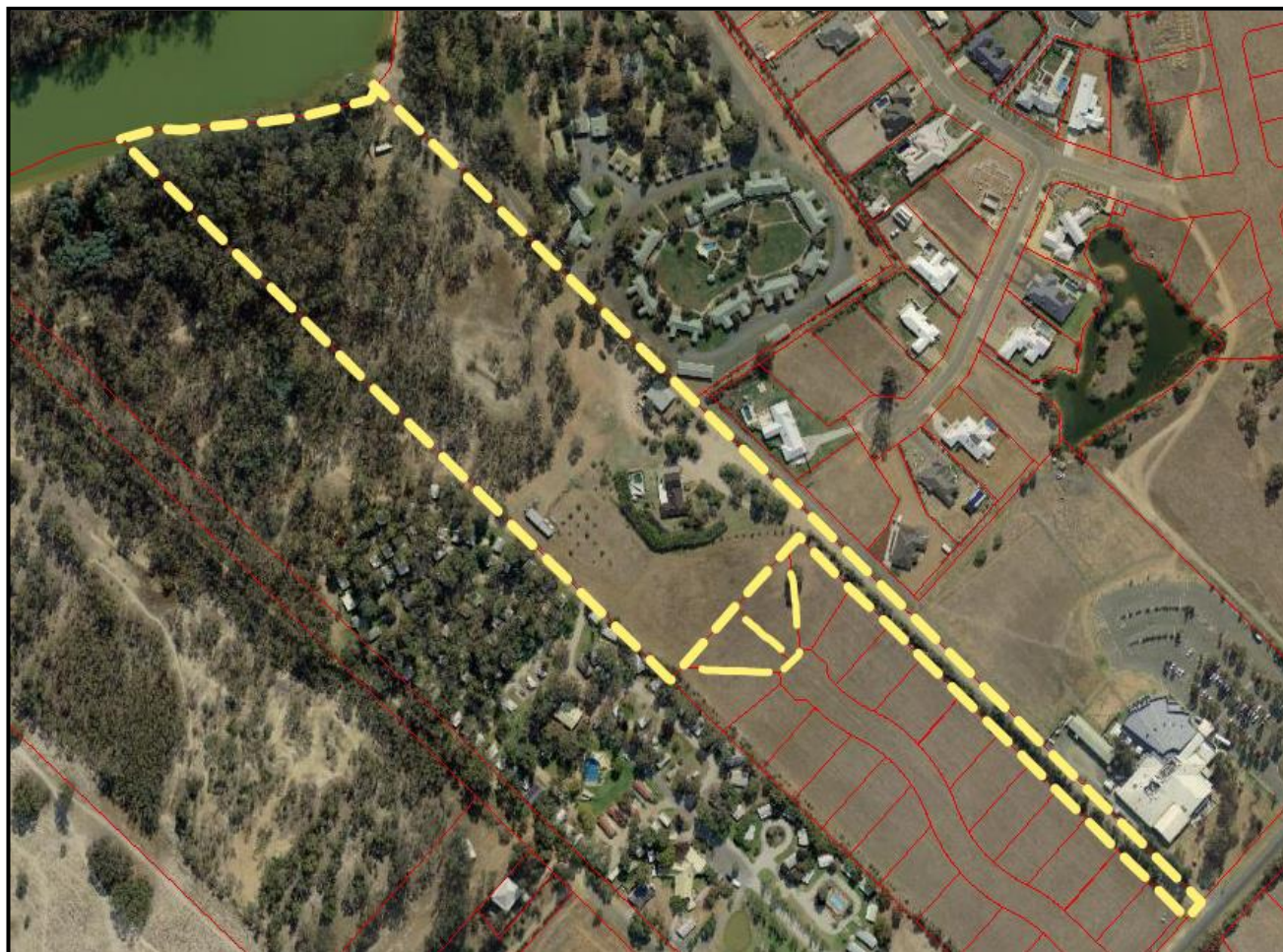


BUSHFIRE ASSESSMENT REPORT

12 Lot Subdivision (Re-Subdivision)

66 Merool Road and 23 & 24 Bayaderra Court, Moama NSW 2731

**PREPARED BY:**

Applicant / Consultant name	Planright Surveying
Address	PO Box 586, Echuca Vic 3564
Telephone	03 5482 1699
Email	office@planright.net.au

REVISIONS:

Revision 2	05 June 2024
------------	--------------

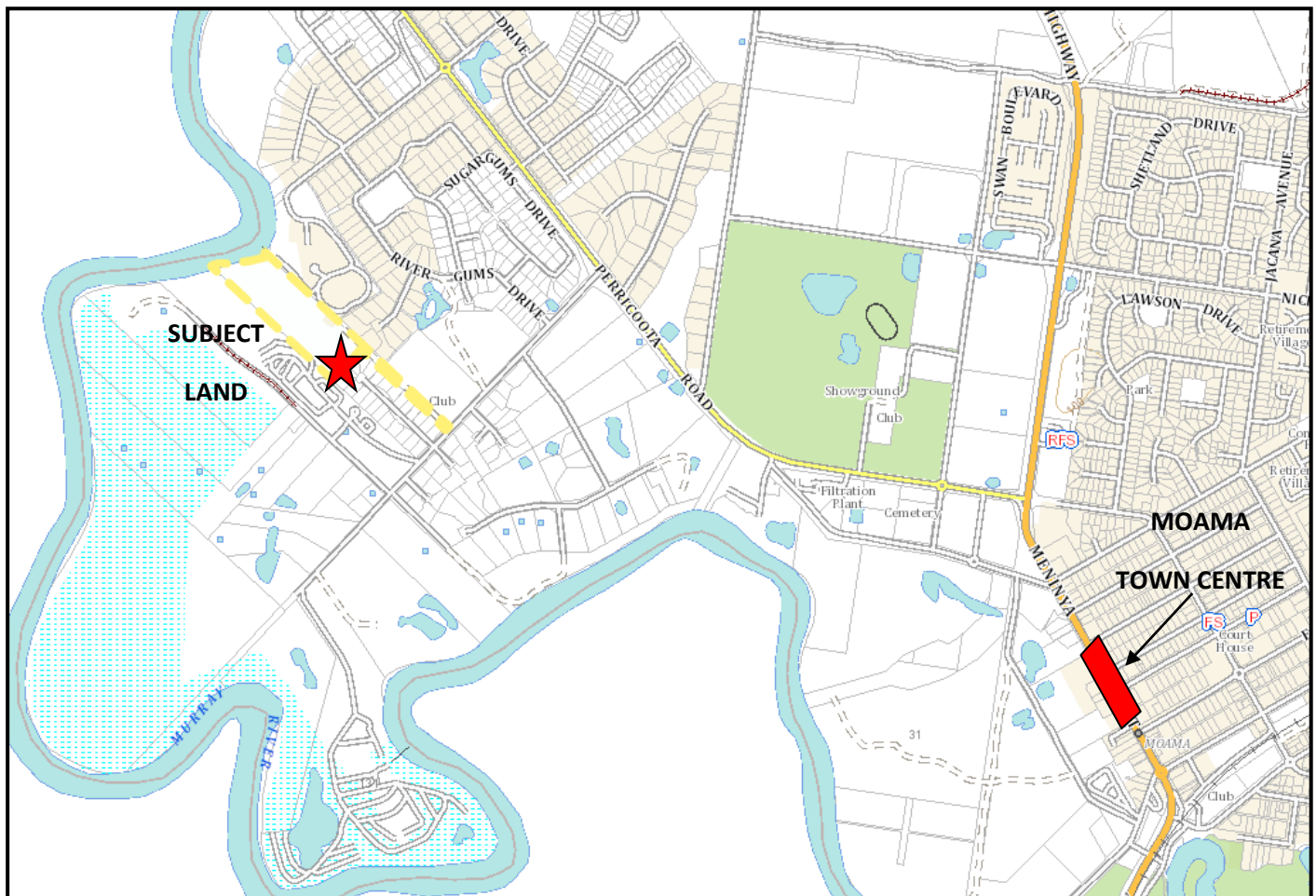
**1.0 INTRODUCTION**

The proposed development is located on land identified as being bushfire prone and as such a Bushfire Assessment report is required to accompany the development application as submitted. The subject land is located within an area with an FDI of 80.

The development must conform to the specifications and requirements of the NSW Rural Fire Service outlined in *Planning for Bushfire Protection – a guide for land use planners, fire authorities, developers and home owners*. The development is for a 12-lot subdivision (re-subdivision), and as such must be assessed against the provisions for subdivision in bushfire-prone areas. The subject properties are known as 66 Merool Road (Lot 2 in DP1206253) which is currently developed for a single dwelling, shedding, and a business, and 23 & 24 Bayaderra Court (Lots 12 & 13 in DP1259705) Moama, which were part of Stage 1 subdivision.

2.0 SUBJECT SITE DESCRIPTION & SURROUND LAND USES

The area of all subject lots is approximately 63,822m² in total and is located within well-established area, approximately 2.5km from the Moama town centre.



Locality Plan

Vegetation on the western portion of 66 Merool Road consists of a variety of native scattered trees and low shrubs. The remainder of this parcel is modified and maintained for personal garden uses associated

with the existing dwelling. The section of higher risk however is the western portion of the Grassy Woodland environment, which provides a risk of bushfire to the future development of the land. The existing properties located within Bayaderra Court are free of vegetation.

As evident on the submitted Bushfire Management Plan, the land slopes towards the Murray River over the span of 400m+, towards the mapped floodplain, on an approximate slope of 2 degrees (variation between 0 and 5 degrees). The area designated for residential uses is at the front of the subject allotments.

The bushfire prone area does fluctuate in AHD heights, but is located generally north-west of the development areas, and is separated from future dwellings.

The subject lots are mostly zoned R1 (General residential), but the rear portion of Lot 1 is zoned E3 (Environmental Management) being the floodplain/wetland area.

There are no threatened species of flora or fauna known within the local area, as identified within the BiotNet Atlas database pdf attached with this application. Some vulnerable species are known to inhabit similar habitats within the area and state, and therefore could be evident within the rear of the site. No significant vegetation clearing is necessary for this application; therefore, these species will not be harmed.

All essential services are existing within the first stage of the estate, so there will be minimal works required to extend infrastructure to each lot. The proposed subdivision is not anticipated to cause any issues regarding soil degradation, erosion or any other similar environmental impacts.

3.0 PROPOSAL



This application is a 12-lot subdivision (re-subdivision), which is an extension of the River Sands estate located within Moama. Lots will range between 1511m² and 3999m² in area, with a single larger parcel designated for the protection of E3 land, which sits at 3.686ha (Lot 1).

4.0 ASSESSMENT OF VEGETATION

Under the Australian Standard *AS 3959-2018 Construction of buildings in bushfire prone area*, vegetation that does not trigger a BAL greater than BAL-LOW (i.e. Low threat) according to AS 3959 includes the following:

- Vegetation of any type more than 100 m from the site;
- Single areas of vegetation less than 1 ha in area and not within 100 m of other areas of vegetation being classified;
- Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site or each other;
- Strips of vegetation less than 20 m wide (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified;
- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops;
- Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parkland, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and wind breaks.

As evident by some sections of the property, sections of scattered vegetation less than 0.25ha and not within 20m of each other are applicable to this assessment; however, they are a low threat, reducing the threat of bushfire spread to the future dwellings on the land.

Semi-arid woodland is deemed to be the closest classification to the subject vegetation.

5.0 SLOPE OF VEGETATION

The site and surrounding lands slope towards the Murray River in varying degrees of decline. Site levels vary from 92.00m to 97.50m over the 450m+ expanse.

The overall slope of the land varies between 0 and 5 degrees.

See contour plan for details.

6.0 STANDARDS FOR BUSH FIRE PROTECTION MEASURES FOR RESIDENTIAL AND RURAL RESIDENTIAL SUBDIVISIONS

<u>Asset Protection Zones</u> Intent of measures: <i>To provide sufficient space and maintain reduced fuel loads, so as to ensure radiant heat levels at building are below critical limits and to prevent direct flame contact with a building.</i>		
Performance criteria	Acceptable solutions	
The intent may be achieved where;		
<ul style="list-style-type: none"> <i>Radiant heat levels at any point on a proposed building will not exceed 29kW/m²</i> 	<ul style="list-style-type: none"> <i>An APZ is provided in accordance with the relevant tables/figures in Appendix 2 of this document.</i> <i>The APZ is wholly within the boundaries of the development site. Exceptional circumstances may apply (see section 3.3)</i> 	<p>An APZ will be better implemented at the time of a dwelling Development Application (DA), which will be in accordance with Table A1.12.3 from the RFS <i>Planning For Bush Fire Protection</i> report.</p> <p>The Vegetation Formation Class has been assessed as woodland, and the effective slope of the site is approximately 2 degrees when considering the run length.</p> <p>From an initial assessment, the APZ on Lots 1-5 are not expected to be wholly within the boundaries of each site. The site however is modified, and very little vegetation is evident on any of the properties. An appropriate APZ of 13m can be located along sections of Lots 1-5, between areas suitable for dwellings and towards the bushfire threat.</p> <p>Abutting land contains a line of scattered trees which are used as a buffer and screen. This vegetation is maintained, and little threat to the property.</p>
<ul style="list-style-type: none"> <i>APZs are managed and maintained to prevent the spread of a fire towards the building.</i> 	<ul style="list-style-type: none"> <i>In accordance with the requirements of 'Standards for Asset Protection Zones (RFS 2005). Note - a Monitoring and Fuel Management Program should be required as a condition of development consent.</i> 	<p>Existing parcel of 66 Merool Road (Proposed Lots 1-5) is currently developed upon for residential uses, which is regularly managed to reduce fire risk. The E3 Section of the land is predominantly managed (regular clearing of leaf matter). This area contains young regrowth; however, little leaf litter or undergrowth is present.</p> <p>The remaining land subject to the subdivision is maintained due to recent subdivision works and maintenance for the existing dwelling.</p>

<ul style="list-style-type: none"> APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated. 	<ul style="list-style-type: none"> The APZ is located on lands with a slope less than 18 degrees. 	<p>Works for the extension of existing services will be required for this application.</p> <p>The site is subject to drop towards the Murray River; however, this sloping is minor over the length of the property. An APZ for future dwelling will not be located on land greater than 18 degrees.</p> <p>The rear of Proposed Lot 1 is to contain scattered and clumped indigenous vegetation (Woodlands) which is the main risk of bushfire to the proposed development. Due to the scattering, not all of this vegetation can be assessed as a major threat to future dwellings.</p> <p>The main affected area is E3 Environmental Management Land, which is maintained as appropriate, and contains minor leaf litter and undergrowth.</p> <p>It is not expected that soil stability will be compromised in any way through this subdivision.</p>
---	--	--

Access – Property Access

Intent of measures:

To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupants faced with evacuation.

Performance criteria	Acceptable solutions	
The intent may be achieved where;		
<ul style="list-style-type: none"> Access to properties is provided in recognition of the risk to fire fighters and/or evacuation occupants. 	<ul style="list-style-type: none"> At least one alternative property access road is provided for individual dwellings (or groups of dwellings) that are located more than 200 metres from a public through road. 	<p>Each lot is anticipated to contain a dwelling in the future, which will be subject to Development Approval. A BAL assessment based on the future dwelling will be required at the time of an application.</p> <p>A dead-end road is not avoidable in this instance. An alternative solution put forth is the provision of an appropriately dimensioned (12-metre outer radius) turning circle for the movement of emergency vehicle access at the rear of Bayaderra Court. In accordance with section A3.3 of the RFS Report, dead ends that are longer than 200m are allowable with consideration of the above alternative option.</p> <p>The existing internal road is sufficient in</p>

		size to accommodate both firefighting and residential vehicles through ingress and egress.
<ul style="list-style-type: none"> <i>The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles.</i> <i>All weather access is provided</i> 	<ul style="list-style-type: none"> <i>Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes</i> <i>Roads do not traverse a wetland or to other land potentially subject to periodic inundation (other than a flood or storm surge).</i> 	<p>Ingress/egress from the lots will be via sealed driveways and roads, which are to be sealed, and in good condition.</p> <p>The capacity of non-perimeter road surface is sufficient to carry fully loaded firefighting vehicles.</p>
<ul style="list-style-type: none"> <i>Road widths and design enable safe access for vehicles</i> 	<ul style="list-style-type: none"> <i>A minimum carriageway width of four metres for rural-residential areas, rural landholdings or urban areas with a distance of greater than 70m from the nearest hydrant point to the most external part of the proposed building (or footprint)</i> <i>In forest, woodland and heath situations, rural property access roads have passing bays every 200 metre that are 20 meters long by 2 meters wide, making a minimum trafficable width of six metres at the passing bay.</i> <i>A minimum vertical clearance of four metres to any overhanging obstruction, including tree branches.</i> <i>Internal road for rural properties provide a loop road around any dwelling or incorporate a turning circle with a minimum 12 metre outer radius. Curves have a minimum inner radius of six metres and minimal in number to allow for rapid access and egress.</i> <i>The minimum distance</i> 	<p>The properties are accessed from Bayaderra Court, which is sealed and in good condition, with a seal width across the roadway of approximately 8 metres.</p> <p>There are no overhanging obstructions on any of the properties.</p> <p>Court bowls provide adequate turning circles for fire fighting vehicles.</p> <p>The grade of the roads is practically flat.</p> <p>All roads are public roads, maintained by council and no restrictions or impediments to access apply.</p>

	<p><i>between inner and other curves is six metres. The cross fall is not more than 10 degrees</i></p> <ul style="list-style-type: none"> • <i>Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.</i> • <i>Access to a development comprising more than three dwellings have formalised access by dedication of a road and not by right of way.</i> 	
<p><u>Services – Water, gas and electricity</u></p> <p>Intent of measures:</p> <p><i>To provide adequate water services for the protection of buildings during and after the passage of a bushfire, and to locate gas and electricity so as not to contribute to the risk of fire to buildings</i></p>		
<i>The intent may be achieved where;</i>		
<p><i>Reticulated water supplies</i></p> <ul style="list-style-type: none"> • <i>Water supplies are easily accessible and located at regular intervals.</i> 	<ul style="list-style-type: none"> • <i>Reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter road.</i> • <i>Fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority, once development has been completed. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles.</i> • <i>Hydrants are not located within any road carriageway.</i> • <i>All above ground water and gas service pipes external to the building are metal, including and up to any taps.</i> • <i>The provisions of parking on public roads are met.</i> 	<p>A reticulated water system has been installed in Stage 1, which is to be extended for stage 2 as necessary, and maintained by council. This is already compliant with Australian Standards and will remain so after its extension.</p> <p>All dwellings proposed for Lots 1-5 will be constructed in accordance with the PBP and AS_3959_2018 guidelines. Another BAL rating based on the exact location and design of each dwelling will be required when a Development Application is submitted.</p> <p>Road reserves are 20 metres wide within Bayaderra Court, with wide grass shoulders. This provides a large amount of area for parking, and access for emergency vehicles.</p> <p>All existing gas and water service pipes are either located underground or metal if above ground.</p>

<p>Non-reticulated water supply area.</p> <ul style="list-style-type: none"> For rural-residential and rural developments (or settlements) in bush fire prone areas, a water supply reserve dedicated to firefighting purposes is installed and maintained. The supply of water can be an amalgam of minimum quantities for each lot in the subdivision (community titled subdivisions), or held individually on each lot. 	<ul style="list-style-type: none"> Not applicable 	<p>A raw water system has been installed to service Stage 1, which will be extended to supply Stage 2.</p> <p>A sufficient number of fire plugs are available within Stage 1 and further hydrants will be installed in this stage in accordance with existing regulations.</p>
<p>Electricity Services</p> <ul style="list-style-type: none"> Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings 	<ul style="list-style-type: none"> Where practicable, electrical transmission lines are underground. Where overhead electrical transmission lines are proposed: <ul style="list-style-type: none"> Lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and No part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002) 	<p>The electricity supply in Stage 1 is underground, and will remain so for Stage 2.</p>
<p>Gas Services</p> <ul style="list-style-type: none"> Location of gas services will not lead to ignition of surrounding bush land or the fabric of buildings. 	<ul style="list-style-type: none"> Reticulated or bottled gas is installed and maintained in accordance with AS 1596 - 2002 and the requirements of relevant authorities. Metal piping is to be used. All fixed LPG tanks are kept clear of all flammable materials to a distance of 	<p>Underground gas is already installed in Stage 1, and will be extended as required to future dwellings. These areas are not anticipated to be located within proximity to a high bushfire threat.</p> <p>All services are to be installed and maintained in appropriate and safe locations on-site.</p>

	<p><i>10 metres and shielded on the hazard side of the installation.</i></p> <ul style="list-style-type: none"> <i>If gas cylinders need to be kept close to the building, the release valves must be directed away from the building and at least 2 metres away from any combustible material, so that they do not act as catalysts to combustion. Connections to and from gas cylinders are metal.</i> <i>Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.</i> 	
--	--	--

7.0 BAL ASSESSMENT OF FUTURE DWELLINGS

Fire Danger Index: 80

	<i>Lot 5</i>	<i>Lot 4</i>	<i>Lot 3</i>	<i>Lot 2</i>	<i>Lot 1</i>
<i>Classified Vegetation Type</i>	Woodland	Woodland	Woodland	Woodland (low threat scattered)	Woodland (low threat scattered)
<i>Distance to Vegetation</i>	≈20-29m	≈20-29m	≈ 20-29m	NA ≈150m +	NA ≈150m +
<i>Effective Slope (Degrees)</i>	0 - 5	0 - 5	0 - 5	NA	NA
<i>BAL Rating</i>	BAL 12.5 or 19*	BAL 12.5 or 19*	BAL 12.5 or 19*	BAL 12.5*	BAL 12.5*

* See attached bushfire Management Plan for further information

Lots 6 and 12 are affected by bushfire mapping due the buffer zone from hazardous vegetation. These have not been assessed due to exceeding 150m. A BAL of 12.5 is determined for these parcels.

The subject BAL assessments above are calculated based on the preliminary building envelopes demonstrated in the Bushfire Management Plan attached with this application. Two envelope options have been put forth, providing flexibility for the landowner's dependent upon where they wish to construct their dwellings. Restrictions to building envelopes are also based on flood potential and landscape sloping, which have been taken into account with this assessment.

This assessment determines that all lots should be able to achieve a BAL-12.5 construction standard. This takes into consideration the current condition of the site, and the future development and location of dwellings (based on the recommended building envelopes put forth in the Bushfire Management Plan).

NOTE: This is a preliminary assessment to determine the suitability of development on the bushfire prone land. A future BAL assessment will be required for all Development Applications regarding habitable structures within lots 1 – 5 of this application.

8.0 SITE PHOTOS



1. View of clearing from northern boundary.

Scattered woodland vegetation evident in distance. Some grass.
Predominantly bare, with little to no leaf litter.

Medium to low threat.



2. View of rear vegetation within floodway from northern boundary

Woodland vegetation with evidence of small regrowth. Minor leaf litter evident.

Medium to low threat.



3. Vegetation currently located within proposed lots 6,7, & 8.

Vegetation consists predominantly of scattered grass patches, and dead vegetation.

Low threat.



4. View of woodland vegetation within floodway from north eastern boundary

Woodland with evidence of small regrowth. Minor leaf litter evident.

Medium to low threat.



5. South western view of woodland vegetation fronting lots 3-5.

Small shrubs and minor leaf litter evident.

Canopy cover approximately $\approx 15-30\%$.

Medium to low threat.



6. North western of patchy woodland vegetation fronting lots 3-5.

Small shrubs and minor leaf litter evident.

Canopy cover approximately $\approx 15-30\%$.

Medium to low threat.



7. View of woodland vegetation along western boundary from internal clearing.

Small shrubs and minor leaf litter evident.

Canopy cover approximately $\approx 15-30\%$.

Medium to low threat.



8. View of woodland vegetation along western boundary.

Vegetation appears dense; however, predominantly patchy regrowth. Canopy cover approximately $\approx 25-30\%$.

Small shrubs and minor branch/leaf litter evident.

Medium to low threat.



9. View of woodland directly north of old dam. floodway from northern boundary

Small shrubs and minor branch/leaf litter evident.

Low threat.



10. Vegetation within centre of clearing. Scattered woodland with minimal leaf/branch litter. Pile within centre demonstrating land management of potential fire threats. Low threat.


9.0 CONCLUSION

This report leads to the following conclusions:

- The proposed development is for a 12-lot subdivision (re-subdivision), which does not alter the existing land use or significantly change the interface of the property with adjacent land, and will not increase the risk to life or property.
- The property generally complies with the current planning controls and standards for bush fire protection measures so it is considered that the proposed development meets the requirements of the EPA 1997 & the Rural Fires Act 1997.
- Each property is able to achieve a BAL12.5 construction standard rating, which will be subject to further approvals.
- Future dwellings on each parcel will require Development Approval, in which case each can be assessed on their merits.

LEGEND

BOUNDARY AS DEFINED BY MURRAY RIVER
COUNCIL'S BUSHFIRE PRONE LAND MAP

 BUSHFIRE PRONE LAND (BUFFER ZONE)

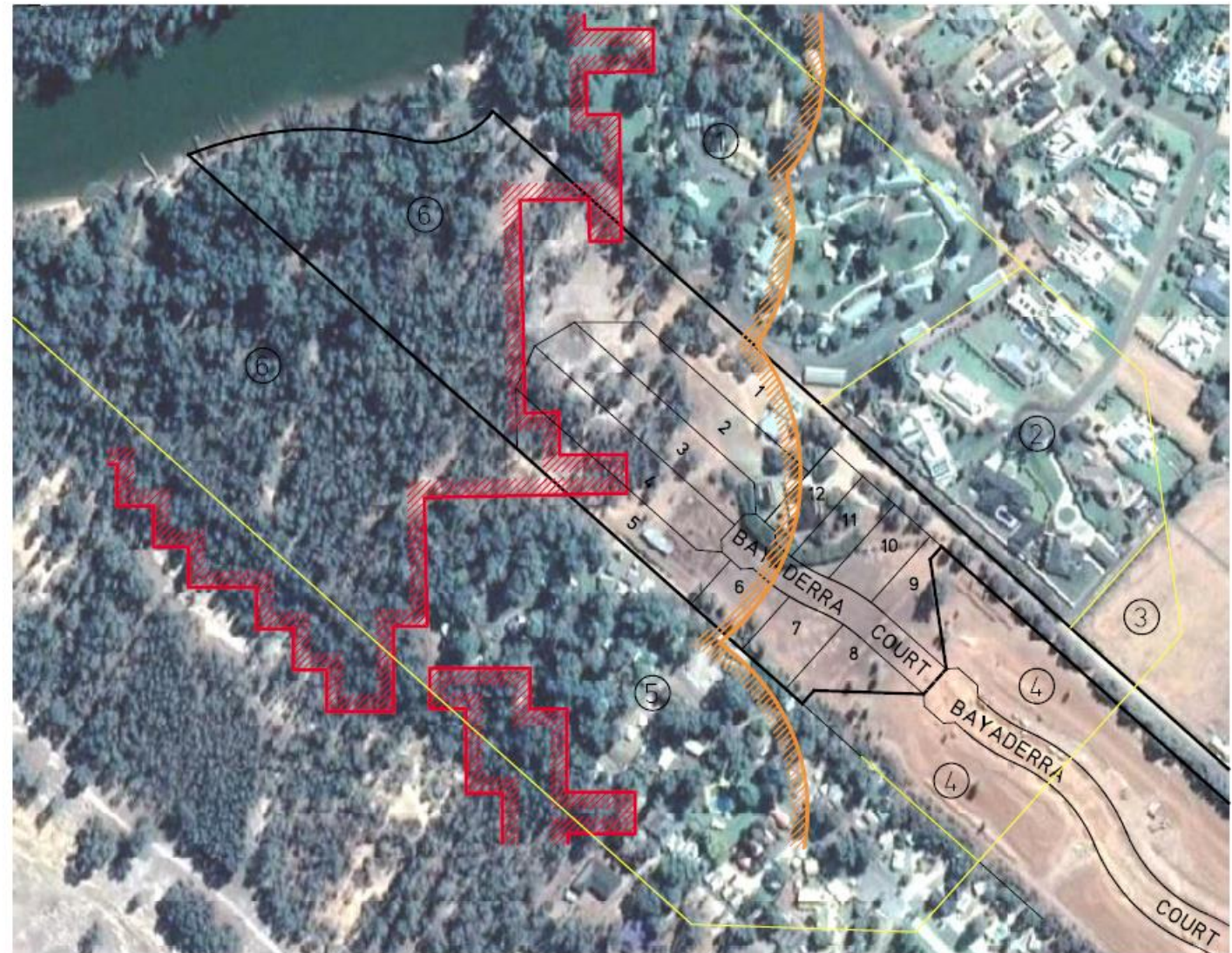
 BUSHFIRE PRONE LAND (VEGETATION TYPE 1)

BUSHFIRE ASSESSMENT

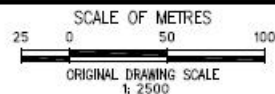
BUSHFIRE ASSESSMENT ZONE 140m RADIUS
FROM SUBJECT LAND, AS FOLLOWS:

- ① MANAGED OPEN WOODLAND - WINBI RESORT
TREES 10 - 30 m TALL
10 - 30% FOLIAGE COVERAGE
FLAT / 0% SLOPE
NO BUSHFIRE HAZARD
- ② CLEARED LAND - WINBI ESTATE
RESIDENTIAL DEVELOPMENT
NO BUSHFIRE HAZARD
- ③ CLEARED LAND - MOAMA RSL
SMALL/MINOR REGROWTH
NO BUSHFIRE HAZARD
- ④ CLEARED LAND - RIVERSANDS ESTATE
RESIDENTIAL DEVELOPMENT
NO BUSHFIRE HAZARD
- ⑤ MANAGED OPEN WOODLAND - DISCOVERY PARKS
TREES 10 - 30 m TALL
10 - 30% FOLIAGE COVERAGE
FLAT / 0% SLOPE
NO BUSHFIRE HAZARD
- ⑥ WOODLAND/OPEN WOODLAND
TREES 10 - 30 m TALL
10 - 30% FOLIAGE COVERAGE
FLAT / 0% SLOPE
APZ REQUIRED 10 METERS

M.G.A. 2020
ZONE 55



Licensed Surveyors • Civil Engineers • Irrigation Designers
21 Nish Street, ECHUCA, Ph. (03) 54821699
139 Hogan Street, TATURA, Ph. (03) 58241322



COPYRIGHT OF THIS DESIGN REMAINS THE PROPERTY
OF PLANRIGHT AND MAY NOT BE COPIED OR MODIFIED
WITHOUT WRITTEN PERMISSION. © COPYRIGHT 2023

BUSHFIRE ASSESSMENT PLAN

Locality of Moama
Merool Road

Lot 2 DP1206253 & Lots 12 & 13 DP1259705

FILE No.	DRAWN	CHECKED	DATE	SHEET NUMBER	VER	SHEET SIZE
S7033	ABT	-	26.7.2019	11 OF 13	6	A3

6	12.6.2024	ECHUCA-MOAMA-TORRUMBARRY FLOOR STUDY MAPPING	ABT	CT
5	16.11.2023	SUBDIVISION LAYOUT AMENDED	MT	CT
4	2.3.2021	SHEET 11 - BUSHFIRE ASSESSMENT PLAN	ABT	CT
3	22.9.2020	LOTS 1 & 2 AMENDED	ABT	MFL
2	16.10.2019	LOTS AMENDED	ABT	-
DETAILS OF AMENDMENTS			DRN	CHK
FILE NAME: S7033_PP_V6.dwg				

