Our Ref: 21.2017.88.1 – D21/206026

Your Ref:

Enquiries to: Mr Neels Pretorius



12th November 2021

Mr Victor Marcelino PO Box 465 SOUTH FREMANTLE WA 6162

Email: victor@terranovis.com.au

# Re: Amended Bushfire Management Plan – Lots 14, 299 and 9010 Kerosene Lane, Baldivis

I refer to your amended Bushfire Management Plan for Lots 14, 299, and 9010 Kerosene Lane, Baldivis received on the 18th October 2021.

The Bushfire Management Plan is considered suitable, and has been approved. Please find attached herein a copy of the approved Bushfire Management Plan.

Please note that the Bushfire Management Plan requires the subdivider to prepare section 70A Notifications on all titles to advise owners of the existence of the Bushfire Management Plan. This action should be undertaken prior to the lots being created. In addition, the subdivider is required to provide all owners with a copy of the approved Bushfire Management Plan.

Should you have any enquiries with respect to this advice, please contact Mr Neels Pretorius on 9527 0763.

Yours faithfully

gillespoe

C GILLESPIE <u>A/CO-ORDINATOR STATUTORY PLANNING</u>

www.rockingham.wa.gov.au



Building Envelope APPROVED

Date: 12 November 2021

COR Ref: 21.2017.88.1



# **BUSHFIRE MANAGEMENT PLAN**

# Lot 14, 299 & 9010 Kerosene Lane, Baldivis

# City of Rockingham



Prepared by Ralph Smith BPAD27541 smith.consulting@bigpond.com 0458 292 280 Site visited 8 June 2021; Report completed 18 October 2021

# CITY OF ROCKINGHAM Bushfire management plan/Statement addressing Building Envelopfe Bushfire Protection Criteria coversheet

Report author WA BPAD acc Not accredite	Ralph Smith creditation level (pla ed Level 1 please provide the	BAL assessor Leve	Month Ju	ne Level 3 practitio	Year 2021
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Not accredite	ed Level 1 please provide the	BAL assessor Leve	el 2 practitioner		
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	WIND DUMDAR 27		n expiry: Month		Year 2022
		Accieditatio	A A A A A A A A A A A A A A A A A A A	ugust	1001 2022
Bushfire mana	ogement plan versi	on number: 1.1			
Bushfire mana	gement plan date	: Day 18	Month	October	Year 202
Client/busines	ss name: Terranovi	s Pty Ltd			
	al any of the followin development (in B	ng (see <u>SPP 3,7 for definition</u> AL-40 or BAL-FZ)	\$(2ng		Yes
Strategic plan	nning proposal (inc	luding rezoning applicati	ons)		
Minor develo	pment (in BAL-40 o	r BAL-FZ)			
High risk land	l-use				1
High risk land Vulnerable la					1
	ind-use				1
Vulnerable la None of the a Note: Only if	above	ne above answers in the roposal to DFES for comm		the decision maker (e	e.g. local gover
Vulnerable la None of the c Note: Only if or the Why has it be	above		ient.		

Building Envelope This Provide Management Plan has been developed by Smith Bushfire Consultants Pty Ltd for the exclusive use of the client, Terranovis Pty Ltd and their agents.

Date: 12 November 2021 The plan has been compiled using the standard methodologies required by Western Australian conservertment departments and agencies. It is based on the following:

• State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7), December 2015

• Guidelines for Planning in Bushfire Prone Areas, December 2017

• Standards Australia. (2018). *Australian Standard* 3959 – *Construction of buildings in bushfireprone areas (Incorporating amendments No 1 and 2)*. Standards Australia, Sydney, NSW.

The techniques described in the above publications have been applied in the appropriate areas and circumstances for the development of this document.

Where there was no public access the interpretation is based on photographic and satellite imagery, and a laser distance meter was used to measure distances and effective slope.

It is recommended that this Bushfire Management Plan be revised every five years to ensure that it remains relevant and in-line with current requirements. This will optimise protection. It is proposed that the property owners undertake the review.

#### DISCLAIMER

This Bushfire Management Plan has been prepared in good faith. It is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this plan is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error or omission from this publication.

Smith Bushfire Consultants Pty Ltd has exercised due and customary care in the preparation of this Bushfire Management Plan and has not, unless specifically stated, independently verified information provided by others.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Smith Bushfire Consultants Pty Ltd performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this plan.

#### **Document control**

Report Version	Purpose	Author/reviewer and accreditation details	Date Submitted
1	Original BMP to support the development	Ralph Smith	22/07/2021
1.1	Revised post development vegetation map and BAL Contour Map	Ralph Smith	18/10/2021

© Smith Bushfire Consultants Pty Ltd – October 2021

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# CITY OF ROCKINGHAM Section 1: Proposal Details

#### **Building Envelope**

This provide the support the development of Stage 5 of the Paradiso Estate. There is an approved BMP for the site which was developed in September 2017 for the entire site. This BMP also includes the service station site and medical centre site which Date: are located adjacent to Kerosene Lane and north of the Stage 5 development and are shown in Figure 2.





Figure 1. A copy of the subdivision site plan.

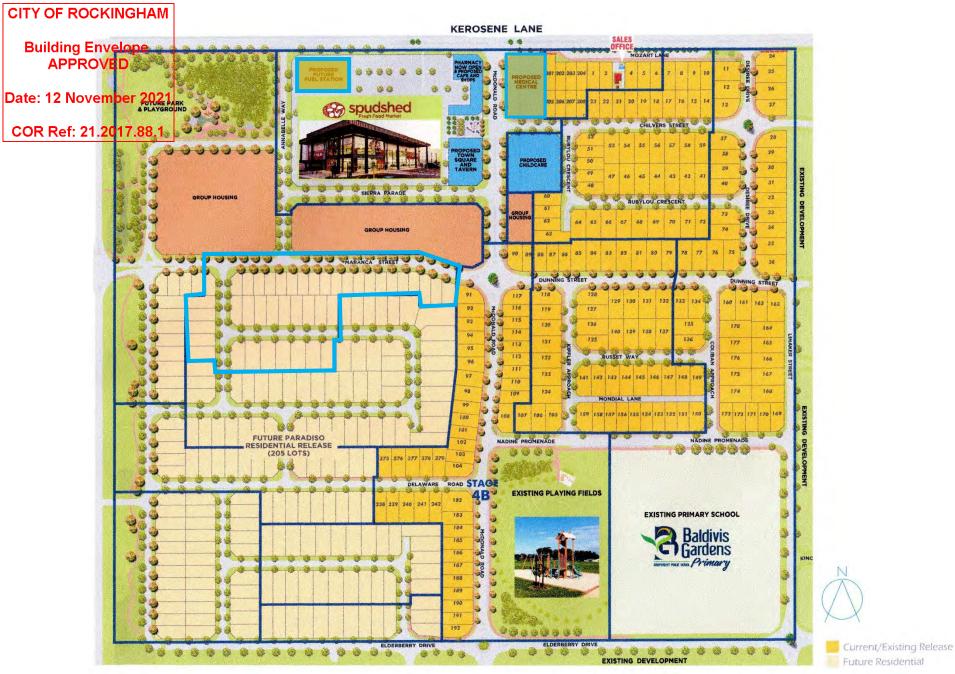


Figure 2. A copy of the entire development site plan

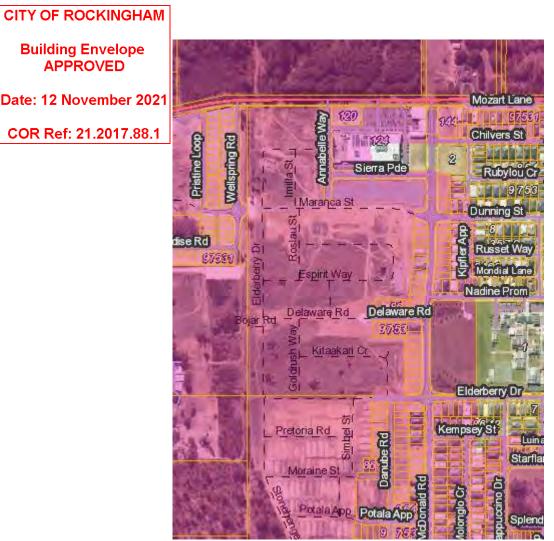


Figure 3. Aerial photo of the bushfire prone area for the subject site.

#### Section 2: Environmental Considerations

#### Subsection 2.1: Native Vegetation – modification and clearing

The land on which Stage 5 is located will be cleared when the land for the other stages is cleared in the very near future. Stage 5 is located on a grassland area with only a few very scattered native species.

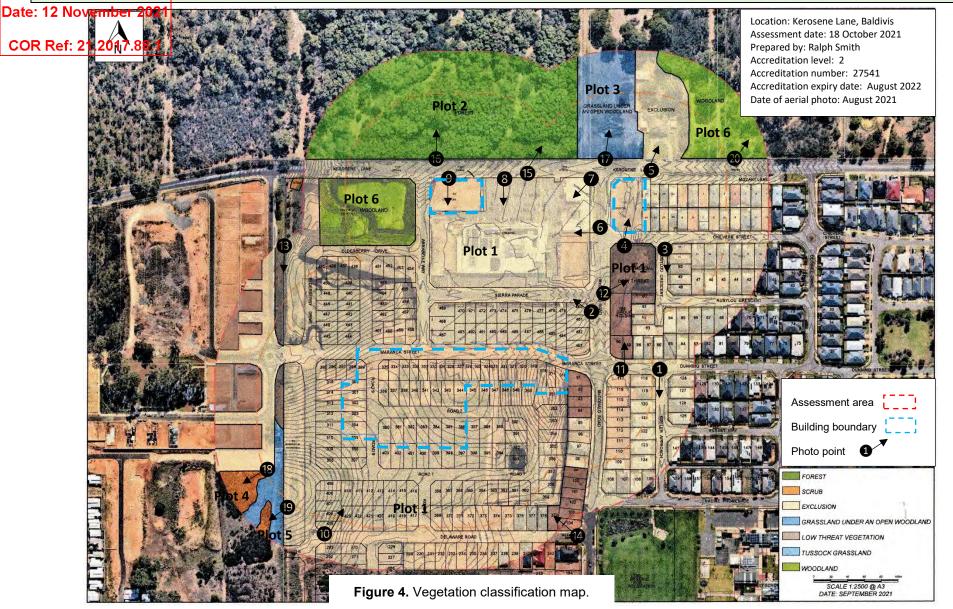
#### Subsection 2.2: Re-vegetation/Landscape Plans

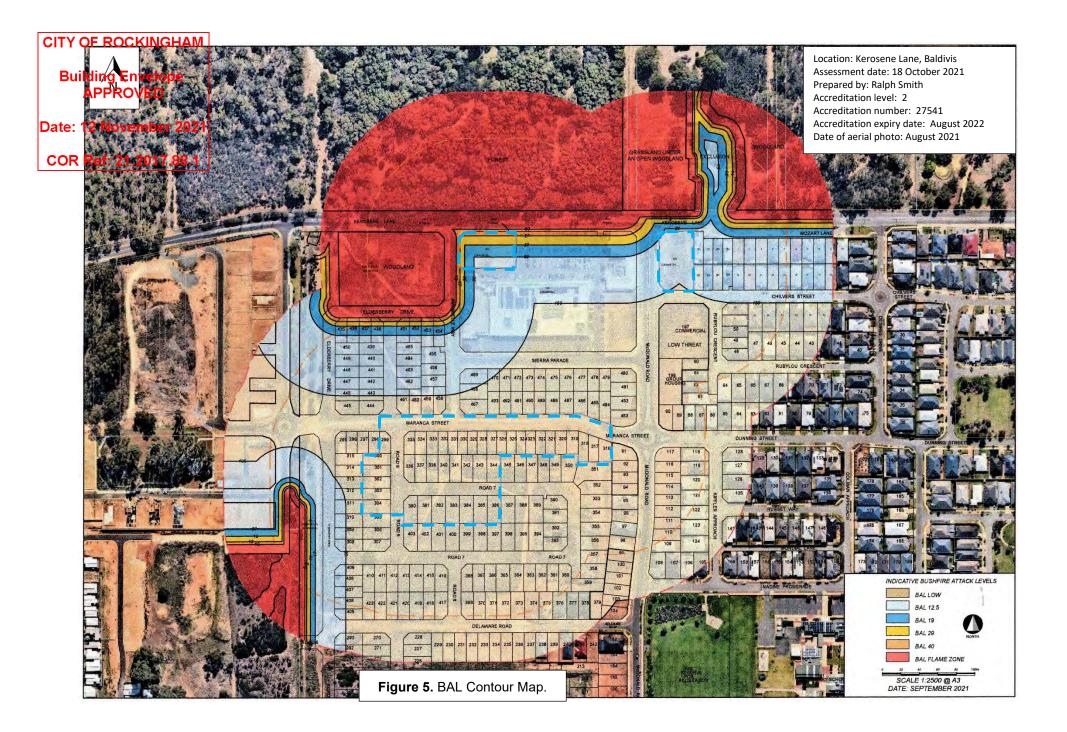
There will be re-vegetation plans associated with this development for the area in the north-west corner of the development site this is identified as a future drainage basin and it will be developed as a woodland vegetation.

## Busection 3; Bushfire assessment results

#### APPROVED

Subsection 3.1: Assessment Inputs





CITY OF ROCKINGHAM Plot 1 Building Envelope Cather to the second second

requirements.

, <sup>9e</sup>(e) and (f) including the City's firebreak notice vegetation management

**Photo ID: Photo 1** Looking at the road, infrastructure and houses.



**Photo ID: Photo 2** Looking at the bitumen carpark and shops.



**Photo ID: Photo 3** Looking at the road, infrastructure and dwellings adjacent to the development site.



**Photo ID: Photo 5** Looking at the dwelling north of Kerosene Lane.



**Photo ID: Photo 4** Looking at the proposed medical centre and grassland that must be mown during the bushfire season.



Photo ID: Photo 6 The shops north of the development site.



**Photo ID: Photo 7** Looking south at Kerosene Lane and shops.



2/06/2021 2:34:57 PM (+8.0 hrs) Dir=S Lat=:32:29737 Lor=115:80797 All=0m MSL **Photo ID: Photo 8** Looking south at the road, parking area and shops.



8/00/2021 2:38:19 PM (+8 0 hrs) bir=S Lat=32:2975 Lon=115.80719 Alt=0m MSL WGS 1984 **Photo ID: Photo 9** Looking at the site of the proposed service station.



806/2021 2:5527 PM (+8 o hrs) DIFENNE Late:32:30144 Lone:115:80604 Alteom MSL WGS 198 **Photo ID: Photo 10** Looking at the grass which will be cleared as a component of this development.



Photo ID: Photo 11 The bitumen road, road reserve and cleared lots.



**Photo ID: Photo 12** The grass vegetation which is managed to 'low threat vegetation' during the bushfire season.



**Photo ID: Photo 13** The managed vegetation on the land to the west of the development site.



**Photo ID: Photo 14** The established infrastructure east of the development site.

#### Plot 2

Class A - Forest (AS 3959 vegetation classification A-03)



**Photo ID: Photo 15** The revegetated forest north of the development site.



**Photo ID: Photo 16** The forest vegetation north of the development site.

#### Plot 3

Class G – Grassland under an open woodland (AS 3959 vegetation classification G–06)



**Photo ID: Photo 17** The grassland vegetation north of the development site.



**Photo ID: Photo 18** The scrub vegetation west of the development site.

#### Plot 5

Class G – Tussock Grassland (AS 3959 vegetation classification G–22)



**Photo ID: Photo 19** The grassland vegetation between the scrub west of the development site.

#### Plot 6

Class B – Woodland (AS 3959 vegetation classification B–05)



16/07/2021 2:31:41 PM (+8:0 free) Dir=E Lat=-32:29/38 Lon=115.81031 All=1m MSL WGS84 **Photo ID: Photo 20** The woodland vegetation north-east of the development site.

# Notes to Accompany Vegetation Classification Building Envelope

Date: 12 November 2021 Clause 2.2.3.2 (e) and (f)

**R Ref: 21.2017.88.1** This plot comprises the development site which will very soon be cleared. It includes the neighbouring houses, other built assets, driveways and the road infrastructure adjacent to the development site.

This plot also comprises the subdivided lots that are not yet built upon and are required to be mainatined as 'low threat vegetation' during the bushfire season through the application of the City of Rockingham's Firebreak Notice.

#### 2. Plot 2

Class A – Forest (AS 3959 vegetation classification A-03)

This plot comprises the forest regrowth vegetation on the land adjacent and to the north of the subdivison site. It is located north of Kerosene Lane. The revegetation is planted at a density that produces greater than 30% overstorey cover.

#### 3. Plot 3

Class G – Grassland under an open woodland (AS 3959 vegetation classification G–06)

This plot comprises the grassland vegetation north of Kerosene Lane, east of the forest vegetation, and west of the established house, shed and garden.

#### 4. Plot 4

Class D – Scrub (AS 3959 vegetation classification D–13)

This plot comprises the very sparse and scattered scrub that is growing in clumps within the grassland vegetation that is south-west of Stage 5, but west of the earlier developments.

There is also area of scrub to the north-west of the Stage 5 development area and is on the border, but just outside the 150 metre assessment area.

#### 5. Plot 5

Class G – Tussock Grassland (AS 3959 vegetation classification G–22)

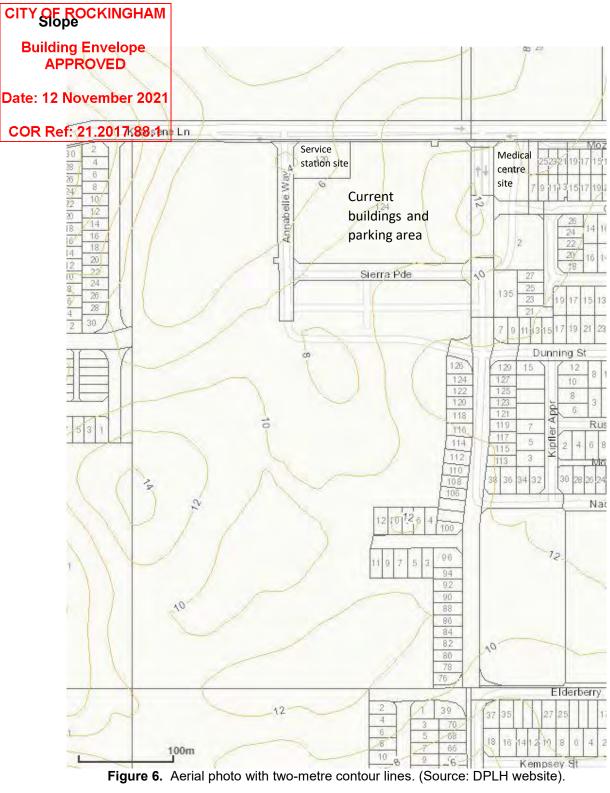
This plot comprises the grassland that is located between the clumps of scrub. It is very sparse. The grassland vegetation is growing within the gaps associated with the scattered scrub that is south-west of Stage 5, but west of the earlier developments.

#### 6. Plot 6

Class B – Woodland (AS 3959 vegetation classification B–05)

This plot comprises the tuart woodland vegetation on the land within 150 metres of the subdivison site, to the north-east. It is located north of Kerosene Lane and east of the established house, shed and garden.

This plot also includes the proposed revegetation site north of the Stage 5 development area.



The slope is upslope from the north-east section of the development site which contains the Spud Shed building, other buildings and car parks.

# CITY OF ROCKINGHAM Other environmental values

A desking Envelope of the State Government websites was conducted and found to contain no significant environmental or human assets within or adjacent to the development site, including:

Date: 12 November 2021 Threatened and priority rare flora; Threatened and priority rare fauna;

COR Ref. 2520 \$1588.1 • Carnaby Cockatoo confirmed roost sites;

- Environmentally sensitive areas;
- Tuart woodlands; •
- Heritage Council WA Heritage agreements •
- Aboriginal heritage places map; and •
- DBCA land of interest. •

#### Subsection 3.2: Assessment outputs

Table 1: This table covers the Stage 5 site post-development.

	Ме	thod 1 BAL Determinatio	n	
Vegetation Area/Plot	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Exclusion s 2.2.3.2 (e) and (f)	Not applicable	Not applicable	LOW
2	Forest	Level	213	LOW
3	Grassland under an open woodland	Level	65	LOW
4	Scrub	Upslope	109	LOW
5	Tussock Grassland	Upslope	65	LOW
6	Woodland	Level	113	LOW
		Determined Bush	nfire Attack Level	LOW

CIT	Y OF ROCK	INGHAM				
в	Table 2: T	his table o <mark>/elope</mark>	overs the pote	ntial service station site.		
	APPROV			thod 1 BAL Determination	n	
	2: 12 Noven Vegetation Area/Plot	<mark>017.88.1</mark> A Veq		Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
	1	Exclu s 2.2 and (	.3.2 (e)	Not applicable	Not applicable	LOW
	2	F	orest	Level	20	40
	3		nd under an woodland	Level	113	LOW
	4	S	Scrub	Upslope	326	LOW
	5	Tuss Gras	ock sland	Upslope	311	LOW
	6	Woo	dland	Level	183	LOW
				Determined Bus	shfire Attack Level	40

 Table 3: This table covers the potential medical centre site.

	Me	thod 1 BAL Determinatio	n	
Vegetation Area/Plot	Applied Vegetation Classification	Effective Slope Under the Classified Vegetation (degrees)	Separation Distance to the Classified Vegetation (metres)	Bushfire Attack Level
1	Exclusion s 2.2.3.2 (e) and (f)	Not applicable	Not applicable	LOW
2	Forest	Level	48	12.5
3	Grassland under an open woodland	Level	20	12.5
4	Scrub	Upslope	492	LOW
5	Tussock Grassland	Upslope	441	LOW
6	Woodland	Level	52	12.5
		Determined Bush	nfire Attack Level	12.5

### Section 4; dentification of bushfire hazard issues

Date: The Noringing property in the forest and the woodland vegetation north of Kerosene Lane and the subdivision site.

COR Ref: 21.2017.88.1

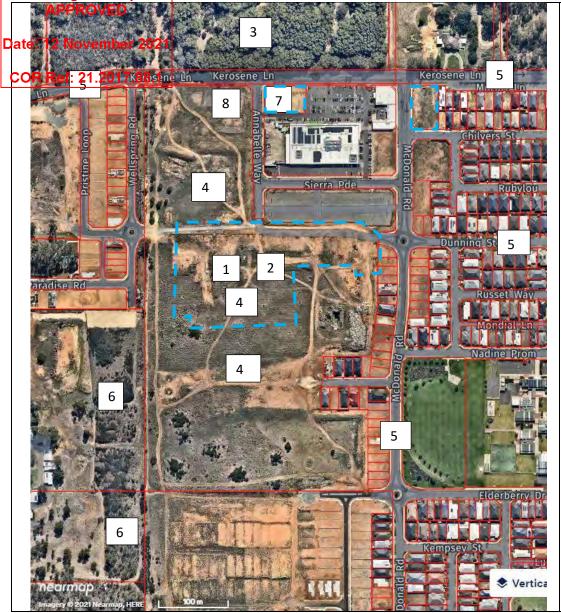
The scrub and grassland west of the development site is a bushfire hazard that will remain post this development.

The development site will be cleared of vegetation during the development. The revegetation of the drainage area as a woodland will pose an ongoing bushfire threat once it is established.

Building Enve	Compliance	
Bushfire protection	Methon of Compliance	Proposed bushfire management strategies
COR Ref: 21.20	Acceptable solutions	
Element 1: Location	A1.1 Development location	This subdivision will be developed in such a manner that on completion the dwellings within Stage 5 will be BAL- Low. The service station site will be BAL rated at BAL–40 and does not meet the State's criteria for development The medical centre is rated as BAL–12.5.
Element 2: Siting and design	A2.1 Asset Protection Zone (APZ)	There is no requirement for an APZ with this development.
Element 3: Vehicular	A3.1 Two access routes	There are multiple access options to and through the subdivision that facilitate movement to a range of alternativ locations and directions of travel.
access	A3.2 Public road	All new public roads will be constructed to the appropriate standards as required in the Guidelines.
	A3.3 Cul-de-sac (including a dead-end- road)	Not applicable.
	A3.4 Battle-axe	Not applicable.
	A3.5 Private driveway longer than 50 m	Not applicable.
	A3.6 Emergency access way (EAW)	Not applicable.
	A3.7 Fire service access routes (perimeter roads)	Not applicable.
	A3.8 Firebreak width	Firebreaks and fuel loads will be established and maintained in accordance with the City's firebreak notice.
Element 4:	A4.1 Reticulated areas	The site is serviced by reticulated scheme water
Water	A4.2 Non-reticulated areas	Not applicable.
Water	A4.3 Individual lots within non- reticulated areas (Only for use if creating 1 additional lot and cannot be applied cumulatively)	Not applicable.

#### Subsection 5.2: Additional management strategies

#### **Building Envelope**



#### Legend

- 1. Subject land
- 2. Roads

#### Notes

- 1. AS 3959 construction standards apply to the subdivision for dwellings
- 2. There will be reticulated scheme water and required fire hydrants.
- 3. Forest to the north is the primary vegetation plot that provide an ongoing bushfire threat.
- 4. The site is cleared of native vegetation, and the grassland and is being cleared ready for the developed.
- 5. External access options for the residents on the established bitumen roads.
- 6. The scrub and grassland vegetation.
- 7. Service station site is rated at BAL-40 for part of the lot adjacent to Kerosene Lane.
- 8. The revegetated woodland location.

Location: Kerosene Lane (Paridiso Estate), Baldivis Assessment date: 18 October 2021 Prepared by: Ralph Smith Accreditation level: 2 Accreditation number: 27541 Accreditation expiry date: August 2021 Date of aerial photo: August 2021 Version: 1.1

Figure 7. Spatial representation of bushfire management strategies.

# Building Envelope APPROVED

Section 6: Responsibilities for Implementation and Management of the Bushfire Date: 12 Nov Methan 2621

#### COR Ref: 21.2017.88.1

DEVELO	PER/LANDOWNER – PRIOR TO SALE OR OCCUPANCY
No.	Implementation Action
1	Establish and maintain the firebreaks is accordance with s33 of the Bush Fires Act 1954.
2	Establish the reticulated scheme water supply to comply with the State Government's requirements.
3	A notification, pursuant to Section 165 of the <i>Planning and</i> <i>Development Act 2005</i> is to be placed on the certificate(s) of title of the proposed lot(s) that are declared as bushfire prone, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:
	"This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land". (Western Australian Planning Commission)
4	Construct the dwellings to the required standard as described in AS 3959

No.	Management Action	
1	Comply with the relevant local government annual firebreak notice issued under s33 of the Bush Fires Act 1954.	
2	Maintain the dwellings to the appropriate AS 3959 construction standard.	

Building Envelope

Date: 12 Access external to the development site that shows there are numerous alternative access options to alternative destinations.



#### CITY O Appendix 2: Asset Protection Zone criteria

#### **Building Envelope** APPROVED

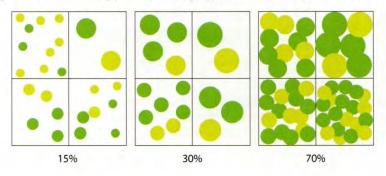
#### **ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT**

#### Date: 12 N SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

COR Ref: 21.2017.88.1 PZ 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 16: 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.

## Appendix 3: City of Rockingham Fire Control Notice 2021/2022

The City of Rockingham formally requires through the Fire Control Notice requires the grassland to be managed so that it is no greater than 50 mm. This means that all vacant lots associated with this development will be managed to the 'low threat vegetation' criteria within AS 3959.

### COR Ref: 21.2017.88.1 All land with an area of less than 4047 m<sup>2</sup> (less than one acre)

# Owners/Occupiers of vacant land are required to:

- Remove accumulated fuel such as leaf litter, twigs, dead bush and dead trees capable of carrying a running fire.
- Have the entire vacant land clear of weed or long grasses by slashing, mowing or other means to a height no greater than 50 mm and maintained in this state.

# Owners/Occupiers of developed land are required to:

 Ensure driveways and access ways to all buildings are maintained at a minimum of three (3) metres in width and a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back to clear access.

#### References Building Envelope

APPROVED Australian Building Codes Board, (2019). *Building Code of Australia*. Australian Building Codes Board, Sydney. Date: 12 November 2021

COR Ref: 21.2017.88.1

Contour map from https://maps.agric.wa.gov.au/nrm-info/

Department of Fire and Emergency Services (DFES), (2021). *Map of Bushfire Prone Areas*. Retrieved 22 July 2021 from

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

Western Australian Planning Commission. (2017). *Guidelines for Planning in Bushfire Prone Areas.* Western Australian Planning Commission, Perth, WA. December 2017.

City of Rockingham Fire Control Notice Retrieved 22 July 2021 from https://rockingham.wa.gov.au/forms-and-publications/your-services/fire-and-bush/fire-controlnotice-2021-2022

Environmental and built values information from https://espatial.dplh.wa.gov.au/PlanWA/Index.html?viewer=PlanWA