



# **Bush Fire Hazard Assessment Report**

**For Proposed; Carport**  
**6 Allawah Ave Elanora Heights NSW**



15<sup>th</sup> March 2019

**Prepared By:**  
**The Fire Consultants**  
**Tel: 0418 460517 Fax: 02 98823774**  
**PO Box 29 Forestville NSW 2087**



## **Abbreviations Used**

**TFC – The Fire Consultants**

**PBP 2006 – Planning for Bushfire Protection (NSW Rural Fire Service)**

**RFS - Rural Fire Service**

**BCA - Building Code of Australia**

**EP&A Act- Environmental Planning and Assessment Act 1979**

**BAL - Bushfire Attack Level**

**APZ - Asset Protection Zone**

**FRNSW - Fire Rescue NSW**

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The assessment and recommendations contained in this Bush Fire Assessment are the views of TFC. The bushfire protection assessment, recommendations and strategies contained in this report are intended to address the submission requirements for developments on bush fire prone land as required by Section 100b of the RFS Act 1997 and or S79ba of the EP&A Act 1979.

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A bushfire may be unpredictable and in many cases perform differently to the measurements and assumptions of this report and AS3959. Therefore the information contained in this report cannot be used as a guarantee against any damages or losses resulting from any bushfire events.

### Document Control

Document Name	Project Ref	Date	Author	Status
6 Allawah	1	15/3/19	J Murphie	Complete

## **Executive Summary**

This report has been prepared as a bush fire assessment for a carport at 6 Allawah Ave Elanora Heights in the Municipality of Northern Beaches

The proposal is “infill” development and has been identified as being bush fire prone and is subject to consideration under Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (NSW RFS 2006).

The proposal has been found to be **39 metres from the nearest bush fire hazard , Forest.**

**The proposal is found to be in the BAL – 12.5 range as per Table 2.4.2 of AS3959-2009 Construction of Buildings in Bushfire Prone Areas and will not need referral to the NSW Rural Fire Service to meet the aims and objectives of the Building Code of Australia (ABCB 2009). It will also need to meet the requirements of Planning for Bush Fire Protection (NSW RFS 2006).**

**This report makes recommendations in order to assist the proposal being accepted by the NSW Rural Fire Service and Northern Beaches Council**

### **For the infill of the existing house**

<b>Building Elevation</b>	<b>Construction Standard (Bush Fire)</b>
<b>North</b>	<b>BAL- 12.5</b>
<b>South</b>	<b>BAL -12.5</b>
<b>East</b>	<b>BAL -12.5</b>
<b>West</b>	<b>BAL -12.5</b>

## **1. Introduction**

This report forms a Bush Fire Assessment Report to Northern Beaches Council for the purposes of Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The report identifies that the proposal can meet the requirements of Planning for Bush Fire Protection (2006). This report has been prepared in accordance with the submission requirements of Appendix 4 of Planning for Bush Fire Protection (NSW RFS 2006). The site is identified as being within the Buffer-Zone of Category 2 Vegetation as per Northern Beaches Council Bushfire Prone Land Map and therefore compliance with Bushfire legislation is required.

The proposed development is for a carport at the front of the property that is entirely shielded from the hazard at rear by the existing residence.

## **2. Purpose of this Report**

The purpose of a Bush Fire Hazard Assessment report is to provide the consent authority, owners and RFS with a bushfire hazard determination consistent with the aim and objectives of Planning for Bush Fire Protection 2006 (RFS) and Section 4.14 of the EP&A Act 1979. Such report provides the necessary recommendations for new building construction standards and any further bushfire mitigation measures appropriate having regard the hazard and circumstances of the development.

The recommendations provided in this report will assist Council and the Owner in proving a construction standard consummate with bushfire safety standards so that a safer level is provided should a bushfire occur on or near the property.

**Property Details**

Applicant Name: Stephen and Jill Whitehouse

Council: Northern Beaches

Council Reference N/A

Address: 6 Allawah St Elanora Heights

Lot 50 DP 136416

Site Area: 550m<sup>2</sup>

**3. Proposal**

The proponent seeks to construct a carport at the front of the residence. The site is bounded by residential development to the South, North and West with bushland behind to the eastern aspect. Northern Beaches Council's GIS Mapping indicates that the proposed development is located within a Bushfire Hazard Vegetation Buffer Zone of Category 2 Bushfire Hazard Vegetation. The Category 2 Bushfire Hazard Vegetation is located to the East and slopes up away from the site.

The land is zoned for R2 (Low Density Residential) residential purposes and the proposal is understood to comply with the requirements of Northern Beaches Council LEP and DCP. This report only addresses the planning and construction issues relevant to the proposal. The proposal constitutes "infill" development as defined and as such must meet the specifications and requirements in Chapter 4 (section 4.3.5) of *Planning for Bush Fire Protection* (NSW RFS 2006).

**Type of Proposal PBP 2006**

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> New Building      | <input checked="" type="checkbox"/> Urban                 | <input type="checkbox"/> Dual Occupancy |
| <input type="checkbox"/> Rural Residential | <input checked="" type="checkbox"/> Alterations/Additions | <input type="checkbox"/> Isolated Rural |

#### **4. Scope of Report and Referenced Documents**

The scope of this report is limited to the actual property concerned. A representative of TFC has visited the site and surrounding area but did not enter neighbouring private lands. This report is based on requirements of the EP&A Act, Planning for Bush Fire Protection (2006) NSWRFPS (PBP), the Building Code of Australia (BCA) and AS3959 2009-Construction of buildings in Bush Fire Prone Areas. The methodology for this report is based PBP (specifically Appendix 3) and AS3959-2009. Vegetation and site information was gathered from site inspection, Council Vegetation data and Aerial Photos. The report used base drawings as provided by the applicant to TFC.

#### **5. Statement that the site is Bush Fire Prone Land**

The land has been identified on the Northern Beaches Council Bush Fire Prone Land Map which covers the entire site.

A copy of the bush fire prone land status is shown below (Figure 1).

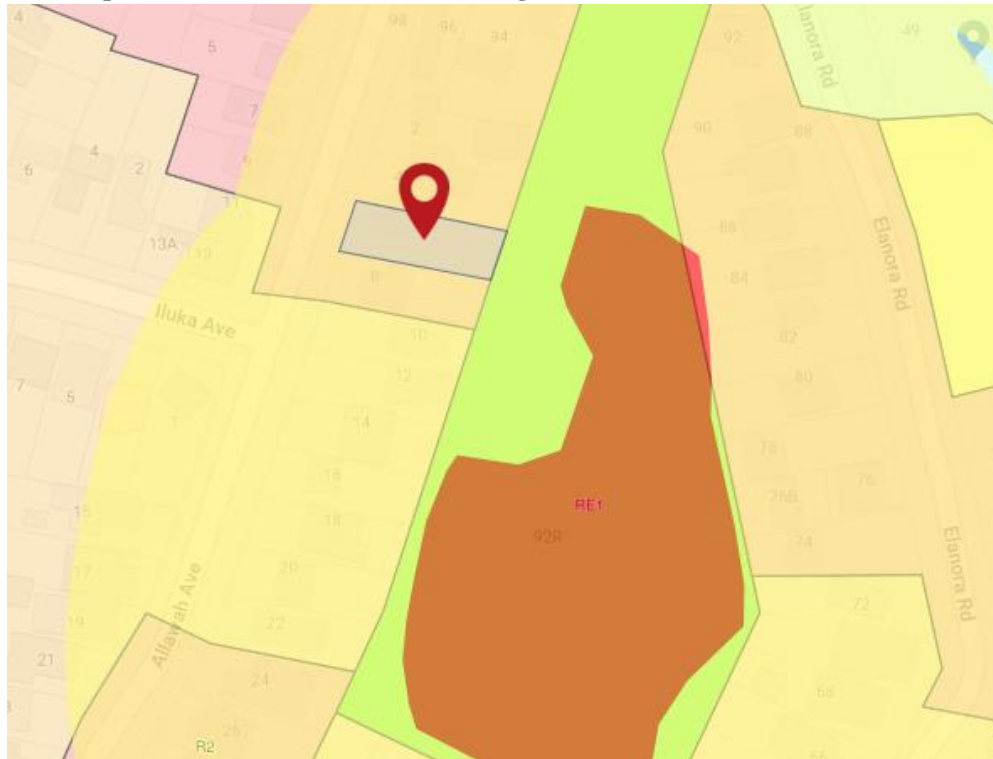


Figure 1: - 6 Allawah St Elanora Heits NSW Bushfire Prone Land Map (NSW Planning)



It should be noted that the Bush Fire Prone Land Map above indicates that the site is in a Bushfire Hazard Buffer Zone of Bushfire Hazard Vegetation.



Image 1: Aerial View of the allotment. (NSW Government 2018)



## **6. Bush Fire Hazard Assessment**

### **6.1 Preface.**

This bushfire hazard assessment has been done according to the guidelines of Planning for Bushfire Protection 2006 (NSWRFS) and AS3959-2009, Construction of Buildings in Bushfire Prone Areas. Properties that are located within a designated Bushfire Prone Area as identified by a Council Area Bush Fire Prone Map and Registered with the NSWRFS, must have either a Bush Fire Hazard Assessment or a Bush Fire Hazard Certificate (in certain Complying Development instances) completed and submitted prior to Council or a Private Certifier being able to approve the development.

The proposed development of a carport on this site is infill development and as such must comply with Section 4.14 of the EP&A Act 1979 and PBP 2006.

The property is known as 6 Allawah St Elanora Heights and is in a residential area within the Northern Beaches Council Local Government Area. The property has direct access to Allawah Street which runs to the West of the subject allotment. The vegetation that is a potential bush fire hazard is 39m to the east directly behind the existing residence.

## 6.2 Location

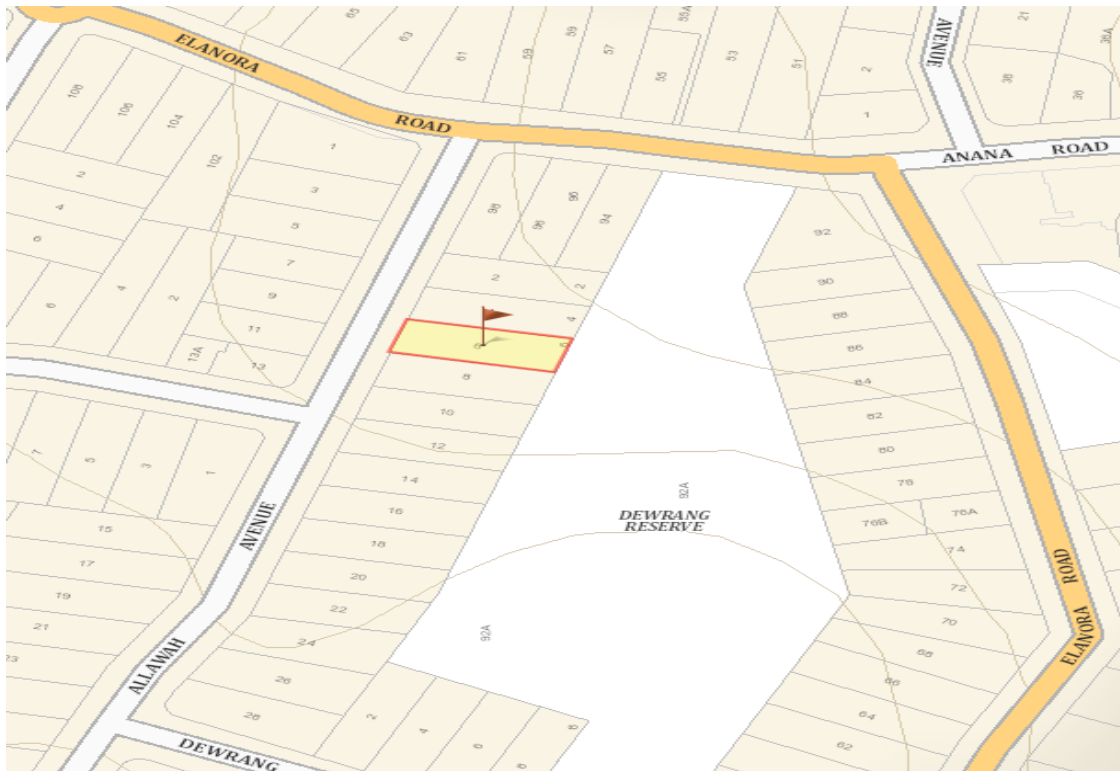


Image 2: - Site Aerial. (NSW Government 2018)

### Property Details

Address: 6 Allawah Avenue, Elanora Heights, 2101

Lot/Section/Plan no: 50/-/DP13643

Council: Northern Beaches

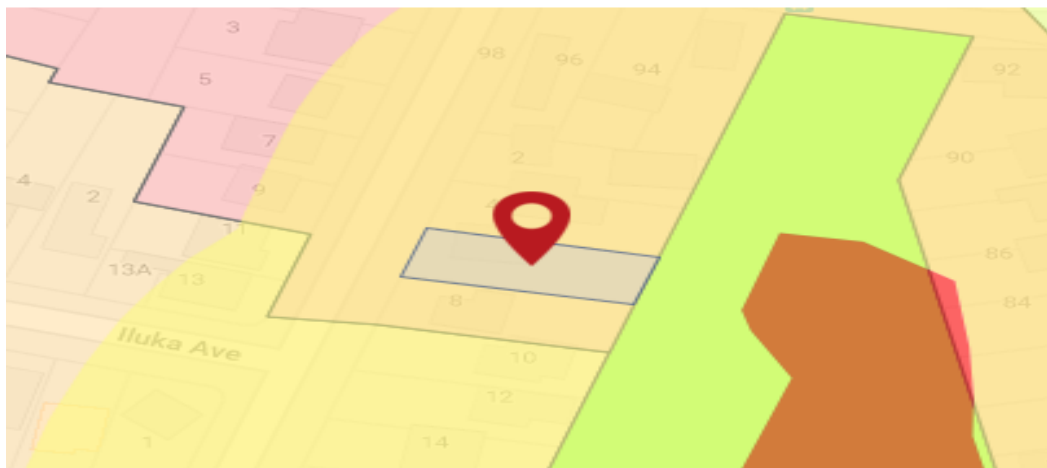


Figure 2: -Street Location of Property (NSW Government 2018)

### 6.3 Vegetation.

The vegetation that effects the development and is deemed the "Hazard" is mapped by Council on the applicable Bush Fire Prone Land map as Category 1 Bushfire Hazard Vegetation. The Lot has been largely cleared and the predominant Bushfire Hazard Vegetation formation using "Keith 2004" identification is Forest which is in the Eastern aspect.

The property is located within other residential properties to the West North and South. For the purposes of this compliance report this assessment notes that the property does not contain any hazard upon it. The separation distance to the hazard is assessed as follows;

Direction	Distance to Hazard
East	<b>39m</b>
South	<b>100+m</b>
North	<b>100+m</b>
West	<b>100+m</b>



**Image 3 – Identifies the Forest Classified Vegetation to the east**



**Classified Vegetation (NSW Government 2018)**



Photo 1 – Indicates the transition area between the Forest Classified Vegetation and the grassland behind 6 Allawah street to the east of the property.

## 6.4 Slope

The slope that would most significantly affect a bushfire is assessed for 100 metres from the building. The slope that is measured is under the hazard. **The slope has been assessed as being upslope/Flat as it rises away from the property to the south east.**



**Image 4 - Indicates the degree of slope in the Northern, Western and Eastern aspects (NSW Government 2018)**

Direction	Effective Slope
South	N/A
North	N/A
West	N/A
East	Upslope Flat

## 6.5 Asset Protection Zones (APZ)

The APZ is 39m to the east, and 100m + in other directions



Image 5- Indicates the APZs from the proposed additions

(NSW Government 2018)

Direction/Aspect	Effective Slope	Distance to Hazard	Required by PBP Table 2.4	Land-use	Vegetation type/Formation	Complies
North	NA	100+	20m	Residential	N/A	Yes
South	N/A	100+m	N/A	Residential	N/A	Yes
East	Flat upslope	39m	20m	Forest	Forest	Yes
West	N/A	100+	10m	Residential	N/A	Yes

Table 1: - APZ distances

**The proposal meets the requirements of Table 2.4 Minimal Specifications for APZ**



## **6.6 Access for Fire Services and Escape**

The subject property has direct access to Allawah Street, which in turn has access to Elanora RD. The road is surfaced and suitable for fire appliances. Should occupants be required to escape the area in emergency then they should be able to do so. Access is therefore considered suitable.

## **6.7 Water Supply**

The site is connected to mains pressure reticulated water supply and there are fire hydrants located in Allawah Street.

## **6.8 Environmental Impact**

It is not proposed that any further environmental impact will occur due from the bush fire requirements of the alterations and additions.

## **6.9 Electricity Services**

The site is provided with electricity direct from transmission lines.

## **6.10 Gas Services**

Any gas connection is installed and maintained in accordance with AS1596, metal piping should be used.

## 6.11 Hazard Assessment Determination

PBP refers to the appropriate construction standard for a development as determined by Tables contained within AS3959- 2009 "Construction of buildings in Bush fire Prone Areas." This provides a recommendation for the Bush Fire Attack (BAL) Level required for a development. The following Bush Fire Attack Levels have been determined for 6 Allawah Street Elanora heights

FDI Appropriate to Development – The Northern Beaches Council LGA 100  
AS3959 Table 2.4.2

For the infill carport

<b>Direction/ Aspect</b>	<b>Distance to Vegetation</b>	<b>Vegetation Formation</b>	<b>Slope in degrees</b>	<b>Construction Requirements AS3959-2009 and PBP2006</b>
South	<b>100+ metres</b>	<b>Developed</b>	<b>N/A</b>	
East	<b>39 metres</b>	<b>Forest</b>	<b>Flat</b>	BAL-12.5
North	<b>100+</b>	<b>Developed</b>	<b>N/A</b>	
West	<b>100+</b>	<b>Developed</b>	<b>N/A</b>	

Table 2: - Summary of Building Compliance Requirements AS3959-2009.

PBP allows where more than one facade is exposed to a hazard, then the facade with the highest requirement is used to determine the appropriate level of construction. In this case the carport is completely shielded by the residence and no direct radiant heat would be expected, therefore ember protection as per BAL12.5 is considered appropriate.

**The site has been found to be in the BAL-12.5 zone and will have to comply with requirements for BAL Construction -Sections 3, and 5 of AS 3959**

The proposed dwelling must also comply with the specification and requirements of Section 4.3.5 of *Planning for Bush Fire Protection, Infill development*. This assessment is provided below in detail.

<b>Performance requirement Chapter 4 PBP 2006</b>	<b>Acceptable Solution</b>	<b>Compliance</b>
in relation to siting and design: • The existing building is sited and designed to minimise the risk of bush fire attack.	Buildings are designed and sited in accordance with the siting and design principles in this section (see also figure 4.7).	Yes –
in relation to Asset Protection Zones: • A defendable space is provided onsite. • An asset protection zone is provided and maintained for the life of the development.	APZ determined in accordance with Appendix 2 and Section 3.3 Exceptional Circumstances for APZs.	<b>Yes</b>
in relation to construction standards: • It is demonstrated that the proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.	Construction determined in accordance with Appendix 3	<b>Yes – The BAL is determined as being BAL-12.5</b>
in relation to access requirements: • safe, operational access is provided (and maintained) for emergency services personnel in suppressing a bush fire while residents are seeking to relocate, in advance of a bush fire.	Compliance with section 4.1.3 for property access roads.  Compliance with section 4.2.7 for access standards for internal roads.	Yes - Existing Road system. driveway meets width requirements and does not place Firefighters at risk  Access available away from hazard.
in relation to water and utility services: • adequate water and electricity services are provided for fire- fighting operations • gas and electricity services are located so as not to contribute to the risk of fire to a building.	Compliance with section 4.1.3 for services - water, electricity and gas.	Yes- The site is connected to mains pressure reticulated water supply Electrical supply as per existing. Gas not exposed to radiant heat or flame nor landscaping elements for embers.
in relation to landscaping: • it is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.	Compliance with Appendix 5 of <i>Planning for Bush Fire Protection</i> (2006)	Yes No significant planting under windows or other exposed elements of house – considered acceptable.

Table 3: Compliance with Specifications and Requirements of *Planning for Bush Fire Protection*.  
Chapter 4

Compliance with Specific Objectives PBP as per 4.3.2

Objective	Details
Ensure that the bushfire risk to adjoining land is not increased	The development does not add to the bushfire risk
Provide Minimum Defendable Space	A defendable space is provided
Provide better bushfire protection, on a redevelopment site, than the existing situation. This should not result in any new works being exposed to a greater risk than the existing building.	<b>The proposal will be built to BAL12.5</b>
Ensure the footprint of the proposed building does not extend towards the hazard beyond existing building lines on neighbouring land.	The development is at front of property away from the hazard
Not result in an increased bushfire management and maintenance responsibility on adjoining land owners unless they have agreed to the development	The development does not increase hazard or bushfire management on adjoining lands
Ensure Building design and construction enhance the chances of occupant and building survival	The recommendations enhance the existing structure and survival

## **7 Recommendations**

- **The proposed carport shall comply with AS3959-2009 Section 3 and 5 AS3959.**
- **The entire site is deemed an Inner Protection Area and as such any landscaping gardens and the like should comply with Appendix 5 PBP 2006**

It is recommended that Northern Beaches Council and the NSW Rural Fire Service approve the proposed alterations and additions to 6 Allawah St Elanora Heights

### **7.1 Environmental Impact of any proposed bushfire measures**

Measure	Environmental Impact	Comment
APZ	No Impact	APZ already in existence and no change planned
Construction	No Impact	Constructed on existing envelope
Water Supply	No Impact	Existing supply
Utilities	No Impact	Existing supplies
Vehicle Access	No Impact	Direct access to road

## **8. Conclusion**

The proposed carport at 6 Allawah Street Elanora Heights NSW can meet the planning requirements of *Planning for Bush Fire Protection* (NSW RFS 2006) and, are capable of meeting Australian Standard AS3959-2009 and the *Building Code of Australia* in relation to construction (ABCB 2015).

**The Bushfire Attack Level for the proposed additions to the carport has been determined to be BAL 12.5 due to shielding.**

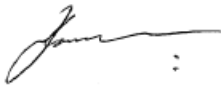
**The required Asset Protection Zones determined from Table 2.4 of PBP 2006 meet the intent of Section 3.3 of PBP 2006.**

In accordance with the bush fire measures contained with this report and the site-specific assessment as per PBP and AS3959, it is our opinion that combined will provide a satisfactory level of bush fire safety to the property and satisfies the requirements of the RFS and Councils obligations for this area.

The **Council** can determine the matter as complying with the specifications and requirements Planning for Bush Fire Protection and section 4.14 of the EP&A Act (NSW RFS 2006).

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Prepared by Jim Murphie



BPAD - Certification No. 7200

Graduate Diploma Bushfire Planning and Design (UWS)

Graduate Certificate in Fire Engineering

Graf IFE



FPA Australia Corporate Member



## **References.**

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- Standards Australia, AS 3959-2009 *Construction in Bushfire Prone Areas* (amended 2001) SAI Global, Melbourne.
- Northern Beaches Council, 2019 *Bush Fire Prone Land Map*
- NSW Government Six Mapping 2018

## **Disclaimer**

Disclaimer: Quote from Planning for Bushfire Protection, “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”. Although the standard is designed to improve the performance of the building, there can be no guarantee, because of the variable nature of bushfires that any one building will withstand bushfire attack on every occasion.

The opinions and assessment in regard to bushfire development in a Bushfire Prone Area given by TFC are therefore given in good faith.