

# Bushfire Hazard Assessment Report

## Planning Proposal

***At:***  
**32 – 34 Jacks Lane**  
**Maroota**

*Reference Number:* 150840

*Prepared For:*  
Graeme Bell

**22<sup>nd</sup> September 2017**

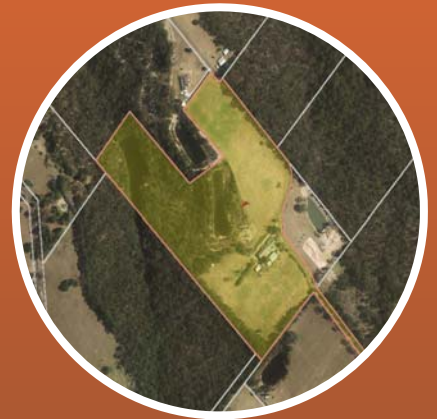


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## List of Abbreviations:

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APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 as amended.
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	The Hills Council
DA	Development Application
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
LEP	Local Environmental Plan
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2006</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

## 1.0 Introduction

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The subject site is known as 32-34 Jacks Lane, Maroota (Lot 4 DP 864355) and is a large allotment zoned RU1 – Primary Production. The planning proposal relates to the proposed new zoning (RU2 - Rural Landscape) to allow for the future cluster subdivision of the subject site into five (5) new rural-residential allotments and one (1) association allotment having no building rights.

As part of this planning proposal the applicant has had a subdivision plan prepared by McKinlay Morgan & Associates (Plan No. 92830: DA:1, dated 12/10/15 REV: B 6/9/17) to demonstrate that the proposed future subdivision can comply with Council's relevant specifications and requirements. We have also relied on this subdivision plan to demonstrate the proposal satisfies the relevant specifications and requirements of Planning for Bush Fire Protection 2006. In this regard should the planning proposal be successful and the future subdivision application remain consistent with this subdivision plan this report is suitable for use for both applications.

The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' (Fact Sheet 1/17, version 1 – June 2017). In this regard additional bushfire protections measures have been provided to ensure an acceptable level of bushfire safety. Pre-lodgement advice from the NSW RFS has directed us to take this approach and the response from our formal pre-lodgement meeting included;

*"The bush fire assessment report prepared for the proposal should reflect the additional performance based requirements for rural residential cluster subdivisions as outlined in the NSW RFS community resilience fast fact titled 'Multi Lot Residential Subdivision in Bush Fire Prone Area' dated December 2016".*

The subject site has street frontage to Jacks Lane to the northeast which exits the site and interconnects with Wisemans Ferry Road to the southeast and abuts other private rural allotments to the southeast, southwest and northwest. The vegetation identified as being a potential bushfire hazard is located within the subject allotment, (proposed future association allotment) and neighbouring allotments to the southwest, northeast and northwest.

The Hills Council's Bushfire Prone Land Map identifies that the subject site as containing designated Category 1 Vegetation and its associated 100 metre buffer zone and therefore the application of *Planning for Bush Fire Protection 2006* (PBP) is required.

## 2.0 Purpose of Report

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The purpose of this Bushfire Assessment Report is to provide an independent bushfire hazard determination together of the subject site and surrounding area and to determine if the planning proposal and subsequently the future development applications will comply with the requirements of *Planning for Bush Fire Protection 2006*.

## 3.0 Scope of this Report

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The scope of this report is limited to providing a bushfire hazard assessment for future development within the subject site. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject site.

## 4.0 Referenced Documents and Persons

Comments provided are based on the requirements of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act), the *Rural Fires Act* 1997, the Rural Fires Regulation 2013, the RFS document known as '*Planning for Bush Fire Protection* 2006' for the purposes of bushfire hazard determination and Australian Standard 3959 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

A company representative has made an inspection of the site and the surrounding area. The proposed subdivision plan prepared by McKinlay Morgan & Associates (Plan No. 92830: DA:1, dated 12/10/15 REV: A 6/9/17) has been relied upon for this report.

## 5.0 Site Zone

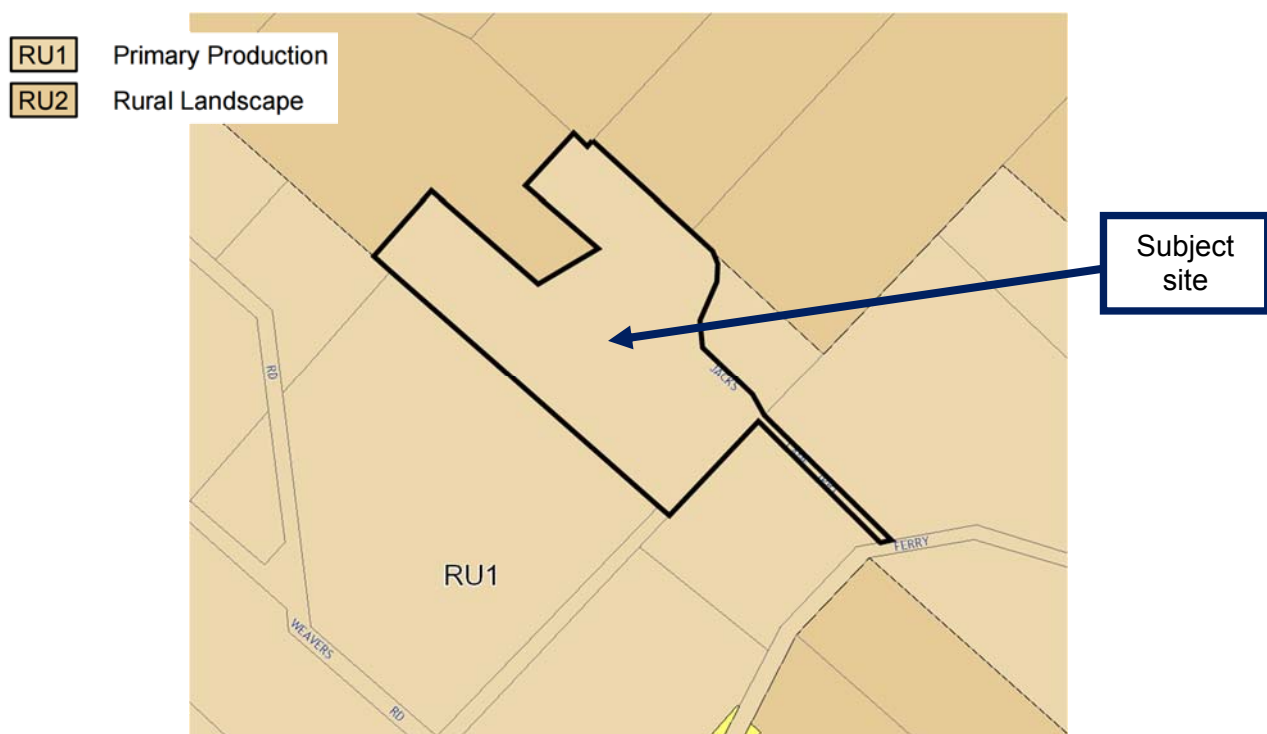


Image 01: Zone plan extract from The Hills Council Mapping database

## 6.0 Aerial view of the subject allotment

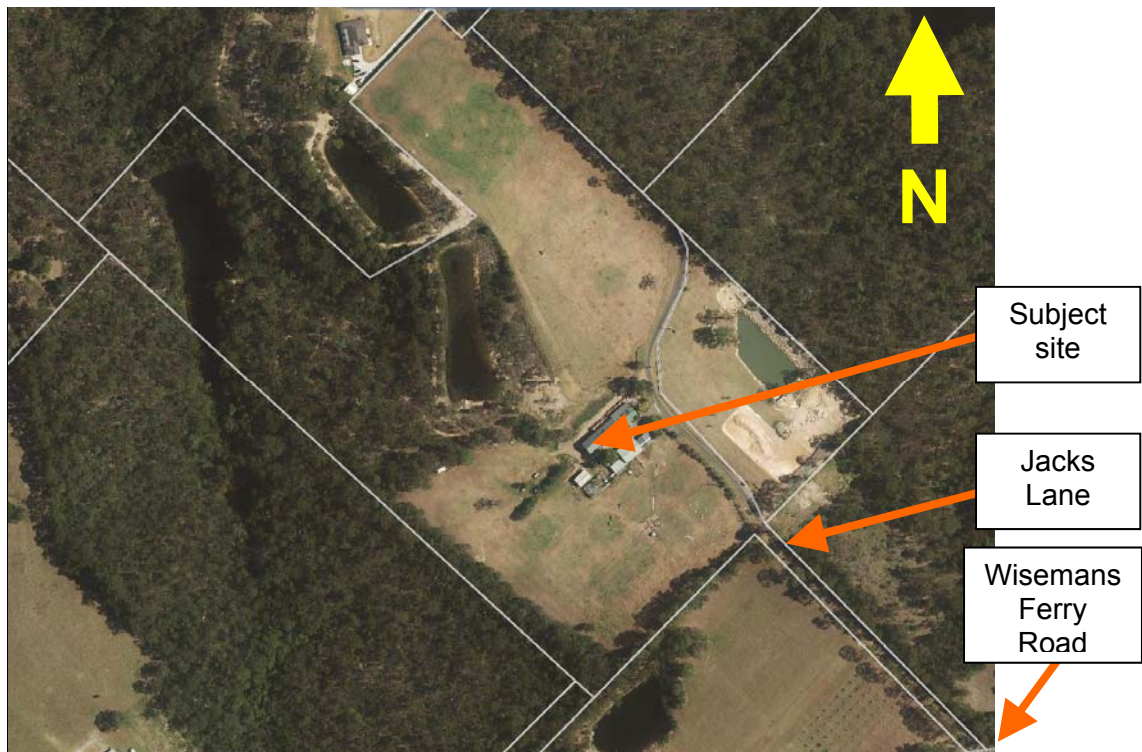


Image 02: Aerial view of the subject area, extract from SixMaps.



## 7.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2006*.

<b><u>Proposed lot 2:</u></b>	<b>Northeast</b>	<b>Southeast</b>	<b>Southwest</b>	<b>Northwest</b>
<b>Vegetation Structure</b>	Forest	Maintained grounds	Forest	Forest
<b>Slope</b>	10 - 15 degrees down	N/A	0 – 5 degrees down	0 – 5 degrees down
<b>Required Asset Protection Zone</b>	50 metres	N/A	25 metres	25 metres
<b>Proposed Asset Protection Zone</b>	≥50 metres	>100 metres	≥32 metres	≥61 metres
<b>Significant Environmental Features</b>	Jacks Lane	Proposed Lot 3	Neighbouring allotment / Dam / Proposed Lot 1	Maintained grounds
<b>Bushfire Attack Level</b>	BAL 29	BAL Low	BAL 29	BAL 12.5
<b>Proposed Bushfire Attack Level</b>	BAL 40	BAL 40	BAL 40	BAL 40

<b><u>Proposed lot 3:</u></b>	<b>Northeast</b>	<b>Southeast</b>	<b>Southwest</b>	<b>Northwest</b>
<b>Vegetation Structure</b>	Forest	Maintained grounds	Forest	Maintained grounds
<b>Slope</b>	10 – 15 degrees down	N/A	0 – 5 degrees down	N/A
<b>Required Asset Protection Zone</b>	50 metres	N/A	25 metres	N/A
<b>Proposed Asset Protection Zone</b>	≥50 metres	>100 metres	≥32 metres	>150 metres
<b>Significant Environmental Features</b>	Jacks Lane	Proposed Lot 4	Dam / Proposed Lot 1	Proposed Lot 2
<b>Bushfire Attack Level</b>	BAL 29	BAL Low	BAL 29	BAL Low
<b>Proposed Bushfire Attack Level</b>	BAL 40	BAL 40	BAL 40	BAL 40

<b><u>Proposed lot 4:</u></b>	<b>Northeast</b>	<b>Southeast</b>	<b>South</b>	<b>West</b>
<b>Vegetation Structure</b>	Forest	Maintained grounds	Maintained grounds	Forest
<b>Slope</b>	10 – 15 degrees down	N/A	N/A	0 - 5 degrees down
<b>Required Asset Protection Zone</b>	50 metres	N/A	N/A	25 metres
<b>Proposed Asset Protection Zone</b>	>50 metres	>100 metres	>100 metres	>32 metres
<b>Significant Environmental Features</b>	Jacks Lane	Maintained grounds	Proposed Lot 5	Dam / Proposed Lot 1
<b>Bushfire Attack Level</b>	BAL 29	BAL Low	BAL Low	BAL 29
<b>Proposed Bushfire Attack Level</b>	BAL 40	BAL 40	BAL 40	BAL 40

<b><u>Proposed lot 5 (existing dwelling):</u></b>	<b>North</b>	<b>East</b>	<b>West</b>	<b>Southwest</b>
<b>Vegetation Structure</b>	Maintained grounds	Maintained Grounds	Forest	Forest
<b>Slope</b>	N/A	N/A	0 – 5 degrees down	10 - 15 degrees down
<b>Required Asset Protection Zone</b>	N/A	N/A	25 metres	50 metres
<b>Proposed Asset Protection Zone</b>	>100 metres	>100 metres	>16 metres	≥125 metres
<b>Significant Environmental Features</b>	Proposed Lot 4	Jacks Lane	Proposed Lot 1	Neighbouring allotment



<b><u>Proposed Lot 6:</u></b>	<b>North</b>	<b>East</b>	<b>South</b>	<b>Southwest</b>
<b>Vegetation Structure</b>	Maintained grounds	Forest	Maintained grounds	Forest
<b>Slope</b>	N/A	0 – 5 degrees down	N/A	0 - 5 degrees down
<b>Required Asset Protection Zone</b>	N/A	25 metres	N/A	25 metres
<b>Existing Asset Protection Zone</b>	>100 metres	>32 metres	N/A	≥50 metres
<b>Significant Environmental Features</b>	Proposed Lot 5	Jacks Lane	Neighbouring private allotment	Proposed Lot 1
<b>Bushfire Attack Level</b>	BAL Low	BAL 29	BAL Low	BAL 19
<b>Proposed Bushfire Attack Level</b>	BAL 40	BAL 40	BAL 40	BAL 40

## Asset Protection Zones Compliance

The proposed new allotments can accommodate a building footprint achieving the minimum required Asset Protection Zones under Appendix 2 of Planning for Bush Fire Protection 2006.

The available Asset Protection Zones will consist of maintained land within the subject property and land considered 'equivalent to an APZ' being the developed portion of Jacks Lane and maintained grounds within neighbouring private rural-residential allotments.

The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas'. The available building envelopes have been designed so that they exceed the minimum required setbacks from Appendix 2 PBP 2006 and achieve BAL 29 rating under AS3959 – 2009, however in accordance with the RFS publication the future dwellings will be constructed to BAL 40.

## Construction Level Compliance

No new dwellings are proposed as part of this application. An independent assessment will be required under s79BA of the *Environmental Planning and Assessment Act 1997* at the time of an application for the construction of a dwelling within the newly created allotments.

Due to the location of the available building envelopes being greater than 200 metres from a public through road the minimum APZ have been increased to target BAL 29 setbacks however the construction of the future dwellings will be BAL 40 to allow for an increased confidence on these structures.

A restriction to user or positive covenant (e.g. section 88B instrument under the Conveyancing Regulation 2013) shall be placed on each title to ensure any future purchaser or dwelling application includes these requirements in the ensuing consent conditions.

The existing dwelling is required to be retrofitted to improve their resilience against smoke and ember attack. This is to be achieved by enclosing all openings or covering openings with a non-corrosive metal mesh screen (steel, bronze or aluminium) with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

## Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access	<p>The proposed allotments will have street frontage to Jacks Lane to the northeast / east.</p> <p>Jacks Lane will be upgraded to provide a 6.5 metre trafficable width along the property's frontages. From Lot 6 to Wisemans Ferry Road the access will also be upgraded generally to 6.5 metres wide however will slightly narrow where it passes the existing electrical poles (see section 8.07 for more detail).</p> <p>The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' (Fact Sheet 1/17, version 1 – June 2017). In this regard additional bushfire protections measures have been provided to ensure an acceptable level of bushfire safety.</p> <p>Any new private access drive from Jacks Lane to the individual dwellings must comply with the requirements for Property Access as detailed in section 4.1.3(2) of Planning for Bush Fire Protection 2006.</p>
Water Supply	<p>Water considerations will be required to be applied at the time of the construction of a new dwelling within the proposed new allotments.</p> <p>In consideration of the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' the water supply within the proposed lots must be dedicated solely for fire fighting purposes. We recommend that a restriction to user be included to ensure a 10,000 litre static water supply is applied as a <u>dedicated</u> source at the time of any future dwelling construction within these allotments.</p> <p>The existing dam within proposed Lot 1 also provides an additional large static water supply for fire fighters.</p>
Evacuation	<p>Evacuation is possible by utilising the existing and proposed road infrastructure. It is recommended that the occupants complete a Bush Fire Safety Plan addressing "Prepare, Act Survive" as advocated by the NSW RFS <a href="http://www.rfs.nsw.gov.au/">http://www.rfs.nsw.gov.au/</a> under publications / bushfire safety.</p>

## 8.0 Bushfire Hazard Assessment

### 8.01 Preface

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service. All property development within affected areas is subject to the conditions detailed in the document '*Planning for Bush Fire Protection 2006*' (PBP). Set back distances for the purpose of creating Asset Protection Zones (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 '*Construction of buildings in bushfire prone areas*' 2009.

*Planning for Bush Fire Protection 2006*, (PBP) formally adopted on the 1<sup>st</sup> March 2007 and amended May 2010 (Appendix 3) provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

The thrust of the document is to ensure that developers of new properties or sub-divisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development inside determined Category 1 or 2 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 bushfire area.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

The future development application will relate to the subdivision of an existing allotment for residential purposes. To accord with PBP the future subdivision is classified as integrated development and future application will be assessed under section 100B of the *Rural Fires Act* 1997 and a Bushfire Safety Authority will be required from the Commissioner of the NSW Rural Fire Service.

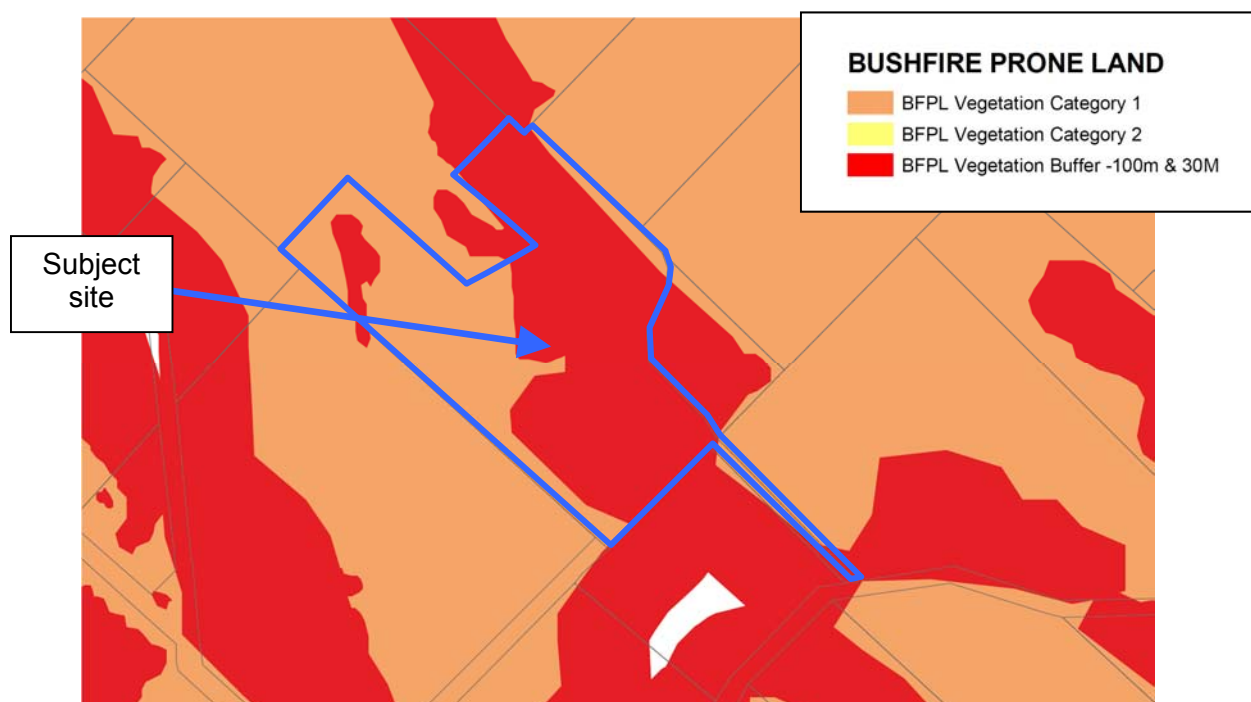


Image 03: Extract from The Hills Council's Bushfire Prone Land Map

## 8.02 Location

The subject site is known as 32-34 Jacks Lane, Maroota (Lot 4 DP 864355) and is a large allotment zoned RU1 – Primary Production.

The subject site has street frontage to Jacks Lane to the northeast and abuts other private rural allotments to all other aspects. The vegetation identified as being a potential bushfire hazard is located within the subject allotment (proposed residual lot 1) and neighbouring allotments to the northwest, northeast and southwest.



Subject property

Photograph 01: View southwest from Jacks Lane toward the subject site

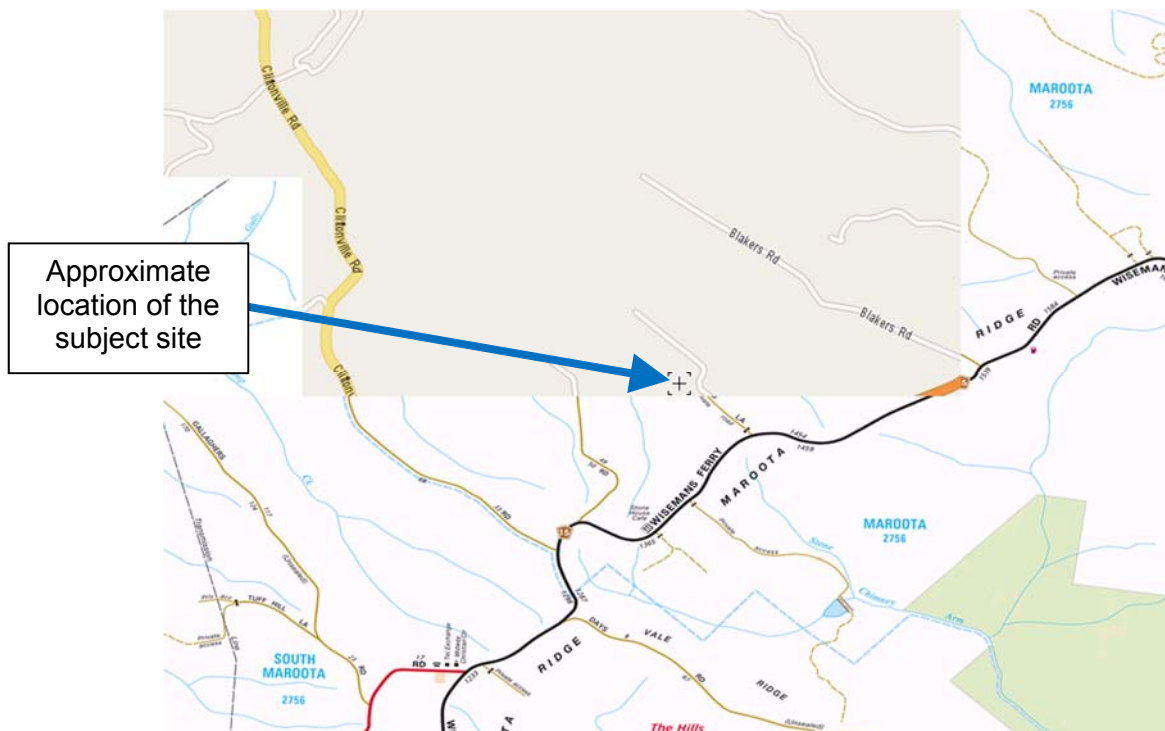


Image 04: Extract from street-directory.com.au



### 8.03 Vegetation

The vegetation identified as being a potential bushfire hazard is located within the neighbouring allotments to the northeast, southwest and northwest and the subject property (proposed lot 1) to the west.

The vegetation posing a hazard to the western aspect within the proposed residual lot and neighbouring allotment to the southwest was found to comprise of trees 10 - 20 metres in height having a 30 - 50% canopy foliage cover and an understorey of shrubs and grasses. The vegetation to the western aspect was found to be mapped as 'Shale/Sandstone Transition Forest (Shale)' on The Hills Council vegetation mapping. Although Shale Transition Forest is regarded as a Woodland under Keith, the higher canopy percentage would indicate a Forest designation for this vegetation although fuel loadings observed onsite would suggest a more Woodland level of fuel loading. As a precautionary approach and to build into the proposal an extra degree of protection the vegetation posing a hazard to the west was determined to be Forest.

The vegetation posing a hazard to the eastern aspect (northeast) was found to comprise of trees 10-20 metres in height having a 40-60% canopy foliage cover and an understorey of low trees, shrubs and grasses. This area was found to be mapped as 'Sandstone Ridgetop Woodland' and 'Sandstone Gully Forest' on The Hills Council vegetation mapping. As was found within the vegetation to the western aspects, Fuel Canopy percentages would suggest a Forest designation with slightly higher ground fuels present to the northeast. Again a precautionary approach, the vegetation posing a hazard to the northeast was determined to be Forest.

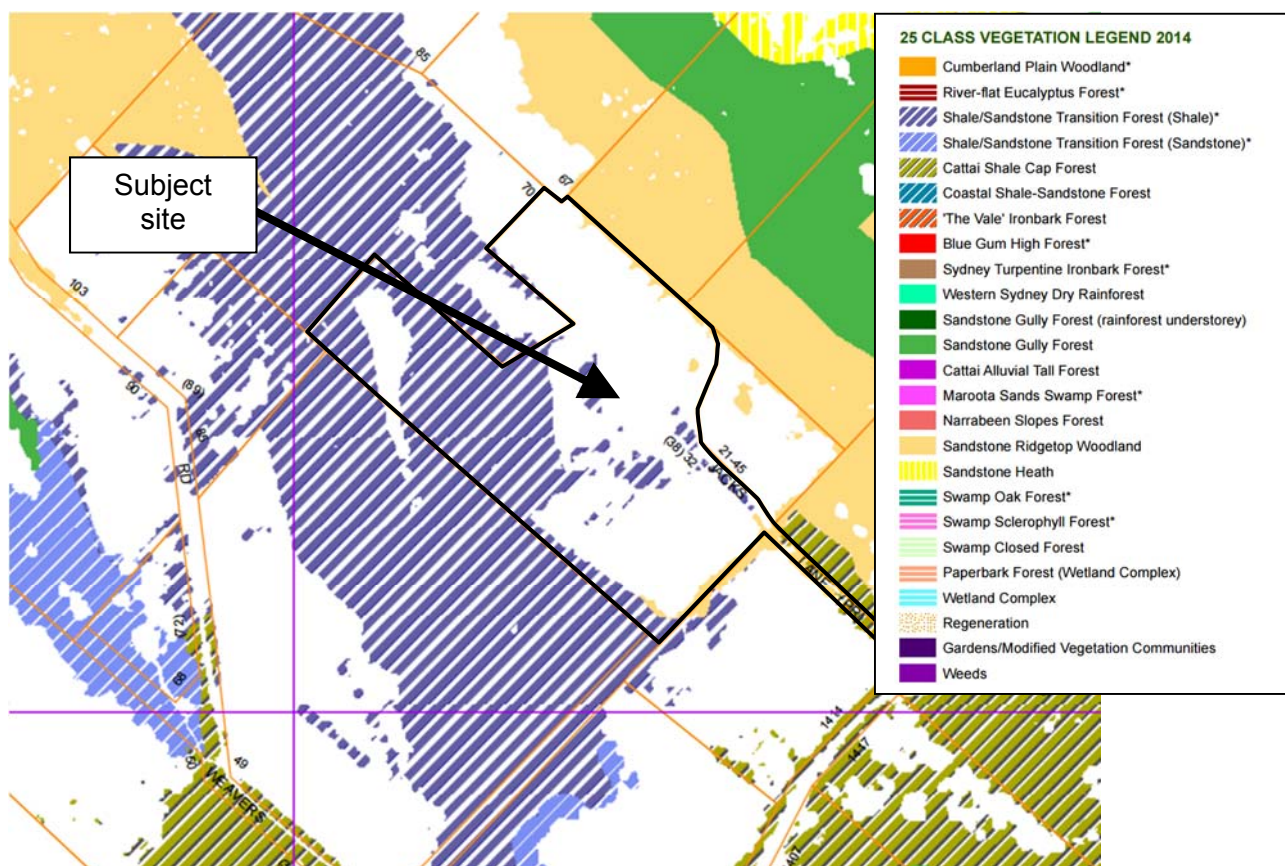


Image 05: Extract from The Hills Council vegetation mapping



Forest

Photograph 02: view of the 'Forest' to the western aspect of the subject site



Subject site

Jacks Lane

Forest

Photograph 03: view of the 'Forest' to the northeastern aspect of the subject site



## 8.04 Slope and Topography

The slope that would most significantly affect bushfire behaviour within the hazard must be assessed for at least 100 metres from the available building footprints to determine the minimum required Asset Protection Zones.

The slope that would most significantly influence bushfire behaviour was determined onsite and verified from topographic mapping to be:

- 0 - 5 degrees down slope within the hazard to the northwest (and southwest of lots 2, 3 & 4)
- 10 - 15 degrees down slope within the hazard to the northeast of Lots 2, 3 & 4 & southwest of lots 5 & 6

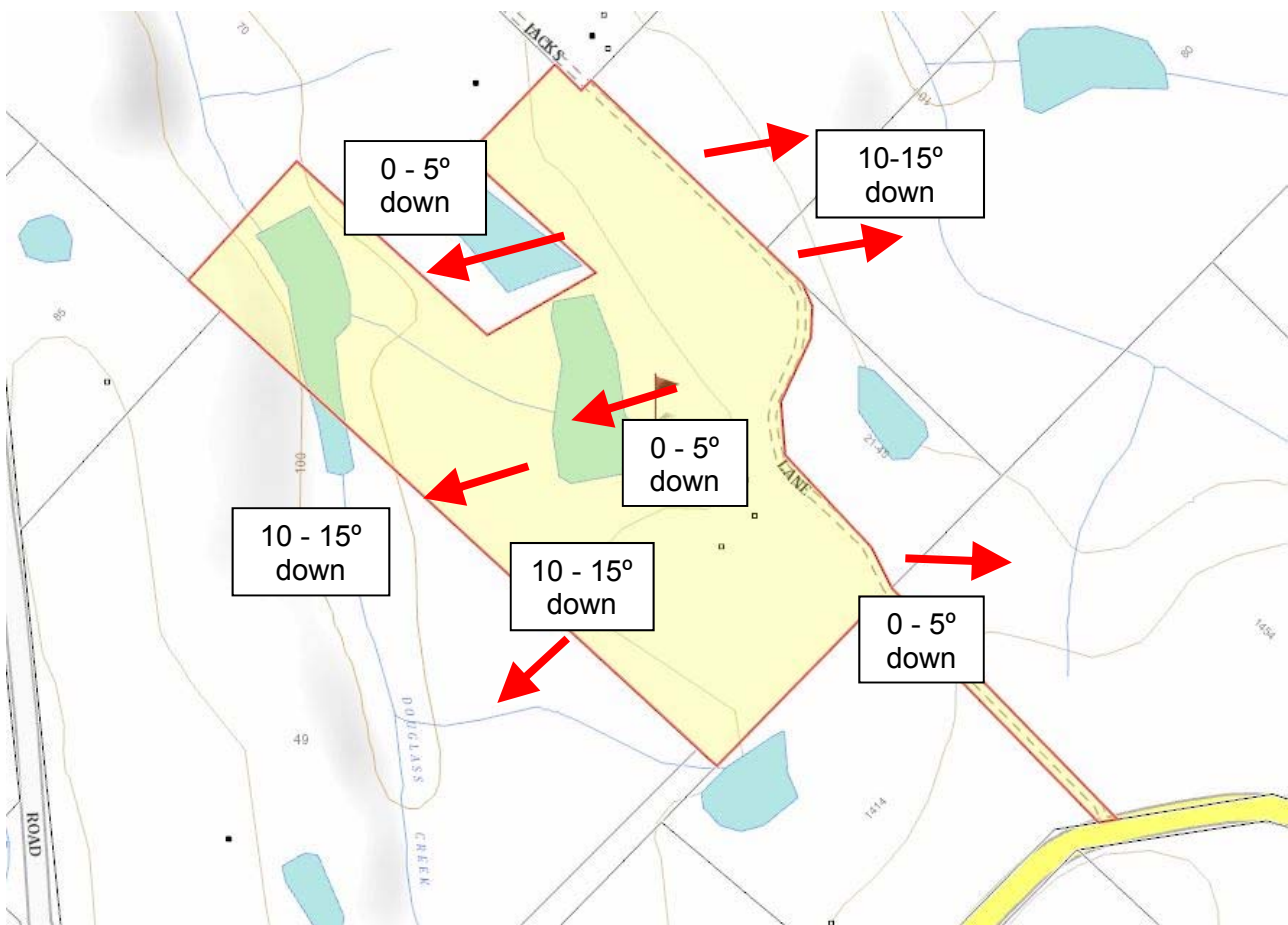


Image 06: Extract from NSW Dept. Lands – SixMaps 2016



## 8.05 Asset Protection Zones

The minimum required Asset Protection Zones (APZ) for proposed new allotments were determined from Table A2.4 of Planning for Bush Fire Protection 2006 and detailed in the compliance table in section 7.0 of this report.

The proposed new allotments can accommodate a building footprint achieving or exceeding the minimum required Asset Protection Zones under Appendix 2 of Planning for Bush Fire Protection 2006. The available Asset Protection Zones will consist of maintained land within the subject property and land considered 'equivalent to an APZ' being the developed portion of Jacks Lane and maintained grounds within neighbouring private rural-residential allotment.

The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas'. The available building envelopes have been designed so that they exceed the minimum required setbacks from Appendix 2 PBP 2006 and achieve BAL 29 rating under AS3959 – 2009, however in accordance with this publication the future dwellings will be constructed to BAL 40.

All Asset Protection Zones will be maintained as an Inner Protection Area as detailed in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

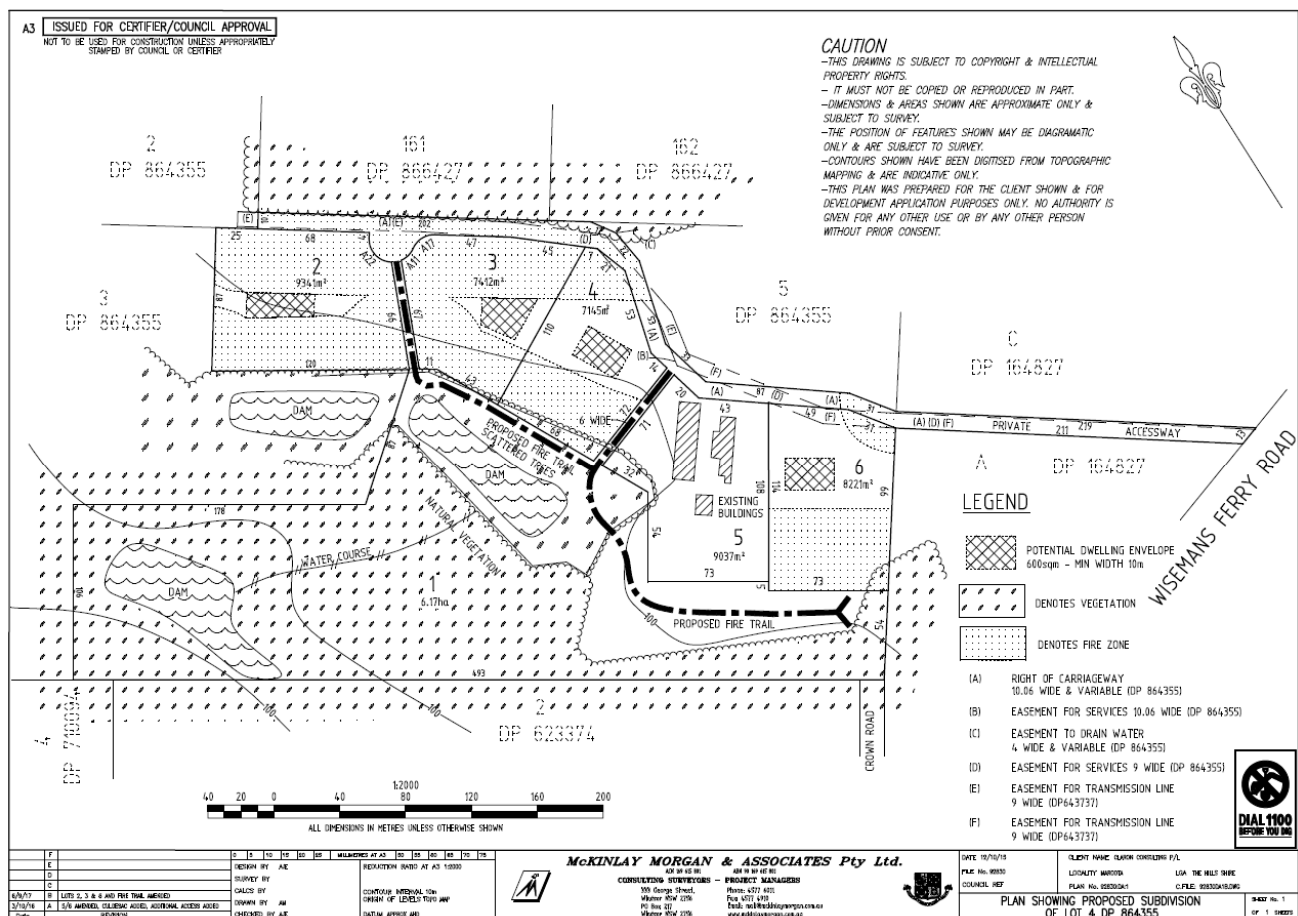


Image 07: Extract from the proposed subdivision plan prepared by McKinlay Morgan & Associates (Plan No. 92830: DA:1, dated 12/10/15 REV: B 6/9/17)

## 8.06 Fire Fighting Water Supply

There are no reticulated water mains or hydrants available within this area. The subject property was found to contain a large dam which can be utilised for the replenishment of attending fire services.

The most distant external point of the available building footprints are located greater than 70 metres from a hydrant and therefore a 10,000 Static Water Supply is required to be provided within each new allotment.

In consideration of the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' the water supply within the proposed lots must be dedicated solely for fire fighting purposes. We recommend that a restriction to user be included to ensure a 10,000 litre static water supply is applied as a dedicated source at the time of any future dwelling construction within these allotments.

The existing buildings within the proposed Lot 5 are serviced with 2 x 20,000 litre concrete water tanks and one (1) 10,000 litre poly tank. Supply is also supplemented by an electric pump from the existing dam.



Photograph 04: View northwest from the existing dam within the subject site



Photograph 05: Existing water tank adjacent to the existing dwelling within the subject site

## 8.07 Property Access – Fire Services & Evacuation

The subject site has street frontage to Jacks Lane to the northeast / east. All proposed rural / residential allotments will have street frontage to Jacks Lane.

Jacks Lane will be upgraded to provide a 6.5 metre trafficable width along the property's frontages. From Lot 6 to Wisemans Ferry Road the access will also be upgraded generally to 6.5 metres wide however will slightly narrow where it passes the existing electrical poles. At the poles passing is only slightly restricted over very short periods at long intervals. As this is a straight section of road a clear line of site is available in both directions and therefore the narrowing for short periods is considered acceptable. In the event this road is being impacted by fire or smoke no private vehicle or fire appliance would enter this section of Jacks Lane. Emergency management plans could be enforced for each allotment detailing early relocation of safe refuge onsite to avoid an unnecessary late relocation of occupants along Jacks Lane.

The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' (Fact Sheet 1/17, version 1 – June 2017). In this regard additional bushfire protections measures have been provided to ensure an acceptable level of bushfire safety.

Any new private access drive from Jacks Lane to the individual dwellings must comply with the requirements for Property Access as detailed in section 4.1.3(2) of Planning for Bush Fire Protection 2006.

There is also a compliant 12 metre turning head adjacent to lots 2 & 3 proposed. Furthermore turning provisions will be available at the entry drive to each property and at the time of future consent for a dwelling in each allotment within each property to enable access and egress of fire services.

Access for fire services and opportunities for occupant evacuation will be considered adequate for this property and can comply with the requirements of PBP 2006 and NSW RFS publications.



Photograph 06: View southeast along Jacks Lane (subject site right of photo)

## 9.0 Site & Bushfire Hazard Determination

### 9.01 Planning for Bush Fire Protection - 2006

*Planning for Bush Fire Protection – 2006* (PBP) is applicable to those lands determined as being within a 'bushfire prone area' in accordance with a local Bushfire Prone Land Map as provided by the Rural Fire Service and Council.

The most appropriate method of determining site bushfire hazard under the terms of PBP is to consider the site in a singular form.

*Bushfire prone areas are defined as those areas;*

- *within or within 100m of high or medium bushfire hazards; or*
- *within or within 30m of low bushfire hazards.*

In this instance the subject site has been identified as being bushfire prone land therefore it is appropriate to apply PBP and AS3959 – 2009 (for any dwelling construction).

### 9.02 Australian Standard AS 3959 – 2009 'Construction of buildings in bushfire –prone areas'

Australian Standard 3959 – 2009 'Construction of buildings in bushfire-prone areas' provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. The Australian Standard 3959 specifies construction standards for buildings within various Bushfire Attack Levels as determined by the *Planning for Bush Fire Protection – 2006* document. The NSW Rural Fire Service will not accept deemed to satisfy provisions for BAL Flame Zone and therefore have a NSW variation to the listed standard provisions of BAL FZ under AS3959 - 2009.

### 9.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m <sup>2</sup> )	Level of construction under AS3959-2009
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	12.6 to 19.0	BAL - 19
29	19.1 to 29.0	BAL - 29
40	29.1 to 40.0	BAL - 40
Flame Zone	>40.0	BAL FZ No deemed to satisfy provisions



## 9.04 Site Specific Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed future development located at 32-34 Jacks Lane, Maroota was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- a) The building footprints exceed the minimum required Asset Protection Zones.
- b) Recommendations to maintain the Asset Protection Zones within the subject property can be included in future development consent.
- c) Future water supply can satisfy the requirements for Services as detailed in section 4.1.3 of PBP.
- d) The proposed access drives and roads can satisfy the performance requirements for Property Access as detailed in section 4.1.3 (1 & 2) of PBP 2006.
- e) The future dwellings while providing the setbacks for BAL 29 construction will be constructed to BAL 40.
- f) Increase APZs above the minimum Appendix 2 requirements to ensure the buildings are suitable as a safe refuge within an area determined to be BAL 29 but constructed to BAL 40.
- g) Dedicated water supply within proposed Lots will be conditioned as part of the consent.

## 9.05 Viable Construction Method

The objectives of *Planning for Bush Fire Protection* – 2006 are for the protection of life including fire fighters. Provided these objectives can be met the construction of buildings is feasible and both the Rural Fire Service and Council should be in a position to consider such applications.

No new dwellings are proposed as part of this application. An independent assessment will be required under s79BA of the *Environmental Planning and Assessment Act* 1997 at the time of an application for the construction of a dwelling within the newly created allotments.

Due to the location of the available building envelopes being greater than 200 metres from a public through road the minimum APZ have been increased to target BAL 29 setbacks however the construction of the future dwellings will be BAL 40 to allow for an increased confidence on these structures.

A restriction to user or positive covenant (e.g. section 88B instrument under the Conveyancing Regulation 2013) shall be placed on each title to ensure any future purchaser or dwelling application includes these requirements in the ensuing consent conditions.

The existing dwelling is required to be retrofitted to improve their resilience against smoke and ember attack. This is to be achieved by enclosing all openings or covering openings with a non-corrosive metal mesh screen (steel, bronze or aluminium) with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

## 10.0 Recommendations

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Following rezoning of the subject site the following recommendations should be applied within the consent conditions for the subsequent subdivision of the subject site.

The recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2006 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas - 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

### General

1. That the proposed development complies with the subdivision plan prepared by McKinlay Morgan & Associates (Plan No. 92830: DA:1, dated 12/10/15 REV: B 6/9/17)

### Construction – existing dwelling within Lot 5 only

2. That where applicable all openable windows on the existing dwelling be screened with aluminium, steel or bronze metal mesh having an aperture size of  $\leq 2.0$  mm in such a way that the entire opening remains screened when in the opened position.
3. That where applicable all vents and weepholes on the existing dwelling be screened with aluminium, steel or bronze metal mesh having an aperture size of  $\leq 2.0$  mm in such a way that the entire opening is screened.
4. That where applicable all external hinged doors on the existing dwelling have draught excluders fitted having a flammability index of not more than 5.

### Construction

5. That a restriction to user be included to ensure that the minimum construction requirement for any future dwelling within the available building envelopes is constructed to BAL 40 under section 8 of AS3959-2009 'Construction of Buildings in Bushfire Prone Areas'

### Asset Protection Zones

6. That all grounds not built upon within the proposed Lots 2, 3, 4, 5 and 6, be maintained as an Asset Protection Zone (Inner Protection Area).

Maintenance of the Asset Protection Zones is to be in accordance with the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 2 of Planning for Bush Fire Protection 2006.

## Landscaping

7. That any new landscaping within the subject property is to comply with Appendix 5 'Landscaping and Property Maintenance' of *Planning for Bush Fire Protection* 2006.

## Access

8. That the upgrade of Jacks Lane is to comply with Public Road as detailed in section 4.1.3 (2) of *Planning for Bush Fire Protection* 2006 in particular to 6.5 metre trafficable width with the exception of the narrowing at the power poles between lot 6 and Wisemans Ferry Road.
9. That the construction of any future access drives within the rural residential allotments complies with the requirements for Property Access as detailed in section 4.1.3 (2) of *Planning for Bush Fire Protection* 2006, in particular:
  - A minimum carriageway width of four metres.
  - A minimum vertical clearance of four metres to any overhanging obstructions, including tree branches.
  - Curves have a minimum inner radius of six metres and are minimal in number to allow for rapid access and egress.
  - The minimum distance between inner and outer curves is six metres.
  - The crossfall is not more than 10 degrees.
  - Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.
  - Internal roads for rural properties provide a loop road around any dwelling or incorporate a turning circle with a minimum 12 metre outer radius (or suitable turning provisions for a fire appliance).

## Services

10. That electricity and gas are to comply with section 4.1.3 of *Planning for Bush Fire Protection* 2006 as follows:

### Electricity:

- Where practicable, new electrical transmission lines are underground.
- Where overhead electrical transmission lines are proposed:
  - 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).



## Water supply

11. That a restriction to user be included to ensure a 10,000 litre dedicated water supply is provided within each proposed allotment at the time of any dwelling construction. The water supply shall have;
- ❖ A suitable connection for firefighting purposes is made available and located within the IPA and away from the structure. A 65mm Storz outlet with a gate or Ball valve is provided.
  - ❖ Gate or Ball valve and pipes are adequate for water flow and are metal rather than plastic.
  - ❖ Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank. A hardened ground surface for truck access is supplied within 4 metres of the access hole.
  - ❖ Above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of fire fighters.
  - ❖ All above ground water pipes external to the building are metal including and up to any taps. Pumps are shielded.

## Management

12. Arrangements are to be established in a "Community Management Statement" (e.g. body corporate by-laws) that the owners (e.g. Executive) consider fire management strategies of the development that takes into account the following:
- (a) Continued management of Asset Protection Zones and fire trails (including green waste disposal practices).
  - (b) Acknowledgement of hazard reduction proposals approved by the District NSW RFS and the District Bush Fire Management Committee that involve the association land.
  - (c) Consultation should occur between the Community Executive and the local District NSW RFS to confirm contact details and legalities involved with permissions for fire management works on association land together with any other community engagement advice for the cluster.
  - (d) Preparation of a Bush Fire Survival Plan for each household that stipulates their leave early or stay and defend course of action.
  - (e) Vegetative waste disposal mechanisms for large bush blocks that apply for the local area.

## 11.0 Conclusion

Given that the property is deemed bushfire prone under The Hills Council's Bushfire Prone Land Map any future development would need to meet the requirements of *Planning for Bush Fire Protection* 2006 and of the construction requirements of Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2009 if any are applicable. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area and its possible impact to the subject site.

The subject site is known as 32-34 Jacks Lane, Maroota (Lot 4 DP 864355) and is a large allotment zoned RU1 – Primary Production. The subject site has street frontage to Jacks Lane to the northeast and abuts other private rural allotments to the all other aspects.

Compliance with Planning for Bush Fire Protection 2006 must be achieved for any future subdivision to be approvable and as such site constraints should be determined at this planning proposal stage and the sites capacity to comply with these requirements should be demonstrated.

The required Asset Protection Zones (APZ) for the future subdivision were determined from Appendix 2 of *Planning for Bush Fire Protection* 2006. A potential subdivision of the site into five (5) rural-residential allotments and one (1) association allotment has been included for the purpose of assessing the sites compatibility for the purposes of rezoning to allow future rural-residential development.

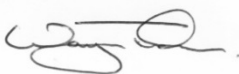
The available building footprints within these proposed new allotments exceed the minimum requirements of PBP 2006. The access design and the provisions of future services (water, gas and electricity) can also meet the performance requirements of section 4.1.3 of PBP 2006.

The location of the available building envelopes are greater than 200 metres from a public through road and in this light consideration has been given to the NSW RFS Community Resilience publication 'Multi lot residential subdivision in bushfire prone areas' (Fact Sheet 1/17, version 1 – June 2017). In this regard additional bushfire protections measures have been provided to ensure an acceptable level of bushfire safety.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is my opinion that the site and the proposed subdivision provided as part of this planning proposal has the capacity to comply with the requirements of PBP 2006. By applying this guideline it will provide a reasonable and satisfactory level of bushfire protection to the subject development and also satisfy both the Rural Fire Service's requirements and those of Council in this area.

Should you have any enquiries regarding this project please contact our office.

Prepared by  
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## 12.0 Annexure 01

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### List of Referenced Documents

- a) *Environmental Planning and Assessment Act 1979*
- b) *Rural Fires Act 1997 as amended*
- c) '*Planning for Bush Fire Protection*' 2006 - NSW Rural Fire Services & Planning NSW
- d) 'Construction of buildings in bushfire prone areas' - AS 3959 – 2009 (as - amended) – Standards Australia
- e) 'The Hills Council's Bushfire Prone Land Map'
- f) Subdivision by McKinlay Morgan & Associates (Plan No. 92830: DA:1, dated 12/10/15 REV: B 6/9/17)
- g) Acknowledgements to:
  - NSW Department of Lands – SixMaps
  - Street-directory.com.au
  - Googlemaps
  - The Hills Council Vegetation Mapping

### Attachments

Attachments: Nil