



Appendix G **Bushfire Managment Plan**



Bushfire Management Plan

(Scheme Amendment)

Lot 564 Garvey Road
Dardanup West

Ref 23-034

Ver A

July 2024



LUSHFIRE & PLANNING

3 Paterson Rd

Pinjarra WA 6208

0418 954 873

ABN 74 232 678 543

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 564 DP250872 Garvey Road		
Suburb:	Dardanup West	State:	WA P/code: 6236
Local government area:	Dardanup		
Description of the planning proposal:	Rural residential Scheme Amendment and subdivision		
BMP Plan / Reference Number:	23-034	Version:	A Date of Issue: 24/07/2024
Client / Business Name:	Harley Dykstra		

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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Is the proposal any of the following special development types (see SPP 3.7 for definitions)?

Unavoidable development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Strategic planning proposal (including rezoning applications)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Minor development (in BAL-40 or BAL-FZ)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High risk land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Vulnerable land-use	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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 Scheme Amendment and rural residential 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	28/02/2025
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

24/07/2024

This bushfire management plan is prepared for the proposed rezoning and subdivision of Lot 562 Garvey Road, Dardanup West. The site is located 2kms south west from Dardanup townsite.

The bushfire management plan demonstrates that the proposed subdivision will comply with State Planning Policy SPP3.7 Planning in Bushfire Prone Areas; and the associated Guidelines for Planning in Bushfire Prone Areas (Version 1.4 December 2021).

The subject land has an area of 40 hectares and is being used for broad acre farming primarily grazing. It is cleared farming land with secondary road frontages to Morellini Way on the western boundary and Ayrshire Road on the southern boundary. The eastern boundary is an existing road reserve with a constructed Emergency Access Way which extends from Holland Loop Garvey Road.

The site is relatively flat with low undulations with an elevation of between 23 and 28m AHD. There is no reticulated water supply to the site or adjacent areas.

The proposed subdivision concept provides for twenty (20) lots ranging in size from 1.04 to 3.5 hectares with a 20m wide subdivision road will extending from Ayrshire Road to Garvey Road. The concept plan also shows proposed building exclusion areas which reflect:

- Town Planning Scheme No 3 boundary setbacks of 20m from the front and 10m from the side; and
- Sufficient area for a maximum BAL-29 rating setbacks permitted under SPP3.7 Planning in Bushfire Prone Areas.

Approximately 25% of the subject is designated as being bushfire prone land as shown in Figure 3. It is noted that the building envelopes of Lots 13 – 17 are not designated as being bushfire prone. Consequently, no Bushfire Attack Level (BAL) Assessment is required and the bushfire construction provisions in the National Construction Code are not applicable.

A Bushfire Attack Level (BAL) Assessment / BAL Contour Map has been prepared for the proposed subdivision and all building envelopes will have a BAL-29 or lower rating.

The subject land is situated in an existing structure plan area, which is substantially developed. The surrounding land is a mixture of rural residential, and broad acre rural land uses, including irrigated pasture. The principal bushfire hazard is the vegetation to the east and north east of the site.

The proposed subdivision 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. Land is considered suitable for land use intensification as the bushfire hazard levels are moderate and low. The proposed subdivision design does not increase the bushfire threat as it provides for the management of vegetation hazards, suitable road access and appropriate separation distances with the proposed development sites having a BAL-29 rating or lower.
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. The bushfire hazard and risks have been identified and assessed in this report. It documents how the hazard level will be reduced and maintained for the life of the development and defines the responsibilities of relevant stakeholders.
3. The design of the subdivision and the development takes into account bushfire protection requirements and includes specific bushfire protection measures. The proposed management/mitigation measures to be implemented in accordance with this Bushfire Management Plan demonstrate that the acceptable solutions within each element of the Bushfire Protection Criteria as contained in the Guidelines for Planning in bushfire Prone Areas (Version 1.4 December 2021) have been met.
4. Achieves an appropriate balance between bushfire risk management measures and biodiversity, conservation values, and environmental protection. There is no significant modification of remnant vegetation for the development.

Document Control

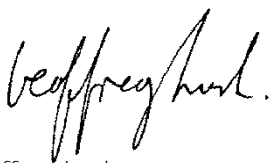
Street No	Lot No	Plan	Street Name		
	564	250872	Garvey Road		
Locality	Dardanup West		State	Postcode	6236
Local Government Area		Dardanup			
Project Description		Local Scheme Amendment and rural residential subdivision			
Prepared for		Harley Dykstra			

Ref No	Revision	Date	Purpose
23-034	A	24 July 2024	Review

Name	Geoffrey Lush	Company	Lushfire & Planning
BPAD	Level 2 Practitioner	Accreditation No	27682
		Expiry	February 2025

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. All information and recommendations made in this report are made in good faith based on information and accepted methodology used at that time. All plans are subject to survey and are not to be used for calculations. Notwithstanding anything contained therein, Lushfire & Planning will not, except as the law may require, be liable for any loss claim, damage, loss or injury to any property and any person caused by fire or by errors or omissions in this report.



Geoffrey Lush
24 July 2024
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1.0 Proposal Details

1.1 Introduction

This bushfire management plan is prepared for the proposed rezoning and subdivision of Lot 564 Garvey Road, Dardanup.

The site is located 2kms south west from Dardanup townsite as shown in Figure 1 and the property details are documented in Table 1.

The objectives of this report are to:

- Confirm the suitability of the proposed zone having regard to the objectives of State Planning Policy SPP3.7 Planning in Bushfire Prone Areas.
- Identify any bushfire management and spatial issues which should be considered; in the preparation of any local structure plan; subdivision or development applications.
- Demonstrate that development will comply with State Planning Policy SPP3.7 Planning in Bushfire Prone Areas; the associated and the associated Guidelines for Planning in Bushfire Prone Areas (Version 1.4 December 2021) now and/or in the subsequent planning stages.

This Bushfire Management Plan has been prepared in accordance with Version 1.4 of Guidelines for Planning Bushfire Prone Areas. Appendix 5 contains a checklist for the preparation of Bushfire Management Plans and in relation to a Scheme Amendments provides that a bushfire hazard level assessment can be prepared. Once the subdivision lot layout is determined then a BAL Contour Map should be provided.

Table 1 Land Details

No	Lot	Plan	Vol	Folio	Registered Proprietor	Area(ha)
	564	250872	462	125A	Wright K & R	40.4991

1.2 Existing Conditions

The existing site conditions are shown in Figure 2.

The subject land has an area of 40 hectares and is being used for broad acre farming primarily grazing. It is cleared farming land with an outbuilding and stock yards. The site is rectangular with a frontage of 744m to Garvey Road and a depth of 543m. There are secondary frontages to Morellini Way on the western boundary and Ayrshire Road on the southern boundary.

The surrounding land has generally been developed for rural residential/rural small holdings with lots varying in size from 1.0 to 2.5 hectares. Lot 2 to the east of the site is still used for broad acre farming and has an area of approximately 80 hectares. On the north side of Garvey Road is Reserve 19722 Cemetery which is managed by the Shire and has an area of 7.6 hectares.

There is an existing district drain on the southern portion of the site which extends to the west. Along the eastern boundary is an existing road reserve with a constructed Emergency Access Way which connects to Holland Loop.

The site is relatively flat with low undulations with an elevation of between 23 and 28m AHD.

The site is cleared with some remnant vegetation along Garvey Road and within the lots to the north. The main areas of vegetation are contained within R19722 on the northern side of Garvey Road and Lot 2 to the east of the site.

There is no reticulated water supply to the site or adjacent areas.

Existing Farm Shed



*Emergency Access Way
on gazetted road along the
eastern boundary of the site.*



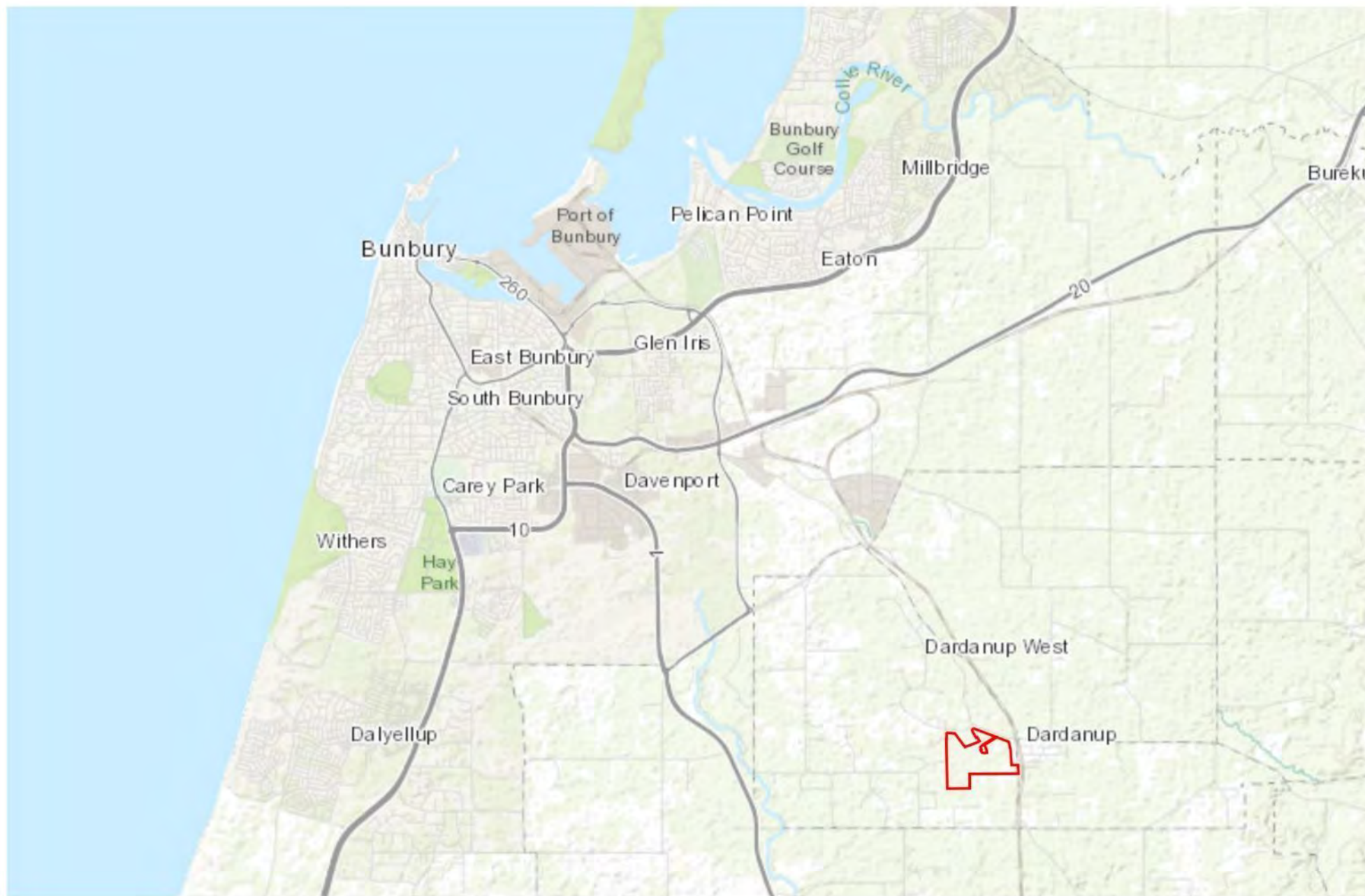


FIGURE 1
LOCATION PLAN

SUBJECT LAND 



Job No 21-036
Rev Description
A Preliminary

Date
06/10/2021



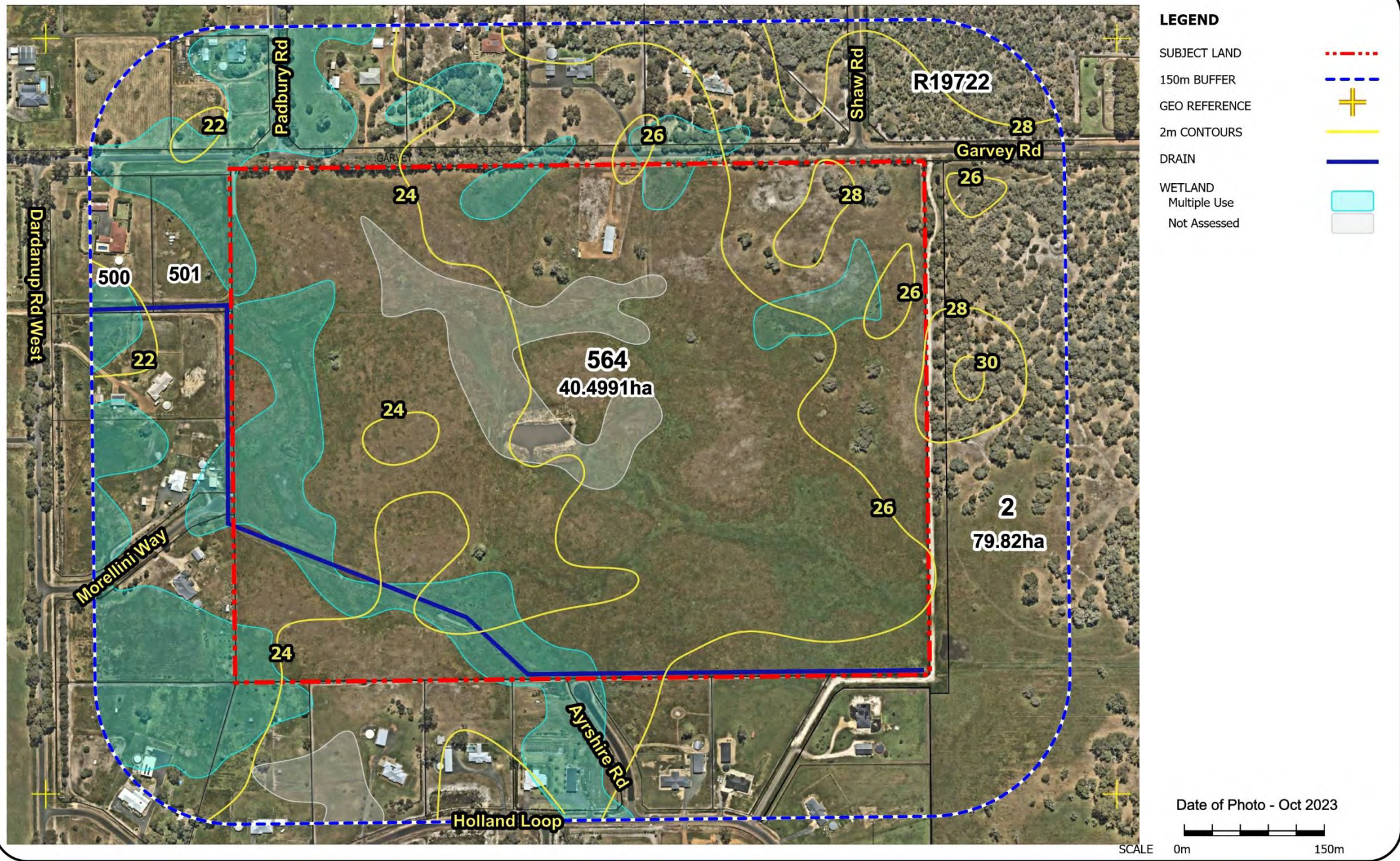


FIGURE 2
EXISTING CONDITIONS

1.3 Bushfire Prone Land

Approximately 25% of the subject is designated as being bushfire prone land as shown in Figure 3. The designation of bushfire prone areas triggers:

- The application of the bushfire construction provisions in the National Construction Code;
- The provisions of the Planning and Development (Local Planning Schemes) Regulations 2015; and
- The application of State Planning Policy SPP3.7 Planning in Bushfire Prone Areas.

State Planning Policy SPP3.7 Planning in Bushfire Prone Areas requires that any subdivision application must be accompanied by a bushfire management plan which includes:

- a) a Bushfire Attack Level (BAL) Assessment or a BAL Contour Map to show the expected BAL ratings for the developed site. The BAL Contour Map shows the proposed BAL ratings based upon any clearing or landscaping;
- b) the identification of any bushfire hazard issues arising from the BAL Contour Map or the BAL assessment; and
- c) an assessment against the bushfire protection criteria requirements contained within the Guidelines demonstrating compliance within the boundary of the development site.

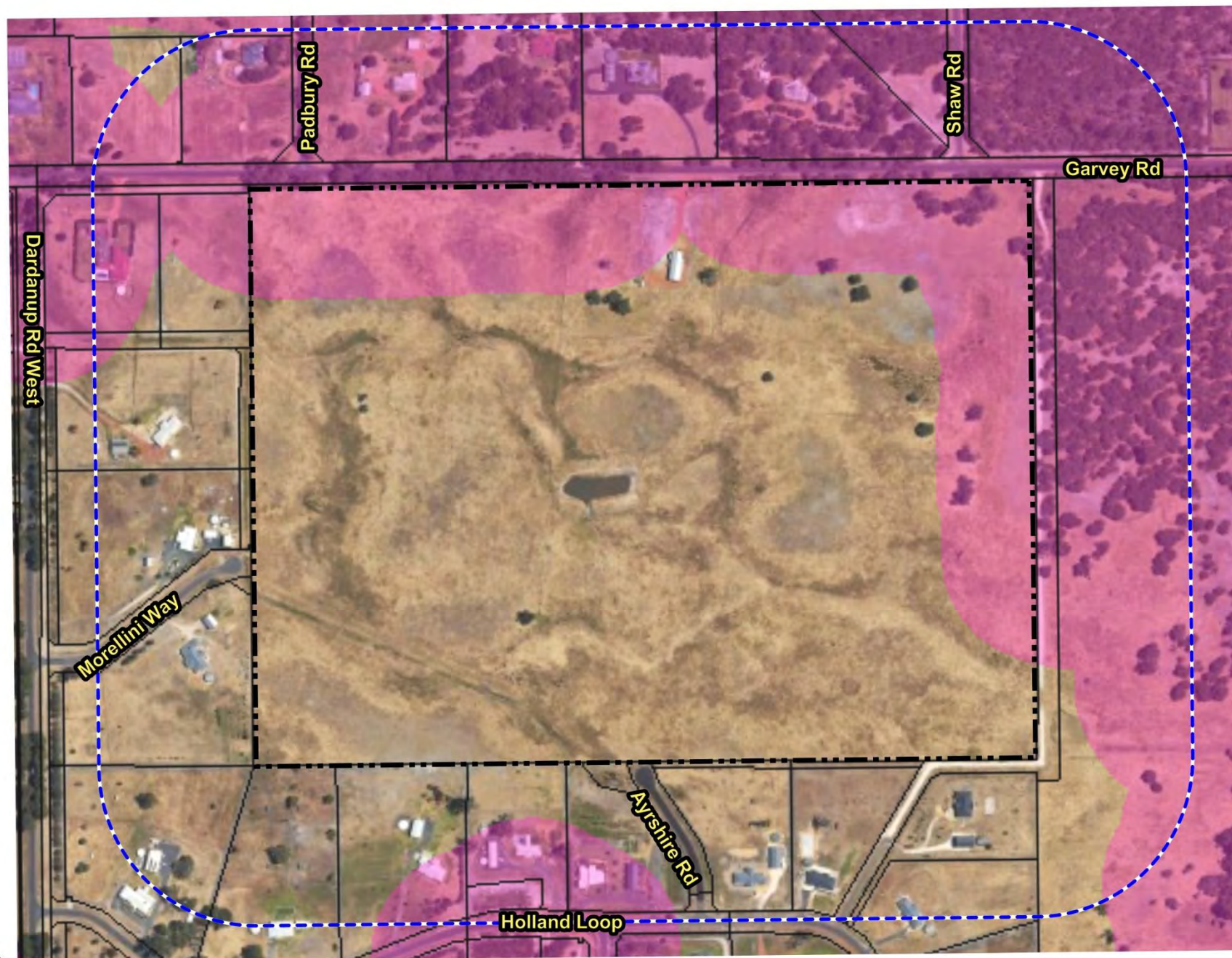
1.4 Fire Prevention Order

The Shire's 2024 - 2025 Fire Prevention Order states that land within the Rural Small Holdings zone is required to have:

- ❖ A firebreak installed immediately inside and along all property boundaries, 2 metres in width and 4 metres in height. The firebreak may only deviate from a boundary up to 6 metres, to avoid established trees and /or other natural features that would make it impractical to be installed on the boundary.
- ❖ A 20 metre Asset Protection Zone (as defined) must be slashed to a height that does not exceed 100 millimetres surrounding dwellings, sheds and all haystacks.
- ❖ All flammable material/vegetation (dead trees and branches) must be removed from the 20 metre Asset Protection Zone.
- ❖ Where slashing is not possible, material/vegetation must be burnt back or sprayed with a suitable herbicide to prevent growth throughout the entire restricted and prohibited burning periods.
- ❖ Burn piles can be kept and are approved under the following conditions:
 - A burn pile is to be no closer than 20 metres from any structure.
- ❖ All fire wood piles must be stored away from a dwelling during the restricted and prohibited burning periods.

The Order also requires that where the property has an approved Bush Fire Management Plan, compliance must be achieved in accordance with the conditions stipulated in the Bush Fire Management Plan, in addition to the requirement of the Fire Prevention Order.

This order is valid for the period 1 July – 30 June annually. Work must be completed by the 30 November annually and maintained until the close of the entire Restricted and Prohibited Burning Periods.



LEGEND

SUBJECT LAND



BUSHFIRE PRONE LAND



Includes bushfire prone vegetation and a 100m buffer.

150m ASSESSMENT BUFFER



FIGURE 3
BUSHFIRE PRONE LAND

1.5 Town Planning Framework

The subject land is designated as rural residential land within the Shire's Local Planning Strategy (2015). It is part of the Dardanup West / Crooked Brook Rural Living precinct which is described as:

This area is already covered by the Dardanup West / Crooked Brook Structure Plan and approximately 50% of the area is already developed. However, in order to allow for further subdivision, it is recommended that this area be identified as a 'Special Control Area' for Structure Planning.

Further subdivision of rural residential areas must consider constraints including waterlogging, bushfire threat, flooding, buffers, environmental constraints, and other limiting criteria.

Council Adopted Local Planning Scheme No 9 for final approval at its Meeting on 27 September 2023 and **the Scheme is currently pending approval from the Minister. The subject land is included in the 'Rural' zone while the developed portions of the Dardanup West / Crooked Brook Rural Living precinct are zoned 'Rural Residential.'**

Schedule 7 of the Scheme contains additional site and development requirements for the rural residential zone noting the following and the following boundary setbacks apply:

- 20m front setback
- 20m secondary street;
- 10m rear and side.

The following provisions apply to building envelopes / building exclusion areas

- (a) All dwellings, outbuildings, on-site effluent disposal systems and other incidental development in the Rural Residential and Rural Smallholdings zones must be located within an approved building envelope or outside of an approved building exclusion area except for –
 - (i) the provision of a suitable access way to the development;
 - (ii) the provision of suitable boundary fencing as approved by the local government; and
 - (iii) development specifically required to implement an approved bushfire management plan or any other bushfire management requirements.
- (b) Where a building envelope or building exclusion area has not been approved a local development plan may be required to be submitted with an application for development approval and the following requirements shall apply –
 - (i) a building envelope shall not exceed 2,000 m² and the area outside of a building exclusion area must contain at least one area of 2,000m²;
 - (ii) a building envelope can be in no more than 2 separate areas which in total do not exceed 2,000 m²;
 - (iii) complies with the minimum setbacks of the Scheme;
 - (iv) the removal of remnant vegetation is to be minimised; and
 - (v) complies with approved bushfire management plan or any other bushfire management requirements.

Each dwelling is to be provided with a minimum 135,000 litre water storage tank in addition to any requirements of an approved bushfire management plan.

1.6 Proposed Development

The proposed subdivision concept plan is shown in Figure 4 and this provides for:

- Twenty (20) lots ranging in size from 1.04 to 3.5 hectares, with an average size of 1.977ha.
- Twelve (12) lots fronting Garvey Road being approximately 1 hectares in size with a frontage of 60m and depth of 170m.
- Two lots will be access from Morellini Way.
- Each lot has a defined developable area (building envelope/building exclusion area).
- A 20m wide road reserve will extending from Ayrshire Road to Garvey Road.

The concept plan also shows proposed building exclusion areas which reflect:

- The Scheme boundary setbacks of 20m from the front / secondary roads and 10m from the side boundary;
- Sufficient area for a maximum BAL-29 rating requiring either a 21m or 27m setback.

2.0 Environmental Considerations

State Planning Policy 3.7 (SPP3.7) policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values. Typically, these environmental factors may include:

- Bush Forever sites;
- Threatened ecological communities;
- Declared rare flora;
- Environmentally sensitive areas;
- Classified wetlands and associated buffers;
- Conservation covenants; and
- Significant areas identified in a local planning or biodiversity strategy.

The subject land contains Multiple Use and Not Assessed wetlands as shown on Figure 2. As the site is cleared pasture, the key environmental issues relate to the wetlands/high water table. This is expected to limit the development of dwellings and areas for on-site effluent disposal as has occurred in the surrounding subdivisions.

There is no proposed clearing of vegetation, other than for the creation of cross overs for the lots fronting Garvey Road.

LEGEND

SUBJECT LAND



DEVELOPMENT AREA
SETBACKS

20m



10m



21m



27m

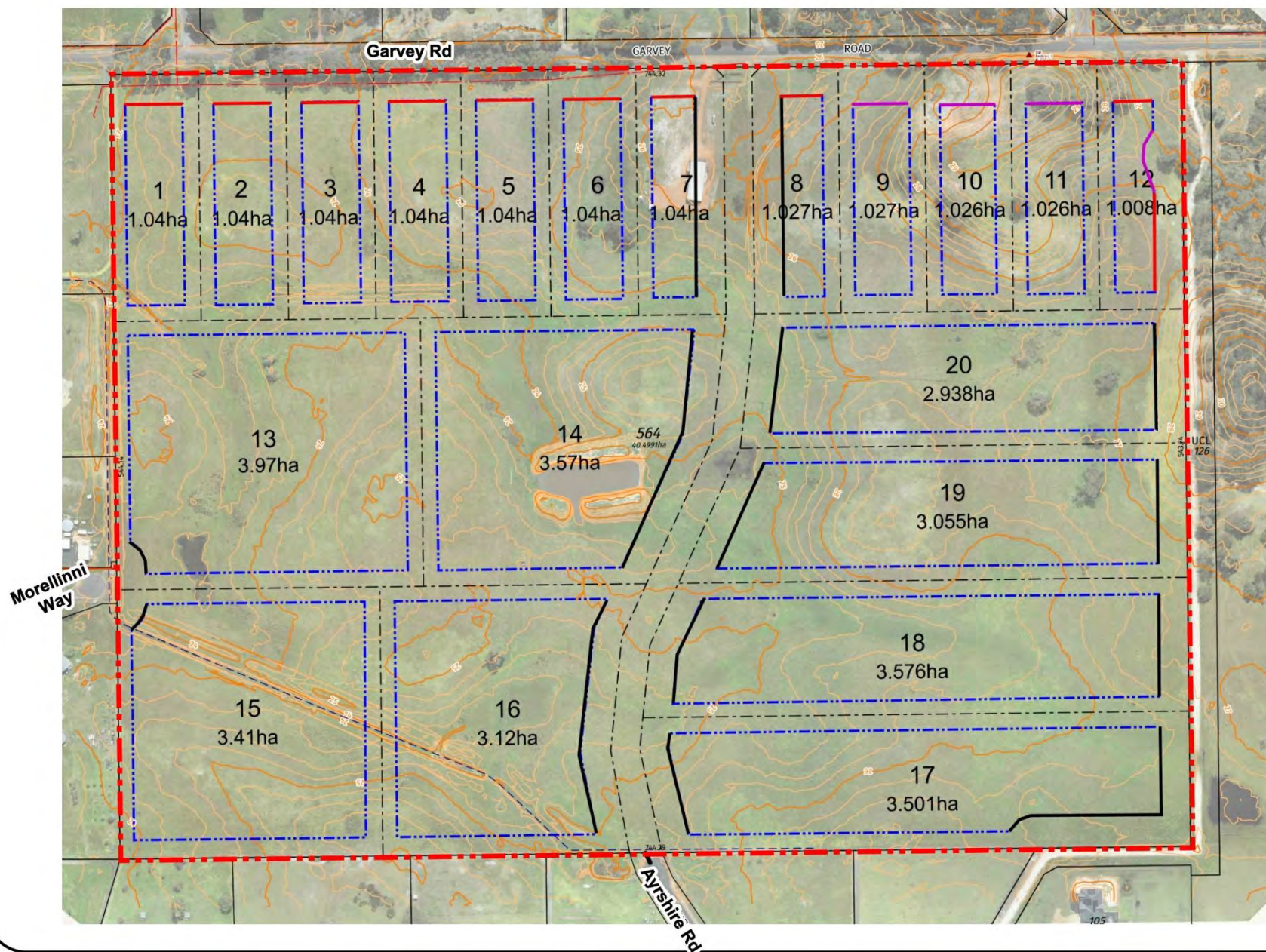


FIGURE 4
SUBDIVISION CONCEPT PLAN

3.0 Bushfire Assessment Results

3.1 Assessment Inputs - Vegetation Classification

All vegetation within 150m of the proposed development site has been classified in accordance with:

- Clause 2.2.3 of Australian Standard AS3959 Construction of Buildings in Bushfire Prone Areas;
- The Visual Guide for Bushfire Risk Assessment in Western Australia; and
- Applicable Fire Protection Australia BPAD Practice Notes.

The vegetation plots are shown in Figure 5 and described in Table 3.

Table 2 Vegetation Summary

Plot	Vegetation Class	Slope Deg	Description
1	Class A - Forest	>0 – 5	Mixed forest in surrounding rural residential lots typically Jarrah, Marri and Peppermint to 25m height with more than 50% canopy coverage.
2	Class A - Forest	>0 – 5	Mixed forest in Reserve 19722 typically Jarrah, Marri and Peppermint to 25m height with more than 60% canopy coverage and dense understorey with extreme near surface fuel loads.
3	Class A - Forest	>0 – 5	Forest vegetation along Garvey Road verges.
4	Class G Grassland	>0 – 5	Grassland in surrounding rural residential lots
5	Class G Grassland	>0 – 5	Grassland within the subject land
6	Class A - Forest	>0 – 5	Peppermint forest in Lot 2 with some Eucalypts to 20m height with more than 60% canopy coverage and dense understorey with extreme near surface fuel loads.
7	Excluded 2.2.3.2	N/A	Existing dwellings and maintained land.
8	Class G Grassland	>0 – 5	Broad acre grassland pasture within Lot 2.

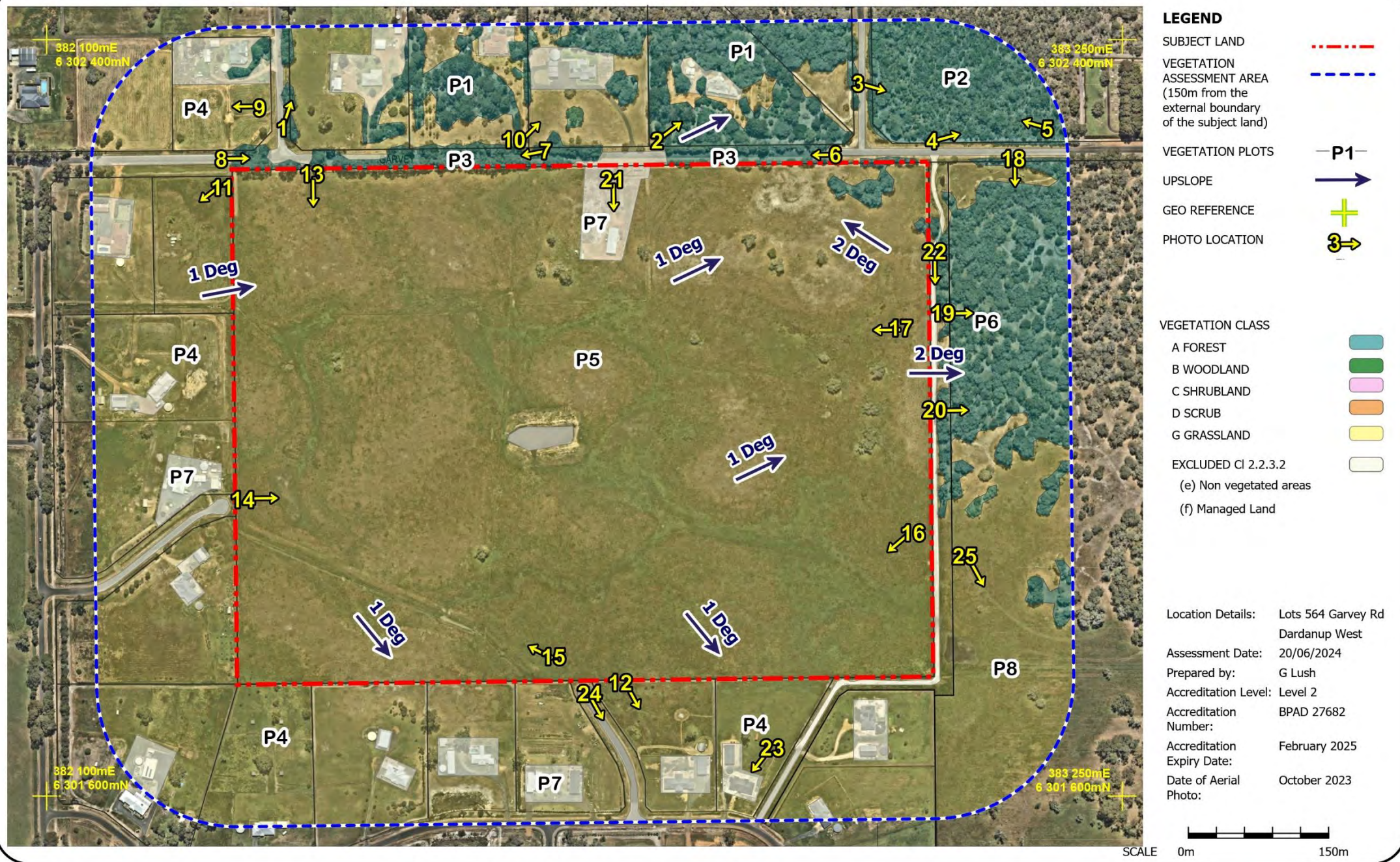


FIGURE 5
 VEGETATION CLASSIFICATION

Photo No 1 Plot No 1

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed forest in surrounding rural residential lots typically Jarrah, Marri and Peppermint to 25m height with more than 50% canopy coverage.



Photo No 2 Plot No 1

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed forest in surrounding rural residential lots typically Jarrah, Marri and Peppermint to 25m height with more than 50% canopy coverage.



Photo No 3 Plot No 2

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed forest in Reserve 19722 typically Jarrah, Marri and Peppermint to 25m height with more than 60% canopy coverage and dense scrub understorey with extreme near surface fuel loads.



Photo No 4 Plot No 2

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed forest in Reserve 19722 typically Jarrah, Marri and Peppermint to 25m height with more than 60% canopy coverage and dense scrub understorey with extreme near surface fuel loads.



Photo No 5 Plot No 2

Vegetation Classification

Class A Forest - Open forest A-03

Description

Mixed forest in Reserve 19722 typically Jarrah, Marri and Peppermint to 25m height with more than 60% canopy coverage and dense scrub understorey with extreme near surface fuel loads.



Photo No 6 Plot No 3

Vegetation Classification

Class A Forest - Open forest A-03

Description

Forest vegetation along Garvey Road verge. Narrow strip on both sides of the road, less than 20m apart, being Jarrah, and Marri to 25m height with more than 40% canopy coverage.



Photo No 7 Plot No 3

Vegetation Classification

Class A Forest - Open forest A-03

Description

Forest vegetation along Garvey Road verge. Narrow strip on both sides of the road, less than 20m apart, being Jarrah, and Marri to 25m height with more than 40% canopy coverage.



Photo No 8 Plot No 3

Vegetation Classification

Class A Forest - Open forest A-03

Description

Forest vegetation along Garvey Road verge. Narrow strip on both sides of the road, less than 20m apart, being Jarrah, and Marri to 25m height with more than 40% canopy coverage.



Photo No 9 Plot No 4

Vegetation Classification

Class G Grassland – Sown pasture G-26

Description

Grassland in surrounding rural residential lots.



Photo No 10 Plot No 4

Vegetation Classification

Class G Grassland – Sown pasture
G-26

Description

Grassland in surrounding rural
residential lots.



Photo No 11 Plot No 4

Vegetation Classification

Class G Grassland – Sown pasture
G-26

Description

Grassland in surrounding rural
residential lots.



Photo No 12 Plot No 4

Vegetation Classification

Class G Grassland – Sown pasture
G-26

Description

Grassland in surrounding rural
residential lots.



Photo No 13 Plot No 5

Vegetation Classification

Class G Grassland – Dense sown pasture G-25

Description

Improved pasture within the subject land with some scattered isolated paddock trees being less than 10% of the plot area..



Photo No 14 Plot No 5

Vegetation Classification

Class G Grassland – Dense sown pasture G-25

Description

Improved pasture within the subject land with some scattered isolated paddock trees being less than 10% of the plot area..



Photo No 15 Plot No 5

Vegetation Classification

Class G Grassland – Dense sown pasture G-25

Description

Improved pasture within the subject land with some scattered isolated paddock trees being less than 10% of the plot area..



Photo No 16 Plot No 5

Vegetation Classification

Class G Grassland – Dense sown pasture G-25

Description

Improved pasture within the subject land with some scattered isolated paddock trees being less than 10% of the plot area..



Photo No 17 Plot No 5

Vegetation Classification

Class G Grassland – Dense sown pasture G-25

Description

Improved pasture within the subject land with some scattered isolated paddock trees being less than 10% of the plot area..



Photo No 18 Plot No 6

Vegetation Classification

Class A Forest - Open forest A-03

Description

Peppermint forest in Lot 2 with some Eucalypts to 20m height with more than 60% canopy coverage and dense understorey with extreme near surface fuel loads.



Photo No 19 Plot No 6

Vegetation Classification

Class A Forest - Open forest A-03

Description

Peppermint forest in Lot 2 with some Eucalypts to 20m height with more than 60% canopy coverage and dense understorey with extreme near surface fuel loads.



Photo No 20 Plot No 6

Vegetation Classification

Class A Forest - Open forest A-03

Description

Peppermint forest in Lot 2 with some Eucalypts to 20m height with more than 60% canopy coverage and dense understorey with extreme near surface fuel loads.



Photo No 21 Plot No 7

Vegetation Classification

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description

Existing shed and stockyards with managed grass less than 100mm in height.



Photo No 22 Plot No 7

Vegetation Classification

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description

Existing emergency access way along the eastern boundary within a gazetted road reserve.



Photo No 23 Plot No 7

Vegetation Classification

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description

Existing dwellings and managed land with lawn areas less than 100mm in height.



Photo No 24 Plot No 7

Vegetation Classification

Excludable - 2.2.3.2(f) Low Threat Vegetation

Description

Ayrshire Road connecting to the southern boundary to be extended through the subject land.



Photo No 25 Plot No 8

Vegetation Classification

Class G Grassland – Sown pasture
G-26

Description

Broad acre grassland pasture within
Lot 2.



3.2 Assessment Outputs – BAL Contour

The revised classification of the vegetation recognising the proposed subdivision development is shown in Figure 6, with the grassland within the subject land being maintained as low threat vegetation (Plot 5).

A BAL Contour Map is shown in Figure 7 and 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 BAL are documented in Table 3 and all the proposed building envelopes / development sites will have a rating of BAL-29 or less.

It is noted that the development portions of Lots 13 – 17 are not designated as being bushfire prone. Consequently, no Bushfire Attack Level (BAL) Assessment is required and the bushfire construction provisions in the National Construction Code are not applicable.

Table 3 BAL Setbacks

Lot	Veg Plot	Vegetation Classification	Slope	Setback to Building Envelope	Assigned BAL Rating	Designated BFP Land
1	3	Class A - Forest	Flat	21m	BAL – 29	Yes
2	3	Class A - Forest	Flat	21m	BAL – 29	Yes
3	3	Class A - Forest	Flat	21m	BAL – 29	Yes
4	3	Class A - Forest	Flat	21m	BAL – 29	Yes
5	3	Class A - Forest	Flat	21m	BAL – 29	Yes
6	3	Class A - Forest	Flat	21m	BAL – 29	Yes
7	3	Class A - Forest	Flat	21m	BAL – 29	Yes
8	3	Class A - Forest	Flat	21m	BAL – 29	Yes
9	3	Class A - Forest	>0-5	27m	BAL – 29	Yes
10	3	Class A - Forest	>0-5	27m	BAL – 29	Yes
11	3	Class A - Forest	>0-5	27m	BAL – 29	Yes
12	6	Class A - Forest	>0-5	27m	BAL – 29	Yes
13	4	Class G Grassland	>0-5	10m	BAL – 29	No
14	4	Class G Grassland	>0-5	>50m	BAL – LOW	No
15	4	Class G Grassland	>0-5	10m	BAL – 29	No
16	4	Class G Grassland	Upslope	10m	BAL – 29	No
17	4	Class G Grassland	Upslope	10m	BAL – 29	No
18	6	Class A - Forest	>0-5	25m	BAL – 29	Yes
19	6	Class A - Forest	>0-5	25m	BAL – 29	Yes
20	6	Class A - Forest	>0-5	25m	BAL – 29	Yes

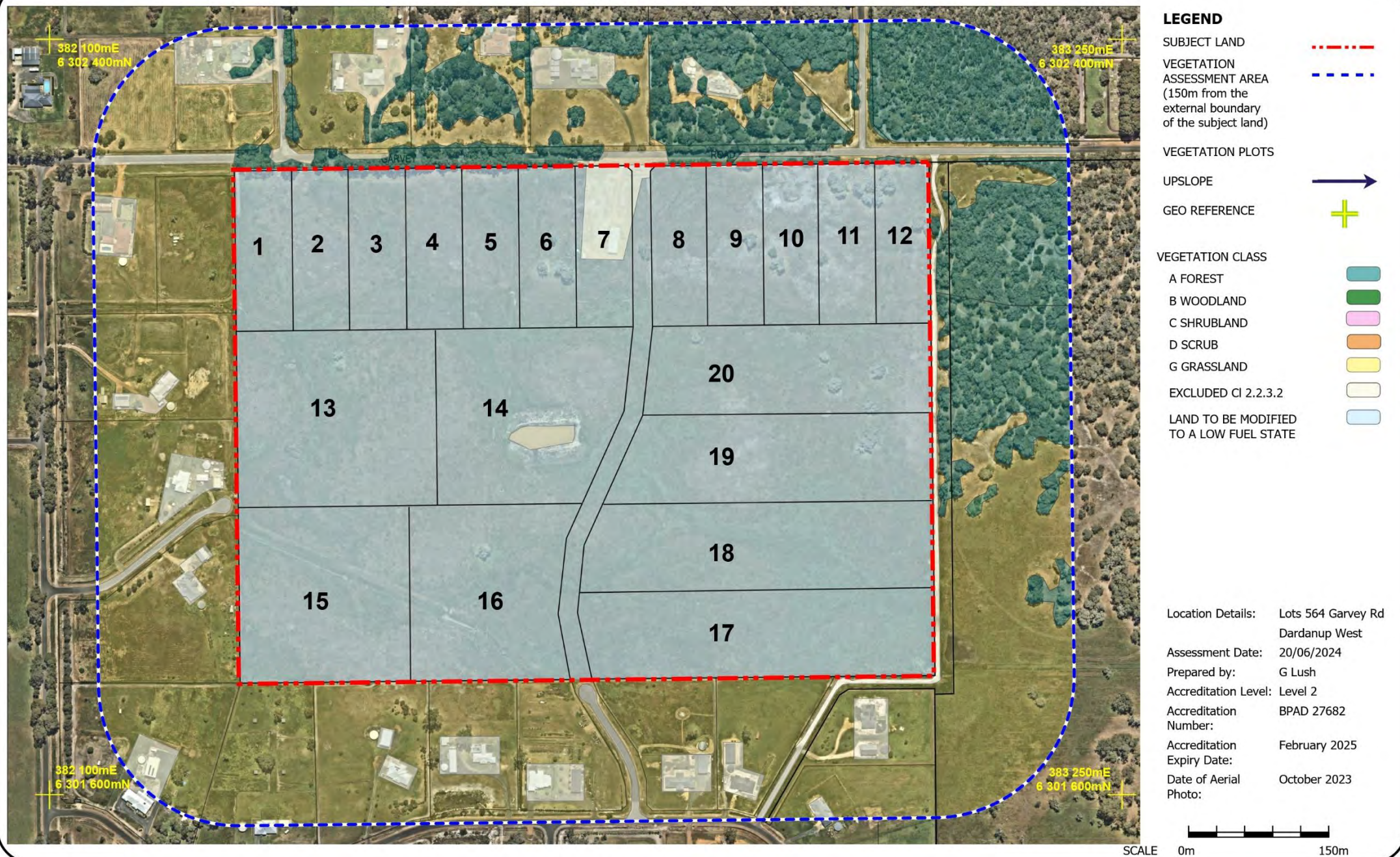


FIGURE 6
MODIFIED VEGETATION CLASSIFICATION

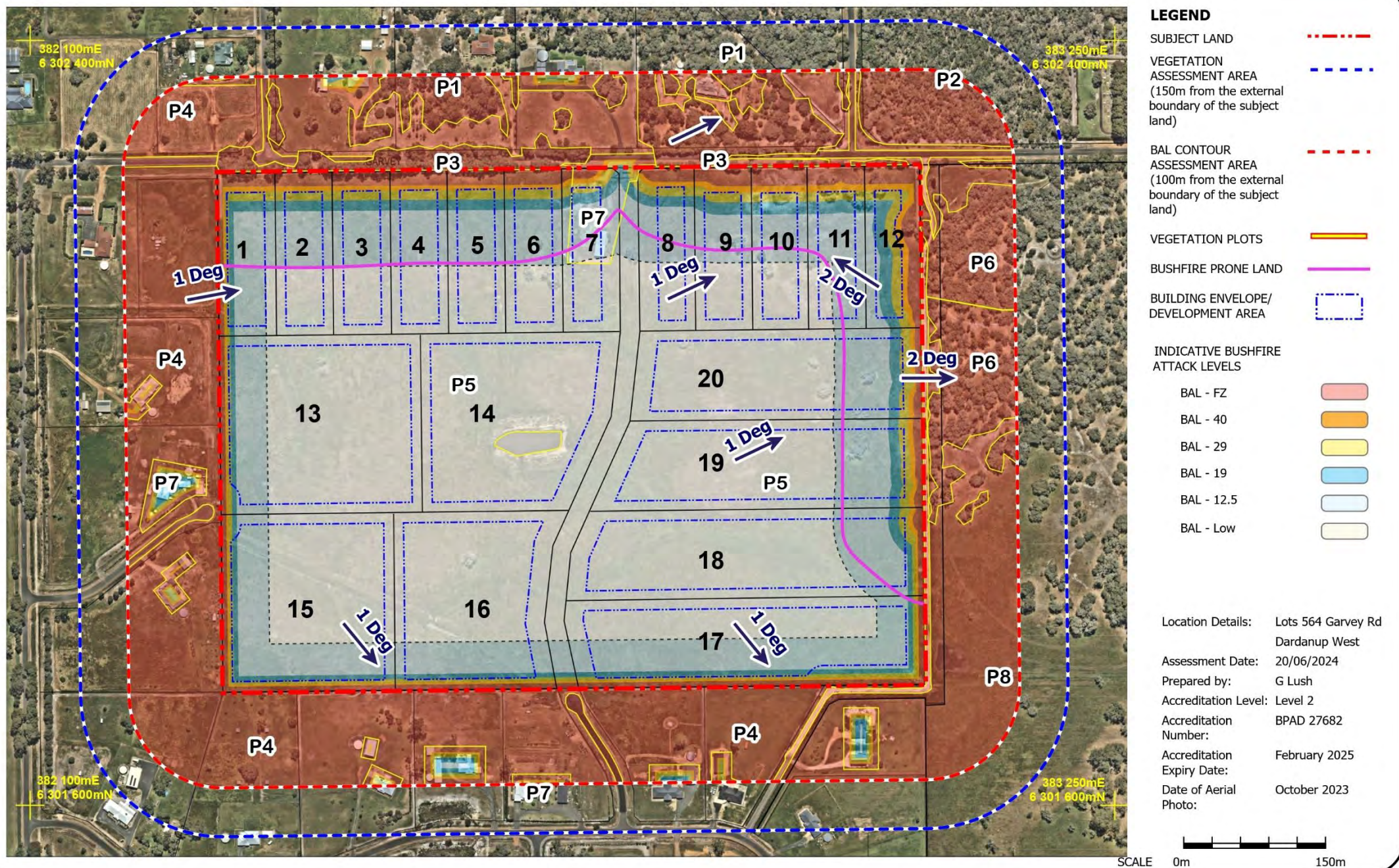


FIGURE 7
BAL CONTOUR MAP

The BAL Contours shown on this plan are indicative and reflect the anticipated ratings for the completed development, based upon the assumptions referenced in the report. They should not be used for BAL Assessments and maybe subject to change arising from alterations to site conditions, AS3959, practice notes, or methodology.



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4.0 Identification of Bushfire Hazard Issues

The context of the site to the surrounding local area is shown in Figure 8. The subject land is situated in an existing structure plan area, which is substantially developed. The surrounding land is a mixture of rural residential, and broad acre rural land uses, including irrigated pasture.

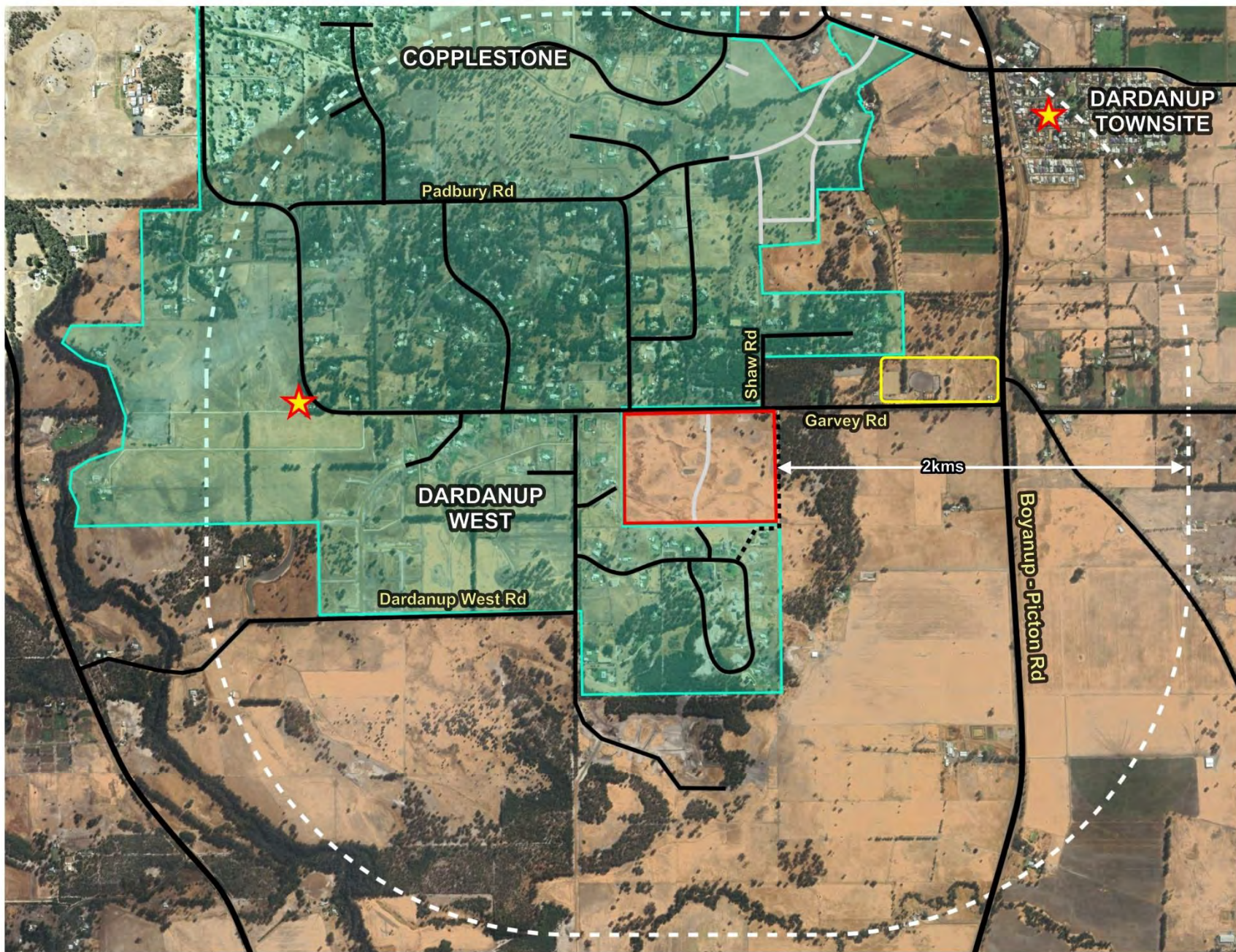
The principal bushfire hazard is the vegetation to the east and north east of the site being within R19722 on the northern side of Garvey Road and Lot 2 to the east of the site. There is fragmented and non-homogenous vegetation within many of the existing rural residential and linear vegetation along the road reserves.

Garvey Road is a local distributor road providing access in multiple directions connecting to Dardanup West Road and Padbury Road giving district access to the west and north west of the site.

Dardanup townsite includes local safer places, the town hall and the Dardanup Central Volunteer Bush Fire Brigade. The Dardanup Equestrian Centre can also potentially be a safer place as it is a large open space area with substantial carp parking areas.

The key bushfire management issues for the proposed development are:

- Provision of appropriate separation distances from permanent bushfire hazards surrounding the site to ensure a BAL rating of BAL-29 or less can be achieved;
- Ensuring that vegetation within hazard separation distance is maintained as low threat vegetation;
- Provision of appropriate vehicular access to ensure that the development of the site, including any staging, has egress in two different directions;
- Provision of appropriate water supply and associated infrastructure; and
- Construction of dwellings in accordance with AS3959 construction standards.



LEGEND

SUBJECT LAND

EXISTING
RURAL SMALL
HOLDING ZONES

PROPOSED ROAD

BUSHFIRE BRIGADE

DARDANUP
EQUESTRIAN CENTRE



FIGURE 8
LOCAL CONTEXT

5.0 Assessment Against the Bushfire Protection Criteria

5.1 BPC Elements

The requirements of the Bushfire Protection Criteria as contained in Version 1.4 (Dec 2021) of the Guidelines for Planning in Bushfire Prone Areas are referenced in the following sections.

5.1.1 Element 1 Location

Intent: To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.	
Acceptable Solution	Compliance
<p><u>A1.1 Development location</u></p> <p>The strategic planning proposal, subdivision and development application is located in an area that is or will, on completion, be subject to either a moderate or low bushfire hazard level, or BAL-29 or below.</p>	<p>All the designated building envelopes will have a rating of BAL-29 or less.</p>

5.1.2 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	Compliance
<p><u>A2.1 Asset Protection Zone</u></p> <p>Every habitable building is surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:</p> <ul style="list-style-type: none"> • 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. • 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. • Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones'. 	<p>The proposed lots are large enough to fully contain the asset protection zone within the lot boundaries. While these are to be the minimum distance required to achieve a BAL-29 rating, the Shire's Fire Prevention Order requires a 20m APZ for each dwelling.</p> <p>The proposed building exclusion areas, generally have a 20m setback from the lot boundaries. There are however a number of lots where this setback is only 10m typically being a side boundary. In this situation the APZ might extend over the lot boundary, but it is proposed that the whole of lots will be developed and maintained in accordance with the APZ specifications.</p>

5.1.3 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	Compliance
<p><u>A3.1 Public road</u></p> <p>The minimum requirements under this acceptable solution are applicable to all proposed and existing public roads.</p> <p>Public roads are to meet the minimum technical requirements in Table 6, Column 1.</p> <p>The trafficable (carriageway/pavement) width is to be in accordance with the relevant class of road in the Local Government Guidelines for Subdivisional Development (IPWEA Subdivision Guidelines), Liveable Neighbourhoods, Austroad standards and/or any applicable standards for the local government area.</p> <p><u>A3.2a Multiple access routes</u></p> <p>Public road access is to be provided in two different directions to at least two different suitable destinations with an all-weather surface (two-way access).</p> <p>If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200 metres from the subject lot(s) boundary to an intersection where two-way access is provided.</p> <p>The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints and the following requirements are met:</p> <ul style="list-style-type: none"> • the no-through road travels towards a suitable destination; and • the balance of the no-through road, that is greater than 200 metres from the subject site, is wholly within BAL-LOW, or is within a residential built-out area. <p><u>A3.2b Emergency access way</u></p> <p>Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution.</p>	<p>The vehicular access technical requirements (BPC Table 6) are shown in Table 4 at the end of this section.</p> <p>The proposed subdivision roads are to be designed in accordance with Institute of Public Works Engineering Australia WA Division Inc. (2009) Local Government Subdivisional Guidelines. This includes a minimum trafficable surface of 6m.</p> <p>The development site has access in multiple directions.</p> <p>There are no proposed emergency access ways.</p>

Acceptable Solution	Compliance
<p><u>A3.3 Through-roads</u></p> <p>All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where:</p> <ul style="list-style-type: none"> • it is demonstrated that no alternative road layout exists due to site constraints; and • the no-through road is a maximum length of 200 metres to an intersection providing two-way access, unless it satisfies the exemption provisions in A3.2a of this table. <p>A no-through road is to meet all the following requirements:</p> <ul style="list-style-type: none"> • requirements of a public road (Table 6, Column 1); and • turn-around area as shown in Figure 24 (18 metre diameter head). <p><u>A3.4a Perimeter roads</u></p> <p>A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed (including as part of a staged subdivision) with the aim of:</p> <ul style="list-style-type: none"> • separating areas of classified vegetation under AS3959, which adjoin the subject site, from the proposed lot(s); and • removing the need for battle-axe lots that back onto areas of classified vegetation. <p>A perimeter road is to meet the requirements contained in Table 6, Column 1.</p> <p>A perimeter road may not be required where:</p> <ul style="list-style-type: none"> • the adjoining classified vegetation is Class G Grassland; • lots are zoned for rural living or equivalent; • it is demonstrated that it cannot be provided due to site constraints; or • all lots have frontage to an existing public road. <p><u>A3.4b Fire service access route</u></p> <p>Where proposed lots adjoin classified vegetation under AS3959, and a perimeter road is not required in accordance with A3.4a, a fire service access route can be considered as an acceptable solution to provide firefighter access, where access is not available, to the classified vegetation.</p>	<p>There are no proposed no – through roads.</p> <p>Morellini Way is an existing cul-de-sac being approximately 190m in length that provides access to 2 lots. This will provide access to Lots 13 and 15 which are not designated as being bushfire prone.</p> <p>There is an existing road reserve on the eastern boundary that contains an emergency access way which fills the function of perimeter road. It is noted that the adjoining lots will not have any direct access to this and it is expected that any dwelling will be located near the proposed subdivision road at the front of the lot being more than 100m distance from the hazard vegetation.</p> <p>This is not applicable as no fire access route is being provided.</p>

Acceptable Solution	Compliance
<p><u>A3.5 Battle-axe access legs</u></p> <p>Where it is demonstrated that a battle-axe cannot be avoided due to site constraints, it can be considered as an acceptable solution.</p> <p>There are no battle-axe technical requirements where the point the battle-axe access leg joins the effective area of the lot, is less than 50 metres from a public road in a reticulated area.</p> <p>In circumstances where the above condition is not met, or the battle-axe is in a non-reticulated water area, the battle-axe is to meet all the following requirements:</p> <ul style="list-style-type: none"> • requirements in Table 6, Column 4; and • passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres). 	<p>This is not applicable as no battle axe lots are being provided.</p>
<p><u>A3.6 Private driveway</u></p> <p>There are no private driveway technical requirements where the private driveway is:</p> <ul style="list-style-type: none"> • within a lot serviced by reticulated water; • no greater than 70 metres in length between the most distant external part of the development site and the public road measured as a hose lay; and • accessed by a public road where the road speed limit is not greater than 70 km/h. • within a lot serviced by reticulated water. <p>In circumstances where all of the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following:</p> <ul style="list-style-type: none"> • requirements in Table 6, Column 4; • passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres); and • 18m diameter turn-around area as shown in Figure 28 and within 30 metres of the habitable building. 	<p>This provision relates to development applications rather than the Amendment or subdivision. As the site does not have a reticulated water supply, all driveways are to comply with the provisions including having an 18m diameter turning area adjacent to the dwelling.</p>

5.1.4 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	Compliance
<p><u>A4.1 Identification of future water supply</u></p> <p>Evidence that a reticulated or sufficient non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2.</p> <p>Where the provision of a strategic water tank(s) is required a suitable area within a road reserve or a dedicated lot the location should be identified, should be identified on the structure plan, to the satisfaction of the local government.</p>	<p>As the subdivision creates 20 lots, a 50,000L strategic water tank is required. Consistent with the surrounding subdivisions, this can be located at the West Dardanup Bush Fire Brigade station which is located 1.4kms west of the subject land as shown in Figure 8.</p>
<p><u>A4.2 Provision of water for firefighting purposes</u></p> <p>Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority.</p> <p>Where these specifications cannot be met, then the following applies:</p> <ul style="list-style-type: none"> • The provision of a water tank(s), in accordance with the requirements of Schedule 2 being 50,000L per 25 lots or part thereof or 10,000L tank per lot. • Where the provision of a strategic water tank(s) is applicable, then the following requirements apply: <ul style="list-style-type: none"> – land to be ceded free of cost to the local government for the placement of the tank(s); – the lot or road reserve where the tank is to be located is identified on the plan of subdivision; – tank capacity, construction, and fittings, provided in accordance with the requirements of Schedule 2; and – a strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). 	<p>The site is not connected to the reticulated water supply.</p> <p>The subject land is not connected to a reticulated water supply and it is proposed to provide one (1) 50,000L water tanks as approved by the Shire at the West Dardanup Bush Fire Brigade station.</p>
<p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s), in accordance with the requirements listed above.</p>	<p>Not applicable.</p>

5.2 Additional Management Strategies

5.2.1 Individual Water Supply

The provision of and maintenance of reliable water supplies is essential in fire control and a suitable water supply must be readily available and accessible to Fire Appliances at all times. While there will be a strategic water tank for fire fighting, the fire protection of lots will be improved by having an additional water supply for each dwelling.

It is important to note, that a combined tank of drinking water and water for firefighting purposes is not recommended. This requirement is necessary, as stagnant water may alter the quality of the drinking water and the emergency services, by law, may not be able to take water from the water supply to suppress a bushfire.

The available water supply should be a minimum of 10,000L with a non electric pump and appropriate fittings as follows:

- 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.

5.2.2 Purchaser Advice

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

5.2.3 Bushfire Survival Plan

Before the start of the fire season landowners need to decide what to do in the event of a bushfire including:

- Property preparation and maintenance;
- Knowing the bushfire warning levels and triggers for when to leave;
- Knowing where to go; and
- Knowing which way to go.

This can be accomplished by the preparation of a Bushfire Survival Plan and Preparedness-Toolkit is available online at <https://mybushfireplan.wa.gov.au/>

6.0 Responsibilities for Implementation and Management of the Bushfire Measures

The management of the risk posed by bushfires is a shared responsibility between landowners, government and industry. These responsibilities are documented in Table 4.

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

Table 4 Implementation

No	MANAGEMENT ACTION
1.0 Developer Prior to Issue of Titles (Subdivision)	
1.1	Updating the Bushfire Management Plan to reflect the subdivision application lot design.
1.2	Compliance with the applicable measures in this Bushfire Management Plan relating to the subdivision construction including those outlined in Section 5.0 and any vegetation modifications required to achieve the proposed BAL ratings.
1.3	Construction of the subdivision roads to standards outlined in the BMP to ensure safe access and egress.
1.4	Construction of the battle axe legs to the standards outlined in the BMP/subdivision approval.
1.5	Provision of (1) one 50,000L water tank at the West Dardanup Bush Fire Brigade station to the requirements and satisfaction of the Shire of Dardanup as follows: <ol style="list-style-type: none"> 1. The water tanks, associated works and all plumbing are to be arranged, constructed, and paid for by the developer; 2. The water tanks are to be placed on 8m diameter sand pad compacted to min 9 blows per 300mm SPT, blue metal to be place around the base of the tank (min 20mm); and 3. The water tanks are to be connected to the existing tanks on the reserve and the following provided by the developer: <ol style="list-style-type: none"> a. Existing water tank to have Gate valve and T piece with gate valve with 3 inch camlock installed; and b. New tank to have 3 inch gate valve at the opposite side to the gate valve.
2.0 Developer Prior to Sale of Lots (Purchase)	
2.1	Providing prospective purchasers with a summary of this BMP
3.0 Landowner Prior to Occupancy (Development)	
3.1	Siting of dwellings so as to have a maximum BAL-29 rating.
3.2	Ensuring that any application for a building permit for a dwelling (on land designated as being bushfire prone) is to include an individual BAL assessment to confirm that sufficient land has been cleared to provide for BAL-29 setbacks.
3.3	That any driveway longer than 50m are to be designed and constructed in accordance with the following specifications: <ul style="list-style-type: none"> • A minimum 4m trafficable surface (0.5m shoulders); • Minimum 6m horizontal clearance to vegetation; • Minimum 4.5m vertical clearance to vegetation; • Have an all-weather surface (i.e. compacted gravel, limestone or sealed); and • Provide a 18m diameter turning circle adjacent to the dwelling.
3.4	Consider the voluntary provision of a 10,000L static water supply tank for firefighting with:

No	MANAGEMENT ACTION
	<ul style="list-style-type: none"> 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.

4.0 Landowner (Ongoing)	
4.1	Undertaking regular maintenance of their property in preparation for the annual fire season.
4.2	Ensuring that all fire mitigation measures shall be completed by the date prescribed in Shire's Fire Prevention Order.
4.3	Preparing a bushfire survival plan and reviewing this annually before the fire season.
5.0 Local Government Management (Ongoing)	
5.1	Ensuring Building Permit Applications and Development Applications are compliant with the building and land use planning provisions.
5.2	Enforce compliance with its annual Fire Prevention Order