

# **SMITH CONSULTING**

**Bushfire Consultants**

## **BUSHFIRE MANAGEMENT PLAN**

**Lots 1, 200, 201 and Location 7256 Golf Links Road,  
Pemberton  
Shire of Manjimup**



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Site visited 12 September 2017; Report completed 10 October 2019

## Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit: Yes  No

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

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Report author:

WA BPAD accreditation level (please circle):  
 Not accredited  Level 1 BAL assessor  Level 2 practitioner  Level 3 practitioner

If accredited please provide the following.  
 BPAD accreditation number:  Accreditation expiry: Month  Year

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Bushfire management plan version number:

Bushfire management plan date: Day  Month  Year

Client/business name:

	Yes	No
<b>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)?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the bushfire protection criteria elements)?</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Is the proposal any of the following (see [SPP 3.7 for definitions](#))?

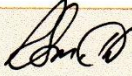
	Yes	No
<b>Unavoidable development (in BAL-40 or BAL-FZ)</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Strategic planning proposal (including rezoning applications)</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Minor development (in BAL-40 or BAL-FZ)</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>High risk land-use</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Vulnerable land-use</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

None of the above

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

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

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

Signature of report author 

Date

## NOTE

This Bushfire Management Plan has been developed by Smith Consulting for the exclusive use of the client, Mark Bombara.

The plan has been compiled using the standard methodologies required by Western Australian government departments and agencies. It is based on the following:

- *State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7)*, December 2015
- *Guidelines for Planning in Bushfire Prone Areas*, December 2017
- *Australian Standard 3959 – Construction of buildings in bushfire-prone areas*, November 2018
- Standard fuel load field data collection methods and conversion to a fuel load applicable for the appropriate fire spread models.

The techniques described in the above publications have been applied in the appropriate areas and circumstances for the development of this document.

Where there was no public access the interpretation is based on photographic and satellite imagery, and a laser distance meter was used to measure distances and effective slope.

It is recommended that this Bushfire Management Plan be revised every five years to ensure that it remains relevant and in-line with current requirements. This will optimise protection. It is proposed that the property owners undertake the review.

## DISCLAIMER

This Bushfire Management Plan has been prepared in good faith. It is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this plan is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error or omission from this publication.

Smith Consulting has exercised due and customary care in the preparation of this Bushfire Management Plan and has not, unless specifically stated, independently verified information provided by others.

Any recommendations, opinions or findings stated in this report are based on circumstances and facts as they existed at the time Smith Consulting performed the work. Any changes in such circumstances and facts upon which this document is based may adversely affect any recommendations, opinions or findings contained in this plan.

## DOCUMENT STATUS

Version	Comment	Reviewer	Review Date
1	Original version	RDS	20 November 2017
2	Minor text modifications	RDS	7 February 2018
3	Minor text changes requested by DPLH	RDS	5 March 2019
4	Minor text modifications	RDS	4 April 2018
5	Minor text modifications	RDS	18 May 2019
6	Requested text and map modifications	RDS	10 October 2019

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## 1. Introduction

This Bushfire Management Plan (BMP) is provided to provide guidance for the planning and management of the potential bushfire threat on the proposed subdivision on Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton. The existing house will be retained and subdivided off. It is acknowledged that future structure plans will be required for future proposals.

The development site is not adjacent to any Bush Forever sites, nor any Aboriginal Heritage sites. The development site has, in part, been designated by the Fire and Emergency Services Commissioner as a bushfire prone area. The BMP is prepared as a requirement for structure planning at the request of the Western Australian Planning Commission (WAPC). It should also be noted that the Department of Fire and Emergency Services (DFES) advise that it is an unreasonable expectation that a fire appliance will be available to protect every home during a bushfire emergency. It is therefore critical that all new residential buildings are constructed to an appropriate standard and the surrounding vegetation appropriately managed.



**Figure 1.** Aerial photo showing the subject site Golf Links Road, Pemberton, and surrounding lots as being designated only in a very small part as bushfire prone. Source: Department of Fire and Emergency Services.

It is important to note that not all lots are located within the designated bushfire prone area.

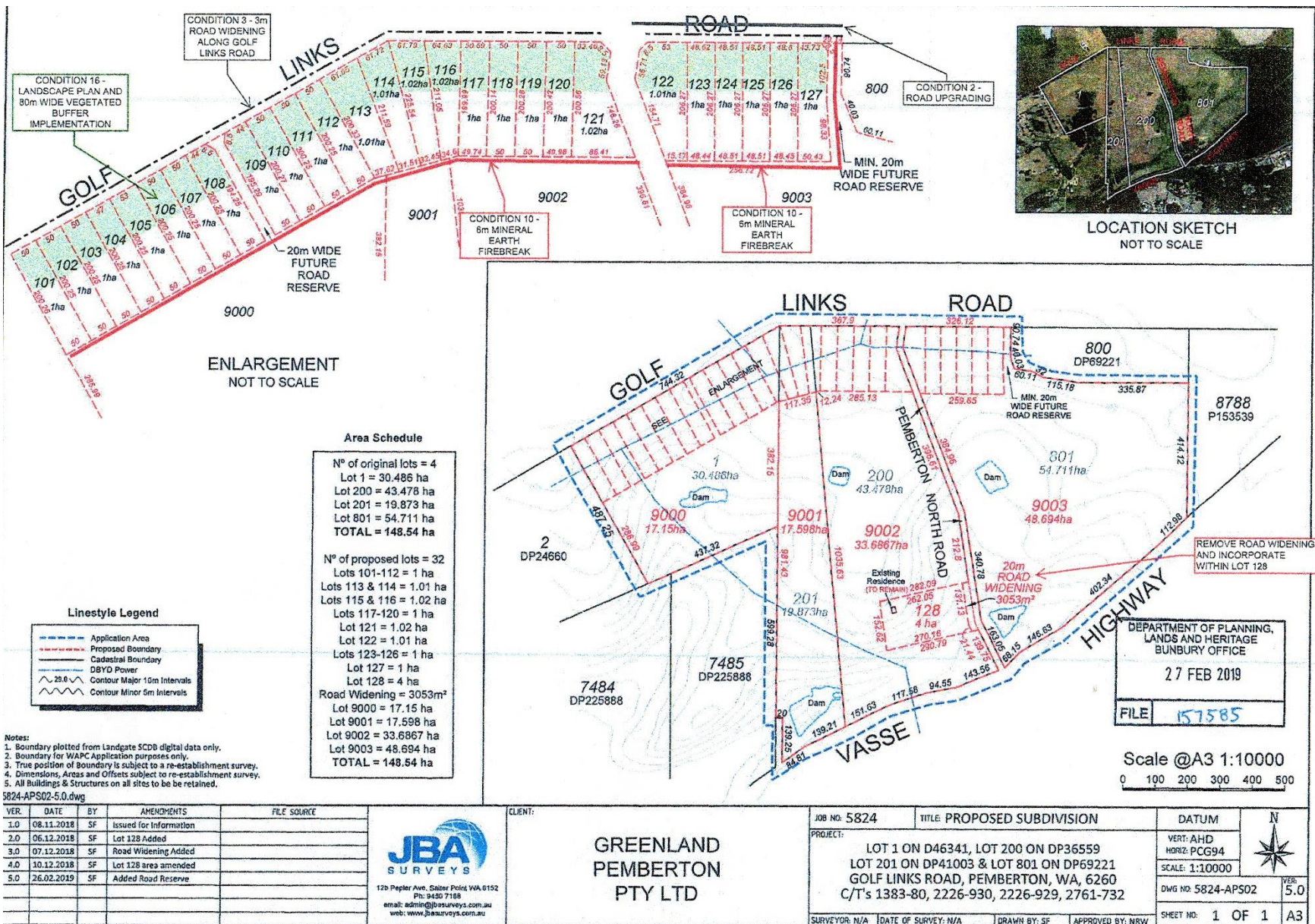


Figure 2. Proposed subdivision plan

## **2. Aim**

It is generally recognised that bushfires are an inevitable threat in the spring, summer and autumn months in the south-west of Western Australia.

The aim of this Bushfire Management Plan when implemented is to reduce occurrence of, and minimise the potential impact of bushfires onto buildings and vegetation located within the subject site, thereby reducing the threat to life, property and the environment.

This plan will document the minimum fire prevention requirements for the site.

## **3. Objectives**

### **3.1 Purpose**

The purpose of this Bushfire Management Plan is to address the fire protection risks within the subject site being Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton. Implementation of the Bushfire Management Plan will reduce the threat to the landowners, residents, visitors and firefighters in the event of a bushfire within or near the site. It achieves this by presenting the minimum requirements to be implemented.

The Bushfire Management Plan also seeks to ensure that the landowners, residents and relevant agencies are aware of their responsibilities.

### **3.2 Objectives**

The objectives of this Bushfire Management Plan are achievable and measurable:

- Consider the change of land use proposal for Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, and associated vehicular access
- Identify the site's vegetation, and surrounding vegetation, topography and proposed land use
- Assess potential bushfire issues, hazards and the proximity of the site to predominant vegetation classes
- Ensure water is available to the development to enable property and life to be defended in the event of a bushfire
- Ensure the siting of the proposed subdivision minimises the level of bushfire impact
- Outline the bushfire mitigation strategies for the site
- Identify the stakeholders responsible for undertaking and implementing the bushfire mitigation strategies defined in this Bushfire Management Plan.

## **4. Legislation and Policy Considerations**

The Western Australian Planning Commission and the Shire of Manjimup require the preparation of a Bushfire Management Plan for the proposed subdivision as part of the proposed scheme amendment to the Shire of Manjimup's Local Planning Scheme No. 6 (TPS 6), which rezoned the site for urban development. This document has been prepared to satisfy that requirement.

All relevant provisions of applicable planning legislation and policies have been considered in the preparation of this Bushfire Management Plan. These include:

- Bush Fires Act (1954)
- State Planning Policy 3.7 (2015)
- Guidelines for Planning in Bushfire Prone Areas (2017)
- Visual guide for bushfire risk assessment in Western Australia (2016)
- Local planning scheme requirements (bushfire related)
- Local planning policy requirements (bushfire related)
- Fire Control Notice requirements
- Relevant approvals

## **5. Description of the Area (Current Status)**

### **5.1 General**

The development of Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, is located within the Shire of Manjimup. The subject site has been designated by the Fire and Emergency Services as bushfire prone for only a small part of the development site.

The land has been basically cleared of native vegetation and remains as grassland that was previously grazed. The neighbouring properties to the east and south provide a potential grassland bushfire threat. To the north is land that has been developed for avocado growing, housing, associated infrastructure and rural activities such as grazing. To the west is a golf course.

There are no cultural or environmentally significant features on the lots being developed.

### **5.2 Climate**

The Shire of Manjimup has a Mediterranean climate with four seasons: cool, wet winters (June-August) followed by a mild spring (September-November), and hot, dry summers (December-February) leading into autumn (March-May). Rainfall usually occurs in autumn through to spring. This rainfall facilitates substantial vegetation growth during the winter and spring months, which dries in summer and continues through autumn.

The maximum temperature occurs during summer when the bushfire fuels are at their driest. As the summer progresses the grass fuels cure and become available as bushfire fuel. Grass fuels are a diminishing bushfire risk as they start to break down, post being 100% cured. This is in stark contrast to the natural environment where forest, woodland or shrubland with a scrub multi-tiered understorey become a greater bushfire risk late in summer and early autumn, until the winter rains break.

One of the potential bushfire ignitions is lightning. While lightning can be an issue, it is highly improbable that it will be a significant issue for this development. This means that the greatest fire threat will occur in the afternoon and with fire travelling through the unmanaged grassland and neighbouring vegetation.



### 5.3 Topography

Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, and the surrounding land is sloping land with slopes of up to 2.9°. The potential greatest threat is the unmanaged grassland vegetation associated with the neighbouring property surrounding and immediately adjacent to the subject site, excluding the golf course.

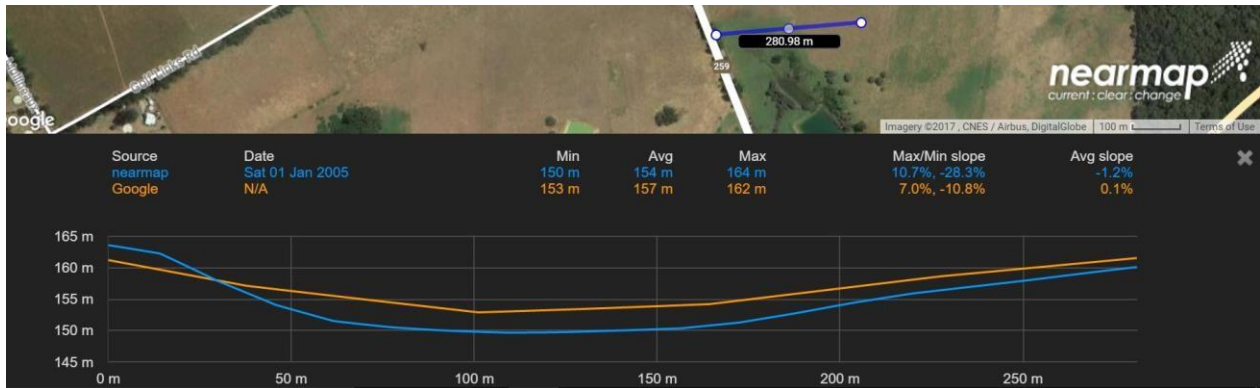


Figure 2. Undulating slope across the neighbouring lots to the east of 0.1% (0.06°).



Figure 3. Slope across the neighbouring properties to the north of 5% (0.0.6°).



Figure 4. Slope across the neighbouring properties to the west of 1.6% (0.11°).



Figure 5. Slope across the lot and neighbouring property to the south of 4.7% (0.4°).

## 5.4 Bushfire fuels

Historically, Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton (and the surrounding lots), are part of a modified vegetation comprising a grass surface fuel under a very sparse tree canopy.

The predominant vegetation type on Lot 1, 200, 201 and Location 7256 Golf Links Road at the conclusion of the development, as described in the *Australian Standard 3959 – Construction of buildings in bushfire-prone areas (AS 3959)*, is grassland. The vegetation in the area adjacent to the development site, which provides the grassland surface fuels will continue to provide bushfire fuels. The 'low threat' vegetation associated with golf course and also the avocado orchards will continue to be excluded as required in AS 3959.

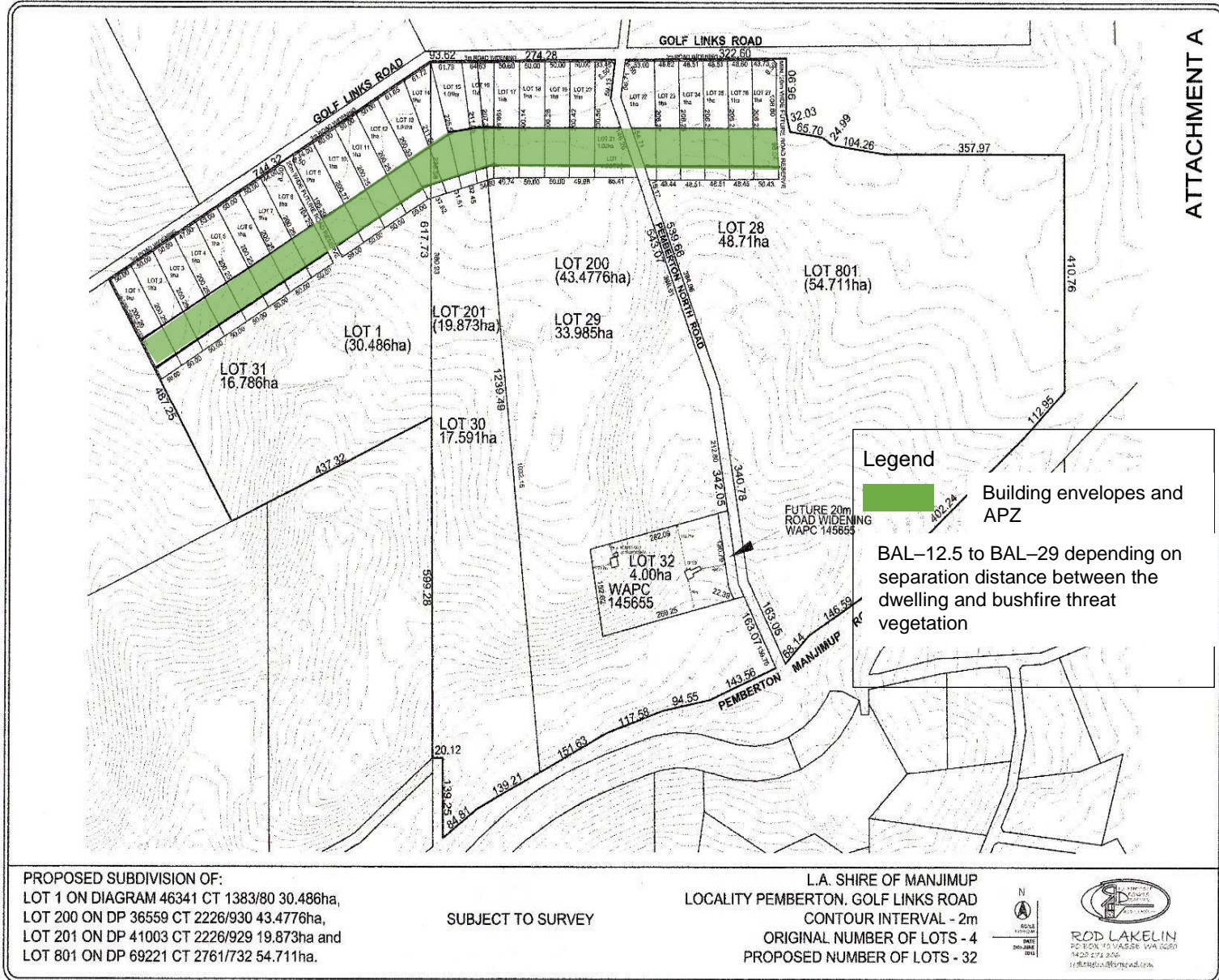
The vegetation types as described in AS 3959 are:

- Grassland across the site – Closed tussock grassland G – 21. This includes the grassland under the tree overstorey.
- Small pocket of Scrub (shrubs > 2 metres tall) – Closed scrub D – 13
- Exclusion as per Section 2.2.3.2 (e) and (f)

## 5.5 Vegetation classification

All vegetation within 100 metres of the proposed subdivision as indicated on the site assessment plan was classified in accordance with the AS 3959. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below. AS 3959 only requires consideration of 100 metres between vegetation and the building and 50 metres between vegetation and the building for grassland. The Western Australian Government requires all vegetation within 150 metres to be assessed.

5.6 BAL ratings



ATTACHMENT A

The entire development of the current lots (Lots 1, 200, 201 and location 7256) have been considered as one entity through the bushfire prone declaration by the State, even though not all of the new lots will be bushfire prone. The BAL ratings for the new lots are based on the creation and maintenance of an asset protection zone (APZ) of a minimum of 20 metres, around all sides or all dwellings on the lots, but may be able to be reduced to 8 metres if a BAL-29 construction standard is applied.

Through the Building Codes of Australia (BCA) there is a requirement that an area be formally designated as a bushfire prone to require the construction standard of AS 3959. Most lots in this subdivision will not be declared as bushfire prone through the application of the current designation when the new lots are created.

It is therefore essential that the visual amenity revegetation required by the Shire adjacent to Golf Links Road does not increase the bushfire risk nor increase the construction standards.

## 5.7 Land use

The general land use adjacent to the Stage 1 (A and B) of the development site at Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, is cattle grazing, orchard production (avocados) and recreation on the golf course. The land to the west is the golf course and a mixture of cultivated plants and grassland in the north, east and south. To the north is a mixture of cultivated orchards (avocados) and grazing. Land to the north and south of the development site has not been declared as bushfire prone.



**Figure 7.** Aerial photograph showing Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, and surrounding land use. Source: Near map Online Mapping System.

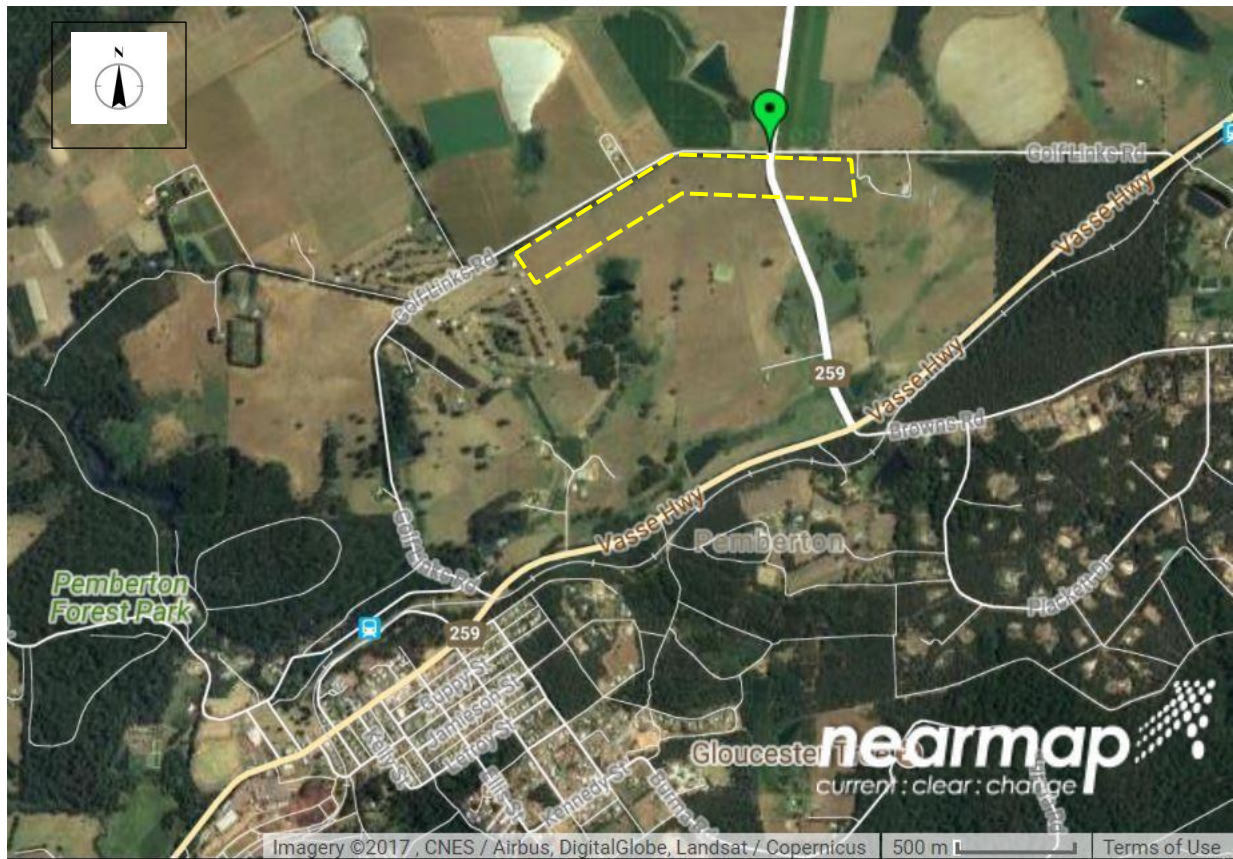
## 5.8 Assets

Within the local area, the assets include all the built structures on neighbouring properties, fruit trees, and the animals within the paddocks, windbreaks and the grass (pasture) within those areas. The local assets are changing and becoming a more 'standard' large lot urban development on the private land.

There are no cultural or environmentally significant features on the lots being developed.

## 5.9 Access

General access to the site is currently via Pemberton Road North which links directly to Golf Links Road, which are bitumen roads and facilitates travel east, west, north and south. This provides multiple ingress/egress routes for individual properties in the area. It also facilitates emergency services access. Vehicle access issues associated with linking Lot 302/9003 to Golf Links Road, and whether there is a need to widen Pemberton North Road (WAPC 157585) will be dealt with during the development of future BMPs or other mechanisms.



**Figure 8.** Aerial photograph showing the indicative Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, and location of access options. Source: Near Map Online Mapping System.

The subdivision is in an area that is well established with a supporting road network adjacent to the subdivision site. The proposed subdivision will result in an intensification (as indicated in the

*Guidelines for Planning in Bushfire Prone Areas*) and an increase in vehicular traffic during a fire emergency and general use on a daily basis.

The access for this subdivision will come via Pemberton Road North and Golf Links Road. Under the current Guidelines A3.1 requires that *Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents/public at all times and under all weather conditions.* There are two different destinations available through the current road network.

The lots will have shared driveways to assist in maintaining the integrity of the proposed vegetated buffer.

## **5.10 Water supply**

Reticulated mains water supply will not be available to the subdivision site. As the site is not within the reticulated water supply, The Shire requires a rain water tank of not less than 120,000 litres is to be installed on each lot and be available when the dwelling building permit application is made. Additionally 15,000 litres of water within the tanks are to be available for firefighting. These water volumes are a requirement in LPS4 section 5.2.4. To enable standardization of access to this supply, each private domestic vessel shall be fitted with 50 or 75 mm Ball Valve and a 50 mm female Camlock fitting with a blanking cap. Access to this outlet must be within six metres on hardstand to facilitate fire appliance use. This coupling shall be installed and maintained in a correct operating condition at all times at the property owner's expense. The Shire's requirements will ensure that when all lots are developed in Stage 1 (A and B) and dwellings are built there will be 405,000 litres of water available for firefighting.

Additionally a 50,000 litre water tank and access as per the Guidelines will be developed near the western boundary of the development site (near the golf course) to service the first 25 lots of the development. A second 50,000 litre water tank and access will be developed, if required, when additional lots are available and the dwelling building permit application is made for any of the lots east of Pemberton Road North.

## **6. Bushfire**

### **6.1 Bushfire hazard level**

The bushfire hazard assessment for this site is moderate and has a predominant bushfire attack level of BAL-12.5 to BAL-29, depending on the separation between the grassland vegetation and the dwelling when considered against the requirements in *Guidelines for Planning in Bushfire Prone Areas* (2017), AS 3959 and the Building Code of Australia (BCA). This BAL rating also assumes that the Shire of Manjimup firebreak and fuel load management guidelines are undertaken and an asset protection zone (APZ) of 20 metres is established. This determination is based on the observation of the predominant vegetation type on the development site and adjacent assessable lands and aligning that to the published criteria.

The 80 metre wide vegetated buffer that is required as a condition of subdivision will be planted so that the surface fuels will continue to be grassland. The native species used in the revegetation process will be a mixture of tall trees, shrubs, scrub and ground covers.

All vegetation within 150 metres of the lot boundaries or building have been considered in accordance with the Western Australian Government criteria. AS 3959 only requires consideration of 50 metres between the vegetation and the lot boundary or building for grassland and 100 metres for other vegetation types.

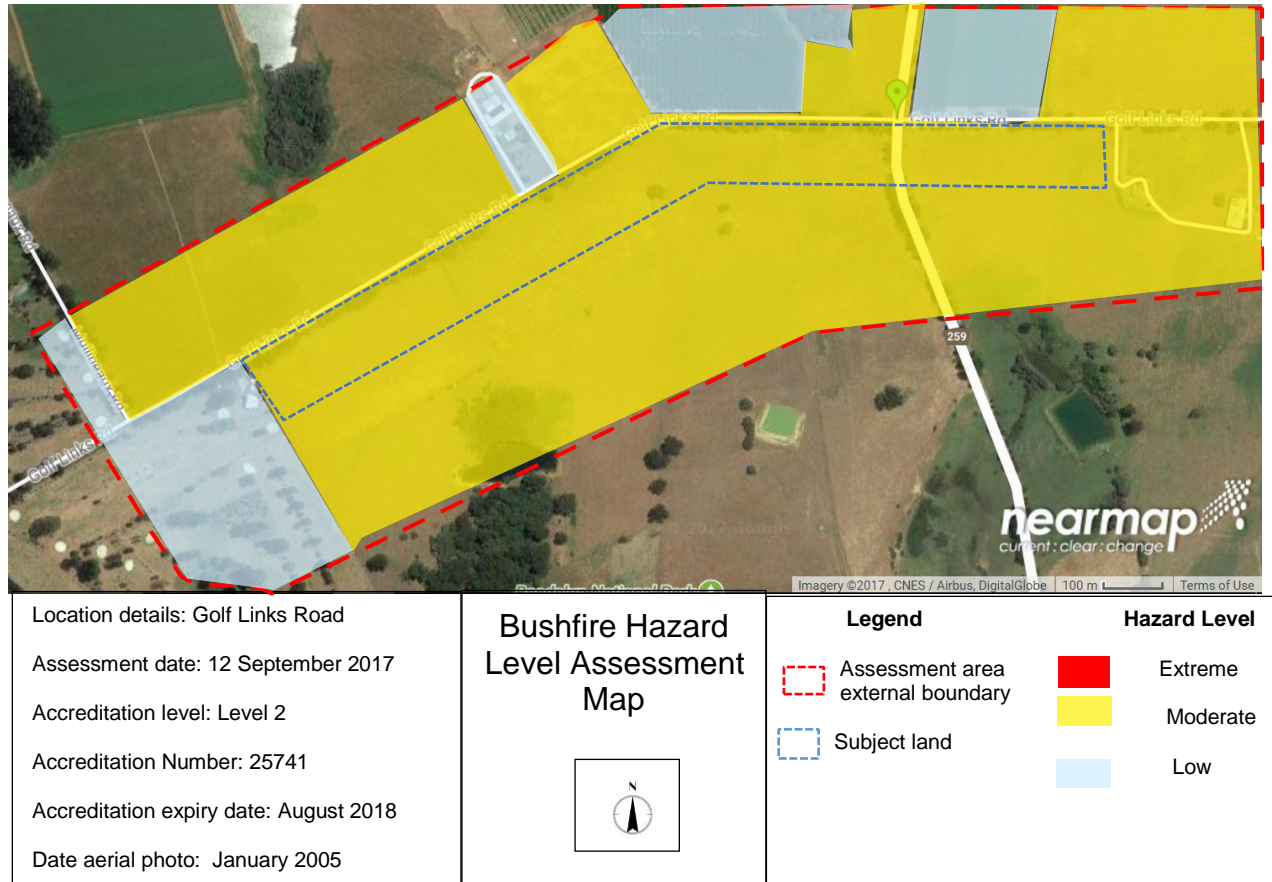


Figure 9. Bushfire hazard level assessment map.

## 6.2 Bushfire Attack Level (BAL) Assessment

### 6.2.1 Potential Bushfire Impacts

The potential bushfire impacts to the proposed dwellings from each of the identified vegetation plots are identified in the BAL contour map. AS 3959 Table 2.4.3 provides guidance as to the separation distance between the vegetation classifications and the future dwellings.

The areas not declared as bushfire prone after the new lots have been created will not require the dwelling to be constructed to AS 3959 criteria. Only the lots that have been formally declared by the State Government as bushfire prone will be required to be constructed to the standards as specified in AS 3959.

Plot	Vegetation Classification	Effective Slope	Separation (m)	BAL
1	Exclusion*	Flat	Not applicable	BAL-LOW
2	Class G – Grassland (AS 3959 classification G-21)	<5°	20	BAL-12.5*
3	Class D – Scrub (AS 3959 classification D-13)	5°	58	BAL-12.5

\*Note: The BAL rating will alter if the separation distance is reduced between the dwelling and the vegetation.

### 6.2.2 Determination of Bushfire Attack Level (BAL)

The Bushfire Attack Level (highest BAL) on the subdivision nearest to the vegetation has been determined in accordance with clause 2.2.6 of AS 3959 using the above analysis and considering the Shire's firebreak and fuel load notice requirements for an APZ.

The determined Bushfire Attack Level (BAL) for the new lots declared as bushfire prone is BAL-12.5 provided the 20 metre asset protection zone is established and maintained and the dwellings are restricted and provide a continuous reduced fuel zone parallel to Golf Links Road. Where the APZ is less than 20 metres, but not less than 8 metres, the dwelling can be constructed to a maximum of BAL-29.

It is recommended that regardless of whether the new lots are formally declared as bushfire prone or not that the dwellings be constructed to BAL-12.5. It is acknowledged that there is no formal trigger to support this recommendation.

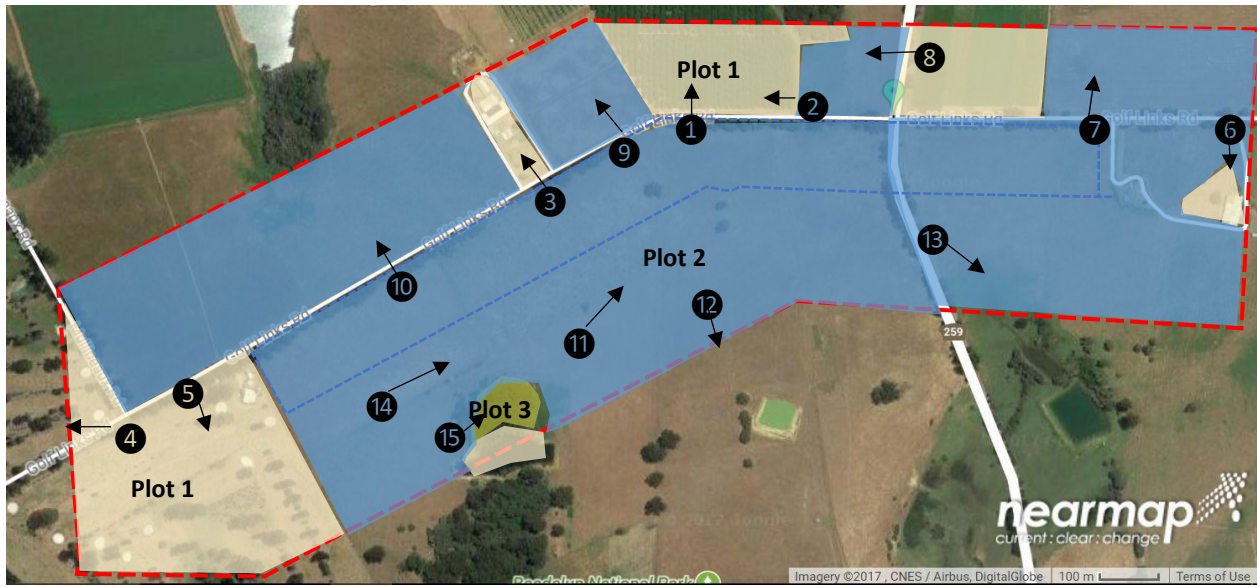
The revegetation of the buffer zone between Golf Links Road and the proposed dwelling location of 80 metres will be planted sympathetically to both the bushfire protection and buffer protection requirements. The plantings in distance back from Golf Links Road will have 25 metres of tall trees, then a nine metre wide buffer of dense plantings and then 47 metres of trees/tall shrubs *Agonis flexuosa* which will have an overstorey crown cover of less than 10%. The surface vegetation under the *Agonis flexuosa* overstorey will be grassland.

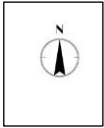
### 6.2.3 Construction standard

The predominant vegetation type on Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton, is grassland. The new lots will be a mixture of formally declared bushfire prone and lots not declared as bushfire prone. The formally declared lots will be required to construct to AS 3959 standard. It is recommended that the lots not declared as bushfire prone also build to a minimum of BAL-12.5 and that all dwellings establish and maintain a suitable APZ classified as an exclusion as defined in AS 3959.



6.2.4 Assessment area with the vegetation classification



<p>Location details: Golf Links Road                  Assessment date: 31 August 2017                  Accreditation level: Level 2                  Accreditation Number: 25741                  Accreditation expiry date: August 2019                  Date aerial photo: October 2017</p>	<p>Vegetation Classification Map</p> 	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li><span style="border: 1px dashed red; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Assessment area external boundary</li> <li><span style="border: 1px dashed blue; display: inline-block; width: 20px; height: 10px; margin-right: 5px;"></span> Subject land</li> <li><span style="border: none; display: inline-block; width: 15px; height: 15px; border-radius: 50%; background-color: black; color: white; text-align: center; line-height: 15px; margin-right: 5px;">16</span> Photo point</li> </ul>	<p><b>Vegetation Class</b></p> <ul style="list-style-type: none"> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #92d050; margin-right: 5px;"></span> C – Scrub</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #4682b4; margin-right: 5px;"></span> G – Grassland</li> <li><span style="display: inline-block; width: 20px; height: 10px; background-color: #fffacd; margin-right: 5px;"></span> Excluded as per 2.2.3.2 (e) &amp; (f)</li> </ul>
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**Figure 10.** Aerial photo showing assessment area (red boundary within 150 m of the lot boundary) with AS 3959 vegetation classification and photo points.

6.2.5 Photos showing vegetation classification to a distance of 150 metres from the assessment site on Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton.

All vegetation within 150 metres of the proposed new lots as indicated on the site assessment plan was classified in accordance with the Western Australian Government criteria and Clause 2.2.3 of AS 3959 was applied. Each distinguishable vegetation plot with the potential to determine the Bushfire Attack Level is identified below. AS 3959 only requires consideration of 50 metres between vegetation and the building for grassland.

**Plot 1**

Exclusion – Low threat vegetation and non-vegetated areas  
Clause 2.2.3.2 (e) & (f)



**Photo ID: Photo 1** The avocado orchard to the north.



**Photo ID: Photo 2** Avocado orchard north of the subdivision site and Golf Links Road.



**Photo ID: Photo 3** Infrastructure north of the site.



**Photo ID: Photo 4** Golf course and road infrastructure.



**Photo ID: Photo 5** The golf course adjacent to the site.



**Photo ID: Photo 6** Infrastructure adjacent to the site on a neighbouring property .

**Plot 2**

**Class G – Grassland (G – 21)**



**Photo ID: Photo 7** Grassland north of the site.



**Photo ID: Photo 8** Grassland vegetation and avocado orchard.



**Photo ID: Photo 9** The grassland north of the site.



**Photo ID: Photo 10** The grassland and water body north of the subdivision site.



12/09/2017 1:27:57 PM (+8.0 hrs) Dir=NE Lat=-34.42984 Lon=116.04284 Alt=450ft MSL WGS-84

**Photo ID: Photo 11** The grassland north of the site.



12/09/2017 1:35:34 PM (+8.0 hrs) Dir=SE Lat=-34.42805 Lon=116.04429 Alt=476ft MSL WGS-84

**Photo ID: Photo 12** The grassland near the site.



12/09/2017 3:35:01 PM (+8.0 hrs) Dir=NNW Lat=-34.42861 Lon=116.04086 Alt=476ft MSL WGS-84

**Photo ID: Photo 13** The grassland north of the site.

## Plot 2

Class D – Scrub (D – 13)



12/09/2017 1:18:18 PM (+8.0 hrs) Dir=ENE Lat=-34.43134 Lon=116.04033 Alt=522ft MSL WGS-84

**Photo ID: Photo 14** The grassland and scrub north of site.



12/09/2017 1:22:02 PM (+8.0 hrs) Dir=ENE Lat=-34.43073 Lon=116.04252 Alt=440ft MSL WGS-84

**Photo ID: Photo 15** The scrub and water south the of the subdivision site.

## Notes to Accompany Vegetation Classification

### 1. Plot 1

Exclusion – Low threat vegetation and non-vegetated areas  
Clause 2.2.3.2 (e) and (f)

This plot comprises the houses, roads, paths, buildings, cultivated gardens, and the avocado orchard and managed grassland areas, including the golf course which surround the subdivision site.

### 2. Plot 2

Class G – Grassland (AS 3959 classification G – 21)

This plot comprises the pasture and grass surface fuel surrounding the subdivision and within the 150 metres assessment zone.

### 3. Plot 3

Class D – Scrub (AS 3959 classification D – 13)

This plot comprises the very small patch of scrub (tea tree) associated with the dam. The tea tree is downslope at 5° and the distance between the lot boundary and the tea tree is 38.7 metres. As the dwelling for this lot will be set back from the lot boundary by around 20 metres it is anticipated that the distance between the tea tree and dwelling to be in excess of 58 metres.

## Other considerations in regard to vegetation

1. The fire spread algorithms applied in AS 3959 consider fine fuels as less than 6 mm diameter for dead material, and less than 3 mm diameter for live material.

## 7. Bushfire Mitigation Strategies

This Bushfire Management Plan is developed to provide guidance for the planning and management of the potential bushfire threat on the proposed development on Lot 1, 200, 201 and Location 7256 Golf Links Road, Pemberton. The Bushfire Management Plan (BMP) is a supporting document for the proposed Structure Plan for the subdivision application. In accordance with the State Government's requirements, the BMP considers the bushfire threat after the BMP has been implemented.

This Bushfire Management Plan adopts an acceptable solution and performance-based system of control for each bushfire hazard management issue. The approach is consistent with Appendix 4 of *Guidelines for Planning in Bushfire Prone Areas* (December 2017).

Each element comes from Appendix 4 of *Guidelines for Planning in Bushfire Prone Areas* (December 2017).

## 7.1 Bushfire protection performance criteria and acceptable solutions

### Element 1: Location

*Intent: To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk to bushfire to facilitate the protection of people, property and infrastructure.*

### Acceptable solution (s)

To achieve compliance with this Element the following acceptable solution, must be met:

#### **COMPLIANT through the application of all Acceptable Solutions for the Element**

The proposed subdivision and development is located in an area where the bushfire hazard level on the site is moderate. The site, only in part, has been declared as bushfire prone and therefore the AS 3959 construction standards need to be applied for Class 1, 2 and 3 buildings and associated Class 10a buildings in the areas formally declared as bushfire prone. The BAL assessment has identified that no portions of lots have been classified as BAL-FZ and/or BAL-40, provided the APZ has been established. The site is currently grassland and the revegetation of the amenity strip may not change the BAL ratings. The revegetation of the 80 metre-wide vegetation buffer adjacent to Golf Links Road will be separated by an additional 70 metre setback (150 metre Agricultural Setback) which will be maintained in a low fuel / APZ state. At most, revegetation will generate a BAL—12.5 threat to dwellings.

The new lots that are not in the area declared as bushfire prone will not trigger the requirement to construct to AS 3959.

Element 2: Siting and Design of Development

*Intent: To ensure that the siting and design of development minimises the level of bushfire impact.*

Acceptable solution (s)

To achieve compliance with this Element the following acceptable solutions, must be met:

**COMPLIANT through the application of all Acceptable Solutions for the Element**

The proposed subdivision and development is located in an area that is currently farmland. The site will become large semi-rural lots. The Western Australian government has declared the site, only in part, as bushfire prone.

There will be a flexible width APZ separating the dwellings from the grassland to ensure that the dwellings are rated at BAL-29 or less. The APZ will also be constructed to comply with the Shire's firebreak and fuel load notice regardless of whether the new lots are in the areas declared as bushfire prone. The road infrastructure is in place. The roads surrounding the subdivision are constructed of bitumen. The private driveways need to be developed, but adjoining lots will share an entry point on Golf Links Road. These have been established and link to Golf Links Road.

The revegetation within the APZ will be in accordance with the standards for an APZ required by the *Guidelines for Planning in Bushfire Prone Areas*.

### Element 3: Vehicular access

*Intent: To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.*

#### Acceptable solution (s)

To achieve the intent, all applicable 'acceptable solutions' must be addressed:

#### **COMPLIANT through the application of all Acceptable Solutions for the Element**

There are bitumen roads providing access for the lots to the subdivision. The roads currently in place provide alternative access roads to facilitate movement to and from the subdivision. These provide access for 4x2 emergency, public and private vehicular access to the proposed lots. The road network provides multiple entry and exit roads and provides access to alternative destinations.

All roads within the subdivision being truncated in accordance with DC 1.7 General Road Planning. Any widening of current roads will be dealt with by mechanisms not related to the BMP.

Access to the lots will be via shared driveways and they are required to be constructed to the appropriate standard as described in the Guidelines.

The lots will maintain firebreaks and asset protection zones in accordance with the Shire's firebreak order. This will include the firebreaks around the introduced revegetation.

It is proposed to place farm gates on a number of lots to provide additional access for the emergency services. The identified locations are on lots 4, 8, 12, 16 and 20 where farm gates are to be established and maintained in the south-east corner of the lot to provide access into the farmland to the south and access into the lot for emergency services. The access into the farmland is not to be used other than in an emergency. These will be informal emergency access solely for the emergency services. As they are a component of the BMP their placement and maintenance is required through the Shire's firebreak order.

There will be a six metre wide mineral earth firebreak , required to be constructed and then maintained throughout the fire season, with associated gates, signs and unsealed crossovers, in the location depicted on the plan date-stamped 27 February 2019 (shown as Figure 2 in this BMP).



#### Element 4: Water

*Intent: To ensure that water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.*

#### Acceptable solution (s)

To achieve the intent, all applicable 'acceptable solutions' must be addressed:

#### **COMPLIANT through the application of all Acceptable Solutions for the Element**

The subdivision will not be developing reticulated scheme water to the subdivision site. As the site is not within the reticulated water supply, a rainwater tank of not less than 120,000 litres is to be installed on each lot as required in LPS4 section 5.2.4. Additionally 15,000 litres of water within the tanks are to be available for firefighting. To enable standardisation of access to this supply, each private domestic vessel shall be fitted with 50 or 75 mm Ball Valve and a 50 mm female Camlock fitting with a blanking cap. Access to this outlet must be within six metres on hard stand to facilitate fire appliance use. This coupling shall be installed and maintained in a correct operating condition at all times at the property owner's expense.

Additionally a 50,000 litre tank and access as per the Guidelines will be developed near the western boundary of the development for the first 25 lots. A second 50,000 litre water tank and access will be developed, if required, when the dwelling building permit application is made for any of the lots above the initial 25 lots.

## **8. Implementing the Bushfire Management Plan**

### **8.1 The developer's responsibility**

To establish the reduced level of risk and threat of fire, the developer of lots created by this proposal will be responsible for undertaking and implementing measures protecting the assets from the threat and risk of bushfire.

The developer shall be responsible for:

- Establishing the access roads to the lot boundaries
- Establishing the 50,000 litre water tank (s) and access at the prescribed standard for the development
- Placing appropriate signage
- Providing reticulated power
- Ensuring that the property owners are aware of the endorsed and approved Bushfire Management Plan
- Placing a notification on title pursuant to *section 165A of the Planning and Development Act 2005* on lots affected by a BAL rating of 12.5 or higher that advises that the lot is within a bushfire prone area and that particular planning and building requirements related to bushfire risk may apply to development on the land. The notification is to state "This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land."

- There will be a six metre wide mineral earth firebreak , required to be constructed and then maintained throughout the fire season, with associated gates, signs and unsealed crossovers, in the location depicted on the plan date-stamped 27 February 2019 (shown as Figure 2 in this BMP).
- Provide 'Certification by a Bushfire Consultant' that that developer responsibilities contained within Section 8.1 of the BMP have been implemented during subdivisional works.

## **8.2 Property owner's responsibilities**

To maintain the reduced level of risk and threat of fire, the owners/occupiers of lots created by this proposal will be responsible for undertaking, complying and implementing measures protecting their own assets from the threat and risk of bushfire.

The owner/occupier shall be responsible for:

- Where specified, maintaining firebreaks on their property clear of flammable material by the dates shown on the Shire of Manjimup's *Fire Break Notice and Bushfire Information*. This is a statutory requirement. A copy is available from the Shire of Manjimup website.
- The APZ will be established prior to construction and maintained after dwelling construction to comply with the APZ requirements
- Maintaining in good order and condition all fencing and gates
- Ensuring that any new domestic dwellings to be built on the property are designed and constructed in full compliance with the requirements of the Shire of Manjimup and as detailed in *Australian Standard 3959 – Construction of buildings in bushfire-prone areas*
- Implementing and maintaining bushfire fuels as specified in the Bushfire Management Plan and in accordance with the Shire of Manjimup requirements
- Reviewing and implementing hazard reduction, when required, as required by the Shire of Manjimup
- Installing and maintaining crossovers and driveways as required by the Shire of Manjimup
- The 80 metre vegetation buffer shall be maintained by the landowner in perpetuity. No clearing of the vegetated buffer shall occur without approval from the Shire.

## **8.3 Shire of Manjimup responsibilities**

The responsibility for compliance with the law rests with individual property owners and occupiers. The following conditions are not intended to transfer some of the responsibilities to the Shire of Manjimup. The Shire of Manjimup has statutory control and responsibility for ensuring that community fire safety is maintained.

The Shire of Manjimup shall be responsible for:

- Providing timely advice on standards and methods to achieve community fire protection to owners/occupiers of land
- Administering development controls in accordance with the local planning scheme, with due regard for *State Planning Policy 3.7 – Planning in Bushfire Prone Areas* and other policies and publications outlined in these guidelines

- Seeking compliance with Bushfire Management Plans, including issuing the annual issuing of Firebreak Notices under section 33 of the *Bush Fires Act 1954*.

## 9. Revising the Bushfire Management Plan

It is recommended that this Bushfire Management Plan be revised every five years to ensure that it is current and in-line with contemporary requirements to optimise protection. It is proposed that the property owners undertake the review.

## 10. References

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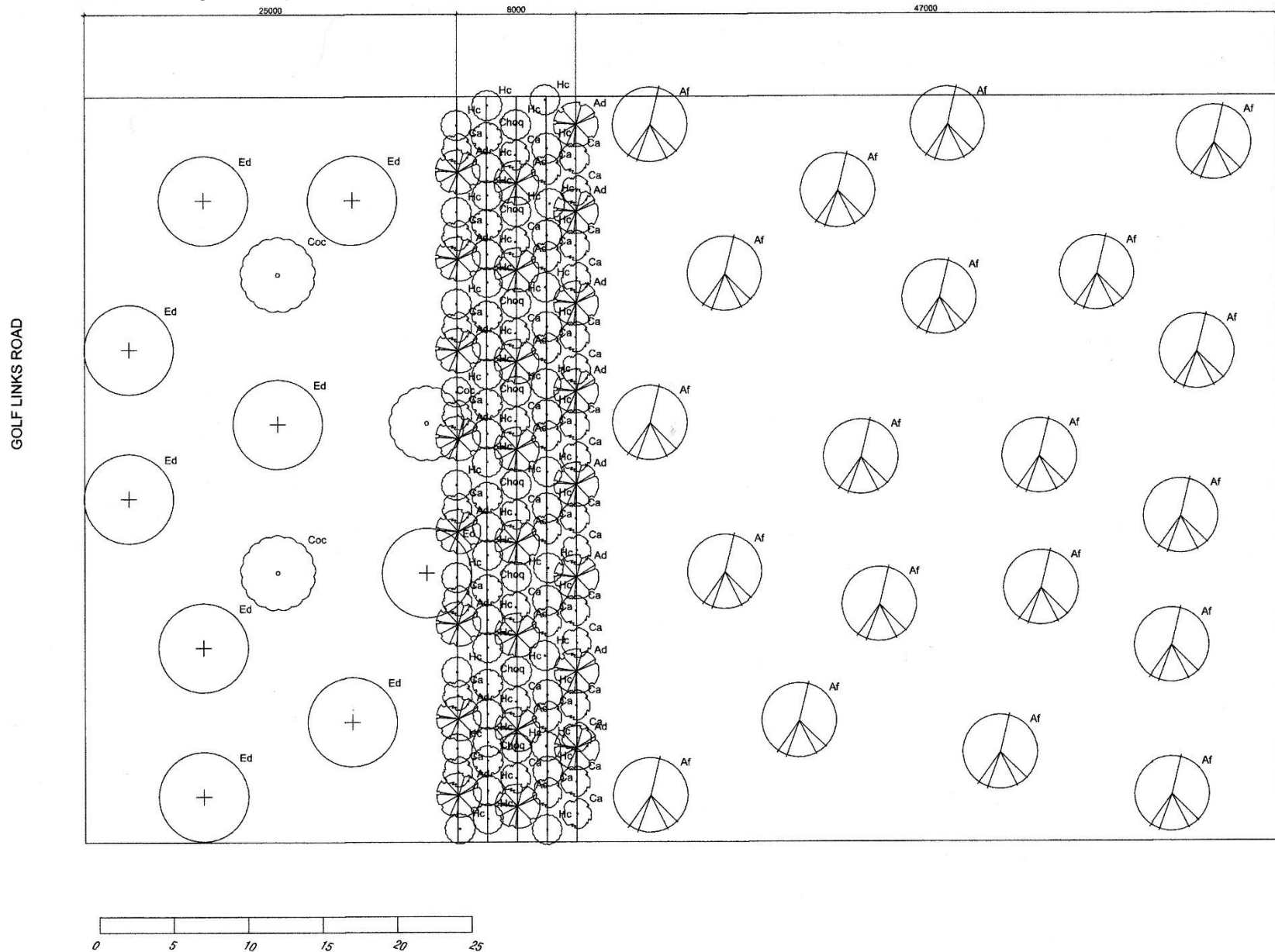
Western Australian Planning Commission. (2017). *Guidelines for Planning in Bushfire Prone Areas*. Western Australian Planning Commission, Perth, WA. December 2017



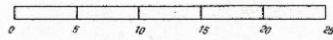
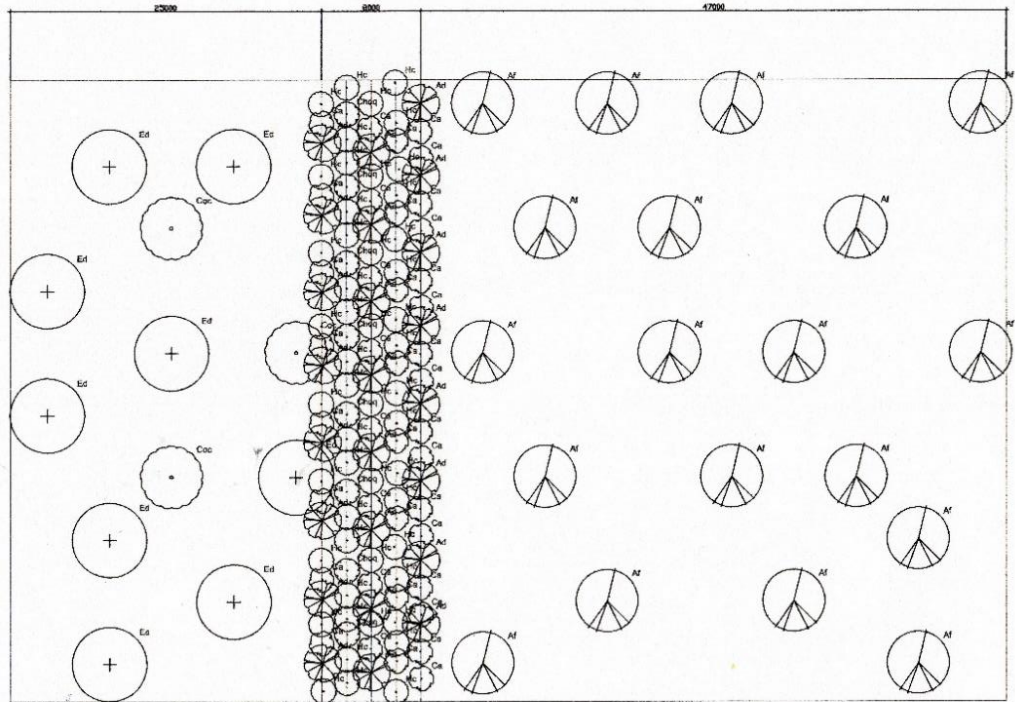


### Appendix 3 Proposed revegetation plan

This is the indicative revegetation plan for the zone 80 metres from Golf Links Road.



GOLF COURSE ROAD



### Plant List 1

Key	Botanic Name	Qty.	Spacing
<b>Trees</b>			
Ed	<i>Eucalyptus diversicolor</i>	9	AS SHOWN
Coc	<i>Corymbia calophylla</i>	3	AS SHOWN
M	<i>Agonis flexuosus</i>	19	AS SHOWN
<b>Shrubs</b>			
Hc	<i>Hibbertia curviflora</i>	51	AS SHOWN
Chq	<i>Chorizanthe quadrifida</i>	8	AS SHOWN
Co	<i>Crocosia linguatfolia</i>	40	AS SHOWN
Ad	<i>Allocasuarina decussata</i>	24	AS SHOWN

Planting densities and distances from houses.  
 The area of the landscape buffer for each lot is 0.4ha.  
 In the arrangement shown there are 31 trees and 123 shrubs.  
 The planting rate for trees is 77 stems per ha.  
 The planting rate for shrubs is 307 stems per ha.  
 The dense shrub planting is required to screen houses from Golf Course Road. It is similar to Main Rivers shrub planting.  
 The closest shrub stem will be 117m from the building line. The closest tree stem will be 70m from the building line.

CLIENT <b>MARK BOMBARA</b>	
JOB <b>GREENLAND PEMBERTON</b>	
DRAWING <b>LANDSCAPE BUFFER PLANTING SKETCH</b>	
SCALE 1:250 AT A1 DATE 25 JANUARY 2018 DESIGNED BILL JAMES DRAWN BILL JAMES	DRAWING NO. <b>18/GP/1</b>

WILLIAM JAMES LANDSCAPE ARCHITECT, 156 ROSA GLEN ROAD, ROSA GLEN WA 6280

## Appendix 4 Private driveways longer than 50 metres

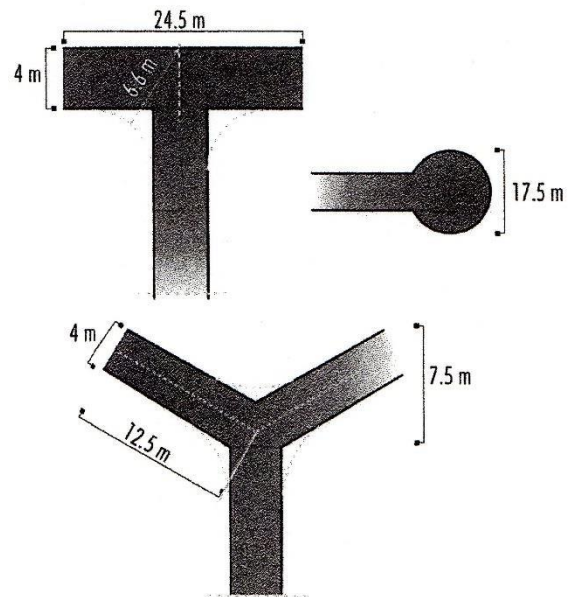
### E3.5 Private driveway longer than 50 metres

For a driveway shorter than 50 metres, fire appliances typically operate from the street frontage however where the distance exceeds 50 metres, then fire appliances will need to gain access along the driveway in order to defend the property during a bushfire. Where house sites are more than 50 metres from a public road, access to individual houses and turn-around areas should be available for both conventional two-wheel drive vehicles of residents and type 3.4 fire appliances.

Turn-around areas should be located within 50 metres of a house. Passing bays should be available where driveways are longer than 200 metres and turn-around areas in driveways that are longer than 500 metres. Circular and loop driveway designs may also be considered. These criteria should be addressed through subdivision design.

Passing bays should be provided at 200 metre intervals along private driveways to allow two-way traffic. The passing bays should be a minimum length of 20 metres, with the combined width of the passing bay and the access being a minimum of six metres.

Turn-around areas should allow type 3.4 fire appliances to turn around safely (i.e. kerb to kerb 17.5 metres) and should be available at the house sites and at 500 metre intervals along the driveway.



**Figure 22:** Design requirements for a private driveway longer than 50 metres

Turning areas should allow type 3.4 fire appliances to turn safely

Source: Guidelines for Planning in Bushfire Prone Areas, page 70