

SETTLERS RIDGE, SOUTH WEST ROCKS

E BUSHFIRE ASSESSMENT

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# **BUSHFIRE HAZARD ASSESSMENT**

**FOR**

## **SETTLERS RIDGE SOUTH WEST ROCKS 3A PROPOSAL**

**AT**

**LOT 31 (31.81ha) - LOT 57 (5.3ha) - LOT 223 (3.4ha)  
SOUTH WEST ROCKS NSW 2431**

**FOR**

**SJ CONNELLY CPP PTY LTD**

**29 August 2012  
Version A**

**Prepared by:**

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## PREFACE

Readers of this report must be aware that the bushfire mitigation recommendations described in this report will not completely remove the risk of bushfire impacting the development site. Recommendations contained herein are designed to improve the bushfire related issues for the existing development. With regard to the application the implementation of recommendations in their entirety, together with the diligent maintenance of Asset Protection Zones, will provide for a reduction of the bushfire threat and the associated risk.

This report caters specifically for the requirements of this project and the Client. No warranty is intended or implied, or responsibility undertaken by Barry Eadie Consulting Pty Ltd for its use on any other project or by any third party.

This report does not include an environmental assessment, Aboriginal heritage assessment or identify endangered species in the area.

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## 1 EXECUTIVE SUMMARY

Attachment 3 of the Director General's Environmental Assessment Requirements under Section 75F of the EP&A Act 1979 lists relevant technical and Policy Guidelines which may assist in the preparation of the Environmental Assessment. ***'Planning for Bushfire Protection' (2006)*** is listed under Attachment 3 and therefore applicable in this application.

Correspondence from Kempsey Shire Council dated 20 August 2010 to the Department also includes reference to ***'Planning for Bushfire Protection' (2006)***.

The requirements under ***'Planning for Bushfire Protection' (2006)*** are addressed under Bush Fire Protection Measures, which include:

- Asset Protection Zones (APZ).
- Access and Egress; Public Roads, Property Access and Fire Trails.
- Services; Water, electricity and gas.
- Construction requirements for Dwellings.

The bushfire measures proposed comply with the requirements of ***'Planning for Bushfire Protection' (2006)*** in all respects and in particular the Bush Fire Protection Measures. The available Asset Protection Zones will require a minimum BAL 12.5 construction in accordance with AS 3959-2009 for all residential dwellings within 100 metres of unmanaged vegetation.

The landscape areas and the Managed Bush Corridors of the proposed development will comply with the requirements for landscaping and Asset Protection Zones and therefore not contribute to any bushfire hazard.

## 2 INTRODUCTION

### 2.1 Report Purpose

This report assesses the capability of the existing sites to be developed for which Concept Plan approval is proposed to be sought includes the creation of 154 Torrens Title Residential allotments, an extension of local roads and infrastructure to service the subdivision and the provision of a variety of open space parcels in accordance with the legislative requirements of *'Planning for Bushfire Protection' (2006)*.

The site, as shown in **Plan 1.2**, has frontage to, and is bound by Gregory Street to the east, Belle O'Connor Street to the south and the partly formed Keith Andrews Avenue to the north. A section of unformed crown road adjoins the western boundary of Lot 223 DP 754396. Undeveloped land lies to the west.

The land is located between the "old" town of South West Rocks and recent residential development which has occurred along Belle O'Connor Street, adjacent 'The Rocks' local shopping centre. The South West Rocks industrial area lies to the south.

The land is undulating and contains a mix of dry sclerophyll forest dominated by scribbly gum, blackbutt, tallowwood, pink and red bloodwood and brushbox. The study site is structurally mature to over-mature. There are no permanent or semipermanent water-bodies within the study area.

The Real Property description of the subject land is:

- Lot 31 DP 754396 (Lot 31)
- Lot 57 DP 1117398 (Lot 57)
- Lot 223 DP 754396 (Lot 223)

These three properties have the following areas:

- Lot 31 – 31.8 hectares
- Lot 57 – 5.3 hectares
- Lot 223 – 3.4 hectares

The subject land is partly zoned 2(a) Residential and 1(d) Rural (Investigation) under the provisions of the Kempsey Local Environmental Plan 1987.

The report will form part of the supporting documentation for Major Project Applications to be submitted to the Minister. A Bushfire Hazard Assessment has been undertaken to determine the necessary requirements for the development in accordance with:

- NSW Rural Fire Service, Planning NSW, *'Planning for Bushfire Protection' (2006)*; and
- AS 3959-2009: *Construction of Buildings in Bush Fire Prone Areas*.

Barry Eadie Consulting Pty Ltd has been engaged by S. J. Connelly CPP Pty Ltd to prepare the Bushfire Hazard Assessment report, to be used in support of the application.

## 2.2 Project Background

The subject land consists of 3 parcels in 3 separate ownerships. They are Lot 31 (31.81 ha), Lot 57 (5.3 ha) and Lot 223 (3.4 ha). The vacant sites form the last linkage between the older sections of South West Rocks, and the expanding urban development to the south.

This includes a local commercial / shopping precinct approximately 350m to the south of the site known as “The Rocks” shopping village and community centre.

To the north, there are scattered commercial developments randomly located along Gregory Street, before the road merges with the town centre of South West Rocks, some 1.5km away. Recreational facilities such as the South West Rocks Country Club, Surf Club, and South West Roxy Cinema are similarly located to the north of the site.

Development Consent for the subdivision of Lot 223 into 35 lots was granted by Kempsey Shire Council (KSC) on 26th September 2003.

The application was considered concurrently with 2 applications for residential subdivision of Lot 57 into a total of 46 lots. These applications were also granted consent on October 30th 2003. The approvals were subsequently tested in the Land & Environment Court (LEC) in 2004; “Friends of South West Rocks Inc v Machro Pty Ltd and Ors” (Ref: NSWLEC 721). The consents were voided by the Court on matters relating to the then SEPP 71 requirements applying to State Significant Development.

This project involves treating the 3 land parcels as a single integrated development parcel. It is expected that they will however be developed separately.

### 3 BUSHFIRE LEGISLATION IN NSW

The *Environmental Planning and Assessment Act 1979* and the *Rural Fires Act 1997* were amended via the *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*.

The amendments to the legislation are not retrospective and consequently will not usually apply to development applications which were made, but not necessarily finally determined, before 1 August 2002.

With regard to the *Environmental Planning and Assessment Act 1979*, the amendments:

- a) Require local government councils to record on maps land identified by the Commissioner of the NSW Rural Fire Service as bushfire prone land; and
- b) Prevent development consent being granted for the carrying out of development for certain purposes on bushfire prone land unless the consent authority is satisfied that the development conforms to certain documented bushfire protection specifications and requirements (*'Planning for Bushfire Protection' (2006)* and *AS 3959 – Construction of Buildings in Bushfire-Prone Areas*) or has consulted with the Commissioner;

*'Planning for Bushfire Protection' (2006)*, defines bushfire prone areas as an area that can support a bushfire or is likely to be subject to bushfire attack. In general, a bushfire prone area is an area containing a high, medium or low bushfire hazard, or any area within 100 m of a high or medium bushfire hazard, or within 30 m of a low bushfire hazard. Bushfire hazard areas do not include existing urban areas or water bodies (other than wetland vegetation), and are identified by bushfire hazard mapping produced under an approved Bushfire Risk Management Plan, or other such map certified by the Commissioner of the NSW Rural Fire Service for this purpose.



## 4 SITE ASSESSMENT

<b>NAME:</b>	S J Connelly CPP Pty Ltd
<b>SITE ADDRESS:</b>	The subject land is Lot 31 (31.81 ha), Lot 57 (5.3 ha) and Lot 223 (3.4 ha).
<b>COUNCIL:</b>	Kempsey Shire Council
<b>TYPE of DEVELOPMENT:</b>	Subdivision

Barry Eadie conducted inspections of the site at South West Rocks site and the surrounding area on 10 January 2011. The following assessment has been undertaken in accordance with the requirements of *'Planning for Bushfire Protection' (2006)*. The proposal is for approval of the Residential Subdivision at Settlers Ridge, South West Rocks.

### 4.1 Location

The land is located between the "old" town of South West Rocks and recent residential development which has occurred along Steve Eagleton Drive adjacent 'The Rocks' local shopping centre. The South West Rocks industrial area lies to the south.

### 4.2 Vegetation

The vegetation has been assessed over a distance of 140 m from the existing bush vegetation both on and off site in all directions in accordance with Figure A2.1 of *'Planning for Bushfire Protection' (2006)*.

This report will address the proposed development in a number of sections i.e. seven (7) sections. The sections correspond to the proposed subdivision layout shown on the attached plan.

#### **North: Proposed Lots 7-17, 126, 127, 144 and 145 fronting Keith Andrews Avenue:**

North: Keith Andrews Avenue with residential development further north.

South: Proposed Lots.

East: Proposed Lots with Gregory Street, East of proposed Lot 7.

West: Proposed Lots except proposed Lot 126, which has vegetation to the West.

#### **Northwest: Proposed Lots 98-100 and 213-215**

North: Forest vegetation across Keith Andrews Avenue.

South: Proposed Lots.

East: Proposed Lots.

West: Proposed Lots with road and Reserve West of Proposed Lot 213.

**West: Proposed Lots 118-125**

North: Proposed Lots.

South: Proposed Lots and new road South of Proposed Lot 118.

East: Proposed Lots.

West: Proposed Road and Reserve then Forest

**Southwest: Proposed Lots 80, 81,100-103.**

North: Proposed Lots.

South: New road then Forest

East: Proposed Lots.

West: New road then Forest.

**South: Proposed Lots 1, 18, 59-63 and 68-71.**

North: Proposed Lots.

South: Existing residential Lots.

East: Proposed and existing Lots.

West: Proposed Lots.

**East: Proposed Lots 1-7 and 36-58**

North: 1-7 Gregory Street, 36-58 proposed residential lots.

South: Proposed and existing Lots.

East: Existing residential for Lots 36-58 and Gregory Street for Lots 1-7.

West: Proposed Lots.

NOTE: All other proposed Lots have adjoining proposed lots or street frontage.



*Typical vegetation throughout the site*



*Typical vegetation throughout the site*



*Typical vegetation throughout the site*

### 4.3 Slope

Based on the site inspection, the slope of the land over a distance of 100 m from the indicative building lines in all directions has been assessed. In accordance with ***‘Planning for Bushfire Protection’ (2006)***, the slope has been assessed based on the gradient that will most significantly influence the fire behaviour of the site. The slope that most significantly influences fire behaviour is as follows:

#### ***Proposed Lots 7-17, 144 and 145***

Development Aspect	Hazard / Vegetation within 140m of Development	Predominant Vegetation Class (Table A2.1)	Average Slope of Land	Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)	Proposed Width of Asset Protection Zone (IPA + OPA)
North	Keith Andrews Avenue	N/A	Flat	Nil	N/A
South	Proposed Lots	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed Lots	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A

***Proposed Lot 126***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Keith Andrews Avenue	N/A	Flat	Nil	N/A
South	Proposed Lots	Forest South-west	0-5 <sup>0</sup> Down-slope	20m	27m
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed road then Forest	Forest	0-5 <sup>0</sup> Down-slope	20m	27m

***Proposed Lot 127***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Keith Andrews Avenue	N/A	Flat	Nil	N/A
South	Proposed Lots	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed Lots	N/A	0-5 <sup>0</sup> Down-slope	20m	51m

***Proposed Lots 113-117 and 119-125***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed Lots	Forest North-west	Flat	20m	21m
South	Proposed Lots	Forest South-west	0-5 <sup>0</sup> Down-slope South-west	20m	27m
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed Lots	N/A	0-5 <sup>0</sup> Down-slope	20m	27m

***Proposed Lot 118***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed Lots, Forest Northwest	Forest	Up-slope	20m	21m
South	Proposed Lots, Forest Southwest	Forest	0-5° Down-slope	20m	27m
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed road then Forest	Forest	0-5° Down-slope	20m	27m

***Proposed Lots 80, 81 and 100-103***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed Lots,	N/A	Up-slope	Nil	N/A
South	Proposed road then Forest	Forest	0-5° Down-slope	20m	27m
East	Proposed Lots, Forest South-east	Forest	Flat	20m	21m
West	Proposed road then Forest	Forest	0-5° Down-slope	20m	27m

***Proposed Lot 68,69***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed Lots	N/A	Flat	Nil	N/A
South	Proposed road then Forest	Forest	0-5° Down-slope	20m	27m
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed road, Lots, Forest Southwest	Forest	0-5° Down-slope	20m	27m

***Proposed Lots 70,71***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed Lots	N/A	Flat	Nil	N/A
South	Proposed road then Lots	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed Lots, road, Forest Southwest	Forest	0-5 <sup>0</sup> Down-slope	20m	>27m

***Proposed Lots 59-67***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Predominant Vegetation Class (Table A2.1)</b>	<b>Average Slope of Land</b>	<b>Recommended Width of Asset Protection Zone (IPA + OPA) (Table A2.5)</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>
North	Proposed road and Lots	N/A	Flat	Nil	N/A
South	Proposed Lots and road	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A
East	Proposed Lots	N/A	Flat	Nil	N/A
West	Proposed Lots and road	N/A	0-5 <sup>0</sup> Down-slope	Nil	N/A



#### 4.4 Asset Protection Zone

The Asset Protection Zone (APZ) acts as a buffer zone between the development and the hazard. The primary purpose of an APZ is to ensure that a progressive reduction of bushfire fuels occurs between the bushfire hazard and any habitable structures. The APZ consists of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

The following table shows the minimum required Asset Protection Zones, which attracts BAL 29 construction for residential dwellings, the table also shows the proposed Asset Protection Zone which will comply with the requirements for BAL 12.5 construction for all dwellings within 100 metres of unmanaged vegetation with and FDI of 80.

##### *Bushfire Attack Summary*

##### *Proposed Lots 7-17, 144 and 145*

Development Aspect	Hazard / Vegetation within 140m of Development	Most Significant Gradient of the Land	Proposed Width of Asset Protection Zone (IPA + OPA)	Level of Bushfire Attack (Table 2.4.3)	Construction Standard Required AS3959-2009
North	Keith Andrews Avenue	Flat	Nil	N/A	None
South	Proposed lots	0-5 <sup>0</sup> Down-slope	Nil	N/A	None
East	Proposed Lots	Flat	Nil	N/A	None
West	Proposed Lots	0-5 <sup>0</sup> Down-slope	>100m to unmanaged vegetation	N/A	None

**Proposed Lot 126**

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Most Significant Gradient of the Land</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>	<b>Level of Bushfire Attack (Table 2.4.3)</b>	<b>Construction Standard Required AS3959-2009</b>
North	Keith Andrews Avenue	Flat	Nil	N/A	BAL 19
South	Proposed lots	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL29
East	Proposed Lots	Flat	Nil	N/A	BAL 19
West	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29

**Proposed Lot 127**

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Most Significant Gradient of the Land</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>	<b>Level of Bushfire Attack (Table 2.4.3)</b>	<b>Construction Standard Required AS3959-2009</b>
North	Keith Andrews Avenue	Flat	Nil	None	BAL 12.5
South	Proposed lots	0-5 <sup>0</sup> Down-slope	Nil	None	BAL 12.5
East	Proposed Lots	Flat	Nil	None	BAL 12.5
West	Proposed Lot, proposed road then Forest	0-5 <sup>0</sup> Down-slope	51m to unmanaged vegetation	BAL 12.5	BAL 12.5



**Proposed Lot 113**

Development Aspect	Hazard / Vegetation within 140m of Development	Most Significant Gradient of the Land	Proposed Width of Asset Protection Zone (IPA + OPA)	Level of Bushfire Attack (Table 2.4.3)	Construction Standard Required AS3959-2009
North	Proposed Lots, Forest North-west	Flat	16m road reserve North-west 3m building line plus 8m easement to the west	BAL 29	BAL 29
South	Proposed lots	0-5 <sup>0</sup> Down-slope	16m road reserve South-west 3m building line plus 8m easement to the west	BAL 29	BAL 29
East	Proposed Lots	Flat	Nil	N/A	BAL 19
West	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 3m building line plus 8m easement to the west	BAL 29	BAL 29

**Proposed Lots 114-117 and 119-125**

Development Aspect	Hazard / Vegetation within 140m of Development	Most Significant Gradient of the Land	Proposed Width of Asset Protection Zone (IPA + OPA)	Level of Bushfire Attack (Table 2.4.3)	Construction Standard Required AS3959-2009
North	Proposed Lots, Forest North-west	Flat	16m road reserve North-west 6m building line plus 5m easement to the west	BAL 29	BAL 29
South	Proposed lots	0-5 <sup>0</sup> Down-slope	16m road reserve South-west 6m building line plus 5m easement to the west	BAL 29	BAL 29
East	Proposed Lots	Flat	Nil	N/A	BAL 19
West	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29

***Proposed Lot 118***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Most Significant Gradient of the Land</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>	<b>Level of Bushfire Attack (Table 2.4.3)</b>	<b>Construction Standard Required AS3959-2009</b>
North	Proposed Lots, Forest North-west	Up-slope	16m road reserve North-west 6m building line plus 5m easement to the west	BAL 29	BAL 29
South	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29
East	Proposed Lots	Flat	Nil	N/A	BAL 19
West	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29

***Proposed Lots 80, 81, 100-103***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Most Significant Gradient of the Land</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>	<b>Level of Bushfire Attack (Table 2.4.3)</b>	<b>Construction Standard Required AS3959-2009</b>
North	Proposed Lots	Up-slope	Nil	N/A	BAL 19
South	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29
East	Proposed Lots, Forest South-east	Flat	16m road reserve South-east 6m building line plus 5m easement to the west	BAL 29	BAL 29
West	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29

**Proposed Lot 68, 69**

Development Aspect	Hazard / Vegetation within 140m of Development	Most Significant Gradient of the Land	Proposed Width of Asset Protection Zone (IPA + OPA)	Level of Bushfire Attack (Table 2.4.3)	Construction Standard Required AS3959-2009
North	Proposed Lots	Flat	N/A	N/A	BAL 19
South	Proposed road then Forest	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29
East	Proposed Lots	Flat	N/A	N/A	BAL19
West	Proposed road, Lots, Forest South-west	0-5 <sup>0</sup> Down-slope	16m road reserve 6m building line plus 5m easement to the west	BAL 29	BAL 29

**Proposed Lots 70,71**

Development Aspect	Hazard / Vegetation within 140m of Development	Most Significant Gradient of the Land	Proposed Width of Asset Protection Zone (IPA + OPA)	Level of Bushfire Attack (Table 2.4.3)	Construction Standard Required AS3959-2009
North	Proposed Lots	Flat	N/A	None	BAL 12.5
South	Proposed road then Lots	0-5 <sup>0</sup> Down-slope	N/A	None	BAL 12.5
East	Proposed Lots	Flat	N/A	None	BAL 12.5
West	Proposed Lots, road, Forest South-west	0-5 <sup>0</sup> Down-slope	>27m	BAL 29	BAL 29

### ***Proposed Lots 59-67***

<b>Development Aspect</b>	<b>Hazard / Vegetation within 140m of Development</b>	<b>Most Significant Gradient of the Land</b>	<b>Proposed Width of Asset Protection Zone (IPA + OPA)</b>	<b>Level of Bushfire Attack (Table 2.4.3)</b>	<b>Construction Standard Required AS3959-2009</b>
North	Proposed road and Lots	Flat	N/A	None	BAL 12.5
South	Proposed Lots and road	0-5 <sup>0</sup> Down-slope	N/A	None	BAL 12.5
East	Proposed Lots	Flat	N/A	None	BAL 12.5
West	Proposed Lots, road,	0-5 <sup>0</sup> Down-slope	>50m	BAL12.5	BAL 12.5

## **4.5 Level of Construction**

Table 2.4.2 of AS 3959-2009: ***Construction of Buildings in Bushfire-Prone Areas*** determines the construction requirements based upon vegetation classification and slope.

**NOTE:** *Construction requirements are detailed in AS 3959-2009 and Addendum Appendix 3 of 'Planning for Bushfire Protection' (2006).*

*The construction requirements for the next lower BAL than that determined for the site may be applied to an elevation of the building where the elevation is not exposed to the source of bushfire attack. An elevation is deemed to be not exposed to the source of bushfire attack if all of the straight lines between that elevation and the source of bushfire attack are obstructed by another part of the building.*

*The construction requirements for a shielded elevation shall be not less than that required for BAL 12.5, except where exposed elevations have been determined as BAL LOW.*

All residential dwellings within 100 metres of unmanaged vegetation will be required to be constructed to a Level of construction in accordance with the Table in section 4.4 above based upon the available Asset Protection Zone.

## 4.6 Fire Fighting Personnel Access

### 4.6.1 Public Road Access

Access is provided to each Section directly from Keith Andrews Avenue and Trevor Judd Avenue, all of which are capable of supporting fully loaded fire fighting vehicles.

### 4.6.2 Property Access

Property Access is available from an internal road network, which are capable of supporting a fully loaded fire-fighting vehicle.

## 4.7 Electricity Supply

It is proposed that transmission lines providing power to the proposed development should be installed underground.

## 4.8 Gas

Reticulated or bottled gas shall be installed and maintained in accordance with AS/NZS 1596-2002: *Storage and Handling of LP Gas* and the requirements of the relevant authorities. If gas cylinders are to be kept close to buildings, the release valve must be directed away from the building and away from any hazardous materials such as firewood, so that it does not act as a catalyst to combustion.

## 4.9 Water Supply

Town reticulated water supply will be available to the development. Hydrants will be located throughout the development. This will ensure that there are hydrants available for fire fighting at the interface between the development and the unmanaged vegetation.

## 4.10 Recommendations

Based on Barry Eadies' site inspection and assessment, the following recommendations would be required for future development of dwellings on the lots:

- (a) APZ's be provided in accordance with section 4.4 of this report;
- (b) If any trees are to be located within the envisaged APZs, this is considered acceptable, providing the following conditions are met:
  - (i) Canopies are a minimum of 2-5 metres apart;
  - (ii) Canopies should not overhang buildings Vegetation is not to touch or overhang dwellings (canopy vegetation must not be within 2-5 metres of any building / dwelling);
  - (iii) Vegetation is not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and

- (iv) Vegetation is located far enough away from dwellings so that it will not ignite the dwelling by direct flame contact or radiant heat emission.
- (c) Woodpiles, combustible material storage sheds, large areas / quantities of garden mulch and stacked flammable building materials should not be located within IPA of dwellings;
- (d) Reticulated or bottled gas shall be installed and maintained in accordance with AS/NZS 1596-2002: ***Storage and Handling of LP Gas*** and the requirements of the relevant authorities.

## 5 CONCLUSIONS

Barry Eadie has conducted a site inspection and assessment of the existing site. The assessment has been undertaken in accordance with '***Planning for Bushfire Protection***' (2006) and AS 3959-2009: ***Construction of Buildings in Bush Fire Prone Areas***.

Provided the recommendations stated above are implemented in full, Barry Eadie Consulting Pty Ltd is of the opinion that the proposed development achieves the intent of the relevant legislation and in particular the requirements as set out in '***Planning for Bushfire Protection***' (2006).

## 6 REPORT BASIS INFORMATION

The report is based on the following:

- (i) Site inspections carried out on 10 January 2011 by Barry Eadie;
- (ii) Site Plan

## 7 REFERENCES

- NSW Rural Fire Service, Planning NSW, '***Planning for Bushfire Protection***' (2006).
- AS 3959-2009: ***Construction of Buildings in Bush Fire Prone Areas***.

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## **APPENDIX A – PROPOSED DEVELOPMENT PLAN**

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