

BUSHFIRE RISK MANAGEMENT PLAN

FOR

RESIDENTIAL SUBDIVISION

LOT 1 DP 1119830

MARSHALL WAY,

NAMBUCCA HEADS

PREPARED BY

BUSHFIRESAFE
(AUST) PTY LTD

MAY 2015

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EXECUTIVE SUMMARY

Bushfiresafe (Aust) P/L has been engaged by Geoff Smyth Consulting on behalf of their client to undertake a complete Bushfire Risk Assessment for the 132 lot residential subdivision of Lot 1 in DP 1119830, Marshall Way, Nambucca Heads. The assessment was conducted in accordance with section 91A of the Environmental Planning & Assessment Act (1979) and followed the guidelines recommended in the Planning for Bushfire Protection (RFS, 2006).

Property Description

The property is an urban residential subdivision, Lot 1, DP1119830 within the Nambucca Heads Shire.

The property for the proposed development is on the fringe of the urban township of Nambucca Heads. The development is a proposed 132 lot urban subdivision, which shall be developed through stages. The property slopes gently from the southeast corner with a Northerly aspect. The property has urban developed properties on the Eastern and South/Eastern elevations, a Council sporting field and Open Space Recreation area adjoins the subject property on the Northern elevation; on the Western elevation is the Nambucca State Forest and adjoining the subject property on the Southern elevation is local Aboriginal community land designated for their community future development.

The property is zoned R1 General Residential Marshall Way road reserve adjoins the eastern boundary and a Council Reserve and Boundary road adjoining the southern boundary with an area of retained native vegetation occurring to the south and west,

This development proposal is for a 132-Lot residential subdivision of Lot 1, Marshall Way, Nambucca Heads. The subdivision will be constructed within 7 stages and a deferred area; the deferred area is located in the south/east corner of the property and consists of an area of 17,286m². The construction of the deferred area will be undertaken after further discussion with Council. Access for the allotments shall be via constructed roads with two separate access points to Marshall Way and Spring Street.

Vegetation assessment

This Bushfire Risk Assessment was conducted through an on-site inspection undertaken on 2nd December, 2014 using the methodology set out in Planning for Bushfire Protection manual (RFS,2006). The on-site assessment included traversing the subject property and all lands within 140 metres from the proposed subdivision. The property inspection identified areas of Forest to the south, east and west of the subject land as bushfire prone vegetation within 140m of the proposed development. The table below summarises the slope assessments for each vegetation community observed over the subject land.

Aspect	Vegetation	Classification (PBP)	Slope	Comments
N	Grassland	Not Classified	Flat	Farrington Playing Fields.
N/W	Forest	Forest	Upslope	Small area of forest occurs along the western boundary of Farrington Playing Fields.
E	Forest	Forest	Flat	Adjoining developed residential properties and Marshall Way separates this

S	Forest	Forest	10°-15° down	vegetation from the proposed lots. The adjoining Council reserve and Boundary Road is located on top of the ridge line with the forest vegetation on a down slope terrain.
W	Forest	Forest	5°-10° down	Racecourse Fire Trail adjoins the western boundary on an across slope with the forest vegetation occurring on a down slope terrain.

Based on the assessment of the vegetation communities and slopes present on and adjacent to the subject property, and in accordance with Appendix 2 Table A2.5, Planning for Bushfire Protection (RFS 2006), this Bushfire Risk Assessment recommends that a 31 metre Asset Protection Zone (APZ), comprising a Inner Protection Area (IPA) along the southern and western margins of the subject land as listed in the Table below. This APZ shall comprise the managed road reserves for the development and extending onto the subject land as illustrated in Attachment 1.

Elevation	Vegetation	APZ	IPA	OPA	Compliance with PBP	Comment
N	Managed Grass	0m	0m	0m	Yes	Farrington Sports Field adjoins the northern boundary.
N/W	Forest	21m	14m	7m	Yes	APZ contained wholly within Farrington Fields & maintained by Council
E	Forest	21m	21m	0m	Yes	Existing residential properties and Marshall Way allows for a >45m separation from this vegetation to the proposed lots.
S	Forest	42m	42m	0m	Yes	Consists of 2m within the lots along the southern boundary, Council's 20m reserve and the 20m road reserve for Boundary Road.
W	Forest	33m	33m	0m	Yes	Contained wholly within the development site and achieved through utilising the 22m road reserve and 11m within the proposed allotments

Bush Fire Attack Level

An assessment of the bushfire attack level applicable to the proposed development was carried out using the methodology detailed in Appendix 3 of Planning for Bushfire Protection (RFS, 2006) and Appendix B of AS 3959-2009. The bushfire assessment undertaken in

relation to the proposed development concluded the bushfire attack level for the subdivision ranges from BAL29 to BAL LOW depending on the location of the individual allotments:

Access

The access to the residential subdivision shall have a constructed perimeter loop road which will have two access points along Marshall Way and Spring Street, a link road will be constructed joining the north and south section of the constructed perimeter loop road, two small roads less than 200m in length are planned to connect to the link road, these two roads shall terminate with cul-de-sacs. Bellwood Road along the southern boundary and Racecourse Fire Trail along the western boundary will provide access to the for firefighters to the bushland interface. The access roads for the development complies with the intent of Planning for Bushfire Protection 2006 Section 4.1.3-1 (Public Roads).

Services

Reticulated water supply is currently available to the development property. All delivery water lines shall be installed underground to a minimum depth of three hundred millimetres (300mm), with all points above ground using metal pipes or raisers with a minimum internal diameter of nineteen millimetres (19mm).

Where possible electrical transmission lines should be underground; where overhead electrical transmission lines are installed, lines should be installed with short pole spacing, unless crossing gullies, gorges or riparian areas. No part of a tree should be closer to a power line than the distance set by the appropriate authority. Regular inspection of lines is required to ensure they are not fouled by branches.

Construction Standards

The bushfire risk management assessment undertaken in relation to the proposed subdivision concluded that the construction standard in accordance with AS 3959 (1999) Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2001) will be assessed and nominated when development applications are submitted for the construction of dwellings on the approved allotments.

CONCLUSION

The proposed development will comply with the minimum requirements for:

- 1) Asset Protection Zones detailed in Table A2.5 (Minimum Specifications for Asset Protection Zones (APZ) for Residential and Rural Residential Subdivision Purposes (for class 1 & 2 buildings) in FDI 80 Fire Areas); and*
- 2) Access in accordance with section 4.1.3-1 (Access) in the manual for Planning for Bushfire Protection (RFS, 2006).*
- 3) Water Supply in accordance with section 4.1.3-Services in the manual for Planning for Bushfire Protection (RFS, 2006).*

GLOSSARY

APZ	Asset Protection Zone
BFRMP	Bushfire Risk Management Plan
NCBPL	Nambucca Council Bushfire Prone Lands map
EEC	Endangered Ecological Community
EP&A	Environmental Planning and Assessment Act
IPA	Inner Protection Area
KPoM	Koala Plan of Management
LGA	Local Government Area
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection manual
PHACS	Primary Habitat and Corridors Strategy
RFS	Rural Fire Service of New South Wales
SEPP	State Environmental Planning Policy
TOBAN	Total Fire Ban
TSC Act	Threatened Species Conservation Act (1995)
TSCA Act	Threatened Species Conservation Amendment Act (2002)

BUSH FIRE RISK MANAGEMENT PLAN

1.0 SCOPE OF THE PLAN

The Bushfire Risk Management Plan (BFRMP) is a strategic document which identifies: the level of bush fire risk for human habitation; strategies which will be implemented to manage the bush fire risk identified; and those persons responsible for implementing and maintaining this Bushfire Risk Management Plan.

1.1 Area

This Plan covers a proposed residential subdivision of Lot 1, DP 1119830 Marshall Way, Nambucca Heads, within Nambucca Council Local Government Area; the subdivision will consist of 132 residential lots.

1.2 Period of Operation

Once approved by the Local Authority and the NSW Rural Fire Service, this Plan will have a period of operation of the life of the development.

1.3 Aim and objectives of the Plan

The aim of this Plan is to provide for the mitigation of bush fires for the protection of life and property for the habitants, visitors and emergency personnel in bush fire situations Secondly, the Plan aims to reduce the treat to ecological and environmental assets. To achieve this aim, the Bushfire Risk Management Plan must address a number of specific objectives.

- i. Identify the area most at risk from bush fire attack;
- ii. Reduce the risk of bush fire damage to life and property;
- iii. Ensure that the developer/owner/occupier understands their bush fire management responsibilities;
- iv. Reduce the impact of bush fire on the development;
- v. Develop sustainable Asset Protection Zones (APZ) surrounding the proposed building

1.4 Bushfire Risk Management Strategies

This Plan contains a number of strategies, which are directed at addressing the risk to the residential development from bushfire emergencies. This is achieved through addressing and managing fuel loads, separation distances from the assessed dominant bushfire vegetation, and recommending appropriate bushfire building standards.

1.5 Implementation

Implementation of the strategies in this Plan is the responsibility of the developer and shall

be implemented as part of the development infrastructure. The ongoing maintenance of the strategies in this Plan shall be the responsibility of the owner/occupiers of each proposed residential allotments to the limit of their property boundaries. Finally, the local authority or their delegated authority, for the life of the development shall monitor this Plan.

2.0 LEGISLATIVE BUSHFIRE HAZARD MANAGEMENT RESPONSIBILITIES

2.1 Nambucca Shire Council

The Nambucca 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 the council to issue bushfire hazard reduction certificates for hazard reduction to be undertaken on private lands.

2.2 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.

2.3 NSW 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. Through mutual aid agreements, the NSW Fire Brigade can provide assistance to the NSW Rural Fire Service, particularly for structural fire operations within the NSW Rural Fire Brigade Districts. Furthermore, Hazmat operations within New South Wales are the responsibility of the NSW Fire Brigade.

2.4 Nambucca Shire Council Bush Fire Management Committee

The Nambucca Shire Council 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 organisation, a fire fighting organisation 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 Coordinating 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.

2.5 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 any steps that:

(a) a bushfire risk management plan (or the Co-ordinating Committee) advises a person to take;

(b) are included in a bush fire risk management plan that applies to 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 total fire ban (TOBAN) days. Section 10 permits are not required to adhere to Part V provisions of the Environmental Planning & Assessment Act (1979) (EP&A Act) in any 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 (see Section 100E of the Rural Fires Act (1997)).

3.0 INTRODUCTION

Development applications on bush fire prone land must be accompanied by a bush fire assessment report that demonstrates compliance with the aim and objectives of the Planning for Bushfire Protection (PBP) guidelines. In particular, the following matters must be addressed:

- a) A statement that the site is bush fire prone land, where applicable;
- b) The location, extent and vegetation formation of any bushland on or within 100m of the site;
- c) The slope and aspect of the site and of any bush fire prone land within 100m of the site, which may determine the likely path of any bush fire;
- d) Any features on or adjoining the site that may mitigate the impact of a high intensity bush fire on the proposed development;
- e) A statement of the likely environmental impact of any proposed bush fire protection measures; and

- f) Whether any building complies with AS 3959/1999 in relation to the construction level for bush fire protection.

3.1 Background

Bushfiresafe (Aust) P/L has been engaged by Geoff Smyth Consulting on behalf of their client to undertake a complete Bushfire Risk Assessment for the 132 lot residential subdivision of Lot 1 in DP 1119830, Marshall Way, Nambucca Heads. The assessment was conducted in accordance with section 91A of the Environmental Planning & Assessment Act (1979) and followed the guidelines recommended in the Planning for Bushfire Protection (RFS, 2006).

The assessment has involved the following activities:

- i. Verifying of terrain attributes in relation to the assessed bushfire vegetation.
- ii. Identification of the appropriate bushfire protection for any identified environmental assets.
- iii. Determination of the location of adequate water supplies for fire fighting purposes.
- iv. Identifying the capacity of public roads to handle increased volumes of traffic in a bushfire situation.
- v. Identification of adequacies for implementation of fire trails which link to Public roads in the vicinity.
- vi. Identification of adequacy of arrangements for access and egress from the development for the purposes of an emergency response.
- vii. Identification of construction standards to be used for building elements in the development.
- viii. Identification of adequacy of bushfire maintenance plans and fire emergency procedures for the development.
- ix. Identification of additional bushfire protection measures.

3.2 Description of property

The property is an urban residential subdivision, Lot 1, DP1119830 within the Nambucca Shire Council area.

The property for the proposed development is on the fringe of the urban township of Nambucca Heads. The development is a proposed 132 lot urban subdivision, which shall be developed through stages. The property slopes gently from the southeast corner with a Northerly aspect. The property has urban developed properties on the Eastern and South/Eastern elevations, a Council sporting field and Open Space Recreation area adjoins the subject property on the Northern elevation; on the Western elevation is the Nambucca

State Forest and adjoining the subject property on the Southern elevation is local Aboriginal community land designated for their community future development.

The property is zoned R1 General Residential; Marshall Way road reserve adjoins the eastern boundary and a Council Reserve zoned RE1 Public Recreation and Boundary road adjoins the southern boundary with an area of retained native vegetation occurring to the south, north/east and west,



Figure 1: Aerial photograph showing subject property in relation to the identified forest vegetation to the south, east and west.

3.3 Proposal

This development proposal is for a 132-Lot residential subdivision of Lot 1, Marshall Way, Nambucca Heads. The subdivision will be constructed over 7 stages and a deferred area; the deferred area is located in the south/east corner of the property and consists of an area of 17,286m². The construction of the deferred area will be undertaken after further discussion with Council. Access for the allotments shall be via constructed roads with two separate access points to Marshall Way and Spring Street.

3.4 NSW Rural Fire District BFRMP

The Nambucca Council's Bushfire Management Options are to:

(a) **Reduce the hazard** - encourages the development of asset protection zones along the settlement area - bushland interface.

(b) **Reduce vulnerability** - maintain development and building controls and standards appropriate to the level of hazard.

4.0 VEGETATION CLASSIFICATION

The vegetation of the subject property and adjacent properties up to 140m (where practicable) from the proposed subdivision was assessed during a site visit on 2nd of December, 2014. The vegetation communities present were identified and classified into formations as described in Keith (2004).

Appendix A2.3 of *Planning for Bushfire Protection* (PBP) manual (RFS, 2006) outlines the methodology for determining the predominant bushfire prone vegetation to the distance of 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) <i>Forests [wet & dry sclerophyll forests];</i> | (g) <i>Freshwater Wetlands;</i> |
| (b) <i>Woodlands;</i> | (h) <i>Saline Wetlands</i> |
| (c) <i>Plantations – being pine plantations but not native plantations;</i> | (i) <i>Alpine Complex;</i> |
| (d) <i>Forested Wetlands;</i> | (j) <i>Semi – arid Woodlands;</i> |
| (e) <i>Tall Heath lands;</i> | (k) <i>Arid Woodlands; and</i> |
| (f) <i>Short Heath lands;</i> | (l) <i>Rainforests</i> |

4.1 Vegetation communities present on the Property

Open Forest: With the exception of the south/east corner of the property which consists of mature eucalyptus trees with a shrubby understorey the majority of the subject property has been cleared through previous land uses and now consists of eucalypt regrowth and areas of native grasses. This community has trees of approximately 10 – 30 metres in height. The dominant vegetation that occurs in this community is Squiggly Gum trees, with scattered Iron Bark, Bloodwood and Blackbutt species throughout. (Figure 2).



Figure 2: Left; view of south east corner of the subject land showing mature eucalypt trees which shall be removed as part of the development. Right; view of subject land from eastern boundary looking west showing native grasses and eucalypt regrowth (Photograph, W. Hadaway).

4.2 Vegetation within 140m from the subject land boundary

South: Forest: There were 2 parcels of land surveyed adjoining the Southern boundary of the proposed development property; these parcels consisted of an approximate 20m Council reserve, a 20m road reserve and local aboriginal community land.

This community has trees of approximately 10 – 30 metres in height. The dominant vegetation that occurs in this community is Squiggly Gum trees, with scattered Iron Bark, Bloodwood and Blackbutt species throughout. The understorey of the forest community occurring on the Local Aboriginal Community land parcel up to 140m from the proposed developments boundary consists of Eucalypt regrowth and shrubs of varied heights (Figure 3).



Figure 3: Left, view of forest vegetation to south of the subject property this vegetation abuts the southern perimeter of Boundary Road. Right, view looking west along Boundary Road, this road will be upgraded as part of the development (Photographs, W. Hadaway).

West: The land surveyed adjoining the Western boundary of the proposed development property is part of the Nambucca State Forest with Racecourse Firetrail adjoining the western property boundary; This community was assessed as forest vegetation with trees of

approximately 10 – 30 metres in height. The dominant vegetation that occurs in this community is Squiggly Gum, Iron Bark, Bloodwood and Blackbutt trees. The foliage cover of this community is approximately 30 - 60%. The understorey of this community consists of Eucalypt regrowth and native shrubs of various heights, logging waist is scattered throughout this area (Figure 4).



Figure 4: Left, view of forest vegetation to west of the subject property this vegetation is part of Nambucca Forest and separated from the development property by Racecourse Firetrail. Right, view of Racecourse firetrail which adjoins the western boundary of the development property the firetrail is well maintained (Photographs, W. Hadaway).

East: Forest vegetation occurs to the east of the development property dominated with Squiggly Gum, Iron Bark, Bloodwood and Blackbutt trees. This vegetation is greater than 45 metres at the closest point from the proposed lots and separated by Marshall Way and existing residential developed properties which adjoin the eastern property boundary and consists of maintained lawns and gardens (Figure 5).



Figure 5: Left: View of developed residential properties to the east along Marshall Way. Right: View of forest vegetation adjacent to Marshall Way which extends behind the existing residential properties (Photographs, W. Hadaway).

North: There are Council sporting fields and a community open space recreation area adjoining the proposed development property on the Northern boundary. The vegetation for a

distance greater than 140m from the proposed development property boundary is maintained through Council's township maintenance program and consists of introduced grasses; an small area of forest vegetation occurs adjacent to the north/west corner of the development property (Figure 6).



Figure 6: Left: View from the North West corner of the development property looking north showing maintained Farringdon Sports Field with forest vegetation greater than 140m in the background. Right: View from the North West corner of the development property looking east showing maintained Farringdon Sports Field with forest vegetation to the east in the background, the trees seen on the right shall be significantly modified as part of the development (Photographs, W. Hadaway).

4.3 Assessed Bushfire Vegetation in Relation to the Proposed Subdivision

The surrounding Forest vegetation to the south, east and west of the subject property is classified as Category 1 bushfire prone vegetation, according to the Nambucca Council Bushfire Prone Lands (NCBPL) map (Nambucca Council, 2007). The 100m buffer to Category 1 bushfire prone vegetation extends over the majority of the subject property. A bushfire risk assessment is required for any development of this property.

It was assessed that the Forest vegetation to the south, east and west of the property will have the most influence on bushfire behaviour for this development.

5.0 LANDFORM ASSESSMENT

Inspection of published topographic maps and an on-site assessment using a clinometer verified the following land forms were present over the subject land. There is a moderate fall towards northern boundary.

5.1 Assessed Dominant Slope in relation to identified bushfire prone vegetation

Appendix 2 of Planning for Bushfire Protection (RFS, 2006) recommends that slopes should be assessed, over a distance of at least 100m from a development site and that the dominant gradient of the land should be determined on the basis of which will most significantly influence the fire behaviour at the site.

Table 1 summarises the slope assessments for each vegetation community observed beneath the identified bushfire prone vegetation. This information will be used as the basis for determining those aspects of the proposed development that may require provisions for, and implementation of appropriate Asset Protection Zones.

Table 1: Site Assessment Summary – vegetation communities

Aspect	Vegetation	Classification (PBP)	Slope	Comments
N	Grassland	Not Classified	Flat	Farrington Playing Fields.
N/W	Forest	Forest	Upslope	Small area of forest occurs along the western boundary of Farrington Playing Fields.
E	Forest	Forest	Flat	Adjoining developed residential properties and Marshall Way separates this vegetation from the proposed lots.
S	Forest	Forest	10°-15° down	The adjoining Council reserve and Boundary Road is located on top of the ridge line with the forest vegetation on a down slope terrain.
W	Forest	Forest	5°-10° down	Racecourse Fire Trail adjoins the western boundary on an across slope with the forest vegetation occurring on a down slope terrain.

6.0 Environmental Issues

Extensive flora and fauna surveys have been conducted on the property over the past years, no endangered flora and fauna have been identified within the development site and no significant environmental features were identified throughout the onsite assessment.

7.0 BUSHFIRE ASSESSMENT FOR PROPOSED DEVELOPMENT

7.1 Asset Protection Zones

Based on the assessment of the vegetation communities and slopes present on and adjacent to the subject property and in accordance with Appendix 2 Table A2.5, Planning for Bushfire Protection (RFS 2006).

Lots 29 – 36 & lots 11 & 107 located along the western boundary are impacted by forest vegetation to the west which occurs on a 5 -10° down slope terrain, a 33 metre asset protection zone (APZ) shall be implemented and maintained on this elevation, all other aspects of these lots either adjoin internal lots or proposed development roads. The recommended APZ shall be wholly contained within the development property and consist of the 22 metre road reserve and 11 metres within the proposed allotments.

Lots 85 – 107 located along the southern boundary are impacted by forest vegetation to the south which occurs on a 10 - 15° down slope terrain, an 42 metre asset protection zone (APZ) shall be implemented and maintained on this elevation, all other aspects of these lots either adjoin internal lots or proposed development roads. The recommended APZ shall consist of the 2 metre within the southern boundaries of the allotments, 20 Council reserve which will be maintained to the standard of an Inner Protection Area and 20 metre wide road reserve of Boundary Road which will be upgraded as part of the development which adjoins the Council reserve.

Lot 11 located within the north/west corner of the development site is impacted by a small area of forest vegetation to the north/west, a 21 metre asset protection zone shall be implemented and maintained on this elevation, The APZ is achieved through utilising the 6 metre drainage swale which adjoins the northern property boundary and the 6 metre wide service road/fire trail which adjoins the northern perimeter of the drainage swale and 9 metres within the lot/s; all other aspects of the lot either adjoin internal lots or proposed development roads.

A temporary 21 metre APZ shall be maintained within the deferred area along the boundaries of lots 60, 61 & 85 until such time as the deferred area is further developed and the temporary APZ is no longer required.

The asset protection zones for the remaining lots are provided by the external lots or by Farrington Sports Field and existing developed residential properties. If in future Council decides to revegetate Farrington Playing Fields they shall implement and maintain a 21 metre APZ adjoining the northern boundary of the proposed development which will include the drainage swale and service road/fire trail.

A temporary 20 metre APZ shall be maintained at the end of each stage of the development until such time as the temporary APZ is no longer required (refer attachment 2 Staging Diagrams).

The asset protection zones mentioned above are summarised in the table below and illustrated in Attachment 1.

Table 2: Asset Protection Zone summary

Elevation	Vegetation	APZ	IPA	OPA	Compliance with PBP	Comment
N	Managed Grass	0m	0m	0m	Yes	Farringdon Sports Field adjoins the northern boundary.
N/W	Forest	21m	14m	7m	Yes	APZ contained wholly within Farringdon Fields and maintained by Council
E	Forest	21m	21m	0m	Yes	Existing residential properties and Marshall Way allows for a >45m separation from this vegetation to the proposed lots.
S	Forest	42m	42m	0m	Yes	Consists of 2m within the lots along the southern boundary, Council's 20m reserve and the 20m road reserve for Boundary Road.
W	Forest	33m	33m	0m	Yes	Contained wholly within the development site and achieved through utilising the 22m road reserve and 11m within the proposed allotments

The Asset Protection Zones for all aspects of the development shall be measured from the foliage drip line to the gutter or fascia (if a gutterless roof is used) of any proposed dwelling, and shall be implemented and maintained to the specifications as outlined below.

Inner Protection Area (IPA) shall be maintained in such a manner that;

- minimal fire fuel that could be set alight by bushfire (e.g. long grass, tree branches etc.) is present at ground level;
- vegetation does not provide a path for the transfer of fire to the development;
- trees are a minimum of 5 metres away from any building, measured from the edge of the foliage to the roof line or any open balconies;
- bark chips and the like are not present within 5 metres of any building;
- any trees present have a minimum canopy separation of 2 metres; and
- any trees present are not species that retain dead material or deposit excessive amounts of ground fuel in a short time.

7.2 Assessed Bushfire Attack Level

An assessment of the bushfire attack level applicable to the proposed development was carried out using the methodology detailed in Appendix 3 of Planning for Bushfire Protection (RFS, 2006) and Appendix B of AS 3959-2009. The bushfire assessment undertaken in relation to the proposed development concluded:

All lots within the development that are located adjacent to bushfire prone vegetation have had appropriate asset protection zones applied to maintain a minimum bushfire attack level (BAL) of no greater than BAL-29, all other lots have bushfire attack levels that comply with BAL-19 or lower. The table below sets out the BAL ratings for the proposed lots depending on the separation distances from the identified bushfire prone vegetation.

Vegetation	Aspect	Separation distance (m)	Bushfire Attack category
Forest 10-15°	South	42-<56	BAL - 29
		56-<73	BAL – 19
		73-<100	BAL – 12.5
		>100	LOW
Forest 5-10°	West	33-<46	BAL - 29
		46-<61	BAL – 19
		61-<100	BAL – 12.5
		>100	LOW
Forest Flat	East	21-<31	BAL - 29
		31-<42	BAL – 19
		42-<100	BAL – 12.5
		>100	LOW
Forest Upslope	North/West	21-<31	BAL - 29
		31-<42	BAL – 19
		42-<100	BAL – 12.5
		>100	LOW

7.3 Electricity Supply

Electrical transmission lines should be underground. Where overhead electrical transmission lines are installed, pole spacing should be short unless crossing gullies, gorges or riparian areas. No part of a tree should be closer to a power line than the distance set by the appropriate authority. Regular inspection of lines is required to ensure they are not fouled by branches.

7.4 Adequacy of Water Supply

Reticulated water is available to the development and will be supplied to each allotment through the town mains system in accordance with local water authority, council development control plans (DCPs) or any other policies and procedures.

- a) External fire hydrants will be installed and located in accordance with Australian Standard 2419-1, the hydrants shall be installed so as a clear unobstructed path to each designated building envelope, and
- b) The fire hydrants shall be installed at a maximum distance of 70m from the furthest extremity of the building/s, and
- c) The location of fire hydrants shall be delineated by blue pavement markers in the centre of the road, and
- d) All delivery water lines shall be installed underground to a minimum depth of three hundred millimetres (300mm), with all points above ground using metal pipes or raisers with a minimum internal diameter of nineteen millimetres (19mm).

7.5 Adequacy of Access and Egress in Bushfire Situations

The access to the residential subdivision shall have a constructed perimeter loop road which will have two access points along Marshall Way and Spring Street, a link road will be constructed joining the north and south section of the constructed perimeter loop road, two small roads less than 200m in length are planned to connect to the internal roads, these two roads shall terminate with cul-de-sacs. Bellwood Road along the southern boundary and Racecourse Fire Trail along the western boundary will provide access to the for firefighters to the bushland interface. The access roads for the development complies with the intent of Planning for Bushfire Protection 2006 Section 4.1.3-1 (Public Roads).

Where required a temporary Cul De Sac shall be constructed on roads at the end of each stage of the development until such time the temporary Cul De Sacs are no longer required (refer attachment 2 Staging Diagrams).

7.6 Fire Trails

A fire trail/ service road shall be constructed on the northern perimeter of the drainage swales adjoining the northern property boundary, this fire trail shall link with Marshals Way to the east and Racecourse fire trail to the west with a link to the internal development road at a distance of 200 meters; a fire trail is also proposed along the southern boundary (Bellwood Road), this fire trail shall link with the currently constructed portion of Boundary Road to the east and Racecourse fire trail to the west with a link to the internal development road at a distance of 200 meters from Racecourse Fire Trail.

8.0 BUSHFIRE CONSTRUCTION STANDARDS

The bushfire risk management assessment undertaken in relation to the proposed subdivision concluded that the construction standard in accordance with AS 3959 (1999) Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2001) will be

assessed and nominated when development applications are submitted for the construction of dwellings on the approved allotments.

9.0 LANDSCAPING AND PROPERTY MAINTENANCE – BUSHFIRE PROVISIONS

According to the PBP manual, the principles of landscaping for bush fire protection are to: prevent flame impingement on the dwelling; provide a defensible space for property protection; reduce fire spread; deflect and filter embers; provide shelter from radiant heat; and reduce wind speed. Careful consideration of the species selection, their location relative to their flammability, and on-going maintenance to readily remove flammable fuels (leaf litter, twigs and debris) is critical to providing for bushfire protection (RFS, 2006).

10.0 EXTENT OF COMPLIANCE AND/OR DEVIATION FROM SPECIFICATIONS

The proposed development will comply with the minimum requirements for:

- 1) Asset Protection Zones detailed in Table A2.5 (Minimum Specifications for Asset Protection Zones (APZ) for Residential and Rural Residential Subdivision Purposes (for class 1 & 2 buildings) in FDI 80 Fire Areas); and
- 2) Access in accordance with section 4.1.3-1 (Access) in the manual for Planning for Bushfire Protection (RFS, 2006).
- 3) Water Supply in accordance with section 4.1.3-Services in the manual for Planning for Bushfire Protection (RFS, 2006).

REFERENCES

Nambucca Council, 2007 Nambucca Council Bushfire Prone Lands Map webpage at: <http://maps.coffsharbour.nsw.gov.au/eview-html/index.html>.

Nambucca Council, 2011. Nambucca Council Local Environment Plan webpage at: <http://maps.coffsharbour.nsw.gov.au/eview-html/index.html>.

Keith, D., 2004. *Ocean shores to Desert Dunes*. Department of Environment and Conservation, Sydney.

RFS, 2006. *Planning for Bushfire Protection, New South Wales Rural Fire Service*. NSW, Sydney.

Standards Australia, 2009. *Australian Standard 3959-2009 Construction of Buildings in Bushfire-prone Areas*. Standards Australia, Sydney.

COMMERCIAL IN CONFIDENCE

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**OPEN FOREST
VEGETATION**

OPEN FOREST
VEGETATION

This drawing was prepared by Bushfiresafe (Aust) P/L to demonstrate the vegetation communities surrounding the development site and the required asset protection zones and should not be used for any other purpose.

General Notes

ATTACHMENT 1 SITE LAYOUT / ASSET PROTECTION ZONES

Bushfire safe (Aust)
20 Maciachlan St
Macleean NSW 2463
(02) 6645 1099



CLIENT:
Nambucca Gardens Pty Ltd
Nambucca Heads

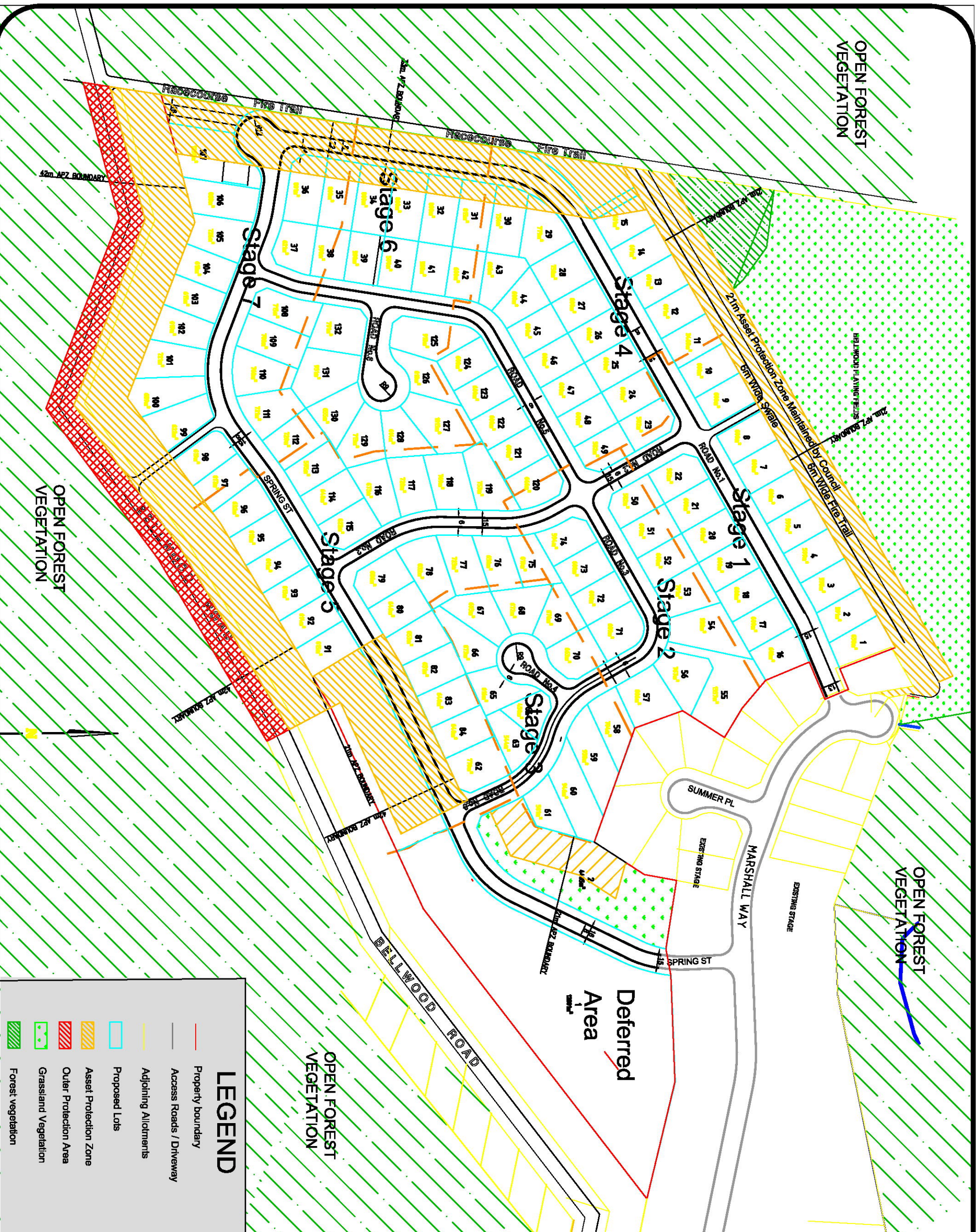
Project

**Business Assessment for Proposed
Urban Subdivision Lot 1 DP11119830
Marshall Way,
Nambucca Heads**









Date: May, 2016

Scale: PA3

Ref



LEGEND

-  Property boundary
-  Access Roads / Driveway
-  Adjoining Allotments
-  Proposed Lots
-  Asset Protection Zone
-  Outer Protection Area
-  Grassland Vegetation
-  Forest vegetation