

BUSHFIRE RISK MANAGEMENT PLAN

FOR PROPOSED

HIGHWAY SERVICE CENTRE

LOT 1 DP1 165676, LOT 1 DP210674 AND

LOT 11, DP 1134229

TWEED VALLEY WAY

CHINDERAH

PREPARED BY

BUSHFIRESAFE

(AUST) PTY LTD

MAY 2013

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BUSHFIRESAFE (AUST) PTY LTD

BUSHFIRE RISK MANAGEMENT & ENVIRONMENTAL CONSULTANTS

20 McLachlan Street
Ph (02) 66451088

Maclean, NSW 2463
Fax (02) 66451099

A.B.N 89 114 025 820
A.C.N 114 025 820



Sunshine Coast

3 Herford Drive

Kureelipa QLD 4560

Ph/Fax: 07 54764265

Mobile: 0408538529

EXECUTIVE SUMMARY

Bushfiresafe (Aust) P/L has been engaged by Jim Glazbrook Town Planning P/L on behalf of their client to undertake a complete Bushfire Assessment for the proposed construction of a Highway service centre on Lot 1 DP1165676, Lot 1 DP210674 & Lot 11, DP1134229, Pacific Highway/Tweed Valley Way, Chinderah. The assessment was conducted in accordance with section 91A of the Environmental Planning & Assessment Act (1979) and section 100B of the Rural Fires Act (1997), and followed the guidelines recommended in the Planning for Bushfire Protection guidelines (RFS, 2006).

Property Description

Lot 1 DP1165676, Lot 1 DP210674 & Lot 11, DP1134229 has been cleared of all over storey vegetation and developed and utilised for rural industry with large areas of managed grassland areas. The Pacific Highway Motorway adjoins the eastern boundary, the northern boundary adjoins Murwillumbah off ramp, Tweed Valley Way adjoins the western boundary and the southern boundary adjoins a property utilised for rural industry. The subject property is zoned 1(b2) Agriculture Protection in the Tweed Shire Council Local Environmental Plan (Tweed Shire Council, 2000).

This proposal seeks to undertake a boundary adjustment/subdivision to allow the construction of a service station, food outlets and carpark areas as illustrated in the attached Site Plan.

This Bushfire Risk Assessment was conducted through an on-site inspection undertaken on 10th May, 2013 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 development. The property inspection identified areas of Forest as bushfire prone vegetation within 140m of the proposed development.

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. The table below outlines the slopes affecting the proposed development.

Table 1 Terrain attributes affecting the proposed subdivision.

Aspect	Slope	Vegetation	Comments
N	Upslope	Road Reserve / Forest	Bushfire prone veg.
E	Flat	Road Reserve / Forest	Bushfire prone veg.
S	Flat	Developed industrial land	Not bushfire prone veg.
W	Flat	Developed industrial land	Not bushfire prone veg.

Asset Protection Zones (APZ)

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 Asset Protection Zones (APZ), Inner Protection Area (IPA) and Outer Protection Area (OPA) should be established as listed below and shown on Attachment 1.

The proposed structures are greater than 100 metres from the identified bushfire vegetation, separated by the Pacific Highway Motorway to the east and the proposed parking area and the Murwillumbah off ramp to the north which complies with the requirements for asset protection zones as outlined in Planning for Bushfire Protection 2006 (PBP).

Bush Fire Attack Categories

An assessment of the bushfire attack categories applicable to the proposed development was carried out using the methodology detailed in Appendix 3 of Planning for Bushfire Protection (RFS, 2006). This bushfire risk management assessment concluded the following bushfire attack categories for the proposed development.

The bushfire risk assessment identified that the proposed service centre buildings are in a **BAL-Low** Bushfire Attack category, as outlined in Table 3.4 Determination of Category of Bushfire Attack FDI 80 in the Planning for Bushfire Protection manual (RFS, 2006) with the following site attributes:

- The Forest vegetation to the east and north was identified as the bushfire prone vegetation;
- The terrain was assessed as generally flat or upslope as the effective slope influencing any bushfire behaviour.
- The proposed building has a lateral separation/APZ of greater than 100 metres from the identified bushfire prone vegetation.

Access

Access to the existing buildings shall be via constructed driveways connecting with Pacific Highway or Tweed Valley Way. Access will be sufficient for fire fighting vehicles.

Services

Reticulated water is available to the development and will be supplied 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 80m 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).

The electrical supply is already connected to the development; no further transmission lines are required for this development.

Construction Standards

The bushfire risk management assessment undertaken in relation to the proposed service station extension concluded that the existing buildings will have **No Requirement** to comply with any construction standard described in AS 3959 (2009) Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2009), this recommended construction standard was derived from the following:

- Forest as the assessed bushfire prone vegetation to the east and north;
- >100m separates the Forest vegetation from the proposed buildings;
- All buildings were assessed as being in a **BAL-Low** Bushfire Attack Level.

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 for Residential and Rural Residential Subdivision Purposes (for class 1 & 2 buildings) in FDI 80 Fire Areas in the Planning for Bushfire Protection manual (RFS, 2006); and
- 2) Access in accordance with section 4.1.3-2 (Property Access) in the Planning for Bushfire Protection manual (RFS, 2006).

GLOSSARY

APZ	Asset Protection Zone
AS3959	Australian Standard – Construction of Buildings in bushfire-prone areas
BFRMP	Bushfire Risk Management Plan
EEC	Endangered Ecological Community
EP&A	Environmental Planning and Assessment Act
IPA	Inner Protection Area
KPoM	Koala Plan of Management
LEP	Local Environment Plan
LGA	Local Government Area
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection manual
RFS	Rural Fire Service of New South Wales
SEPP	State Environmental Planning Policy
TOBAN	Total Fire Ban
TSBPL	Tweed Shire Bush Fire Prone Lands map
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 the proposed construction of Chinderah service station, Tweed Valley Way, Chinderah, within the Tweed Shire Council Local Government Area.

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 commercial 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 undertaken 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 Tweed Shire Council

The Tweed Shire 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 Far North Coast Bush Fire Management Committee

The Far North Coast 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 Jim Glazbrook Town Planning P/L on behalf of their client to undertake a complete Bushfire Assessment for the proposed construction of a Highway service centre on Lot 1 DP1165676, Lot 1 DP210674 & Lot 11, DP1134229, Pacific Highway/Tweed Valley Way, Chinderah. The assessment was conducted in accordance with section 91A of the Environmental Planning & Assessment Act (1979) and section 100B of the Rural Fires Act (1997), and followed the guidelines recommended in the Planning for Bushfire Protection guidelines (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

Lot 1 DP1165676, Lot 1 DP210674 & Lot 11, DP1134229 has been cleared of all over storey vegetation and developed and utilised for rural industry with large areas of managed grassland areas. The Pacific Highway Motorway adjoins the eastern boundary, the northern boundary adjoins Murwillumbah off ramp, tweed Valley Way adjoins the western boundary

and the southern boundary adjoins a property utilised for rural industry. The subject property is zoned 1(b2) Agriculture Protection in the Tweed Shire Council Local Environmental Plan (Tweed Shire Council, 2000).

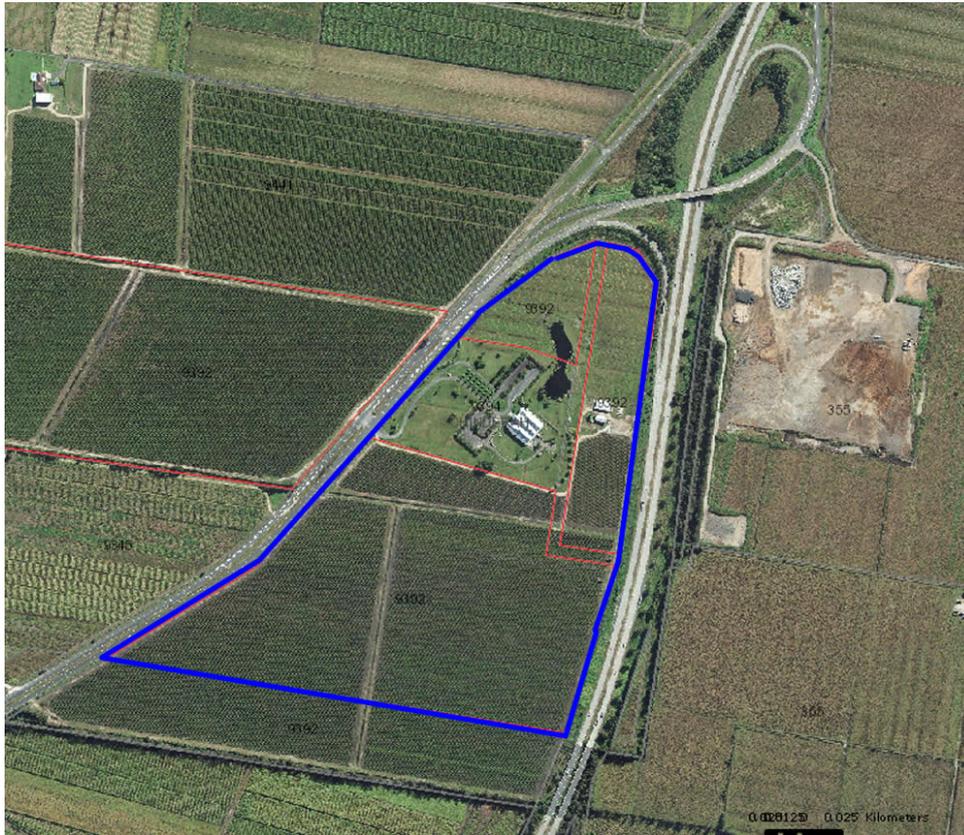


Figure 1: Aerial photograph of the subject property showing the entire property consists of maintained grassland:

3.3 Proposal

This proposal seeks to undertake a boundary adjustment/subdivision to allow the construction of a service station, food outlets and carpark areas as illustrated in the attached Site Plan.

3.4 NSW Rural Fire District BFRMP

The Tweed Shire 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 commercial development were assessed during a site visit on 10th of

May, 2013. 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) Forests [wet & dry sclerophyll forests]; | (g) Freshwater Wetlands; |
| (b) Woodlands; | (h) Saline Wetlands |
| (c) Plantations – being pine plantations not native plantations; | (i) Alpine Complex; |
| (d) Forested Wetlands; | (j) Semi – arid Woodlands; |
| (e) Tall Heath lands; | (k) Arid Woodlands; and |
| (f) Short Heath lands; | (l) Rainforests |

4.1 Vegetation communities present on the Property

Low Closed Grassland: The entire area of the subject proposed to construct the Service Centre has been previously cleared of all overstorey vegetation leaving maintained grassland (Figure 2).



Figure 2 View of managed grassland vegetation over the entire development site (Photographs, W. Hadaway)

4.2 Vegetation within 140m from the subject land boundary

East: Forest vegetation occurs along the eastern perimeter of the Pacific Highway Motorway and is dominated by *Casuarina* species with several eucalypts as canopy trees; this vegetation is greater than 100m from the proposed service centre buildings (Figure 3).



Figure 3 View of managed grassland vegetation at development site looking east with forest vegetation adjoining the eastern perimeter of the Pacific Highway Motorway, W. Hadaway)

North: Forest vegetation occurs adjacent to the Murwillumbah off ramp and consists of semi mature eucalypt trees with a grassy understorey; this vegetation is greater than 100m from the proposed service centre buildings.

West: The western boundary adjoins Tweed Valley Way which is followed by land utilised for rural industry “cropping”, which is not considered bushfire prone vegetation.



Figure 4 View from Murwillumbah off ramp showing rural industry “cropping” to the west of Tweed Valley Way, W. Hadaway)

South: The southern boundary adjoins land utilised for rural industry “cropping”, which is not considered bushfire prone vegetation.



Figure 5 View of managed grassland vegetation at development site looking east with forest vegetation adjoining the eastern perimeter of the Pacific Highway Motorway, W. Hadaway)

4.3 Assessed Bushfire Vegetation in Relation to the Proposed Development

The vegetation to the east and north is mapped as Category 1 bushfire prone vegetation according to the Tweed Shire Bush Fire Prone Lands (TSBPL) map (Tweed Shire Council, 2004) the bushfire buffer extends slightly into the eastern portion of the property. A bushfire risk management plan must accompany any development application.

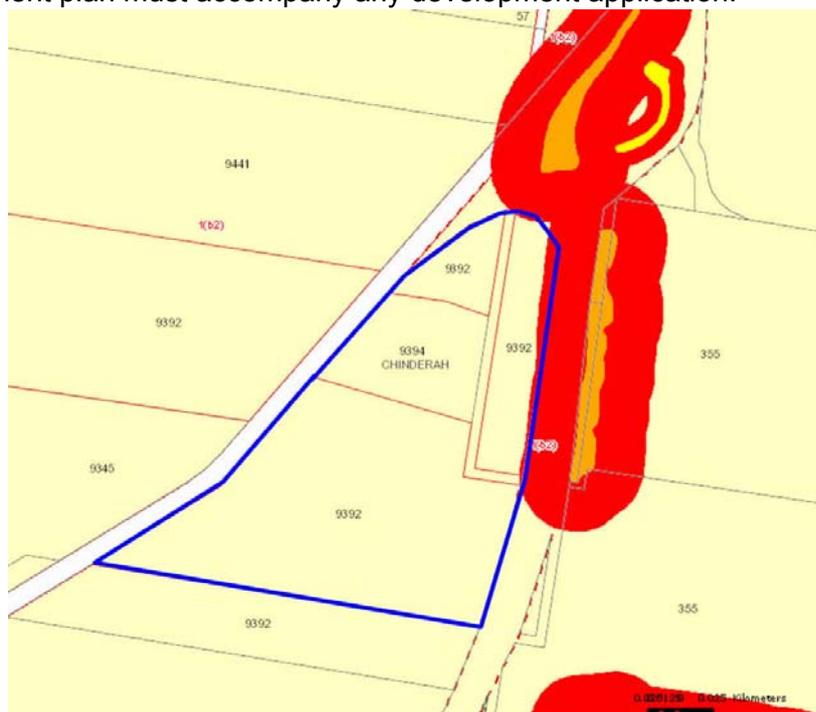


Figure 6 Tweed Shire Council’s bushfire prone land map showing the bushfire buffer extending slightly into the northern and eastern portions of the development property.

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. The subject land is flat forming part of the Tweed Valley floodplain.

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 below outlines the slopes affecting the proposed development.

Table 1 Terrain attributes affecting the proposed subdivision.

Aspect	Slope	Vegetation	Comments
N	Upslope	Road Reserve / Forest	Bushfire prone veg.
E	Flat	Road Reserve / Forest	Bushfire prone veg.
S	Flat	Developed industrial land	Not bushfire prone veg.
W	Flat	Developed industrial land	Not bushfire prone veg.

6.0 BUSHFIRE ASSESSMENT FOR PROPOSED DEVELOPMENT

6.1 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), this bushfire risk assessment recommends that Asset Protection Zones (APZ), Inner Protection Area (IPA) and Outer Protection Area (OPA) should be established as described below and shown on Attachment 1.

The proposed structures are greater than 100 metres from the identified bushfire vegetation, separated by the Pacific Highway Motorway to the east and the proposed parking area and the Murwillumbah off ramp to the north which complies with the requirements for asset protection zones as outlined in Planning for Bushfire Protection 2006 (PBP).

The 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.

6.2 Assessed Bushfire Attack Category

An assessment of the bushfire attack categories applicable to the proposed development was carried out using the methodology detailed in Appendix 3 of Planning for Bushfire Protection (RFS, 2006). This bushfire risk management assessment concluded the following bushfire attack categories for the proposed development.

The bushfire risk assessment identified that the proposed service centre buildings are in a **BAL-Low** Bushfire Attack category, as outlined in Table 3.4 Determination of Category of Bushfire Attack FDI 80 in the Planning for Bushfire Protection manual (RFS, 2006) with the following site attributes:

- The Forest vegetation to the east and north was identified as the bushfire prone vegetation;
- The terrain was assessed as generally flat or upslope as the effective slope influencing any bushfire behaviour.
- The proposed building has a lateral separation/APZ of greater than 100 metres from the identified bushfire prone vegetation.

6.3 Electricity Supply

The electrical supply is already connected to the development property; no further transmission lines are required for this development.

6.4 Adequacy of Water Supply

Reticulated water is available to the development and will be supplied 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 80m 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).

6.5 Public Road Capacity to Handle Increased Volumes of Traffic in a Bushfire Emergency

The public roads (Pacific Highway Motorway, Murwillumbah off ramp and the Tweed Valley Way) in the vicinity of the subject property are adequate to handle increased volumes of traffic in a bushfire emergency. These roads;

- have a bitumen-sealed surface;
- are two-way, allowing traffic to pass in opposite directions; and
- have the capacity to carry fully loaded fire fighting vehicles.

6.6 Adequacy of Access and Egress in Bushfire Situations

Access to the development will be via driveways from Pacific Highway or Tweed Valley Way. These driveways will be short in length, hard (all weather) surfaced and provide sufficient access for fire fighting vehicles.

7.0 BUSHFIRE CONSTRUCTION STANDARDS

The bushfire risk management assessment undertaken in relation to the proposed development concluded that the existing buildings and proposed building will have **No Requirement** to comply with any construction standard described in AS-3959 (2009)

Construction of Buildings in Bushfire Prone Areas (Standards Australia, 2009), this recommendation was derived from the following:

- Forest as the assessed bushfire prone vegetation to the east and north;
- Flat or upslope as the effective slope influencing any bushfire behaviour;
- >100m distance separating the Forest vegetation from the proposed extensions to the service station

8.0 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).

9.0 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) of planning for Bushfire Protection (RFS, 2006); and
- 2) Access in accordance with section 4.1.3-2 (Property Access) in the manual for Planning for Bushfire Protection (RFS, 2006).

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