

# Bushfire Hazard Assessment Report

## ***Proposed:*** **Alterations and Additions**

## ***At:*** **'Dardanelles'** **Stage 2.5 & 2.6 –** **RSL ANZAC Village,** **Narrabeen**

*Reference Number:* 150149

*Prepared For:*  
RSL Lifecare Ltd  
C/- TSA Management

**3<sup>rd</sup> October 2014**



*Prepared By:*  
**Building Code & Bushfire  
Hazard Solutions Pty Limited**

Tel: (02) 9457 6530  
Fax: (02) 9457 6532

PO Box 124  
Berowra NSW 2081  
ABN 19 057 337 774

[www.bushfirehazardsolutions.com.au](http://www.bushfirehazardsolutions.com.au)



**Certified Business**  
Bushfire Planning & Design  
BPD-BA-02354



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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	Warringah Council
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
ILU	Independent Living Unit
IPA	Inner Protection Area
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection – 2006
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

## 1.0 Introduction

The development proposal relates to the alterations and additions to an existing approved aged care development within an existing aged care establishment known as RSL ANZAC Village, Narrabeen. The proposed alterations and additions will involve stages 2.5 and 2.6 (known as Blocks M & N) of the 'Dardanelles' within the site.

The alterations and additions to the approved design do not result in an increase in occupant capacity and purely provide increased functionality of the units to cater for current market interests. The proposal will marginally shift the closest point of the buildings (being the attached balconies) closer to the existing bushland, however with the proposed Asset Protection Zones the subject application will result in a lower Bushfire Attack Level (BAL Flame Zone to BAL 29) and an increased separation distances.

The subject property is located at 90 Veterans Parade, Narrabeen NSW. The subject property has street frontage to Veterans Parade to the east and Lantana Avenue to the south and is bisected by Colooli Road further north. The proposed buildings have frontage to the internal road 'Lakeshore Drive' to the north and are bisected by other internal roads.

The vegetation identified as being the hazard is located to the northeast, southeast, southwest and northwest of the proposed works within the subject site.

Warringah Council's Bushfire Prone Land Map identifies the subject property as containing Category 1 Vegetation and its associated 100 metre buffer zone and therefore the application of Planning for Bush Fire Protection - 2006 (PBP) must apply in this instance.

As the proposal relates to the alterations and additions to an approved aged care development within an existing aged care establishment it has been assessed under the provisions of Special Fire Protection Purpose Development as infill development under section 4.2.5 of Planning for Bush Fire Protection 2006.

A better overall bushfire safety outcome will be achieved by providing:

- Compliance with Australian Standard 3959 'Construction of buildings in bushfire-prone areas' – 2009 for all new construction,
- No new works will be located closer to the bushfire hazard interfaces than existing buildings within the site,
- No new works will be located within a higher Bushfire Attack Level than the existing buildings within the site,
- The Bushfire Attack Level of the subject buildings being reduced from BAL Flame Zone to BAL 29 – outside flame length, by extending the APZs,
- Formal Asset Protection Zones which will be subject to a Fuel Management Plan, &
- Improved emergency planning.

## 2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide RSL Lifecare Ltd, TSA Management, Humel Architects, the Rural Fire Service and Council with an independent bushfire hazard determination together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that the Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject Development Application.

### 3.0 Scope of this Report

The scope of this report is limited to providing a bushfire hazard assessment and recommendations for the subject property. 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 property.

### 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.

Two company representatives have undertaken site inspections of the subject property and the surrounding area. The 'Proposed APZ Zones' Plans prepared by Humel Architects, dwg no 2013.70 AP1-2, dated Oct 2014, rev B have been relied upon for this assessment.

### 5.0 Compliance Tables & Notes

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

	Northeast	Southeast	Southwest	Northwest
<b>Vegetation Structure</b>	Forest	Forest	Riparian	Forest
<b>Slope</b>	0 – 5 degrees down	0 degrees and up	0 - 5 degrees down	0 – 5 degrees down
<b>Proposed Asset Protection Zone</b>	32 metres	25 metres	>97 metres	32 metres
<b>Significant Environmental Features</b>	Lakeshore Drive	Internal Road	Existing buildings / road	Lakeshore Drive
<b>Threatened Species</b>	Not Known By Others	Not Known By Others	APZ Existing	Not Known By Others
<b>Aboriginal Relics</b>	Not Known By Others	Not Known By Others	APZ Existing	Not Known By Others
<b>Bushfire Attack Level</b>	BAL 29	BAL 29	BAL 12.5	BAL 29

### Asset Protection Zones Compliance

The proposed development will include the establishment and ongoing maintenance of a formal Asset Protection Zones achieving a Bushfire Attack Level to the subject buildings of BAL 29. All Asset Protection Zones will be subject to a Fuel Management Plan to ensure the ongoing management.



## Construction Level Compliance

The highest Bushfire Attack Level to the closest point of the proposed new works was determined from Table 2.4.2 of AS3959 – 2009 to be 'BAL 29'. The proposed new works are therefore required to be constructed to BAL 29 under section 7 of AS3959 – 2009.

### 6.0 Aerial view & Site Plan

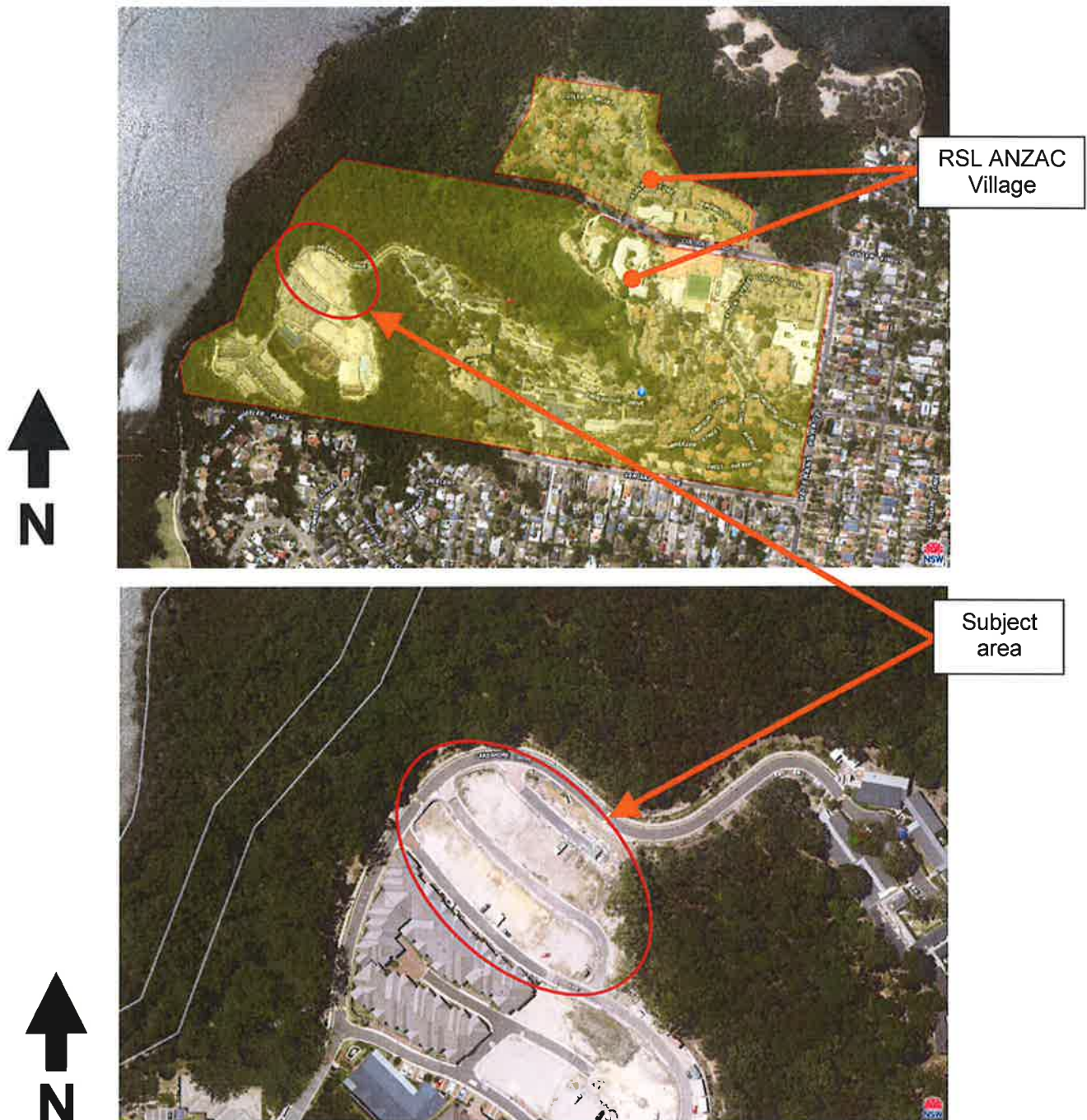


Image 01 & 02: Aerial view of the subject area c/- NSW Government SixMaps database

## 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 – 2009 'Construction of buildings in bushfire prone areas'.

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 a 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 subject development relates to the alterations and additions to an existing approved aged care development within an existing aged care establishment.

To accord with PBP the development is classified as Special Fire Protection Purpose development and assessed as a section 100b application under the Rural Fires Act 1997. The site contains an existing SFPP development and therefore this application has been assessed under the provisions of section 4.2.5 'SFPPs as infill' of Planning for Bush Fire Protection 2006.



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



## 7.02 Location

The subject property is known as RSL ANZAC Village being located at 90 Veterans Parade, Narrabeen and is within Warringah Councils Local Government Area.

The subject property has street frontage to Veterans Parade to the east and Lantana Avenue to the south and is bisected by Colooli Road further north. The proposed buildings have frontage to the internal road 'Lakeshore Drive' to the north and are bisected by other internal roads.

The vegetation identified as being the hazard is located to the northeast, southeast, southwest and northwest of the proposed works within the subject site.



Photograph 01: View east from Lakeshore Drive toward Block N



Image 03: Extract from street-directory.com.au



### 7.03 Vegetation

The vegetation identified as posing a bushfire hazard to the subject buildings is located to the northeast, southeast, southwest and northwest within the subject site.

The vegetation posing the highest hazard to the northeast, southeast and northwest was found to consist of trees 10 - 20 metres in height with a 30-70% foliage cover and an understorey of low trees, shrubs, grasses and ferns. For the purpose of assessment under Planning for Bush Fire Protection 2006 the vegetation posing a hazard to the northeast, southeast and northwest was determined to be Forest.

The vegetation posing a hazard to the southwest was found to be associated with an existing watercourse not exceeding 20 metres on either bank. In accordance with A2.3 of PBP the vegetation posing a hazard to the southwest has been determined to be a 'riparian area' and a Rainforest structure used to ascertain the relevant Bushfire Attack Level.



Forest

Photograph 02: View north along an existing walking trail within the north-western hazard



Forest

Photograph 03: View north from Lakeshore Drive toward the north-eastern/ north-western hazards

## 7.04 Slope and Topography

The slope that would most significantly affect fire behaviour within the hazards must be assessed for at least 100 metres from the proposed development site. The slope was measured onsite using an inclinometer and verified from topographic imagery of the area.

While it is noted that the slope within the hazard to the north increases to 5-10 degree downslope in an east/west direction, this was not found to be directly toward the subject buildings.

The slope that would most significantly affect fire behaviour toward the subject buildings was determined to be:

- 0 – 5 degrees down slope within the hazard to the northeast, southwest and northwest
- 0 degrees and up slope within the hazard to the southeast

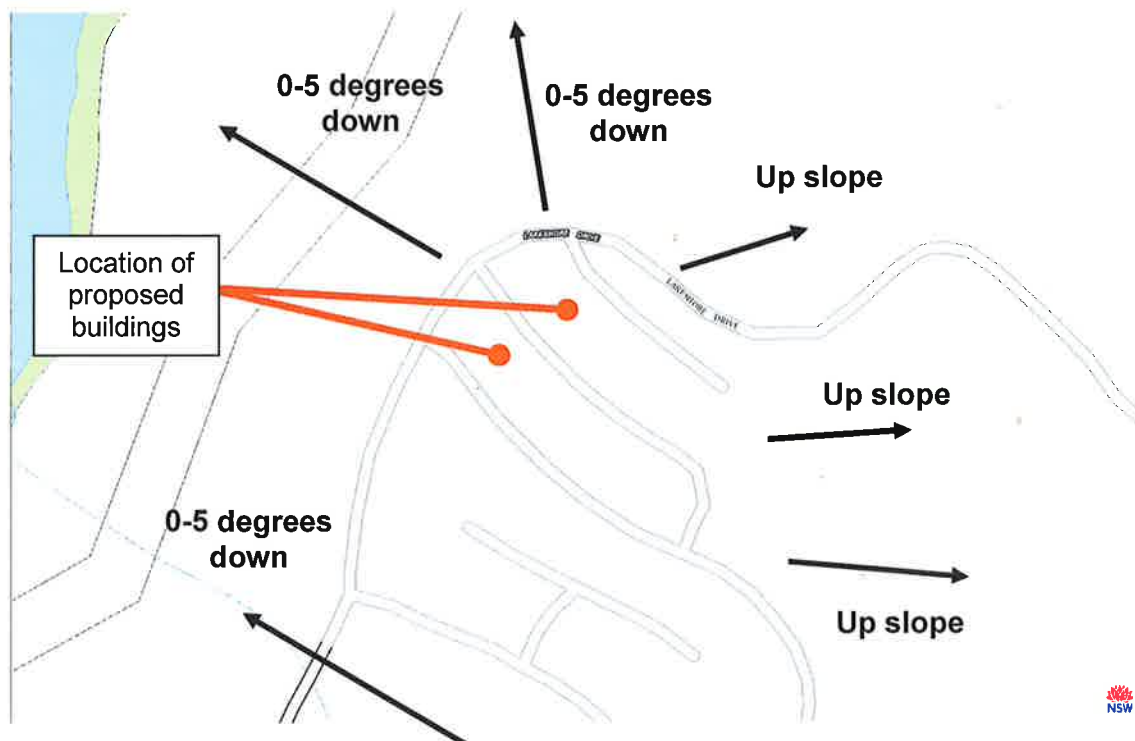


Image 04: Extract from Land and Property Management Authority Spatial Information Exchange

## 7.05 Asset Protection Zones

Asset Protection Zones for new Special Fire Protection Purpose (SFPP) development are determined from Table A2.6 of PBP or bushfire design modelling achieving a radiant heat impact of no more than  $10\text{kW/m}^2$  at the closest point of the available building footprint.

The subject site contains an operational aged care establishment and is therefore considered to be eligible for assessment under the provisions of section 4.2.5 'SFPPs as infill' of PBP.

PBP states that 'Alterations and additions to existing SFPP's (i.e. approved prior to 1st August 2002), including their external appearance or finish, which may involve an increase in size and footprint of the building or redevelopment of an existing building are considered to be infill development'.

The proposed works are within the existing pattern of development, cover a similar footprint to already approved development and extend no closer to the bushfire hazards than existing buildings within the subject property.

The existing separation distances from the approved building footprints were found to vary between 6 metres and 14 metres to the existing bushland to the northeast, southeast and northwest.

The proposed development will include the establishment and ongoing maintenance of a formal Asset Protection Zones that will reduce the BAL to the existing buildings from BAL FZ to BAL 29. All Asset Protection Zones will be subject to a Fuel Management Plan to ensure the ongoing management.

The proposed APZs will locate the subject buildings outside potential flame contact and therefore results in a much better bushfire safety outcome than currently approved.



Photograph 04: View northeast along Lakeshore Drive of the existing APZ



## 7.06 Fire Fighting Water Supply

The proposed buildings will be connected to the existing reticulated water mains for their residential purposes.

Existing pillar hydrants are available throughout the subject site. The existing fire hydrant spacing around the subject buildings and hazards is considered acceptable. The existing water supply is considered acceptable.



Photograph 06: View southwest from Lakeshore Drive toward the subject area

## 7.07 Property Access

The subject property has street frontage to Veterans Parade to the east and Lantana Avenue to the south and is bisected by Colooli Road further north. The proposed buildings have frontage to the internal road 'Lakeshore Drive' to the north and are bisected by other internal roads.

The internal road system of the approved 'Dardanelles' development has already been constructed and will not be altered as part of this application. This existing access provides two way access (Lakeshore Drive) in two directions (to James Wheeler Place or Lantana Avenue) from the subject buildings.

Fire services have free vehicle access to and around the building footprints. Attending fire crews can access the hazard via the existing internal roads within the subject property for hazard reduction or fire suppression activities.

The existing access provisions are considered adequate and will not be altered as part of this application.

## 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 property has been identified as being bushfire prone land therefore it is appropriate to apply PBP.

### 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 development located at RSL ANZAC Village, Narrabeen was assessed against the requirements of Planning for Bush Fire Protection 2006 noting the following:

- a) Water supplies for fire fighting purposes are adequate.
- b) The proposed new works will extend no closer to the bushfire hazard than existing approved building footprints and will be constructed to the relevant Bushfire Attack Level under AS3959 - 2009.
- c) The proposed development will result in a lower BAL to the subject buildings (BAL FZ to BAL 29).
- d) The existing access provisions are considered adequate.

## 8.05 Viable Construction Method

One of 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.

The highest Bushfire Attack Level to the closest point of the proposed new works was determined from Table 2.4.2 of AS3959 – 2009 to be 'BAL 29'. The proposed new works are therefore required to be constructed to BAL 29 under section 7 of AS3959 – 2009.

## 9.0 Recommendations

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The following 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.

### Asset Protection Zones

1. That a minimum 32 metre Asset Protection Zone be maintained in accordance with an Inner Protection Area to the northeast and northwest of Blocks N & M.
2. That a minimum 25 metre Asset Protection Zone be maintained in accordance with an Inner Protection Area to the southeast of Blocks N & M.
3. That a Fuel Management Plan be established to ensure the ongoing management of the Asset Protection Zones.

### Construction

4. That all proposed new building works be constructed to BAL 29 under section 3 and section 7 of AS 3959 – 2009 and Appendix 3 under PBP 2006.

### Landscaping

5. That any new landscaping is to comply with Appendix 5 'Landscaping and Property Maintenance' under Planning for Bush Fire Protection 2006.

### Emergency Management

6. That a bushfire emergency / evacuation plan is prepared constant with the NSW Rural Fire Service Guidelines for the *Preparation of Emergency / Evacuation Plan*.



## 10.0 Conclusion

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Given that the property is deemed bushfire prone under Warringah Council's Bushfire Prone Land Map any development would need to meet the requirements of Planning for Bush Fire Protection – 2006 and of the construction requirements of Australian Standard 3959 – 2009. 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 property.

The development proposal relates to the alterations and additions of an approved aged care development within an existing aged care establishment known as RSL ANZAC Village, located at 90 Veterans Parade, Narrabeen NSW. The vegetation identified as being the hazard is to the northeast, southeast, southwest and northwest within the subject site.

The alterations and additions to the approved design do not result in an increase in occupant capacity and purely provide increased functionality of the units to cater for current market interests. The proposal will marginally shift the closest point of the buildings (being the attached balconies) closer to the existing bushland, however with the proposed Asset Protection Zones the subject application will result in a lower Bushfire Attack Level (BAL Flame Zone to BAL 29) and an increased separation distances.

The subject site contains existing Special Fire Protection Purpose development and therefore this application has been assessed under the provisions of section 4.2.5 'SFPPs as infill' of PBP.

The proposed works are no closer to the hazard than the existing development within the subject site and the improvements to Asset Protection Zones alone provide a significantly better outcome than if the development did not proceed. This in itself suggests the application should be approved under the infill provisions of PBP 2006.

Above this the application provides:

- Compliance with Australian Standard 3959 'Construction of buildings in bushfire-prone areas' – 2009 for all new construction,
- No new works will be located closer to the bushfire hazard interfaces than existing buildings within the site,
- No new works will be located within a higher Bushfire Attack Level than the existing buildings within the site,
- The Bushfire Attack Level of the subject buildings being reduced from BAL Flame Zone to BAL 29 – outside flame length, by extending the APZs,
- Formal Asset Protection Zones which will be subject to a Fuel Management Plan,  
&
- Improved emergency planning.

It is of our opinion that the proposed development satisfies the intent and performance criteria of section 4.3.5 as required under section 4.2.5 of PBP. Furthermore we are of the opinion that the principles of section 3.3 have been demonstrated to achieve exceptional circumstances, allowing for a reduction in the minimum required setbacks.

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 when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development and also satisfy both the Rural Fire Service's concerns and those of Council in this area.

We are therefore in support of the development application.

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

Prepared by  
Building Code & Bushfire Hazard Solutions

Reviewed 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 Certified Practitioner  
Certification number – BPD – PA-09400



**Wayne Tucker**

G. D. Design in Bushfire Prone Areas,  
Certificate IV Fire Technology  
Ass Dip Applied Science  
Manager - Bushfire Section  
Fire Protection Association of Australia BPAD – L3 Certified Practitioner  
Certification number – BPD – PA-09399

**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.

## 11.0 Annexure 01

### 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) 'Ocean Shores to Desert Dunes' David Keith
- f) 'Warringah Council's Bushfire Prone Land Map'
- g) The 'Proposed APZ Zones' Plans prepared by Humel Architects, dwg no 2013.70 AP1-2, dated Oct 2014, rev B
- h) Acknowledgements to:  
NSW Department of Lands – SixViewer  
Street-directory.com.au

### Attachments

Attachment 01: Proposed APZ Zones Plans





PROJECT TITLE	STAGE 25 & 26 PARADELLES
CLIENT	CONSTRUCTION OF 23
DESIGNER	INDIVIDUALS
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000

PROJECT TITLE	STAGE 25 & 26 PARADELLES
CLIENT	CONSTRUCTION OF 23
DESIGNER	INDIVIDUALS
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000

PROJECT TITLE	STAGE 25 & 26 PARADELLES
CLIENT	CONSTRUCTION OF 23
DESIGNER	INDIVIDUALS
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000
DATE	2018/01/11
SCALE	1:1000
PROJECT NO.	1000000000







BOUNDARY

BARRIER FENCE

RESTRICTED DEVELOPMENT LINE

LAKE SHORE DRIVE

APZ LINE

APZ LINE

RESTRICTED DEVELOPMENT LINE

BARRIER FENCE

ROADWAY No. 1

ROADWAY No. 2

ROADWAY No. 1

ROADWAY No. 3

ROADWAY No. 4

ROADWAY No. 2

ROADWAY No. 1

ROADWAY No. 6

DATE OF PRELIMINARY DESIGN	NO.	DATE
DATE OF PRELIMINARY DESIGN	NO.	DATE
DATE OF PRELIMINARY DESIGN	NO.	DATE

PROJECT: RSL LAND LTD  
TSA MANAGEMENT PTY LTD

SHEET TITLE:  
STAGE 2 & 3A PARCELS  
CONSTRUCTION OF 28  
RESIDENTIAL LOTS UNITS  
RSL ANZAC VILLAGE NARRABEEN

PROJECT: RSL LAND LTD  
TSA MANAGEMENT PTY LTD

SCALE: 1:200  
DATE: OCT 2014  
DRAWN BY: [Name]  
CHECKED BY: [Name]

APZ LINE  
B