



## **BUSHFIRE ASSESSMENT REPORT**

### **PROPOSED DEVELOPMENT**

**2 MACPHERSON STREET  
WARRIEWOOD**

**AUGUST 2019  
REF: 9094**

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## **Conacher Consulting Pty Ltd**

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## **PREFACE**

This document provides an assessment of the bushfire attack potential and the necessary bushfire protection strategies for a proposed community title subdivision of the subject land at 2 Macpherson Street, Warriewood. Aspects assessed in relation to the Bushfire Assessment Report included; vegetation type, slopes, water supplies, entry and egress access, provision of defensible space, maintenance of defensible spaces , responsibilities for the upkeep of defensible space and construction standards for any future dwellings.

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# SECTION 1

## BACKGROUND DETAILS

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### 1.1 INTRODUCTION

This Bushfire Assessment Report has been prepared by *Conacher Consulting Pty Ltd*, for a proposal community title subdivision and associated infrastructure.

The objectives of this Report are to:

- i) Assess the site in relation to bushfire hazard from vegetation adjoining the site;
- ii) Address the relevant requirements of Planning for Bushfire Protection (Rural Fire Service, 2006);
- iii) Identify if the development complies with the aims and objectives of Planning for Bushfire Protection (RFS, 2006);
- iv) Prepare a Report that supplies the relevant information for the Rural Fire Service and Council prior to granting a Bushfire Safety Authority (RFS) or development approval (Council).

Previous Bushfire Hazard Assessment Reports have been completed for the subject property in August 2017, January 2019 and April 2019 by *Conacher Consulting Pty Ltd*.

### 1.2 DESCRIPTION OF THE PROPERTY

The property is located at 2 Macpherson Street, Warriewood and comprises Lot 25 Section C DP 5464. The subject site is 2.2 hectares in size and was previously used for a plant nursery business. The subject site contains areas of Cleared Land and Exotic Vegetation and fringing areas of Forested Wetland.

### 1.3 SITE DETAILS

#### ***Location and Surrounding Land Use***

The site is located on the northern side of Macpherson Street with Narrabeen Creek located along the northern and eastern boundaries of the site. The site is within the Warriewood Valley Urban Release Area.

#### ***Topography and Drainage***

The site is located on almost flat land with less than 3° slope with a northerly aspect.

#### ***Vegetation***

The vegetation within the subject site consists of Cleared Land and Exotic Vegetation with small areas of Disturbed Swamp Oak Forest located around the outer edges of the site.

The vegetation adjoining the property to the west and north-west consists of mostly Swamp Oak Forest.

## 1.4 PROPOSED DEVELOPMENT

The development assessed in this report is for a community title subdivision and associated infrastructure to accommodate future residential dwellings.

## 1.5 BUSHFIRE ASSESSMENT CRITERIA

### ***Bushfire Prone Land Map***

The north-west parts of the subject land are mapped as containing Bush Fire Vegetation (Buffer to Category 2) as shown in Figure 1.

### ***Forest Fire Danger Index***

The subject site is located within the Northern Beaches Local Government Area in the Greater Sydney Region. The Forest Fire Danger Index for the Greater Sydney Region is rated at 100 for use in determining asset protection zone requirements and categories for bushfire attack.

### ***Vegetation Classification***

The site contains Cleared Land and Exotic Vegetation and Disturbed Swamp Oak Forest, while the adjoining properties to a distance of 140 metres from the site boundary contain Cleared Land and Exotic Vegetation to the north and east and Forested Wetland to south and west.

The Cleared Land and Exotic Vegetation within the site and on the land to the north and east corresponds to Managed Land according to the RFS Classification of Vegetation formations.

The vegetation to the west and south of the site boundaries is classified as Forested Wetland.

### ***Development Category***

For asset protection zone determinations this development is assessed as a 'residential subdivision' under Chapter 4 of Planning for Bushfire Protection (RFS, 2006). Development consent is required from the Council and a Bushfire Safety Authority is required from the Rural Fire Service for any future subdivision of the site.

### ***Planning for Bushfire Protection (RFS, 2006)***

Due to the presence of land mapped as Bushfire Prone Land within the site, the development application is required to include a Bushfire Assessment Report prepared in accordance with the requirements of *Planning for Bushfire Protection* (RFS, 2006).

### ***State Legislation***

The proposal is subject to Section 91 BA of the *Environmental Planning and Assessment Act* (1979) which requires the consent authority (Council) to consider the requirements of *Planning for Bushfire Protection* (RFS, 2006).

In relation to the *Rural Fires Act* (1997) Section 100 of this Act will apply for any future proposal for subdivision of the land. This will require an application to the RFS for a Bushfire Safety Authority for any future subdivision.

## SECTION 2

### BUSHFIRE ATTACK ASSESSMENT

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#### 2.1 ADJOINING AND SURROUNDING DEVELOPMENT

The site is surrounded by a variety of land uses as outlined below and as shown in Figure 2.

*North*

New residential housing estate.

*South*

Industrial development.

*East*

New residential flat building / multi-dwelling housing development and cleared / managed land.

*West*

Disused plant nursery and forested wetland vegetation.

#### 2.2 VEGETATION IN RELATION TO BUSHFIRE ASSESSMENT

The vegetation classifications identified below relate to the vegetation communities identified in Appendix 2 of RFS (2006) which are required to be assessed for subdivision purposes.

The Cleared Land and Exotic Vegetation on-site and the vegetation adjoining the northern boundary and all cleared land to the east and south is classified as Managed Lands as defined in PBP (RFS, 2006).

The existing patch of vegetation to the west and south is classified as Forested Wetland.

However the vegetation within the perimeter of the site is to be retained and managed as part of a riparian vegetation corridor. As such this vegetation will be assessed as a forest vegetation structure after the initial site development has occurred.

#### 2.3 SLOPE GRADIENTS IN RELATION TO BUSHFIRE ASSESSMENT

The slopes to the north-east, north-west and south-west of the site are almost flat for a length of more than 100 metres outside the existing property boundary. Effective vegetated slopes to the south-east, east and south are upslope for a distance of more than 100 metres. However future filling of the site will raise site levels to above adjoining lands. Therefore future bushfire hazards will be located downslope of the site.

#### 2.4 BUSHFIRE ATTACK ASSESSMENT – INITIAL SITE DEVELOPMENT

An assessment of the bushfire attack in relation to the adjoining lands, vegetation and slope gradients is provided in Table 2.1. The vegetation classifications used in Table 2.1 have been determined on the intended future regrowth and management of the riparian buffer vegetation to establish a forest vegetation structure rather than forested wetlands or remnant vegetation structure. The site will be filled to a level which will be above the surrounding landform.

<b>TABLE 2.1</b> <b>ASSET PROTECTION ZONE ASSESSMENT</b> (from Table A2.4 PBP, 2006)			
<b>Direction</b>	<b>Vegetation Classification (within 140m)</b>	<b>Effective Slope (within 100m)</b>	<b>APZ Requirements (metres)</b>
North	Forest	0-5° downslope	25
South	Forest	0-5° downslope	APZ provided by road
East	Forest	0-5° downslope	25
West	Forest	0-5° downslope	25

As determined from Table A2.4 of RFS (2006) the bushfire threat adjacent to the site will require Asset Protection Zones (APZ) between future development areas and retained vegetation.

## 2.5 BUSHFIRE ATTACK ASSESSMENT – FUTURE BUILDINGS

The Bushfire Attack Level assessment for any future dwellings will be required to be completed at a later stage following civil works as part of a future proposal.



## **SECTION 3**

### **BUSHFIRE PROTECTION MATTERS**

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#### **3.1 ASSET PROTECTION ZONE AND BUSHFIRE HAZARD MANAGEMENT**

Bushfire Asset Protection Zones (APZs) are to be provided around the perimeter of the future development area to protect the future development from the bushfire threat from adjoining retained vegetation. This APZ will provide the required defendable space between the bushfire threat and the future development of at least 25 metres.

The whole of the area within the bushfire Asset Protection Zones (APZs) is to be maintained as an Inner Protection Area (IPA) in accordance with the standards described in Section 4.1.3 of PBP (RFS, 2006). The responsible party for the inspection and maintenance of the APZs will be the individual land owners.

It is also recommended that any landscaping incorporated into the development use suitable groundcover species which do not increase the bushfire hazard of the landscape management area as described in Appendix 5 of PBP (RFS, 2006). The use of fire retardant species and provision of low cut turf areas and non-contiguous tree, shrub and ground layers are effective strategies to prevent the spread of fire.

#### **3.2 BUILDING CONSTRUCTION LEVEL**

The construction requirements (Bushfire Attack Levels) for future buildings within the site according the Australian Standard 3595-2009 (Construction of Buildings in Bushfire Prone Areas) are to be determined at a future time when dwellings are proposed.

#### **3.3 ACCESS**

The proposed development provides for dual access/egress points to Macpherson Street. This will enable the safe evacuation of residents while simultaneously enabling access for emergency services.

#### **3.4 WATER SERVICES**

The existing industrial and residential development within the locality has reticulated water mains. It is expected that the proposed development will extend the existing water reticulation from existing infrastructure therefore a supplementary form of water supply will not be necessary for fire fighting purposes. This water supply arrangement is in compliance with '*Planning for Bushfire Protection, 2006*' in respect of water supply. For the reticulated water supply, fire hydrant spacing, sizing and pressure is to comply with the requirements of AS2419.1 – 2005. A certification or test report from the Water Supply Authority is to be provided to demonstrate that the requirements of AS2419.1-2005 can be achieved during a bushfire event.

#### **3.5 ENVIRONMENT AND HERITAGE ISSUES**

There are no identified aboriginal archaeological constraints on the land.

The site is not affected by any significant environmental, geological or drainage features other than those on adjoining land as addressed in separate ecological and planning reports.

## SECTION 4

### CONCLUSIONS AND RECOMMENDATIONS

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#### 4.1 AIM AND OBJECTIVES OF PLANNING FOR BUSHFIRE PROTECTION

*“The aim of Planning for Bushfire Protection is to use the NSW development assessment system to provide for the protection of human life and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, on site amenity and protection of the environment” (PBP pg 1).*

The preparation of this Bushfire Assessment Report and subsequent assessment by Council and the Rural Fire Service ensures compliance with the aim of Planning for Bushfire Protection.

The following comments are provided in relation to satisfying the objectives of PBP.

##### *Objective 1*

- (i) afford occupants of any building adequate protection from exposure to a bush fire;*

Measures have been identified which can be implemented within the proposed development in regard to requirements for layout and design. Any future dwelling development is to comply with PBP (RFS, 2006) in regards to APZs and Bushfire Attack Levels (AS3959).

##### *Objective 2*

- (ii) provide for a defensible space to be located around buildings;*

A defensible space (APZ) will be established within the subject site. These APZs will be in the form of managed lands (Mown grasses, roadways and landscaped areas), or proposed internal roads. The APZs will be maintained on a regular basis by the management of the proposed development.

##### *Objective 3*

- (iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;*

An APZ of 25 metres and determination of the most appropriate Construction requirement (BAL) for any future dwellings will provide adequate separation between the hazard and buildings which, in combination with other measures such as shielding from ember attack and other integrated measures will prevent direct flame contact and material ignition.

##### *Objective 4*

- (iv) ensure that safe operational access and egress for emergency service personnel and residents is available;*

A multiple ingress/egress route to the existing through road (Macpherson Street) has been incorporated into the design. It is also recommended that the road system within the proposed development be designed and constructed in accordance with PBP as described in Sections 4.1 (RFS, 2006) as identified in Section 3.3. This will ensure safe operational ingress for emergency services and also safe egress for residents during an emergency.

#### *Objective 5*

- (v) *provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the asset protection zone (APZ);*

The managers of the development will undertake regular inspections and undertake management of the Asset Protection Zones. This will include maintenance of the vegetation and fuel loads within the APZs and other landscaped garden areas in accordance with PBP (RFS, 2006).

#### *Objective 6*

- (vi) *ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting)*

With respect to the adequate supply of water services the proposed development is expected to comply provided that the water services are extended from the existing water supply infrastructure and constructed and installed according to AS 2419.1 – 2005. A certification or test report from the Water Supply Authority is to be provided to demonstrate that the requirements of AS2419.1 – 2005 can be achieved during a bushfire event.

## **4.2 CONCLUDING COMMENTS**

The proposed development area is mapped as being partially within a 100m Bush Fire Vegetation Buffer, with the highest bush fire threat arising from the vegetation adjoining the north-west and western boundaries.

AS3959-2009 requires that a level of construction to the identified Bushfire Attack Level (BAL) is required for any proposed residences to be located within 100 metres of the north-west boundary of the subject site.

An APZ is required to be established within the perimeter of the subject site.

## **4.3 RECOMMENDATIONS**

The following recommendations are provided in relation to reducing the potential for loss of life and property by the impact of bushfire:

- i) Establishment and maintenance of Asset Protection Zones (APZ) with separation distances from the bushfire hazard is to be undertaken as shown in Table 2.1;
- ii) Any future habitable buildings are to be constructed to an appropriate Bushfire Attack Level in accordance with the distance from the bushfire hazard;
- iii) Landscape planting to be designed and implemented in a manner that does not increase the bushfire hazard to future dwellings on the site.
- iv) Internal roads are to comply with Section 4.2.7 of RFS(2006).

## REFERENCES

Rural Fire Service (2006) Planning for Bushfire Protection.

Standards Australia (2009) Australian Standard (AS3959-2009) Construction of Buildings in Bushfire Prone Areas.

## FIGURES

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