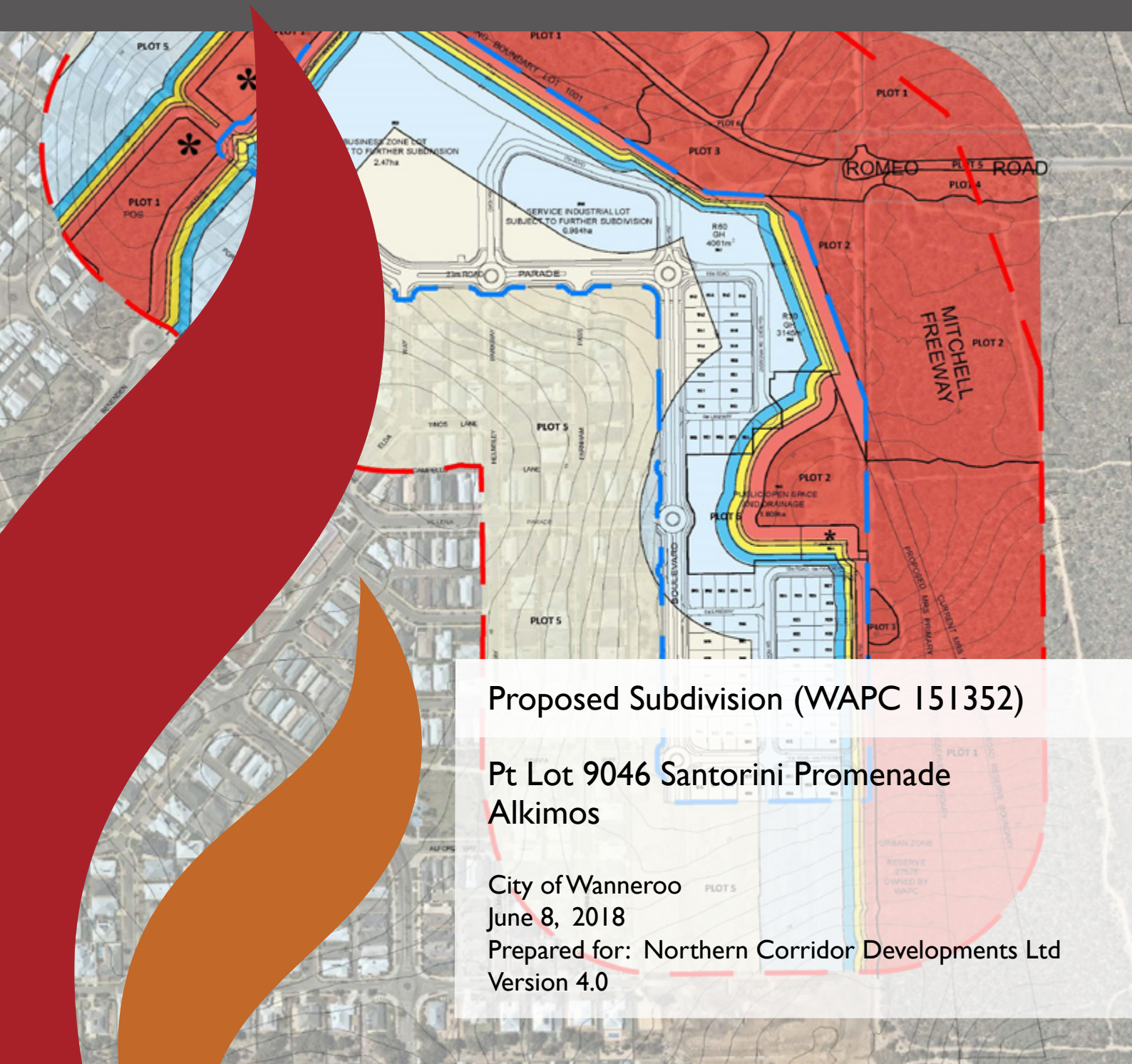


# Bushfire Management Plan



Proposed Subdivision (WAPC 151352)

Pt Lot 9046 Santorini Promenade  
Alkimos

City of Wanneroo  
June 8, 2018

Prepared for: Northern Corridor Developments Ltd  
Version 4.0

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## Document Information

Prepared for: Northern Corridor Developments Ltd  
Project Name: Landbeach East (WAPC 151352)  
Address: Lot 9046 Santorini Promenade, Alkimos

## Document Control

Bushfire Management Plan - Lot 9046 Santorini Promenade, Alkimos			
REPORT VERSION	PURPOSE	AUTHOR/REVIEWER AND ACCREDITATION DETAILS	DATE SUBMITTED
V1	Draft for Review	Dr Ken Strahan (BPAD 36798) Reviewed by Rohan Carboon (BPAD 32160)	15/04/2018
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**Front cover photo:** Post development BAL contours over the site

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## EXECUTIVE SUMMARY

This Bushfire Management Plan (BMP) has been prepared to support a proposed 81 lot subdivision at Lot 9046 Santorini Promenade, Alkimos which includes residential, group housing, business zone and service industrial lots. This BMP addresses the requirements of WAPC 151352 approval. The lots are exposed to bushfire attack in the north-west corner due to permanent woodland vegetation, along the north-east and eastern interfaces which are dominated by woodland and some grassland vegetation.

The area is reticulated and there is good vehicular access.

A Method 1 BAL assessment has been undertaken to determine predicted radiant heat flux levels on the site and no lots are exposed to predicted radiant heat flux levels exceeding 29kW/m<sup>2</sup>.

The proposed subdivision can achieve all of the Acceptable Solutions and Performance Principles in the Guidelines for Planning in Bushfire Prone Areas V1.3 (2107).

The developer is responsible for ensuring requirements for the provision of water and vehicular access are met and establishing and maintaining the Asset Protection Zone until lots are sold. Fuel loads and responsibility for APZ standards then transfers to the new owners / occupiers of the land.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas* (WAPC 2017 V1.3).

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## 1 PROPOSAL DETAILS

The proposal is to subdivide the site into 77 residential lots, two group housing lots and two areas for future subdivisions as illustrated in Figure 1. The lots are to be created to the east of Landbeach Boulevard. All lots will have direct driveway access onto one of these public roads.

The site is zoned 'Residential' under the City of Wanneroo Local Planning Scheme (LPS).

The site adjoins existing residential areas in Alkimos, so the lots will be part of, and an extension of these residential areas (Figure 2). The area is reticulated, and scheme water is provided. The site is currently undeveloped and is primarily covered in mineral sand with some areas of remnant woodland.

This Bushfire Management Plan (BMP) has been prepared to support the subdivision application (WAPC No 151352) that expires on 7 December 2019 and requires that:

*"A bushfire management plan being prepared, approved and relevant provisions implemented during sub-divisional works, in accordance with WAPCs Guidelines Planning in Bushfire Prone Areas Version 1.3, December 1.3 2017 (in particular Appendix 3) to the satisfaction of the local government (Local Government).*

*"A notification, pursuant to section 70A of the Transfer of Land Act 1983 is to be placed on the certificates of title of the proposed lots. Notice of this is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows:*

*- 'the lot is subject to a bushfire management plan' (Local Government)*

This BMP addresses these subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas V1.3* (WAPC et.al. 2017).

If there is a bushfire within or near the site, implementing this BMP will reduce the threat to residents, property and emergency response personnel.



## Bushfire Management Plan – Lot 9046 Santorini Promenade, Alkimos

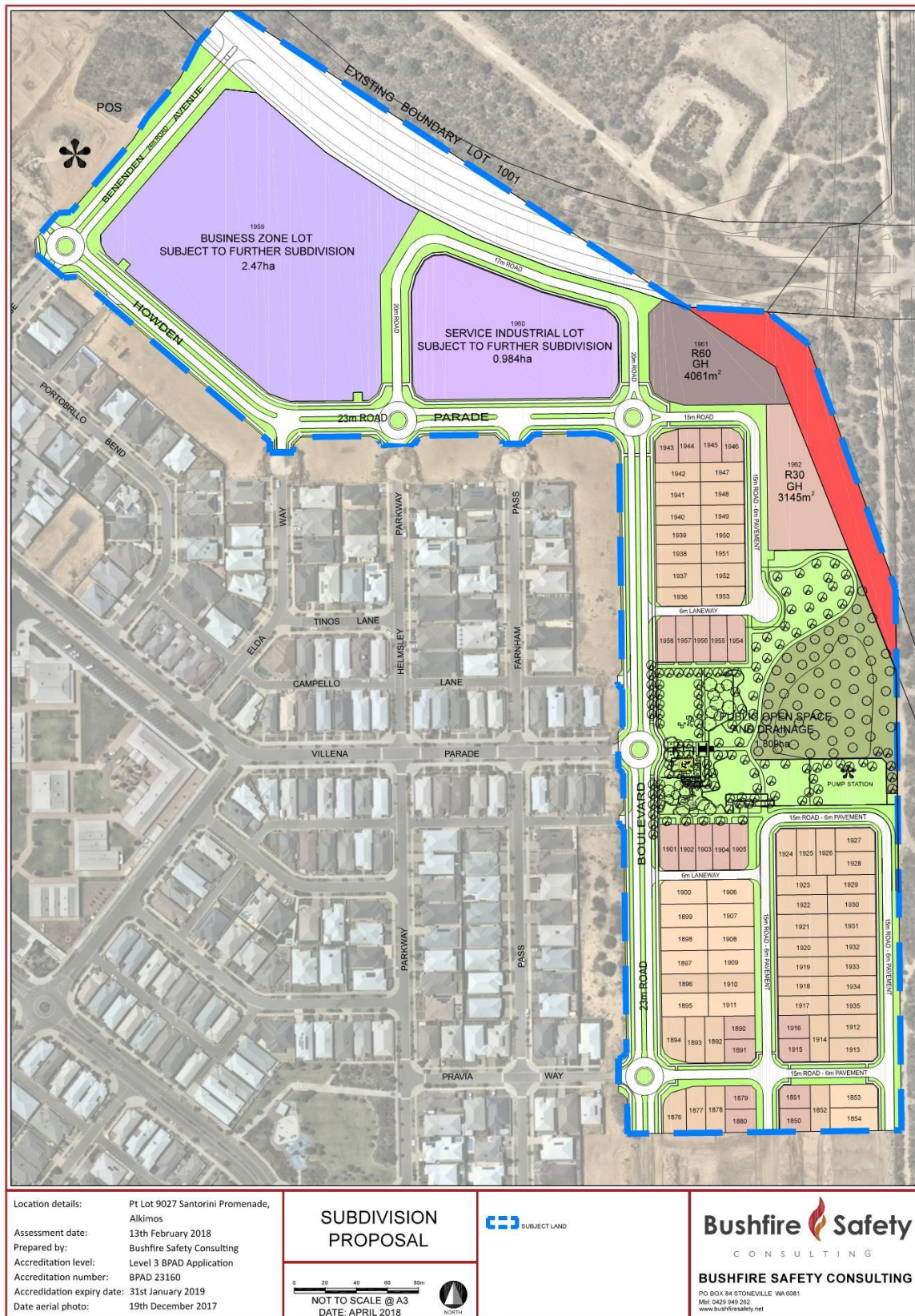


Figure 1: Subdivision plan showing the proposed 81 lots



## Bushfire Management Plan – Lot 9046 Santorini Promenade, Alkimos

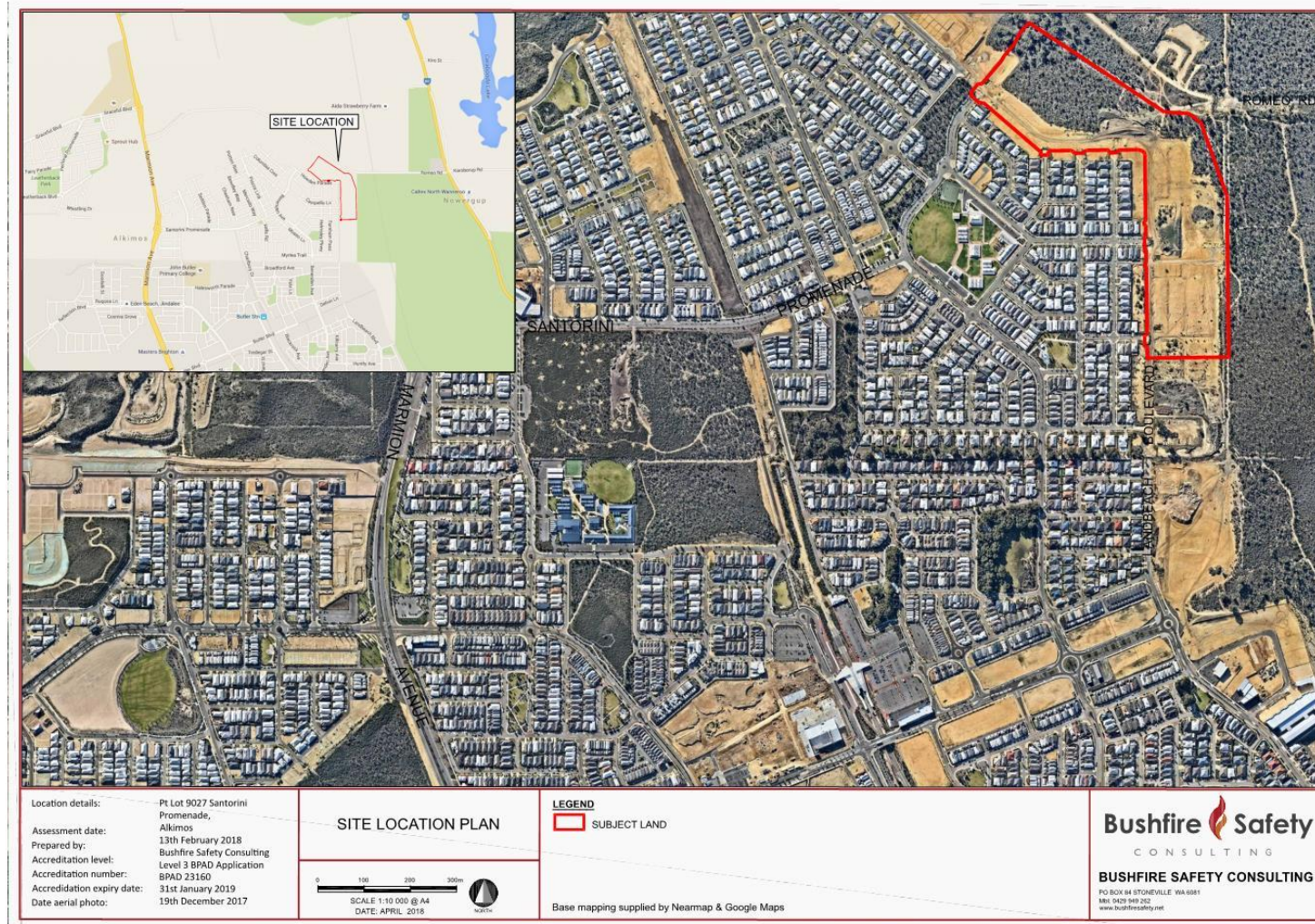


Figure 2: Site location showing surrounding vegetation and proximity to Alkimos residential areas

## Policy and Guidelines

### 1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners/proponents to help achieve acceptable bushfire protection outcomes.

The policy contains objectives and policy measures as well as reference to the bushfire protection criteria as outlined in the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 V1.3; the Guidelines)*. The policy applies to this subdivision proposal because the subdivision application is located in a designated bushfire prone area on the WA map of Bushfire Prone Areas (Figure 3).

The following policy measures will need to be comply with SPP 3.7:

Table 1. Policy measures

<b>Policy Measure 6.2</b>	The subdivision application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW.
<b>Policy Measure 6.4</b>	Policy 6.2 applies meaning the subdivision proposal will be accompanied by: <ul style="list-style-type: none"><li>- BAL Contour Plan</li><li>- Lot specific BAL ratings</li><li>- Identification of relevant issues; and</li><li>- Demonstration of compliance with the guidelines</li></ul>

The subdivision proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7*.

### 1.2 Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)

The Department of Planning have recently released the *Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)*. The requirements of this document are accommodated within this BMP.

The *Guidelines for Planning in Bushfire Prone Areas V 1.3(2017)* is intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.



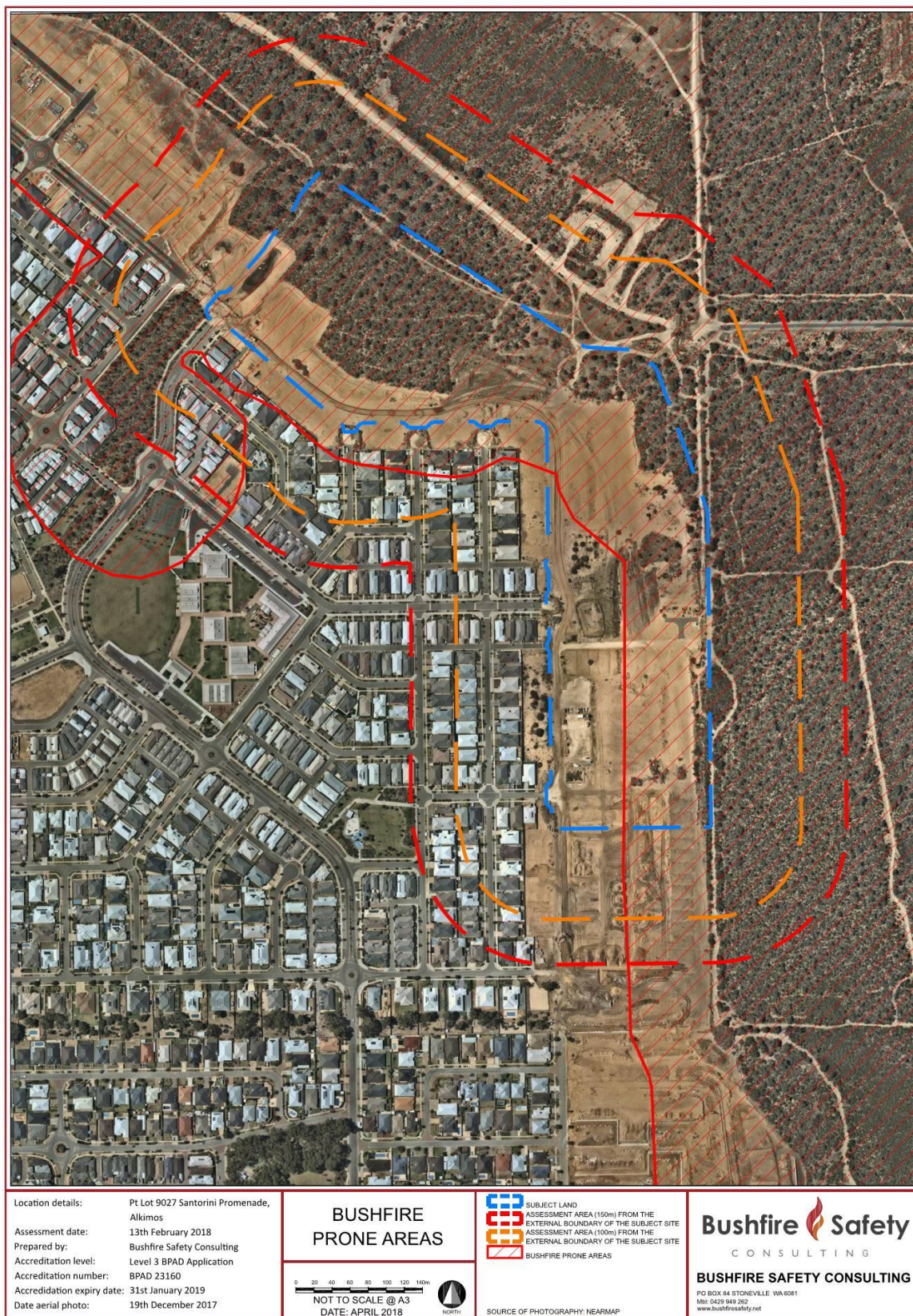


Figure 3: A large portion of the site is within the declared Bushfire Prone area of WA



## 2 ENVIRONMENTAL CONSIDERATIONS

### 2.1 Native Vegetation – modification and clearing

The site is cleared of most vegetation and remaining areas under the control of the developer will also be cleared. There are no native vegetation issues that could impact the sites development.

### 2.2 Re-vegetation/Landscape Plans

The Public Open Space areas (POS 5) is proposed to be partially landscaped and areas of landscaped and managed parkland concentrated against private lots and a central drainage basin revegetated to Class B woodland classification. The large irrigated landscaped areas have been deliberately sited adjacent to future residential lots (**Figure 4**) to provide a low threat interface and acceptable buffer between hazard and development.

The implications of the revegetated POS are depicted in the BAL Contour Plan outlined in **Figure 5**.



Figure 4: POS 5 landscape plan showing irrigated turf and revegetated drainage basin.

### 3 BUSHFIRE ASSESSMENT RESULTS

Bushfires are common in the City of Wanneroo and local brigades respond to numerous bushfires in the district annually. Given the bushfire threat in the area this BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire.

#### 3.1 Assessment Inputs

The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)*. The lot layout is known, and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.

Assessing bushfire hazards at the site-specific level accounts for the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in **Figure 5**.




##### 3.1.1 Vegetation Classification

The site is largely cleared of vegetation and will be maintained clear of vegetation until lots are developed. Areas of remnant woodland will be cleared prior to the creation of titles. Proposed and existing low threat areas will be maintained in this state until permanently developed. The site is bounded by developed residential areas, cleared areas for future development and various vegetation types, mainly Class B woodland and Class G grassland. An area of scrub vegetation is also within 150 metres of the boundary to the north-east (**Figure 5**).

The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 5 with plot descriptions below.

<p><b>Photo ID:</b> 1</p> <p><b>Plot Number:</b> 1</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Woodland (Class B)</p> <p><b>Description/justification of classification</b></p> <p>Banksia woodland with 5- 10 m high canopy and a shrub understorey.</p>	
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<p><b>Photo ID: 2</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Class B Woodland</p> <p><b>Description/justification of classification</b> Eucalypt and banksia woodland with 10-30% canopy cover and shrubland and grass understorey.</p>	<div data-bbox="699 230 1393 275"> DIRECTION 31.62425°S 71 deg(T) 115.70882°E ACCURACY 5 m DATUM WGS84 </div>  <div data-bbox="699 701 1393 745"> LSantorini2 2018-02-13 11:36:20+08:00 </div>
<p><b>Photo ID: 3</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Woodland (Class B)</p> <p><b>Description/justification of classification</b> Woodland dominated by eucalypts 10-30 m tall. Canopy foliage cover is 10%- 30% with shrub and grass understorey.</p>	<div data-bbox="699 813 1393 857"> DIRECTION 31.62220°S 216 deg(T) 115.70510°E ACCURACY 5 m DATUM WGS84 </div>  <div data-bbox="699 1305 1393 1350"> LSantorini2 2018-02-13 11:49:56+08:00 </div>
<p><b>Photo ID: 4</b></p> <p><b>Plot Number: 1</b></p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Woodland (Class B)</p> <p><b>Description/justification of classification</b> Banksia woodland with 5- 10 m high canopy. Canopy foliage cover 10%-30% and shrub understorey.</p>	<div data-bbox="699 1417 1393 1462"> DIRECTION 31.62157°S 197 deg(T) 115.70347°E ACCURACY 5 m DATUM WGS84 </div>  <div data-bbox="699 1910 1393 1948"> LSantorini2 2018-02-13 11:54:41+08:00 </div>

**Photo ID: 5**

**Plot Number: 2**

**Vegetation classification or exclusion clause:**

Woodland (Class B)

**Description/justification of classification**

Remnant banksia woodland with 5- 10 m high canopy. Canopy foliage cover 10%- 30% and shrub understorey. Where this vegetation occurs with the site, it will be cleared and revegetated into developed into a drainage basin and will retain the Class B Woodland classification.



**Photo ID: 6**

**Plot Number: 2**

**Vegetation classification or exclusion clause:**




Woodland (Class B)

**Description/justification of classification**

Banksia woodland with 5- 10 m high canopy. Canopy foliage cover 10%-30% and shrub understorey.





<p><b>Photo ID:</b> 7</p> <p><b>Plot Number:</b> 3</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Scrub (Class D)</p> <p><b>Description/justification of classification</b></p> <p>Scrub &gt; 2m tall.</p>	<table><tr><td>DIRECTION</td><td>31.62756°S</td><td>ACCURACY 5 m</td></tr><tr><td>171 deg(T)</td><td>115.70883°E</td><td>DATUM WGS84</td></tr></table>  <p>LSantorini2 2018-02-13 11:15:39+08:00</p>	DIRECTION	31.62756°S	ACCURACY 5 m	171 deg(T)	115.70883°E	DATUM WGS84
DIRECTION	31.62756°S	ACCURACY 5 m					
171 deg(T)	115.70883°E	DATUM WGS84					
<p><b>Photo ID:</b> 8</p> <p><b>Plot Number:</b> 3</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p><b>Vegetation classification or exclusion clause:</b> Scrub (Class D)</p> <p><b>Description/justification of classification</b></p> <p>Scattered scrub &gt; 2 m tall</p>	<table><tr><td>DIRECTION</td><td>31.62332°S</td><td>ACCURACY 5 m</td></tr><tr><td>95 deg(T)</td><td>115.70797°E</td><td>DATUM WGS84</td></tr></table>  <p>LSantorini2 2018-02-13 11:42:55+08:00</p>	DIRECTION	31.62332°S	ACCURACY 5 m	95 deg(T)	115.70797°E	DATUM WGS84
DIRECTION	31.62332°S	ACCURACY 5 m					
95 deg(T)	115.70797°E	DATUM WGS84					
<p><b>Photo ID:</b> 9</p> <p><b>Plot Number:</b> 4</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Grassland (Class G)</p> <p><b>Description/justification of classification</b></p> <p>Unmanaged grassland &gt; 100 mm in length with scattered shrubs.</p>	<table><tr><td>DIRECTION</td><td>31.62400°S</td><td>ACCURACY 30 m</td></tr><tr><td>278 deg(T)</td><td>115.70771°E</td><td>DATUM WGS84</td></tr></table>  <p>LSantorini2 2018-02-13 11:39:07+08:00</p>	DIRECTION	31.62400°S	ACCURACY 30 m	278 deg(T)	115.70771°E	DATUM WGS84
DIRECTION	31.62400°S	ACCURACY 30 m					
278 deg(T)	115.70771°E	DATUM WGS84					



<p><b>Photo ID:</b> 10</p> <p><b>Plot Number:</b> 5</p> <p><b>Vegetation classification or exclusion clause:</b></p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p><b>Description/justification of classification</b></p> <p>Non-vegetated area- mineral earth cleared for development</p>	<div style="display: flex; justify-content: space-between; font-size: small;"> <span>DIRECTION 229 deg(T)</span> <span>31.63047°S 115.70870°E</span> <span>ACCURACY 5 m DATUM WGS84</span> </div>  <div style="display: flex; justify-content: space-between; font-size: x-small;"> <span>LSantorini2</span> <span>2018-02-13 11:23:47+08:00</span> </div>
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### 3.2 Effective Slope

The landscape to the north-east of the site is generally flat or upslope. Beyond the upper eastern boundary, the effective slope is downslope 0-5 degrees in Plot 2 and beyond the lower eastern boundary the slope is flat or upslope in Plot 1.

The topography and effective slope is outlined in **Figure 5**.

*Table 2. Summary of vegetation type and effective slope*

Vegetation Area/ Plot	Applied Vegetation Classification	Effective Slope under the Classified Vegetation (degrees)
1	Class B Woodland	Flat/ upslope
2	Class B Woodland	Downslope 0-5 degrees
3	Class D Scrub	Flat / upslope
4	Class G Grassland	Flat / upslope

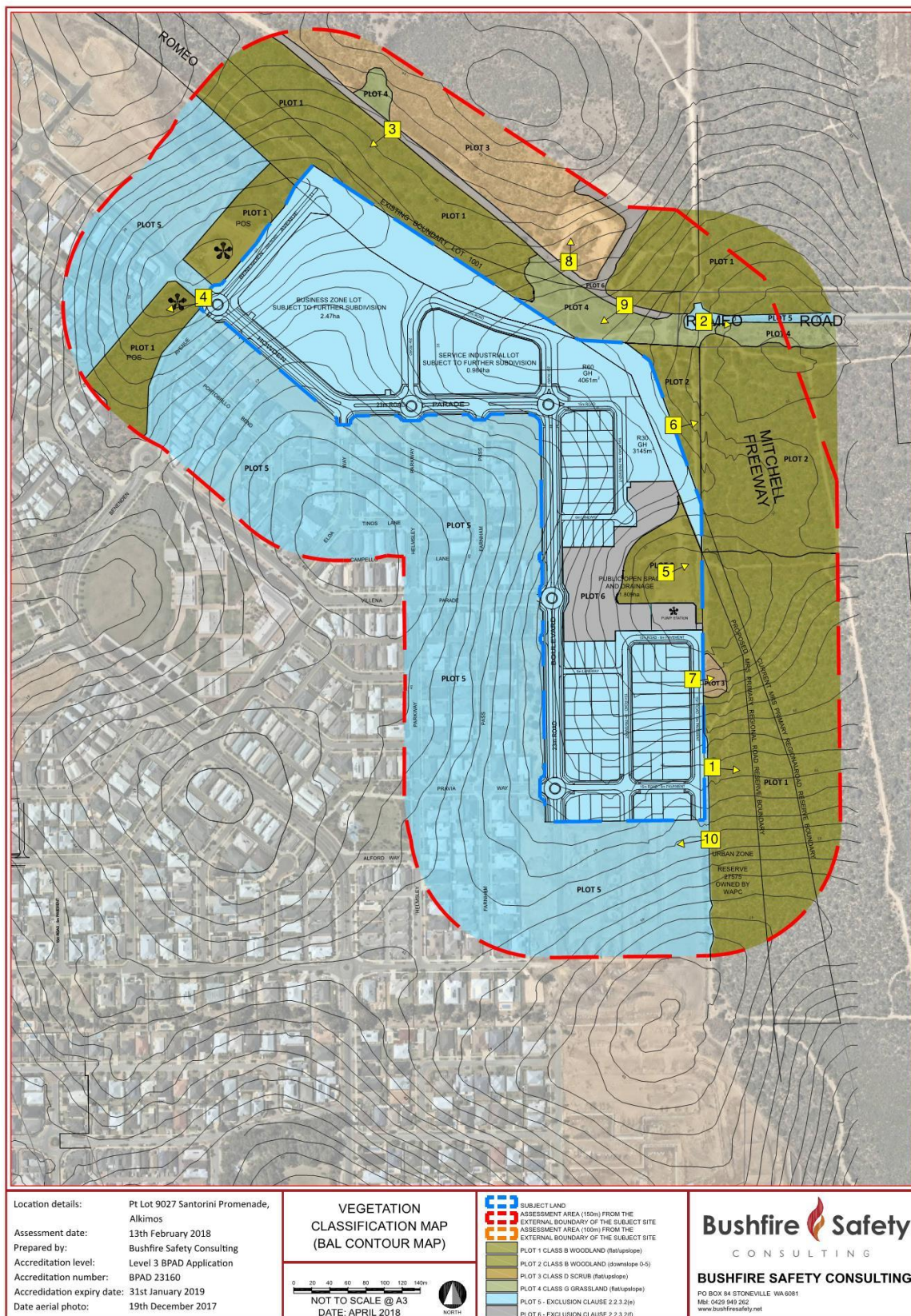


Figure 5: Vegetation Classification Map (for BAL Contour) showing effective slope



### 3.3 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in **Table 3** and **Figure 6**.

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site. No lots are exposed to a predicted radiant heat flux above BAL-29.

Table 3. Summary of assessment outputs

Lot	Applied Vegetation Classification	Plot No. & Effective slope & Site Slope	BAL Assessment Methodology	Separation distance to Classified Vegetation	Highest BAL Contour
1853-1854, 1912-1913	Class B Woodland	Plot 1 Flat	Method 1	20 metres	BAL-19
1927, 1928, 1930, 1931, 1932, 1933 & 1934	Class B Woodland	Plot 1 Flat	Method 1	15 metres	BAL-29
				20m including 5 m internal lot setback	BAL-19
1929	Class D Scrub	Plot 3 Flat	Method 1	15 metres	BAL-29
				19m including 4 m internal lot setback	BAL-19
1935	Class B Woodland	Plot 1 Flat	Method 1	15 metres	BAL-29
				20m including 3 m internal lot setback and external firebreak	BAL-19
1954	Class B Woodland	Plot 2 Downslope 0-5°	Method 1	17 metres	BAL-29
1955	Class B Woodland	Plot 2 Downslope 0-5°	Method 1	25 metres	BAL-19
1899- 1907, 1922-1926, 1936-1953, 1956-1958	Class B Woodland	Plot 2 Downslope 0-5°	Method 1	35-100 metres	BAL-12.5
1879 & 1880	Class B Woodland	Plot 1 Flat	Method 1	98.3 metres	BAL-12.5
				100m with 1.7m internal lot setback	BAL-LOW
1891	Class B Woodland	Plot 1 Flat	Method 1	97.6 metres	BAL-12.5
				100m with 2.4m internal lot setback	BAL-LOW
1890	Class B Woodland	Plot 1 Flat	Method 1	96 metres	BAL-12.5
				100m with 4m internal lot setback	BAL-LOW
1911	Class B Woodland	Plot 1 Flat	Method 1	93.8 metres	BAL-12.5
				100m with 6.2m internal lot setback	BAL-LOW
1908, 1909, 1910	Class B Woodland	Plot 1 Flat	Method 1	93.5 metres	BAL-12.5
				100m with 6.5m internal lot setback	BAL-LOW
1850-1852, 1914-1921,	Class B Woodland	Plot 1 Flat	Method 1	29 metres	BAL-12.5
1876-1878, 1892-1898	NA	NA	Method 1	Greater than 100 metres	BAL- LOW
Business Zone Lot (Subject to further subdivision)	Class B Woodland	Plot 1 Flat	Method 1	20 metres	BAL-19
Service Industrial Lot (Subject to further subdivision)	Class B Woodland	Plot 1 Flat	Method 1	29 metres	BAL-12.5



R60 GH	Class B Woodland	Plot 2 Downslope 0-5°	Method 1	17 metres (with perimeter APZ)	BAL-29
R30 GH	Class B Woodland	Plot 2 Downslope 0-5°	Method 1	17 metres	BAL-29

The final developed scenario where the entire site and adjacent subdivision area is fuel reduced and managed to low threat standards is outlined in **Figure 6**. It also considers the drainage area POS 5 which will be partially revegetated to Class B woodland standards and landscaped into managed irrigated parkland.

#### 4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The existing Class B woodland vegetation to the north-west, north-east and north of the site and the proposed revegetation of the drainage basin in the landscaped POS area poses the greatest threat to the residential development. Radiant heat flux and ember attack could impact the site as evident in the BAL contour plan (**Figure 6**).

## Bushfire Management Plan – Lot 9046 Santorini Promenade, Alkimos

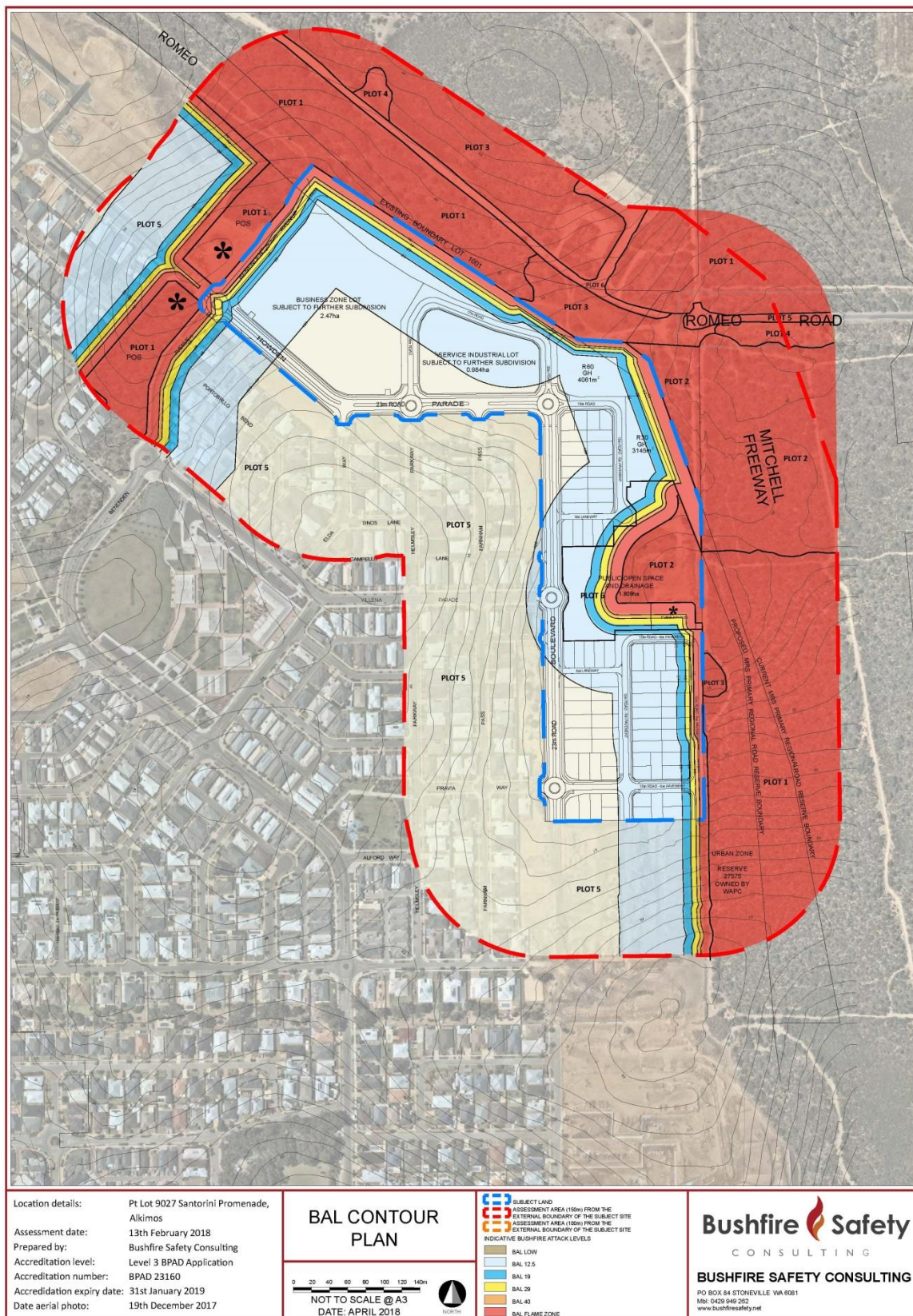


Figure 6: BAL Contour Plan showing predicted radiant heat flux levels into the site

## 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution and performance-based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.3 (2017)*. The management issues are:

- Location of the development
- Siting and Design of Development
- Vehicular access.
- Water

Acceptable solutions are proposed for all of the bushfire protection criteria and each illustrates a means of satisfactorily meeting the corresponding performance criteria.

Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.3(2017)*. The compliance checklist is attached as **Table 4**.



Table 4: Compliance Table

Bushfire Protection Criteria	Method of compliance	Proposed bushfire management strategies
	Acceptable Solutions	
<b>Element 1: Location</b>	AQ1.1 Development Location	The Method 1 BAL Assessment in this report demonstrates the classified vegetation in Plot 1, 2, 3 impact the residential, business zone, service industrial and group housing lots with a BAL rating of BAL-29 or lower. 71 lots are impacted.
<b>Element 2: siting and Design</b>	A2.1 Asset Protection Zone (APZ)	<p>The lots created have internal Asset Protection Zones (APZ) that occupies the entire site and incorporates existing and planned public road reserves and landscaped parklands. Future road reserves will be cleared of vegetation and maintained in this state in perpetuity by the developer and subsequent owners. The R60 Group housing lot includes a temporary APZ occupying BAL-FZ and BAL-40 exposure areas. Features such as internal driveways, carparks and irrigated gardens will form an internal APZ if required when the site is developed.</p> <p>There are no lots exposed to BAL ratings exceeding BAL-29. The APZs are managed in accordance with the requirements of Schedule 1 Standards for Asset Protection Zones outlined in Appendix 2.</p>
<b>Element 3: Vehicular Access</b>	A3.1 Two access routes	The site has access to eight public road access routes.
	A3.2 Public Road	Howden Parade and Landbeach Boulevard, and all proposed and surrounding existing roads comply with minimum public road standards outlined in Appendix 2
	A3.3 Cul-de-sac	There are no cul-de-sacs proposed
	A3.4 Battle-axe	There are no battle axes proposed
	A3.5 Private driveway longer than 50 metres	There are no private driveways longer than 50m proposed
	A3.6 Emergency access way	There are no emergency access ways proposed
	A3.7 Fire Emergency access routes	There are no fire emergency access ways proposed.
	A3.8 Firebreak width	Compliance is achieved with the current City of Wanneroo Firebreak and Fuel Load Notice (Appendix 3).

<b>Element 4: Water</b>	A4.1 Reticulated areas	The development has access to a reticulated water supply. Hydrants will be spaced according to the Water Corporation's No. 63 Water Reticulation Standard.
	A4.2 Non-reticulated areas	Not applicable
	A4.3 Individual lots within non-reticulated areas	Not applicable

### 5.1 Additional Management Strategies

The site will be developed in a single stage. APZ standards within the site will be maintained by the developer prior to the creation of titles until the sale of lots. Public roads and fire hydrants will be spaced to acceptable standards.

A summary of management strategies is outlined in **Figure 7**.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.



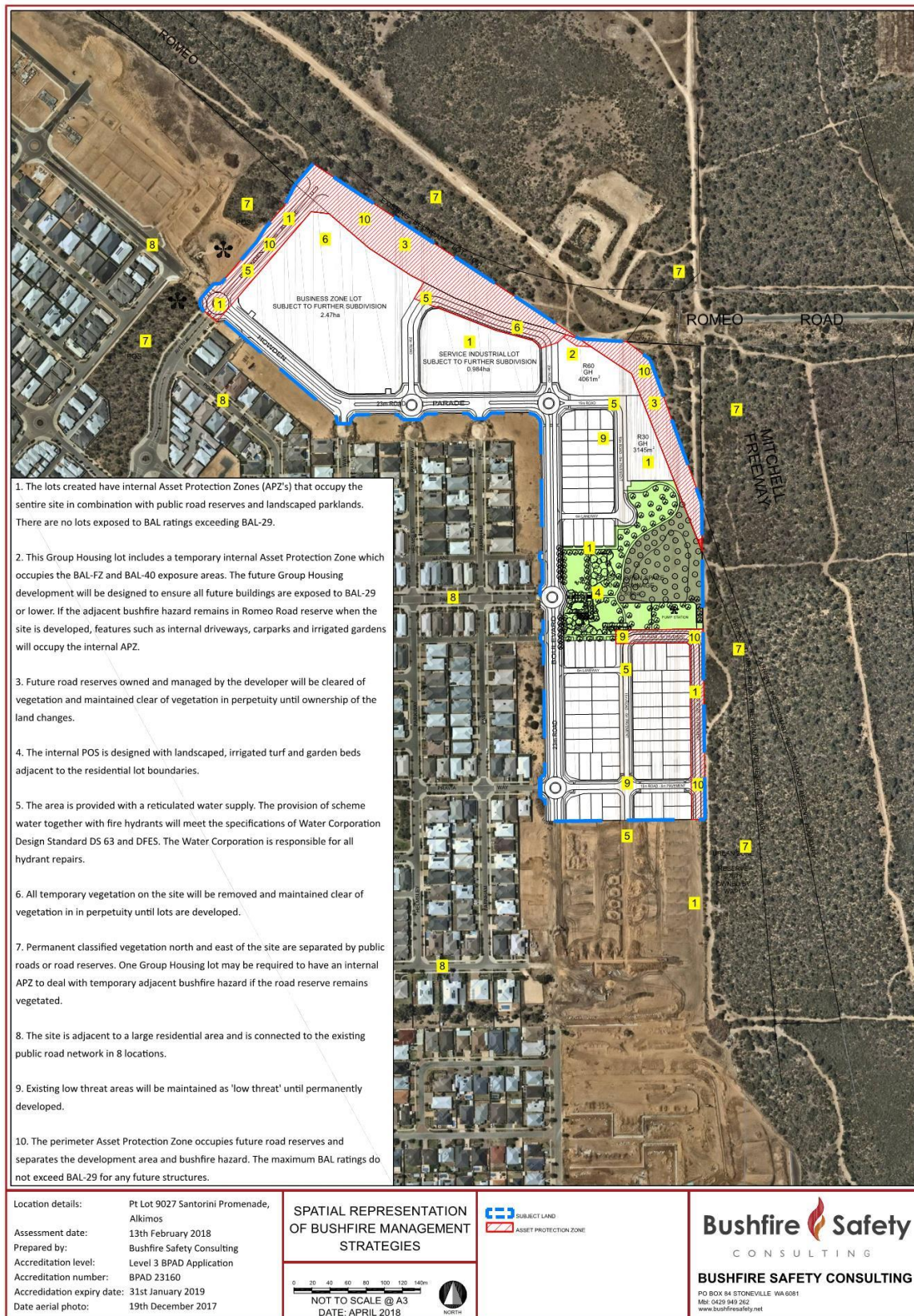


Figure 7: Spatial Representation of Bushfire Management Strategies

## 6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the Developer, future landowners and the City of Wanneroo. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 5. Responsibility for bushfire measures

DEVELOPER – PRIOR TO ISSUE OF TITLES		
No.	Implementation Action	Subdivision Clearance
1	Establish the public roads to standards outlined in Appendix 2	<input type="checkbox"/>
2	Establish the reticulated water supply and hydrant spacing in accordance with the Water Corporation’s No.63 Water Reticulation Standard.	<input type="checkbox"/>
3	Remove the temporary woodland vegetation within the site and maintain a cleared landscape that complies with exclusion clause 2.2.3.2 in AS3959	<input type="checkbox"/>
4	Maintain existing low threat areas as ‘low threat’ until the site is developed	<input type="checkbox"/>
5	A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan.' (Local Government)”.	
DEVELOPER – AT SALE OF LOTS		
6	Make a copy of this BMP available to each lot along with the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Wanneroo’s Fire Control Order.	
LANDOWNER/OCCUPIER – ONGOING MANAGEMENT		
7	Maintain the Asset Protection Zone (APZ) to standards stated in this BMP (Appendix 1).	
8	Ensure the site complies with the City of Wanneroo’s Fire Control Order as published	



9	Ensure construction of buildings complies with AS 3959:2009
10	If buildings are subject to additional construction in the future, AS 3959:2009 compliance is required
<b>CITY OF WANNEROO– ONGOING MANAGEMENT</b>	
11	Maintain public roads to appropriate standards and ensure compliance with the City of Wanneroo's Fire Control Order
12	Provide fire prevention and preparedness advice to landowners upon request, and the City of Wanneroo's Fire Control Order.

## 7 CONCLUSION

This Plan provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 V1.3).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The subdivision is located in the bushfire prone area (i.e. within 100 m of classified vegetation) and risk is reduced via compliance with AS 3959:2009 standards. BAL-29 is not exceeded and existing and recommended APZ incorporates the entire site.

A minimum of two access options and dedicated fire hydrant spacings for fire-fighting are provided. The proposed development will fall within the acceptable level of risk.

### Certification by Bushfire Consultant

I \_\_\_\_\_ certify that at the time of inspection, the BAL ratings contained within this BMP are correct; and implementation actions 1-4 have been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## REFERENCES

DFES. (2017). *PREPARE. ACT. SURVIVE.*

[http://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DE  
S\\_Bushfire-Prepare\\_Act\\_Survive\\_Booklet.pdf](http://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DE<br/>S_Bushfire-Prepare_Act_Survive_Booklet.pdf)

Standards Australia. 2009. Construction of buildings in bushfire-prone areas (Amendments 1-3), AS 3959-2009, Standards Australia International Ltd, Sydney

Western Australian Planning Commission (WAPC). 2017. Guidelines for Planning in Bushfire Prone Areas. December 2017 V1.3. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.

Western Australian Planning Commission (WAPC). 2015b. State Planning Policy No. 3.7: planning in Bushfire Prone Areas (SPP3.7). December 2015. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia.





## APPENDICES

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Appendix 1: Asset Protection Standards

Appendix 2: Vehicular Access Technical Requirements

Appendix 3: City of Wanneroo Firebreak and Fuel Load Notice

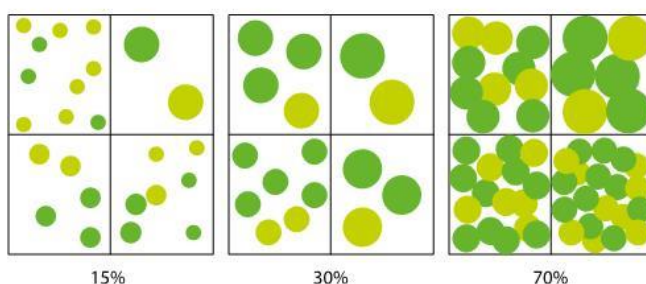
## Appendix 1

### ELEMENT 2: SITING AND DESIGN OF DEVELOPMENT

#### SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES

- **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.

### Appendix 3

<b>TECHNICAL REQUIREMENTS</b>	<b>1 Public road</b>	<b>2 Cul-de-sac</b>	<b>3 Private driveway</b>	<b>4 Emergency access way</b>	<b>5 Fire service access routes</b>
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					



## Appendix 3

### Protect your home and property from bushfires

NOTICE TO ALL OWNERS OR OCCUPIERS OF LAND IN THE DISTRICT OF THE CITY OF WANNEROO REGARDING FIREBREAKS.

The City of Wanneroo hereby gives notice pursuant to Section 33 of the **Bush Fires Act 1954** to all owners or occupiers of land in its district that they are required on or before 15 November, or within 14 days of becoming the owner or occupier of the land if that occurs after the 15 November, to annually plough, cultivate, scarify, or otherwise clear firebreaks as specified in this Notice and thereafter up to, and including the 30 April, annually, to maintain the firebreaks clear of flammable matter.

#### 1. Land having an area of 2000m<sup>2</sup> or more

A firebreak not less than 3 metres wide and 3 metres high immediately inside and around all external boundaries of the land must be cleared.

#### 2. Land having an area of less than 2000m<sup>2</sup>

A firebreak not less than 2 metres wide and 2 metres high immediately inside and around all external boundaries of the land must be cleared.

#### 3. Buildings

A firebreak not less than 3 metres wide immediately around all external walls of every building must be cleared. Whenever a firebreak is cleared by burning the provisions of the Act and Regulations made thereunder must be observed. If pursuant to Item (2) of this Notice, mowing or slashing is carried out the height of vegetation thereafter must not exceed, as far as is reasonably practicable, 20mm over the entire area of the firebreak. The use of chemicals is subject to all restrictions imposed by the Department of Agriculture. Attention is drawn to the Flammable Liquids Regulations made under the Explosives and Dangerous Goods Act 1961, which requires a site on which flammable liquid is stored to be totally cleared of all flammable material for a minimum distance of 5 metres surrounding the site.

If it is considered to be impracticable for any reason to comply with the provisions of this Notice, application may be made not later than the 1st day of November annually to the Council or its authorised officer for permission to provide alternative fire protection measures. If permission is not granted the requirements of this Notice must be complied with.

#### Penalty

An owner or occupier of land who fails or neglects in any respect to comply with the requirements of this Notice is liable to a maximum fine of \$5,000.

#### DATES TO REMEMBER

- Firebreaks must be cleared by **15 November (AND KEPT CLEAR UNTIL APRIL 30)**
- Burning permits required all year round
- Burning prohibited between **1 December to 31 March**

#### When and how to obtain a fire permit

Permits are available from the City of Wanneroo at the following locations:

##### WANNEROO ANIMAL CARE CENTRE

Located at the rear of the Ashby Operations Centre,  
1204 Wanneroo Road, Ashby  
The City's Rangers / Fire Control Officers are available to issue permits 7 days a week\* from 4pm - 6pm

\*Except Good Friday

##### CITY OF WANNEROO CIVIC CENTRE

23 Dundee Road, Wanneroo  
The City's Fire Control Officers / Permit Issuing Officers are available to issue permits Monday to Friday 9am - 4pm

#### NEED ADVICE?

Further advice about how to protect your home, constructing firebreaks, and when and how to burn off, is available from the City of Wanneroo during office hours on 9405 5000.



23 Dundee Road, Wanneroo, WA 6065  
Locked Bag 1, Wanneroo, WA 6946  
T : (08) 9405 5000 F : (08) 9405 5499  
After Hours : 1300 13 83 93  
E : enquiries@wanneroo.wa.gov.au  
wanneroo.wa.gov.au

PROTECT YOUR HOME  
AND PROPERTY FROM  
BUSHFIRES



## Keeping your home safe from fire

There are a number of ways you can help keep your home safe from fire:

- Install smoke detectors in your home
- Clear vegetation away from the walls of your home
- Clear all rubbish and flammable material from around your home to create a 20 metre circle of safety
- Store firewood, timber, petrol, and kerosene well away from your home
- Prior to summer, clean all leaves and debris from your gutters
- Don't have flammable trees such as conifers near buildings
- Have branches trimmed that overhang the house or powerlines
- Fit wire insect screens or shutters to windows and glass doors

If a firebreak is impractical along your boundary for environmental or other reasons notify the City of Wanneroo by 1 October to obtain permission to install firebreaks in alternative positions, or of a different nature.

### ALTERNATIVE METHODS OF REDUCING FIRE HAZARDS ON VACANT LAND

- For urban land less than 2000m<sup>2</sup>, if mowing or slashing is carried out, the height of the vegetation must not exceed, as far as is reasonably practical, 20mm over the entire area of the firebreak
- The use of chemicals is subject to all restrictions imposed by the Department of Agriculture
- Mulching • Disposal at an authorised rubbish tip site

## When and how to burn

### NO BURNING FROM 1 DECEMBER - 31 MARCH

Burning off - that is, bush/running fire including grass, on any land is totally prohibited between 1 December and 31 March. Fire permits for burning material other than garden rubbish are required all year round.

A person in control of the fire must stay with the fire until it is completely extinguished.

### GARDEN RUBBISH AND REFUSE

The burning of garden refuse is permitted between the hours of 6pm and 11pm, provided the fire danger rating is not VERY HIGH, SEVERE, EXTREME or CATASTROPHIC or a TOTAL FIRE BAN has been declared.

Fire danger rating signs are located at the following locations:

- Corner of Joondalup Drive and Wanneroo Road
- Wanneroo Road, south of the Yanchep Beach Road turn off
- Wanneroo Road, Carabooda • Marmion Avenue, Jindalee
- Neaves Road, Mariginiup • Old Yanchep Road, Pinjar
- Gngangara Road, Landsdale • Country Side Drive, Two Rocks

Other points to remember when burning garden refuse and rubbish are:

- All bush and flammable material must be thoroughly cleared within two metres of all points of the site of the fire
- The material must be on the ground, and be no more than one metre wide and one metre high

Only one heap may be burnt at any one time  
Incinerators may be used providing:

- The incinerator is properly constructed and designed to prevent the escape of sparks of burning material
- The incinerator is situated not less than two metres away from a building or fence
- An area of two metres surrounding the incinerator is clear of all flammable material

### BARBECUES

Only gas or electric barbecues may be lit during VERY HIGH, SEVERE, EXTREME or CATASTROPHIC fire danger rating or declared TOTAL FIRE BAN. The lighting of solid fuel barbecues is not permitted on these days.

### SMOKE NUISANCES

City of Wanneroo residents are advised to be mindful of smoke issues associated with any burning that they conduct. Steps should be taken to avoid undue smoke impact to neighbours and adjacent roads. Smoke across roadways can severely impact motorists' visibility and therefore road safety. Issues of smoke nuisance are regulated by the Waste Avoidance and Resource Recovery Act 2007.

### CAMPFIRES

Campfires must not be lit on VERY HIGH, SEVERE, EXTREME or CATASTROPHIC fire danger days or declared TOTAL FIRE BAN. A person must remain in attendance at the site during the whole time the fire is burning. The user must extinguish the fire using water or earth before leaving the area.

## Hints for safer burning

- Don't light a fire on a hot or windy day
- Don't burn more than you can control
- Let your neighbours know you'll be burning material
- Make sure smoke and sparks will not affect your neighbour's washing or enter open windows
- Cut or rake long grass around trees, building and fences before burning
- Burn against the wind
- On a sloping block, burn from the top down
- Keep a hose or spray pack at hand to dampen down fierce fires
- If in doubt, don't burn material yourself - call the Volunteer Fire Brigade
- Stay with the fire until it is completely extinguished
- Where possible, don't burn any closer than 20 metres from your home or other buildings

## Penalties

Under the Bush Fires Act 1954, failing to comply with regulations can result in a fine ranging from \$250 to \$250,000 or imprisonment.

Failure to maintain 2/3 metre firebreak as per firebreak order	\$250
Offence relating to lighting fire in the open air	\$250
Setting fire to bush during prohibited burning times	\$250
Failure of occupier to extinguish bush fire	\$250
Major offences result in Court action with fines ranging from \$250 to \$250,000 or imprisonment for 14 years.	

### THE BIGGEST PENALTY OF ALL

The biggest penalty of all would be losing your loved ones or home to fire. Please ensure you, your family and your home are kept safe by taking the necessary precautions.

## Special rural and residential land

Owners and occupiers of special rural and special residential land should be aware of their responsibilities to take bush fire prevention measures, while ensuring they do not contravene Town Planning Scheme provisions which control the removal of vegetation in Special Residential and Special Rural Zones.

These special rural zones were created in areas of natural flora, and the Scheme recognises the importance of preserving the natural environment in these areas. Anyone found cutting down, lopping or damaging trees in these areas without City approval may be guilty of an offence.

However, bush fire prevention, including the installation of firebreaks, is essential regardless of the zoning of the land.

Below are some guidelines for installing firebreaks in special rural zones to prevent bush fires, while minimising damage to the natural environment.

- A 3 metre wide and 3 metre high firebreak should be cleared around the perimeter of special rural or special residential lots
- These firebreaks need not be strictly around the perimeter, but may deviate according to the flora
- The firebreak does not have to be ploughed but can instead be created by clearing and removing all flammable material
- Care should be taken to avoid damaging or removing significant trees and shrubs
- Avoid the build up of undergrowth and leaf litter