# Bushfire Management Plan: Subdivision: Lot 603 Toreopango Avenue, Yanchep Parcel Property Pty Ltd







#### **DOCUMENT TRACKING**

Project Name	Bushfire Management Plan: Subdivision: Lot 603 Toreopango Avenue, Yanchep
Project Number	22PER1698
Project Manager	Daniel Panickar
Prepared by	Maitland Ely
Reviewed by	Daniel Panickar (BPAD Level 3 – 37802)
Approved by	Daniel Panickar (BPAD Level 3 – 37802)
Status	Draft
Version Number	v1
Last saved on	6 May 2022

This report should be cited as 'Eco Logical Australia 2020. *Bushfire Management Plan: Subdivision: Lot 603 Toreopango Avenue, Yanchep.* Prepared for Parcel Property.

#### **ACKNOWLEDGEMENTS**

This document has been prepared by Eco Logical Australia Pty Ltd with support from Parcel Property (the client).

#### Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and the client. The scope of services was defined in consultation with the client, by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Template 2.8.1

Version control	
Version	Purpose
v1	Draft – Submission to client

# Contents

1. Introduction	1
1.1 Proposal details	1
1.2 Purpose and application of the plan	1
1.3 Environmental considerations	1
	_
2. Bushfire assessment results	
2.1 Bushfire assessment inputs	5
2.1.1 Fire Danger Index	
2.1.2 Vegetation classification and slope under vegetation	5
2.2 Bushfire assessment outputs	7
2.2.1 BAL assessment	7
2.2.2 Method 1 BAL assessment	7
2.3 Identification of issues arising from the BAL assessment	8
3. Assessment against the Bushfire Protection Criteria	
3.1 Compliance	
3.2 Additional Bushfire Requirements	12
4. Implementation and enforcement	14
5. Conclusion	
5. References	16
Appendix A – Classified Vegetation Photos	
Appendix B – Standards for Asset Protection Zones	
Appendix C - Vehicular access technical requirements (WAPC 2017)	25
list of Figures	
List of Figures	
Figure 1: Site overview	
Figure 2: Site Plan	
Figure 3: Bushfire Prone AreasFigure 4: Vegetation classification	
Figure 4: Vegetation classification Figure 5: Bushfire Attack Level (BAL) Contours	
Figure 6: Spatial representation of the bushfire management strategies	
Figure 7: Illustrated tree canony cover projection (WAPC 2017)	23

# List of Tables

Table 1: Classified vegetation as per AS 3959: 2018	5
Table 2: Method 1 BAL calculation (BAL contours)	
Table 3: Summary of solutions used to achieve bushfire protection criteria	
Table 4: Proposed work program	14

# 1. Introduction

# 1.1 Proposal details

Eco Logical Australia (ELA) was commissioned by Parcel Property to prepare a Bushfire Management Plan (BMP) to support a subdivision application for Lot 603 Toreopango Avenue, Yanchep (hereafter referred to as the subject site, Figure 1). The proposed development will result in an intensification of land use and involves the development of 528 residential lots, one business lot, one balance lot and five Public Open Space (POS) areas (Figure 2).

The subject site is within a designated bushfire prone area as per the *Western Australia State Map of Bush Fire Prone Areas* (DFES 2019; Figure 3), which triggers bushfire planning requirements *under State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; Western Australian Planning Commission [WAPC] 2015) and reporting to accompany submission of the development application in accordance with the associated *Guidelines for Planning in Bushfire Prone Areas v 1.4* (the Guidelines; WAPC 2017).

The subject site is located within the Shire of Wanneroo in Yanchep. The current plan is the subdivision of lot 603 Toreopango Avenue into 528 residential lots, one business lot, one balance lot and five Public Open Space (POS) areas (Figure 2). The subject site currently is comprised of classifiable vegetation. Classifiable vegetation bounds the subject site to the north, east and west. To the south of the site is residential housing as well as more classifiable vegetation on the southeast and southwest.

This assessment has been prepared by ELA Bushfire Consultant Maitland Ely with quality assurance undertaken by Principal Bushfire Consultant Daniel Panickar (FPAA BPAD Level 3 Certified Practitioner No. BPAD37802).

## 1.2 Purpose and application of the plan

The primary purpose of this BMP is to act as a technical supporting document to inform planning assessment. This BMP is also designed to provide guidance on how to plan for and manage the bushfire risk to the subject site through implementation of a range of bushfire management measures in accordance with the Guidelines.

#### 1.3 Environmental considerations

SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values.

No revegetation is proposed within the development and landscaping will be maintained in a low-threat state.

ELA is not aware of outstanding environmental approvals required to facilitate development of the subject site.

1

© ECO LOGICAL AUSTRALIA PTY LTD

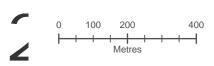


Figure 1: Site Overview

Subject site

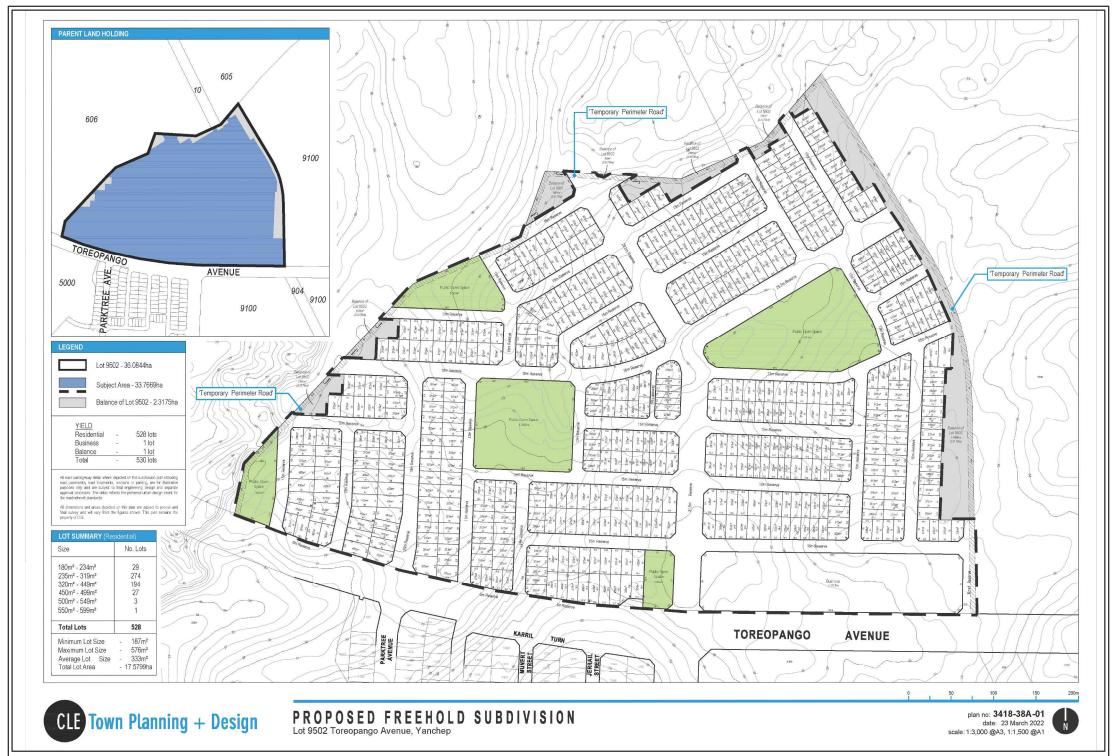
100m site assessment

150m site assessment



Datum/Projection: GDA 1994 MGA Zone 50 22PER1698-SM Date: 5/04/2022 logical

A TETRA TECH COMPANY



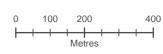


**Figure 3: Bushfire Prone Areas** 

Bushfire Prone Mapping (DFES 2021)

Subject site 100m site assessment 150m site assessment





Datum/Projection: GDA 1994 MGA Zone 50 22PER1698-SM Date: 5/04/2022



# 2. Bushfire assessment results

# 2.1 Bushfire assessment inputs

The following section is a consideration of spatial bushfire risk and has been used to inform the bushfire assessment in this report.

#### 2.1.1 Fire Danger Index

A blanket Fire Danger Index (FDI) 80 is adopted for Western Australia, as outlined in Australian Standard *AS 3959: 2018 Construction of Buildings in Bushfire Prone Areas* (SA 2018) and endorsed by Australasian Fire and Emergency Service Authorities Council (AFAC).

# 2.1.2 Vegetation classification and slope under vegetation

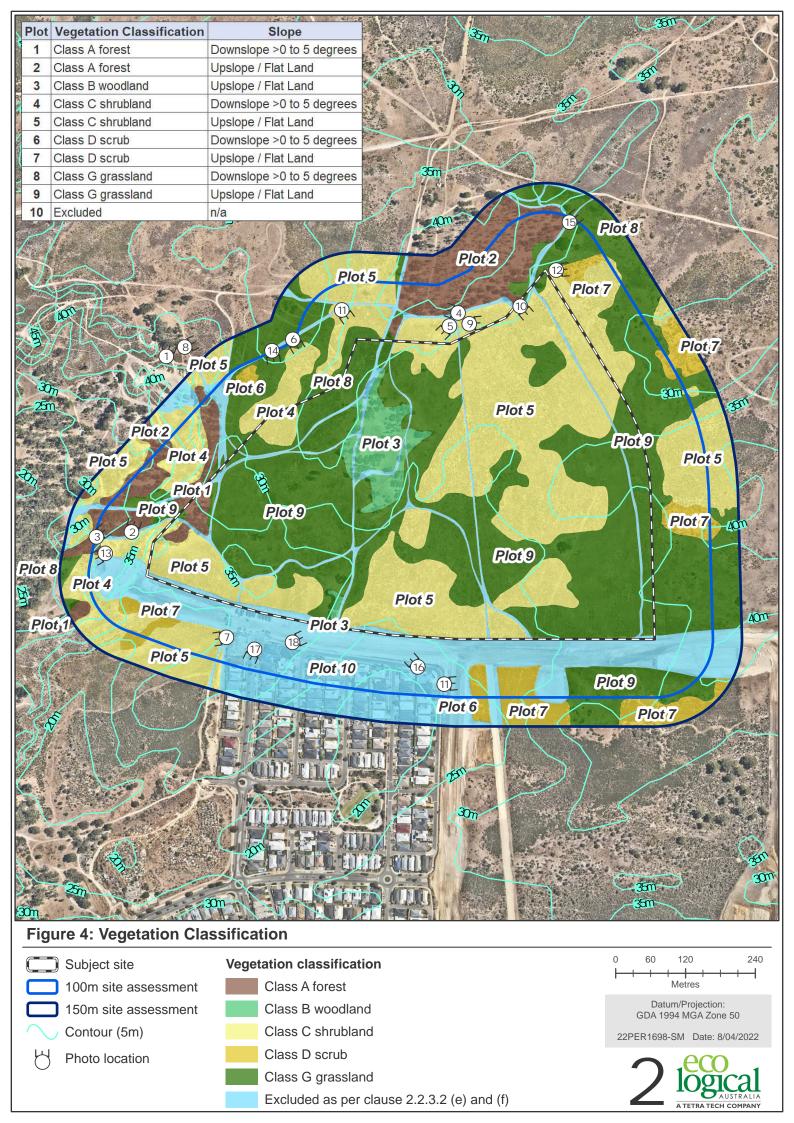
Vegetation and effective slope (i.e. slope under vegetation) within the subject site and surrounding 150 m (the assessment area) were assessed in accordance with the Guidelines and AS 3959: 2018 with regard given to the Visual guide for bushfire risk assessment in Western Australia (DoP 2016). Site assessment was undertaken on 17 March 2022.

The classified vegetation and effective slope for the site from each of the identified vegetation plots are identified below in Table 1 and Figure 4.

Table 1: Classified vegetation as per AS 3959: 2018

Plot	Vegetation Classification	Effective Slope
1	Class A Forest	Downslope >0 to 5 degrees
2	Class A Forest	All upslopes and flat land (0 degrees)
3	Class B Woodland	All upslopes and flat land (0 degrees)
4	Class C Shrubland	Downslope >0 to 5 degrees
5	Class C Shrubland	All upslopes and flat land (0 degrees)
6	Class D Scrub	Downslope >0 to 5 degrees
7	Class D Scrub	All upslopes and flat land (0 degrees)
8	Class G Grassland	Downslope >0 to 5 degrees
9	Class G Grassland	All upslopes and flat land (0 degrees)
10	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-

Photographs relating to each area and vegetation type are included in Appendix A.



# 2.2 Bushfire assessment outputs

A Bushfire Attack Level (BAL) assessment has been undertaken in accordance with SPP 3.7, the Guidelines, AS 3959: 2018 and the bushfire assessment inputs in Section 2.1.

#### 2.2.1 BAL assessment

All land located within 100 m of the classified vegetation depicted in Figure 4 is considered bushfire prone and is subject to a BAL assessment in accordance with AS 3959: 2018.

A Method 1 BAL assessment (as outlined in AS 3959: 2018) has been completed for the proposed development and incorporates the following factors:

- Fire Danger Index (FDI) rating;
- Vegetation class;
- Slope under classified vegetation; and
- Distance between proposed development area and the classified vegetation.

Based on the identified BAL, construction requirements for proposed buildings can then be assigned. The BAL rating gives an indication of the expected level of bushfire attack (i.e. radiant heat flux, flame contact and ember penetration) that may be received by proposed buildings and subsequently informs the standard of construction required to increase building survivability.

#### 2.2.2 Method 1 BAL assessment

Table 2 and Figure 5 display the Method 1 BAL assessment (in the form of BAL contours) that has been completed for the proposed subdivision in accordance with AS 3959: 2018 methodology.

Table 2: Method 1 BAL calculation (BAL contours)

Plot	Vegetation Classification	Effective Slope	Separation distances required					
Piot		Effective Slope	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5	
1	Class A Forest	Downslope >0 to 5 degrees	<20	20-<27	27-<37	37-<50	50-<100	
2	Class A Forest	All upslopes and flat land (0 degrees)	<16	16-<21	21-<31	31-<42	42-<100	
3	Class B Woodland	All upslopes and flat land (0 degrees)	<10	10-<14	14-<20	20-<29	29-<100	
4	Class C Shrubland	Downslope >0 to 5 degrees	<7	7-<10	10-<15	15-<22	22-<100	
5	Class C Shrubland	All upslopes and flat land (0 degrees)	<7	7-<9	9-<13	13-<19	19-<100	
6	Class D Scrub	Downslope >0 to 5 degrees	<11	11-<15	15-<22	22-<31	31-<100	
7	Class D Scrub	All upslopes and flat land (0 degrees)	<10	10-<13	13-<19	19-<27	27-<100	
8	Class G Grassland	Downslope >0 to 5 degrees	<7	7-<9	9-<14	14-<20	20-<50	

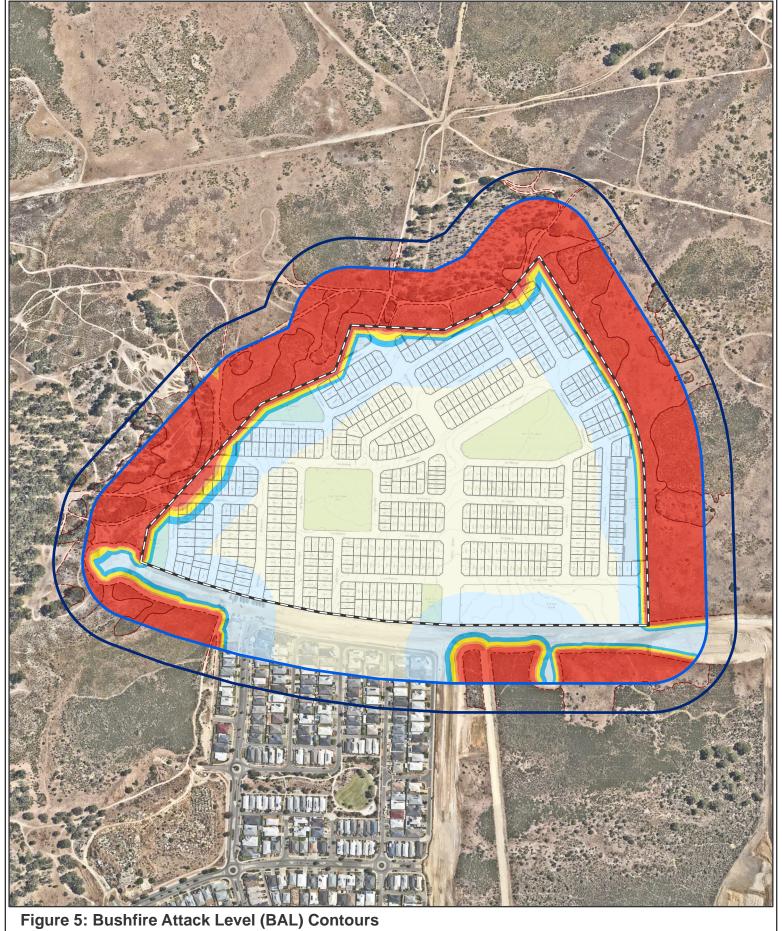
Plot	Vegetation Classification	Effective Slope	Separation distances required				
PIOL		Effective Stope	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
9	Class G Grassland	All upslopes and flat land (0 degrees)	<6	6-<8	8-<12	12-<17	17-<50
10	Excluded AS 3959: 2018 2.2.3.2 (e) & (f)	-	N	o separation	distances req	uired – BAL-L	OW

# 2.3 Identification of issues arising from the BAL assessment

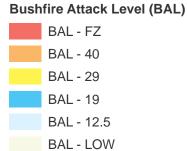
Should there be any changes in development design or vegetation/hazard extent that requires a modified bushfire management response, then the above BAL ratings will need to be reassessed for the affected areas and documented in a brief addendum to this BMP.

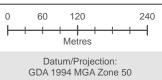
The proposed development has areas of natural vegetation onsite that have not been managed for a number of years. There are several existing fire breaks and roads throughout the subject site. In future, management of fuel loads and onsite vegetation may reduce the potential bushfire risk and reduction of radiant heat affecting the development.

Ten proposed lots within the subject site are located in areas subject to BAL ratings of BAL-FZ and BAL-40. The extent of the BAL-FZ and BAL-40 contours on seven of these lots are narrow (0.5to 9.5 m) (Figure 5), and as such, these lots can potentially be developed with an appropriate Asset Protection Zone (APZ) to exclude construction of a dwelling within these BAL ratings. The remaining three lots should be delayed until future dwellings can achieve BAL ratings ≤BAL-29. This is discussed further in section 3.1











# 3. Assessment against the Bushfire Protection Criteria

# 3.1 Compliance

The proposed subdivision is required to comply with policy measures 6.2 and 6.4 of SPP 3.7 and the Guidelines. Implementation of this BMP is expected to meet objectives 5.1-5.4 of SPP 3.7.

In response to the above requirements of SPP 3.7 and the Guidelines, bushfire risk management measures, as outlined, have been devised for the proposed subdivision in accordance with Guideline acceptable solutions to meet compliance with bushfire protection criteria.

Table 3 outlines the Acceptable Solutions (AS) that are relevant to the proposal and summarises how the intent of each Bushfire Protection Criteria has been achieved. No Performance Solutions (PS) have been proposed for this proposal. These management measures are depicted in Figure 6 where relevant.

Table 3: Summary of solutions used to achieve bushfire protection criteria

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 1: Location A1.1 Development location				Majority of proposed lots within the subject site will be located in an area subject to BAL ratings of ≤BAL-29.
				Ten proposed lots within the subject site that are exposed to BAL ratings of BAL-FZ and BAL-40 as a result of vegetation on neighbouring land (depicted in Figure 6) will only be sold only once future dwellings on these lots can be subject to BAL ratings ≤BAL-29.
Element 2: Siting and design of development A2.1 Asset Protection Zone (APZ)	$\boxtimes$			The proposed development has an APZ sufficient for the potential radiant heat flux to not exceed 29kW/m² and will be managed in accordance with the requirements of 'Standards for Asset Protection Zones' (WAPC 2021; Appendix B).
				The APZ on temporary on perimeter road and lot boundaries will be managed to low-fuel state.  The proposed subdivision is considered to be compliant with A2.1.
Element 3: Vehicular access A3.1 Public Roads	$\boxtimes$			The subject site is accessed via existing public roads. The Guidelines do not prescribe values for the trafficable (carriageway/pavement) width of public roads as they should be in accordance with the class of road as specified in the IPWEA Subdivision Guidelines, Liveable Neighbourhoods, Austroad Standards and/or any applicable standard in the local government area. Proposed within this subdivision are designed according to Liveable neighbourhoods.  ELAs assessment identified that all of the surrounding roads are bitumen with estimated width of the sealed surface achieving a minimum width of 6 m and therefore consider the existing road network would provide suitable access and egress

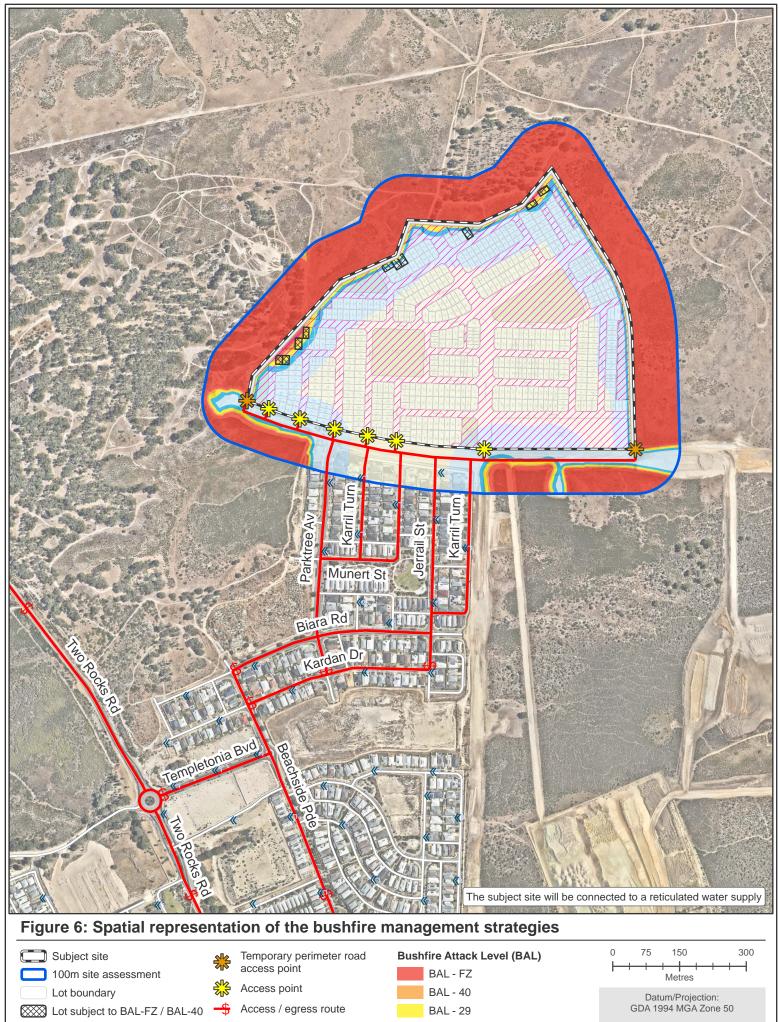
© ECO LOGICAL AUSTRALIA PTY LTD

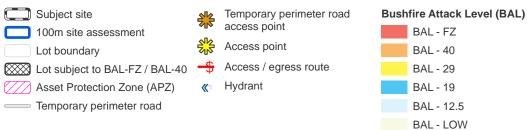
Bushfire Protection Criteria	AS	PS	N/A	Comment
				for the community and emergency services personnel in the event of a bushfire. Vehicular access technical requirements in accordance with the Guidelines are detailed in (Appendix C).  The proposed subdivision is considered to be
				compliant with A3.1.
A3.2a Multiple access routes				Two access routes from the subject site to two suitable destinations are available via the existing public road network (Figure 6). Beachside Parade connects to Templetonia Boulevard and Zamia Rise, which both connect to Two Rocks Road; providing access/egress routes north and south. Beachside Parade also links up to Yanchep Beach road south of the site, providing access/egress east. Please refer to A3.1 above for details regarding vehicular access technical requirements for public roads.  The proposed subdivision is considered to be compliant with A3.2a.
A3.2b Emergency Access way				No emergency access ways are required or proposed.
A3.3 Through-roads				With proposed development of temporary perimeter road, all proposed public roads within this subdivision are through-roads.  A3.3 is not applicable to this proposed subdivision.
A3.4a Perimeter roads				A temporary perimeter is proposed as a part of this subdivision. The proposed perimeter road will comply with the requirements outlined in the Guidelines shown in Appendix C and will be decommissioned once surrounding development removes the bushfire hazard interface with the subject site.  The proposed subdivision is considered to be compliant with A3.4a.
A3.4b Fire service access route				No fire service access route is required as all classified vegetation can be accessed as well as all proposed lots with the subject site. The proposed subdivision includes temporary perimeter road.  A3.4b is not applicable to this proposed subdivision.
A3.5 Battle-axe access legs				No battle-axe properties are proposed as a part of this subdivision, as such there are no existing battle-axe access legs to the subject site.  A3.5 is not applicable to this proposed subdivision.
A3.6 Private driveways				The subject site is serviced by reticulated water, no private driveways greater than 70 m in length and the subject site is accessed by a public road where speed limit is not greater than 70 km/hr.  A3.6 is not applicable to this proposed subdivision.

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 4: Water  A4.1 Identification of future water supply	$\boxtimes$			Reticulated water will be supplied to the proposed subdivision.  The proposed subdivision is considered to be compliant with A4.1.
A4.2 Provision of water for firefighting purposes	$\boxtimes$			Existing reticulated water is present within the area. ELA assume the hydrants and the existing reticulated water supply present in the area likely complies with Water Corporations Design Standard DS 63 Water Reticulation Standard, however, recommend this is confirmed with the Water Corporation, where possible. Hydrants within the surrounding residential development are generally spaced approximately 100 m apart) as depicted in Figure 6. The proposed subdivision is considered to be compliant with A4.2.
Element 5: Vulnerable tourism land uses				This subdivision application is not considered vulnerable tourism land use (see Section <b>3.2</b> ). Element 5 is not applicable to this proposed development.

# 3.2 Additional Bushfire Requirements

All landscaping areas within the subject site will be maintained in accordance with Standards for Asset Protection Zones (Appendix B).





22PER1698-SM Date: 5/05/2022



# 4. Implementation and enforcement

Implementation of the BMP applies to the developer, future owners within the subject site and the local government to ensure bushfire management measures are adopted and implemented on an ongoing basis. A summary of the bushfire management measures described in Section 3, as well as a works program, is provided in Table 4. These measures will be implemented to ensure the ongoing protection of life and property assets is achieved. Timing and responsibilities are also defined to assist with implementation of each measure.

Table 4: Proposed work program

No	Bushfire management measure	Responsibility
Prior to	issue of Titles	
1	Ensure future buildings are located outside of areas subject to BAL-FZ and BAL-40 as per the design in Figure 6.	Developer
2	Withhold the lots subject to BAL-FZ and BAL-40 from sale if future buildings cannot achieve ≤BAL-29 until such time that this can be achieved.	
3	Clear Asset Protection Zones as depicted in Figure 6.	Developer
4	Ensure that 100 m wide APZs are cleared and maintained around each stage of subdivision if the entirety of the development depicted in Figure 6 is not developed in a single stage.	Developer
5	Landscape the proposed POS areas such that they can be excluded from classification under clause 2.2.3.2 of AS 3959: 2018.	Developer
6	Place Section 165 Notification on Title for all lots within Bushfire Prone Areas.	Developer
7	Construct road network, including temporary perimeter road as per plan in Figure 6.	Developer
8	Provide reticulated water supply to all lots and install hydrants in accordance with Water Corporation standards.	Developer
Prior to	occupancy	
9	Ensure all APZs are implemented and maintained.	Developer
10	Maintain temporary perimeter road until surrounding development removes the bushfire hazard interface with the subject site.	Developer
11	Construct proposed buildings to relevant construction standard in AS 3959: 2018.	Developer/ Builder
Ongoing	g management	
12	Maintain APZs to the standard in the Guidelines	Owners / City of Wanneroo (in public reserves)
13	Maintain temporary perimeter road until surrounding development removes the bushfire hazard interface with the subject site.	Developer

# 5. Conclusion

In the author's professional opinion, the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed subdivision. As such, the proposed subdivision is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is recommended for approval.

# 6. References

City of Wanneroo, Firebreak Notice (2021) [Online]. Available from: <u>Firebreak Notice 2021 - City of Wanneroo</u>

Department of Fire and Emergency Services (DFES), 2019, *Map of Bush Fire Prone Areas, [Online]*, Government of Western Australia, available from: http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx

Department of Planning (DoP), 2016, Visual guide for bushfire risk assessment in Western Australia. DoP, Perth.

Standards Australia (SA), 2018, Construction of buildings in bushfire-prone areas, AS 3959-2018. SAI Global, Sydney.

Western Australian Planning Commission (WAPC), 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*. WAPC, Perth.

Western Australian Planning Commission (WAPC), 2021, *Guidelines for Planning in Bushfire Prone Areas Version 1.4 (including appendices)*, WAPC, Perth.

Western Australian Planning Commission (WAPC), 2019, A guide to developing a Bushfire Emergency Evacuation Plan, October 2019.

# Appendix A - Classified Vegetation Photos

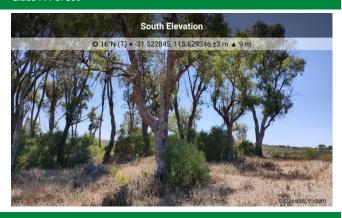
#### Plot 1 Classification or Exclusion Clause

#### Photo Point 1

Classified vegetation within this plot is comprised of trees that could grow up to 30 m tall with 30%-70% foliage cover. Understorey is tiered layers of vegetation comprised of shrubs and grasses.

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### **Class A Forest**



#### Plot 1 Classification or Exclusion Clause

#### **Photo Point 2**

Classified vegetation within this plot is comprised of trees that could grow up to 30 m tall with 30%-70% foliage cover. Understorey is tiered layers of vegetation comprised of shrubs and grasses.

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### **Class A Forest**



## Plot 1 Classification or Exclusion Clause

#### Photo Point 3

Classified vegetation within this plot is comprised of trees that could grow up to 30 m tall with 30%-70% foliage cover. Understorey is tiered layers of vegetation comprised of shrubs and grasses.

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### **Class A Forest**



#### Plot 2 Classification or Exclusion Clause

# Photo Point 4

Classified vegetation within this plot is comprised of trees that could grow up to 30 m tall with 30%-70% foliage cover. Understorey is tiered layers of vegetation comprised of shrubs and grasses.

Slope under this vegetation was assessed as upslope/flat land.

#### **Class A Forest**



#### Plot 3 Classification or Exclusion Clause

#### **Photo Point 5**

Classified vegetation within this plot is comprised of trees 10-30 m tall with 10-30% foliage cover. Understorey is comprised of grasses. This plot is seen further in the background of associated photo (photo 5).

Slope under this vegetation was assessed as upslope/flat land.

#### **Class B Woodland**



#### Plot 4 Classification or Exclusion Clause

# Photo Point 6

Classified vegetation within this plot is comprised of shrubs <2 m tall with >30% foliage cover. This plot is seen further in the background of associated photo (photo 6).

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### **Class C Shrubland**



#### Plot 5 Classification or Exclusion Clause

#### **Photo Point 7**

Classified vegetation within this plot is comprised of shrubs <2 m tall with >30% foliage cover.

Slope under this vegetation was assessed as upslope/flat land.

#### Class C Shrubland



#### Plot 5 Classification or Exclusion Clause

#### **Photo Point 8**

Classified vegetation within this plot is comprised of shrubs <2 m tall with >30% foliage cover.

Slope under this vegetation was assessed as upslope/flat land.

#### **Class C Shrubland**



#### Plot 5 Classification or Exclusion Clause

# Photo Point 9

Classified vegetation within this plot is comprised of shrubs <2 m tall with >30% foliage cover.

Slope under this vegetation was assessed as upslope/flat land.

#### **Class C Shrubland**



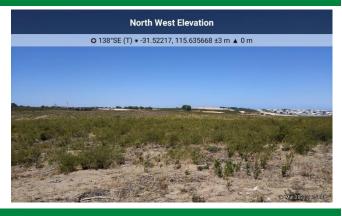
#### Plot 5 Classification or Exclusion Clause

#### **Photo Point 10**

Classified vegetation within this plot is comprised of shrubs <2 m tall with >30% foliage cover.

Slope under this vegetation was assessed as upslope/flat land.

#### Class C Shrubland



#### Plot 6 Classification or Exclusion Clause

#### **Photo Point 11**

Classified vegetation within this plot is comprised of shrubs >2 m tall and >30% foliage cover. This plot is seen further in the background.

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### **Class D Scrub**



#### Plot 7 Classification or Exclusion Clause

# Photo Point 12

Classified vegetation within this plot is comprised of shrubs >2 m tall and >30% foliage cover.

Slope under this vegetation was assessed as upslope/flat land.

#### **Class D Scrub**



#### Plot 8 Classification or Exclusion Clause

#### **Photo Point 13**

Classified vegetation within this plot is comprised of grasses.

Slope under this vegetation was assessed as downslope >0 to 5 degrees.

#### Class G Grassland



#### Plot 9 Classification or Exclusion Clause

#### **Photo Point 14**

Classified vegetation within this plot is comprised of grasses.

Slope under this vegetation was assessed as upslope/flat land.

#### Class G Grassland



#### Plot 9 Classification or Exclusion Clause

# **Photo Point 15**

Classified vegetation within this plot is comprised of grasses.

Slope under this vegetation was assessed as upslope/flat land.

#### Class G Grassland



## Plot 10 Classification or Exclusion Clause

#### Excluded AS 3959-2018 2.2.3.2 (e)

#### **Photo Point 16**

Non-vegetated area that is comprised of a new road that is currently being developed.



#### Plot 10 Classification or Exclusion Clause

Excluded AS 3959-2018 2.2.3.2 (e) & (f)

#### **Photo Point 17**

This plot is comprised of non-vegetated areas and low threat vegetation. It contains residential housing, roads, and managed garden.



#### Plot 10 Classification or Exclusion Clause

Excluded AS 3959-2018 2.2.3.2 (e)

# **Photo Point 18**

Non-vegetated area that is comprised of a new road that is currently being developed.



# Appendix B – Standards for Asset Protection Zones

The following standards have been extracted from the *Guidelines for Planning in Bushfire Prone Areas* v 1.4 (WAPC 2017).

Every habitable building is to be surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

- **a. 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 fire does not exceed 29kW/m² (BAL-29) in all circumstances.
- **b. Location:** the APZ should be contained solely within the boundaries of the lot on which a 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).
- **c. Management:** the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (below):
  - 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 7).

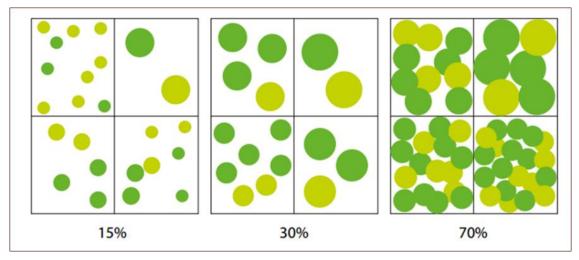


Figure 7: Illustrated tree canopy cover projection (WAPC 2017)

- 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.

#### **Additional notes**

The Asset Protection Zone (APZ) is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. Hazard separation in the form of using subdivision design elements or excluded and low threat vegetation adjacent to the lot may be used to reduce the dimensions of the APZ within the lot.

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. The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

# Appendix C - Vehicular access technical requirements (WAPC 2017)

Technical requirements	Public road	Emergency access way <sup>1</sup>	Fire service access route <sup>1</sup>	Battle-axe and private driveways <sup>2</sup>
Minimum trafficable surface (m)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (m)	N/A	6	6	6
Minimum vertical clearance (m)		4	.5	
Minimum weight capacity (t)		1	.5	
Maximum grade unsealed road <sup>3</sup>	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Maximum grade sealed road <sup>3</sup>	As outlined in the IPWEA Subdivision Guidelines		1:7 (14.3%)	
Maximum average grade sealed road	As outlined in the IPWEA Subdivision Guidelines		1:10 (10%)	
Minimum inner radius of road curves (m)	As outlined in the IPWEA Subdivision Guidelines		8.5	

 $<sup>^{\</sup>rm 1}$  To have crossfalls between 3 and 6 %.

<sup>&</sup>lt;sup>2</sup> Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

 $<sup>^{\</sup>rm 3}\,\text{Dips}$  must have no more than a 1 in 8 (12.5% -7.1 degree) entry and exit angle



