunsborough, contains native vegetation, much of which is in a highly modified state and amounts to scattered trees over grass. Vegetation remaining within the Site will require modification to establish and maintain the Site as a low fuel zone. Large remnant trees with the potential for hollows should be maintained wherever they meet Asset Protection Zone standards, as they provide important habitat to threatened fauna species including the Western Ringtail Possum and the Black Cockatoo species.

A basic desktop assessment for significant environmental values has been completed, with the Protected Matters Search Tool (accessed 27 July 2020) identifying a number of rare flora and fauna species or species habitat that may occur within the Site. There is also a Threatened Ecological Community adjacent to the Site.

*Table 2 Significant environmental values identified within the Site (SLIP Public Data)*

Environmental Value	Yes or No	If Yes - describe
Conservation Covenants	No	Not applicable
Bushfire Forever Sites	No	Not applicable
Conservation Category Wetlands and Buffer	No	Not applicable
Threatened Ecological Community (TEC)	Yes	A Threatened Ecological Community (TEC) is located in proximity to the Site.
Declared Rare Flora (DRF)	Yes	A number of species or species habitat may occur in proximity to the Site (PMST report, 27 July 2020).
Threatened Fauna	Yes	A number of species or species habitat may occur in proximity to the Site (PMST report, 27 July 2020).
Significant through Local Planning or Biodiversity Strategy	No	Not applicable

## 3.2 Re-vegetation / Landscape Plans

No active revegetation is required within the Site. Any future planting of vegetation, or a failure to maintain the properties requirements for fuel loading maintenance as detailed in this Bushfire Management Plan, can change the BAL rating significantly.

The Public Open Space to the north of the Site may include revegetation works in the future. This area has been classified as Class A Forest to reflect the potential for these works increasing the canopy cover and understorey within this vegetation.

The Landscape Buffer to the south of the Site has been classified as Class A - Forest (worst case scenario) and Class G Grassland. The areas that are classified as Class G Grassland will be landscaped in the future, at subdivision stage in accordance with a landscape plan approved by the City of Busselton. This area is required to be planted to Asset Protection Zone standards and maintained in a low fuel state to meet these standards in perpetuity, meaning that these areas will then be excluded from classification under S 2.2.3.2 (f) of AS 3959.



# Assessment Against the Bushfire Protection Criteria

## 4.1 Compliance with the Acceptable Solutions for each Element

Bushfire Protection Criteria - Element 1 - Location		
<b>Intent:</b> To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.		
<b>Performance Principle P1:</b> The intent may be achieved where the strategic planning proposal, subdivision or development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low OR a BAL-29 or below applies AND the risk can be managed. For unavoidable development in areas where BAL-40 or BAL-FZ applies, demonstrating that the risk can be managed to the satisfaction of DFES and the decision-maker.		
Acceptable Solution	Compliance	Assessment Statements
<b>A1.1 Development location</b> The strategic planning proposal, subdivision and development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.	Compliance with this element is achieved.	<p>Yes, a number of lots within the Site will contain a dwelling setback line, with a restrictive covenant excluding the construction of dwellings within these areas, ensuring no dwelling will be constructed in an area over BAL-29. The dwelling setback line ensures a minimum distance of 21m between the portion of any lot that is available for the construction of a dwelling and the Class A Forest - Upslope/Flat vegetation. The BAL Contours across the Site (Figures 5 to 6) show that the remainder of the residential lots are within areas of BAL-29 or lower.</p> <p>Perimeter roads and a public access way (Figure 1) have been utilised to provide separation between residential lots and the bushfire hazard along the southern, western and much of the northern boundary. The eastern portion of the northern boundary includes residential lots that abut Class A - Forest vegetation, however the Dwelling</p>

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Setback Line as detailed above ensures that no dwelling is constructed in an area above a BAL-29 rating, achieving compliance with this element.

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## Bushfire Protection Criteria - Element 2 - Siting and Design

**Intent:** To ensure that the siting and design of development minimises the level of bushfire impact.

**Performance Principle P2:** The siting and design of the strategic planning proposal, subdivision or development application, including roads, paths and landscaping, is appropriate to the level of bushfire threat that applies to the site. That it incorporates a defensible space and significantly reduces the heat intensities at the building surface thereby minimising the bushfire risk to people, property and infrastructure, including compliance with AS 3959 if appropriate.

Acceptable Solution	Compliance	Assessment Statements
<p><b>A2.1 Asset Protection Zone (APZ)</b></p> <p>Every habitable building is surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:</p> <ul style="list-style-type: none"> <li>• Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m<sup>2</sup> (BAL-29) in all circumstances.</li> <li>• Location: the APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).</li> <li>• Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones'. (see Appendix B).</li> </ul>	<p>Compliance with this element is achieved.</p>	<p>To achieve an Asset Protection Zone (APZ) of sufficient size, a 21 m setback is required from any Class A Forest vegetation and an 8 m setback from any Class G Grassland vegetation. Due to the size of the lots within the Site, APZs will overlap lot boundaries. To ensure any dwelling constructed within the Site can achieve an APZ of sufficient width to achieve a BAL-29 or lower rating, the entire Site will be established to APZ standards by the developer during the development process. As individual lots are sold, management of each lot to APZ standards will become the responsibility of the individual lot owner. The Dwelling Setback Line and associated restrictive covenants on the title of impacted lots will ensure that each dwelling can achieve a sufficiently sized APZ.</p> <p>In addition to managing each lot to the APZ requirements of the Guidelines, landowners must also comply with the requirements for Urban Residential lots under the City of Busselton's Firebreak and Fuel Hazard Reduction Notice (which is subject to review from time to time). This includes managing grasses at under 10cm in height.</p>

### Bushfire Protection Criteria - Element 3 - Vehicular Access

**Intent:** To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.

**Performance Principle P3:** The internal layout, design and construction of public and private vehicular access and egress in the subdivision/ development allow emergency and other vehicles to move through it easily and safely at all times.

Acceptable Solution	Compliance	Assessment Statements
<b>A3.1 Two Access Routes</b> Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents/the public at all times and under all weather conditions.	Compliance with this element is achieved.	All of the lots within the Site have two vehicular access/egress routes, with access provided out to Commonage Road as well as through the neighbouring development, that provides access/egress into the Dunsborough Lakes Development. The road to the east into the exiting development will be constructed as part of this development. All roads to be constructed and existing roads in proximity to the Site are well constructed public roads and comply with the requirements of the Guidelines (Figure 7).
<b>A3.2 Public Road</b> A public road is to meet the requirements in Table 6, Column 1 (Figure 7).	Compliance with this element is achieved.	The new internal roads will be constructed to comply with the Guidelines (A3.2).
<b>A3.3 Cul-de-sac (including a dead-end road)</b>	Not applicable to this Site.	
<b>A3.4 Battle-axe</b>	Not applicable to this Site.	
<b>A3.5 Private driveway &gt;50m</b>	Not applicable to this Site.	Each lot within the Site will have a private driveway less than 50 m.
<b>A3.6 Emergency Access Way</b>	Not applicable to this Site.	
<b>A3.7 Fire Service Access Routes (perimeter roads)</b>	Not applicable to this Site.	

## Bushfire Protection Criteria - Element 3 - Vehicular Access

### A3.8 Firebreak Width

Lots greater than 0.5 ha must have an internal perimeter firebreak of a minimum width of 3 m or to the level as prescribed in the local firebreak notice issued by the local government.

Compliance with this element is achieved.

The proposed lots will be listed as category 2, urban residential lots on the City of Busselton's Firebreak and Fuel Hazard Reduction Notice 2020/2021 (Appendix A). No firebreaks are required on lots that do not exceed 2024 m<sup>2</sup> in area.

**Table 6:** Vehicular access technical requirements

TECHNICAL REQUIREMENTS	1 Public road	2 Cul-de-sac	3 Private driveway	4 Emergency access way	5 Fire service access routes
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal clearance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	N/A	4.5	4.5	4.5
Maximum grade <50 metres	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum crossfall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius (m)	8.5	8.5	8.5	8.5	8.5
*Refer to E3.2 Public roads: Trafficable surface					

**Figure 7** Vehicular access technical requirements - Table 6 from the Guidelines for Planning in Bushfire Prone Areas (WAPC, V1.3 Dec 2017)

Bushfire Protection Criteria - Element 4 - Water		
<b>Intent:</b> To ensure that water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.		
<b>Performance Principle P4:</b> The subdivision, development or land use is provided with a permanent and secure water supply that is sufficient for fire fighting purposes.		
Acceptable Solution	Compliance	Assessment Statements
<b>A4.1 Reticulated Areas</b> The subdivision, development or land use is provided with a reticulated water supply in accordance with the specifications of the relevant water supply authority and Department of Fire and Emergency Services.	Compliance with this element is achieved.	A reticulated water supply will be provided to all lots in accordance with Busselton Water requirements, to the Water Corporation's No. 63 Water Reticulation Standard. Fire Hydrants will be supplied in accordance with Water Corporations requirements.
<b>A4.2 Non-reticulated Areas</b>	Not applicable to this Site.	
<b>A4.3 Individual lots within non-reticulated areas</b>	Not applicable to this Site.	

## 4.2 Performance Based Solutions

The Site assessment was conducted in accordance with AS 3959-2018 Simplified Procedure (Method 1). The Proposal meets all the compliance requirements for the four Bushfire Protection Criteria Elements. There are no performance-based solutions proposed.

## 4.3 Summary of the Assessment Outcomes

This plan provides acceptable solutions and responses to the performance criteria outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC, 2017).

The layout and design of the development is such that no structure will be required to be exposed to a radiant heat flux in excess of 29 kW/m<sup>2</sup> (BAL-29) provided the management as outlined in the plan is adopted.

Any class 1, 2, 3 or associated 10a structure that is to be constructed, must be designed and built to conform with Australian Standards AS3959-2018:

- BAL-29: sections 3 & 7;
- BAL-19 sections 3 & 6; and
- BAL 12.5 sections 3 & 5.



## Spatial representation of the proposed risk management measures



### NOTES

In this development, Asset Protection Zones (APZ) will be achieved with the entire Site being established and maintained to APZ standards.

Vegetation within the APZ is to comply with Schedule 1 Element 2 of the Guidelines noting that:

- Trees >5m in height are to be setback a minimum distance of 6m from the building with no branches overhanging the roof.
- Shrubs <5m in height are to be setback a minimum distance of 3m from the building, and not planted in clumps greater than 5 sqm
- Grass is to be maintained at less than 100mm in height.

There will be no dwelling constructed in areas above BAL-29 represented by the Dwelling Setback Line. The impacted lots will have a restrictive covenant placed on the title.

The Developer will maintain all Lots in a low fuel state until individual lots are sold, where it is the responsibility of the landowner.

The Developer will establish and maintain the public open space that is classified as grassland in accordance with the landscape plan approved by the City of Busselton for a minimum of two years, when this area will be ceded to

the Crown and vested to the City of Busselton, who will then be responsible for maintaining these areas in a low threat state in perpetuity.

Public roads will be constructed to meet the standards of the Guidelines.

Reticulated water will be installed according to the Water Corporation's No. 63 Water Reticulation Standard and fire hydrants according to the Water Corporation's requirements.

Landowners must comply with the City of Busselton's Firebreak and Fuel Hazard Reduction Notice for Urban Residential lots.

Establishment of the Site in a low fuel state, water supply, public roads and public open spaces are the responsibility of the Developer. Maintenance of the APZ's once the land is sold, construction of any dwellings to BAL Standards and compliance with the City of Busselton's Firebreak and Fuel Hazard Reduction Notice are the responsibility of the Landowner.

The measures listed above shall be implemented prior to occupancy of any dwelling and shall continue to be maintained in perpetuity.

### PROPERTY / ASSESSMENT DETAILS

Location details: Lots 41 and 9072 Commonage Road, Dunsborough

Project: 19791

Assessment date: 27 July 2020

Prepared by: D Cuthbert; Accreditation Level: Level 1

Accreditation Number: 48409

Accreditation Expiry Date: 02/22



Figure 8

Bushfire Management Strategies - Lots 41 and 9072 Commonage Road, Dunsborough



# Responsibilities for Implementation and Management of the Required Bushfire Measures

The responsibilities for the Developer, Builder, Landowner/Occupier and City of Busselton are outlined in Table 3, Table 4, Table 5 and Table 6 respectively.

**Table 3** *Developer Responsibilities*

Number	Action	Due	Completed
1	Where WAPC condition a subdivision application approval with a requirement to place a notification onto the certificate(s) of title and a notice of the notification onto the diagram or plan of survey (deposited plan). This will be done pursuant to Section 165 of the <i>Planning and Development Act 2005</i> ('Hazard etc. affecting land, notating titles as to:') and applies to lots with a determined BAL rating of BAL-12.5 or above.  The notification to be placed on the title in the form of a Section 70a notifying future purchases that the lot is within a designated bushfire prone area and the development is to comply with the Bushfire Management Plan. Wording to be provided by the City of Busselton.	Creation of titles and deposited plan	<input type="checkbox"/>
2	Provide a copy and obtain endorsement of this Bushfire Management Plan by those with responsibility under this plan including Builders, Landowners/Occupiers and City of Busselton.	Post planning approval and prior to lot sale	<input type="checkbox"/>
3	Install reticulated water supply to all Lots according to the Water Corporation's No. 63 Water Reticulation Standard.	Post planning approval and prior to lot sale	<input type="checkbox"/>
4	Install fire hydrants in accordance with Water Corporation requirements.	Post planning approval and prior to lot sale	<input type="checkbox"/>
5	Install all public roads (A3.2) to the standards detailed in this plan.	Post planning approval and prior to lot sale	<input type="checkbox"/>
6	Establish Restrictive Covenants over any lots with areas over BAL-29, with the appropriate dwelling exclusion setbacks from the boundaries as detailed in Figure 8 - Bushfire Management Strategies, to ensure any dwelling constructed within the lot is BAL-29 or less.	Creation of titles and deposited plan	<input type="checkbox"/>

7	Maintain the Site in a low fuel state with grass under 10 cm post development approval and prior to the lots being sold where responsibility is handed to the Landowner.	Post planning approval and prior to lot sale	<input type="checkbox"/>
8	Establish the south eastern area of Public Open Space (Figure 8) in a low fuel state for two years, when the land will be ceded to the Crown and vested to the City of Busselton, with maintenance responsibilities in perpetuity of the public open space handed over to the City of Busselton.	Post planning approval for two years / hand over to City of Busselton	<input type="checkbox"/>

**Table 4** *Builder Responsibilities*

Number	Action	Due	Completed
1	Be aware of the existence of any BMP that refers to the Site.	Prior to any building work.	<input type="checkbox"/>
2	Ensure the building, driveway or incidental structure to which a building permit applies is compliant on completion with the bushfire provisions of the Building Code of Australia (BCA) as it applies in WA, the relevant BAL standard and requirements of Table 6, column 3 of the guidelines for driveways.	Prior to any building work.	<input type="checkbox"/>
3	Ensure no habitable dwellings are constructed in areas above a BAL-29 rating.	Prior to any building work	<input type="checkbox"/>

**Table 5** *Landowner/Occupier Responsibilities*

Number	Action	Due
1	Maintain their lot to Asset Protection Zone (APZ) standards, as detailed in this Bushfire Management Plan.	Ongoing
2	Ensure no habitable dwellings are constructed in areas above a BAL-29 rating.	Ongoing
3	Achieve compliance with the City of Busselton's Firebreak and Fuel Hazard Reduction Notice for urban residential lots, including maintaining grasses at under 10cm in height.	Ongoing, during the bushfire season
4	Be aware updating the Bushfire Management Plan may be required to ensure that the bushfire risk management measures remain effective. Bushfire plans do not expire and are a 'living document'. Updating is required in certain circumstances, including (but not limited to) if site conditions change, if further details are required at subsequent development stages or to reflect new technologies or methodologies in best practice bushfire risk management ('Guidelines' s4.6.4).	Ongoing

**Table 6**     *City of Busselton Responsibilities*

Number	Action	Due
1	Monitor landowner compliance with the annual firebreak notice.	Ongoing
2	Develop and maintain district bushfire fighting services and facilities.	Ongoing
3	Promote education and awareness of bushfire prevention and preparation measures through the community.	Ongoing
4	Administer the requirements of the <i>Bush Fires Act 1954</i> , <i>Planning and Development Act 2005</i> and the <i>Building Act 2011</i> .	Ongoing
5	Maintain areas of Public Open Space in perpetuity.	Two years post planning approval - once responsibility is transferred from Developer.

## Appendix A      City of Busselton Firebreak and Fuel Hazard Reduction Notice

#### PERMITS TO BURN

Permits to Burn are required for the whole of the Restricted Burning Times and can only be obtained from the Fire Control Officer for your area

A list of Fire Control Officers is available on the City's website on the Fire and Emergency Services Information page

Most of our Fire Control Officers are volunteers, make sure you plan ahead if you intend to apply for a permit

A permit must be obtained before any burning takes place and the permit holder must be in possession of the permit throughout the duration of the burn.

The Fire Control Officer will require the following information prior to issuing a permit:

- The address of the property where it is proposed to conduct the burn
- Details of three able bodied persons who will be in attendance at the fire at all times whilst it is alight, including a contact phone number
- What fire-fighting equipment will be on-hand during the burn and confirmation it is in good working order
- Are there firebreaks installed at the property and can a fire appliance get access to the site of the burn
- What are the materials to be burned, are they dry, and what is the size of the proposed burn

The permit holder shall ensure all conditions of the permit, as shown on the permit, are fully complied with

Failure to obtain a permit or failure to fully comply with the conditions of a permit may result in a fine or prosecution

*The hardest aspect of fire prevention is explaining to your family why you didn't undertake any!*



*Actions speak louder than words and actions save lives*

#### GENERAL INFORMATION

**Burning of Garden Refuse:** pursuant to Section 24G(2) of the *Bush Fires Act 1954*, the burning of garden refuse is prohibited throughout the District during Prohibited Burning Times, and prohibited in Urban areas of the District during Restricted Burning Times

During Restricted Burning Times, a Permit to Burn is required for the burning of garden refuse in Rural Residential or Rural areas

**Camping and/or Cooking Fires:** pursuant to Section 25(1a) of the *Bush Fires Act 1954*, the lighting of fires in the open for the purpose of camping and/or cooking is prohibited throughout the District during Prohibited Burning Times

Pursuant to Section 25(1)(a) of the *Bush Fires Act 1954*, the lighting of fires in the open for the purpose of camping and/or cooking is prohibited when the Fire Danger Rating for the District is Very High or above without the written approval of the City

**Fire Pits, Chimineas, and/or Braziers:** pursuant to Section 25 of the *Bush Fires Act 1954*, the lighting of fire pits, Chimineas and/or braziers is prohibited during Prohibited Burning Times, and otherwise prohibited if the Fire Danger Rating for the District is Very High or above

**Conditions for the Lighting and Extinguishing of Fires in the Open:** when burning garden refuse; or lighting camping and/or cooking fires; or when lighting fire pits, Chimineas and/or braziers the space of ground around the site of the fire, having a radius of at least 3 metres from the site at the centre, is clear of all vegetation and other flammable materials

The person who lit the fire, or a person left in attendance at the fire as the case may be, shall completely extinguish the fire by the application of water and/or earth before that person leaves the site unattended

**Further Information:** for further fire safety information and resources, including current Fire Danger Ratings visit the Department of Fire and Emergency Services website [www.dfes.wa.gov.au](http://www.dfes.wa.gov.au)

#### KEY DATES

Dates may change due to seasonal fire conditions in which case details will be published in local newspapers and on the City's website

#### PROHIBITED BURNING TIME

**1 December 2020 to 28 February 2021**  
(BURNING IN THE OPEN PROHIBITED)

#### RESTRICTED BURNING TIMES

**15 October 2020 to 30 November 2020 inclusive and 1 March 2021 to 31 May 2021 inclusive**  
(BURNING PERMITS REQUIRED)  
(Burning on Public Holidays Prohibited)

#### COMPLIANCE DATES

**Rural Residential / Urban / Industrial Land**  
Compliance with this Notice must be achieved no later than **15 November 2020** and maintained until **12 May 2021**

**Rural Land**  
Compliance with this Notice must be achieved no later than **15 December 2020** and maintained until **12 May 2021**

#### FIREBREAK INSPECTIONS AND RIGHT OF ENTRY

The City will commence its annual firebreak inspection program on **16 November 2020**

Rangers are appointed as Bush Fire Control Officers under the provisions of the *Bush Fires Act 1954* (the Act) and carry out annual inspections.

Under the provisions of the Act, Bush Fire Control Officers may in the performance of their duties, enter any land or building including private property

#### FIREBREAK VARIATIONS

Where there are valid environmental and/or on-ground considerations which prevent full compliance with this Notice, landowners may apply to the City for a variation. A variation must be lodged in writing on a Firebreak and Fuel Hazard Reduction Variation Form which is available on the City's website. Applications for a variation must be submitted by **31 October 2020**



## FIREBREAK AND FUEL HAZARD REDUCTION NOTICE

### 2020/2021 BUSH FIRE SEASON

#### FIRST AND FINAL NOTICE

##### *Bush Fires Act 1954*

Take notice that pursuant to Part 3 Division 6 Section 33 of the *Bush Fires Act 1954*, landowner(s) or occupier(s) of land shall construct firebreaks and carry out fire prevention work in accordance with this Notice



Failure to comply with this Notice may result in a fine of up to

**\$5,000**

Should you require assistance or clarification of the requirements of this Notice, please contact the City's Ranger and Emergency Services on 9781 0444



<b>CATEGORY</b> <i>It is the land owner's responsibility to identify the category that relates to their property and to ensure the necessary fire prevention works are completed on time. Please contact the City if you are unsure of your category.</i>	<b>FIREBREAK CATEGORY CODE AND SUMMARY OF REQUIREMENTS</b> ALL REQUIREMENTS IN THIS NOTICE ARE TO BE MAINTAINED THROUGHOUT THE ENTIRE DURATION OF THE FIRE SEASON FAILURE TO COMPLY MAY RESULT IN A \$5,000 FINE PLEASE BE ADVISED THAT YOUR PROPERTY MUST COMPLY WITH CATEGORY REQUIREMENTS AS NOTED BY A TICK IN COLUMN A, B, C OR D			
	A	B	C	D
<b>CATEGORY 1</b> <b>RURAL</b> Except plantations and vineyards (For tourist chalets, refer to Estate Fire Management Plan or Individual Fire Management Plan) Sections A, C and D apply to this category.	✓		✓	✓
<b>CATEGORY 2</b> <b>URBAN RESIDENTIAL &amp; INDUSTRIAL - COMMERCIAL</b> Sections A, B, D and E1 Trees, apply to this category. Refer to section E - Interpretation and Additional Requirements (E1 Trees).	✓	✓		✓
<b>CATEGORY 3 &amp; 4</b> <b>PLANTATIONS</b> Fire Management Plan applies	N/A	N/A	N/A	N/A
<b>CATEGORY 5</b> <b>PROTEA PLANTATIONS / VINEYARDS</b> (For tourist chalets, refer to Estate Fire Management Plan or Individual Fire Management Plan) Sections A, B, C and D apply to this category.	✓	✓	✓	✓
<b>CATEGORY 6</b> <b>RURAL RESIDENTIAL - LOTS WITH INDIVIDUAL (MINERAL EARTH) BOUNDARY BREAKS</b> Sections A, B, C and D apply to this category unless the property is subject to Estate Fire Management Plan or Individual Fire Management Plan	✓	✓	✓	✓
<b>CATEGORY 7</b> <b>RURAL RESIDENTIAL - LOTS WITH A STRATEGIC FIREBREAK ON ONE OR MORE BOUNDARIES</b> Sections A, B, C and D apply to this category unless the property is subject to Estate Fire Management Plan or Individual Fire Management Plan	✓	✓	✓	✓
<b>CATEGORY 8</b> <b>RURAL RESIDENTIAL - LOTS WITHIN A STRATEGIC FIREBREAK AREA WITH NO STRATEGIC FIREBREAKS ON THE LOT BOUNDARIES</b> Sections B, C and D apply to this category unless the property is subject to Estate Fire Management Plan or Individual Fire Management Plan		✓	✓	✓

**A - Firebreak** – The term firebreak includes a mineral earth firebreak. A mineral earth firebreak means a 3 metre wide area of the owner(s)/occupier(s) land, cleared and maintained totally clear of all vegetation material (living or dead) so there is only mineral earth left. Any overhanging trees and other vegetation must be pruned to a height of 5 metres above the ground level of a mineral earth firebreak.

**Category 1 – Rural:** A mineral earth FIREBREAK shall be constructed 3 metres wide, except in pasture or crop areas where a FIREBREAK shall be 2 metres wide. FIREBREAKS shall be located adjacent to all external boundaries of the land. Where the land area exceeds 120 hectares, an additional FIREBREAK must divide the land into areas of not more than 120 hectares with each part completely surrounded by a FIREBREAK.

**Category 2 – Urban Residential and Industrial-Commercial:** Where the area of land exceeds 2024m<sup>2</sup> (½ acre) a mineral earth FIREBREAK shall be constructed and maintained at least 3 metres wide and within 6 metres of the inside of all external boundaries of the land. Where the area of land is 2024m<sup>2</sup> (½ acre) or less, hazardous material must be removed in accordance with section B - Fuel Reduction (refer to B1).

**Category 5 - Protea Plantations/Vineyards:** A mineral earth FIREBREAK shall be 3 metres wide. A low fuel area is to be maintained in accordance with section B - Fuel Reduction (refer to B2).

**Category 6 and 7 - Rural Residential:** A mineral earth FIREBREAK shall be constructed 3 metres wide. On Category 6 Rural Residential land with pasture or crop, a FIREBREAK shall be 2 metres wide and located within 6 metres of all external boundaries of the land. For Category 7 Rural Residential land, free access along a Strategic FIREBREAK is to be maintained at all times and including across the boundary of a lot, by means of a 3.5 metres wide field gate in the adjoining lot boundary fence.

**B - Fuel Reduction**

- 1) Category 2 - Urban Residential and Industrial-Commercial: Where the area of land is 2024m<sup>2</sup> (½ acre) or less, ALL HAZARDOUS MATERIAL must be removed from the whole of the land except living trees. In the area remaining, vegetation is to be maintained to a height of no greater than 10 centimetres; this includes piles of timber, branches and other vegetation. Trees shall be pruned in accordance with section E – Interpretation and Additional Requirements (refer to E1).
- 2) Category 5 - Protea Plantations/Vineyards: A 5 metre low fuel area is to be maintained between the 3 metre FIREBREAK and the plantation/vineyard area. In this area, vegetation is to be maintained to a height of no greater than 10 centimetres; this includes piles of timber, branches and other vegetation.
- 3) Category 6, 7 and 8 - Rural Residential: Parkland clearing must be carried out in all open paddocks and along the boundary of the property. Clearing means that all dead vegetation and dry grasses (excluding approved crops, pasture areas and living trees/shrubs) including piles of timber and disused materials must be maintained to a height of no greater than 10 centimetres.

**C - Building Protection Zones (BPZ)** - This is a modified area of reduced fuel immediately surrounding a building

BPZ's starve the fire by reducing the fuel levels around your house. These requirements are designed to reduce the fire's intensity and minimise the likelihood of flame contact with buildings. The BPZ gives more protection to families should a fire threaten suddenly and they cannot leave. It also provides extra protection for fire fighters and property owners who may decide to stay with their property.

A BPZ shall be provided for buildings in bush fire prone areas. The surroundings of buildings must comply with the following requirements:

- 1) The BPZ for existing buildings must be at least 20 metres from any external wall of the building unless varied under an approved Fire Management Plan (FMP) in accordance with section E - Interpretation and Additional Requirements (refer to E4).
- 2) The minimum BPZ for buildings constructed after 1 November 2011, in all cases shall be 25 metres.
- 3) The BPZ must be located within the boundary of the lot that the building is situated on.
- 4) Hazardous/flammable materials must not exceed the maximum fuel load specified in Point 5 below with grass areas not exceeding a height greater than 10 cm.
- 5) Fuel loads must be reduced and maintained at 2 tonne per hectare.
- 6) Isolated trees and shrubs may be retained, however, the first 5 metres around all buildings is to be clear of all hazardous/flammable materials.
- 7) Reticulated gardens in the BPZ shall be maintained to a height of no greater than 500 millimetres.
- 8) Wood piles must be at least 10 metres away from habitable dwellings.
- 9) Trees in the BPZ must comply with section E - Interpretation and Additional Requirements (refer to E1).
- 10) Where the land has an approved FMP, compliance must be achieved in accordance with the FMP. The FMP may vary the above BPZ requirements.
- 11) A Hazard Separation Zone (HSZ) is also recommended in the absence of a Fire Management Plan. Section E - Interpretation and Additional Requirements (refer to E3).

**D – Fuel Storage & Haystack Protection Zones**

A 3 metre mineral earth FIREBREAK shall be located within 6 metres of fuel storage tanks, sheds, gas cylinders and haystacks. The mineral earth firebreak shall be maintained so that it is totally clear of all material (living or dead).

**E – Interpretation and Additional Requirements**

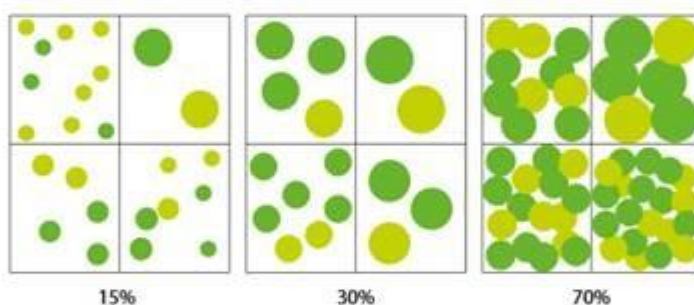
- 1) **Trees** On Urban, Industrial, Rural, and Rural Residential land, all tree branches must be removed or pruned to ensure a clear separation of at least 3 metres back from the eaves of all buildings and 5 metres above the top of the roof. Branches that may fall on the house must also be removed. In the BPZ the following is 'recommended'; the spacing of individual or groups of trees should be 15 metres apart to provide for a 5 metres separation between tree crowns. There is also a requirement of 2.5 metres between trees and power lines so they do not come into contact and start a fire or bring down a power line.
- 2) **Hazardous and Flammable Materials** means the accumulation of fuel including burn piles (living or dead) such as leaf litter, twigs, trash, bush, dead trees and scrub capable of carrying a running fire, but excludes standing living trees and isolated shrubs. **NOTE:** All remaining vegetation, piles of timber, branches and other living vegetation must be maintained to a height of no greater than 10 centimetres. To measure and determine fuel loads use DFES's Visual Fuel Load Guide at <http://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/pages/publications.aspx#5> and select Visual Fuel Load Guide Swan Coastal (Part 1 & 2). Surface bush fire fuels should be kept low to the ground.
- 3) **Hazard Separation Zones (HSZ)** A HSZ is a modified area of reduced fuel load outside of the BPZ and is recommended to assist in reducing the fire intensity when flames are approaching buildings. Both the BPZ and the HSZ are essential strategies for the protection of buildings. A HSZ covers the area 75 metres outside the BPZ. The HSZ should be modified to have a maximum fuel load of 5-8 tonne per hectare. This can be implemented by fuel reduction methods such as burning, mowing and slashing to remove the hazard. This should not require the removal of living trees or shrubs. **REMEMBER:** reduce the fuel level of the fire to lower the intensity of the blaze. Further information on fuel loading can be found in the Visual Fuel Load Guide available by calling DFES or via their website at [www.dfes.wa.gov.au](http://www.dfes.wa.gov.au)
- 4) **Fire Management Plan (FMP)** A FMP is a comprehensive plan for the prevention and control of bushfires which may apply to individual land holdings. A notification, pursuant to the Transfer of Land Act 1893 (as amended) may be placed on the Certificate(s) of Title of the land for medium to long term fire management to reduce the occurrence and minimise the impact of uncontrolled bush fires, thereby reducing the threat to life, property and the environment. The land owner must comply with the FMP. Building in bush fire prone areas, new dwellings and other forms of accommodation, as well as additions to existing buildings are to be constructed in accordance with Australian Standard 3959-2009. In designated bush fire prone areas, the minimum BPZ in all cases shall be 25 metres. Further information on this and other information relating to fire safety issues can be found on the City's website [www.busselton.wa.gov.au](http://www.busselton.wa.gov.au)



## Appendix B     Asset Protection Zone standards

- **Fences:** within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
- **Objects:** within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
- **Fine Fuel load:** combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.
- **Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and/or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.

Figure 18: Tree canopy cover – ranging from 15 to 70 per cent at maturity



- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m<sup>2</sup> in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.
- **Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.
- **Grass:** should be managed to maintain a height of 100 millimetres or less.

Schedule 1: Standards for Asset Protection Zones (Guidelines for Planning in Bushfire Prone Areas, WAPC V1.3 Dec 2017).