

D7

Appendix D7

BUSHFIRE PROTECTION ASSESSMENT

FOR THE PROPOSED
RESIDENTIAL SUBDIVISION

OF

LOTS A & B IN THE SUBDIVISION OF LOT 52 in DP 831284

&

LOT 84 in DP 792945

BELLE O' CONNOR STREET,
SOUTH WEST ROCKS

FOR

MALBEC PROPERTIES.



Australian Bushfire Protection Planners Pty Limited
ACN 083 085 474

RMB 3411 Dog Trap Road,
SOMERSBY 2250 NSW.
Phone: (02) 43622112 Fax: (02) 43622204
Email: abpp@bigpond.net.au

BUSHFIRE PROTECTION ASSESSMENT

FOR THE PROPOSED
RESIDENTIAL SUBDIVISION

OF

LOTS A & B IN THE SUBDIVISION OF LOT 52 in DP 831284

&

LOT 84 in DP 792945
BELLE O' CONNOR STREET,
SOUTH WEST ROCKS

FOR

MALBEC PROPERTIES.

Assessment Number	Document	Preparation Date	Issue Date	Directors Approval
B08745 - 1	Final	3.5.2008	30.10.2008	<i>G.L.Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited, at the request of *Malbec Properties*, has undertaken the bushfire consultancy to inform the project planning process, under Part 3A [Major Projects under State Environmental Planning Policy] of the *Environmental Planning & Assessment Act 1979*, on the bushfire protection measures required for the residential subdivision of land within proposed Lots A & B, being the subdivision of Lot 52 in DP 831284 and Lot 84 in DP 792945, Belle O'Connor Street, South West Rocks.

The proposal is a Project Approval for the development under the provisions of Section 75P (c) of the *Environmental Planning & Assessment Act 1979*.

The land over which the residential subdivision proposal is being undertaken is land within the southern portion of the study area which formed part of the South West Rocks Local Environmental Study [LES] undertaken by Connell Wagner and occupies the land to the north of Belle O'Connor Street and south of the development exclusion zone to Saltwater Creek.

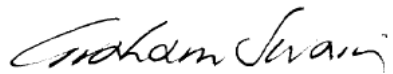
Lot A, in the subdivision of Lot 52 in DP 831284, is in the ownership of Saltwater Developments and contains 7.39 hectares of land within the western portion of the development site, to the east of the South West Rocks Golf Course. Lot B, in the subdivision of Lot 52 in DP 831284, is in the ownership of Malbec South West Rocks Pty Ltd and contains 27.52 hectares of vacant land to the east of Lot A between Belle O'Connor Street and the buffer zone to Saltwater Creek and contains an existing dwelling. Lot 84 in DP 792945 is in the ownership of Malbec South West Rocks Pty Ltd and consists of a triangular parcel of land which is located in the south-eastern corner of the development site and contains an existing dwelling.

The vegetation within the development site consists of Scribbly Gum Woodland and Shrubland [Coastal Heath] with managed curtilages to the existing dwellings. The buffer zone to Saltwater Creek, within the residual northern portion of Lot 52 in DP 831284, contains Swamp Forest, Scribbly Gum Woodland/Open Forest. The land to the south of Belle O'Connor Street contains an approved residential subdivision whilst the land to the east of Lot 84 in DP 792945 contains existing rural residential development which is accessed via Rocks View Crescent.

The vegetation within the development site and within the land occupied by the Sewerage Treatment Plant and the buffer zone to Saltwater Creek is mapped as Category 1 Bushfire Prone Vegetation. Therefore, the proposed lots located adjacent to the bushfire prone vegetation, along the northern aspect of the subdivision precinct, will require the provision of an Asset Protection Zone to a width which complies with the deemed-to-comply provisions of *Planning for Bushfire Protection 2006*.

The Director General's Environmental Assessment Requirements includes, under subheading "Hazard Management and Mitigation – Bushfire [6.3]" the advice that the Environmental Assessment must address the requirements of *Planning for Bushfire Protection 2006 (RFS)*.

This report undertakes an assessment to determine the deemed-to-satisfy requirements of *Planning for Bushfire Protection 2006* and provides recommendations on the provision of Asset Protection Zones to the buildings; emergency access/egress; fire-fighting access and water supplies; construction standards of the buildings and the management of the Asset Protection Zones and residual vegetation so as to address the aim and objectives of *Planning for Bushfire Protection 2006*.



Graham Swain,
Managing Director,
Australian Bushfire Protection Planners Pty Limited.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
TABLE OF CONTENTS.....	5
SECTION 1	7
INTRODUCTION.....	7
1.1 Development Proposal.....	7
1.2 Aim of this Assessment.....	8
1.3 Statutory Requirements.....	8
1.3.1 Legislation.....	8
1.3.1 Legislation.....	8
1.3.2 Planning Policies.....	8
1.4 Documentation reviewed in this Assessment.....	9
1.5 Site Inspection.....	9
1.6 Authority Consultation.....	9
SECTION 2	10
PROPERTY DESCRIPTION	10
2.1 Location.....	10
2.2 Existing Land Use.....	10
2.3 Surrounding Land Use.....	11
2.4 Topography.....	12
2.3 Vegetation.....	13
2.3.1 Vegetation within the Development Site.....	14
2.3.2 Vegetation within 140m of the Development Site.....	16
2.7 Significant Environmental Features within the Development Site.....	17
2.8 Known Threatened Species, Population or Ecological Community within the Development Site.....	17
2.9 Details and location of Aboriginal relics or Aboriginal place.....	17
SECTION 3.....	18
FIRE MANAGEMENT RESPONSIBILITIES	18
3.1 Kempsey Council.....	18
3.2 New South Wales Rural Fire Service.....	18
3.3 New South Wales Fire Brigade.....	18
3.4 Kempsey Bush Fire Management Committee.....	18
3.5 Private Land Owners / Occupiers.....	19
SECTION 4	20
PRECINCT LEVEL ASSESSMENT.....	20
4.1 Precinct Level Assessment of Bushfire Prone Vegetation.....	20
SECTION 5	21
BUSHFIRE PROTECTION ASSESSMENT.....	21
5.1 Introduction.....	21
5.2 Determination of Asset Protection Zones.....	21
5.3 Assessment of Bushfire Attack (Construction Standards).....	23
5.4 Water Supplies for Firefighting Operations.....	25
5.5 Access for Fire Fighting Operations.....	25
5.5.1 Public Roads.....	25
5.5.2 Fire Trail Access.....	26
5.5.3 Emergency Response Access / Egress.....	27
5.6 Adequacy of Bushfire Maintenance Plans and Fire Emergency procedures.....	27
5.7 Emergency Management for Fire Protection / Evacuation.....	27
5.8 Bushfire Hazard Management.....	27
5.8.1 Fuel Management.....	28
5.9 Adequacy of Sprinkler Systems & other Fire Protection Measures.....	28
5.10 Staged Development.....	28

SECTION 630
RECOMMENDATIONS30

SECTION 733
CONCLUSION33

REFERENCES:34

SECTION 8 – SITE PHOTOGRAPHS35

SECTION 938
ATTACHMENT A – Concept Plan showing Bushfire Protection Measures38

SECTION 1

INTRODUCTION

1.1 Development Proposal.

Australian Bushfire Protection Planners Pty Limited, at the request of *Malbec Properties*, has undertaken the bushfire consultancy to inform the project planning process, under Part 3A [Major Projects under State Environmental Planning Policy] of the *Environmental Planning & Assessment Act 1979*, on the bushfire protection measures required for the residential subdivision of land within proposed Lots A & B in the subdivision of Lot 52 in DP 831284 and Lot 84 in DP 792945 Belle O'Connor Street, South West Rocks.

The proposal is a Project Approval for the development under the provisions of Section 75P (c) of the *Environmental Planning & Assessment Act 1979*.

The development proposal seeks approval to create three hundred and nineteen [319] residential lots ranging in sized from 496.5 to > 920m² with access from Belle O'Connor Street and a road network which provides a perimeter road/fire trail between the bushfire hazard and the lots adjoining the bushfire hazard interface and alternate access/egress points to Belle O'Connor Street.

Figure 1 – Subdivision Plan.



1.2 Aim of this Assessment.

The aim of this assessment is to address the Director General's Environmental Assessment Requirements, requires compliance with the requirements of *Planning for Bushfire Protection 2006 (RFS)*.

This report examines the requirements of *Planning for Bushfire Protection 2006* and provides advice on the bushfire protection measures deemed necessary to address the potential bushfire threat to the development.

1.3 Statutory Requirements.

This report has been prepared having regard to the following legislative and planning requirements:

1.3.1 Legislation.

1.3.1 Legislation.

Environmental Planning and Assessment Act - 1979 (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1979* (EPA Act). Part 3A [Major Projects] of the Act commenced on the 1st August 2005 and consolidated the assessment and approval regime for all major projects previously addressed under Part 4 [Development Assessment] or Part 5 [Environmental Assessment] of the Act.

1.3.2 Planning Policies.

Planning for Bushfire Protection – 2006. [Rural Fire Service]

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision, “*Special Fire Protection*” and Class 5 – 8 and 10 buildings in bushfire prone areas.

The document provides deemed-to-satisfy specifications on the provision of Asset Protection Zones to residential and “*Special Fire Protection*” developments; defendable space requirements to other developments and access/water supply provisions for developments in bushfire prone areas. Provision for the assessment of construction standards to buildings and management /maintenance of the Asset Protection Zones/defendable space to buildings is also provided in the document.

1.4 Documentation reviewed in this Assessment.

The following documents were reviewed in the preparation of this report:

- South West Rocks Local Environment Study prepared Connell Wagner;
- Subdivision Plan prepared by EDAW AECOM, Project No. 2784.01, dated 15.10.2008;
- Kempsey Council Bushfire Prone Land Map;
- *Planning for Bushfire Protection 2006* prepared by the NSW Rural Fire Service;
- Australian Standard AS3959 *Construction of Buildings in Bushfire Prone Areas*;
- *Rural Fires Regulation 2002*.

1.5 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty Limited* inspected the site and surrounding areas on the 27th March 2008 to assess the topography, slopes and vegetation classification within and adjoining the development property and to validate the future subdivision's compliance with the requisite deemed-to-satisfy Asset Protection Zones and access provisions. Adjoining properties were also inspected to determine the surrounding land use / vegetation communities land management.

1.6 Authority Consultation.

In accordance with the Director Generals Requirements, consultation with the NSW Rural Fire Service was held on the 30.10.2008.

This consultation occurred between Mr Copeland, Development Control Officer with the NSW Rural Fire Service and Graham Swain, Director of *Australian Bushfire Protection Planners Pty Limited*.

There were no issues raised by Mr Copeland that warrants modification to the development layout or the contents of this report and the recommendations in respect to the provision of fire protection measures and compliance with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006*.

SECTION 2

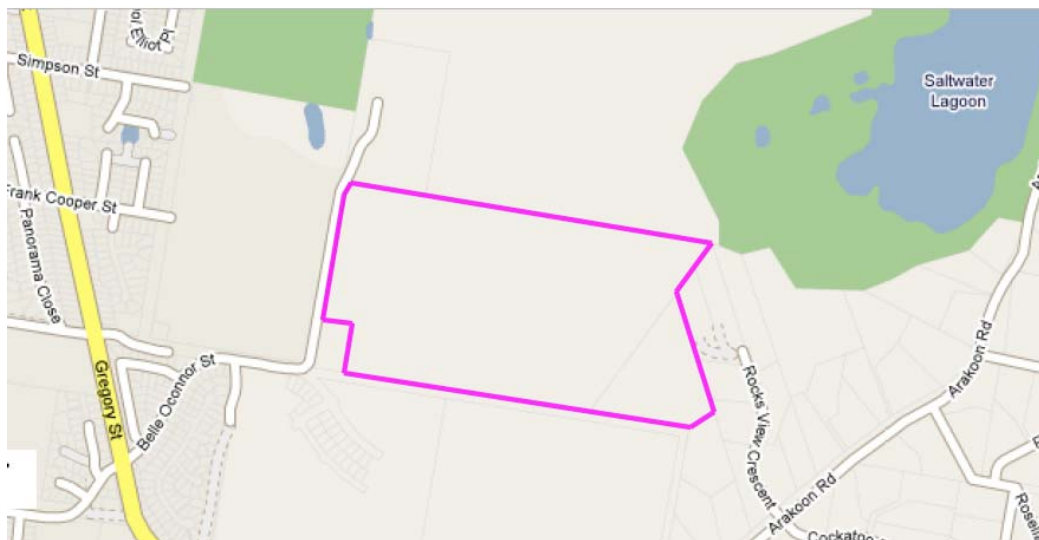
PROPERTY DESCRIPTION

2.1 Location.

The development site occupies 25.3 hectares of land within proposed Lots A & B in the subdivision of Lot 52 in DP 831284 and Lot 84 in DP 792945, Belle O'Connor Street, South West Rocks.

The development site extends to the north from Belle O'Connor Street, north to the buffer zone to Saltwater Creek and to the east from the South West Rocks Golf Course. The eastern boundary is adjoined by existing rural residential development on the northern end of Rocks View Crescent.

Figure 2 – Location of Lot 52 in DP 831284 & Lot 84 in DP 792945.



2.2 Existing Land Use.

Proposed Lot A [in the subdivision of Lot 52 in DP 831284] within the development site is vacant land whilst proposed Lot B [in the subdivision of Lot 52 in DP 831284] contains an existing dwelling and sheds located approximately in the central southern portion of the lot, adjacent to Belle O'Connor Street. This development is located within a managed curtilage with the remainder of the land within this lot being vacant.

Lot 84 in DP 792945 is located in the southern-eastern corner of the development site and contains an existing dwelling located within a managed curtilage. The remainder of this lot contains vacant land.

2.3 Surrounding Land Use.

(a) **North**

The land adjoining the northern aspect of the development site [Lots A & B & Lot 52 in DP 831284] consists of vacant land within the buffer zone to Saltwater Creek [land within the northern portion of Lot 52 in DP 831284].

(b) **East**

The land to the east of the development site [Lot 84 in DP 792945] contains existing rural residential development which is accessed via Rocks View Crescent.

(c) **South**

The land adjoining the southern aspect of the development site [Lots A & B & Lot 84 in DP 792945] consists of the Belle O'Connor Street road reserve with land to the south of the unmade road containing a new residential estate.

(d) **West**

The adjoining land to the west of the development site [Lot A in the subdivision of Lot 52 in DP 831284] forms the access road to the Sewerage Treatment Plant with the South West Rocks Golf Course to the west of the access road. A lot containing an existing dwelling is located to the northeast of the intersection of Belle O'Connor Street and the Sewerage Treatment Plant access road.

Figure 3 – Aerial Photograph of Development Site.



2.4 Topography.

Appendix 2 of *Planning for Bushfire Protection 2006* states that slopes should be assessed, over a distance of at least 100m from a development site and that the gradient of the land should be determined which will most significantly influence the fire behaviour to the site.

2.4.1 Within the Development Site.

The land within the development site forms the lower slopes of the ridgeline that rises to the south, falling to the north towards Saltwater Creek at < 2 degrees. The existing dwelling within Lot B [in the subdivision of Lot 52 in DP 831284] is located on a low spur than also falls to the north at 1 – 2 degrees whilst falling to the east and west at 1 – 2 degrees to the overland flow path that extends to the north from the adjoining properties to the south of Belle O'Connor Street.

[Refer to contours on Figure 4 below].

2.4.2 Beyond the Development Site

(a) North.

The topography of the land to the north of the development site [within the residual land on Lot 52 in DP 831284] falls to the north at less than 2 degrees, across the buffer zone to Saltwater Creek.

(b) Northeast, East & Southeast.

The topography of the land within the adjoining rural residential land to the east of the development falls to the north from Arakoon Road, turning to the northeast from the south-eastern corner of the development site, to follow a creekline that flows to the northeast into Saltwater Lagoon. The adjoining land therefore slopes at 2 – 3 degrees to the northeast.

(c) South.

The topography of the land to the south of the southern boundary of the development site rises to the south at < 5 degrees, across the adjoining residential estate.

(d) West.

The topography of the land to the west of the development site slopes to the north at < 2 degrees whilst rising at < 2 degree to the southwest.

[Refer to contours on Figure 4 below].

Figure 4 – Contour Map.



2.3 Vegetation.

Appendix A2.3 of *Planning for Bushfire Protection 2006* provides a methodology for determining the predominant bushfire prone vegetation for at least 140 metres in all directions from the future development on the site.

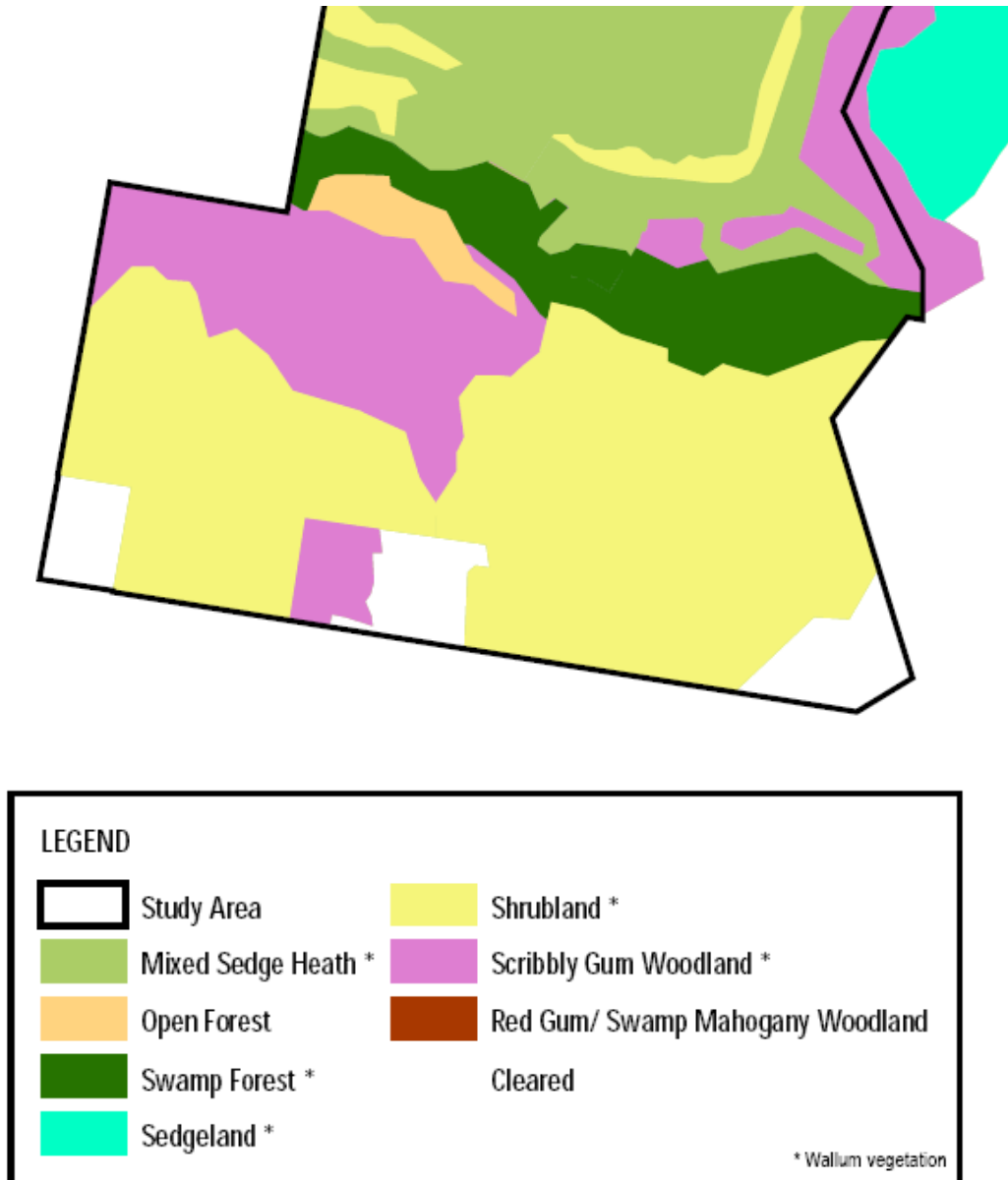
Vegetation is classified using Table A2.1 of *Planning for Bushfire Protection 2006*, which classifies vegetation types into the following groups:

- (a) *Forests [wet & dry sclerophyll forests];*
- (b) *Woodlands;*
- (c) *Plantations – being pine plantations not native plantations;*
- (d) *Forested Wetlands;*
- (e) *Tall Heaths;*
- (f) *Freshwater Heaths;*
- (g) *Short Heaths;*
- (h) *Alpine Complex;*
- (i) *Semi – arid Woodlands;*
- (j) *Arid Woodlands; and*
- (k) *Rainforests.*

2.3.1 Vegetation within the Development Site.

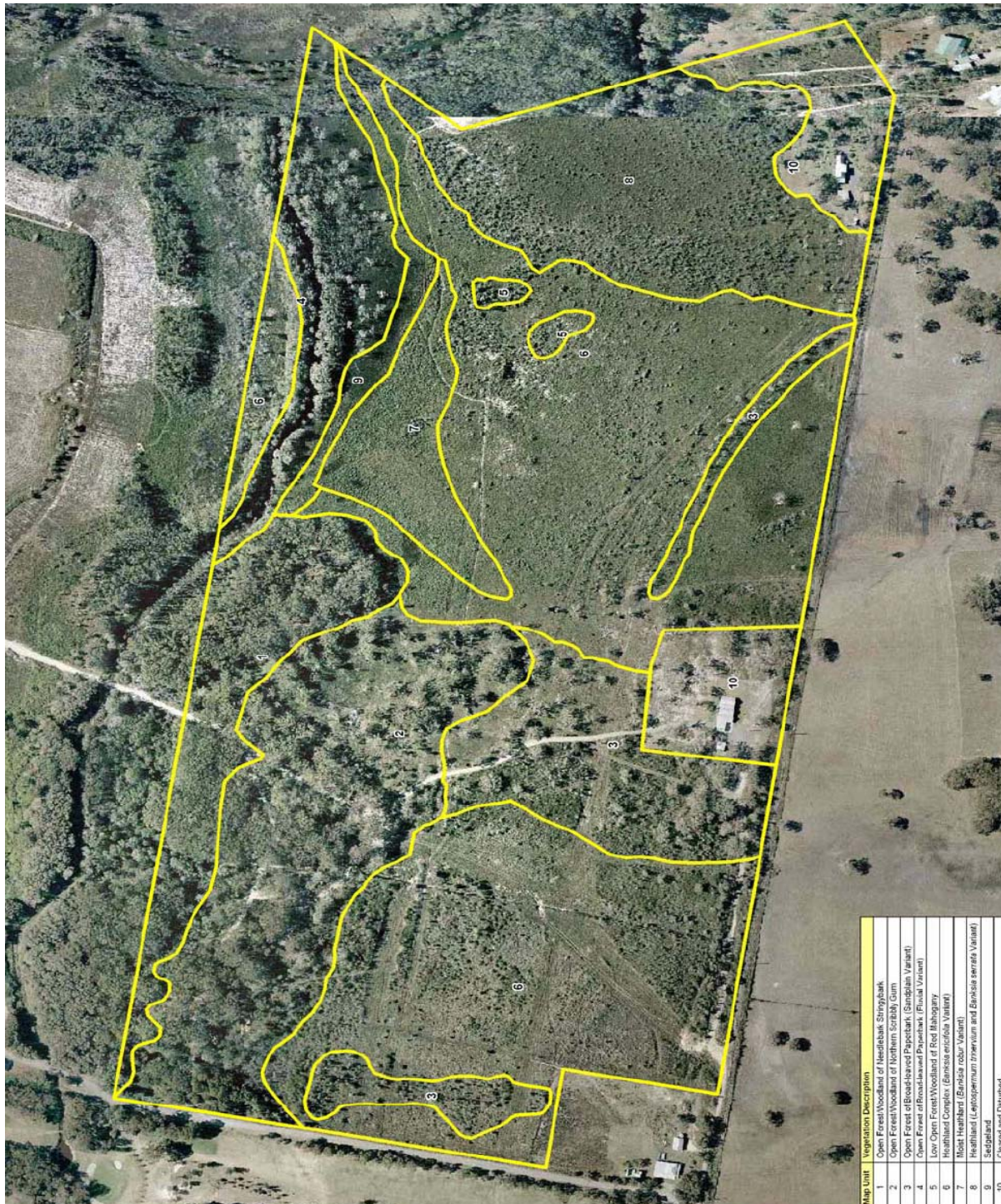
The vegetation within the development site was mapped in the preparation of the South West Rocks Local Environment Study [LES]. Figure 5, below is an extract from the LES and identifies the predominant vegetation within the development site as Shrubland [Coastal Heath regrowth] with an area of Scribbly Gum Woodland located within the north-western portion of the development site and to the west of the existing dwelling on Lot B.

Figure 5 – Vegetation Communities Mapping.



An Ecological Assessment undertaken by Whelans Insites found a total of ten vegetation communities on the site, one of which may constitute an Endangered Ecological Community [EEC]. Figure 6 below locates the vegetation communities on the site.

Figure 6 – Vegetation Communities on the Site.



Vegetation Communities identified by Whelans Insites are:

- Vegetation Type 1 Open Forest/Woodland of Needlebark Stringybark;
- Vegetation Type 2 Open Forest/Woodland of Northern Scribbly Gum;
- Vegetation Type 3 Open Forest of Broad-leaved Paperbark [Sandplain Variant];
- Vegetation Type 4 Open Forest of Broad-leaved Paperbark [Fluvial Variant];
- Vegetation Type 5 Low Open Forest/Woodland of Red Mahogany;
- Vegetation Type 6 Heathland Complex [*Banksia ericifolia* Variant];
- Vegetation Type 7 Moist Heathland [*Banksia robur* Variant];
- Vegetation Type 8 Moist Heathland [*Leptospermum trinervium* and *Banksia serrate* Variant];
- Vegetation Type 9 Sedgeland;
- Vegetation Type 10 Cleared and Disturbed.

2.3.2 Vegetation within 140m of the Development Site.

(a) North

The predominant vegetation to the north of the future residential allotments [within the northern portion of Lot 52 in DP 831284] consists of Open Forest/Woodland of Needlebark Stringybark [Community 1]; Open Forest/ Woodland of Northern Scribbly Gum [Community 2]; Heathland Complex [Community 6 and Moist Heathland [Communities 7 & 8].

The site inspection undertaken on the 27th March 2008 identified that the Open Forest/Woodland of Needlebark Stringybark and Open Forest/Woodland of Northern Scribbly Gum is in fact, for the purposes of defining the bushfire vegetation formation, Low Open Forest with a shrubby understorey and the Coastal Heath/Swamp Forest in the buffer zone to the creek is Forested Wetlands vegetation as defined by Keith in “*Ocean Shores to Desert Dunes*”.

(b) Northeast, East & Southeast

The predominant bushfire prone vegetation to the northeast, east and southeast of the development site consists of Coastal Heath/Forested Wetlands within the riparian corridor to the creekline which flows to the northeast into Saltwater Lagoon.

This vegetation is discontinuous with small pockets set amongst managed curtilages to the adjoining dwellings and is therefore not deemed to constitute bushfire prone vegetation as defined by the NSW Rural Fire Service “*Guideline for Bushfire Prone Land Mapping*”.

(c) South

The predominant vegetation to the south of the development site is managed grassland and landscaped gardens.

(d) West

The predominant vegetation to the west of the development site consists of managed lawns within the Golf Course.

2.7 Significant Environmental Features within the subdivision precinct.

The subdivision footprint does not contain areas of SEPP 14 Wetland; SEPP 44 Koala Habitat; land of geological interest; land slip areas, National Parks Estate, riparian corridor or steep lands [>18 degrees].

2.8 Known Threatened Species, Population or Ecological Community within the development site.

The Whelans Insite Ecological Assessment has identified one of the vegetation types, Open Forest of Broad-leaved Paperbark [Vegetation Type 4] as appearing to conform to THE *Final Determination* of the “*endangered ecological community*” known as *Swamp Sclerophyll Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions*.

This vegetation community is not located within the subdivision precinct.

The Whelans Insite Ecological Assessment identifies ten threatened fauna species within the site, including the Wallum Froglet, Squirrel Glider, Grey-headed Flying Fox and several microchiropteran bats. Most of the threatened fauna species [with the exception of the Wallum Froglet] are forest-dependent, and would not be affected to any significant extent by the proposed subdivision.

2.9 Details and location of Aboriginal relics or Aboriginal place.

As a part of the LES process Jacqueline Collins [Adise Pty Ltd] was engaged to undertake an Aboriginal Heritage Assessment of the LES Study Area. The report states that while no archaeological evidence was found, the possibility of undetected sites occurring in proximity to the site and in particular in the vicinity of the creek channel can not be ruled out entirely and therefore a number of mitigation measures have been recommended.

SECTION 3

FIRE MANAGEMENT RESPONSIBILITIES

Fire management within the development site is the responsibility of:

3.1 Kempsey Council.

The Kempsey Council has responsibility, under Section 66 of the *Rural Fires Act*, to issue a notice in writing requiring an owner / occupier of any land within the LGA to carry out bushfire hazard reduction works on that land. Section 100E of the *Rural Fires Act* requires Council to issue bushfire hazard reduction certificates for hazard reduction to be undertaken on private lands.

3.2 New South Wales Rural Fire Service.

The NSW Rural Fire Service (RFS) has the responsibility for undertaking fire suppression activities, hazard management activities and other functions relative to emergency management, within its areas of operation. *Section 73* of the *Rural Fires Act (1997)* enables the Commissioner to carry out bush fire hazard reduction works on any land as required by a bush fire risk management plan if the work has not been carried out satisfactorily. Incurred costs can be recovered as a debt owed to the Crown.

3.3 New South Wales Fire Brigade.

The NSW Fire Brigade has the responsibility for undertaking fire suppression activities, and other functions relative to emergency management, within its area of operation and through Mutual Aid Agreements, provide assistance to the NSW Rural Fire Service, particularly for structural fire operations within the NSW Rural Fire Brigade Districts. Hazmat management within New South Wales is the responsibility of the NSW Fire Brigade.

3.4 Kempsey Bush Fire Management Committee.

The Kempsey Bushfire Management Committee has the responsibility for planning for co-ordinated fire fighting activities / hazard management activities on a local government level. It is not an operational organization, a fire fighting organization or a funding source for fire management activities.

The Bush Fire Management Committee is supported by the following provisions of the Rural Fires Act 1997:

- **Section 50** of the Act requires the Bush Fire Co-ordinating Committee to constitute a Bush Fire Management Committee for the whole of the area of any local Council area for which a rural fire district is constituted.
- **Section 51 (1A)** requires a Bush Fire Management Committee to report to the Bush Fire Co-ordinating Committee on the implementation of the requirements of the Bushfire Risk Management Plan.

- **Section 52** requires each Bush Fire Management Committee to prepare a draft bush fire management plan for their local areas which includes a plan of operations and a bush fire risk management plan.
- **Section 54** of the Act specifies that a draft bush fire risk management plan is to 'set out schemes for the reduction of bush fire hazards in the rural fire district or other part of the State'. A draft bush fire risk management plan may also restrict or prohibit the use of fire or other fire hazard reduction activities in all or specified circumstances or places to which the plan applies.

3.5 Private Land Owners / Occupiers.

The Rural Fires Act, 1997 provides several legislative opportunities to require land owners and occupiers to manage hazardous fuels. These are listed below:

- **Section 63(2)** states that 'it is the duty of the owner or occupier of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'.
- **Section 87** allows the removal of hazards in the bush fire danger period by the provision of a permit system. The permits are valid for 21 days, excluding TOBAN days. Section 10 permits are not required to adhere to Part V provisions of the EPA Act 1979 in the assessment of impact, except for public authorities. An owner/occupier of private land must obtain from the NSW Rural Fire Service, a bushfire hazard reduction certificate before undertaking hazard reduction works on that land (Section 100E of the Rural Fires Act 1997).

SECTION 4

PRECINCT LEVEL ASSESSMENT

4.1 Precinct Level Assessment of Bushfire Prone Vegetation.

Planning for Bushfire Protection 2006 provides the following procedure for assessing a development at a defined precinct level in order to determine whether the development is bushfire prone and if so, be the need to provide appropriate setbacks [Asset Protection Zones]:

(a) *Determine vegetation distance, type and class as follows:*

Identify all vegetation in each direction from the site for a distance of at least 140 metres, and then consult Table A2.1 to determine the vegetation formation which predominates;

(b) *Determine the average slope of the land between the predominant vegetation class and the development.*

Table 1 summarises the information provided in Section 2 of this report, to undertake a precinct level assessment to determine those aspects of the development precinct that require provision of Asset Protection Zones.

Table 1. Precinct Level Assessment.

Aspect	Existing Land Use	Predominant Vegetation within 140 m of Development	Predominant vegetation class [Table A2.1 <i>BfBFP 2006</i>]	Effective Slope of land for 100m.	Comments
<i>North of development site [Within northern portion of Lot 52 in DP 831284]</i>	Vacant Land within buffer zone to Saltwater Creek	Scribbly Gum Forest + Swamp Forest/Heath	Forest & Forested Wetland	< 2 degrees down slope	The vegetation within the buffer zone to Saltwater Creek is bushfire prone.
<i>East of Development site [east of Lot 84 in DP 792945]</i>	Rural Residential development	Landscaped gardens	Nil	< 2 degrees down slope	The adjoining vegetation on the rural residential development is not bushfire prone.
<i>South of development site [South of Lots A & B]</i>	New Residential Estate	Managed grassland/ landscaped gardens	Nil	< 5 degrees upslope	The vegetation to the south of the development site is not bushfire prone
<i>West of Lot A</i>	Golf Course	Managed Grassland	Nil	< 2 degrees upslope to the S.W. & level to the east	The vegetation within the Golf Course to the west is not bushfire prone.

The vegetation within the buffer zone to Salt Water Creek, to the north of the proposed subdivision is the only bushfire prone vegetation within 140 metres of the development site.

SECTION 5

BUSHFIRE PROTECTION ASSESSMENT

5.1 Introduction.

The Director General issued DGRs for the Environmental Assessment under Part 3A of the *Environmental Planning & Assessment Act* on the 17th October 2008 and requires that the development demonstrate compliance with the requirements of *Planning for Bushfire Protection 2006*.

Planning for Bushfire Protection 2006 provides a methodology to determine the Asset Protection Zones and Bushfire Attack / Construction Standards required for habitable buildings in development for residential purposes that are designated as bushfire prone.

Sections 5.2 and 5.3 of this report use the methodology provided by *Planning for Bushfire Protection 2006* to determine the deemed-to-satisfy Asset Protection Zones and construction standards required for the construction of the future residential development on the site.

Planning for Bushfire Protection 2006 also provides deemed-to-satisfy specifications on the provision of access and water supplies for firefighting operations and emergency access/egress and the management protocols for Asset Protection Zones and landscaping. These matters are examined in Sections 5.4 – 5.8 of this report.

5.2 Determination of Asset Protection Zones.

Appendix 2 of *Planning for Bushfire Protection 2006* provides the following procedure for determining setback distances (Asset Protection Zones):

- (a) *Determine vegetation formations as follows:*
 - Identify all vegetation in all directions from the site for a distance of 140 metres;
 - Consult Table A2.1 to determine the predominant vegetation type; and
 - Select the predominant vegetation formation as described in Table A2.1.
- (b) *Determine the effective slope of the land under the predominant vegetation Class.*
- (c) *Determine the appropriate fire [weather] area in Table A2.2.*
- (d) *Consult Table A2.5 and determine the appropriate setback [Asset Protection Zone] for the assessed land use, vegetation formation and slope range.*

Table 2 provides a summary of this assessment and the resultant widths of the Asset Protection Zones for the construction of future residential development within the proposed development site. The Fire Danger Index [FDI] for the site is 80.

Table 2. Determination of Asset Protection Zones to the future residential development within the development site. Fire Danger Index [FDI] – 80

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation [Table A2.1 5 of Pf BFP 2006]	Effective Slope of Land	Width of Asset Protection Zone [Table A2.5 5 of Pf BFP 2006]	Width of Asset Protection Zone Provided	Compliance with Table A2.5 5 of Pf BFP 2006
North – western sector of Lots A & B	Scribbly Bark “Woodland” within the northern portion of Lot 52, DP 831284	Forest	< 2 degrees down slope to the north	20 metres for Level 3 construction to the future buildings	20 metres separation to Bushfire Prone vegetation provided by APZ	Yes
North – eastern sector – Lot B	Swamp Forest & Coastal Heath	Forested Wetland + Tall Heath	< 2 degrees down slope to the north	20 metres to Forested Wetland; 15 metres to Tall Heath	> 20 metres provided by perimeter road and building setback	Yes
East of Lot 84 in DP 792945	Managed Curtilage in rural residential lots	Nil	< 2 degrees down slope to the N.E.	Nil	> 100 metres provided by APZ within adjoining lots	Yes
South of Lots A & B and Lot 84	Managed grassland/ curtilages on residential estate	Nil	< 5 degrees upslope to the south	Nil	> 100 metres provided by APZ within adjoining lots	Yes
West of Lot A	Managed Curtilage and Golf Course	Nil	< 2 degrees upslope to the S.W. – level to the west	Nil	> 100 metres provided by managed Golf Course + existing residential development	Yes

Assessment Results:

The widths of the Asset Protection Zones to the future dwellings adjacent to the bushfire prone vegetation retained within the buffer zone to Saltwater Creek [within the northern portion of Lot 52 in DP 831284] complies with, or exceeds, the minimum deemed-to-comply width required by *Planning for Bushfire Protection 2006*.

The remaining aspects of the development do not contain bushfire prone vegetation and are located more than 100 metres from bushfire prone vegetation and therefore do not require the implementation of Asset Protection Zones.

5.3 Assessment of Bushfire Attack (Construction Standards).

Part 2.3.4 of the Building Code of Australia states that a Class 1 building that is constructed in a *designated bushfire prone area* must be designed and constructed to reduce the risk of ignition from a bushfire while the fire front passes. Part GF5.1 states that a Class 2 or 3 building constructed in a *designated bushfire prone area* is to provide a resistance to bushfires in order to reduce the danger to life and minimize the risk of the loss of the building.

Australian Standard A.S. 3959 -1999 is the enabling standard that addresses the performance requirements of both Parts 2.3.4 and Part GF5.1 of the Building Code of Australia. Therefore, the construction of future Class 1 and 2 buildings within the development shall be constructed to comply with the specifications of this Standard.

Appendix A3.6 of *Planning for Bushfire Protection 2006* provides the following procedure for determining bushfire attack at construction stage for a building within a designated bushfire prone area:

- (a) *Determine vegetation formation types and sub-formation types around the building;*
- (b) *Determine the separation distance between each vegetation formation and the building;*
- (c) *Determine the effective slope of the ground for each vegetation formation;*
- (d) *Determine the relevant FDI for the Council Area;*
- (e) *Match the relevant FDI, appropriate vegetation formation, separation distance and effective slope to determine the category of bushfire attack.*

Five categories of Bushfire Attack are determined. They are:

- Low:

Insignificant ember attack, radiation heat or is greater than 100 metres from all woody vegetation.

- Medium: (Level 1 Construction AS3959-1999).

Significant ember attack with radiation heat no greater than 12.5 KWm²,

- High: (Level 2 Construction AS3959-1999).

Significant ember attack and possible flame contact, radiation heat greater than 12.5 KWm² and no greater than 19 KWm²

- Extreme: (Level 3 Construction AS3959-1999).

Significant ember attack and possible flame contact, radiation heat greater than 19 KWm² and no greater than 29 KWm²

- Flame Zone:

Within the Flame Zone and / or greater than 29 KWm² (Construction outside scope of AS3959-1999).

Table 3 provides a summary of the level of Bushfire Attack and requisite construction standards for the future dwellings located within 100 metres of the bushfire prone vegetation retained in the buffer zone to Saltwater Creek, to the north of the proposed residential subdivision. The Fire Danger Index [FDI] for the site is 80.

Table 3 Bushfire Attack Assessment – Determination of Construction Standards to Future Dwellings within the proposed residential subdivision.

Aspect	Predominant Vegetation Class <i>[Table A2.1 Planning for Bushfire Protection 2006]</i>	Effective Slope of Land	Minimum width of Asset Protection Zone <i>[Table A2.5 PfBFP 2006]</i>	Level of Bushfire Attack <i>[by calculation]</i>	Construction Standard in accordance with A.S.3959
North	Forest & Forested Wetlands within the buffer zone to Saltwater Creek [within the northern portion of Lot 52 in DP 831284	2 degrees down slope to the north	> 20 metres separation to Bushfire Prone Vegetation provided by Asset Protection Zone/ perimeter road & building setback.	Extreme	Level 3 construction standards required.
East	Managed Curtilage	2 degrees down slope to the northeast	> 100 metres	Low	Nil construction standards required.
South	Managed grassland & landscaped gardens	< 5 degrees upslope	> 100 metres	Low	Nil construction standards required.
West	Managed Curtilage within Golf Course	Level to the west	> 100 metres	Low	Nil construction standards required.

Assessment Results:

It is recommended that the minimum construction to the first row of future dwellings along the northern aspect of the subdivision shall be Level 3 in accordance with the specifications of Australian Standard A.S 3959 -1999 “Construction of Buildings in Bushfire Prone Areas. The future dwellings located beyond the first row, up to 100 metres from the bushfire hazard interface, shall be constructed to comply with Level 1 in accordance with the specifications of Australian Standard A.S 3959 -1999 “Construction of Buildings in Bushfire Prone Areas.

5.4 Water Supplies for Firefighting Operations.

The future residential subdivision of the land will have a reticulated water supply extended from the existing water supply mains. The dwellings in the future subdivision of the land will be connected to this reticulated water supply.

The reticulated water supply in the subdivision shall include the provision of a water supply main with Hydrants installed in accordance with the specifications of Australian Standard A.S 2419.2 and have a minimum flow rate of 10 litres / second.

Fire hydrants shall be accessible and located such that a tanker can park within a maximum distance of 20 metres from the hydrant and the habitable building must be located such that a fire at the furthest extremity can be attacked by fire-fighters using two 30 metre hose lines and a 10 metre water jet. A clear unobstructed path between the hydrant and the most distant point of the building cannot exceed 90 metres.

Hydrant locations shall be delineated by blue markers placed on the hydrant side of the centreline of the road pavement.

5.5 Access for Fire Fighting Operations.

5.5.1 Public Roads:

The public roads within the proposed subdivision shall be constructed to comply with the specifications for public roads as defined by Section 4.1.3 of *Planning for Bushfire Protection 2006* and provide a looped road network that extends off Belle O'Connor Street.

- **Specifications for Public Roads.**

Section 4.1.3 [Access] of *Planning for Bushfire Protection 2006* provides advice on the design and construction of Public Roads providing access to and internal roads within a development which is deemed to be bushfire prone.

The specifications for public roads are:

- *Roads shall be designed for two-wheel drive all weather access;*
- *Perimeter roads adjacent to the bushfire hazard interface shall be two-way with a minimum carriageway width of 8.0 metres, kerb to kerb, with shoulders on each side to allow traffic to pass in opposite directions;*
- *Roads shall be through roads. Dead ends shall not be more than 200 metres in length and incorporate a 12m outer radius turning circle;*

- *The capacity of road surfaces/bridges in a subdivision with reticulated water supply shall be 15 tonnes;*
- *Curves of roads shall have a minimum inner radius of 6 metres and a minimum outer radius of 12 metres;*
- *Vertical clearance above the road surface shall be 4.0 metres;*
- *All public roads eight metres wide shall locate services outside parking reserves to ensure accessibility to the reticulated water supply;*
- *All public roads between 6.5 & 8 metres in width shall be No Parking on one side with services (hydrants) located opposite the parking side;*
- *Public Roads less than 6.5 metres in width shall provide parking bays clear of the road formation and locate services outside the parking bays;*
- *Single lane one-way roads shall be no less than 3.5 metres in width with parking bays provided clear of the road formation;*
- *Parking Bays shall be 2.6 metres wide from kerb to the edge of the road formation;*
- *All access roads directly interfacing the bushfire hazard shall provide roll top kerbing to the hazard side of the road.*

5.5.2 Fire Trail Access.

The subdivision layout provides for a fire trail access link from the existing road to the Sewerage Treatment Plant and the internal perimeter road along the northern edge of the subdivision. The layout also provides for a Fire Trail/Walking Path from the proposed northern road connection [Road 6] to the turning head on Road No.8. These fire trails are located within the Asset Protection Zone to the north of lots within the north-western corner and central portion of the subdivision precinct and shall be fitted with a fire trail access gate at the road intersections.

• Specifications for the Fire Trail.

The specifications for the proposed fire trail within a development are:

- *A minimum carriageway width of 4.0 metres with an additional 1.0 metre clearance provided to each side which is kept clear of grasses and shrubs;*
- *The carrying capacity of the fire trail surface shall be 15 tonnes for reticulated areas;*
- *A minimum vertical distance of 4.0 metres shall be provided clear of overhanging branches, trees and shrubs.*

5.5.3 Emergency Response Access / Egress.

The subdivision layout provides emergency response access/egress in the form of a looped public road network which extends off the extension of Belle O' Connor Street which in turn connects to the west into the existing road network within the adjoining residential development providing egress for residents and emergency services, away from bushfire events within the buffer zone to Saltwater Creek.

Additional fire operational access in the form of a fire trail is provided along the northern aspect of the proposed lots within the north-western corner and central portion of the subdivision precinct.

5.6 Adequacy of Bushfire Maintenance Plans and Fire Emergency procedures.

The Kempsey Bushfire Risk Management and Operational Plans adequately address the bushfire maintenance and fire emergency procedures for the management of the bushfire vegetation and the operational procedures during fire events in the local area. A fuel management plan should be prepared for the maintenance of the vegetation within the buffer zone to Saltwater Creek.

5.7 Emergency Management for Fire Protection / Evacuation.

Future bushfire events in the vegetated buffer zone to Saltwater Creek may cause the need for emergency services to consider evacuation of those residents located adjacent to the hazard interface. Should this occur, emergency management and relocated will be initiated by Police and therefore a site specific emergency evacuation plan will not be necessary with safe evacuation routes available to the south, away from any potential bushfire attack.

5.8 Bushfire Hazard Management.

The intention of bushfire hazard management is to prevent flame contact with a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimize the potential for wind driven embers to cause ignition and to reduce the effects of smoke on residents and fire-fighters.

Careful attention shall be given to species selection of landscaping within the lots, their location relative to their flammability, avoidance of continuity of vegetation [separation horizontally and vertically] and ongoing maintenance to remove flammable fuels. Methods of bushfire hazard management include mowing of lawns and manual removal of combustible material, particularly within the landscaped areas.

It is recommended that a Section 88B Instrument, under the provisions of the Conveyancing Act of 1919, shall be created on the title of the lots impacted by the provision of the Asset Protection Zone along the northern edge of the subdivision to ensure ongoing management of the nominated Asset Protection Zone and the combustible fuels within the landscaped gardens.

5.8.1 Fuel Management:

A diligent approach to the management of bushfire fuel levels is required to the land within the future development. Management of the vegetation within the development precinct shall comply with the recommendations of Appendix A5.4 & Appendix A5.5 of *Planning for Bushfire Protection 2006* and the Rural Fire Service “*Standards for Asset Protection Zones*”.

Management of the landscaped gardens shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the buildings;
- Keep areas under fences, fence posts, gates & trees raked and clear of combustible fuels;
- Utilise non-combustible fencing and retaining wall structures;
- Separate the tree canopy and shrub connectivity with defined landscaped garden beds;
- Maintain tree canopies and shrubs so that they are clear of the building by at least five metres;
- Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to buildings;
- Maintain minimal fine fuel loading at ground level within the Inner Protection Area and landscaped area (nominally 3 tonnes / hectare);
- Trees and shrubs are acceptable provided that they are spread out and do not form a continuous canopy, are not species that retain dead material and are located away from the buildings to minimize radiant heat and direct flame attack.
- Landscape species selection shall be drawn from those that are considered to be species which are “*fire retardant*” and do not promulgate the spread of fire.

5.9 Adequacy of Sprinkler Systems & other Fire Protection Measures.

There are no sprinkler systems required or recommended.

5.10 Staged Development.

The Subdivision Plan records that the development of the land occurs over eleven stages.

The staging of a land which is subject to potential bushfires requires that temporary Asset Protection Zones are provided to each stage, unless the stage contains permanent Asset Protection Zones. The provision of temporary access roads/fire trails will also be required to the perimeter of each stage that does not have the benefit of a permanent perimeter road.

It is therefore recommended that the entire development precinct shall be managed to the standard of an Outer Protection Area [OPA] until the completion of the subdivision. Each stage shall be provided, to those edges which do not include the permanent Asset Protection Zone, a 100 metre wide temporary Inner Protection Area [IPA].

Internal and perimeter roads constructed within each stage shall have temporary "T" turning heads constructed within the adjoining stage so as to permit fire appliance egress in a forward direction. Temporary fire trails shall also be provided within the temporary Inner Protection Area so as to provide fire fighting access to the perimeter of the stage.

SECTION 6

RECOMMENDATIONS

Recommendation 1- Asset Protection Zones:

Asset Protection Zones shall be provided to the widths as nominated in Table 4. (Refer to Attachment D – “Plan of Bushfire Protection Measures”).

Table 4. Asset Protection Zones.

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation [Table A2.1 5 of Pf BFP 2006]	Effective Slope of Land	Width of Asset Protection Zone [Table A2.5 of Pf BFP 2006]	Width of Asset Protection Zone Provided	Compliance with Table A2.5 5 of Pf BFP 2006
North – western sector of Lots A & B	Scribbly Bark “Woodland” within the northern portion of Lot 52, DP 831284	Forest	< 2 degrees down slope to the north	20 metres for Level 3 construction to the future buildings	20 metres separation to Bushfire Prone vegetation provided by APZ	Yes
North – eastern sector – Lot B	Swamp Forest & Coastal Heath	Forested Wetland + Tall Heath	< 2 degrees down slope to the north	20 metres to Forested Wetland; 15 metres to Tall Heath	> 20 metres provided by perimeter road and building setback	Yes
East of Lot 84 in DP 792945	Managed Curtilage in rural residential lots	Nil	< 2 degrees down slope to the N.E.	Nil	> 100 metres provided by APZ within adjoining lots	Yes
South of Lots A & B and Lot 84	Managed grassland/ curtilages on residential estate	Nil	< 5 degrees upslope to the south	Nil	> 100 metres provided by APZ within adjoining lots	Yes
West of Lot A	Managed Curtilage and Golf Course	Nil	< 2 degrees upslope to the S.W. – level to the west	Nil	> 100 metres provided by managed Golf Course + existing residential development	Yes

Recommendation 2 – Management of Asset Protection Zones:

The Asset Protection Zones shall be maintained as an Inner Protection Area in accordance with Appendix 5 of *Planning for Bushfire Protection 2006* and the NSW Rural Fire Service’s “Specifications for Asset Protection Zones”.

Recommendation 3:

Management of the landscaped gardens within the lots shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the buildings;
- Keep areas under fences, fence posts, gates & trees raked and clear of combustible fuels;
- Utilise non-combustible fencing and retaining wall structures;
- Separate the tree canopy and shrub connectivity with defined landscaped garden beds;
- Maintain tree canopies and shrubs so that they are clear of the building by at least two metres;
- Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to buildings;
- Maintain minimal fine fuel loading at ground level within the Inner Protection Area and landscaped area (nominally 3 tonnes / hectare);
- Trees and shrubs are acceptable provided that they are spread out and do not form a continuous canopy, are not species that retain dead material and are located away from the buildings to minimize radiant heat and direct flame attack.
- Landscape species selection shall be drawn from those that are considered to be species which are “*fire retardant*” and do not promulgate the spread of fire.

Recommendation 4 – 88B Covenant for the management of Asset Protection Zones & landscaped gardens:

An 88B Covenant, in accordance with the provisions of the Conveyancing Act of 1919, shall be created on the title of the future lots burdened by the Asset Protection Zones to ensure the ongoing management of the landscaped gardens/residual vegetation, in accordance with the prescriptions of an Inner Protection Area.

Recommendation 5 – Construction Standards to future buildings:

The minimum construction standard to the future dwellings within 27 metres of the northern bushfire hazard interface shall be Level 3 construction standard, in accordance with the specifications of Australian Standard A.S 3959 - Second Edition 1999 and Amendment 1, 2000, “*Construction of Buildings in Bushfire Prone Areas*”.

Recommendation 6 – Construction Standards to future buildings:

The minimum construction standard to the future dwellings within 28 – 100 metres of the bushfire hazard interface shall comply with Level 1 construction standards, in accordance with the specifications of Australian Standard A.S 3959 - Second Edition 1999 and Amendment 1, 2000, “*Construction of Buildings in Bushfire Prone Areas*”.

Recommendation 7 – Construction Standards to future buildings:

The roof gutters/valley of the future buildings on the lots within 100 metres of the bushfire hazard interface shall be fitted with a protection device that minimises the accumulation of combustible materials in the gutters/valleys. The protection device shall have a flammability index of less than 5 as measured under Australian Standard A.S.1530.2 – 1993 “*Methods for fire tests on building materials, components and structures – Test for flammability of materials*”.

Recommendation 8 – Public Access Roads:

Future public access roads shall be constructed to comply with the deemed-to-satisfy provisions of Section 4.1.3 of *Planning for Bushfire Protection 2006*.

Recommendation 9 – Fire Trails:

The fire access trails shall be constructed to comply with the deemed-to-satisfy provisions of Section 4.1.3 of *Planning for Bushfire Protection 2006*. The formed width shall be 4.0 metres with an additional metre provided to both sides and kept clear of grasses and shrubs. Locked fire trail access gates shall be provided at the intersection with the public road network.

Recommendation 10 – Water Supplies for Fire Fighting Operations:

The existing water supply mains shall be extended, to service the future residential development, in accordance with the specifications of Australian Standard A.S 2419.2. Hydrants shall have a flow rate of 10 litres / second and shall be accessible and located such that a tanker can park within a maximum distance of 20 metres from the hydrant and the habitable building must be located such that a fire at the furthest extremity can be attacked by fire-fighters using two 30 metre hose lines and a 10 metre water jet. A clear unobstructed path between the hydrant and the most distant point of the building cannot exceed 90 metres.

Blue hydrant markers shall be provided to locate the positions of the hydrants. The markers shall be positioned on the hydrant side of the centreline of the road pavement.

Recommendation 11 – Staged Development:

The entire development precinct shall be managed to the standard of an Outer Protection Area [OPA] until the completion of the subdivision. Each stage shall be provided, to those edges which do not include the permanent Asset Protection Zone, a 100 metre wide temporary Inner Protection Area [IPA]. Internal and perimeter roads constructed within each stage shall have temporary “T” turning heads constructed within the adjoining stage so as to permit fire appliance egress in a forward direction. Temporary fire trails shall also be provided within the temporary Inner Protection Area so as to provide fire fighting access to the perimeter of the stage.

SECTION 7

CONCLUSION

A Project Plan approval is being sought, under Part 3A [Major Projects] of the *Environmental Planning & Assessment Act 1979* for the subdivision of proposed Lots A & B in the subdivision of Lot 52 in DP 831284 and Lot 84 in DP 792945, Belle O' Connor Street, South West Rocks. The proposed subdivision creates approximately 319 residential lots within an 25.3 hectares of land located to the north of the unmade section of Belle O'Connor Street and the buffer zone to Saltwater Creek, identified in the Southwest Rocks Local Environment Study [LES].

The South West Rocks Golf Course occupies the land to the west of the proposed subdivision and existing rural residential development is located to the east. Seascape Grove, a new residential development adjoins the southern aspect of the proposed subdivision, leaving the northern aspect exposed to the bushfire prone vegetation within the buffer zone to Saltwater Creek.

This vegetation is deemed to be Bushfire Prone Vegetation as determined under the provisions of Section 146 of the *Environmental Planning & Assessment Act 1979*.

Therefore, the Director General's Environmental Assessment Requirements for the subdivision of the land require that the proposed development comply with the requirements of *Planning for Bushfire Protection 2006*.

This report has therefore reviewed the development against the requirements of *Planning for Bushfire Protection 2006* and the recommendations contained in Section 6 address the deemed-to-comply provisions for the provision of Asset Protection Zones to the future dwellings on the northern hazard interface; access and water supplies for fire fighting operations; construction of the future dwellings, the management of the landscape/Asset Protection Zones and the provision of temporary fire protection measures required to be applied to each of the development stages.

The following table summarises the extent to which the Concept Plan conforms to the deemed-to-satisfy specifications of *Planning for Bushfire Protection 2006*.

Table 5. Compliance with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2006*.

Bushfire Protection Measure	Compliance with deemed-to-satisfy provisions of <i>Planning for Bushfire Protection 2006</i>.
(I) Asset Protection Zone setbacks	YES – width of Asset Protection Zone complies with Table A2.5 of <i>Planning for Bushfire Protection 2006</i> .
(II) The siting and adequacy of water supplies for fire fighting	YES – Hydrant supply to be installed in accordance with AS 2419.2
(III) Design of Public Roads	YES – Perimeter Public Road provided and roads to comply with the specifications of Section 4.1.3(1) of <i>Planning for Bushfire Protection 2006</i> .
(IV) Design of Fire Trail network	YES – Fire trail provided within APZ to the north of residential lots in the north-western corner of subdivision. Fire Trails to be constructed to comply with the specifications of Section 4.1.3(3) of <i>Planning for Bushfire Protection 2006</i> .
(V) Adequacy of emergency response access and egress	YES – Road network provides two-way perimeter road plus internal road network that permits egress away from the bushfire hazard interface
(VI) Adequacy of bushfire maintenance plans and fire emergency procedures	YES – Fire Management Plan should be prepared for vegetation within the buffer zone to Saltwater Creek.
(VII) Building construction standards	YES – Level 3 construction required for buildings located within 27m of hazard interface; Level 1 construction required for buildings located 28 – 100m from bushfire hazard interface
(VIII) Adequacy of sprinkler systems and other fire protection measures to be incorporated into the development	Not applicable

The proposed development, as represented by the Project Plan layout prepared by EDAW/AECOM, complies with the “Deemed-to-Satisfy” specifications set out in Chapter 4 (Performance Based Control) and the aim and objectives of *Planning for Bushfire Protection 2006*.

REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2006*;
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires Regulation 2002*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*;
- *Bushfire Environmental Assessment Code 2003*;
- Building Code of Australia;
- Australian Standard A.S 3959-1999 “*Construction of Buildings in Bushfire Prone Areas*”.
- *Kempsey Bushfire Prone Land Map*

SECTION 8 – SITE PHOTOGRAPHS



Photograph No. 1 – Looking north into buffer zone to Saltwater Creek showing Low Open Forest vegetation



Photograph No. 2 – Looking northwest across buffer zone to Saltwater Creek showing Scribbly Gum vegetation.



Photograph No. 3 – Looking east along Belle O'Connor Street showing managed lands to the south of the development site.



Photograph No. 4 – Looking west along Belle O'Connor Street showing adjoining Seascope Grove residential estate.



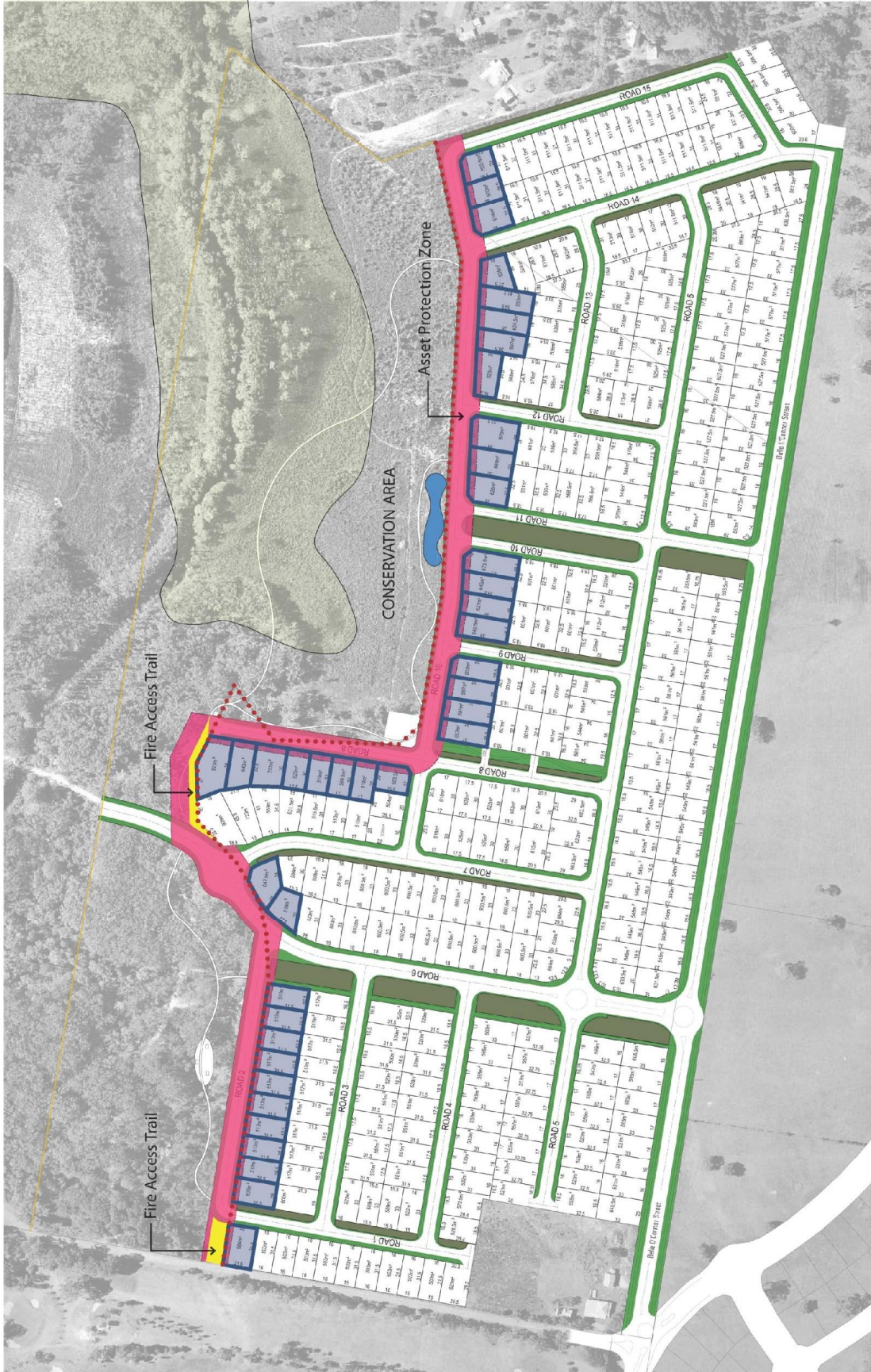
Photograph No 5 – Looking west from proposed subdivision showing South West Rocks Golf Course.








Photograph No. 6 – Showing managed lands within rural residential development to the east of the development site.

SECTION 9

ATTACHMENT A – Concept Plan showing Bushfire Protection Measures.



LEGEND

-  LES Development Line
-  20 Metre APZ
-  SFP 14 Wetland Area
-  Fire Access Trail
-  Conservation Area
-  Lots affected by APZ requiring 883 instrument

Our Reference B08745 - 3

Malbec Properties
Level 5
280 George Street,
Sydney
NSW 2001



Attention: Alex Soovoroff

Response to Director General's Requirements.

Dear Alex,

Thank you for the list of enquiries in response to the Environmental Assessment submission.

Item 6 'Hazard Management and Mitigation – *Bushfire*' requests a response to four items. These are examined and addressed below:

Item 6.3a

Recommendation 3 of the Bushfire Protection Assessment [BPA, Appendix D7] refers to ongoing management of the landscaped garden areas of the lots. There are nine management actions proposed. Is this recommendation applicable to all lots within the proposed subdivision? If so, how will this be implemented on an ongoing basis?

Response:

The BPA recommends the provision of Asset Protection Zones along the northern aspect of the subdivision, maintained as an Inner Protection Area in accordance with Appendix 5 of *Planning for Bushfire Protection 2006* and the NSW Rural Fire Service's "*Specifications for Asset Protection Zones*". Recommendation 3 provides the management criterion for the landscaped gardens within the lots in the subdivision.

This recommendation has been made due to the fact that the future dwellings and associated landscaped gardens will be impacted by wind borne embers given off during fire events in the vegetation to the north of the estate. Therefore it would be prudent for the landscape vegetation within all lots to be managed in accordance with the prescriptions provided in the report.

Implementation of the proposed management prescriptions will be undertaken by the future owners/occupiers of the proposed lots and will not be a burden on the land owners as the requirements relate to 'good house keeping' of the curtilage to the future dwellings.

Item 6.3b

Recommendation 4 of the BPA should be specific about the lot numbers that the asset protection zones impact on and where a section 88B instrument will be required.

Response:

The amended Subdivision Plan and Landscape Plan prepared by EDAW/AECOM shows the extent of the Asset Protection Zones on the lots which adjoin the bushfire hazard interface. The section 88B instrument relating to the creation and management of the Asset Protection Zones shall apply to those lots identified as containing the Asset Protection Zone. The management of the landscaped gardens shall apply to all lots within the subdivision, by way of an 88B instrument on the title of the lots.

Item 6.3c

Recommendation 8 of the BPA recommends that all roads comply with Planning for Bushfire Protection 2008. However, the assessment should comment on whether the roads as currently proposed comply with PBP.

Response:

The subdivision layout provides for a looped road network with perimeter roads located between the bushfire prone vegetation and the future dwellings located along the northern aspect of the subdivision. This road network layout complies with the deemed-to-satisfy provisions of Section 4.1.3 - Access [1] – Public Roads of *Planning for Bushfire Protection 2006*.

The deemed-to-satisfy width of perimeter roads shall be 8.0 metres. An examination of the width of perimeter Road No. 2 [9m], No. 6 [11m], No. 8 [8m] and No. 16 [9m] confirms compliance with this specification.

The minimum deemed-to-comply width of internal public roads is 6.5 metres with 'No Parking' to one side of the road pavement. Examination of the proposed internal road widths confirms that the proposed roads comply with, or exceed, this minimum standard. Roads No. 10 & No. 11 have a carriageway width of 6 metres however they form a two lane road with each carriageway providing a width of 6 metres [the minimum width required by *Planning for Bushfire Protection 2006* is 3.5m for dual lane roads].

Item 6.3d

Recommendation 9 of the BPA refers to fire access trails. Please clarify whether fire access trails are proposed as part of the proposal and, if so, where?

Response:

Fire access trails were recommended in the BPA and shown on the Subdivision Plan and Landscape Plan. The reference in the body of the report is as detailed below:

5.5.2 Fire Trail Access.


The subdivision layout provides for a fire trail access link from the existing road to the Sewerage Treatment Plant and the internal perimeter road along the northern edge of the subdivision. The layout also provides for a Fire Trail/Walking Path from the proposed northern road connection [Road 6] to the turning head on Road No.8.

These fire trails are located within the Asset Protection Zone to the north of lots within the north-western corner and central portion of the subdivision precinct and shall be fitted with a fire trail access gate at the road intersections.

The locations of the fire trails are shown on the amended Subdivision Plan and Landscape Plan.

If you require any further information please contact the undersigned on (02) 43622 112.

Yours faithfully,



Graham Swain.
Managing Director,
Australian Bushfire Protection Planners Pty Limited
30/3/2009

