

Bushfire Management Plan

Development – Change of Land-use Lot 1 (No. 543) King Road, Oldbury



Ref: 200910 Version: 1.0 Sept 2020





Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details									
Site Address / Plan Reference:	546 [Lot 1 D60562] King Road								
Suburb:	Oldbury State: WA P/code:):	6121				
Local government area:	Serpen	Serpentine-Jarrahdale							
Description of the planning propo	osal:	Change of land	d-use: truck c	lepot.					
BMP Plan / Reference Number:		200910 Version: 1.0 Date of Issue:				21 Se	21 Sept 2020		
Client / Business Name:		Exit Waste							
Reason for referral to DFES							Yes	5	No
Has the BAL been calculated by a AS3959 method 1 has been used to			nethod 1 as	outlined in	AS3959 (t	ick no if			\boxtimes
Have any of the bushfire protect performance principle (tick no if or elements)?									\boxtimes
Is the proposal any of the following	g specia	l development	types (see	SPP 3.7 for d	efinitions)'	?			
Unavoidable development (in BAL-40 c	or BAL-FZ	Z)							\boxtimes
Strategic planning proposal (including	rezoning	g applications)							\boxtimes
Minor development (in BAL-40 or BAL-FZ)							\boxtimes		
High risk land-use									\boxtimes
Vulnerable land-use	Vulnerable land-use						\boxtimes		
If the development is a special development is a special development (E.g. considered)									
Note: The decision maker (e.g. the local government or the WAPC) should only refer the proposal to DFES for comment i one (or more) of the above answers are ticked "Yes".									
BPAD Accredited Practitioner Details and Declaration									
Name		Accreditation	n Level	Accredita	tion No.	A	ccreditat	ion Ex	piry
Jeremy Durston				pril 2021					
Company Bushfire West Pty Ltd				O403 328 8					
I declare that the information provided in this bushfire management plan is to the best of my knowledge true and correct.									
		P							
Signature of Practitioner		J.		Da	ate	21 Se	ot 2020		

REPORT DETAILS

Subject Land

Street No.	Lot No.	Plan	Street Name	
543	1	60562	King Road	
Locality		Oldbury (6121)		
Allotment Area		4.2256 ha		
Zoning		Rural		
Local Government		Serpentine-Jarrahdale		
Proposal description		Change of land-use: transport depot.		
Site assessment date 18 Sept 2020				

Document Reference

Project	Date	Purpose
ref.200910		
version 1.0	21 Sept 2020	SPP3.7 compliance, development application.

Author

Practitioner	Accreditation Level	Accreditation No.
Jeremy Durston	Level 3	BPAD 36525

Report Limitations

The measures contained in this report are considered to be minimum standards only. Bushfire West Pty Ltd and the author do not guarantee that if such standards are complied with a building or property will not be damaged or that lives will not be harmed or lost during a bush fire event.

Bushfire and weather conditions can be extremely dangerous and unpredictable. The management of bushfire risk will depend on, among other things, the actions of property owners and/or occupiers over which the author has no control.

All surveys, forecasts, projections and recommendations made in this report are made in good faith on the basis of information available at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.

Notwithstanding anything contained therein, the author will not, except as the law may require, be liable for any loss or other consequences arising out of the services provided.

Jeremy Durston jeremy@bushfirewest.com.au Bushfire West Pty Ltd



1. Summary

This Bushfire Management Plan has been prepared for the proposed change of land-use to incorporate a transport depot at 543 King Road, Oldbury (the development). The subject site is 4.2256 ha in area and zoned Rural. It is currently developed with a dwelling, workshop and shed, and the transport depot includes an office/crib room, ablution building, car parking area and truck hard-stand area. The subject land also includes fenced pasture areas with trees and grass. Figure 1A illustrates the development site plan.

In accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP3.7) (WAPC, 2015), development in bushfire prone areas is required, unless exempt, to address the bushfire protection criteria detailed in Appendix 4 of Guidelines for Planning in Bushfire Prone Areas Version 1.3 (the Guidelines) (WAPC, 2017).

The transport depot office/crib room requires assessment against SPP3.7 due to its occupancy as a work-space. This report has been prepared to identify the bushfire hazard issues for the site, to address the relevant bushfire protection criteria and to specify the required bushfire management measures.

Subject to the measures detailed within this Bushfire Management Plan, the proposal meets all necessary requirements of SPP3.7, including the four elements of the Bushfire Protection Criteria as follows:

- Location the office/crib room is assessed as an acceptable rating of BAL-19;
- Siting and design an Asset Protection Zone is to be maintained around habitable buildings and adjacent structures to the minimum extent of 20m.
- o Road access King Road provides the required two access alternatives to the site;
- Internal access A compliant driveway with turnaround area is to be maintained. Firebreaks are to comply with the Shire of Serpentine-Jarrahdale Firebreak and Fuel Hazard Reduction Notice; and
- Firefighting water supply an onsite water supply of 20,000L reserved for firefighting is to be maintained [i,e, 10,000L for the transport depot and 10,000L for the residence].

2. Environmental Considerations

There are no known environmental considerations. No clearing of remnant vegetation is proposed. The area of the required Asset Protection Zone is currently maintained for low threat.

3. Local Government Fire Control Notice

The Shire of Serpentine-Jarrahdale annual Firebreak and Fuel Hazard Reduction Notice includes the following requirements for land greater than 1 acre (4047 m²):

- Keep grass short.
- o Trim all trees and bushes over driveways, access ways and firebreaks to leave a 4m wide clearance and a clear vertical axis.
- o Install firebreaks that are:
 - Immediately surrounding all agricultural buildings, sheds or group of buildings.
 - Immediately inside all external boundaries.
 - A minimum of 3 metres wide, but not wider than 5 metres.
- Maintain 20m asset protection zones or as per your approved BAL/FMP assessment.

A copy of the 2019/20 Firebreak and Fuel Hazard Reduction Notice is included in Appendix 2.

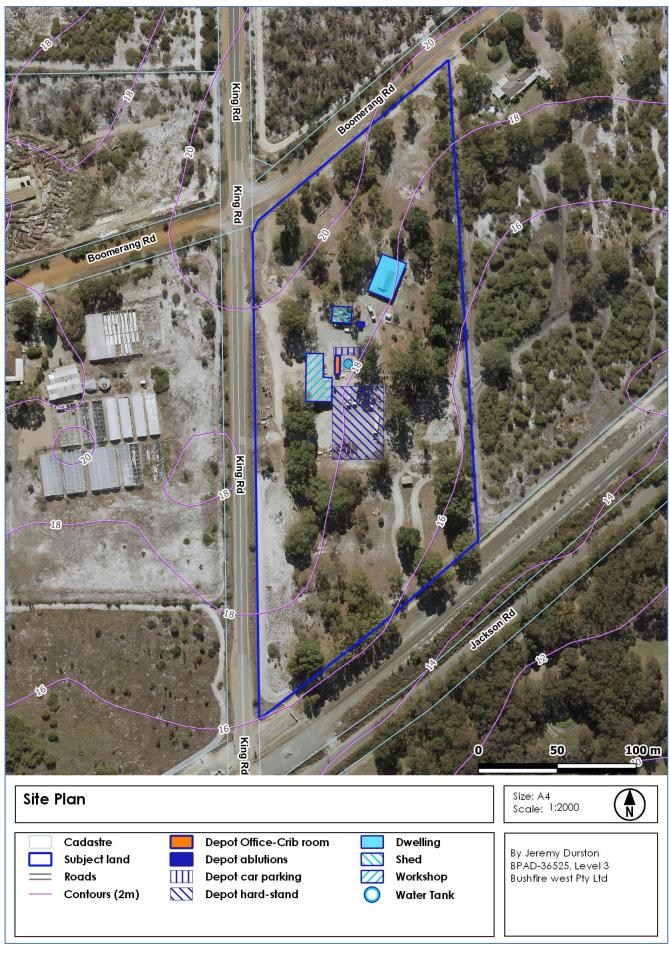


Figure 1A: Site Plan

4. Bushfire Assessment Inputs

Effective Slope

Effective slope under each vegetation plot was assessed in accordance with the methodology detailed in AS 3959-2018 Construction of buildings in bushfire prone areas (AS 3959). Slope data was measured on site and cross referenced with Landgate elevation data. The effective slope of each vegetation plot is listed in the tables provided below.

Vegetation Assessment

The location and extent of AS 3959 vegetation structures, including Clause 2.2.3.2 exclusions, within 150 metres of the site are mapped in Figure 4A, and illustrated in the photos below. All bushfire structures and fuel loads are assessed in their mature states. Each area is summarised in Table 4A.

Area 1		
Classification	Class B Woodland [B-05]	
Effective Slope	Downslope 1.5°	

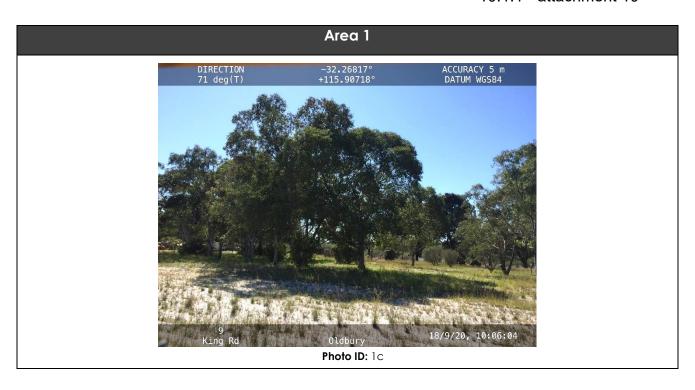
Pasture with grass and trees [Eucalypt & Pine] with canopy cover less than 30%.



Photo ID: 1a



Photo ID: 1b



Area 2		
Classification	Class D Scrub [D-14]	
Effective Slope	Downslope 1.0°	

Low-lying area to the east of the site with mixed shrub species below 4m in height and grass.



Area 3		
Classification	Class D Scrub [D-14]	
Effective Slope	Upslope	

Area to the west of King Road with low Banksia and mixed shrub species below 4m in height and grass.



Area 4			
Classification	Class G Grassland [G-22]		
Effective Slope	Upslope		

Grass road verges adjacent to the subject land.



Area 5			
Classification	Class G Grassland [G-22]		
Effective Slope	Upslope		

Agricultural area to the west of King Road with predominately grass pasture.



Photo ID: 5a

Area 6		
Classification	Exclusions 2.2.3.2(e)&(f)	
Effective Slope	n/a	

Onsite area managed for low threat surrounding existing buildings and structures.



Photo ID: 6a



Table 4A Areas of classified vegetation and exclusions:

Vegetation Area	Vegetation Classification	Effective Slope
Area 1	Class B Woodland	Downslope 1.5°
Area 2	Class D Scrub	Downslope 1.0°
Area 3	Class D Scrub	Upslope
Area 4	Class G Grassland	Upslope
Area 5	Class G Grassland	Upslope
Area 6	Exclusions 2.2.3.2(e)&(f)	n/a

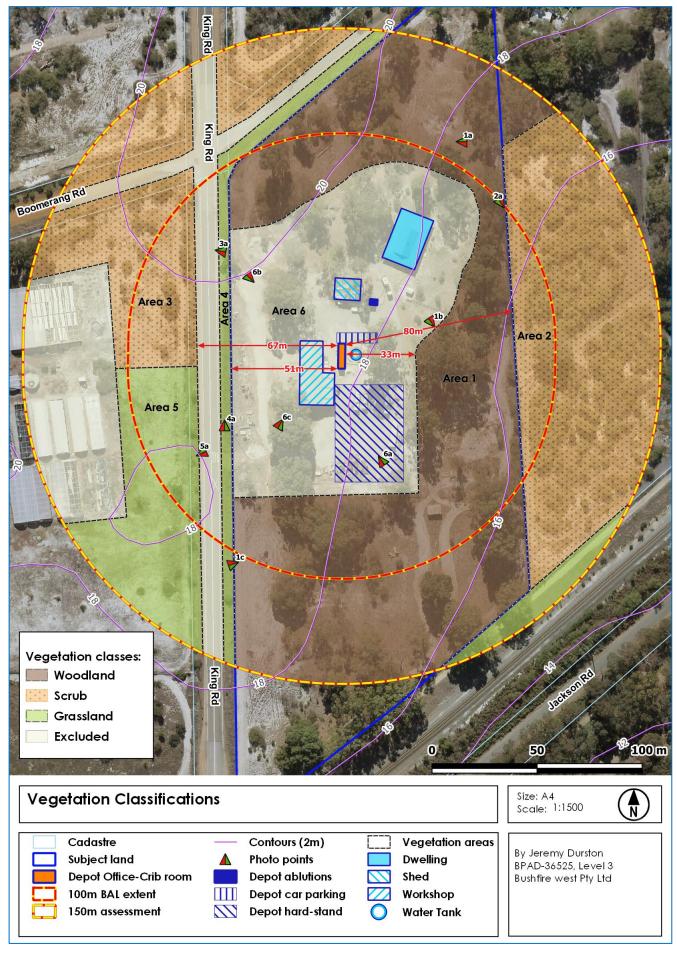


Figure 4A: Vegetation Classifications & Exclusions

5. Bushfire Assessment Outputs

Potential bushfire impact analysis was undertaken in accordance with AS 3959 Methodology 1 to determine the potential worst-case scenario radiant heat impact on the transport depot office/crib room. The resulting BAL ratings are presented in the following table (Table 5A).

Table 5A: Worst Case BAL Ratings (AS3959 Method 1) for the transport depot office/crib room:

Vegetation Areas	Vegetation Classification	Effective Slope	Separation	BAL
1	Class B Woodland	Downslope 1.50	33m	BAL-19
2	Class D Scrub	Downslope 1.00	80m	BAL-12.5
3	Class D Scrub	Upslope	67m	BAL-12.5
4	Class G Grassland	Upslope	51m	BAL-LOW
5	Class G Grassland	Upslope	66m	BAL-LOW
6#	Exclusions 2.2.3.2(e)&(f)	n/a	n/a	BAL-LOW
			Worst case BAL	BAL-19

[#] the required Asset Protection Zone will be incorporated into this area.

6. Identification of Bushfire Hazard Issues

The BAL assessment has identified the following hazard issues:

- o The Woodland vegetation located within the subject land represents the major hazard. An Asset Protection Zone to the minimum extent of 20m [i.e. the dimension specified by the Shire of Serpentine-Jarrahdale annual Firebreak and Fuel Hazard Reduction Notice] is sufficient to ensure ratings will not exceed BAL-29 in future.
- The areas of Scrub vegetation in areas neighbouring the subject land represent the major offsite hazards.
- o Grass pasture on neighbouring land represents an additional hazard.
- o Grass road verges also may contribute to a bushfire.

Due to the proposed development being subject to a rating above BAL-LOW the bushfire protection criteria apply and are addressed within this report.

7. Compliance with Guidelines for Planning in Bushfire Prone Areas

Table 7A provides an assessment against the bushfire protection criteria detailed in Appendix 4 of Guidelines for Planning in Bushfire Prone Areas Version 1.3 (the Guidelines), including the applicable Acceptable Solutions for each element.

Table 7A: Assessment against the bushfire protection criteria of the Guidelines

Element	Acceptable Solution (A)	Compliance		Notes
1. Location	A1.1 Development location	Yes	Complies	The development location is assessed as an acceptable BAL-19.
2. Siting of Development	A2.1 Asset Protection Zone	Yes	Complies	An Asset Protection Zone to the minimum extent of 20m is to be maintained within the boundaries of the Lot, to the specifications detailed in Appendix 1. The APZ is to extend from all applicable building walls, veranda posts, attached structures and/or adjacent structures within 6m of habitable buildings.
3. Vehicular Access	A3.1 Two access routes	Yes	Complies	King Road provides the required two access alternatives.
	A3.2 Public road	n/a		Public roads are existing and do not form part of this development.
	A3.3 Cul-de-sac	n/a		The site is not situated on a cul-de-sac.
	A3.4 Battle-axe	n/a		The lot is not a battle-axe lot.
	A3.5 Private driveways longer than 50m	Yes	Complies	The driveway complies and is to be maintained in accordance with Element 3 of the Guidelines for Planning in Bushfire Prone Areas, in conjunction with the Shire of Serpentine-Jarrahdale requirements as follows: • All-weather surface. • 4m trafficable surface with 6m horizontal clearance. • 4.5m vertical clearance. • 15t capacity. • 8.5m turn radius. • A driveway turnaround area is to allow fire appliances to turn around safely (i.e. minimum 19m turning circle as specified by the Shire of Serpentine-Jarrahdale Standard Conditions for Emergency Services) within 50m of the office/crib room and dwelling.

Element	Acceptable Solution (A)	Compliance		Notes
	A3.6 Emergency access way	n/a		Not required.
	A3.7 Fire service access routes	n/a		Not required.
	A3.8 Firebreak widths	Yes	Complies	Firebreaks are required as per the annual Firebreak and Fuel Hazard Reduction Notice
4. Water	A4.1 Reticulated areas	n/a		Non-reticulated.
	A4.2 Non- reticulated areas	n/a		
	A4.3 Individual lots within non- reticulated areas	Yes	To Comply	An onsite static water supply is required to be maintained with min. 20,000L capacity reserved for firefighting [i.e. 10,000L for the transport depot and 10,000L for the residents]. To be accessible from the vehicle turnaround area.

The required measures are illustrated in the Bushfire Management Strategies Map (Figure 7A).

8. Additional Requirements –Firebreak Notice

The Shire of Serpentine-Jarrahdale Fuel Hazard Reduction Notice requires additional bushfire management measures, including the following:

Install bare mineral earth trafficable firebreaks to a minimum of three (3) metres wide immediately surrounding all buildings, sheds and haystacks or groups of buildings situated on that land, with all overhanging branches, trees, limbs etc. to be trimmed back to three (3) metres high with a clear vertical axis over firebreak area. This includes driveways and access to all buildings on the land.

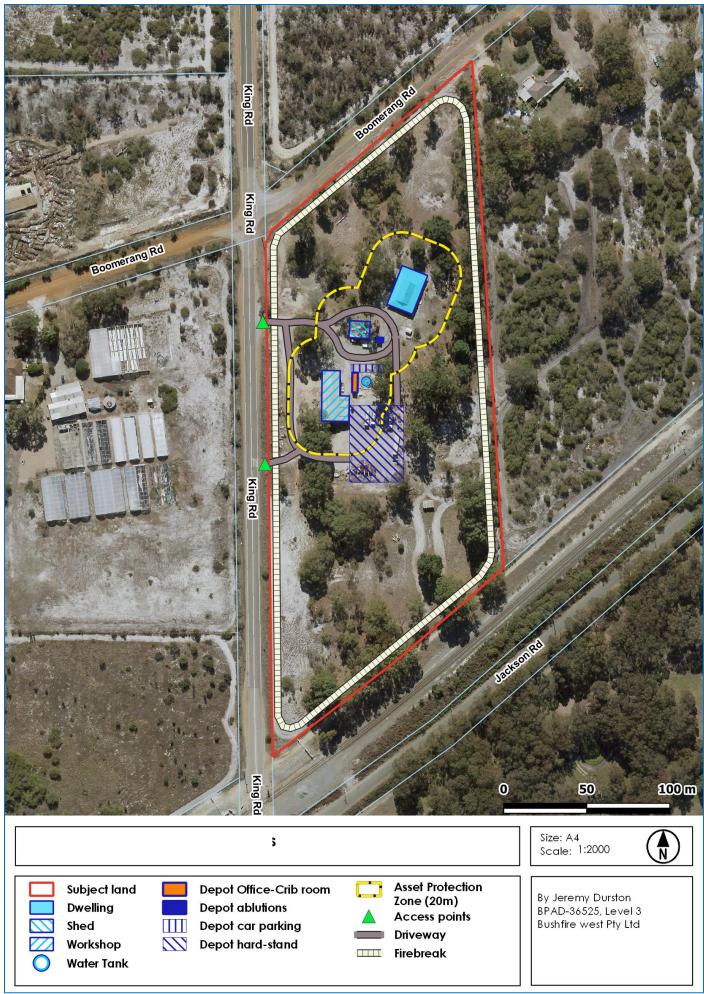


Figure 7A: Bushfire Management Strategies Map

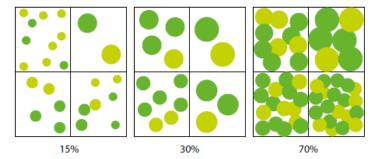
Appendix 1

Schedule 1: Standards for Asset Protection Zones

Source: Guidelines for Planning in Bushfire Prone Areas (DoP/DFES v1.3 2017) Appendix 4 Element 2

- a. **Width**: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29) in all circumstances.
- b. **Location**: the APZ should be contained solely within the boundaries of the lot on which a building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity (see explanatory notes).
- c. **Management**: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (below):
 - Fences: within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.
 - Objects: within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.
 - o **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.
 - o **Trees (> 5 metres in height):** trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.

Figure 16: Tree canopy cover – ranging from 15 to 70 per cent at maturity



Source: The Guidelines (WAPC, 2017)

- o **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.
- o **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.
- o Grass: should be managed to maintain a height of 100 millimetres or less.



Definitions

Acre

4047m² area of land.

Agricultural buildings

Any sheds or groups of buildings on agricultural zoned land.

Asset Protection Zone (APZ)

An area required to achieve a BAL-29 or less, measured from the outer edge of the building or as stated in your approved BAL assessment (within the boundaries of your land). Fuel loads in this zone may not exceed 2 tonnes per hectare.

Bushfire Attack Level (BAL) Assessment

A measurement of the buildings potential exposure to a bushfire, in accordance with Australian Standard 3959 - Construction of buildings in bushfire prone areas.

Firebreak

A strip of land that has been cleared of all flammable material, leaving bare mineral earth. This includes the trimming back of anything overhanging the fire break area. Mowed firebreaks are not acceptable.

Flammable material

Any vegetation (bushes, grasses, trees, mulch and green waste), object or material that is likely to catch fire.

Fire Management Plan

A document forming part of a building, development or subdivision approval that sets out short, medium and long-term bushfire risk management strategies for the life of the development.

Fuel and vegetation storage

Storage of hydrocarbons and/or fuel dumps (containing fuel or not) including drums, piles or stacks and any other flammable material.

Trafficable

The ability for 4x4 vehicles to access your land on a firm surface without obstruction. No firebreak is to terminate without provision for departure to a safe place or a cleared turnaround area of not less than a 21 metre radius (prior written approval from the Shire is required).

You

Owner or occupier of any land within the Shire of Serpentine Jarrahdale.

Vertical axis

An uninterrupted vertical line at a right angle to the horizontal line of the firebreak.

Firebreak Notice

Please read carefully as these are your legal requirements.

This notice applies to all owners and/ or occupiers of land within the Shire of Serpentine Jarrahdale.

Pursuant to Section 33 of the *Bush Fires Act 1954* you are required to take action in accordance with this notice for the duration indicated in your category.

The following categories detail what you must do to comply, with no exemptions. Failure to comply may result in you being fined and/or Council entering your land to install firebreak works at the owners expense.

This Notice and information has effect **1 October 2019.** All previous Firebreak Notices are hereby cancelled.

By order of the Chief Executive Officer.

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Firebreak Notice egal requirements

Your legal requirements 1. If you live on 1 acre or less

On your land

- ☐ Cut all grass to less than 25mm in height.
- ☐ Trim all trees and bushes that overhang driveways, access ways and firebreaks to leave a 4 metre wide clearance and a clear vertical axis.

OR

- □ Install firebreaks that are:
- Immediately inside all external boundaries.
- Immediately surrounding all agricultural buildings, sheds or group of buildings.
- ✓ A minimum of 3 metres wide, but not wider than 5 metres.
- Trim all trees and bushes that overhang driveways, access ways and firebreaks to leave a 4 metre wide clearance and a clear vertical axis.

For your dwellings

- Maintain 20m asset protection zones or as per your approved BAL/FMP assessment.
- ☐ Trim back all trees overhanging buildings.

Prior approval by Shire officers may be required for the removal of any vegetation on existing properties.

Compliance is required by **30 November** and must be maintained until **31 May** each and every year.

2. If you live on more than 1 acre

On your land

- □ Keep grass short.
- ☐ Trim all trees and bushes that overhang driveways, access ways and firebreaks to leave a 4 metre wide clearance and a clear vertical axis.
- □ Install firebreaks that are:
- ✓ Immediately inside all external boundaries.
- Immediately surrounding all agricultural buildings, sheds or group of buildings.
- ✓ A minimum of 3 metres wide, but not wider than 5 metres.

For your dwellings

- Maintain 20m asset protection zones or as per your approved BAL/FMP assessment.
- ☐ Trim back all trees overhanging buildings.

Prior approval by Shire officers may be required for the removal of any vegetation on existing properties.

□ Locate new development 4 metres or more from the perimeter fence of your land. Development includes sand pads associated with structures.

November and must be maintained until 31 May each and every year.

3. To vary your firebreak

Apply in writing to the Shire from 1 June to 31 October requesting your variation and the reasons for your application. If approved all firebreak conditions will be as per your variation.

Firebreak Notice Legal Requirements

Firebreak Notice Legal requirements

If your variation is not approved or your previous variation is cancelled, you must comply with the Firebreak Notice requirements for your land.

You don't need to apply for a variation every year. Remember, variations are provided to the property owner, not the land.

To apply for a variation call 9526 1111 and request a Firebreak Variation application form.

Compliance is required by 15 **November** and must be maintained until 31 May each and every year.

See the Firebreak Variation guidelines on pages 14 to 15 for more information.

4. If you have a plantation

You must comply with:

- ☐ The Shire's conditions of approval.
- Any approved Bushfire Management Plan.
- ☐ Australian Standard 3959 Construction of buildings in bushfire prone areas.

On your land

- □ Install firebreaks that are:
- Immediately inside all external boundaries.
- ✓ Immediately surrounding all agricultural buildings, sheds or group of buildings.
- ✓ A minimum of 20 metres wide, or as per your planning approval.
- ✓ Have a clear vertical axis.

Compliance is required throughout the whole year.

5. Storing fuel and haystacks

Around fuel storage areas

- ☐ Install firebreaks that are:
- Immediately surrounding each stack or pile.
- A minimum of 4 metres wide, but not wider than 20 metres, with a clear vertical axis.
- ✓ Include where possible additional low fuel zones outside of the firebreak area. Cut all grass within these zones to less than 100mm in height.

Around haystacks

Your haystack area is not permitted to be larger than 25m long x 10m wide x 5m high.

- □ Install firebreaks that are:
- Immediately surrounding each stack or
- ✓ A minimum of 5 metres wide, but not wider than 20 metres. If only 5 metres wide then have an additional 5m low fuel area directly adjacent to the firebreak.
- Include where possible additional low fuel zones outside of the firebreak area. Cut all grass within these zones to less than 100mm in height.

Compliance is required by 30 **November** and must be maintained until 31 May each and every year.

6. Other flammable materials

Stacks of other flammable materials, such as mulch, compost or combustible materials, is not permitted to be larger than 20m long x 10m wide x 3m high.



Firebreak Notice Legal requirements

- □ Install firebreaks that are:
- Immediately surrounding each stack or pile.
- A minimum of 10 metres wide, but not wider than 20 metres. If only 10 metres wide then have an additional 5m low fuel area directly adjacent to the firebreak.
- Include where possible additional low fuel zones outside of the firebreak area. Cut all grass within these zones to less than 100mm in height.

If you have to clear any trees or shrubs to install your firebreaks, you may need planning approval from the Shire.

Any tree or shrub with at least one well defined trunk higher than 4 metres or wider than 150mm in diameter, measured at a height of 1.2 metres above ground level will need planning approval for removal.

For more information see the **Trees on my property** page on the Shire's website.

Remember Australian Standard 3959
- Construction of buildings in bushfire prone areas applies to new buildings on your land.

Compliance is required by **30**November and must be maintained until **31 May** each and every year.



7. Bushfire and Emergency Management Plans and BAL Assessments

Some properties need to comply with approved:

- ✓ Bushfire Management Plans.
- ✓ Emergency Management Plans.
- ✓ Bushfire Attack Level (BAL) assessments.

This is because of conditions approved under a subdivision approval, development approval or building permit.

These requirements are in addition to the requirements of this Notice.

Failure to comply may result in a \$5,000 fine.

Compliance is required throughout the **whole year.**

8. Any other requirements

Further to the firebreak requirements listed above, the Shire may instruct property owners or occupiers in writing to comply with additional firebreak prevention works.

These works are to reduce hazards and may include a Bushfire Risk Treatment Plan derived from the Shire's Bushfire Risk Management Plan.

9. Burning your garden waste

In accordance with Section 24G of the *Bush Fires Act 1954* as amended.

If you want to burn your garden waste you need to:

- ☐ Let your neighbours know 72 hours before you burn.
- Do a maximum of 2 burns per calendar month within the restricted burning period.

Firebreak and Fuel Hazard Reduction Notice 2019/20

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- ☐ Each pile can be no bigger than 1 cubic metre.
- ☐ Only one pile may be alight at any one time.
- ☐ Only burn dry garden waste from your property without accelerants.

Don't burn at all during the prohibited burning period.

During restricted burning period don't burn on Sundays or public holidays.

Failure to comply may result in a \$3,000 fine.

Compliance is required during the restricted and prohibited burning periods.

More information about burning your garden waste is on page 28.



Firebreak installation guide

Firebreaks provide safe access for firefighters and their vehicles. The landowner is responsible for the standard and quality of firebreaks on their land.

You can choose to install your firebreaks yourself or engage a contractor.

Remember you need to maintain your firebreak throughout the firebreak season. Regrowth occurs between December and May, and you will need to clear this regrowth and any fallen tree limbs and obstructions.

Acceptable firebreak



Non acceptable firebreak



Firebreak and Fuel Hazard Reduction Notice 2019/20