

# Bushfire Hazard Assessment Report

***Proposed:***  
**New Zoning**

***At:***  
**2 & 24 Collingwood Dr &  
107 Matcham Rd, Matcham**

*Reference Number:* 170450

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**7<sup>th</sup> December 2016**



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## Contents

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	<u>Page No.</u>
List of Abbreviations	2
1.0 Introduction	3
2.0 Purpose of Report	3
3.0 Scope of Report	3
4.0 Referenced Documents and Persons	3
5.0 Compliance Table and Notes	4
6.0 Aerial view of the subject allotment	5
7.0 Bushfire Hazard Assessment	6 - 10
8.0 Site and Bushfire Hazard Determination	11 - 12
9.0 Conclusion	13 - 14
10.0 Annexure	14
- List of referenced documents and attachments	
- Attachments	

## List of Abbreviations:

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APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 as amended.
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Central Coast 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
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 comprises of three existing allotments known as 2 and 24 Collingwood Drive and 107 Matcham Road, Matcham (Lot 2 DP 561283, Lot 11 DP 567336 and Lot 13 DP 576336) and is within Central Coast Council's local government area.

The planning proposal relates to the proposed new zoning to allow for the future rural-residential subdivision of the three existing allotments into six. The existing allotments are currently zoned Deferred Matter which reverts back to the Pre 2014 zoning of 7(a) Conservation.

The subject site has street frontage to Matcham Road to the east and Collingwood Drive to the south and abuts neighbouring private rural-residential allotments to the north and west. The vegetation identified as being a potential bushfire hazard is located to the east, south and southwest of the subject site.

Central Coasts Council's Bushfire Prone Land Map identifies that the subject site contains designated Category 1 and Category 2 Vegetation and their associated buffer zones 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 rural-residential subdivision 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 Gosford Council's LEP 2014

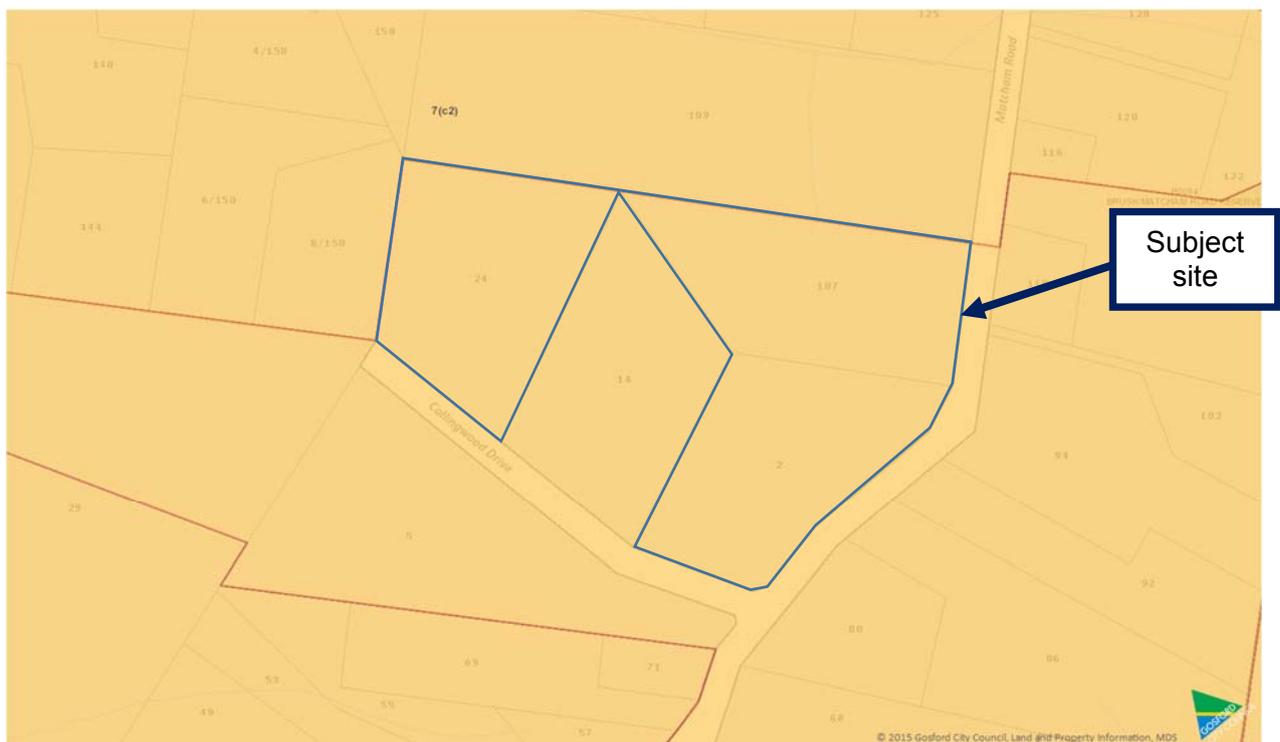


Image 02: Zone plan extract from Gosford Council's LEP pre 2014

## 6.0 Aerial view of the subject allotment



Image 03: Aerial view of the subject area, extract from NSW Dept. Lands SIXMaps database.



## 7.02 Location

The subject site comprises of three existing allotments known as 2 and 24 Collingwood Drive and 107 Matcham Road, Matcham (Lot 2 DP 561283, Lot 11 DP 567336 and Lot 13 DP 576336) and is within Central Coast Council's local government area.

The subject site has street frontage to Matcham Road to the east and Collingwood Drive to the south and abuts neighbouring private rural-residential allotments to the north and west. The vegetation identified as being a potential bushfire hazard is located within the east, south and southwest of the subject site.



Photograph 01: View west from Matcham Road along the access drive for 107 Matcham Road

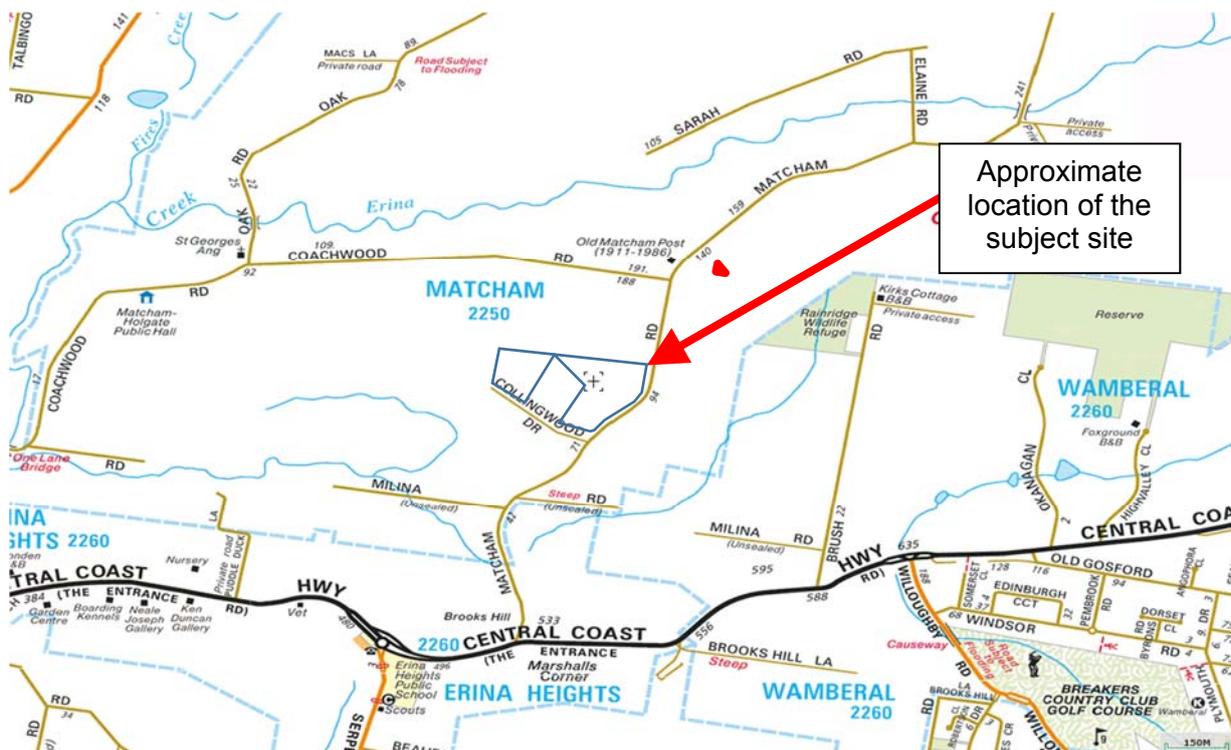


Image 05: Extract from street-directory.com.au

## 7.03 Vegetation

The vegetation within the subject site was found to be predominately slashed / grazed pastures, with a small pocket of mature trees within the northern portion of 24 Collingwood Drive. The vegetation posing a hazard to the subject site was found to be within neighbouring private allotments to the east, south and southwest.

The vegetation posing a hazard to all three aspects was found to consist of trees 15-30 metres in height with an understorey of low trees, shrubs and grassy. This vegetation is mapped as being Coastal Narrabeen Moist Forest (North Coast Wet Sclerophyll Forest) on Gosford LGA 2009 layer on NSW Government SixMaps portal.

The vegetation posing a hazard to the south was found to be less than a hectare in size and therefore in accordance with A2.3 of PBP has been assessed as a Remnant hazard.

For the purpose of assessment under Planning for Bush Fire Protection 2006 the vegetation posing a hazard to the east and southwest was determined to be Forest.



Photograph 03: View east from Matcham Road toward the southern hazard



Photograph 04: View southwest from Collingwood Drive toward the south-western hazard

## 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 the available building footprints 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:

- 0 degrees and upslope within the hazard to the east
- 15 – 20 degrees down slope within the hazard to the south
- 5 - 10 degrees down slope within the hazard to the southwest

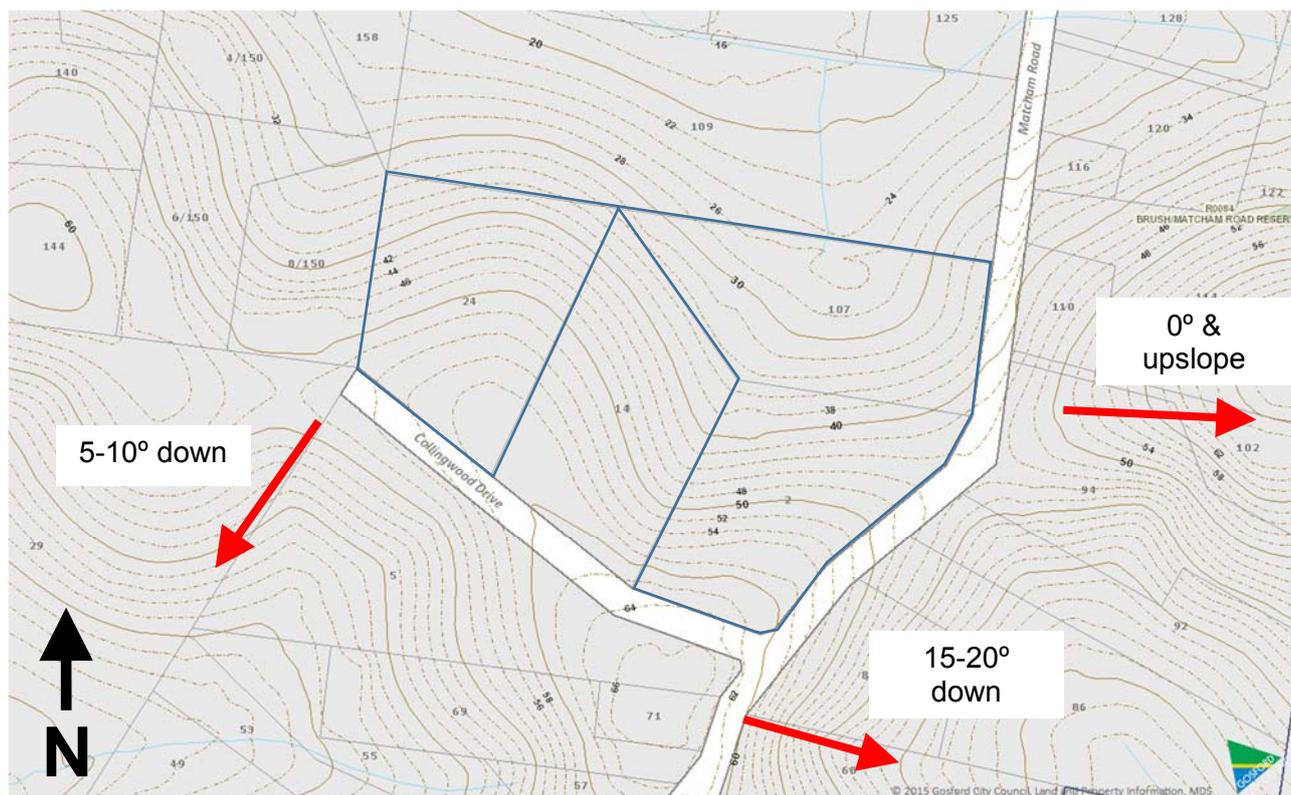


Image 06: Extract from NSW Dept. Lands SIXMaps database

## 7.05 Asset Protection Zones

Asset Protection Zones (APZ's) 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;

- 20 metres from the hazard to the east
- 25 metres from the hazard to the south
- 35 metres from the hazard to the southwest

Within the APZ's access drives, swimming pools, outdoor play areas, and non-habitable structures such as detached garages and work sheds are permitted.

All grounds within the subject site will be required to be continued to be maintained in accordance with the requirements for an APZ as described in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

Any future subdivision of the subject site can provide building footprints exceeding the minimum required Asset Protection Zones under Appendix 2 of Planning for Bush Fire Protection 2006.

## 7.06 Fire Fighting Water Supply

Hydrants are available along Collingwood Drive and Matcham Road for the replenishment of attending fire services.

The water supply requirements for rural-residential subdivision can be addressed by two methods, being;

1. Provision of a static water supply (the size of the proposed allotment will dictate the size of the water supply (Table 4.2 of PBP)); or
2. The most distant external point of the available building footprint is within 90 metres of an existing hydrant along Collingwood Drive or Matcham Road.

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 frontage to Matcham Road to the east and Collingwood Drive to the south.

Planning for Bush Fire Protection addresses design considerations for access roads for properties determined to be bushfire prone. Any new access drive for a future subdivision application will need to comply with the requirements for 'Property Access' as detailed in section 4.1.3 of Planning for Bush Fire Protection 2006.

The following are the requirements for Property Access as detailed in section 4.1.3 of PBP which must be applied to any new access drive.

- 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
- A minimum carriageway width of four metres
- In forest, woodland and heath situations, rural property access roads have passing bays every 200 metres that are 20 metres long by two metres wide, making a minimum trafficable width of six metres at the passing bay.
- A minimum vertical clearance of four metres to any overhanging obstructions, including tree branches.
- Internal roads 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 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.

*Note: Some short constrictions in the access may be accepted where they are not less than the minimum (3.5m), extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.*

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

## 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 2 & 24 Collingwood Drive and 107 Matcham Road, Matcham was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- The subject site is large enough that any future building footprints can meet or exceed the minimum required Asset Protection Zones.
- Recommendations to maintain the Asset Protection Zones within the subject site can be included in future development consent.
- Future water supply can satisfy the requirements for Services as detailed in section 4.1.3 of PBP.
- Any proposed access drives can satisfy the requirements for Property Access as detailed in section 4.1.3 (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 current application. An independent assessment will be required under s79BA of the *Environmental Planning and Assessment Act* 1997 at the time of any future application for the construction of dwellings within the proposed future allotments.

## 8.06 Risk Rating

In assessing the bushfire threat to the site and its structures it is important to have a holistic approach and assess the risk of a bushfire occurring and impacting the subject site. It is also important to include the risk the site poses to neighbouring properties.

Table 01 is an overview of risk to any future dwellings. This model takes a holistic approach and assesses the risk of a bushfire occurring and impacting the site. This risk level can be reduced by either an increase in preparedness by the owners/occupants of the dwellings (e.g. good house keeping, maintained lawns & bushfire awareness) and/or hazard reduction activities by local fire agencies. Alternatively this risk level can increase if the preparedness level decreases and/or hazard reduction activities are neglected for the area.

The below matrix is for risk only, it does not reflect the Bushfire Attack Level determined within PBP 2006.

		CONSEQUENCE			
		Minor	Moderate	Major	Catastrophic
L I K E L I H O O D	Almost Certain	High	Very High	Extreme	Extreme
	Likely	Medium	High	Very High	Extreme
	Possible	Low	Medium	High	Very High
	Unlikely	Low	Low	Medium	High

Table 01: Risk Matrix

## 9.0 Conclusion

Given that the property is deemed bushfire prone under Central Coast 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 comprises of three existing allotments known as 2 and 24 Collingwood Drive and 107 Matcham Road, Matcham (Lot 2 DP 561283, Lot 11 DP 567336 and Lot 13 DP 576336) and is within Central Coast Council's local government area.

The planning proposal relates to the proposed new zoning to allow for the future rural-residential subdivision of the three existing allotments into six. The existing allotments are currently zoned Deferred Matter which reverts back to the Pre 2014 zoning of 7(a) Conservation.

The vegetation identified as being a potential bushfire hazard is located within the east, south and southwest of the subject site.

The required Asset Protection Zones (APZ) for the future subdivision were determined from Appendix 2 of *Planning for Bush Fire Protection* 2006. The subject site is large enough that any future building footprints can meet or exceed the minimum required Asset Protection Zones as detailed in Appendix 2 of PBP.

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.

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that the site has the capacity to comply with the relevant specifications and requirements of Planning for Bush Fire Protection 2006.

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

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**Disclaimer:**

Quote from *Planning for Bush Fire Protection* 2006, 'Any representation, statement opinion, or advice expressed or implied in this publication is made in good faith on the basis that the State of New South Wales, the NSW Rural Fire Service, its agents and employees are not liable (whether by reason of negligence, lack of care or otherwise) to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.'

Similarly the interpretations and opinions provided by Building Code and Bushfire Hazard Solutions in regard to bushfire protection are also given in the same good faith.

## 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) 'Central Coast Council's Bushfire Prone Land Map'
- f) Acknowledgements to:  
NSW Department of Lands – SIXMaps  
Street-directory.com.au

### Attachments

Attachment 01: N/A