



Bushfire Management Plan



**Lot 383 Padbury Road
Dardanup**

LUSH FIRE & PLANNING

3 Paterson Road
Pinjarra WA 6208
0418 954 873
ABN 74 232 678 543

REF: 16-056

Ver D

May 2019

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:	Lot 383 DP247456 Padbury Road		
Suburb:	Dardanup West	State:	WA
P/code:	6236		
Local government area:	Dardanup		
Description of the planning proposal:	Rural residential subdivision		
BMP Plan / Reference Number:	16 - 036	Version:	D
Date of Issue:	14/05/2019		
Client / Business Name:	A Pantlin		

Reason for referral to DFES	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 BPC elements)?	☐	☒
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	☐	☒
Strategic planning proposal (including rezoning applications)	☒	☐
Minor development (in BAL-40 or BAL-FZ)	☐	☒
High risk land-use	☐	☒
Vulnerable land-use	☐	☒

If the development is a special development as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Local structure plan and subdivision

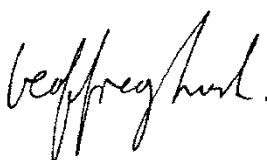
Note: The decision maker (e.g. the local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name	Accreditation Level	Accreditation No.	Accreditation Expiry
Geoffrey Lush	Level 2	BPAD 27682	28/02/2020
Company	Contact No.		
Lush Fire & Planning	0418 954 873		

I declare that the information provided in this bushfire management plan is to the best of my knowledge true and correct.

Signature of Practitioner



Date

14/05/2019

Document Reference

Property Details

Street No	Lot No's	Plan	Street Name
175	383	247456	Padbury Road
Locality Dardanup West		State WA	Postcode 6236
Local Government Area		Dardanup	
Description of the building or works		Rural residential subdivision	

Report Details

Job No	16 - 036	Assessment Date	5 September 2016
Ver	Date	Revision	
A	4 January 2017	Preliminary	
B	16 May 2017	Revised subdivision design and updated policy measures	
C	16 April 2018	Revised subdivision design and DFES comments	
D	15 May 2019	DPLH Modifications	

Accreditation Statement

Name	Geoffrey Lush	Company	Lushfire & Planning
BPAD	Level 2 Practitioner	Accreditation No Expiry	27682 February 2020

Disclaimer

The measures contained in this report do not guarantee that a building will not be damaged in a bushfire. The ultimate level of protection will be dependent upon the design and construction of the dwelling and the level of fire preparedness and maintenance under taken by the landowner. The severity of a bushfire will depend upon the vegetation fuel loadings; the prevailing weather conditions and the implementation of appropriate fire management measures.



Geoffrey Lush

14 May 2019

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1.0 INTRODUCTION

This bushfire management plan is prepared to support the proposed rezoning and subsequent subdivision of Lot 383 Plan 247456 Padbury Road Dardanup West. The site is located on the corner of Padbury and Keenan Roads.

The subject land is located approximately 2.5 kilometres west of the Dardanup townsite as shown in Figure 1.

This report has been prepared to demonstrate that the design of proposed subdivision has given appropriate regard to:

- State Planning Policy 3.7 Planning in Bushfire Prone Areas; and
- Guidelines for Planning in Bushfire Prone Areas (2015)

The aim of this Report is to reduce the threat to the residents in the proposed subdivision and fire fighters in the event of a bushfire within or adjacent to the development. It defines the responsibilities of relevant stakeholders and the measures required to manage the potential likelihood of fires starting on the proposed lots or the adjoining land. The assets which are highlighted for protection from bush fires are:

- Any future dwelling within the subdivision; and
- The existing development surrounding the properties.

The first priority for fire management is the preservation of life and to reduce the impact of bushfires on property and infrastructure (1).

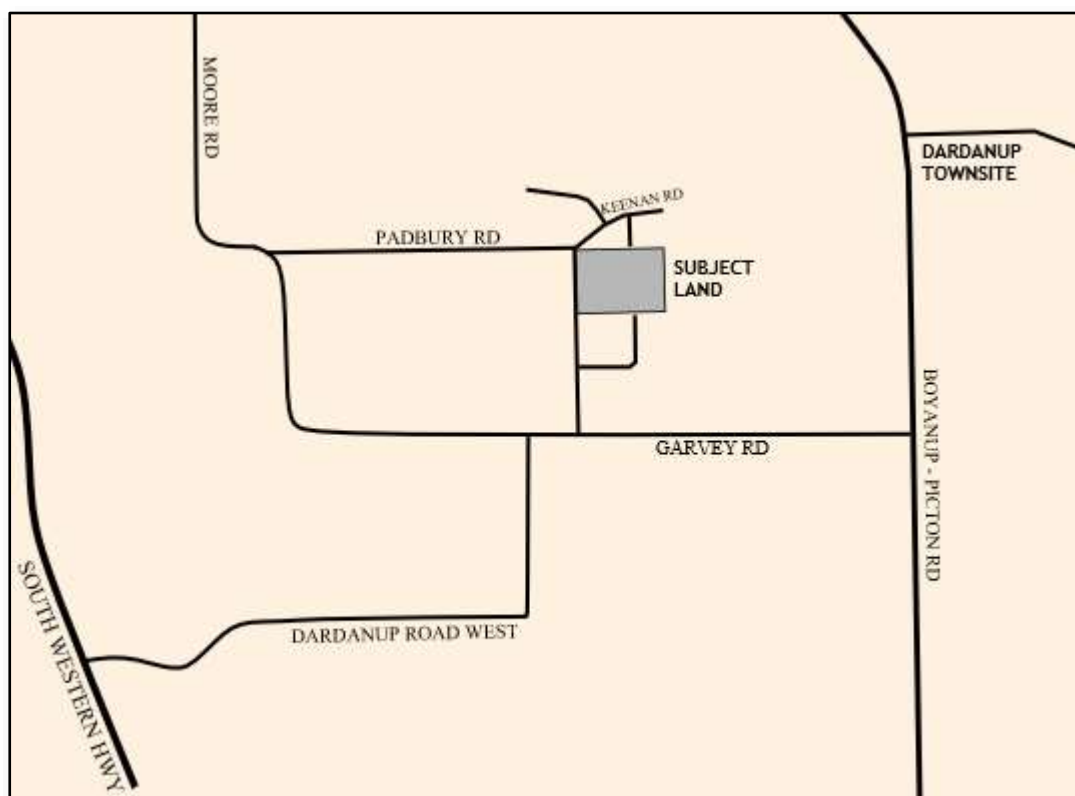


Figure 1 Location Plan

1 WAPC (2015) SPP3.7 Planning in Bushfire Prone Areas page 1

2.0 EXISTING CONDITIONS

The subject land has an area of 16.311 hectares with a frontage of 347m to Padbury Road and a depth of 468m. The cadastral information for the site is shown in Figure 2.

There is an existing dwelling, granny flat, outbuildings, and other improvements on the property. The land to the north, south and west of the property has been developed for rural residential purposes with lots generally being 2 hectares in size. The land to the east has larger un-subdivided rural lots.

The existing conditions are shown in Figure 3 and the following photographs.

The site does not contain any remnant vegetation and there is cleared pasture around the dwelling on the balance of the property. There are small areas of remnant vegetation on the adjacent and nearby road verges.

The subject land and surrounding area is flat land which has historically been used for irrigated farming and grazing. The contours for the property are shown in Figure 2 and there is a minor ridge in the middle of the property which is only 1m above the surrounding area. The gradients are minor being between 0.5 and 1.0 degrees.

There is a district drain adjacent the southern boundary. An existing fire service access is located on the southern boundary between Padbury Road and Slattery Way.

Padbury Road is a sealed local road which connects to Moore Road in the north west and to Garvey Road to the south. Keenan Way provides access to the adjoining subdivision (Killarney Glen) to the north. Slattery Way is a cul-de-sac extending to the property boundary from Keenan Way in the north and Padbury Road from the south.

The locality has a Mediterranean climate with cool wet winters and hot dry summers. It has an annual rainfall of 724mm (2). The mean maximum temperature is 30.1 °C with the highest recorded maximum temperature of 40.8 °C in January 1997.

Each year there are on average:

- 52 days with temperatures over 30 °C;
- 11 days with temperatures over 35 °C; and
- 0.1 day with temperatures over 40 °C.

In summer the wind speed and direction at:

- 9:00am is typically from the east and south east between 20 and 40kph; and
- 3:00pm is typically from the west between 20 and 40kph.

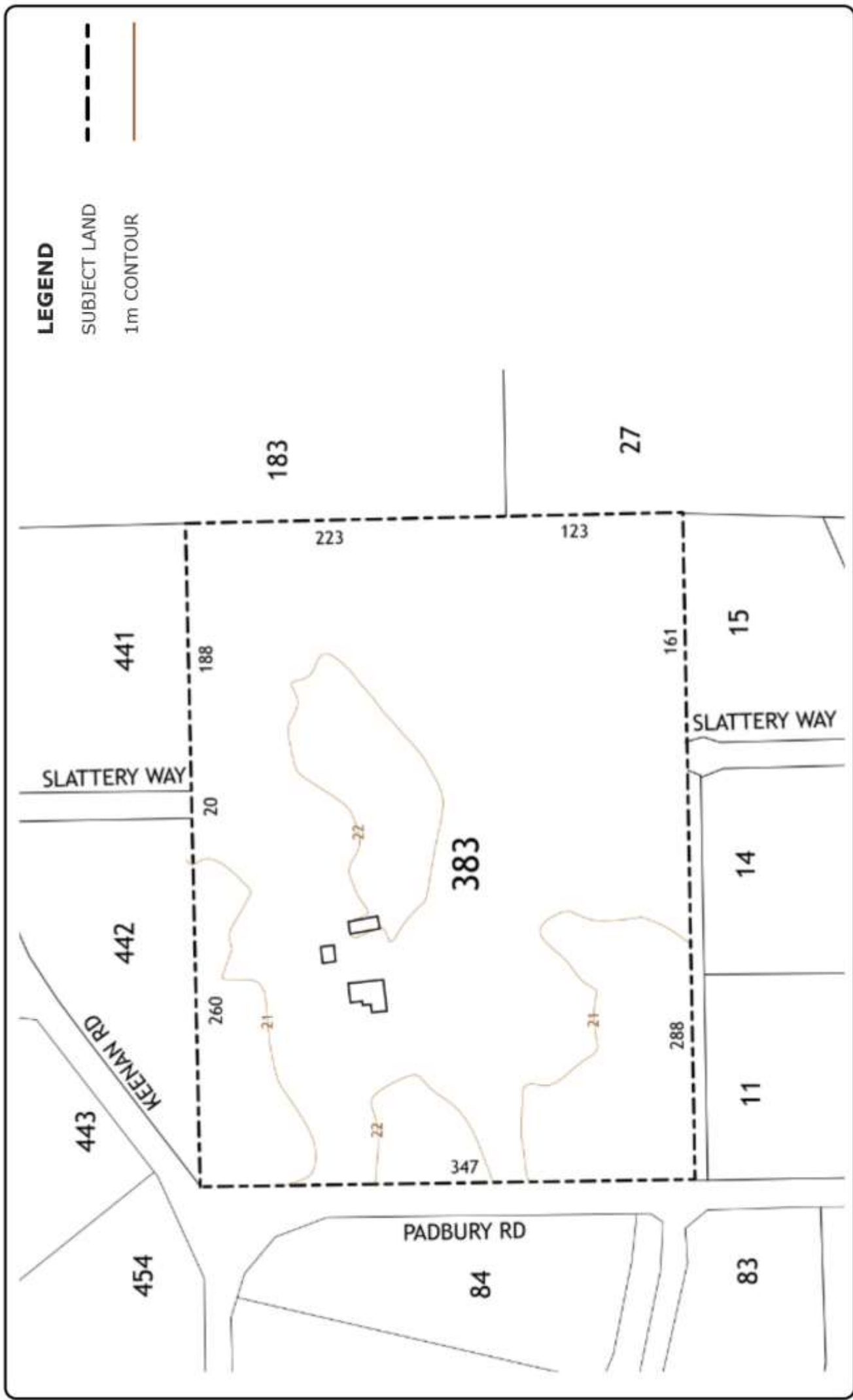


FIGURE 2
CADASTRAL PLAN



Rev	Description	Date
A	Preliminary	03/01/2017



LEGEND

- SUBJECT LAND
- FIRE SERVICE ACCESS ROUTE
- DRAINAGE CHANNEL
- PHOTOGRAPH & DIRECTION

Rev	Description	Date
A	Preliminary	03/01/2017



FIGURE 3
EXISTING CONDITIONS

Lot 383 Padbury Road



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6

Lot 383 Padbury Road



Photograph 7



Photograph 8



Photograph 9



Photograph 10

Photograph 11



3.0 DEVELOPMENT FRAMEWORK

3.1 Bushfire Prone Land

An extract of the State Bushfire Prone Map for the subject land is shown in Figure 4.

The designation of bushfire prone areas triggers:

- The application of Australian Standard AS3959 Construction of Buildings in Bushfire Prone Areas under the Building Code of Australia (from the 8th April 2016);
- The provisions of the Planning and Development (Local Planning Schemes) Amendment Regulations 2015 (from the 8th April 2016); and
- The application of SPP3.7 Planning in Bushfire Prone Areas (from the 7th December 2015).

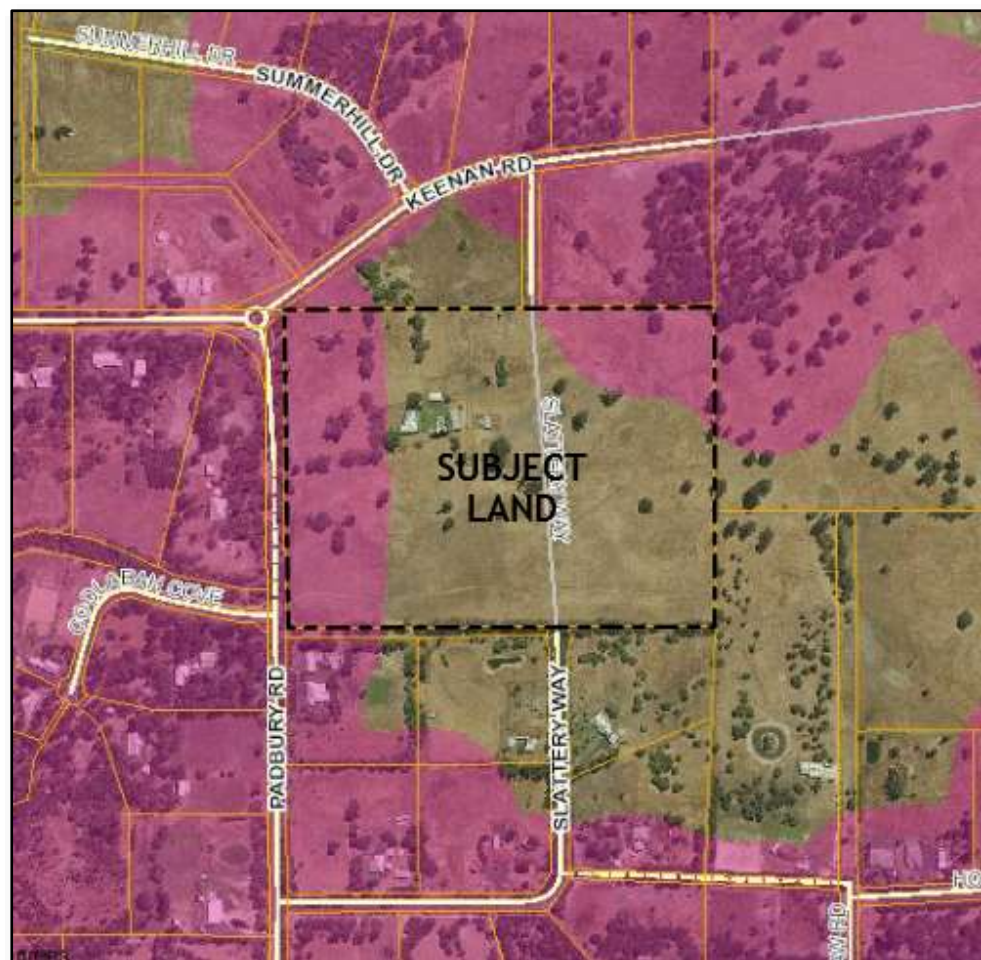


Figure 4 Bushfire Prone Land

3.2 SPP 3.7 Planning in Bushfire Prone Areas

State Planning Policy 3.7 Planning in Bushfire Prone Areas was gazetted on the 7th December 2015. The policy provides the foundation for land use planning to address bushfire risk management in Western Australia. It contains objectives and policy measures, as well as reference to the bushfire protection criteria contained in the Guidelines.

The objectives of the policy are to:

1. Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount.
2. Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process.
3. Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specified bushfire protection measures.
4. Achieve an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

The Policy requires that planning proposals, subdivision and development applications should have on completion:

- A moderate bushfire hazard level (BHL); and/or
- A Bushfire Attack Level (BAL) rating of between BAL-12.5 to BAL-29 applies.

3.3 Australian Standard AS3959 (2009)

AS3959 Construction of Building in Bush Fire Prone Areas (3) provides measures for improving the ability of buildings to withstand burning debris, radiant heat and flame contact during a bush fire. The lower the separation distance from bushfire prone vegetation, the higher the standard of construction is required for buildings. The construction requirements relate to:-

- Subfloor Supports;
- Floor;
- External Walls;
- External Elements and Doors
- Roofs;
- Verandas, Decks, Steps; and
- Water and gas pipes.

It is emphasised that only applying the Standard's construction measures is not a complete response to bush fire safety. The measures contained in the Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the unpredictable nature and behaviour of fire and extreme weather conditions.

3 Standards Australia (2009) AS 3959 – Construction of Buildings in Bush Fire Prone Areas. Sydney. Standards Australia International Ltd.

3.4 Planning Bulletin 111 Planning in Bushfire Prone Areas

A revised version of Planning Bulletin 111 was released in October (2016) to provide improved guidance for the administration of SPP3.7.

It states that the overarching policy intentions for Planning in Bushfire Prone Areas are:

- That strategic planning documents or proposals, subdivision and development applications within a bushfire prone area, should demonstrate a Bushfire Attack Level (BAL) of 29 or below; and
- Proposals that on completion, are extreme and/or BAL-40 or BAL-Flame Zone will generally not be supported (subject to exemptions relating to minor or unavoidable development).

3.5 Fire Prevention Order

Within the Small Holdings Zone which includes the subject land, Council's Fire Prevention Order requires:

- Bare earth firebreaks of 2m width and 4m in height must be maintained within and adjacent to the lot boundary.
- Fire hazards on properties must be slashed to a height of no more than 50mm and flammable material must be removed.
- Must have a 20 metre low fuel area around all buildings and haystacks or groups thereof.

Fire prevention measures must be completed by the 30th November each year and maintained until the 26th April.

4.0 PROPOSED DEVELOPMENT

The proposed subdivision is shown in Figure 5. This consists of creating ten (10) lots ranging in size from 1.0ha to 2.6ha. Figure 5 also shows the building exclusion areas and the boundary setbacks contained in the Planning Scheme being:

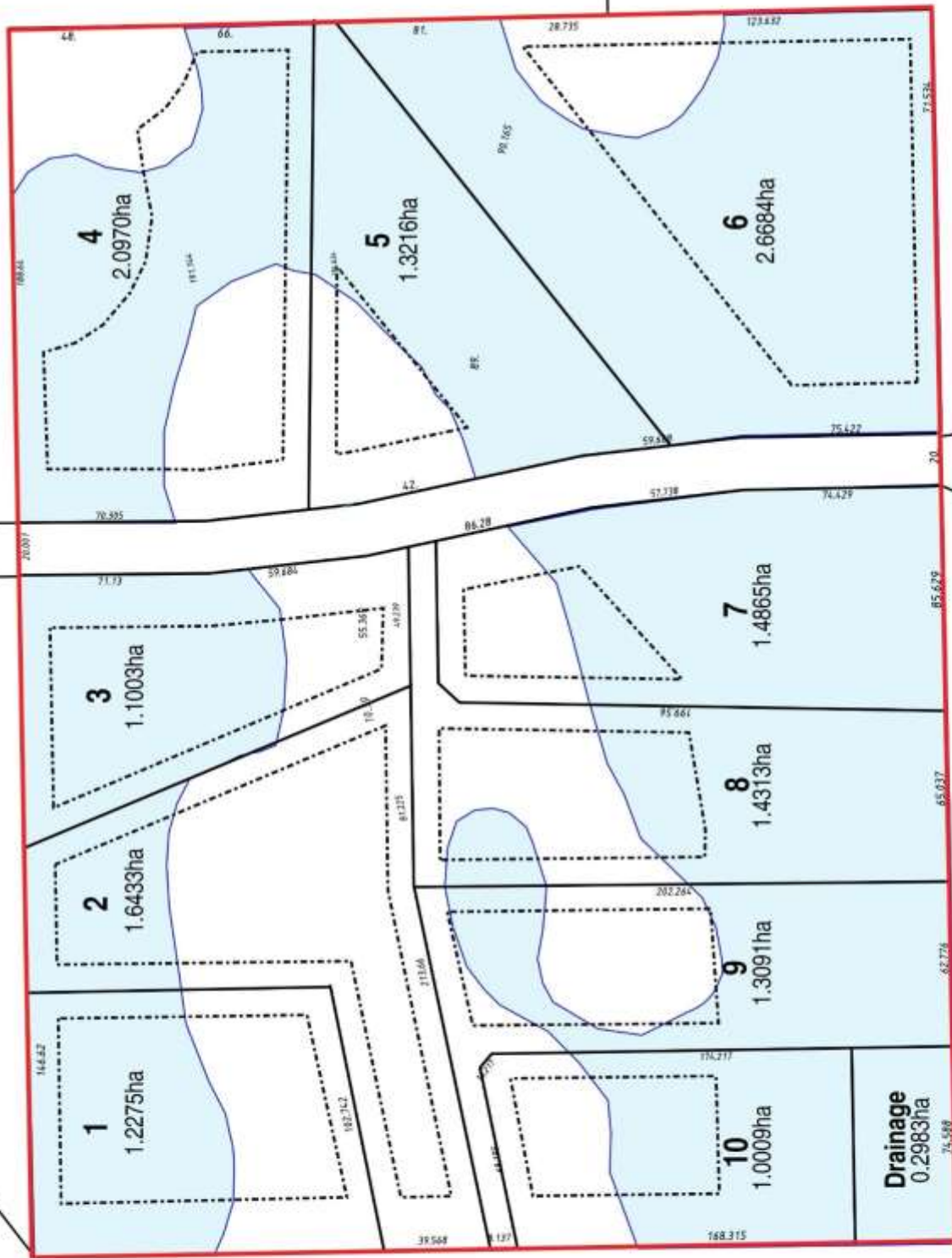
- 20m from the front boundary; and
- 10m from the side and rear boundaries.

Slattery Way will be extended through the subdivision being a 20m wide road reserve connecting to the existing road on the northern and southern boundaries. There are two battle axe lots with the access leg being 10m wide and 49m and 68m long respectively.

A drainage reserve will be located in the south western corner of the site with an area of 0.2983ha. A water tank reserve will be located on the southern boundary with an area of 0.09ha.

LEGEND

- SUBJECT LAND
- PROPOSED LOT BOUNDARY
- BUILDING EXCLUSION AREA
- - - - - DEVELOPMENT SETBACK
 - 20m FRONT
 - 10m SIDE & REAR
 - 50m WATERCOURSE



SCALE 0m 100m

FIGURE 5

PROPOSED SUBDIVISION



Rev	Description	Date
A	Preliminary	03/01/2017
B	Subdivision plan	12/05/2017
C	Subdivision design	11/04/2018
D	Subdivision design	10/04/2019



Ref No 16-056

5.0 THE BUSHFIRE ISSUE

5.1 Bushfire History

The annual fire season extends from approximately mid-October to mid-May. This is the normal period where weather conditions are conducive to the ignition and spread of bushfires. The fire risk increases once vegetation has cured which is generally later in the season.

Bush fires occur annually within the locality with sufficient intensity to cause property damage and potentially to be life threatening.

5.2 Bushfire Hazard

A Bushfire Hazard Level assessment provides a 'broadbrush' means of determining the potential intensity of a bushfire for a particular area.

The bush fire hazard primarily relates to the vegetation on the site, the type and extent (area) of vegetation and its characteristics. The methodology for determining the bushfire hazard level is contained in the Guidelines for Planning in Bushfire Prone Areas (Section 4.1 and Appendix 2). This classifies vegetation based on tree height and the percentage of canopy cover. The classification of the vegetation also takes into account The Visual Guide for Bushfire Risk Assessment in Western Australia (WAPC 2016).

The vegetation classifications are shown in Figure 6.

The Bushfire Hazard Level assessment is shown in Figure 7 and this includes the classification of the hazard vegetation.

The subject generally has a moderate hazard rating which is primarily due to pasture / grassland areas being assigned a moderate hazard level. Land with a moderate bushfire hazard rating can be developed in accordance with the policy measures in SPP3.7 which includes compliance with the Bushfire Protection Criteria.

Land with an extreme bushfire hazard rating should not be developed unless it can be shown that the hazard can be permanently reduced to a moderate level.



LEGEND

- SUBJECT LAND
- 150m MAPPING BOUNDARY
- VEGETATION CLASS
- FOREST
- WOODLAND
- UNMANAGED GRASSLAND AND PASTURE
- LOW THREAT VEGETATION NON VEGETATED AREAS

NOTES

The assessment of this site / development was undertaken on the **5 September 2016** for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2009 Simplified Procedure (Method 1).



Rev	Description	Date
A	Preliminary	12/05/2017

FIGURE 6
VEGETATION CLASSIFICATIONS



FIGURE 7
BUSHFIRE HAZARD LEVELS



Rev	Description	Date
A	Preliminary	03/01/2017
B	BHL Methodology	12/05/2017

5.3 BAL Contour Map

A BAL Contour Map is shown in Figure 8. A BAL Contour Map is a plan of the subject lot/s illustrating the potential radiant heat impacts and associated indicative BAL ratings in reference to any classified vegetation remaining within 100 metres of the assessment area after the development is completed.

The assumptions for the preparation of the BAL Contour Map are:

- That the pasture areas in the adjoining properties has been classified as 'grassland' as the applicant does not have any control over these areas;
- That the paddock areas within each lot will be maintained as Low Threat Vegetation. Where this does not occur then an increased BAL rating may apply when development occurs; and
- That any landscaping or revegetation will be classified as low threat vegetation pursuant to AS3959 Clause 2.2.3.2

Where an adjoining lot has Grassland vegetation then assuming that there is a minimum 10m side boundary setback a BAL-29 rating would apply as shown in Table 1.

Table 1 Grassland BAL Setbacks

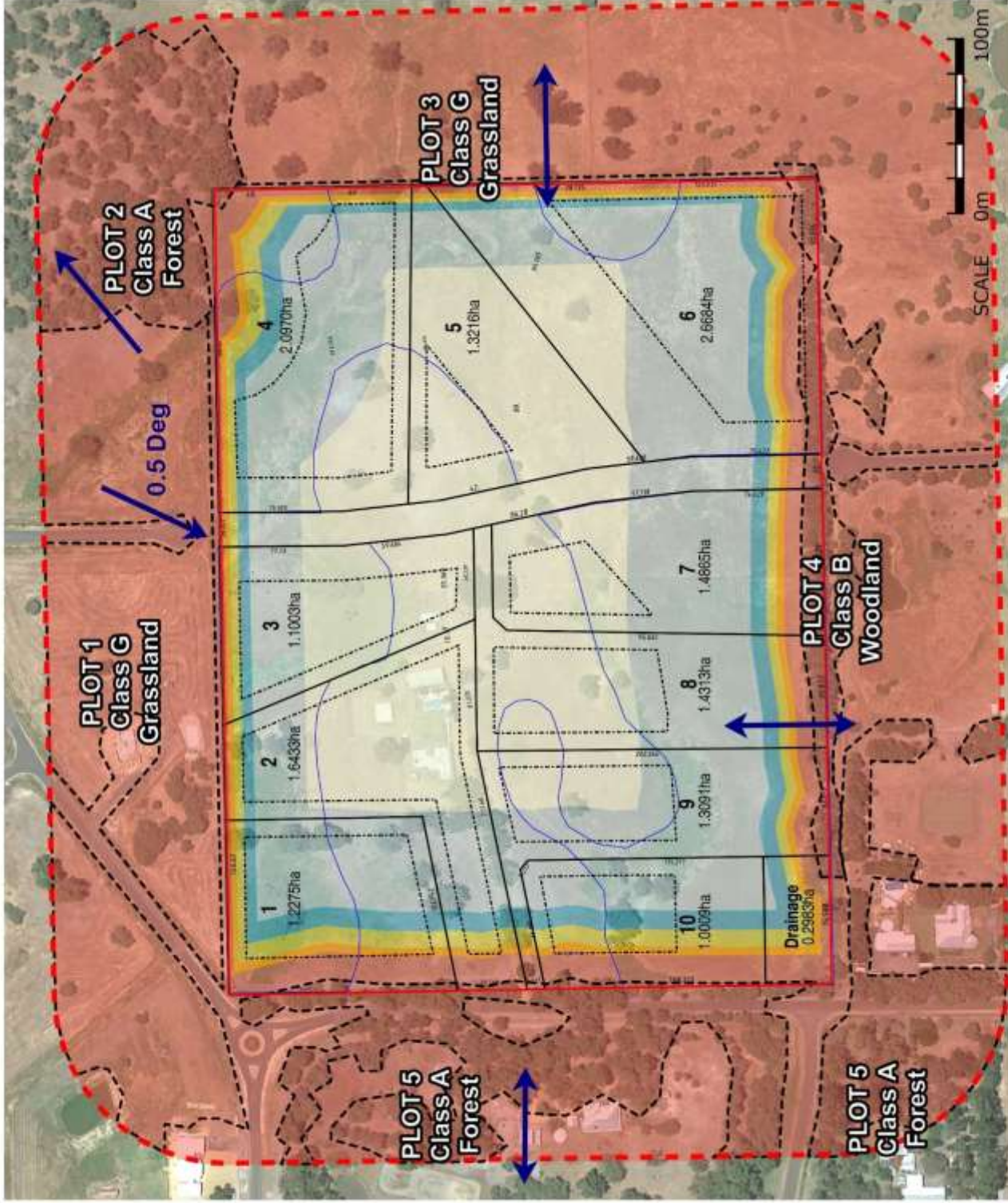
Vegetation Classification	Bushfire Attack Levels (BALs)				
	BAL - FZ	BAL - 40	BAL - 29	BAL - 19	BAL - 12.5
	Distance (m) of the site from the predominant vegetation class				
	All upslopes and flat land				
G Grassland	< 6	6 - < 8	8 - < 12	12 - < 17	17 - < 50

5.4 District Context

The relationship of the subject land to the surrounding area is shown in Figure 9.

The subject is located in the centre of the Dardanup Small Holdings area which extends between Moore Road and the Picton - Boyanup Road and this area includes the Copplestone and West Dardanup locations.

The proposed roads are in accordance with the approved Dardanup Small Holdings Structure Plan. The future extension of Keenan Road to the Dardanup townsite will improve the accessibility to the area.



BPAD

Bushfire
 Planning & Design
 Accredited Practitioner
 Level 2

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Rev

Description

A	Preliminary
B	Subdivision Plan
C	Building Exclusion & Setbacks
D	Subdivision Design

Date

03/01/2017
12/05/2017
20/03/2018
10/04/2019

LUSHfire

and planning

Ref No 16-056

FIGURE 8
BAL CONTOURS

LEGEND

- SUBJECT LAND
- EXISTING ROAD
- PROPOSED ROAD
- DARDANUP WEST FIRE STATION

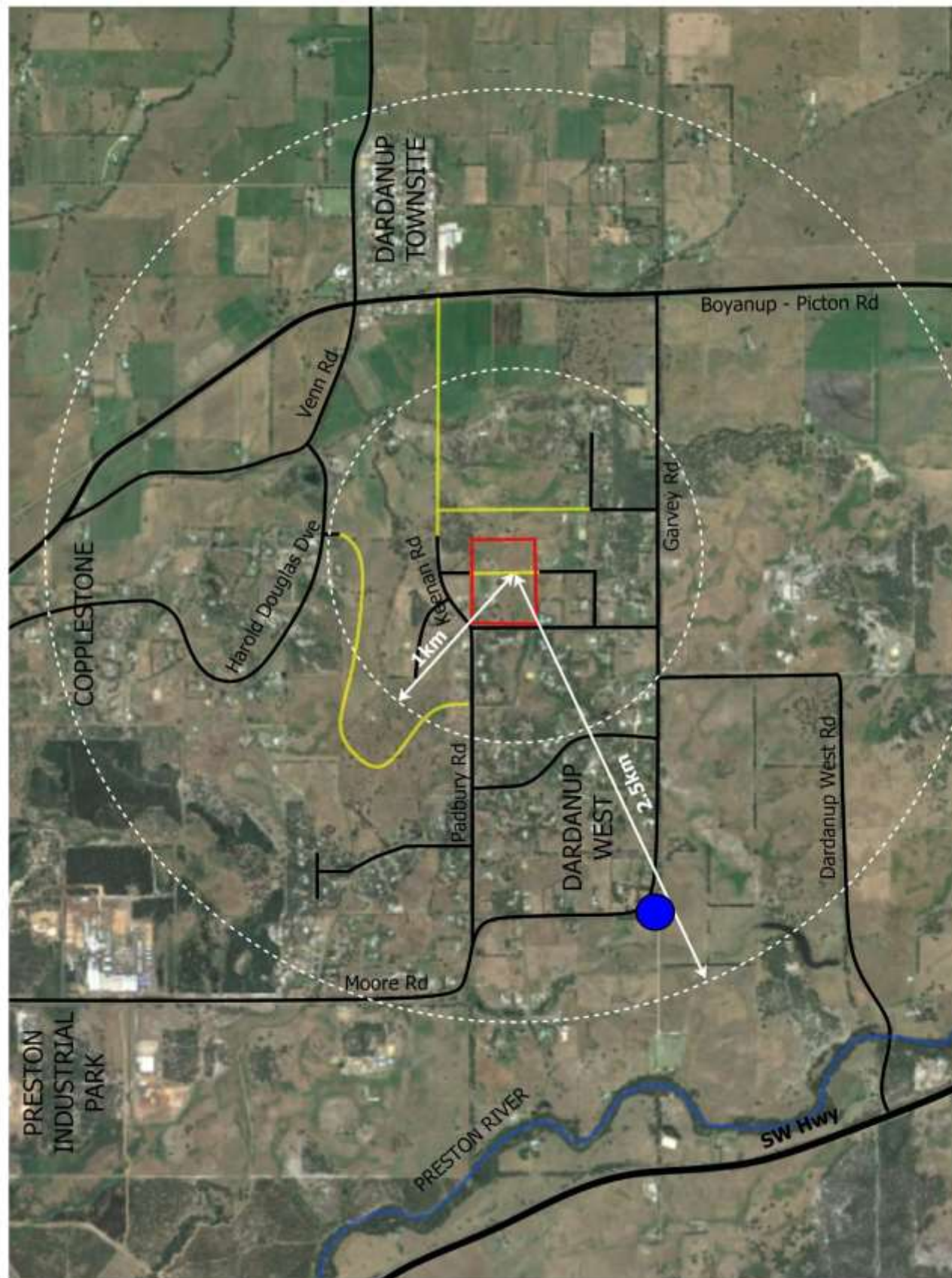


FIGURE 9
DISTRICT CONTEXT

Rev	Description	Date
A	Preliminary	12/05/2017



6.0 FIRE MITIGATION MEASURES

In formulating the proposed mitigation measures regard has been given to the objectives, general principles, guidance statements and performance criteria contained in the Guidelines for Planning in Bushfire Prone Areas and specifically the Bushfire Protection Criteria. The mandatory requirements in the Bushfire Protection Criteria are referred to as “acceptable solutions” and these are designated below in brackets after each heading.

The fire management recommendations for the subject land and are shown on Figure 10 and discussed further in the following sections.

6.1 Bushfire Protection Criteria

The Bushfire Protection Criteria are contained in Appendix 4 of the Guidelines for Planning in Bushfire Prone Areas (2015).

The criteria contain a set of performance criteria and acceptable solutions that new subdivision and developments are required to meet in bush fire prone areas. The main components are:

- Element 1 Location;
- Element 2 Siting and Design of Development;
- Element 3 Vehicular Access; and
- Element 4 Water.

6.1.1 Element 1 Location

A1.1 Development Location

This provision stipulates that the development is to be located so that it has or will have:

- A moderate to low bushfire hazard level; or
- A Bushfire Attack Level rating of BAL-29 or below.

As shown in Figure 7 the subject land has a moderate bushfire hazard rating.

The potential BAL Contours are shown in Figure 8. This illustrates the potential radiant heat impacts and associated indicative BAL ratings in reference to the classified vegetation which is predominantly located on the adjoining properties. It assumes that the paddock areas within each lot will be maintained as Low Threat Vegetation. Where this does not occur then an increased BAL rating may apply when development occurs.

Figure 8 also shows the building exclusion areas and the minimum boundary setbacks provided for in the Planning Scheme ie 20m front boundary; 10m side and rear boundaries. There are minor portions of lots which have a BAL-40 or BAL-FZ rating encroaching past these setbacks. However, any BAL assessment that results in a BAL 40 or FZ rating will then trigger a Development Application pursuant to Clause 78D Part 10A of the Planning and Development (Local Planning Schemes) Regulations 2015. As part of this application local government can require the dwelling to be sited so as to achieve a BAL-29 rating.

It is also noted that a 20m asset protection zone will provide a BAL-12.5 rating from Class G Grasslands either on upslopes or downslopes of less than 5 degrees.

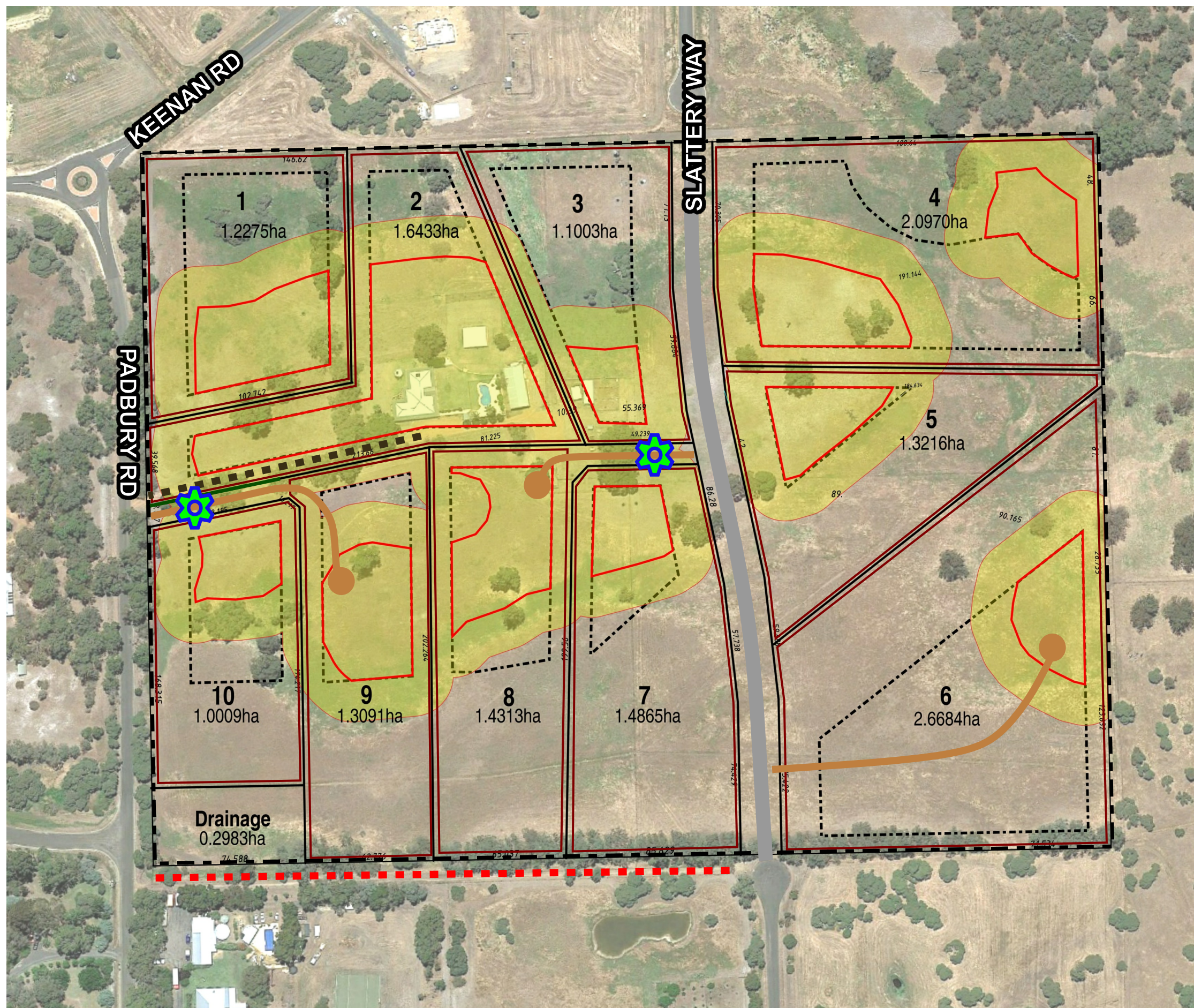


FIGURE 10
BUSHFIRE MITIGATION MEASURES

Recommendations

1. That dwellings be located so as to have a maximum BAL-29 rating.
2. That any application for a building permit for a dwelling is to include an individual BAL assessment to confirm that sufficient land has been cleared to provide for BAL-29 setbacks.

6.1.2 Element 2 Siting and Design of Development

A2.1 Asset Protection Zone (APZ)

An asset protection zone is a "low fuel zone" located around a building. The APZ is by default the distance between the building and the hazard vegetation provided that this is not less than a BAL-29 rating.

The requirements for the asset protection zone are as follows:

- 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 bushfire 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 the 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 following requirements:
 - 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.
 - 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.

Recommendations

3. That the vegetation within the BAL setback is to be maintained as an asset protection zone in accordance with the APZ specifications.

6.1.3 Element 3 Vehicular Access

A3.1 Two Access Routes

The subject land has access from two directions (south and west) from Padbury Road and also Slattery Way.

A3.2 Public Roads

The proposed subdivision roads will be designed in accordance with the standards specified in the Local Government Subdivisional Guidelines (4) which meet required specification for bushfire access.

A3.3 Cul – de-sacs

This is not applicable to the subdivision.

A3.4 Battle-Axes

There are two battle axe legs in the proposed subdivision for Lots 8 and 9. These are 68 and 50m long with a width of 10m which exceeds the minimum requirement in Table 6 of the Guidelines. The Guidelines indicated that battle axe legs should be avoided in bushfire prone areas as they do not provide two way access and can be potentially blocked by falling trees.

The possible alternative design solutions for Lots 8 and 9 would be to:

1. Reconfigure the design of Lots 7, 8, 9 and 10 re move the battle axe legs; or
2. Construct a public road across the northern boundary of these lots which would also remove the battle axe legs.

Option 1 is not viable due to the extent of the building exclusion, low lying areas on the southern portion of the lots.

Option 2 is not viable because:

- the road and associated road reserve, will result in the reduction of usable land for the construction of the dwelling, given the low lying nature of the land; and
- the road construction is not required for connectivity by the local government, given the close proximity of cross roads to the north and south of the site.

Further it is noted that there is an existing fire service access route along the southern boundary which already provides an east west access. Slattery Way extends south from the site connecting into Padbury Road less than 300 south of the site boundary. In summary there is already a highly connective road network and the provision of a further road to access two lots, which only have pasture, is difficult to justify.

A3.5 Private Driveways Longer than 50 metres

The driveways to proposed Lot 8, 8 and 9 will exceed 50m due to the length of the battle axe legs. The driveways for the other lots may exceed 50m in length depending upon

4 Institute of Public Works Engineering Australia WA Division Inc. (2009) Local Government Subdivisional Guidelines Perth

where the dwelling is located. If it does, then it must comply with the following provisions:

- A minimum trafficable surface of 4m width;
- A horizontal clearance of 6m to vegetation;
- A maximum grade of 1:10;
- Curves with a minimum 8.5m inner radius;
- Passing bays every 200 metres with a minimum length of 20 metres and a minimum width of two metres (i.e. the combined width of the passing bay and constructed private driveway to be a minimum six metres);
- Turn-around areas designed to accommodate type 3.4 fire appliances and to enable them to turn around safely every 500 metres (i.e. kerb to kerb 17.5 metres) and within 50 metres of a house;
- Any bridges or culverts are able to support a minimum weight capacity of 15 tonnes; and
- An all-weather surface (i.e. compacted gravel, limestone or sealed).

A3.6 Emergency Access Ways (EAW)

This is not applicable to the subdivision.

A3.7 Fire Service Access Routes

This is not applicable to the subdivision.

A3.8 Firebreak Width

As all the proposed lots are greater than 0.5ha in area it is required to have a 3m wide boundary firebreak.

Recommendations

4. Any new driveway shall have a minimum 4m wide trafficable surface and any access gate shall be a minimum width of 3.6m.
5. Where a driveway is more than 50m in length a turnaround area suitable to a fire appliance shall be provided within proximity to the dwelling.
6. That all lots shall provide a minimum 3m wide boundary firebreak.

6.1.4 Element 4 Water

A4.1 Reticulated Areas

This is not applicable to the subdivision.

A4.2 Non-reticulated areas

A water tank with a hydrant or standpipe is required in non-reticulated areas. This is to have a minimum volume of 50,000L per 25 lots.

Council has instructed that the water tank is to be provided at the West Dardanup fire brigade station located on Garvey Road

A4.3 Non-reticulated areas - One Additional Lot

This is not applicable to the subdivision.

Recommendations

7. That the developer shall fund the provision of a 50,000L water tank and fittings at the West Dardanup fire station.
8. That any new dwelling shall provide with a static water supply tank having a minimum capacity of 10,000L specifically for firefighting with:
 - a) A 50mm male camlock couplings with full flow valves;
 - b) The fittings positioned at the base of the tank so that the total tank capacity is available for firefighting purposes at any time;
 - c) An adequate hard standing access must also be provided adjacent to such connection/s and must be readily identifiable; and
 - d) A nonelectric firefighting pump (normally 5.5hp) with sufficient hose to protect the dwelling and the surrounding low fuel zone.

6.2 Annual Property Maintenance

Annual property maintenance is an important preparation for the annual fire season. This should focus on the area around the proposed dwelling and the following maintenance works should be considered:

Autumn and Winter (May-August)

- Tree pruning and remove lower branches and check that power lines are clear.
- Clear long grass, leaves, twigs and flammable shrubs.
- Overhaul the emergency water pump, fixtures and hoses.

Spring (September-November)

- Prepare boundary firebreaks.
- Carry out maintenance of strategic firebreak.
- Reduce grass levels within the hazard separation and building protection zones.
- Prune the dead material from the shrubs in the building protection zone.
- Clean out gutters, remove debris from roof.

Early summer (December onwards)

- Re-check personal and home protection gear, screens, water supplies and gutters.
- Keep yards as free as possible from combustible materials, fuels and debris.
- Avoid storing any felled trees and rubbish on your property.
- Remove dead shrubs and avoid long grasses, bracken or neglected masses of tall quick-curing annuals.
- Prepare a bushfire survival plan.

Recommendations

9. That the landowners undertake regular maintenance of their property in preparation for the annual fire season.
10. That all fire mitigation measures shall be completed by the date prescribed in Council's Fire Prevention Order.

6.3 Staging

The proposed subdivision plan does not make any provision for the staging of the development. In the event that the subdivision is staged then it is necessary to ensure that appropriate interim measures are provided.

These may include:

- Interim access or emergency access ways;
- Creation of additional low fuel zones to ensure that the recommended BAL ratings can be applied; or
- The provision of boundary firebreaks especially on any balance lot.

Recommendations

11. In the event of any staging of the subdivision a plan and statement of the proposed interim fire management measures will be submitted and approved by the Shire as an adjunct to Figure 10.

6.4 Purchaser Advice

All prospective purchasers must be made aware of the fire management issues, measures and responsibilities associated with the subdivision. This can be a notification placed upon the Certificate of Title of all lots pursuant to Section 70A of the Transfer of Land Act advising landowners of this Bushfire Management Plan and BAL requirements.

Recommendations

12. A notification be included on the certificate of titles advising that the land is subject to a Bushfire Management Plan.
13. That prospective residents be provided with a summary of this Bushfire Management Plan.

6.5 Implementation

The management of the risk posed by bushfires is a shared responsibility between landowners, government and industry. While state and local government undertakes bushfire prevention measures (e.g. planned burning), land use planning and emergency response (fire suppression); land owners in bushfire prone areas must take the necessary steps to prepare their property. These responsibilities are summarised in Table 2.

Table 2 Implementation

No	MANAGEMENT ACTION	TIMING
1.0 Developer Prior to Issue of Titles		
1.1	Construction of subdivision roads to standards outlined in the BMP to ensure safe access and egress.	Subdivision
1.2	Make arrangements with the Shire of Dardanup to supply a 50,000L static water supply tank at the West Dardanup bushfire brigade station.	Subdivision
1.3	Construction of the battle axe driveways.	Subdivision
1.4	Preparing a notification be included on the certificate of titles for the lots advising that the land is subject to a Bushfire Management Plan.	Subdivision
1.5	In the event of any staging of the subdivision a plan and statement of the proposed interim fire management measures will be submitted and approved by the Shire.	Subdivision
2.0 Developer Prior to Sale		
2.1	Providing prospective residents with a summary of this BMP	Sale
3.0 Landowner Prior to Occupancy		
3.1	Ensuring that any application for a building permit for a dwelling is to include an individual BAL assessment to confirm that sufficient land has been cleared to provide for BAL-29 setbacks.	Development
3.2	That the proposed dwellings provide with a static water supply tank having a minimum capacity of 10,000L specifically for firefighting with the associated fittings.	Development
3.3	Any new driveway shall have a minimum 4m wide trafficable surface and any access gate shall be a minimum width of 3.6m.	Development
3.4	Where a driveway is more than 50m in length a turnaround area suitable to a fire appliance shall be provided within proximity to the dwelling.	Development
4.0 Landowners Ongoing		
	That the vegetation within the BAL setback is to be maintained as an asset protection zone in accordance with the APZ specifications.	Annually before the fire season
	That all lots shall provide a minimum 3m wide boundary firebreak.	Annually before the fire season
4.1	Undertaking regular maintenance of their property in preparation for the annual fire season.	Annually before the fire season
4.2	Ensuring that all fire mitigation measures shall be completed by the date prescribed in Council's Fire Prevention Order.	Annually before the fire season
5.0 Local Government Ongoing Management		
5.1	Ensuring Building Permit Applications and Development Applications are compliant with the building and land use planning provisions	Ongoing
5.2	Enforce compliance with its annual Fire Prevention Order.	Ongoing

7.0 CONCLUSION

The subject land is located within a bushfire prone area where fires occur on a regular basis. These fires can pose a risk to life and property. The proposed development is introducing substantial values (property and people) which must be protected from the risk posed by the potential bushfire hazard.

The subject land has moderate bushfire hazard level due to the surrounding farming properties and associated cropping and pasture areas. This rating is also influenced by the extent of remnant vegetation scattered along the road reserves. Any proposed dwelling can be sited so as to ensure that there is a moderate hazard level reflected by having a maximum BAL-29 rating and most likely a BAL -12.5 rating.

The purpose of this Bushfire Management Plan is to minimise the impact of a bush fire to people residing on the proposed lots. It demonstrates that the proposed development complies with the criteria within State Planning Policy 3.7 and the Guidelines for Planning in Bushfire Prone Areas.

The proposed subdivision and development complies with the objectives of State Planning Policy 3.7 as:

1. It avoids any increase in the threat of bushfire to people, property and infrastructure;
2. It reduces vulnerability to bushfire through the identification and consideration of bushfire risks in the design of the development and the decision-making process;
3. The design of the subdivision and the development take into account bushfire protection requirements and include specified bushfire protection measures; and
4. The subdivision achieves an appropriate balance between bushfire risk management measures and, biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

The recommendations in this report should not be construed to assure total bush fire protection and do not guarantee that a building will not be damaged in a bush fire. The severity of a bush fire will depend upon the vegetation fuel loadings; the prevailing weather conditions and the implementation of appropriate fire management measures.

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