

# Bushfire Hazard Assessment Report

***Proposed:***  
**Rezoning**

***At:***  
**20 Tylers Road,  
Bargo NSW**

*Reference Number:* 170060

*Prepared For:*  
Tina Meredith

**27<sup>th</sup> April 2018**

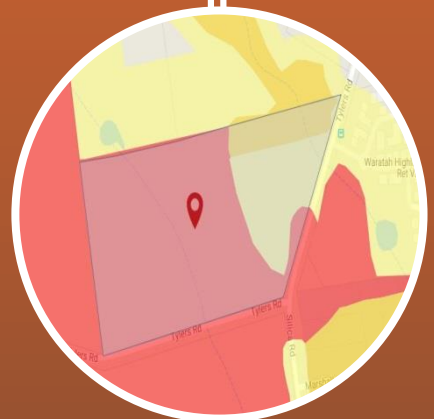
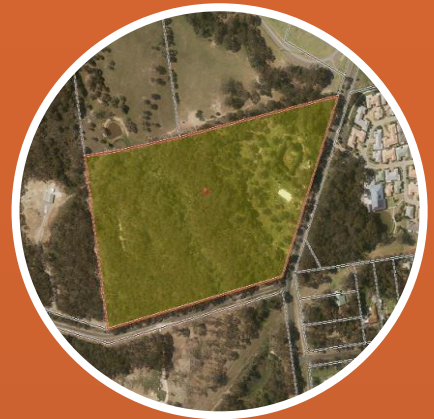


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## List of Abbreviations:

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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	Wollondilly 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
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 a large rural allotment known as 20 Tylers Road, Bargo (Lot 2 DP 270325), the lot is zoned E2 and SP2. The planning proposal relates to the proposed new zoning of the SP2 portion to R5 to allow for the future large lot residential development.

The subject site is bordered by Tylers Road to the east and south, abuts similar rural allotments to the north and west and Bargo Sportsground also to the north. The vegetation identified as being a potential bushfire hazard is located within subject property to the west and Waratah Highlands Retirement Village to the east.

Wollondilly Council's Bushfire Prone Land Map identifies that the subject site as being bushfire prone land and therefore the application of *Planning for Bush Fire Protection* 2006 (PBP) is required. Demonstration that future development can comply with the requirements of PBP 2006 will be included herein.

## 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.

Where Council considers a bushfire risk is associated with surrounding private lands or lands owned by an authority, Council could seek to issue notice under Section 66 of the *Rural Fires Act* on any or all surrounding properties for the purposes of reducing and maintaining safe levels of vegetation and thus reducing the possibility of bushfire impact to existing assets within the subject site and any adjoining properties.

## 4.0 Referenced Documents and Persons

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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.



## 5.0 Site Zone

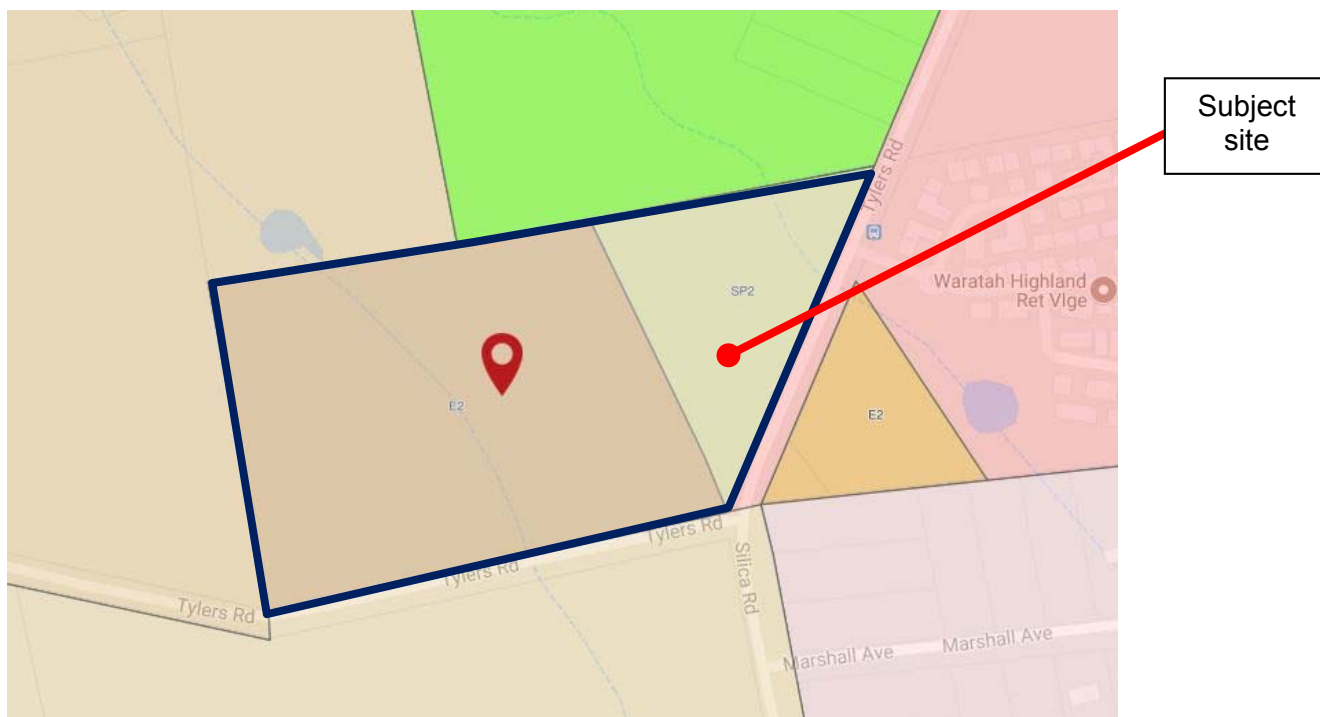


Image 01: Zone plan extract from NSW Government Planning Portal

## 6.0 Aerial view of the subject allotment

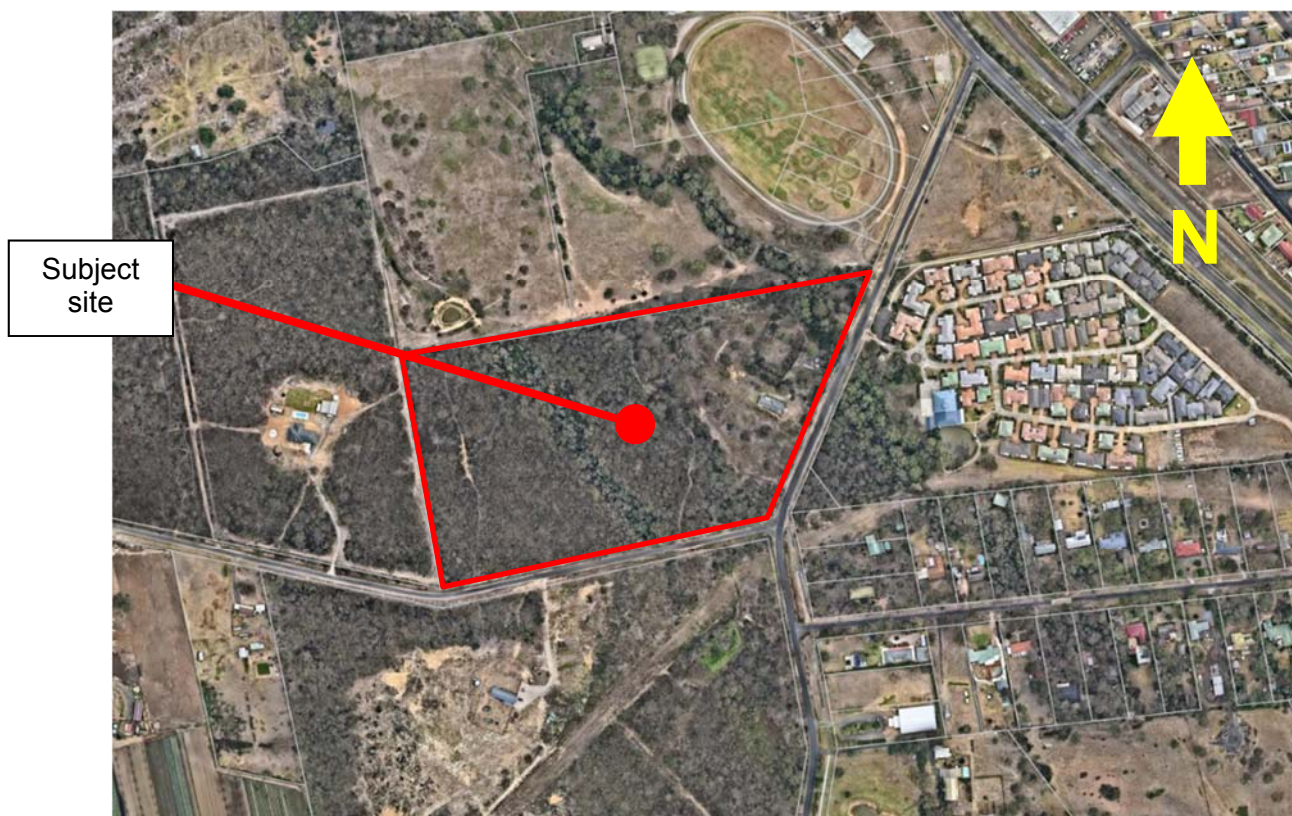


Image 02: Aerial view of the subject area, Sixmaps 2018.

## 7.0 Bushfire Hazard Assessment

### 7.01 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 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.

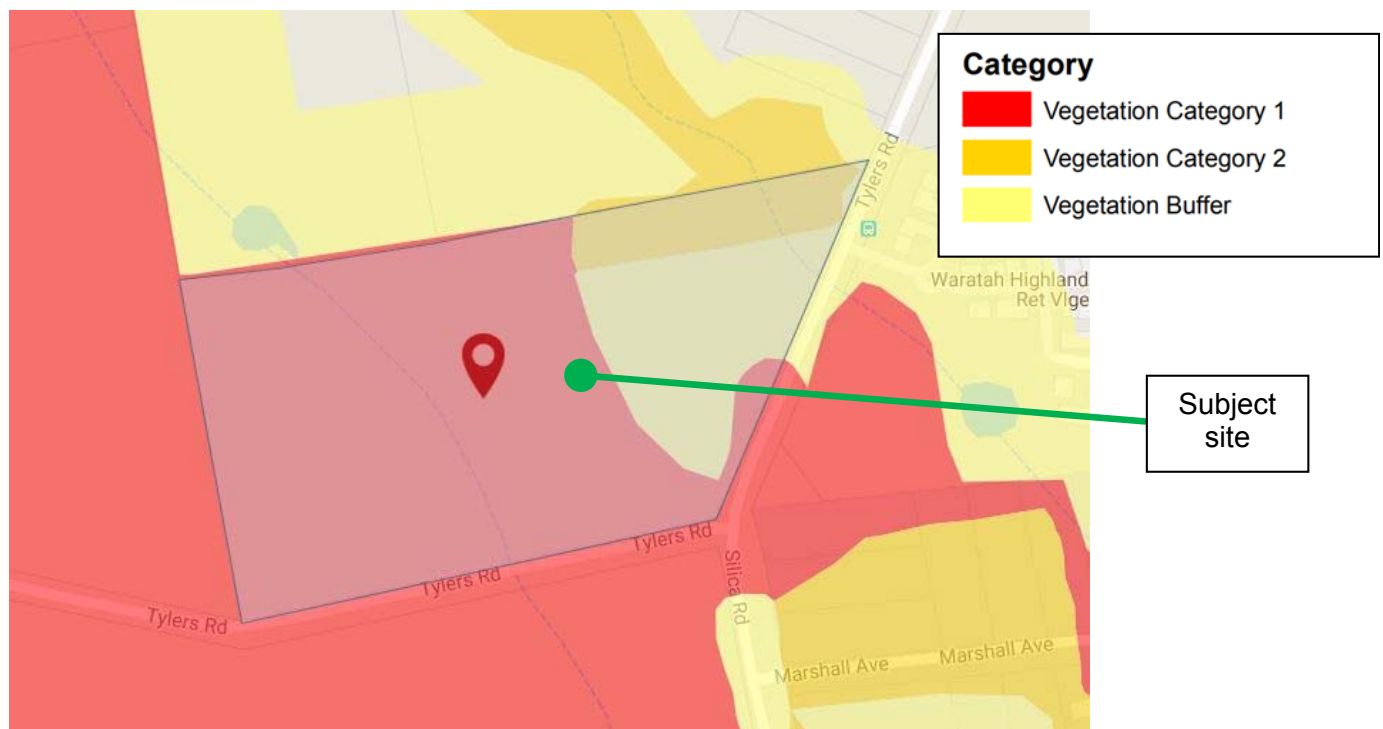


Image 03: Extract from Wollondilly Council's Bushfire Prone Land Map



## 7.02 Location

The subject site is located at 20 Tylers Road, Bargo (Lot 2 DP 270325). The subject site is bordered by Tylers Road to the east and south, abuts similar rural allotments to the north and west and Bargo Sportsground also to the north.

The vegetation identified as being a potential bushfire hazard is located within subject property to the west and Waratah Highlands Retirement Village to the east.



Photograph 01: View along Tylers Road past the subject site

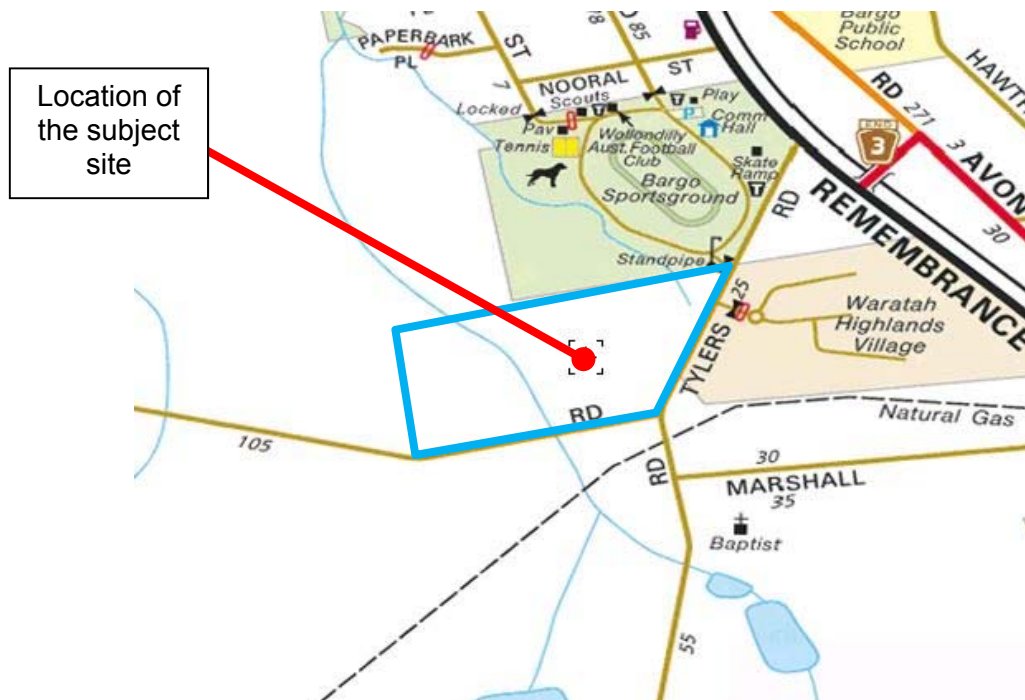


Image 04: Extract from street-directory.com.au



### 7.03 Vegetation

The predominant vegetation within the subject site in the SP2 zoned area was found to consist of mown / slashed grasses and individual trees. The vegetation within the E2 zoned area of the site consists of native vegetation. The vegetation identified as being a potential bushfire hazard is located within the subject property to the west (E2 area) and Waratah Highlands Retirement Village to the east.

The vegetation posing a hazard to the east and west was found to consist of trees 10 - 30 metres in height with a 30 - 70% foliage cover and an understorey of shrubs, small trees, weeds and grasses.

For the purpose of assessment the vegetation posing a hazard to the east and west was determined to be Forest.

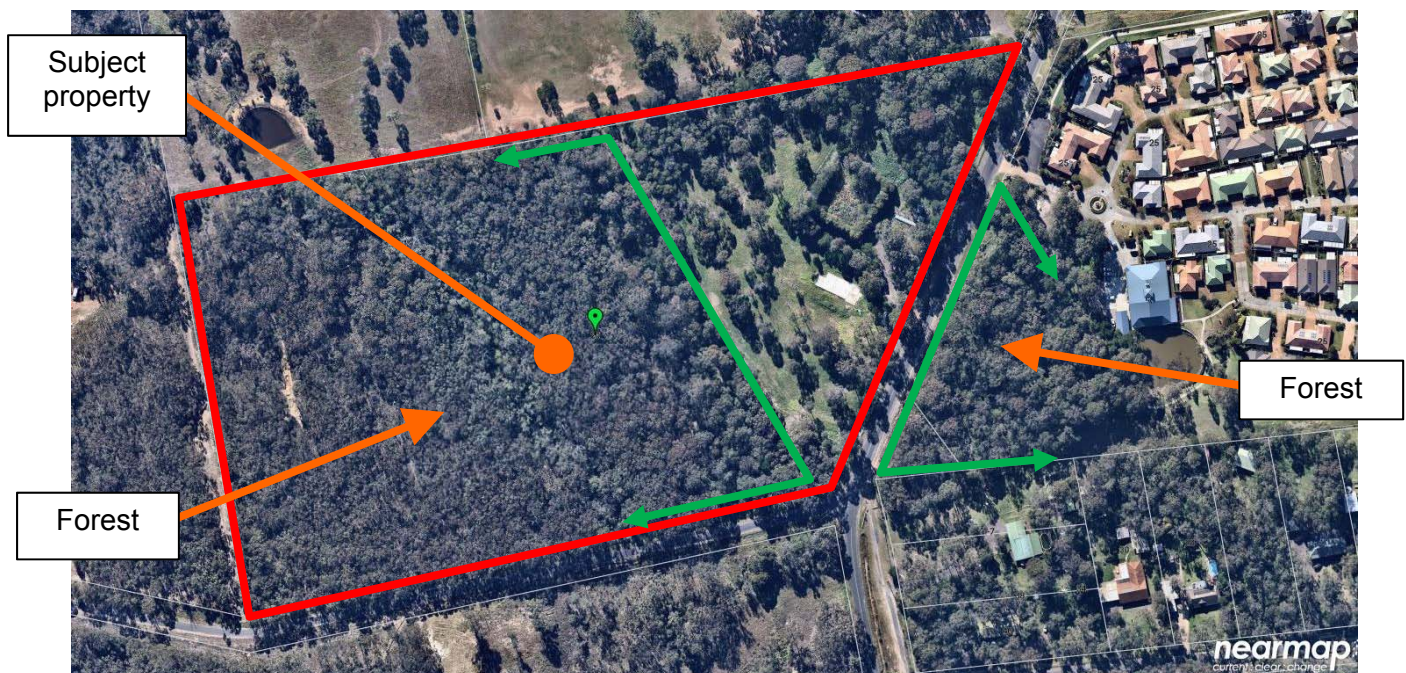


Image 05: Extract from Nearmap showing the vegetation around the subject property

## 7.04 Slope and Topography

The slope that would most significantly affect bushfire behaviour within the hazard must be assessed for at least 100 metres from within the hazard to determine the required Asset Protection Zones. The slope that would most significantly influence bushfire behaviour was determined onsite and verified from topographic mapping to be:

- 1 degree down slope within the hazard to the east
- 1 degree down slope within the hazard to the west

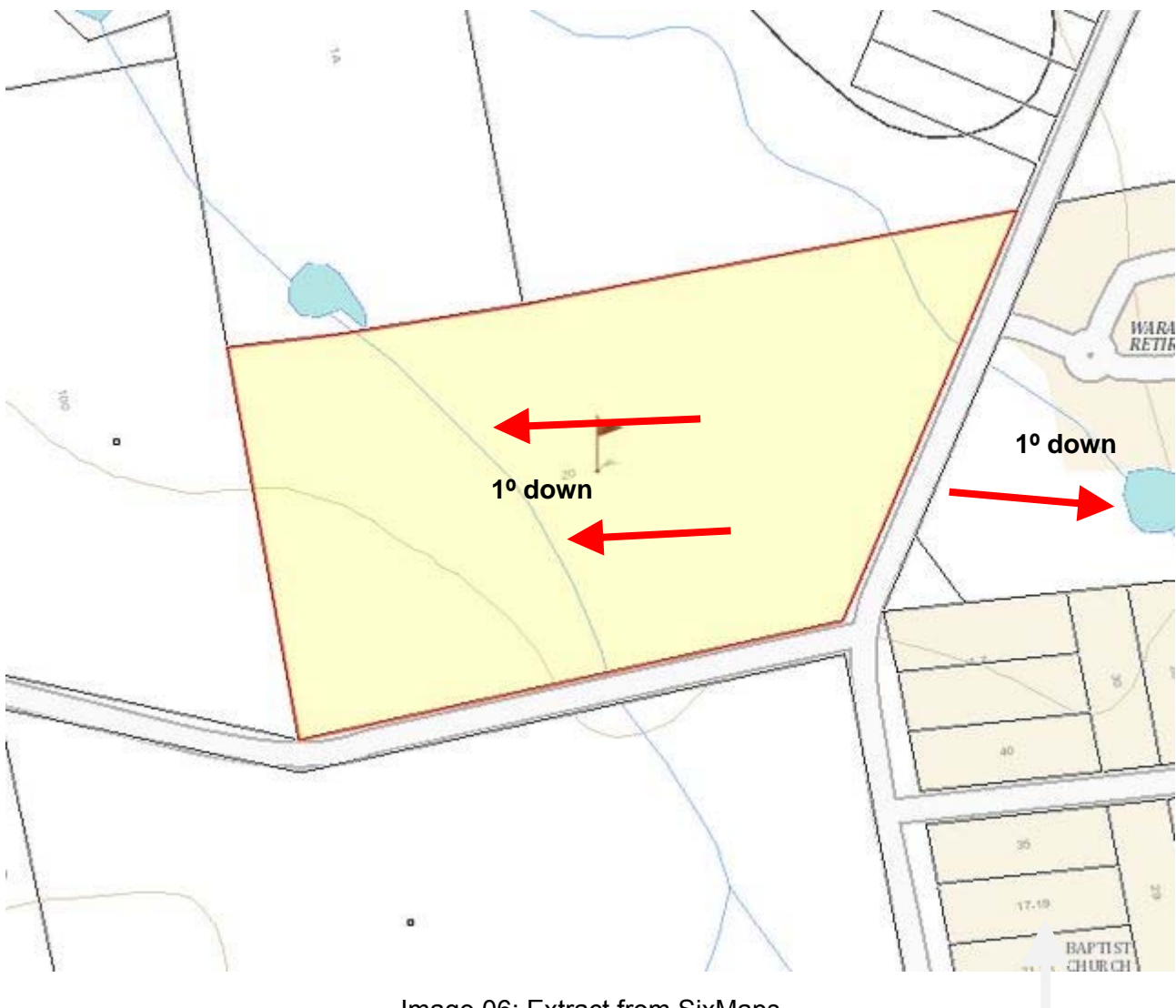


Image 06: Extract from SixMaps

## 7.05 Asset Protection Zones

Asset Protection Zones for residential development are determined from Table A2.4 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 29 kW/m<sup>2</sup> at a building footprint. The required APZ's were determined to be;

- 25 metres from the hazard to the east and west

Within the APZ's roads, swimming pools, play areas, and non habitable structures such as detached garages and work sheds are permitted. The subject site has street frontage to Tylers Road to the east and south and maintained allotments to the north providing off site APZs for the majority of the allotment. Any proposed lots will require a 25 metre APZ from the vegetation to the east and west.

All grounds within the proposed lots and along the road verges will be required to be maintained in accordance with the requirements for an Inner Protection Area as described in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

The planning proposal relates to rezoning to allow for future residential development within the subject site. The site can provide complying setbacks and as such the proposed subdivision can achieve compliance with PBP 2006.

## 7.06 Fire Fighting Water Supply

Hydrants are available along Tylers Roads for the replenishment of attending fire services.

If an internal road is extended into the site a hydrant system will need to be installed to service the proposed residential allotments on the new internal road. The sizing, spacing and pressures of this system must comply with AS2419.1-2005.

A future subdivision has the capability of complying with the water supply requirements of PBP 2006.

## 7.07 Property Access – Fire Services & Evacuation

The subject site has street access from Tylers Road to the east and south.

Attending fire crews are able to access the hazard via Tylers Road for hazard reduction or fire suppression activities. 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.

Tylers Road provides egress to the east to a main arterial road. The access in this direction along this road is not affected by any high bushfire hazards. At this intersection access is available in two different directions.

In consideration of the traditional fire paths, direction of travel, low fire threat along the path of egress the surrounding road network is considered acceptable to cater for the increased development in this area during a bushfire emergency.

## 8.0 Site & Bushfire Hazard Determination

### 8.01 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).

### 8.02 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.

### 8.03 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



## 8.04 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 20 Tylers Road, Bargo was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- a) The building footprints can meet or exceed the minimum required Asset Protection Zones detailed in Appendix 2 of PBP.
- 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) Future access drives and roads can satisfy the requirements for Property Access as detailed in section 4.1.3 (1 & 2) of PBP.

## 8.05 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 s4.14 of the *Environmental Planning and Assessment Act* 1997 at the time of any future application for the construction of a dwelling within the future allotments. Any future dwellings can be outside a BAL Flame Zone and therefore comply with the principles of PBP 2006.

## 9.0 Conclusion

Given that the property is deemed bushfire prone under Wollondilly 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 bordered by Tylers Road to the east and south and abuts residential allotments to the north and west and Bargo Sportsground also to the north. The vegetation identified as being a potential bushfire hazard is located within subject property to the west and Waratah Highlands Retirement Village to the east.

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 residential subdivision were determined from Appendix 2 of *Planning for Bush Fire Protection* 2006. The future allotments (minimum 4000sqm) can comply with or exceed the minimum requirements of PBP 2006. The access design and the provisions of future services (water, gas and electricity) can also meet the requirements of section 4.1.3 of PBP 2006.

No new dwellings are proposed as part of this application. An independent assessment will be required under s4.14 of the *Environmental Planning and Assessment Act* 1997 at the time of any future application for the construction of a dwelling within the future allotments.

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 a future residential subdivision has the capacity to comply with the requirements of PBP 2006.

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

Prepared by  
Building Code & Bushfire Hazard Solutions P/L



**Duncan Armour**

Reviewed and endorsed by  
Building Code & Bushfire Hazard Solutions P/L



**Stuart McMonnies**

G. D. Design in Bushfire Prone Areas.  
Certificate IV Fire Technology  
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner  
Accreditation number – BPAD 9400



## 10.0 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) 'Wollondilly Council's Bushfire Prone Land Map'
- f) Acknowledgements to:  
NSW Department of Lands – SixViewer  
Street-directory.com.au
- g) Location and Site Development Plan by Rein Warry and Co., File No. 6838, Amendment 8, Dated 6/3/2013

### Attachments

Attachments: Nil