

Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit: Yes No

Date of site visit (if applicable): Day Month Year

Report author or reviewer:

WA BPAD accreditation level (please circle):

Not accredited Level 1 BAL assessor Level 2 practitioner Level 3 practitioner

If accredited please provide the following.

BPAD accreditation number: Accreditation expiry: Month Year

Bushfire management plan version number:

Bushfire management plan date: Day Month Year

Client/business name:

	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?		
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?		

Is the proposal any of the following (see SPP 3.7 for definitions)?	Yes	No
Unavoidable development (in BAL-40 or BAL-FZ)		
Strategic planning proposal (including rezoning applications)		
High risk land-use		
Vulnerable land-use		

None of the above

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

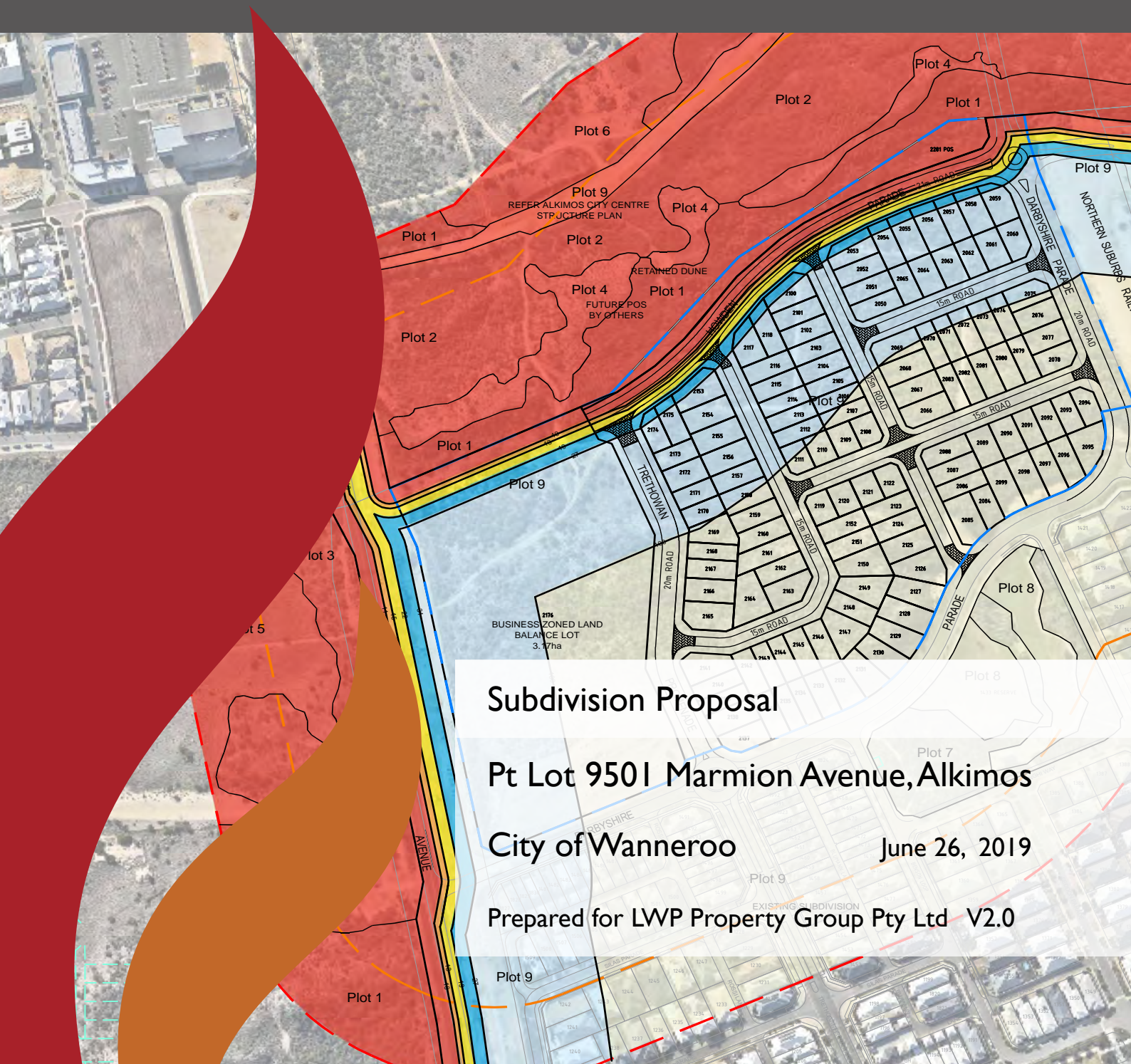
The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author or reviewer



Date

Bushfire Management Plan



Subdivision Proposal

Pt Lot 9501 Marmion Avenue, Alkimos

City of Wanneroo


June 26, 2019

Prepared for LWP Property Group Pty Ltd V2.0

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Document Information

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Bushfire Safety Consulting Pty Ltd

I hereby declare that I am a BPAD accredited bushfire practitioner.	
Accreditation No. _____	
Signature _____	
Date _____	



Document Control

Bushfire Management Plan – Pt Lot 9051 Marmion Avenue, Alkimos			
REPORT VERSION	PURPOSE	AUTHOR/REVIEWER AND ACCREDITATION DETAILS	DATE SUBMITTED
V1	Draft for Review	Rohan Carboon (BPAD 32160) Dr Karen Brown (BPAD 48364)	19/06/2018
V2	Final for Submission	Rohan Carboon (BPAD 32160) Dr Karen Brown (BPAD 48364)	26/6/2019

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 subdivision at Lot 9051 Marmion Ave, Alkimos which includes 126 residential lots and a business zone. The lots are exposed to bushfire attack in the north and west due to the presence of Class D Scrub 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/m².

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 126 residential lots with a balance lot zoned for business development in the future as illustrated in Figure 1. The lots are to be created to the north and west of Darbyshire Parade. All lots will have direct driveway access onto one of six proposed public roads which intersect the site and provide access to surrounding public roads to the south.

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

The site adjoins existing residential areas in Alkimos to the south and east, so the lots will be 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 scrub and shrubland vegetation.

This BMP addresses a future subdivision condition 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 9051 Marmion Ave, Alkimos

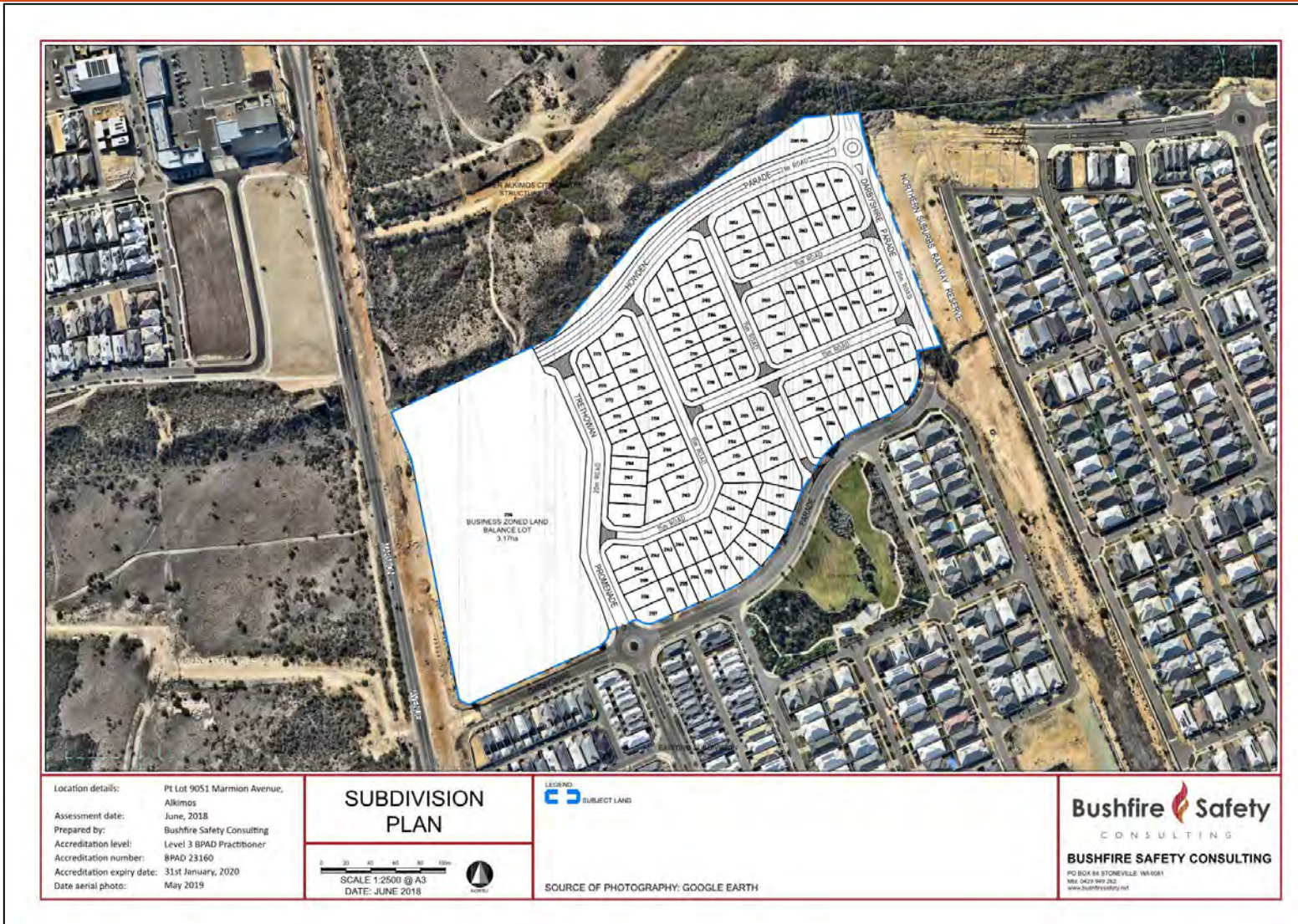


Figure 1: Subdivision plan showing the proposed layout

Bushfire Management Plan – Lot 9051 Marmion Ave, Alkimos

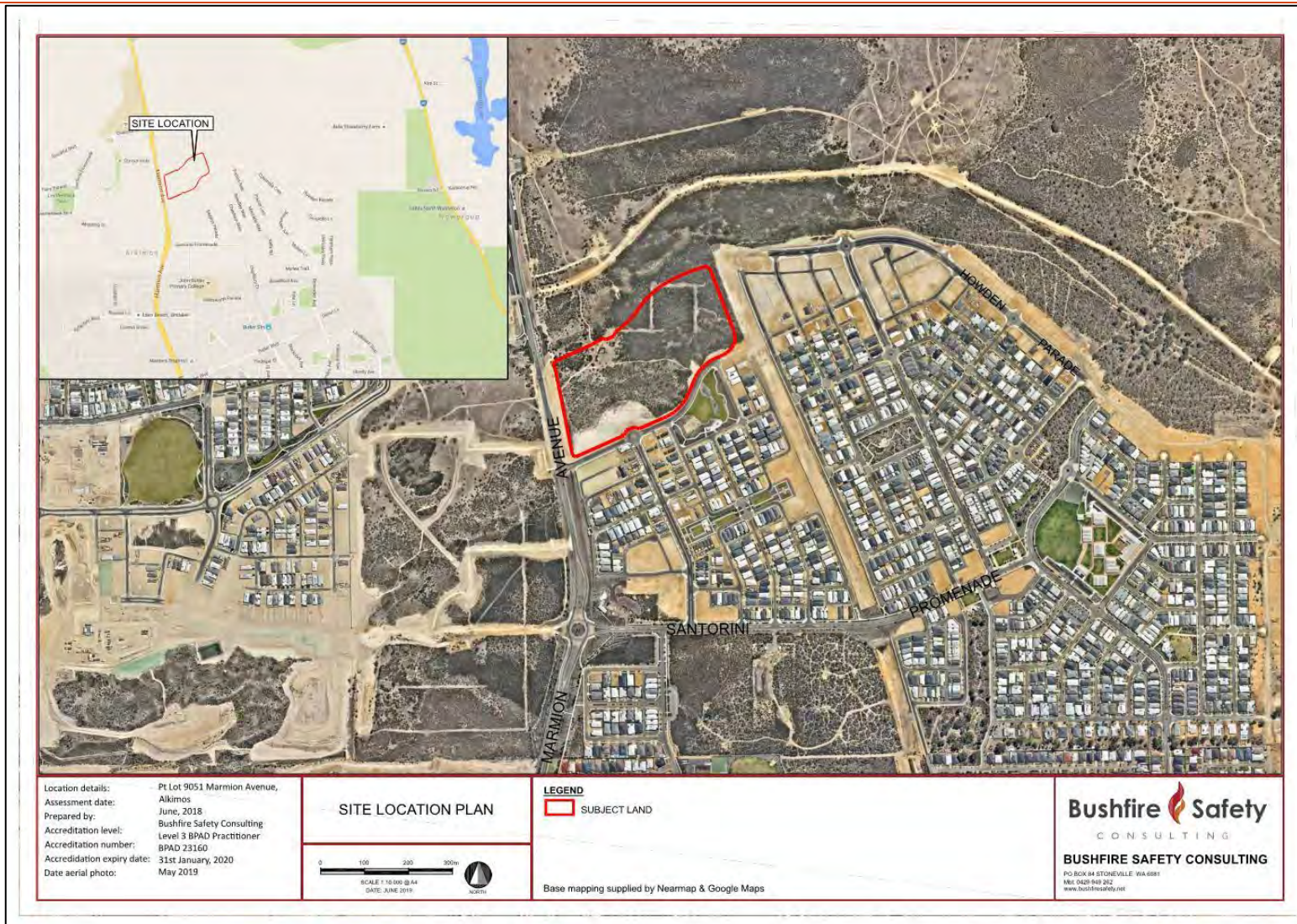


Figure 2: Site location showing surrounding vegetation and proximity to Alkimos residential areas

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

Policy Measure 6.2	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.
Policy Measure 6.4	Policy 6.2 applies meaning the subdivision proposal will be accompanied by: <ul style="list-style-type: none"> - BAL Contour Plan - Lot specific BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the guidelines

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*. Any future Development Applications (DA) in the balance lot zoned 'Business' will be required to comply with *SPP 3.7* and the Guidelines. Individual Bushfire Management Plans may be required to support each individual DA.

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.

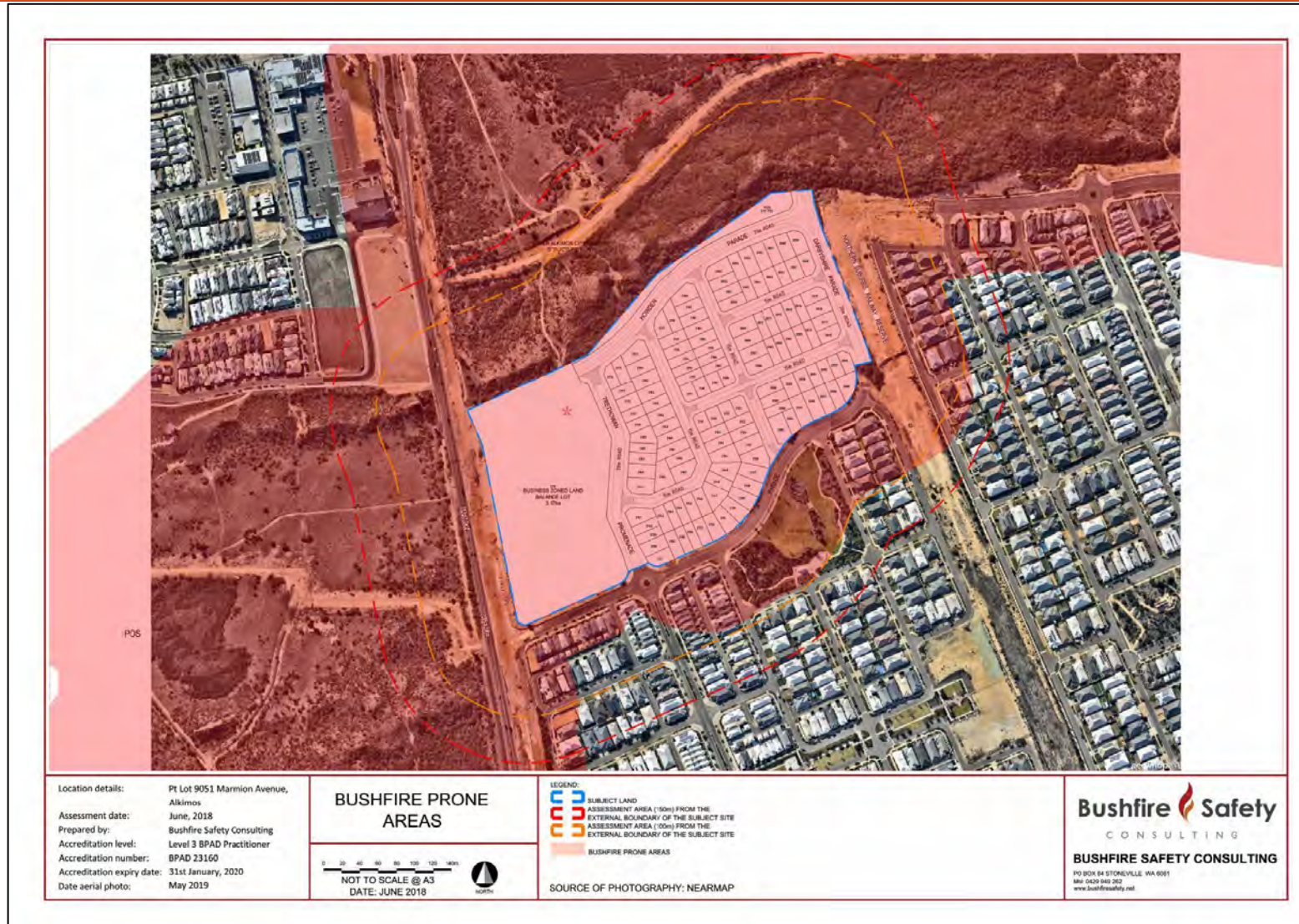


Figure 3: The site is within the declared Bushfire Prone area of WA

2 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – modification and clearing

The site contains remnant scrub and shrubland vegetation which will be cleared by the developer prior to subdivision. There are no native vegetation clearing issues that could impact the site's development.

2.2 Re-vegetation/Landscape Plans

There are no proposed revegetation or landscape plans for this subdivision. The thin strip of Public Open Space (POS) north of Howden Parade in the site will retain existing vegetation which is Class D Scrub.

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 4**.





3.1.1 Vegetation Classification





The site predominately contains Class D Scrub and Class C Shrubland vegetation which will be cleared prior to the lots being developed. The site is bounded by developed residential areas to the south and east, and Marmion Road reserve to the west. An area of permanent Class D Scrub vegetation is present along the boundary to the north with a steep upslope to the crest of the sand dune (Plot 1 photo 2). Low shrubland vegetation (Photos 11,12,13 Plot 4) occurs on the dune crest. North of the dune crest, Class D Scrub occurs with a downslope (Photos 5,6,7 Plot 2). Class D Scrub and Class G Grassland vegetation occurs west of Marmion Avenue and there is no bushfire threat south of the site. The northern railway reserve east of the site is largely unvegetated and in this condition is not a threat.

The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.

<p>Photo ID: 1</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall with occasional Acacia to 4m. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 2</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Solid acacia shrubs 2 to 3 metres tall with. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 3</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 4</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Sparse shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	

<p>Photo ID: 5</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 6</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 7</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 8</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	

<p>Photo ID: 9</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 10</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause:</p> <p>Class D Scrub</p> <p>Description/justification of classification Large shrubs 2 to 3 metres tall. Understorey consists of small shrubs and annual grasses.</p>	
<p>Photo ID: 11</p> <p>Plot Number: 4</p> <p>Vegetation classification or exclusion clause:</p> <p>Class C Shrubland</p> <p>Description/justification of classification Small shrubs <1m tall, understorey of annual grasses and herbaceous weeds. Occasional large shrub (< 10% canopy cover).</p>	
<p>Photo ID: 12</p> <p>Plot Number: 4</p> <p>Vegetation classification or exclusion clause:</p> <p>Class C Shrubland</p> <p>Description/justification of classification Small shrubs <1 tall, understorey of annual grasses and herbaceous weeds. Occasional large shrub (< 10% canopy cover).</p>	

<p>Photo ID: 13</p> <p>Plot Number: 4</p> <p>Vegetation classification or exclusion clause:</p> <p>Class C Shrubland</p> <p>Description/justification of classification Small shrubs 1 to 2m tall, understorey of annual grasses and herbaceous weeds. Occasional large shrub (< 10% canopy cover).</p>	
<p>Photo ID: 14</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause:</p> <p>Grassland (Class G)</p> <p>Description/justification of classification Unmanaged grassland > 100 mm in length with scattered shrubs (<10% canopy cover).</p>	
<p>Photo ID: 15</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause:</p> <p>Grassland (Class G)</p> <p>Description/justification of classification Unmanaged grassland > 100 mm in length with scattered shrubs (<10% canopy cover).</p>	
<p>Photo ID: 16</p> <p>Plot Number: 6</p> <p>Vegetation classification or exclusion clause:</p> <p>Grassland (Class G)</p> <p>Description/justification of classification Unmanaged grassland > 100 mm in length with scattered shrubs (<10% canopy cover).</p>	

<p>Photo ID: 17</p> <p>Plot Number: 7</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (b)</p> <p>Description/justification of classification Single area of vegetation less than 1 ha in area and not within 100m of other vegetation being classified.</p>	
<p>Photo ID: 18</p> <p>Plot Number: 7</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (b)</p> <p>Description/justification of classification Single area of vegetation less than 1 ha in area and not within 100m of other vegetation being classified.</p>	
<p>Photo ID: 19</p> <p>Plot Number: 8</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (f)</p> <p>Description/justification of classification Low threat vegetation – maintained lawn in public reserve.</p>	
<p>Photo ID: 20</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Non-vegetated area- mineral earth cleared for northern railway reserve.</p>	
<p>Photo ID: 21</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Non-vegetated area- mineral earth cleared for northern railway reserve.</p>	

<p>Photo ID: 22</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Non-vegetated area- mineral earth cleared for northern railway reserve.</p>	
<p>Photo ID: 23</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Non-vegetated area- mineral earth cleared for development.</p>	
<p>Photo ID: 24</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Currently Class C Shrubland, however subdivision will result in non-vegetated area consisting of roads and buildings.</p>	
<p>Photo ID: 25</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification Currently Class D Scrub, however subdivision will result in non-vegetated area consisting of roads and buildings.</p>	

<p>Photo ID: 26</p> <p>Plot Number: 9</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2 (e)</p> <p>Description/justification of classification</p> <p>Currently Class D Scrub, however subdivision will result in non-vegetated area consisting of roads and buildings.</p>	
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3.2 Effective Slope

The landscape to the north of the site slopes up to a dune crest, before sloping down 10 to 15 degrees on the far side away from the site. Slope to the west of Marmion Avenue average downslope 2 degrees.

Table 2. Summary of vegetation type and effective slope

Vegetation Area/ Plot	Applied Vegetation Classification	Effective Slope under the Classified Vegetation (degrees)
1	Class D Scrub	Flat/ upslope
2	Class D Scrub	Downslope 10 – 15
3	Class D Scrub	Downslope 0 – 5
4	Class C Shrubland	Downslope 0 - 5
5	Class G Grassland	Downslope 0 – 5
6	Class G Grassland	Flat/ upslope
7	Exclusion 2.2.3.2 (b)	N/A
8	Exclusion 2.2.3.2 (f)	N/A
9	Exclusion 2.2.3.2 (e)	N/A

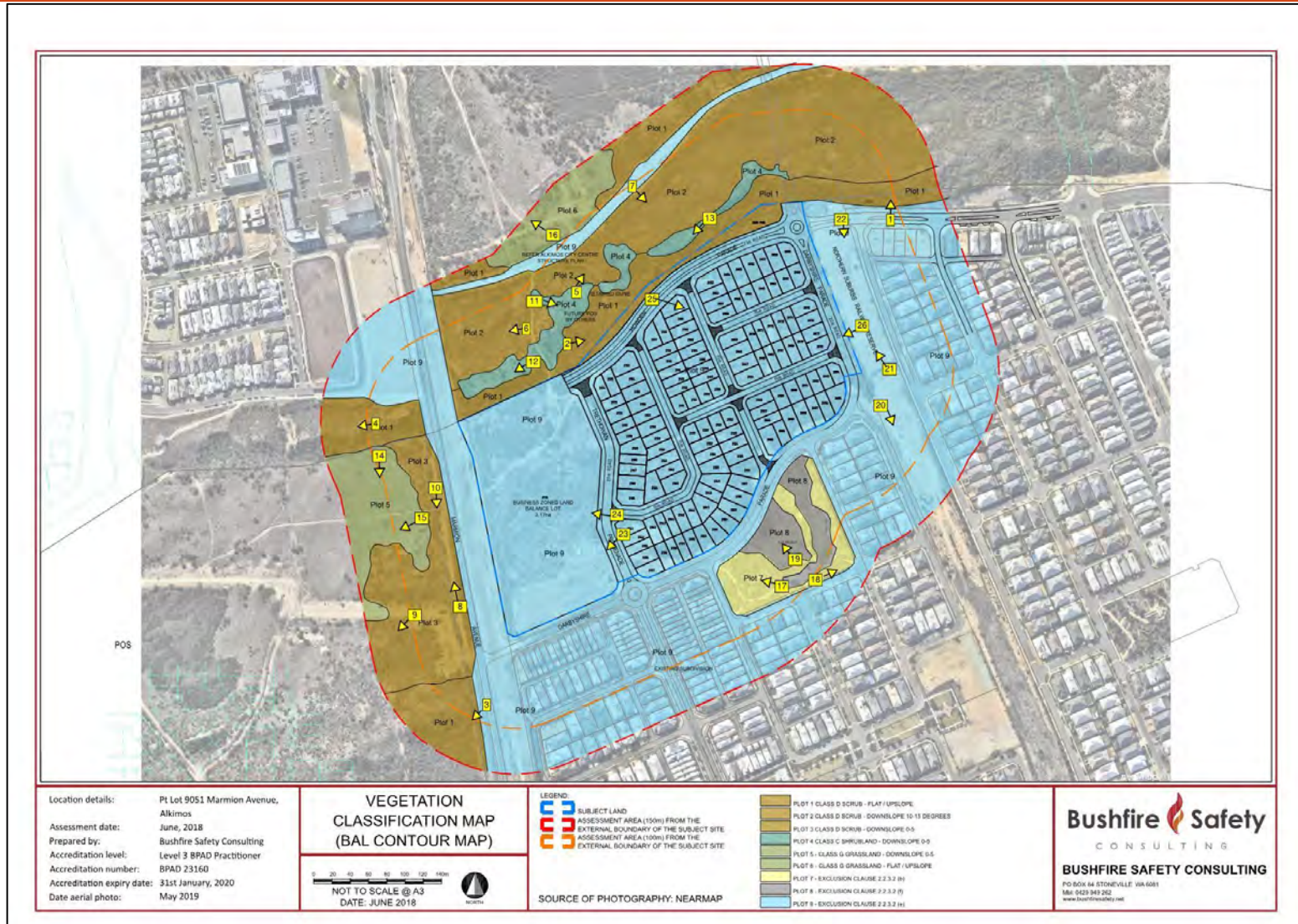


Figure 4: Vegetation Classification Map (for BAL Contour)

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 residential lots are exposed to a predicted radiant heat flux above BAL-29. The business zoned lot will require a 13 metre setback from the northern boundary and the classified Scrub vegetation to achieve BAL-29 and lower.

Table 3. Summary of assessment outputs

Lots	Applied Vegetation Classification	Plot No. & Effective slope & Site Slope	Separation distance to Classified Vegetation	Separation distance feature	Highest BAL Contour
2174, 2175, 2153, 2117, 2118, 2100, 2053-2059	North - Class D Scrub	Plot 1 Upslope	21 – 27m	21m wide Howden Parade Road Reserve	BAL-19
2060–2065, 2050-2052, 2069-2075, 2101-2107, 2110-2116, 2154-2158, 2169-2173	North - Class D Scrub	Plot 1 Upslope	27 – 100m	Howden Parade and residential lots	BAL-12.5
2066-2068, 2076-2083, 2108, 2109, 2084-2099, 2159-2168, 2119-2152	North - Class D Scrub	Plot 1 Upslope	> 100m	Howden Parade and residential lots	BAL-LOW
Business Zone Lot (Subject to further development)	North - Class D Scrub	Plot 1 Upslope	13 – 19m	13m internal APZ	BAL-29
			19 - 27m	Internal setback	BAL-19
			27 – 100m	Internal setback	BAL-12.5
	West – Class D Scrub	Plot 3 Downslope 0 - 5	37 – 100m	Marmion Avenue Road Reserve	BAL-12.5

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

The existing Class D Scrub vegetation to the north of the site and west of Marmion Avenue pose the greatest threat to the future residential and business development lots. Radiant heat flux and ember attack could impact the site as evident in the BAL contour plan (**Figure 5**).

Bushfire Management Plan – Lot 9051 Marmion Ave, Alkimos

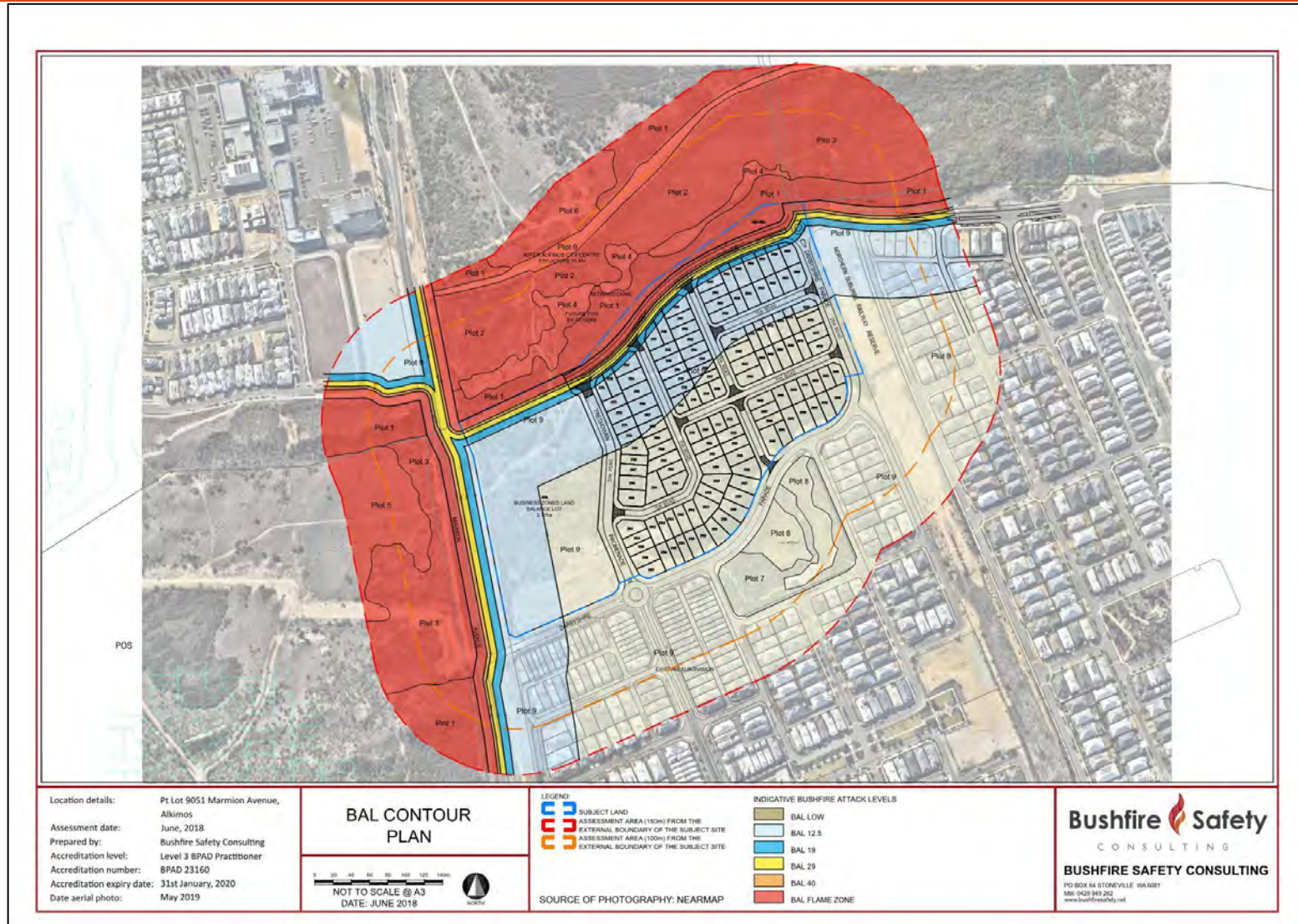


Figure 5: BAL Contour Plan showing predicted radiant heat flux levels into the site

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	
Element 1: Location	AQ1.1 Development Location	The Method 1 BAL Assessment in this report demonstrates the classified vegetation to the north and west of the proposed subdivision impacts 49 of the residential lots, as well as the business zoned lot. All residential lots are exposed to BAL-19 or lower. The business lot is exposed to BAL-29 maximum with a 13 metre APZ on the northern boundary.

Bushfire Management Plan – Lot 9051 Marmion Ave, Alkimos

Element 2: siting and Design	A2.1 Asset Protection Zone (APZ)	<p>All lots within 100m of the post development bushfire threat to the north will have internal Asset Protection Zones (APZ) that incorporates existing and planned public road reserves (see Figure 6). Future road reserves and Business Zone area will be cleared of classified vegetation and maintained in this state by the developer and subsequent owners. Features such as internal driveways, carparks and irrigated gardens will form an internal APZ if required when the site is developed.</p> <p>A 21m internal perimeter APZ in the Howden Road Reserve on the northern boundary of the residential area will be established and provide setback distances for residential lots to achieve BAL-19 or lower. Marmion Road Reserve provides a large low fuel setback from scrub vegetation to the west for the Business Zoned land. A 13m setback distance from the northern boundary of the Business Zone will ensure no buildings will be located in this area and that future development will achieve BAL-29 or lower.</p> <p>There are no lots exposed to BAL ratings exceeding BAL-29. The APZs will be managed in accordance with the requirements of Schedule 1 Standards for Asset Protection Zones outlined in Appendix 2.</p>
Element 3: Vehicular Access	A3.1 Two access routes	All lots will have direct driveway access onto one of six proposed public roads which intersect the site and provide multiple access routes to surrounding public roads.
	A3.2 Public Road	Darbyshire Parade and Marmion Road, 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).
Element 4: Water	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 established and 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.

The proposed business lot will be developed in the future and individual development application may trigger the requirements of State Planning Policy 3.7 triggering a Bushfire Management Plan for the individual proposal.

A summary of management strategies is outlined in **Figure 6**.

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.

Bushfire Management Plan – Lot 9051 Marmion Ave, Alkimos

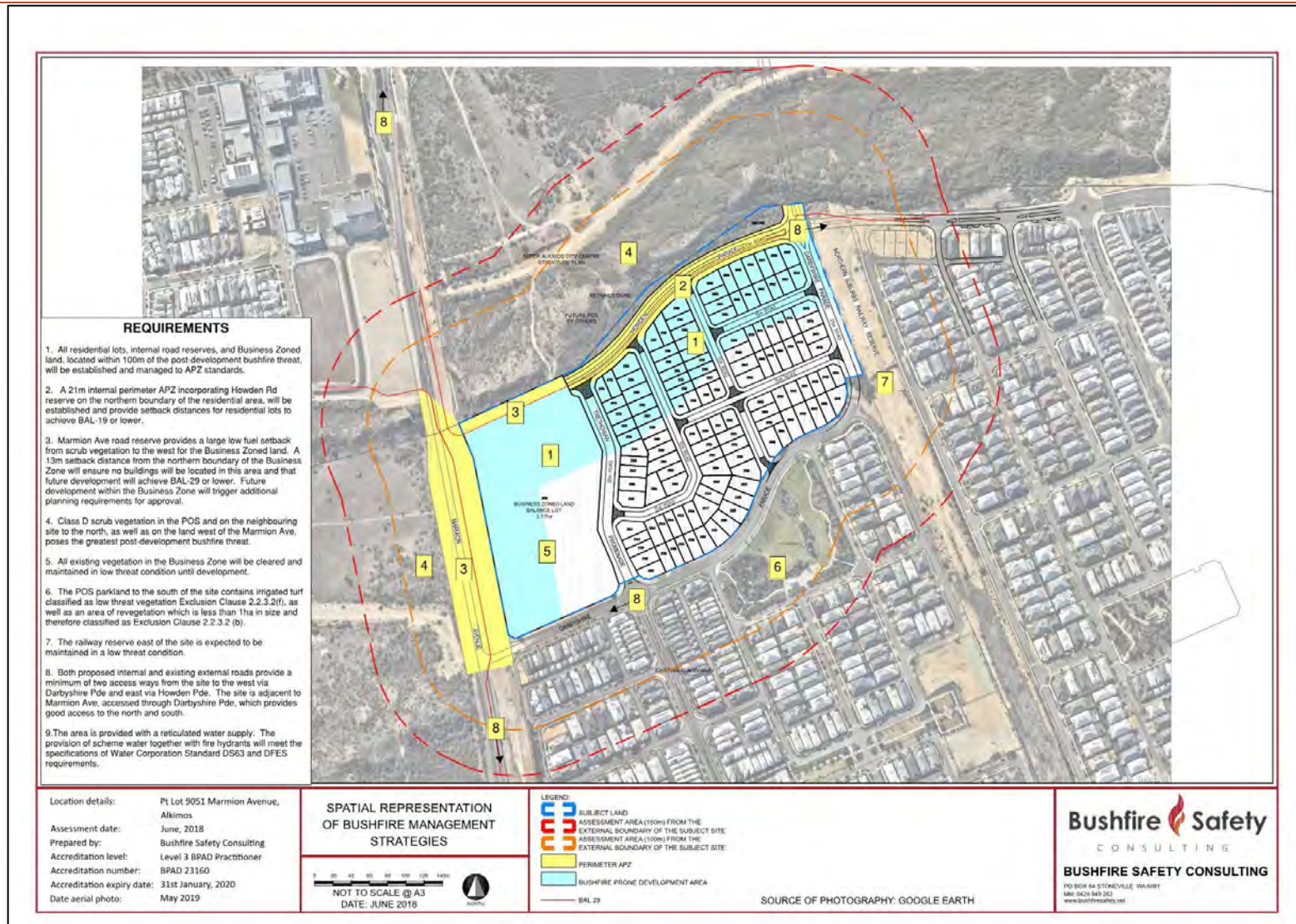


Figure 6: Spatial Representation of Bushfire Management Strategies

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 Scrub vegetation within the site and maintain a cleared landscape that complies with exclusion clause 2.2.3.2 in AS3959	<input type="checkbox"/>
4	Re-assess BAL ratings and develop BAL report and certificates to accompany individual building licence applications.	<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)".	
6	Any future Development Applications (DA) in the balance lot zoned 'Business' will be required to comply with SPP 3.7 and the Guidelines. Individual Bushfire Management Plans may be required to support each individual DA.	

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 by local government is recommended.

Signature: _____ Date: _____

DEVELOPER – AT SALE OF LOTS	
7	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 Firebreak and Fuel Load Notice.
LANDOWNER/OCCUPIER – ONGOING MANAGEMENT	
8	All lot owners within 100 metres of bushland are to maintain the Asset Protection Zone (APZ) to standards stated in this BMP (Appendix 1).
9	Ensure the site complies with the City of Wanneroo’s Firebreak and Fuel Load Notice as published.
10	Ensure construction of buildings complies with AS 3959:2009 if required.
11	If buildings are subject to additional construction in the future, AS 3959:2009 compliance is required.
CITY OF WANNEROO– ONGOING MANAGEMENT	
12	Maintain public roads to appropriate standards and ensure compliance with the City of Wanneroo’s Firebreak and Fuel Load Notice
13	Provide fire prevention and preparedness advice to landowners upon request, and the City of Wanneroo’s Firebreak and Fuel Load Notice.

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.

REFERENCES

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

http://www.dfes.wa.gov.au/safetyinformation/fire/bushfire/BushfireManualsandGuides/DESS_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

Appendix 1: Asset Protection Standards

Appendix 2: Vehicular Access Technical Requirements

Appendix 3: City of Wanneroo Firebreak and Fuel Load Notice 2018/19

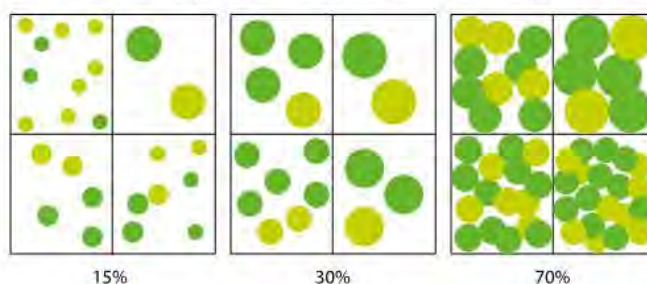
Appendix 1 – Asset Protection Standards

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 5m² 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 2 – Vehicle Access Technical Requirements

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

Appendix 3 – City of Wanneroo Firebreak and Fuel Load Notice

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 2000m² 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 2000m²
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 2000m², 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 Yanchev Beach Road turn off
- Wanneroo Road, Carabooda • Marmion Avenue, Jindalee
- Neaves Road, Mariginiup • Old Yanchev 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