

BUSHFIRE PROTECTION ASSESSMENT

FOR THE PROPOSED TORRENS TITLE
RESIDENTIAL SUBDIVISION

OF

LOT 21 in DP714858,
HEARNES LAKE ROAD,
WOOLGOOLGA

FOR

BBK DEVELOPMENTS PTY LTD.



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Assessment Number	Document	Preparation Date	Issue Date	Directors Approval
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EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited, at the request of *BBK Developments Pty Ltd*, has undertaken the bushfire consultancy to inform the concept 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 proposed Torrens Title residential subdivision within Lot 21 in DP 714858, Hearn's Lake Road, Woolgoolga.

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 proposal is being undertaken is land located to the north of Hearn's Lake Road and is bounded by an existing residential subdivision and pasture land to the north and northwest and Coastal Littoral Forest and the Pacific Ocean to the east. The site contains approximately 2.989 hectares in area and contains two existing residential dwellings which will be demolished as part of the development proposal.

The land within the property is zoned 2E Residential Tourist. The objectives of the zone are to enable tourist development and other development compatible with the surrounding environment. Dwellings are a permissible use.

The Coffs Harbour Draft Local Environmental Plan Amendment No. 29 applies to the land and introduces a 7A Environmental Protection Habitat and Catchment Zone over the eastern part of the site and rezones the remainder of the land Residential 2A. The proposal is consistent with this amendment as it does not propose any residential subdivision of the sensitive land but aggregates it into a single allotment for protection with long term environmental rehabilitation to provide a high quality setting for the development and to enhance the environmental and recreational values of the site and its locality.

The proposed subdivision will contain 43 lots and is proposed to be constructed in one stage but released in five stages. Stage 1 will comprise ten lots [Lots 1 – 10], located in the south-western corner of the site. Lot 10 in Stage 1 will contain the stormwater management ponds for the subdivision.

Stage 2 will contain five lots [Lots 11 – 15], located within the north-western corner of the site.

Stage 3 will contain eight lots [Lots 16 – 23], located to the east of Stage 2 adjacent to the northern boundary.

Stage 4 contains eleven lots [Lots 24 – 34], located in the south-eastern corner of the site. Lot 28 in Stage 4 contains the future Environmental Reserve portion of the site. This lot will be transferred to Coffs Harbour Council ownership as a proposed reserve.

Stage 5 contains nine lots [Lots 35 – 43], located to the east of Stage 3 on the northern boundary.

The site is situated east of the Pacific Highway, on the southern outskirts of the Woolgoolga Township [approximately 1km to the south]. To the south of the site is Hearnese Lake Road with Hearnese Lake and land zoned for public open space and environmental protection between Hearnese Lake Road and the foreshore to Hearnese Lake.

The site abuts a narrow corridor of Littoral Rainforest on the coastal dunes and then the Pacific Ocean to the east. Three Leasehold Cottages are located on the foreshore to the southeast of the site.

Access to the site will be from Hearnese Lake Road and then to the Pacific Highway. However, in the longer term access will be via a service road constructed from Hearnese Lake Road to Bosworth Road to the north, once residential development utilising Hearnese Lake Road has achieved a threshold.

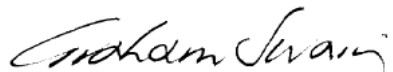
The vegetation within the property consists of managed grassland, remnant Open Forest species with a slashed grassy understorey; Headland Heathland/Grassland on the steeper slopes of the eastern portion of the site; Low Closed Forest and Littoral Rainforest in the eastern portion of the site.

An Ephemeral Wetland occupies the lowest, north-eastern most corner of the site.

The Coffs Harbour Bushfire Prone Land Map indicates that a small portion of bushfire prone vegetation is located within the eastern portion of the site with the site being impacted by the buffer zone to bushfire prone vegetation on the Coastal Dunes to the east, the Littoral Rainforest in the Hearnese Lake Foreshore Reserve to the south and the Category 1 Bushfire Prone Vegetation on the land to the west of the site.

The Director Generals Environmental Assessment Requirements includes, under subheading 7 “Hazard Management and Mitigation” 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* and therefore Item 7 of the Directors Generals Requirements [DGRs].



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

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SECTION 1

INTRODUCTION

1.1 Development Proposal.

This Bushfire Protection Assessment has been prepared, at the request of *BBK Developments Pty Ltd*, to inform the planning process, under Part 3A [Major Projects] of the *Environmental Planning & Assessment Act 1979*, on the bushfire protection measures required for the proposed forty three (43) lot Torrens Title residential subdivision within Lot 21 in DP 714858, Hearn's Lake Road, Woolgoolga.

The development site occupies approximately 2.989 hectares of land located to the north of Hearn's Lake Road and bounded to the north and northwest by land containing existing residential development. The eastern boundary of the site is bounded by the Coastal Dune system to Woolgoolga Back Beach and the Pacific Ocean.

The development proposal creates forty one [41] residential lots, released in five stages, with access off the eastern terminus of Hearn's Lake Road. The new road network within the subdivision provides a looped road to the western aspect, or primary bushfire hazard interface, and looped fire trails to the eastern and southern aspects of the proposed lots.

Asset Protection Zones have been provided to the south-western aspect and to the Littoral Rainforest vegetation to the east and south of the proposed lots. The north-western and northern aspects of the site adjoin land that does not constitute bushfire prone land and therefore no Asset Protection Zones are required to these aspects.

The proposed development also includes creation of stormwater management ponds on proposed Lot 10 and the dedication of Lot 28 to Coffs Harbour Council as a Littoral Reserve in the north-eastern corner of the site.

1.2 Aim of this Assessment.

The aim of this assessment is to address the Director General's Environmental Assessment Requirements, which under subheading 7 "Hazard Management and Mitigation" requires that the requirements of *Planning for Bushfire Protection 2006 (RFS)* be addressed.

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.

(a) *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.

(b) *Rural Fires Act 1997*

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention
- Protection of people and property from fires; and
- Protection of the environment.

In relation to the management of bushfire fuels on public and private lands within NSW, the following section of the Act applies:

- Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of the spread of bushfires.

(c) *Rural Fires Regulation 2002.*

The *Rural Fires Regulation 2002*, August 2002, repeals the *Rural Fires Regulation 1997* and restates with some modifications the provisions of the old Regulation and contains new provisions relating to bushfire prone land and bushfire hazard reduction.

(d) *Threatened Species Conservation Act 1995 (TSC Act).*

The TSC Act aims to protect and encourage the recovery of threatened species, populations and communities as listed under the Act.

The TSC Act is integrated with the EP&A Act and requires consideration of whether a development or an activity (such as the implementation of hazard reduction and asset protection) is likely to significantly affect threatened species, populations and ecological communities or their habitat.

(e) Native Vegetation Act 2003 (NV Act).

The *Native Vegetation Act* states indigenous vegetation within 20 metres of the bed or bank of a river or lake, or on slopes over 18 degrees, requires clearing consent under the *NV Act*, unless during an emergency fire event as authorized under the *Rural Fires Act 1997*.

1.3.2 Planning Policies.

(a) 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.

1.3 Documentation reviewed in this Assessment.

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

- Subdivision Plans prepared by de Groot & Benson Pty Ltd; Project 06265, Maps 1 – 6, Amendment G, dated July 2007;
- Preliminary Environmental Assessment – Major Project Application prepared by Mersonn Pty Ltd, May 2007;
- Flora & Fauna Assessment prepared by James Warren & Associates, dated October 2003;
- Flora & Fauna Assessment prepared by BushfireSafe Pty Ltd, dated June 2006;
- Environmental Constraint Analysis prepared by Sainty and Associates Pty Ltd, dated September 2006;
- A Review of the Sainty & Associates [2006] Report, prepared by Ecological, dated February 2007;
- Traffic Study prepared by Roadnet, dated August 2003;
- Moonee Beach 1:25,000 Aerial Photograph;
- Coffs Harbour 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*.

1.4 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty Limited* inspected the site and surrounding areas on the 25th June 2007 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.

1.5 Authority Consultation.

In accordance with the Director Generals Requirements, consultation with the NSW Rural Fire Service was held on the 19th October 2007.

This consultation occurred between Mr Dan 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 property known as Lot 21 in DP 714858, Hearnese Lake Road, Woolgoolga, is located in the Coffs Harbour Local Government Area (LGA) and occupies an area of approximately 2.989 hectares of land to the immediate northeast of the existing terminus of Hearnese Lake Road.

The northern and north-western boundaries adjoin existing residential development whilst the south-western boundary adjoins the access handles to the properties to the north of the development site. The southern boundary adjoins an access track forming the unmade eastern section of Hearnese Lake Road with the Hearnese Lake foreshore and Hearnese Lake extending to the south.

The eastern boundary adjoins the Coastal Dunes to Woolgoolga Back Beach.

2.2 Existing Land Use.

The land within the development property is contains two existing residential dwelling houses set in a managed curtilage of mown grass.

The existing zoning on the land is 2E Residential Tourist.

The development plan identifies that the proposed residential precinct is located on the higher land within the property which under the draft Local Environmental Plan Amendment No. 29 will be rezoned to Residential 2A. Under the draft LEP the lower area of the eastern portion of the site will be rezoned to 7A Environmental Protection Habitat and Catchment.

2.3 Surrounding Land Use.

(a) North

The land adjoining the northern boundary of the property contains existing residential development which provides a separation of > 140 metres from the northern boundary of the site to the closest bushfire prone vegetation to the north.

(b) East

The land adjoining the eastern boundary of the property consists of an unformed Crown Road Reserve and the Coastal Dunes of Woolgoolga Back Beach within Crown Reserve No. 64B.

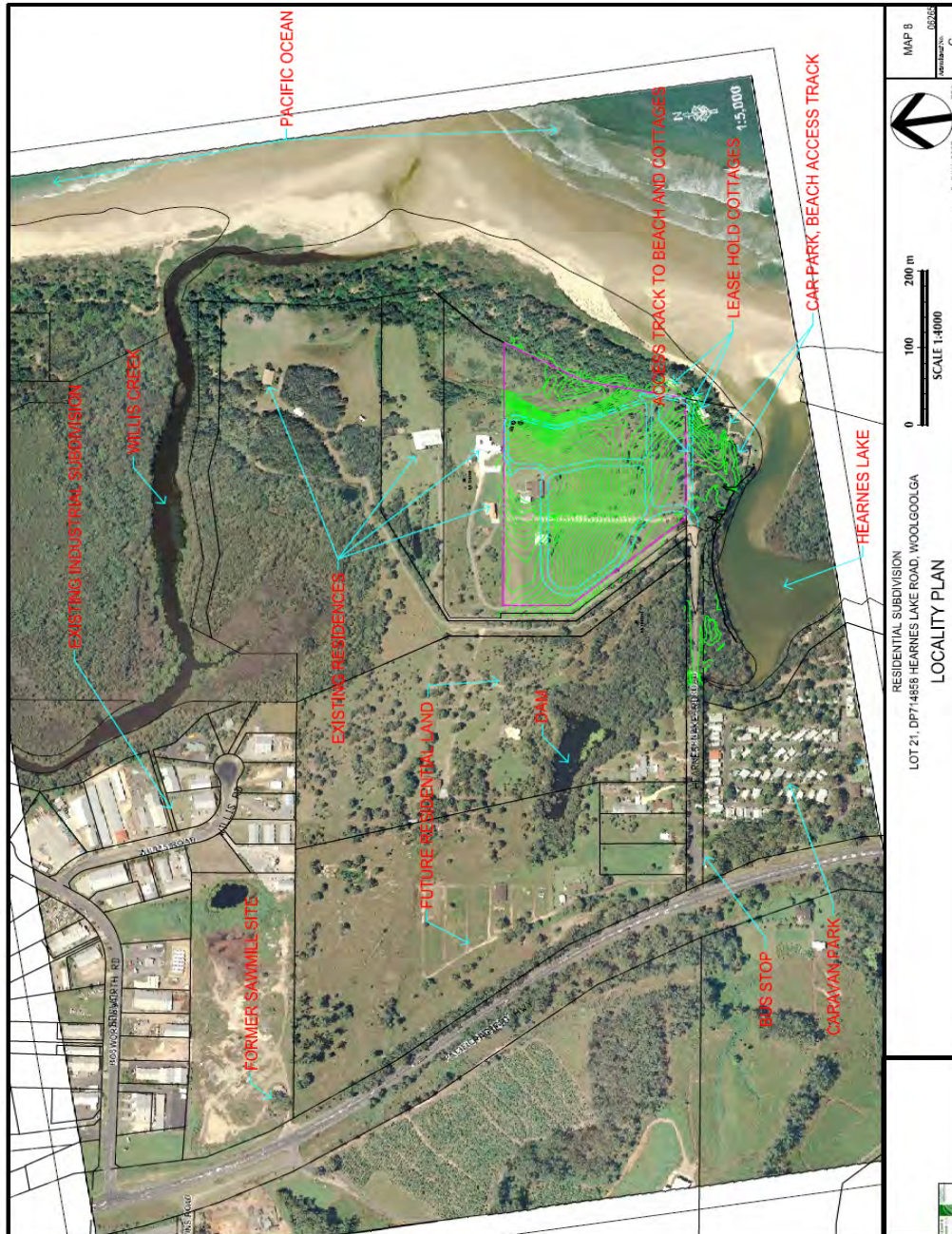
(c) South

The adjoining land to the south of the property consists of the eastern unmade portion of Hearnese Lake Road beyond which, to the south, is the foreshore reserve to Hearnese Lake.

(d) West & Southwest

The adjoining land to the west and southwest consists of two 20 metre wide access handles to Lots 201 and 202 in DP 1066412, which is the land to the north of the property. A further access handle to Lot 1 in DP 253878 is located to the west and southwest of the previous access handles with private land within Lot 32 in DP 1047234 extending further to the west.

Site Locality Plan



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 Development Property.

The significant topographical feature on the development property is a knoll that is located adjacent to the northern boundary. From RL 20 metres [AHD] on the knoll the land falls to the east to a low wetland area at RL 4.0 metres. The slopes to the east range from 6 degrees increasing to > 18 degrees downslope across the lower portion of the ridge slope, above the wetland. The land beyond the wetland rises to the Coastal Dune system.

A saddle extends to the southeast from the knoll with slopes of 6 degrees, flattening to < 3 degrees on the southern end of the saddle with the land to the southwest of the knoll falling to Hearn's Lake Road and the adjoining access handles at 8 degrees whilst the land to the west falls at < 3 degrees to the west.

2.4.2 Beyond the Development Precinct.

(a) North.

The topography to the north of the northern boundary falls across the adjoining residential land at 3 – 5 degrees downslope to the north.

(b) East.

The topography to the east of the proposed lots in Stage 5 of the subdivision [Lots 39 – 43] falls to the east at > 18 degrees for a width of approximately 15 metres before reaching the level Wetland. The land beyond the Wetland rises to the east at < 10 degrees to the apex of the Coastal Dunes.

The land to the northeast of the Lots 29 & 32 within Stage 4 falls to the east at 10 degrees for a width of approximately 15 metres before rising to the east, beyond the gully line, at < 10 degrees to the apex of the Coastal Dunes. The land to the east of Lot 27 rises to the east at 2 – 3 degrees to the apex of the Coastal Dunes.

(c) South.

The topography of the land to the south of the southern boundary of the site falls to the south across Hearn's Lake Road and the Hearn's Lake foreshore at < 5 degrees to the embankment that forms the northern edge of the lake.

(d) Southwest & West.

The topography of the land to the southwest of the development site falls to the southwest at 3 degrees increasing to 4 degrees further to the north.

The land to the west of the western boundary of the development site, west of Lots 12 & 13, forms a continuation of the ridgeline that runs west from the knoll and forms a level aspect to these lots whilst falling to the southwest at 4 – 5 degrees.

2.3 Vegetation within the Development Property.

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.*

The vegetation within the development property has been assessed by James Warren & Associates and BushfireSafe Pty Ltd. Both reports establish that there are six vegetation communities on the site with the predominant vegetation on the property being slashed grassland.

Community 1 – Open Forest occupies a small area in the south of the site and occurs in small patches or clumps with a managed [slashed] grassy understorey.

Community 2 – Headland Heathland/Grassland occurs toward the north of the site along the more steeply rising bank.

Community 3 – Low Closed Forest occurs as small, isolated fragments in the lower elevations toward the east and southeast of the site and has been managed by slashing the grassy understorey vegetation.

Community 4 – Low Closed Forest [Littoral Rainforest regeneration] is located in the more elevated areas of the eastern portion of the site [the foot-slopes to the Coastal Dunes.

Community 5 – Low Closed slashed grassland occurs over the majority of the site.

Community 6 – Ephemeral Wetland occupies the lowest, north-eastern most corner of the site. It occupies an area of approximately one hectare of the site and 4.5 hectares of land within the properties to the north of the site.

2.6 Vegetation within 140 metres of Development Precincts.

(a) North

The predominant bushfire prone vegetation to the north of the residential allotments in the proposed development is located > 140 metres to the north. The adjoining residential development contains landscaped gardens which are not bushfire prone.

(b) East

The predominant bushfire prone vegetation to the east of the site consists of Littoral Rainforest on the Coastal Dunes within Reserve No.64B, to the east of the property.

(c) Southeast.

The predominant vegetation to the southeast of the proposed lots consists of managed landscaped gardens to the Crown Lease Holdings on the Coastal Dune. This vegetation is likely to be replaced with Littoral Rainforest on the termination of the Crown Leases.

(d) South

The predominant bushfire prone vegetation to the south of the lots in the development consists of Littoral Rainforest within the foreshore reserve to Hearn's Lake.

(e) Southwest.

The predominant vegetation to the southwest of the lots within Stage 1 of the subdivision consists of the Dry Sclerophyll Forest and Swamp Forest on the southern portion of Lot 32 in DP 1047234. This vegetation is regenerating up to the eastern boundary of the adjoining property.

(f) West

The predominant vegetation on the land to the west of the lots within Stage 2 of the subdivision consists of managed grassland with scattered trees and shrubs.

2.7 Significant Environmental Features on the Property.

The Flora & Fauna Assessment reports record that the development property contains an Ephemeral Wetland ecosystem, which is listed as Endangered and is a high priority for conservation on private lands, and regenerating Littoral Rainforest vegetation.

The property does not contain areas of Geological interest; Land slip areas or National Parks Estate.

The development site does contain small sections of Steep Lands [>18 degrees] within the lower slopes to the ridgeline to the west of the Wetland.

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

An assessment of the significance under the *Threatened Species Conservation Amendment Act 2002* was completed for the threatened flora species known to occur and the 33 threatened fauna species assumed to occur on the site.

The assessment concluded that the proposed development is unlikely to have a significant effect on any of these species.

A SEPP 44 assessment concluded that the site does not support core Koala Habitat, and that there is therefore no need for a plan of management for core Koala habitat.

The wetlands vegetation and swamp forest communities have been listed as “*endangered ecological communities (EEC)* on the *NSW Threatened Species Conservation Act 1995 (TSC Act)*”. These communities will be retained in the proposed reserve area within Lot 28.

The management of the land within the 7A zoned land will be undertaken in accordance with a Vegetation Management Plan.

2.9 Details and location of Aboriginal relics or Aboriginal place.

The Hearnese Lake/Sandy Beach Development Control Plan identifies two areas of Cultural Heritage on the development site.

The first site is Site HL2 – Natural Mythological Site which is located in the north-eastern corner of the property. The DCP states that all development is to be excluded and that adjacent development shall not impact on the spiritual/sacred significance of this site and an appropriate buffer between the site and future development is provided. The development layout does not impact on this site as the wetland provides separation of the lots from the Natural Mythological Site.

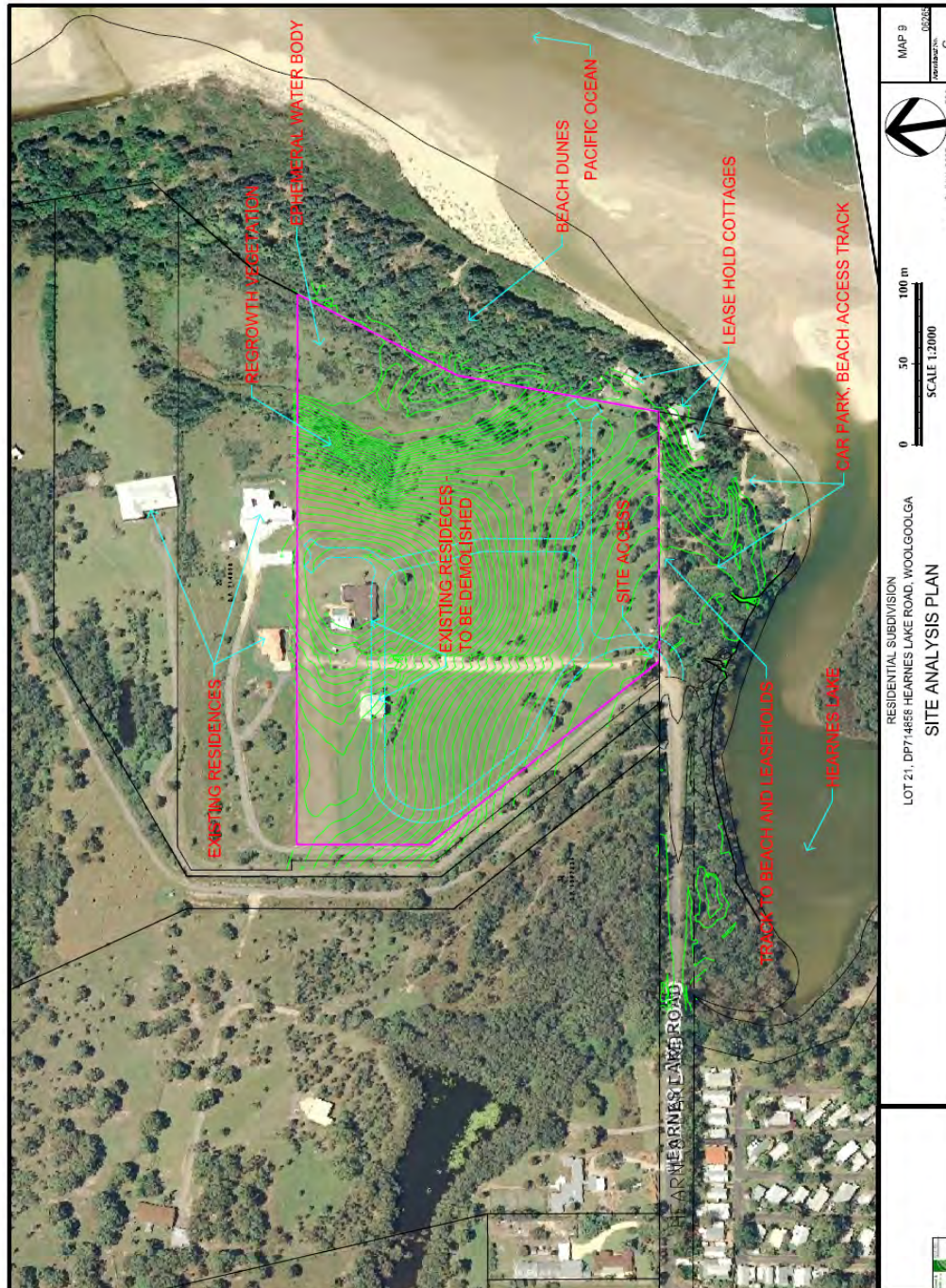
The second site is the spur crest on Lot 21. The DCP states that it will be the responsibility of the developer to undertake an Archaeological Investigation to determine the status of the Spur Crest before any disturbance works commence. The investigation is to involve:

- The removal of grass cover by manually ‘scrapping off’ (to minimise ground disturbance);

- A comprehensive inspection and assessment of the site area;
- Management options are to be developed on the basis of an interpretation and investigation of the results by a person deemed suitably qualified by Council.

This investigation will be undertaken as part of the subdivision site works.

Copy of Site Analysis Plan



SECTION 3

FIRE MANAGEMENT RESPONSIBILITIES

Fire management within the development site is the responsibility of:

3.1 Coffs Harbour Council.

The Coffs Harbour 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 Coffs Harbour Bush Fire Management Committee.

The Coffs Harbour 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'.

In this section; '*notified steps*' means:

- (a) any steps that a bush fire risk management plan (or the Co-ordinating Committee) advises a person to take;
 - (b) that are included in a bush fire risk management plan applying to the 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 BfBFP]	Effective Slope of land for 100m.	Comments
North	Existing Residential Development	Managed Curtilage	Nil	3 - 4 degrees downslope.	The adjoining vegetation is not bushfire prone.
East	Vacant Land within Reserve	Wetland + Littoral Rain Forest.	Wetland + Rainforest	< 10 degrees upslope	The adjoining vegetation is bushfire prone.
South East	Lease Hold Cottages	Managed Curtilage with Littoral Rainforest	Nil to managed Curtilage Rainforest	< 2 degrees upslope	The adjoining Rainforest vegetation is bushfire prone.
South	Vacant Land within Reserve	Littoral Rainforest	Rainforest	< 2 degrees downslope	The adjoining vegetation is bushfire prone.
South west	Access Handles + vacant land	Swamp Forest & Dry Sclerophyll Forest	Dry Sclerophyll Forest	3 – 4 degrees downslope.	The vegetation within the adjoining land is bushfire prone.
West	Vacant residential land	Managed Curtilage	Nil	Level	The adjoining vegetation is not bushfire prone.

The Bushfire Prone Land Map accurately maps the vegetation within and adjoining the property as Bushfire Prone Vegetation. The managed curtilage on the land to the north and west of the site is not bushfire prone vegetation.

SECTION 5

BUSHFIRE PROTECTION ASSESSMENT

5.1 Introduction.

The Director General, in issuing the requirements for the Environmental Assessment under Part 3A of the *Environmental Planning & Assessment Act* is likely to require that the development address the provisions of *Planning for Bushfire Protection 2006*, in particular the provision of bushfire Asset Protection Zones (APZ) in accordance with appropriate vegetation classification, locations [outside the proposed conservation areas and buffer zones]; provision of emergency access & egress; water supply and measures for fuel management and maintenance.

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 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 residential development within proposed subdivision. Fire Danger Index – 80:

Table 2. Determination of Asset Protection Zones. FDI – 80

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation (Table A2.1)	Effective Slope of Land	Width of Asset Protection Zone [Table A2.5 of PfBFP]	Width of Asset Protection Zone Provided	Compliance with Table A2.5.
North	Managed Curtilage to residential development.	Nil	3 - 4 degrees down slope.	Nil Asset Protection Zone required.	> 140 metres separation to Bushfire Prone vegetation provided by managed curtilage	Yes
East	Wetland & Littoral Rainforest.	Rainforest	> 18 degrees for 15 metres then Level	20 metre IPA for Rainforest vegetation on land > 15 degrees downslope.	20 metres provided by APZ & perimeter fire trail	Yes
South East	Managed Curtilage + Littoral Rainforest in Reserve.	Rainforest	< 2 degrees upslope & < 5 degrees down slope	10 metre IPA for Rainforest vegetation.	> 10 metres provided by APZ within lots/ development boundary	Yes
South	Littoral Rainforest in Reserve	Rainforest	< 2 degrees down slope	10 metre IPA for Rainforest vegetation,	> 10 metres provided by APZ within lots/ development boundary	Yes
South West	Dry Sclerophyll Open Forest & Swamp Forest	Forest	< 5 degrees down slope to the south west	25 metre IPA for Forest vegetation.	25 metres provided by APZ & perimeter road within development boundary	Yes.
West	Managed Curtilage	Nil	Level to the west	Nil Asset Protection Zone required.	> 100 metres provided by adjoining managed residential development	Yes

Assessment Results:

The widths of the Asset Protection Zones provided by the perimeter road/fire trail/Asset Protection Zone and building setback exceed the deemed-to-comply setbacks provided by Table A2.5 of *Planning for Bushfire Protection 2006*, required for Level 3 construction of the future dwellings which adjoin the bushfire hazard.

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 the Class 1, 2 and Class 3 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 in accordance with the following classifications:*
 - *Less than 20 metres*
 - *From 20 metres but not greater than 30 metres*
 - *Greater than 30 metres but not greater than 50 metres*
 - *Greater than 50 metres but not greater than 80 metres*
 - *Greater than 80 metres but not greater than 100 metres.*
- (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:

Significant ember attack with radiation heat no greater than 12.5 KWm², (Level 1 Construction AS3959-1999).

- High:

Significant ember attack and possible flame contact, radiation heat greater than 12.5 KWm² and no greater than 19 KWm² (Level 2 Construction AS3959-1999).

- Extreme:

Significant ember attack and possible flame contact, radiation heat greater than 19 KWm² and no greater than 29 KWm² (Level 3 Construction AS3959-1999).

- 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 Assessment for the future residential buildings within the subdivision and provides recommendations on the resultant construction standards for a Fire Danger Index [FDI] of 80.

Table 3 Bushfire Attack Assessment – Determination of Construction Standards to Future Dwellings

Aspect	Predominant Vegetation Class [Table A2.1 Planning for Bushfire Protection 2006]	Effective Slope of Land	Minimum width of Asset Protection Zone [Table A2.5 PfBFP 2006]	Level of Bushfire Attack [Table A3.3 of PfBFP 2006]	Construction Standard in accordance with A.S.3959
North	Managed Curtilage	3 - 4 degrees down slope.	> 140 metres separation to Bushfire Prone Vegetation.	Nil	Nil construction standards required.
East	Littoral Rainforest	> 18 degrees down slope for 15m – level & then > 5 degrees upslope to the east.	20 metres provided by perimeter fire trail + APZ.	Extreme.	Level 3 construction standards.
South east	Managed Curtilage + Littoral Rainforest	< 2 degrees upslope + < 5 degrees downslope.	> 10 metres provided by APZ.	Extreme.	Level 3 construction standards.
South west	Dry Sclerophyll Forest + Swamp Forest	< 5 degrees downslope to the S.W.	25 metre wide APZ	Extreme	Level 3 construction standards
West	Managed Curtilage	Level	> 100 metres provided by managed curtilage	Nil.	Nil construction standards required.

Assessment Results:

In addition to the construction standards found to be necessary as determined in Table 3, it is recommended that the minimum construction to the future dwellings shall be Level 1 in accordance with the specifications of Australian Standard A.S 3959 -1999 "Construction of Buildings in Bushfire Prone Areas.

5.3 Water Supplies for Firefighting Operations.

The future residential subdivision of the land will have a reticulated water supply connected to the Coffs Harbour Council 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 ring 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.

5.4 Access for Fire Fighting Operations.

5.4.1 Public Roads:

The Torrens Title subdivision of the land within Lot 21 in DP 714858 will create new lots which will have vehicular access directly off perimeter and internal roads which will be constructed to the deemed-to-satisfy specifications for Public Roads as defined by Chapter 4 of *Planning for Bushfire Protection 2006*. The new roads shall have a minimum 8.0 metre seal width to Road 1 & 2 and 6.5 metre seal width to the eastern end of Road 2 and to Road 3.

- **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 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.*

5.4.2 Fire Trail Access.

The subdivision plan provides for the construction of a perimeter fire trail to the eastern aspect of Lots 29, 32, 39 – 43, extending north from the Road 2 cul-de-sac, turning to run along the northern boundary to link with the Road 3 cul-de-sac. This trail forms the eastern edge of the Asset Protection Zone to these lots and provides access to the bushfire hazard interface.

A further fire trail is provided extending to the south off the Road 2 cul-de-sac and linking to the existing access track that extends along the southern boundary of the site, within the eastern unmade section of Hearnese Lake Road. This trail provides access to the bushfire hazard interface along the southern aspect of the subdivision.

- **Specifications for Fire Trails.**

The specifications for the proposed fire trails 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;*
- *Passing bays shall be provided at approximately 200 metre intervals on fire trails. Passing bays shall be 20 metres long and 3 metres wide, clear of the road formation;*
- *The carrying capacity of the fire trail surface shall be 15 tonnes for reticulated areas;*
- *Curves shall have an inner radius of 6 metres and an outer radius of 12 metres;*
- *Maximum grades shall be 15 degrees (10 degrees preferred);*
- *A minimum vertical distance of 4.0 metres shall be provided clear of overhanging branches, trees and shrubs.*

5.4.3 Emergency Response Access / Egress.

The subdivision layout provides emergency response access/egress in the form of a looped road from Hearnese Lake Road and cul-de-sac turning heads to the short dead-ends. The perimeter fire trails provide access to the Littoral Rainforest vegetation to the eastern and southern aspects of the subdivision and adequately address fire fighting access to the subdivision, given the low fire risk from the Littoral Rainforest vegetation to these aspects.

5.5 Adequacy of Bushfire Maintenance Plans and Fire Emergency procedures.

The Coffs Harbour 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.

5.6 Emergency Management for Fire Protection / Evacuation.

The proposed residential development will be subject to the impact of fires burning within the bushfire prone vegetation to the east, south and to the southwest of the site. This potential impact will create high levels of ember attack and dense smoke given off by the predominant Dry Sclerophyll/Swamp Paperbark vegetation to the southwest of the site.

The potential impact from fires burning in the Littoral Rainforest vegetation to the east and south will be low levels of radiant heat and smoke.

The setbacks prescribed in this report are in accordance with the Rural Fire Service deemed-to-satisfy setback provisions and are designed to mitigate the likely levels of radiant heat on the dwellings to less than 12.5 kWm² with the radiant heat unlikely to threaten building elements.

5.7 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 within the development to ensure ongoing management of the nominated Asset Protection Zone and the combustible fuels within the landscaped gardens.

5.7.1 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.

5.8 Adequacy of Sprinkler Systems & other Fire Protection Measures.

There are no sprinkler systems required or recommended.

SECTION 6

RECOMMENDATIONS

Recommendation 1:

Asset Protection Zones shall be provided to the widths as nominated in Table 4. (Refer to Figure 2 “Plan of Bushfire Protection Measures”).

Table 4. Asset Protection Zones.

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation Table A2.1)	Effective Slope of Land	Width of Asset Protection Zone [Table A2.5 of Pf BFP	Width of Asset Protection Zone Provided	Compliance with Table A2.4.
North	Managed Curtilage	Nil	< 5 degrees down slope	Nil	> 140 metres of managed land	Yes
East	Littoral Rainforest in Reserve No. 64B	Littoral Rainforest	> 18 degrees down slope for 15 metres; level.	20 metres for Littoral Rainforest vegetation	20 metres provided by perimeter fire trail & building setback/APZ	Yes
South East	Littoral Rainforest in Reserve.	Littoral Rainforest	< 5 degrees down slope	10 metre IPA for Littoral Rainforest vegetation	10 metres provided by APZ	Yes
South	Littoral Rainforest in Reserve.	Littoral Rainforest	< 2 degrees down slope	10 metre IPA for Littoral Rainforest vegetation	> 10 metres provided by perimeter fire trail & APZ	Yes
South west	Dry Sclerophyll Open Forest/Swamp Forest	Forest	< 5 degrees down slope	25 metre IPA for Forest vegetation	25 metres provided by perimeter road & building setback	Yes
West	Managed Curtilage	Nil	Level.	Nil	> 100 metres provided by access roads & managed curtilage	Yes.

Recommendation 2:

The Asset Protection Zones and the landscape gardens within each lot 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”.

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 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 3:

An 88B Covenant, in accordance with the provisions of the Conveyancing Act of 1919, shall be created on the title of the future residential lots to ensure the ongoing management of the landscaped gardens/residual vegetation within the development in accordance with the provisions of an Inner Asset Protection Zone [Curtilage to dwellings].

Recommendation 4:

The application of bushfire construction standards shall apply to the future dwellings in accordance with Table 3 of this report. The minimum construction standard to the future dwellings within the Torrens Title subdivision shall be Level 1 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 5:

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*.

Specifications for public roads are:

- *Roads shall be designed for two-wheel drive all weather access;*

- *Perimeter roads 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.*

Recommendation 6:

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

- ***Specifications for Fire Trails.***

The specifications for the proposed fire trails 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;*

- *Passing bays shall be provided at approximately 200 metre intervals on fire trails. Passing bays shall be 20 metres long and 3 metres wide, clear of the road formation;*
- *The carrying capacity of the fire trail surface shall be 15 tonnes for reticulated areas;*
- *Curves shall have an inner radius of 6 metres and an outer radius of 12 metres;*
- *Maximum grades shall be 15 degrees (10 degrees preferred);*
- *A minimum vertical distance of 4.0 metres shall be provided clear of overhanging branches, trees and shrubs.*

Recommendation 7:

The Coffs Harbour 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 with blue pavement marks provided to locate hydrant positions.

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.

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 8:

The roof gutters/valley of the future buildings 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*”;

SECTION 7

CONCLUSION

A Concept Plan approval is being sought, under Part 3A [Major Projects] of the *Environmental Planning & Assessment Act 1979* for the Torrens Title subdivision of land within Lot 21 in DP 714858 Hearnese Lake Road, Woolgoolga.

The property is located to the south of the village of Woolgoolga and extends to the north from Hearnese Lake Road and east to the foreshores dunes of Woolgoolga Back Beach.

The development proposal, as shown on the Concept Plan, is for the Torrens Title residential subdivision of the high land located above the 1.100 flood level and beyond the 50 metre wide buffer zone on contour RL 3.5 metres.

The subdivision proposal creates forty three [43] lots with proposed Lot 10 being for stormwater management purposes and proposed Lot 28 being rezoned, under the Coffs Harbour Draft LEP Amendment No. 29, to 7A Environmental Protection Habitat and Catchment Zone and transferred to the Coffs Harbour Council.

Proposed Lot 28 contains an ephemeral wetland and regenerating Littoral Rainforest. The development proposal retains the integrity of the wetland and Littoral Rainforest vegetation and provides a perimeter fire trail and Asset Protection Zone between the retained vegetation and the future dwellings in the subdivision. The widths of the Asset Protection Zones comply with/exceed the minimum deemed-to-comply widths required by Table A2.5 of *Planning for Bushfire Protection 2006*.

The Director General's Environmental Assessment Requirements is likely to include the requirement to address the requirements of *Planning for Bushfire Protection 2006 (RFS)*, in particular the provision of bushfire asset protection zones (APZ) in accordance with appropriate vegetation classification, locations [outside the proposed conservation area]; provision of emergency access and egress; water supply and measures for fuel management and maintenance.

This report has therefore assessed the requirements of *Planning for Bushfire Protection 2006* and the recommendations contained in Section 6 address the deemed-to-comply provisions of *Planning for Bushfire Protection 2006*.

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 8. 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
(II) The siting and adequacy of water supplies for fire fighting	YES
(III) Capacity of public roads to handle increased volumes of traffic in the event of a bushfire emergency	YES
(IV) Public roads that link with the fire trail network have two - way access	YES
(V) Adequacy of emergency response access and egress	YES
(VI) Adequacy of bushfire maintenance plans and fire emergency procedures	YES
(VII) Building construction standards	YES
(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 Concept Plan layout prepared by de Groot & Benson Pty Ltd, 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 and Environmental Assessment Legislation Amendment Act 2002*;
- *Rural Fires Regulation 2002*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*;
- *Threatened Species Conservation Act 1995*;
- *Native Vegetation Act*;
- *Bushfire Environmental Assessment Code 2003*;
- Building Code of Australia;
- Australian Standard A.S 3959-1999 “*Construction of Buildings in Bushfire Prone Areas*”.
- *Coffs Harbour Bushfire Prone Land Map*

SECTION 8

SITE PHOTOGRAPHS



Photograph taken from Knoll looking Southeast along saddle to Lease Hold Cottages on Crown Reserve No. 64B.



Photograph looking east from Knoll to Littoral Rainforest Vegetation within Crown Reserve No. 64B.



Photograph taken from Knoll looking northeast over Wetland to Littoral Rainforest Vegetation in Crown Reserve No. 64B. Adjoining dwelling shown in far left hand corner of photograph.



Photograph taken from top of bank looking east over Wetland – Littoral Rainforest further to the east.



Photograph taken looking southeast along Wetland – Littoral Rainforest on the left.



Photograph taken looking north along Wetland – Littoral Rainforest on the right.



Photograph taken from proposed Lot 7 looking northeast to the Littoral Rainforest in Crown Reserve No. 64B.



Photograph taken looking east from the site towards Lease Hold Cottages within Crown Reserve No. 64B.



Photograph taken looking west along southern boundary of development site showing existing access track along the unmade section of Hearnese Lake Road. Littoral Rainforest on left.



Photograph taken looking east along access track to the south of the development site showing access driveway to Hearnese Lake Reserve parking area and Littoral Rainforest vegetation.



Photograph taken looking south along access driveway on property to the west of the site showing extend of Dry Sclerophyll Forest bushfire prone vegetation.



Photograph taken looking west across managed curtilage on the property to the west of the development site.



Photograph taken looking northeast from the access driveway to the northern property showing extent of managed curtilage to the north of the development site.



Photograph taken looking east from the access driveway to the northern property showing extent of managed curtilage to the north of the development site.

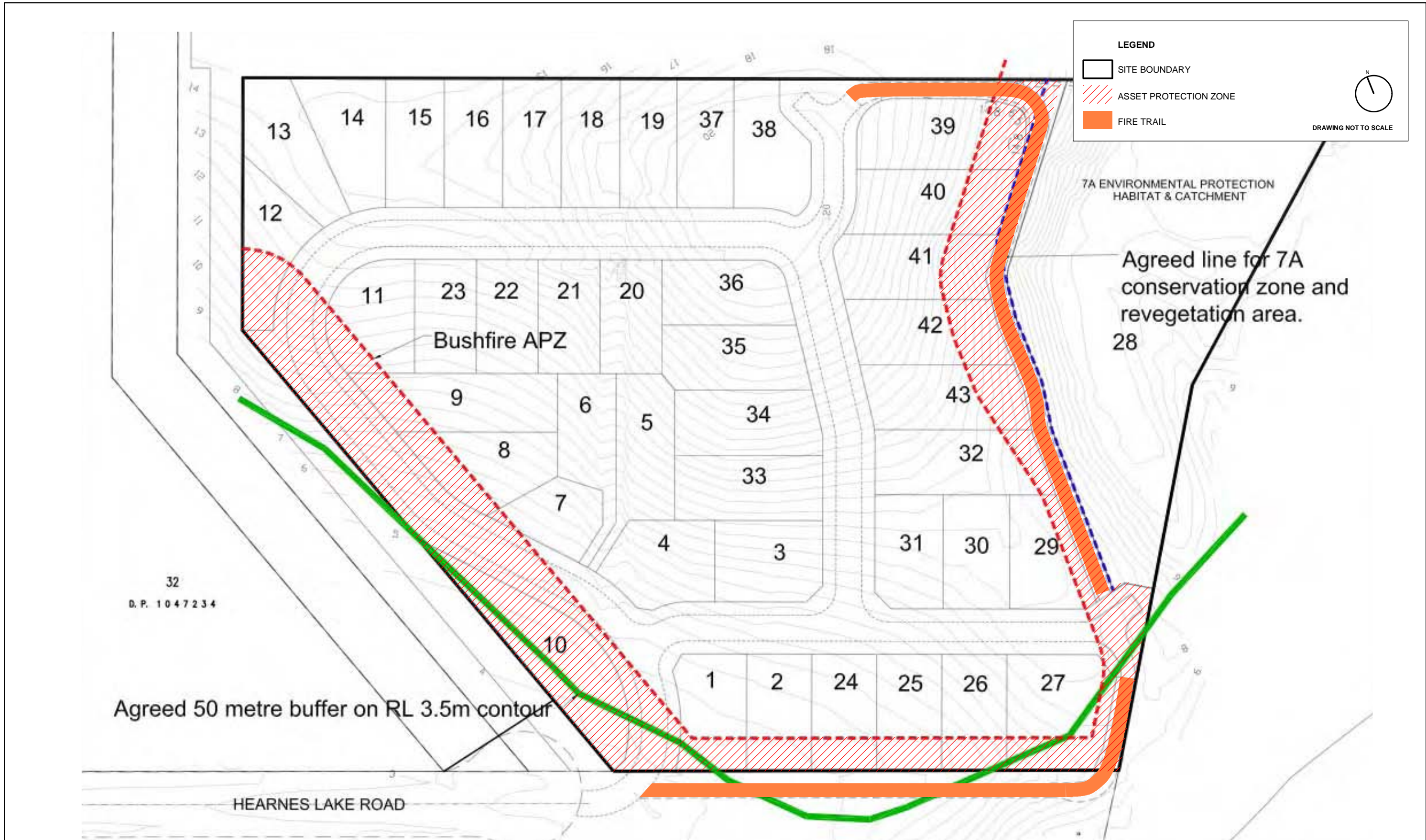
SECTION 9

FIGURE 1

AERIAL PHOTOGRAPH OF DEVELOPMENT SITE

FIGURE 2

PLAN OF BUSHFIRE PROTECTION MEASURES



RMB 3411 Dog Trap Road
Somersby NSW 2250

Tel: 612 43622112 / 612 43621184
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Email: abpp@bigpond.net.au

Job No: B07552	Drawing No: F2
Drawn by: GS	Date: 15.06.06
Amendment	Date
A	
B	
C	

Figure 2
Plan of Bushfire Protection Measures
Hearnes Lake Road, Woolgoolga

Source: Geoff Smyth Consulting