

This Report has been prepared and submitted by  
Bushfire Consulting Services Pty Ltd  
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Reference: 19/0345

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Date of Issue: 27 May 2019

# Bush Fire Assessment Report

in relation to the proposed  
covered pergola over an existing deck at

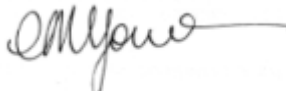
**Lot 518 DP 218576**  
**11 Leinster Avenue Killarney Heights**  
**(subject site)**



**BUSHFIRE**  
**CONSULTING**  
**SERVICES** PTY LTD

Designing Bushfire Protection Measures

## Executive Summary

This Assessment has been Certified by: Catherine Gorrie BPAD-Level 3 Accredited Practitioner FPAA Cert No: BPAD20751	
What is the recommended level of compliance with AS3959-2009?	AS3959-2009 BAL 12.5
Can this proposal comply with AS 3959-2009 and Addendum to Appendix 3 of Planning for Bush Fire Protection (PBP)?	Yes
Does this development comply with the aims and objectives of PBP?	Yes
Is referral to the NSW Rural Fire Service (RFS) required?	No
Plan Reference:	Plans by Australian Outdoor Living numbered 17770 dated 15/03/2019
Bushfire Consulting Services Report Issue No: Date of Issue:	1 27/05/2019

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### Disclaimer

*Any recommendation or advice expressed in this report is made in good faith and in accordance with the relevant legislation for bushfire prone development in New South Wales. It should be borne in mind that the measures recommended in this report cannot guarantee that a building will survive a bushfire event on every occasion. This is due to the degree of vegetation management, the unpredictable behaviour of bushfires and extreme weather conditions. As such, the author is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to the person taking action or not taking action based on the recommendations of this report.*

*NOTE: This bush fire assessment report shall remain valid for 12 months from the date of issue.*

## List of Abbreviations

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2009 including Amendment 3
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPAD	Bushfire Planning and Design (Accreditation Scheme)
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Northern Beaches Council
CDC	Complying Development Certificate
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act – 1979
FPAA	Fire Protection Association of Australia
IPA	Inner Protection Area
NCC	National Construction Code
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection 2006
RF Act	Rural Fires Act – 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SWS	Static Water Supply

## Introduction

This report has been commissioned by Australian Outdoor Living to provide a bush fire assessment for the construction of a covered pergola over an existing deck at Lot 518 DP 218576, 11 Leinster Avenue Killarney Heights.

The subject property is “bushfire prone land” as per the local Council bushfire prone land map as defined by section 10.3 (s10.3) of the *Environmental Planning & Assessment Act (EP&A) 1979* and therefore the requirements stipulated by legislation apply.

*Planning for Bush Fire Protection 2006* (Chapter 4.3.5) describes this type of development as “infill development” and therefore the requirements of section 4.14 (s4.14) of the EP&A Act are applicable.

The bush fire assessment report and recommendations are derived from the NSW EP&A Act, the Rural Fire Service document *Planning for Bush Fire Protection 2006* and Australian Standard 3959-2009 ‘Construction of Buildings in Bushfire Prone Areas’.

## Purpose of this Report

The purpose of this report is to provide the owners, the Council, the Certifier and the Rural Fire Service with a description of the development as well as the vegetation type, slope and any other factors influencing the likely bushfire behaviour, sufficient to show that the development will be protected from the likely bushfire threat as outlined in the current legislation.

This independent report is submitted as part of the development application to Council to assist the Council in determining the conditions of consent appropriate to the development.

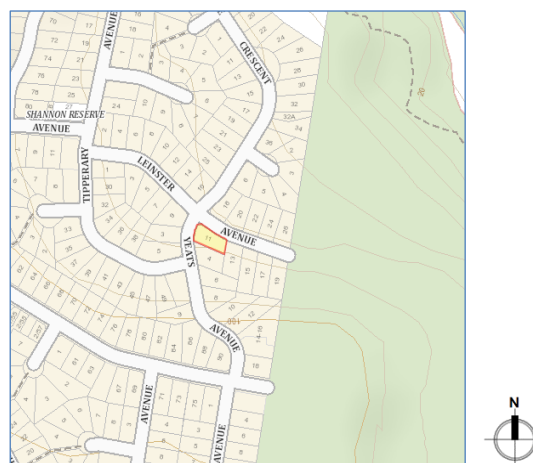
# Site Assessment

Bushfire Consulting Services Pty Ltd attended the site on 6 March 2019. The assessment relates to the plans referenced on page 2 of this report. The NSW Department of Planning Spatial Information Exchange mapping website has also been used as a reference, and Ocean Shores to Desert Dunes by David Keith, in determining the vegetation type.

## Location

The site is located and known as Lot 518 DP 218576, 11 Leinster Avenue Killarney Heights The property is part of Northern Beaches local government area.

**Figure 1: Location Map: Source: Land & Property Management Authority (LPMA) SIX Viewer**



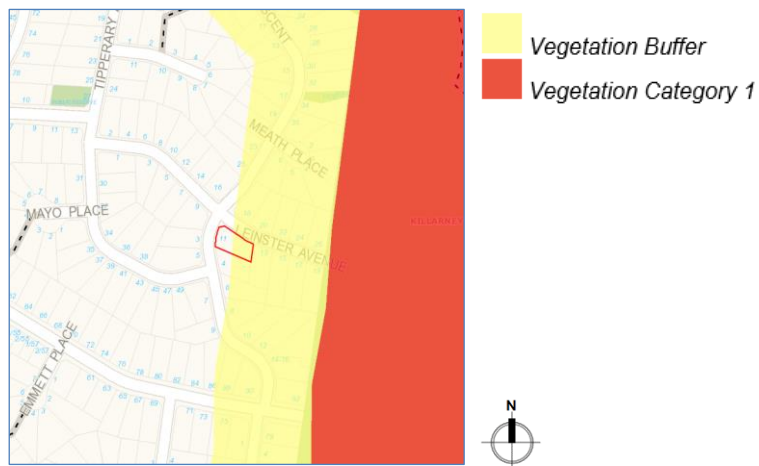
*Site location outlined in red*

**Figure 2: Aerial Map: Source: LPMA SIX Viewer**



*Site location outlined in red*

**Figure 3: Bushfire Prone Land Map: Source: [services.northernbeaches.nsw.gov.au](http://services.northernbeaches.nsw.gov.au)**



*Site location outlined in red*

## The Proposal

The proposal is for a covered pergola over an existing attached deck on the northern elevation of the existing dwelling. In terms of the BCA, the classification of the building is Class 10a.

## Property Description

The allotment is approximately 724m<sup>2</sup> in area. The lot is a corner lot that is bounded by Leinster Avenue to the northeast and Yeats Avenue to the approximate northwest. It currently contains a two storey dwelling, swimming pool and associated ancillary development.

## Zoning

The land is zoned R2 - Low Density Residential under Warringah Council LEP 2011. Adjacent lands are similarly zoned.

**Figure 4: Zoning Map: Source: NSW Government Planning Viewer**



*Site location outlined in blue*

## **Vegetation Classification for the Site and Surrounds**

The bushfire threat emanates from bushland located to the east of the lot. To the north, south and west there are existing residences with managed curtilages.

Based on a site inspection and determination of vegetation formation using the Keith 2004 Identification Key, the primary bushland vegetation having the potential to affect the subject development is most representative of Forest.

Direction	Vegetation Classification
North	Absence of classified vegetation for >100m
East	Absence of classified vegetation for 90m then Forest
South	Absence of classified vegetation for >100m
West	Absence of classified vegetation for >100m



**Figure 5: Site photos: Source: BFCS P/L 6/05/2019**



*Subject site*



*View to southwest showing the north elevation of the existing dwelling on the subject site, which is the site of the proposed development*



*View of classified vegetation approximately 90m to the east of the subject development*



# Slope

The slope has been measured manually on site over a distance of 100m from the proposed building footprint where accessible, under the classified vegetation community constituting the hazard. The slope was found to be consistent with the topographical data from LiDar.

**Figure 6: Slope Diagram: Source: NearMap with LiDAR and BFCs P/L overlays**



*Approximate site location outlined in red, 1m contours*

Direction from Building Footprint	Slope Description
North	N/A
East	Downslope >10 - 15°
South	N/A
West	N/A

*Note: Effective 'slope' refers to the slope under the classified vegetation in relation to the building, not the slope between the building and the classified vegetation.*

## **Fire Weather**

The development is located in the Killarney Heights area which is part of the Greater Sydney Region, which has a Fire Danger Index of 100.

## **Access and Egress**

The site has direct access to Leinster Avenue, which is a public road. Suitable access for fire fighting vehicles and evacuation is available.

## **Water Supply**

The area has a reticulated water supply and a fire hydrant is located approximately 37m from the lot to the northeast, within the distance prescribed by PBP.

## **Biodiversity Values**

A search of the NSW Office of Environment and Heritage's Biodiversity Values Map has been carried out and has not revealed any high biodiversity values on the land.

## **Environmental**

There are no features on or adjoining the site which may mitigate the impact of a high intensity bushfire on the proposed development. The proposed bushfire protection measures will not adversely impact on the environment. It should be noted that this report has not focused on environmental issues and as such they may require further specialist investigation.

## **Assessment of Bushfire Risk**

The following is derived from AS3959-2009 and the simplified method for determining the Bushfire Attack Level – Method 1, as outlined in AS3959-2009.

Aspect	Possible APZ	Vegetation Classification	Slope Under Classified Vegetation	Anticipated Radiant Heat Flux kW/m <sup>2</sup>	Bushfire Attack Level (BAL) required
North	>100m	N/A	N/A	N/A	BAL 12.5
East	90m	Forest	>10-15° Downslope	<12.5	BAL 12.5
South	>100m	N/A	N/A	N/A	BAL 12.5
West	>100m	N/A	N/A	N/A	BAL 12.5

## Assessment of Compliance with PBP

The proposed development conforms to PBP as follows:

Performance Criteria	Meets or not	Comment
APZs	Y	According to PBP Table A2.4, the minimum APZ required is 50m. In this case 90m is available when including adjacent managed land and roadways, which exceeds the minimum distance. The land is already suitably managed and vegetation does not require modification
Defendable Space	Y	Adequate defendable space is available to the front of the dwelling and pedestrian firefighter access is available to the rear
Siting and Design	Y	Siting and design is in accordance with local council requirements for the allotment
Landscaping	Y	Future landscaping is to comply with PBP 2006 Appendix 5
Construction Standards	Y	Must comply with AS3959-2009 BAL 12.5
Access and Egress	Y	Safe operational access is available to emergency services personnel while residents are seeking to relocate in advance of a bushfire

Performance Criteria	Meets or not	Comment
Water Supply	Y	The site has a reticulated water supply and a fire hydrant is located within the distance prescribed by PBP
Electricity and Gas Supply	Y	Any proposed bottled gas supply location will comply with PBP where it is located so as to not lead to ignition of the surrounding bushland or the building. Where practicable, electrical transmission lines will be located underground
Emergency and Evacuation Planning	Y	The need to formulate an emergency evacuation is suggested. To do so, occupants can complete a Bush Fire Safety Plan on the NSW RFS Website <a href="http://www.rfs.nsw.gov.au/">http://www.rfs.nsw.gov.au/</a> under publications / bushfire safety

## Recommendations

The following recommendations are made for the bushfire measures for the proposed residential development of a covered pergola over an existing deck at Lot 518 DP 218576, 11 Leinster Avenue Killarney Heights, and are based upon the relevant provisions of the NSW Rural Fire Service Guideline entitled *Planning for Bush Fire Protection 2006*.

### 1. Construction Standard

The proposed development shall be constructed to sections 3 and 5 of AS3959-2009 (BAL 12.5), with the exception that the construction requirements shall be varied to comply with the requirements of Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of *Planning for Bush Fire Protection 2006*.

### 2. Asset Protection Zones

At the commencement of building works and in perpetuity the entire property shall be managed as an Inner Protection Area (IPA) Asset Protection Zone, as outlined within

section 4.1.3 and Appendix 5 of “Planning For Bush Fire Protection 2006”, and the NSW Rural Fire Service’s document, “Standards for Asset Protection Zones”.

The following points are a guide to Asset Protection Zone requirements. The Asset Protection Zone should comprise the following:

- Minimal fine fuel on the ground.
- Vegetation that does not provide a continuous path to the building for the transfer of fire.
- Shrubs and trees that do not form a continuous canopy and vegetation is planted in clumps, rather than continuous rows.
- Species that retain dead material or deposit excessive quantities of ground fuel are avoided.
- Shrubs and trees are pruned so that they do not touch or overhang the building.
- Vegetation is located far enough away from the building so that plants will not ignite the building by direct flame contact or radiant heat emission.

### 3. Emergency and Evacuation Planning

The need to formulate an emergency evacuation is suggested. To do so, occupants can complete a Bush Fire Safety Plan on the NSW RFS Website <http://www.rfs.nsw.gov.au/> under publications / bushfire safety.

## Summary

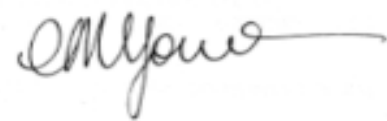
This report consists of a bush fire assessment for the proposed residential development of a covered pergola over an existing deck at Lot 518 DP 218576, 11 Leinster Avenue Killarney Heights. The report concludes that the proposed development is on designated bushfire prone land and the legislative requirements for development in bushfire prone areas are applicable.

The proposed development will be constructed to the minimum standards required in accordance with the guidelines of *Planning for Bush Fire Protection 2006*. This report has considered all the elements of bushfire attack and provided the proposed development is constructed in accordance with the recommendations of this report, it is my opinion that the development satisfies the Objectives and Performance

requirements of *Planning for Bush Fire Protection 2006* and *Australian Standard AS3959-2009*.

*Notwithstanding the precautions adopted, it should always be remembered that bushfires burn under a wide range of conditions and an element of risk, no matter how small, always remains and although the standard is designed to improve the performance of such buildings, there can be no guarantee because of the variable nature of bushfires that any one building will withstand bushfire attack on every occasion.*

*This report is a bush fire assessment that provides the required information to assist local Council and the Rural Fire Service in determining compliance in accordance with *Planning for Bush Fire Protection* and *AS3959-2009*. The local Council is the final consenting authority and the construction of the building must comply with the recommendations included in the Council's conditions of consent.*



**Catherine Gorrie**

**Accredited Bushfire Consultant**

**Fire Protection Association Australia BPAD- LEVEL 3 (BPAD20751)**

Grad Dip Bushfire Protection (UWS 2010)

Diploma Environmental Health & Building Surveying (TAFE 2005)

Corporate Bronze Member Fire Protection Association Australia

**Bushfire Consulting Services Pty Ltd**

**Mob: 0425 833 893**



## References

Environmental Planning & Assessment Act 1979

Planning for Bush Fire Protection 2006 (Rural Fire Service)

Addendum: Appendix 3, Planning for Bush Fire Protection 2010 (Rural Fire Service)

Australian Standard 3959-2009 'Construction of Buildings in Bushfire Prone Areas'

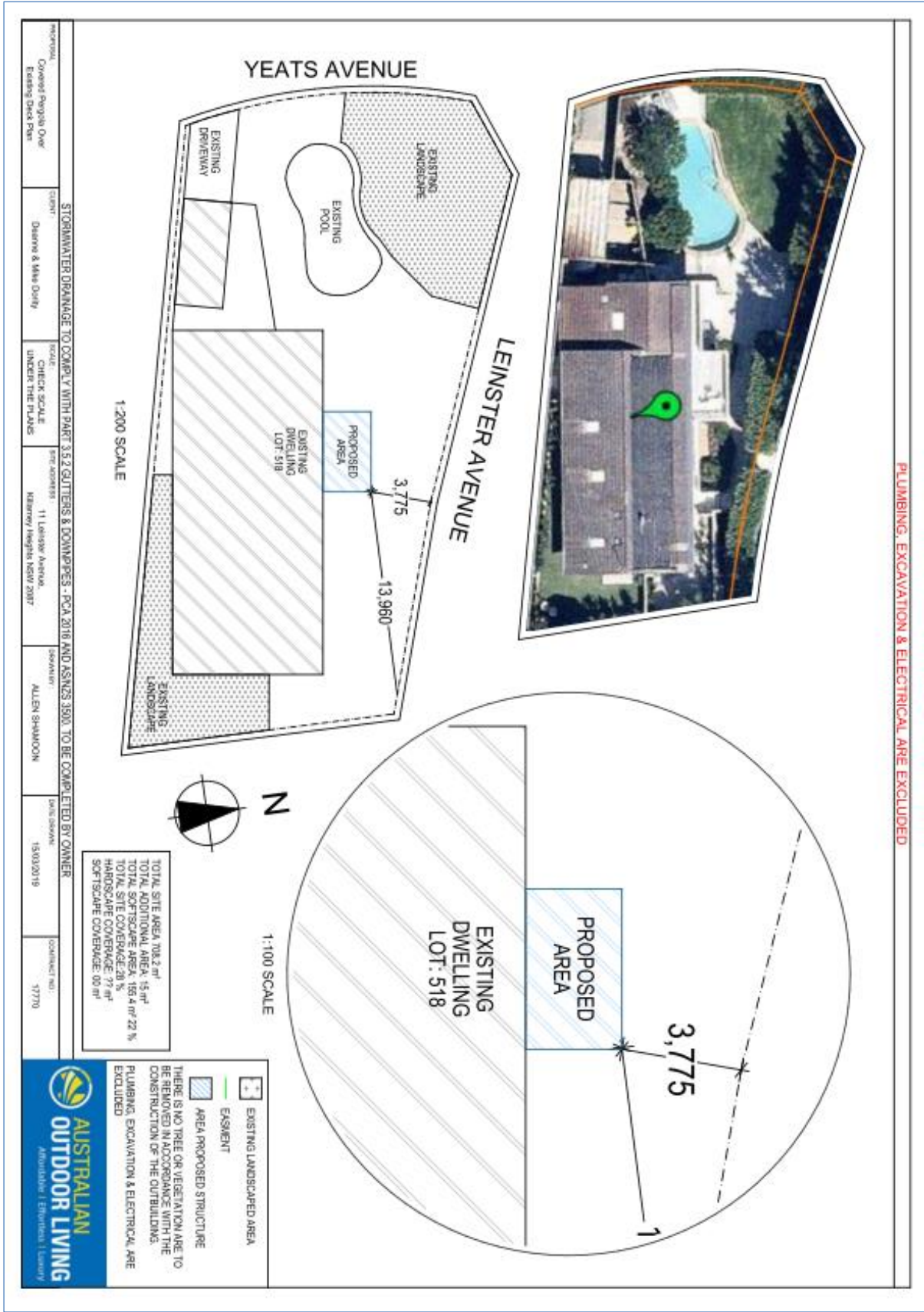
NSW Department of Planning Spatial Information Exchange mapping website

Building Code of Australia (Building Codes Board)

Keith, D., Ocean Shores to Desert Dunes, the Native Vegetation of NSW and the ACT

Department of Environment and Conservation, NSW 2006.

Site Plan



## BUSHFIRE RISK ASSESSMENT CERTIFICATE

This form is completed by a recognized consultant in bushfire risk assessment in accordance with section s4.14 of the Environmental Planning and Assessment Act 1979 No 203

PROPERTY ADDRESS:	Lot 518 DP 218576 11 Leinster Avenue Killarney Heights
DESCRIPTION OF PROPOSAL:	A covered pergola over an existing deck
PLAN REFERENCE: (relied upon in report preparation)	Plans by Australian Outdoor Living numbered 17770 dated 15/03/2019
BAL RATING	BAL 12.5  (If the BAL rating is FZ the application is to be referred to NSW RFS for assessment.)
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES <input checked="" type="radio"/> NO (Circle the relevant response) (If YES the application is to be referred to NSW RFS for assessment.)

I, Catherine Gorrie, of Bushfire Consulting Services Pty Ltd, have carried out a bushfire risk assessment on the above mentioned proposal and property. A detailed Bushfire Assessment Report is attached which includes the submission requirements set out in Appendix 4 of Planning for Bushfire Protection 2006 together with recommendations as to how the relevant specifications and requirements are to be achieved.

REPORT REFERENCE:	19/0345
REPORT DATE:	27/05/2019
CERTIFICATION NO/ACCREDITED SCHEME:	BPAD-Level 3 Accredited Practitioner FPAA Cert No: BPAD20751

Note: this certificate must be completed and signed by a person recognised by the NSW Rural Fire Service as a qualified consultant in bush fire risk assessment in accordance with s4.14 of the EP&A Act 1979 No 203.

\*\*\*\*\*

I hereby certify, in accordance with Section 4.14 of the Environmental Planning and Assessment Act 1979 No 203:

1. That I am a person recognised by the NSW Rural Fire Service as a qualified consultant in bushfire risk assessment; and
2. That subject to the recommendations contained in the attached Bushfire Risk Assessment Report the proposed development conforms to the relevant specifications and requirements\*.

\* The relevant specifications and requirements being; specifications and requirements of the document entitled *Planning for Bush Fire Protection* prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section s4.14 of the Environmental Planning and Assessment Act 1979 No 203.

I am aware that the bush fire assessment report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with *Planning for Bush Fire Protection 2006*.

Attachments:

- ☒ Bushfire Risk Assessment Report
- ☒ Recommendations
- ☒ Statement of vegetation impact in relation to APZ



SIGNATURE:

DATE: 27/05/2019