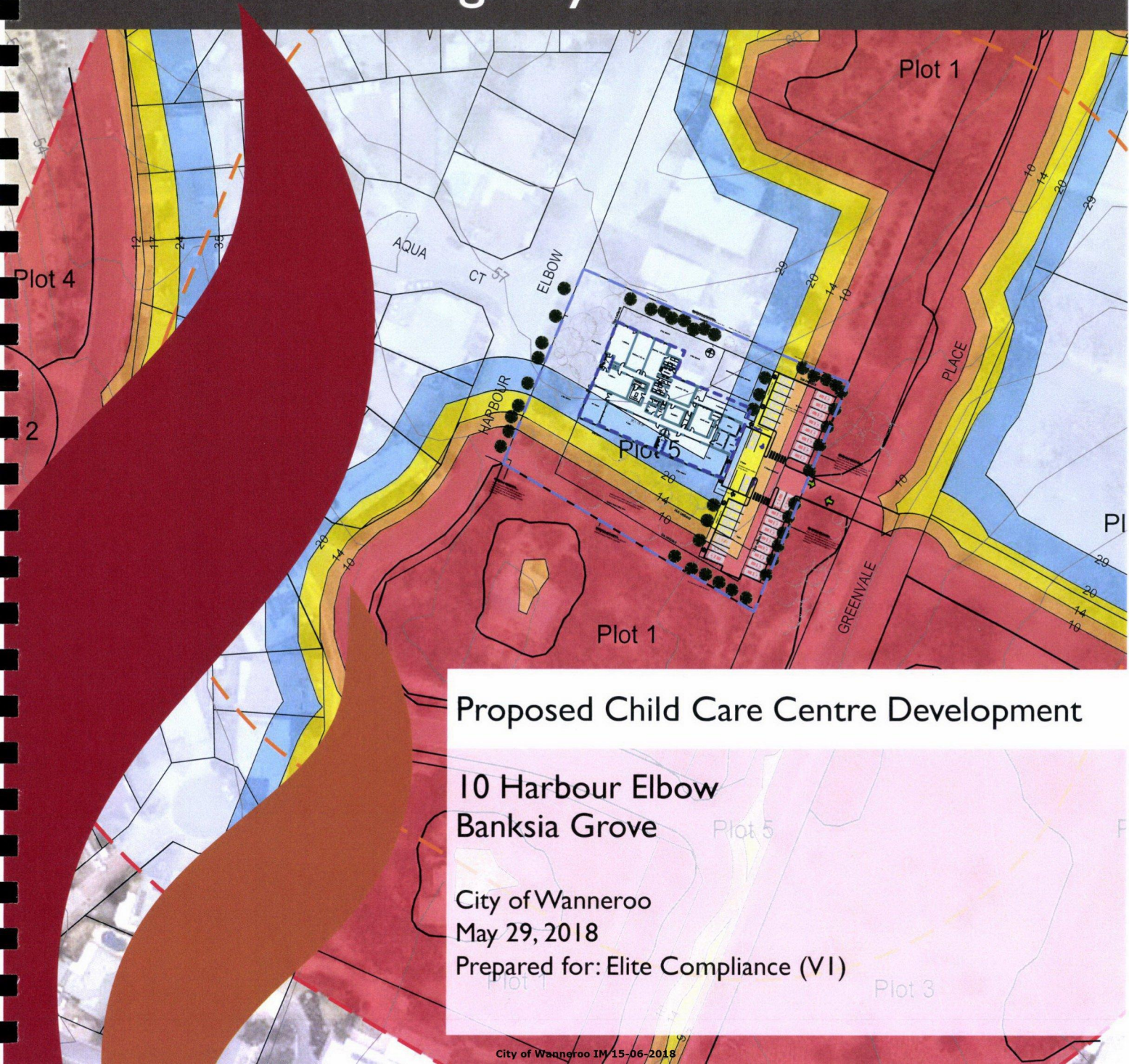


Bushfire Management and Emergency Evacuation Plan



Proposed Child Care Centre Development

10 Harbour Elbow
Banksia Grove

City of Wanneroo
May 29, 2018

Prepared for: Elite Compliance (VI)

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Document Information

Prepared for: The Atlantis Group

Project Name: Development Application: Childcare Facility

Address: 10 Harbour Elbow, Banksia Grove, Western Australia

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Front cover photo: Proposed Development.

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EXECUTIVE SUMMARY

This Bushfire Management and Emergency Evacuation Plan (BMEEP) has been prepared to support a Development Application for the 5003m² site at 10 Harbour Elbow, Banksia Grove. The proposed development is for a child care centre. The building to be erected will be 933.12m² in size and will comprise a waiting room, office, meeting and staff room at the front of the building; two (2) kindy rooms (south side); a nurse and two (2) babies room (north side); two (2) toddlers rooms (north and west side); and a kitchen, art room and small laundry.

It is anticipated that the centre will employ up to twenty four staff when it is operating at full capacity and accommodate up to 120 children. Its hours of operation will be 6.30am to 6pm Monday to Friday, every week, excluding public holidays.

There are bushfire threats to the site from the Banksia Woodland vegetation south of the site south and in the strip of Water Corporation land immediately east of the site. Managed properties occur west, north and north east of Greenvale Road.

The proposed child care development complies with the definition of “vulnerable land use” in the *State Planning Policy 3.7: Planning in Bushfire Prone Areas (SPP 3.7)*, policy clause 6.6 and therefore requires a Bushfire Management Plan which includes an emergency evacuation plan for proposed occupants.

In the event of a bushfire emergency, fire services require ready access to the site and to an adequate water supply. There is good vehicular access to the site via Greenvale Place and a reticulated water supply is available to the site. The facility building is exposed to BAL-19 after the Asset Protection Zone is established within the site.

It is expected that the implementation of this BMEEP will reduce the threat to staff, children, the public and fire fighters in the area addressed by this BMEEP. 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 development application is for a child care centre on the 5003m² site at 10 Harbour Elbow, Banksia Grove.

It is anticipated that the centre will employ up to 24 staff when it is operating at full capacity and accommodate up to 120 children. Its hours of operation will be 6.30am to 6pm Monday to Friday, every week, excluding public holidays.

Access for staff, visitors and fire services personnel will be off Greenvale Place. One driveway is proposed to serve the land, positioned approximately 90 metres north of Malachite Fairway. The application includes plans to establish a car park containing 37 bays, to be setback 1.5 metres from the Greenvale Place boundary (noting this is separated from Greenvale Place by Water Corporations land across which an access easement is to be granted). Play spaces are to be established on either side of the planned building, along with additional tree plantings and landscaping, including a screen on the north side boundary. The Development Application plan is found in Figure 1.

The site is located on the edge of large residential areas to the north and west (Figure 2). The properties east of Greenvale Place are intensively managed horse properties with irrigated green grass and no fire threat. Remnant vegetation is concentrated in the lot immediately south of the site and in the strip of Water Corporation land immediately to the east of the site.

1.1 Building Design and Built Form

The building to be erected will be 933.12m² in size and will comprise a waiting room, office, meeting and staff room at the front of the building; two (2) kindy rooms (south side); a nurse and two (2) babies room (north side); two (2) toddlers rooms (north and west side); and a kitchen, art room and small laundry.

There are doors to the outdoor play spaces on all four sides of the building.

1.2 Purpose of Plan

This BMEEP has been prepared to support the Development Application and addresses existing and future bushfire threats 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 BMEEP will reduce the threat to staff, children, property and emergency response personnel.



Figure 1: Development Application for 10 Harbour Elbow, Banksia Grove

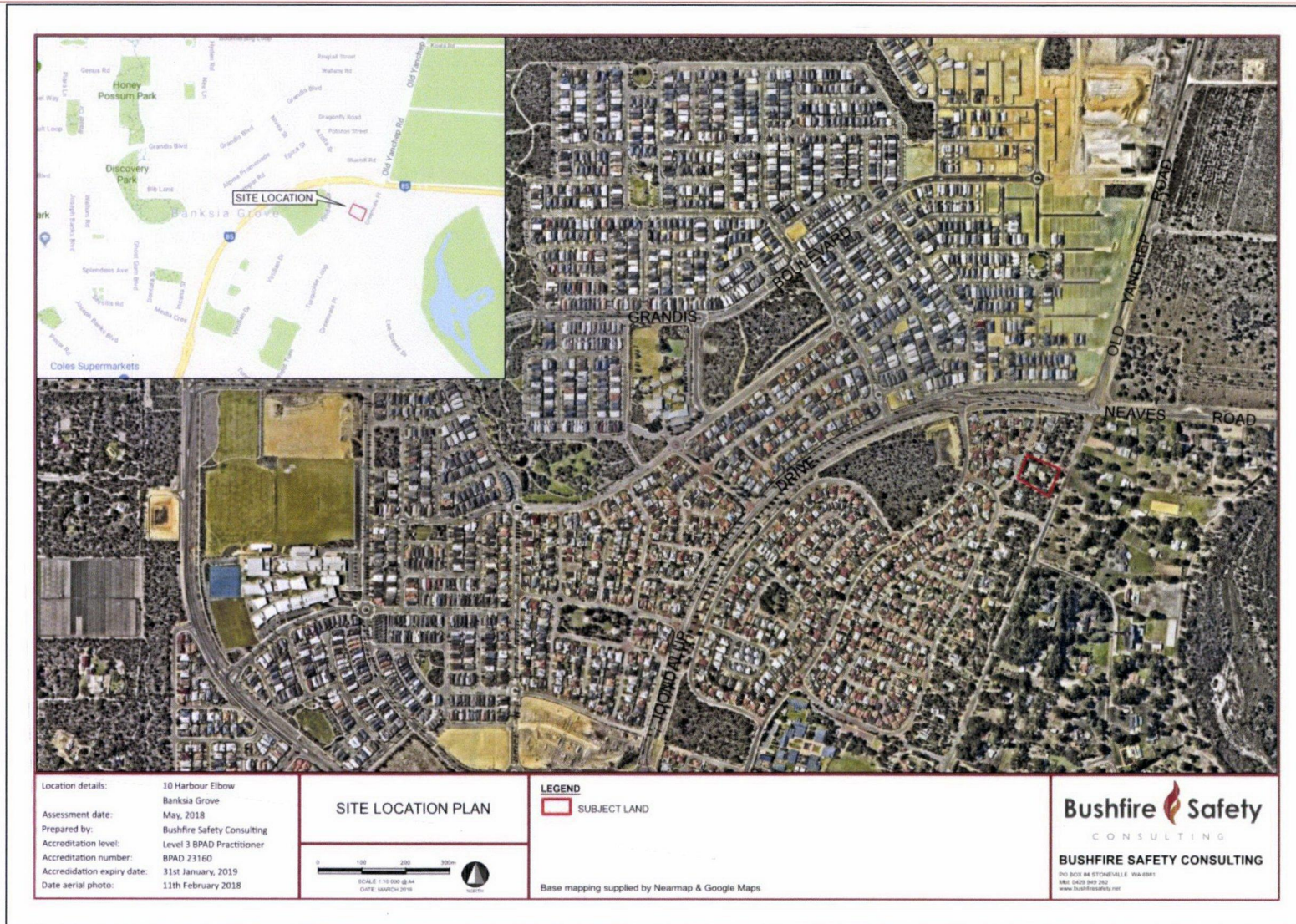


Figure 2: Site location.

Policy and Guidelines

1.2 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 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 Development Application because the site 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 comply with SPP 3.7:

Table 1. Policy measures

Policy Measure 6.2	The development 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 development proposal will be accompanied by a Bushfire Management Plan including the following: <ul style="list-style-type: none"> - BHL Assessment - BAL Contour Plan - BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the Guidelines
Policy Measure 6.6	Policy Clause 6.6 applies to vulnerable land use applications. The development application proposes a childcare centre which is a vulnerable land use under the policy because the users of the facility are less able to respond in a bushfire emergency. The development application will therefore include a comprehensive emergency evacuation plan which specifically reflects the users' needs and circumstances.

1.3 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 BMEEP. 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.

1.4 Evacuation Planning Handbook 4 (Australian Government – Attorney-General’s Department) Australian Emergency Management Institute

This document sets out the process to develop a bushfire evacuation plan for community facilities and residential areas. The document details issues such as decisions to evacuate, warnings, withdrawal, shelter and returning home.

1.5 Australian Standard (AS3745-2010) Planning for Emergencies in Facilities

The objective of the standard is to enhance the safety of people in facilities by providing a framework for emergency planning utilising the built facility as appropriate.

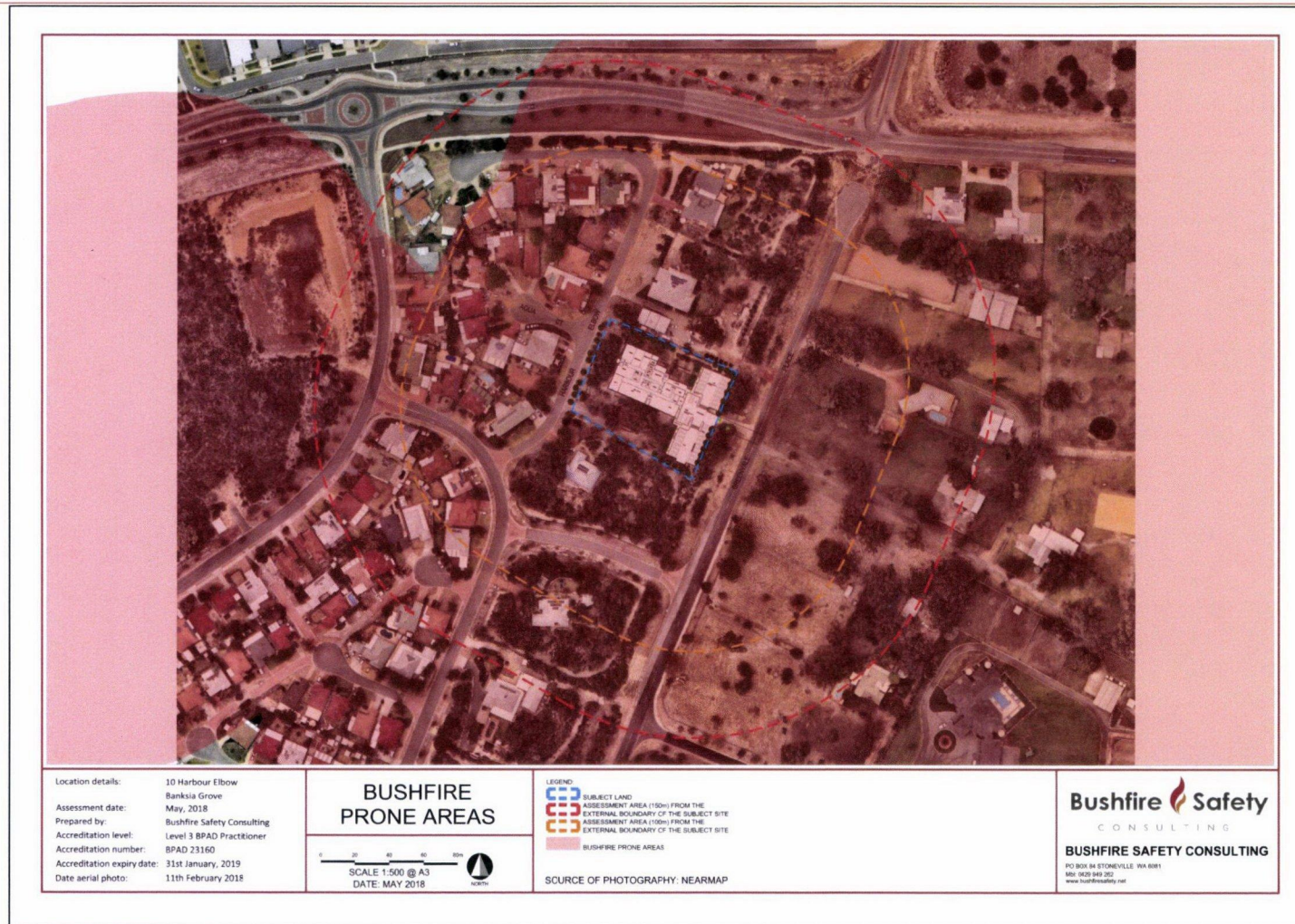


Figure 3: The development site is in the declared Bushfire Prone Area of WA

2 ENVIRONMENTAL CONSIDERATIONS

2.1 Native Vegetation – modification and clearing

The development site is in an established area and development plans include playgrounds and garden landscaping at the site. Mature trees will be retained where possible and fuel loads and fuel structure will be modified to ensure APZ standards are achieved. There are no environmental considerations that limit this proposal. Any planned landscaping will comply with Standards for Asset Protection Zones as outlined in Appendix 1.

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 BMEEP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire.



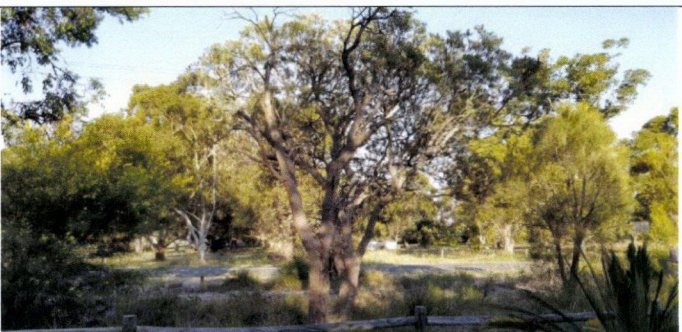
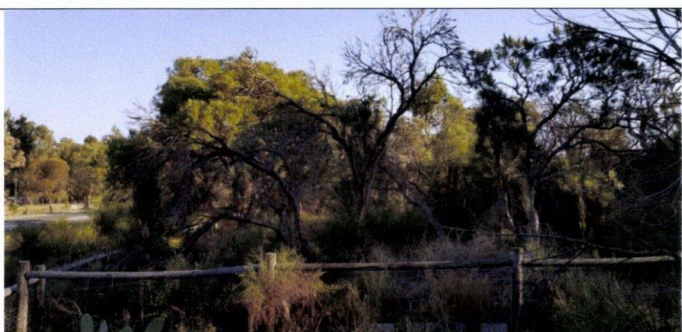

3.1 Assessment Inputs


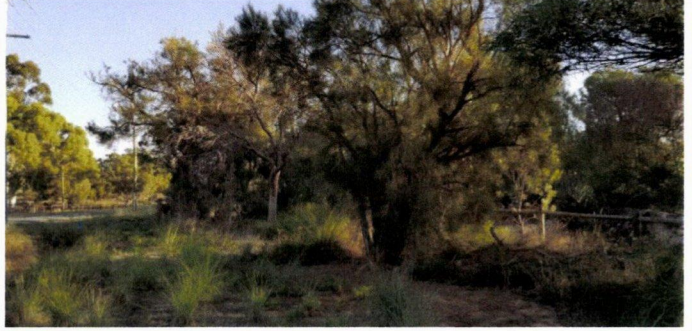

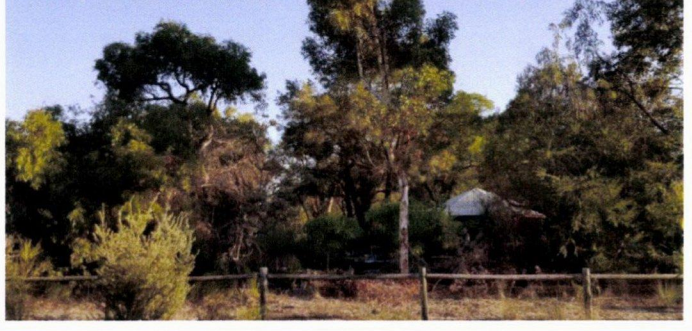
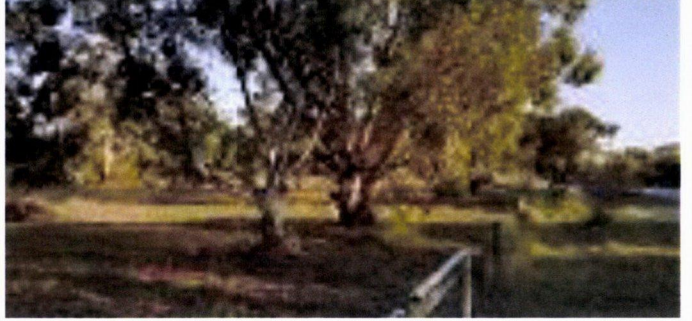
The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.3 (2017)*. The development proposal is known and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines. 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 contains degraded remnant banksia woodland (Class B) vegetation which extends south onto the adjacent properties and in the Water Corporation corridor on the eastern interface. Intensively managed equine properties with small holding yards and irrigated grass vegetation occur east of Greenvale Place and a search of historical aerial images indicate this intensive management has been ongoing since 2007. There is some Class B degraded woodland east of Greenvale Place and intact woodland west of Viridian Drive. Some grassland vegetation occurs south east of the site, otherwise the surrounding residential areas north and west of the site and roadside verges are well managed and low threat.

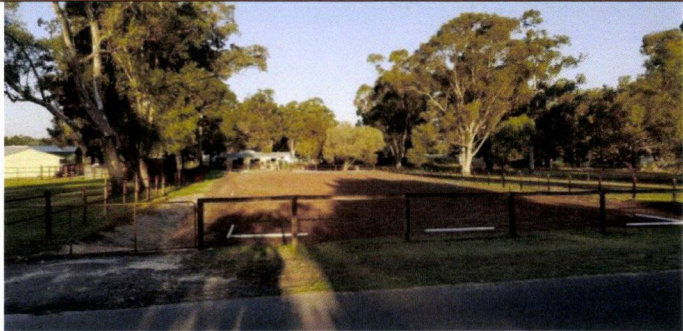
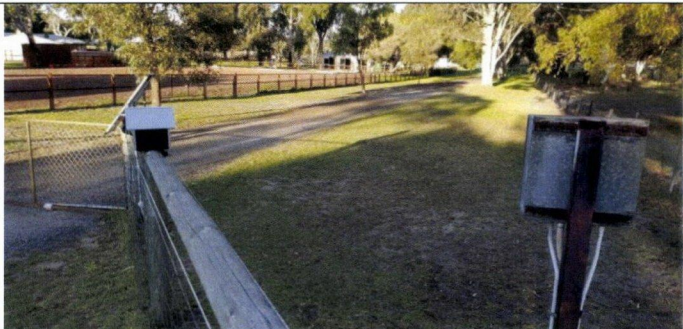
The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in the plot descriptions below and in Figure 4.

<p>Photo ID: 1</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Class B Woodland</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with low shrubs.</p>	
<p>Photo ID: 2</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with low shrubs.</p>	
<p>Photo ID: 3</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Strip of Low Banksia and Casuarina Woodland with grass.</p>	
<p>Photo ID: 4</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification: Low Banksia and Casuarina Woodland with low shrubs.</p>	
<p>Photo ID: 5</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with grass.</p>	

<p>Photo ID: 6</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with grass.</p>	
<p>Photo ID: 7</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with grass.</p>	
<p>Photo ID: 8</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with low shrubs.</p>	
<p>Photo ID: 9</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with low shrubs.</p>	
<p>Photo ID: 10</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Degraded Eucalypt Woodland with grass in paddock</p>	

<p>Photo ID: 11</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Degraded Eucalypt Woodland with grass in paddock</p>	
<p>Photo ID: 12</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Low Banksia and Casuarina Woodland with low shrubs</p>	
<p>Photo ID: 13</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Grassland (Class G)</p> <p>Description/justification of classification : Pasture grasses in paddock</p>	
<p>Photo ID: 14</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Pasture grasses in paddock</p>	
<p>Photo ID: 15</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Woodland (Class B)</p> <p>Description/justification of classification : Degraded Grasses near cul-de-sac head.</p>	

<p>Photo ID: 16</p> <p>Plot Number: 4</p> <p>Vegetation classification or exclusion clause: Scrub (Class D)</p> <p>Description/justification of classification : Regenerating scrub in drainage basin</p>	
<p>Photo ID: 17</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification : Mown irrigated lawn and garden beds</p>	
<p>Photo ID: 18</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification : Woodchips in Neaves Road reserve</p>	
<p>Photo ID: 19</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification : irrigated grazed intensively managed equine property with small holding yards. History of intense management for the past 11 years.</p>	
<p>Photo ID: 20</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: irrigated grazed intensively managed equine property with small holding yards. History of intense management for the past 11 years.</p>	

<p>Photo ID: 21</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification : Unvegetated horse arena</p>	
<p>Photo ID: 22</p> <p>Plot Number: 5</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Mown driveway entrance</p>	

3.1.2 Effective Slope

The landscape slopes gently down to the east from Greenvale Place with a maximum of downslope of 3 degrees. The landscape slopes downslope west of Viridian Drive in Viridian Park. The effective slope under areas of classified vegetation is found in Table 2.

The landscape directly north and south of the site is flat or upslope. The contour lines shown are shown in Figure 4 and were field checked using a clinometer during the site visit.

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 3°
3	Class G Grassland	Flat / upslope
4	Class D Scrub	Downslope 8°

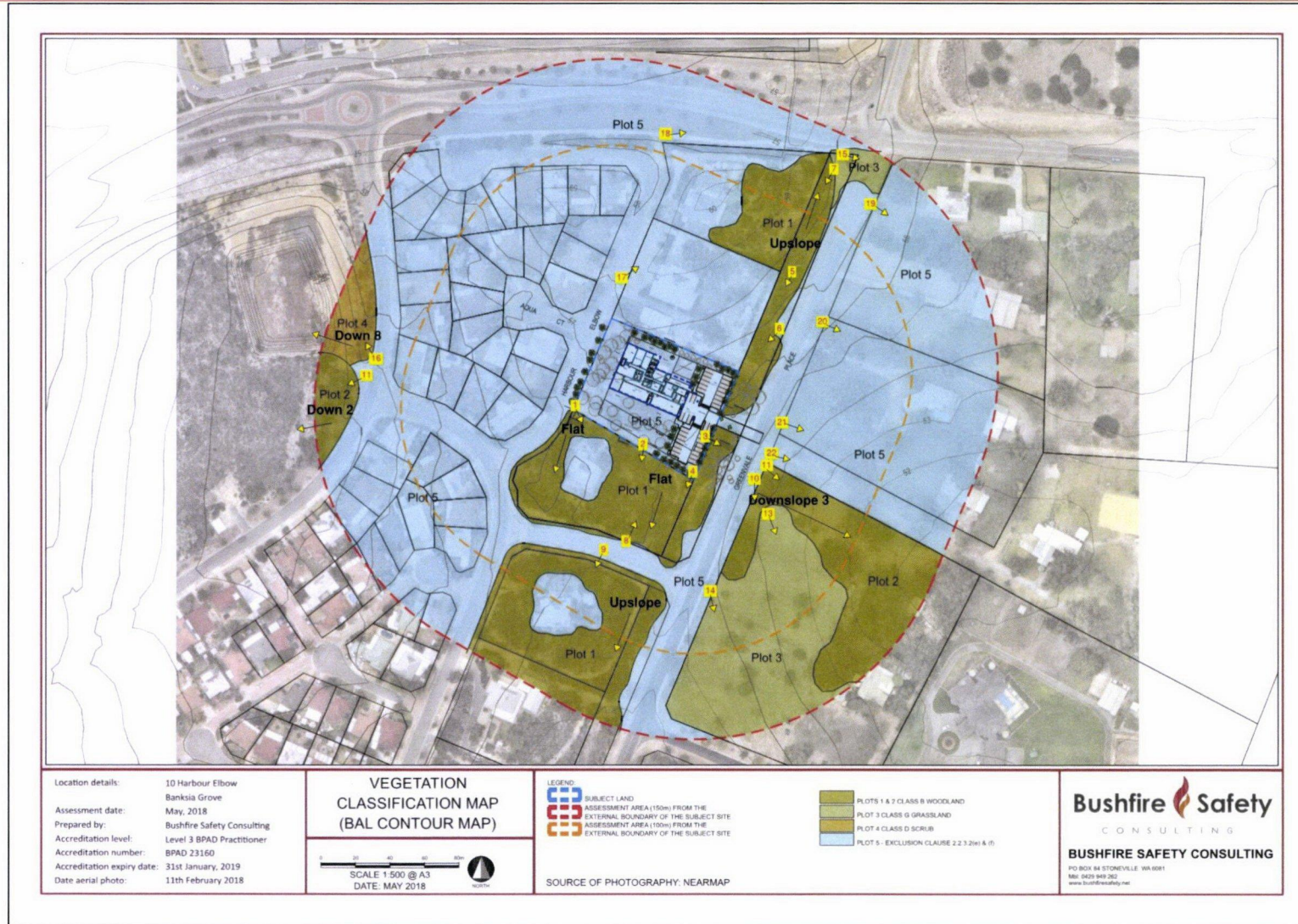


Figure 4: Vegetation Classification Map (for BAL Contour) showing photo points and effective slope.

3.2 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in **Figure 5**.

A method 1 BAL Assessment was undertaken to determine the BAL contours impacting the proposed child care building (Table 3).

Table 3. Summary of assessment outputs

Applied Vegetation Classification	Plot No. & Effective slope & Site Slope	Separation distance to Classified Vegetation	Highest BAL Contour
Class B Woodland	Plot 1 - Flat	21.5 metres	BAL-19
Class B Woodland	Plot 2 – Downslope 3°	58 metres	BAL-12.5
Class G Grassland	Plot 3 – Downslope 3°	74 metres	BAL- LOW
Class D Scrub	Plot 4 – Downslope 8°	138 metres	BAL-LOW

Figure 5 outlines the final developed scenario where the entire site remains fuel reduced and managed to Asset Protection Zone (APZ) standards. The proposed child care building is exposed to BAL-19 due to woodland vegetation located south and east of the site.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

There are no significant bushfire hazard issues. The site is in a developed area and Access routes and water supply are provided to acceptable levels.

The Class B Woodland vegetation south and immediately east in the site in the Water Corporation strip of land poses the greatest threat to the facility. There is a continuous strip of banksia woodland vegetation that is connected from the south through the vegetated lots so the southerly direction poses the greatest potential threat for an intense bushfire front.

There are well managed properties east of Greenvale Road, immediately to the north and west of Harbour Avenue. Ember attack from bushland areas 330 metres east of the site and 220 metres to the north east could ignite fuels closer to the facility and pose a threat.

The site could be impacted as outlined in the BAL contour plan. With the property managed to Asset Protection Zone standards, the facility is exposed to BAL-19.

Public access roads are extensive and border the western boundary and four access routes are available within 200m of the driveway on Greenvale Place. A water supply can be provided to acceptable levels.

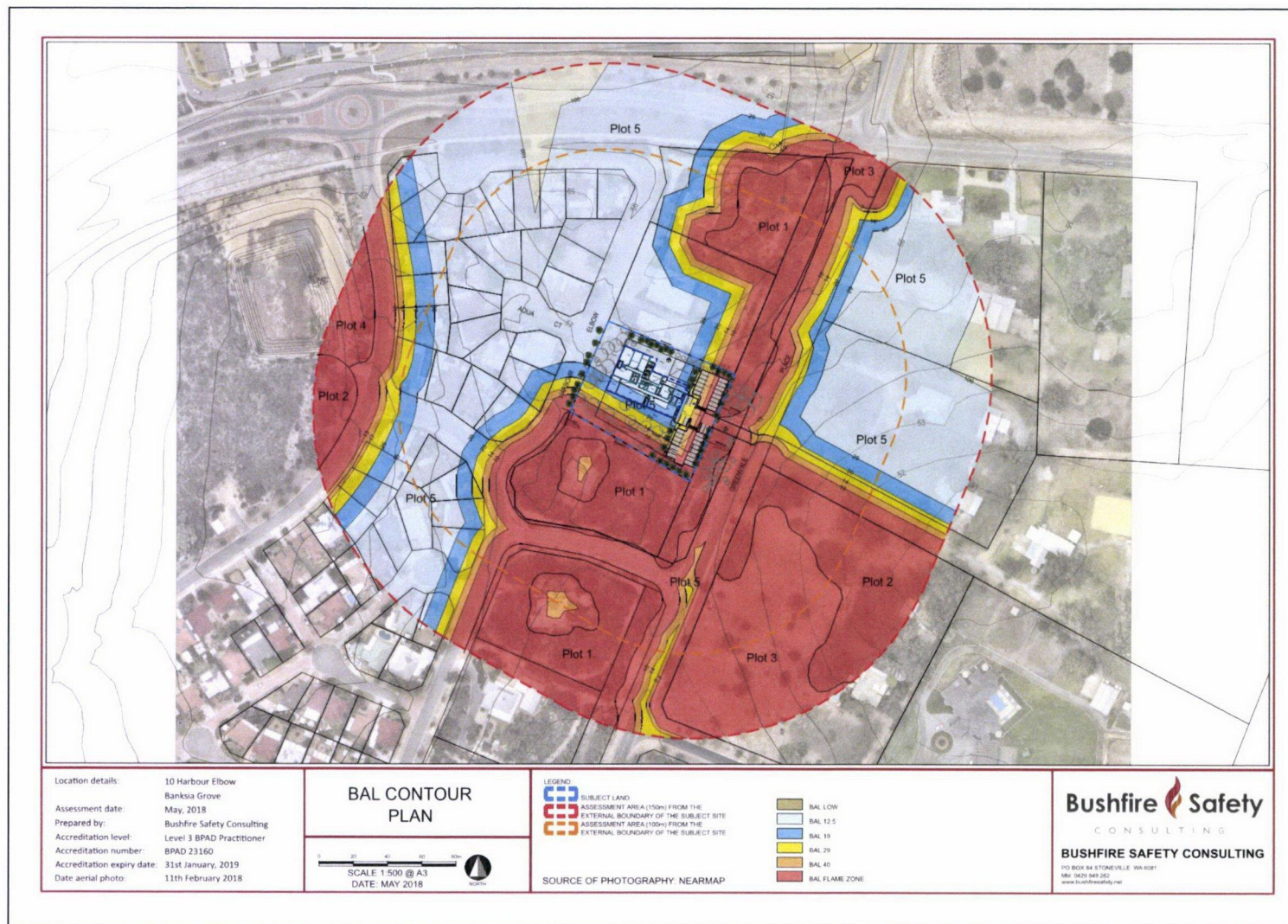


Figure 5: BAL Contour Plan showing predicted radiant heat flux levels into the site

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 bushfire protection 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 details are outlined in Table 4 below.

Table 4: Compliance Table

Bushfire Protection Criteria	Method of compliance	Proposed bushfire management strategies
	Acceptable Solutions	
Element 1: Location	A1.1 Development Location	The Method 1 BAL Assessment outlined in this report demonstrates that the development proposal can accommodate a childcare facility that is exposed to BAL-29 or lower. It is exposed to BAL-19.
Element 2: siting and Design	A2.1 Asset Protection Zone (APZ)	The Asset Protection Zones (APZs) occupies the entire site and some fuel load management is required to establish the standard. The building is exposed to BAL-19 as confirmed by the Method 1 BAL assessment. The APZ is established and managed in accordance with the requirements of Schedule 1 Standards for Asset Protection Zones outlined in Appendix 2.
Element 3: Vehicular Access	A3.1 Two access routes	Access to and from the site is via Greenvale Place, a dead-end road. However, 2 access routes are available 90m from the driveway with Greenvale Place where it meets Malachite Fairway, and four access routes are available within 200m of the driveway on Greenvale Place.
	A3.2 Public Road	No public roads are proposed within the site however the access roads noted above all comply with public road standards.
	A3.3 Cul-de-sac	Greenvale Place is currently a dead end, however the site access to the facility is located 90 metres from Malacite Fairway. The cul-de-sac standard for surface condition, width and turn around head comply with standards.
	A3.4 Battle-axe	There are no battle axes proposed.
	A3.5 Private drive-way longer than 50 metres	There is no private drive-way longer than 50m, however the site does accommodate a 6m wide driveway and will additionally accommodate a compliant T-shaped turn around area. The private driveway standards that will be achieved are found in Appendix 2 - Vehicular Access Technical Requirements.
	A3.6 Emergency access way	There are no emergency access ways proposed
	A3.7 Fire Emergency access routes	There are no emergency access ways proposed
	A3.8 Firebreak width	Compliance with the current City of Wanneroo Firebreak requirement on a property greater than 2000sqm is for a firebreak no less than 3m wide by 3m high around the perimeter and the growth on the firebreak cannot exceed 20mm high. The entire site will comply with the firebreak notice as it will all be managed to APZ standards.
Element 4:	A4.1 Reticulated areas	Fire services require ready access to an adequate water supply during fire emergencies which is available via hydrants on

Water		Harbour Elbow. As required by Regulation 18B (1) of the amended (19 Dec 2012) Building Regulations 2012, the application for the building permit for a Class 2-9 building is required to have plans and specifications of sufficient detail for assessment purposes deposited with DFES. This documentation will be provided to DFES for assessment.
	A4.2 Non-reticulated areas	Not Applicable
	A4.3 Individual lots within non-reticulated areas (for 1 additional lot only)	Not Applicable

5.1 Additional Management Strategies

The site will be developed in a single stage and the APZ standards within the site will be established and maintained by the owners/managers.

There are no designated Community Fire Refuges in the City of Wanneroo, however, at the time of an emergency, the relevant authorities will select an evacuation centre and DFES, the Council and Police will provide this information to the facility managers and residents at the site if this is required.

The safest place to be during a bushfire is away from it. Where to go is a crucial element when people are relocating during a time of emergency. The evacuation of the site if threatened by a bushfire will occur preferably by vehicle if time permits away from the threat with the assistance of the Police, local government and DFES. Where sufficient capacity cannot be organised for a site evacuation, there is potential for children to be walked away from the site in a northerly direction towards Neaves Road under supervised conditions by the Police and Emergency Services.

Comprehensive details are provided in the bushfire evacuation plan (Appendix 4).

There are no safe sheltering options available at the site unless a small localised fire occurs near to the facility and the local fire agencies advise it is safe to shelter on-site in the building.

The spatial representation of bushfire management strategies is outlined in Figure 6.

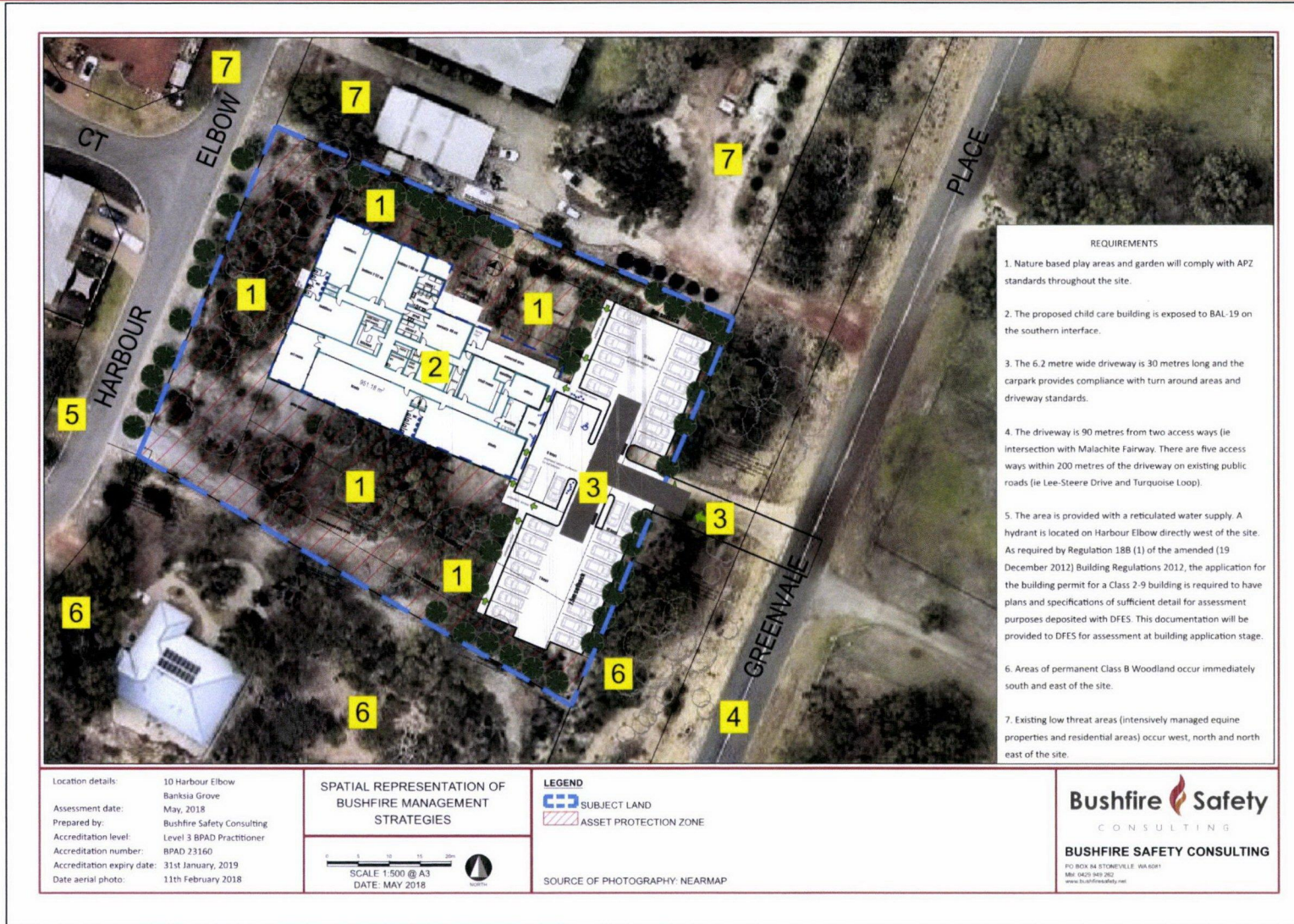


Figure 6: Spatial Representation of Bushfire Management Strategies

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, landowners and facility managers and the City of Wanneroo. The check boxes for implementation actions will be used for development application 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 OCCUPATION OF FACILITY		
No.	Implementation Action	DA Clearance
1	Establish the APZ to standards outlined in Appendix 1 and certify BAL the rating at building licence stage	<input type="checkbox"/>
2	Make a copy of this BMEEP available to the facility manager and staff.	
3	Recommendation the facility is constructed to AS3959 standards.	
4	As required by Regulation 18B (1) of the amended (19 Dec 2012) Building Regulations 2012, the application for the building permit for a Class 2-9 building is required to have plans and specifications of sufficient detail for assessment purposes deposited with DFES. This documentation will be provided to DFES for assessment at this stage.	
5	Distribute the Bushfire Emergency Evacuation Plan to all members of the Local Emergency Management Committee and incorporate their feedback into the plan using this important local process.	
FACILITY MANAGEMENT – ONGOING MANAGEMENT		
6	Update the BEEP once the facility is staffed and operational. Annually review the Bushfire Emergency Evacuation Plan	
7	Maintain the Asset Protection Zone (APZ) to standards stated in this BMEEP (Appendix 1).	
8	Ensure the site complies with the Shire of Wanneroo’s Fire Control Notice as published.	
9	If buildings are subject to additional construction in the future, AS 3959:2009 compliance is recommended.	
CITY OF WANNEROO – ONGOING MANAGEMENT		
10	Ensure road verge vegetation in proximity to the facility is maintained in a ‘low threat’ condition.	

11	Maintain public roads to appropriate standards and ensure compliance with the City of Wanneroo Fire Information Notice.
12	Provide fire prevention and preparedness advice to landowners upon request, including the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Wanneroo Fire Control and Fuel Load Notice.

Certification by Bushfire Consultant

I _____ certify that at the time of inspection, the BAL rating contained within this BMEEP is correct; and implementation action 1 has been undertaken in accordance with the BMEEP.

Clearance is recommended.

Signature: _____

Date: _____

REFERENCES

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 Notice
- Appendix 4: Bushfire Emergency Evacuation Plan

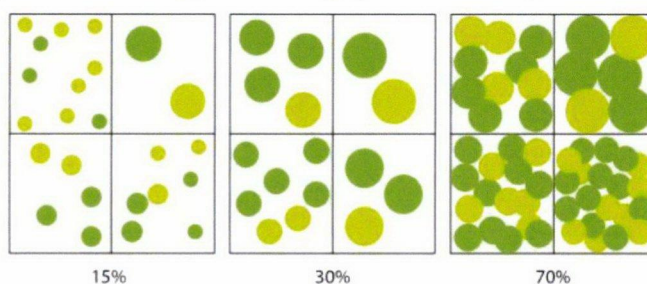
Appendix 1: Asset Protection Zone Standards

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

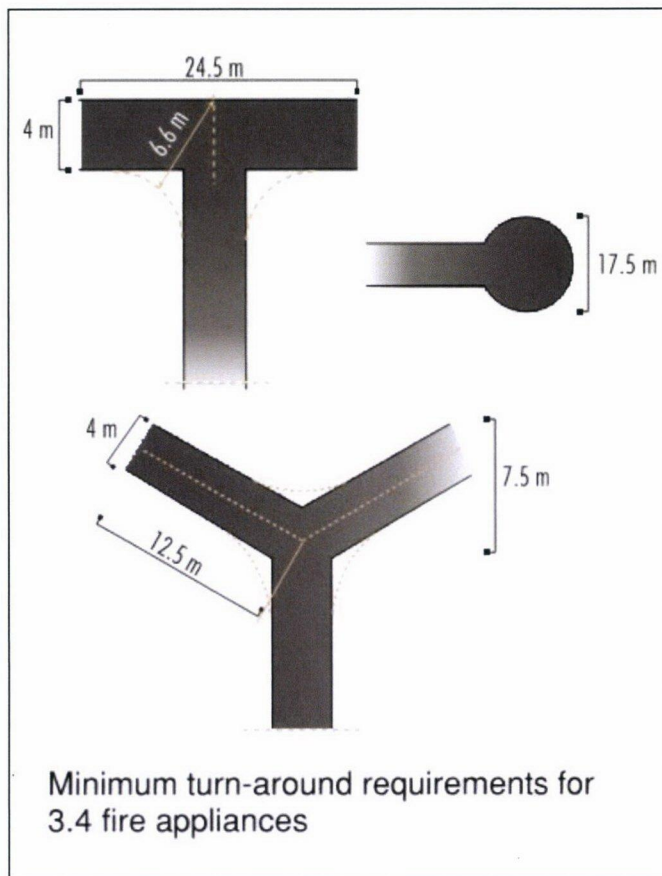


- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 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 : Vehicular Access Technical Requirements

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

*Refer to E3.2 Public roads: Trafficable surface



Appendix 3: City of Wanneroo – Firebreak 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

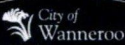
Permits are available from the City of Wanneroo at the following locations:

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 Dundeebar 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 Dundeebar 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, bushburning 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 Jorndalup Drive and Wanneroo Road
- Wanneroo Road, south of the Yanchep Beach Road turn off
- Wanneroo Road, Caraboods • Marmion Avenue, Jindalee
- Neaves Road, Manginup • Old Yanchep Road, Pinjar
- Gnaragara 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 fence 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 metres 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

Appendix 4: Bushfire Emergency Evacuation Plan