

Planning For Bushfire Protection



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Reference: 1179-R
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Bushfire Risk Assessment

In relation to proposed development at:

No 54 Irrubel Road, Newport

*In accordance with the requirements of 4.14 of the EP&A Act No 203 Part (1) [b] This Assessment has been prepared and Certified by: Ronald Coffey
BPAD – A Certified Practitioner
FPAA Cert. No: BPD-PA 09328*

Can this proposal comply with AS3959,
2009 + addendum to Appendix 3 of PBP?

YES

What is the recommended level of
compliance AS3959, 2009?

BAL 19

Does this development comply with the
requirements of PBP?

YES

Does this development comply with the
Aims and objectives of PBP?

YES

Is referral to the NSW RFS required?

NO

This assessment confirms that the proposal conforms to the specifications and requirements, that are relevant to the development, of the version (as prescribed by the regulations) of the document entitled Planning for Bushfire Protection prepared by the NSW Fire Service in co-operation with the NSW Department of Planning.

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Introduction

The purpose of this report is to determine the category of bushfire attack and subsequent construction standard for the proposed development of a new detached Class 1a Granny Flat at No 54 Irrubel Road, Newport.

The site is identified as 'bush fire prone land' for the purposes of Section 146 of the *Environmental Planning and Assessment Act 1979* and the legislative requirements for building on bushfire prone lands are applicable.

The proposed development is an infill development as defined within Chapter 4.3.5 of Planning for Bushfire Protection 2006 and this report has been prepared in accordance with the requirements of section 79BA of the Environment Planning and Assessment Act.

The NSW Rural Fire Service have provided a Community Resilience Fast Fact Reference No 4/12 which outlines the NSW RFS position on the assessment of dual occupancy, multi dwelling housing, secondary dwellings, detached granny flats and boarding houses that increase the density on a single parcel of bushfire prone land.

A key feature of this document is that the NSW RFS will not support an application that does not provide appropriate separation between a hazard and dwellings.

The minimum APZ is based on a bushfire attack level of 29kw/m² [BAL 29].

In this instance the bushfire attack level is BAL 19.

This assessment includes an analysis of the hazard, threat and subsequent risk to the development proposal and provides recommendations that satisfy the Objectives and Performance requirements of the Building Code of Australia, Planning for Bushfire Protection 2006 [PBP] and Australian Standard AS3959, 2009.

The site was inspected: 10/10/2017

Summary of Assessment

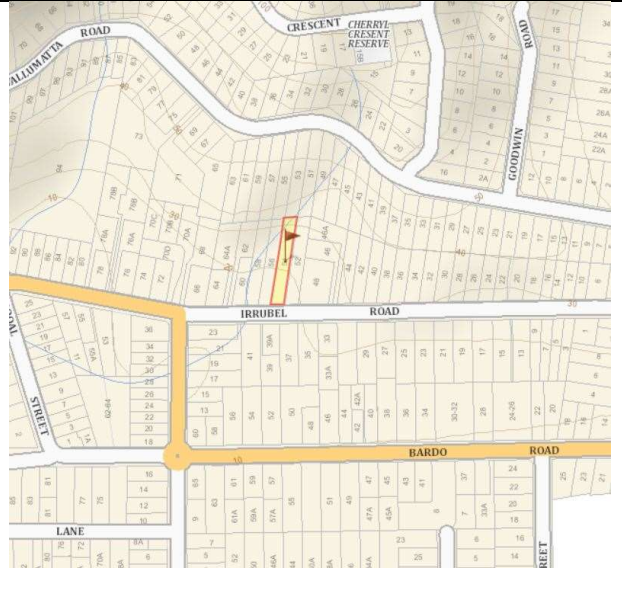
- Building construction and design – AS3959, 2009 BAL 19
- Asset Protection zones - Conforms to the requirements of PBP
- Landscaping - Conforms to the requirements of PBP
- Access and egress arrangements – Conforms to the requirements of PBP
- Water supply and utilities - Conforms to the requirements of PBP
- Defendable space - Conforms to the requirements of PBP

1) Location

No 54 Irrubel Road, Newport

Lot 6, DP 12463

LGA – Northern Beaches Council



2) Development Proposal and Building Classifications

The proposal is for the construction of a new detached granny flat.

Building Classification 1A

The development does not include alterations, additions or renovations to the existing dwelling on the site and this report does not include recommendations for the upgrading of the existing dwelling.

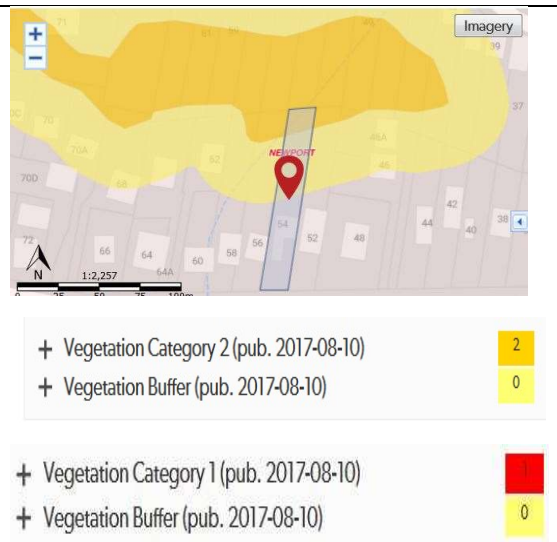
3) Description of the Subject

Property

The development site is a residential lot facing south onto Irrubel Road.

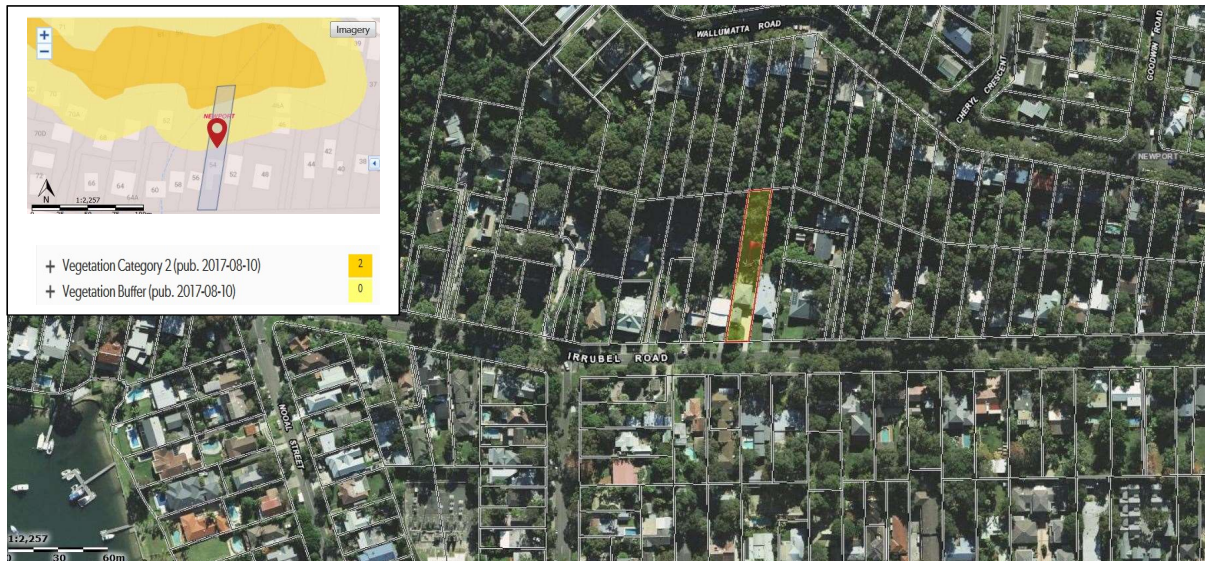
The following sections 4-8 describe in detail the vegetation, slope, access and egress, availability of water supplies and environmental considerations for the site.

The adjacent image is the bushfire prone land map for the area.



4) Classification of the Vegetation on and surrounding the Site

The site is developed and maintained and there is no threat from bushfire attack on the site.



Properties south, east and west of the subject site are developed and maintained and there is no threat of bushfire attack from these directions for more than 100m.

Adjoining the northern boundary is an area of bushland that is considered a threat from bushfire attack to the site; however, a site inspection revealed that the aerial image showing extensive canopy is misleading. The closest hazard is on an unmanaged property 17 north-west of the subject site. [No 57 Wallumatta Road, Newport]

With reference to PBP and the bushfire prone land map for the area this area of bushland is a remnant and a low hazard. The APZ requirements and building construction standards for this bushland area will be the same as for rainforests. [PBP-Appendix 2]

PBP Appendix 2, part [a] provides that *“Remnant vegetation is a parcel of vegetation with a size of less than 1ha or a shape that provides a potential fire run directly towards buildings not exceeding 50m. These remnants are considered a low hazard and APZ setbacks and building construction standards for these will be the same as for rainforests.*

The effective slope is to be determined over the length of the remnant.”

In this instance the parcel of land to the north considered a hazard, is upslope away from the subject site, is a narrow ‘handle’ in the immediate vicinity of the subject site and could not support a substantial run of fire towards the proposed development.

5) Assessment of Effective Slope

North: Upslope

South, east and west: No hazard for >100m

6) Access and Egress

The site has direct access to Irrubel Road, which is a public road, and access and egress for emergency vehicles and evacuation is in opposite directions and appears adequate.

7) Adequacy of water supply

The area has reticulated water supply and hydrants are spaced at regular distances along Irrubel Road.

8) Environmental Considerations

The scope of this assessment has not been to provide an environmental assessment; however, the subject site is a small residential lot that has been developed for many years and it appears that the proposed development will have no adverse environmental effect.

9) Bushfire Risk Assessment

Table 1; Reference AS3959, 2009 Table 2.4.2

Determination of category of bushfire attack for the site and subsequent required building standards

Direction	Distance of APZ	Vegetation Classification	Assessment of Effective Slope	Anticipated Radiant heat	Bushfire Attack Level (BAL)
North & NW	17m	Remnant	Upslope	<19kw/m2	BAL 19
South	>140m	Developed sites	n/a	-	-
East	>140m	Developed sites	n/a	-	-
West	>140m	Developed sites	n/a	-	-
Summary: Based upon the relevant provisions of PBP the anticipated radiant heat attack is for the site is <19kw/m2 and the subsequent minimum construction standard is BAL 19 AS3959, 2009.					

10) Assessment of the extent to which the construction conforms or deviates from Chapter 4 of 'Planning for Bushfire Protection 2006'

Performance Criteria	Acceptable Solutions	Meets Performance Criteria
The intent may be achieved where:		
<u>In relation to APZ's:</u> - Defendable space is provided - An APZ is provided and maintained for the life of the building.	Defendable space is provided on all sides of the building Asset protection zones are provided partially on site and by adjoining development and public roads.	Yes
<u>In relation to siting and design:</u> Buildings are sited and designed to minimise the risk of bushfire attack.	The siting of the building has been determined in accordance with local council requirements and no advantage could be gained by recommending a re-siting of the building.	Yes
<u>In relation to construction standards:</u> It is demonstrated that the proposed building can withstand bushfire attack in the form of wind, smoke, embers, radiant heat and flame contact.	Construction standards have been recommended in accordance with the requirements of PBP.	Yes
<u>In relation to access requirements:</u> Safe operational access is provided [and maintained] for emergency services personnel in suppressing a bushfire while residents are seeking to relocate, in advance of a bushfire.	The access and egress requirements have been designed to provide safe and effective evacuation from the subject site and appear to be adequate for fire brigade personnel and firefighting equipment.	Yes
<u>In relation to water and utility services:</u> - Adequate water and electricity services are provided for fire-fighting operations - gas and electricity services are located so as to not contribute to the risk to a building.	The area has reticulated water supply; however, the closest hydrant is >70m from the proposed development and the recommendations of this report shall include a 5,000l water tank with appropriate fittings for first aid firefighting. This report shall recommend compliance with PBP 4.1.3 for services including electricity and gas.	Yes
<u>In relation to landscaping:</u> It is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.	The development application shall include recommendations that the site is managed in accordance with Inner Protection Area requirements of PBP.	Yes
<u>In relation to Emergency and Evacuation Planning:</u>	The need to formulate an emergency evacuation plan has been discussed and it is advised that the residents should complete a <i>Bush Fire Survival Plan</i> as formulated by the NSW Rural Fire Service. An emergency evacuation plan is not recommended as a condition of consent.	Yes

11) Recommendations

The following recommendations are made for the bushfire protection measures for the proposed residential development of a new detached Granny Flat at No 54 Irrubel Road, Newport and are based upon the relevant provisions of the NSW Rural Fire Service guideline entitled *Planning for Bushfire Protection 2006*.

- 1) Construction Standard: The proposed development shall be constructed to a minimum standard of Section 3 [construction general] and Section 6 [BAL 19] of AS3959, 2009 'Construction of Buildings in Bushfire Prone Areas' and Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of 'Planning for Bushfire Protection 2006'.
- 2) Construction Standard Class 10b: PBP 4.3.6 [f] At the planning stage, class 10b buildings in bushfire prone areas should be non-combustible. [Class 10b buildings include a retaining or free standing wall, swimming pool or the like.]
- 3) Fences and Gates: All new fencing and gates shall be constructed in accordance with the NSW Rural Fire Service guideline: Fast Fact – *Fences or Gates in Bushfire Prone Areas*. [Refer Section 14 of this report]
- 4) Gutter Guards: New roofing shall be gutterless or have leafless guttering and valleys to prevent the build-up of flammable material. Any materials used shall have a flammability index no greater than 5.
- 5) Electricity and Gas Supplies: As far as practical, new electricity and gas supplies shall be installed in accordance with the requirements of 4.1.3 of PBP. Note: 4.1.3 of PBP requires that 'where practical, electrical transmission lines should be underground' and 'the location of gas services will not lead to ignition of surrounding bushland or the fabric of the building'.
- 6) Existing Dwelling: The development does not include alterations, additions or renovations to the existing dwelling on the site and this report does not include recommendations for the upgrading of the existing dwelling.
- 7) Asset Protection Zones: The entire site where not built on shall be established and maintained as an Inner Protection Area in accordance with the requirements of PBP with the exception that gutter guards have been recommended as an alternate solution rather than remove or severely prune overhanging trees.

- 8) Emergency and Evacuation Planning: The need to formulate an emergency evacuation plan has been discussed and it is advised that the residents should complete a *Bush Fire Survival Plan* as formulated by the NSW Rural Fire Service.

An emergency evacuation plan is not recommended as a condition of consent.

- 9) Water Supplies: In recognition that reticulated water supply exists but the closest hydrant is greater than 70m from the proposed development, a 5,000 litre water supply tank with a 38mm storz fitting and ball or gate valve shall be provided. The water supply tank, if located externally, shall be constructed of non-combustible material [metal or masonry].

12) Summary

This report consists of a bushfire risk assessment for the proposed residential development of a new detached Granny Flat at No 54 Irrubel Road, Newport.

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 Bushfire Protection 2006*.

This report has considered all of the elements of bushfire attack and provided the proposed development is constructed in accordance with the recommendations included in section 11 of this report, it is my considered opinion that the development satisfies the Objectives and Performance requirements of the *Building Code of Australia, Planning for Bushfire 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 Hazard Assessment that provides the required information to assist Local Council and the Rural Fire Service in determining compliance in accordance with Planning for Bushfire Protection and AS 3959, 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.



Ron Coffey – Bushfire Safety Engineer
Grad I Fire E [Institute of Fire Engineers - 1973]
Grad Cert Fire Safety Eng [UWS - 2003]
Grad Dip Building in Bushfire Prone Areas [UWS – 2005]
Ass Prof Cert in Expert Evidence in the Land & Environment Court [UTS – 2005]
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Member - Fire Protection Association Australia



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13) References

Australian Building Codes Board

Building Code of Australia
Volumes 1&2
Canprint

Australian Building Codes Board [2001]

Fire Safety Engineering Guidelines
Edition 2001
ABCB Canberra

D. Drysdale D. [1998]

Introduction to Fire Dynamics 2nd Edition
John Wiley & Sons Ltd

NSW Government Environmental Planning and Assessment Act [1979]

Part 79BA – Consultation and development Consent – Certain Bushfire Prone Land
NSW Government Printer

Planning NSW [2006]

Planning for Bushfire Protection 2006

A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners

This document provides the necessary planning considerations when developing areas for residential use in residential, rural residential, rural and urban areas when development sites are in close proximity to areas likely to be affected by bushfire events and replaces Planning for Bushfire Protection 2001.

This document is essential reading: Download a copy from the RFS website or purchase a copy through the NSW Government Online Shop or phone 9228 6333

Ramsay C & Rudolph L [2003]

Landscape and Building Design for Bushfire Prone Areas
CSIRO Publishing

Standards Australia [2009]

Australian Standards 3959
Australian Building Code Board

14) Fences and Gates

BAL 12.5 & BAL 19

1. Where a timber fence does not connect to a dwelling and has a minimum of 1 metre separation from the dwelling then a fence may be constructed from hardwood, or non-combustible material.
2. Where a fence connects directly to or has less than 1 metre separation from a dwelling it should be constructed from non-combustible materials only.
3. In all cases where timber fences are proposed, care should be taken in the selection, location and maintenance of landscaping adjoining the fence. Unmanaged landscaping could promote fire activity due to ember, radiant heat and direct flame contact and then further impact timber fencing.

The above is based on the premise that construction for level 1 & 2 dwellings is sufficiently removed from the main fire front and won't be subjected to direct flame contact or extreme levels of radiant heat that may cause ignition of combustible materials. However, dwellings could still be exposed to significant levels of ember attack and relatively high levels of radiated heat that may cause fences to ignite.

BAL 29, BAL 40 &/or Flame Zone

Dwellings assessed as requiring these construction levels shall have fencing constructed from non-combustible materials e.g. Sheet metal or masonry. This is due to the increased likelihood of direct flame contact causing ignition of combustible materials which may provide a fire path to the dwelling.