

Bushfire Assessment Report

Prepared for

Ricky Singh

18 Alidenes Rd

Wilsons Creek

Lot 14 DP 755722



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28th October, 2022

Executive summary

This Bushfire Assessment is produced in response to the statutory requirement under the Rural Fires Act that a Section 100B application be made to the Rural Fire Service for a Bushfire Safety Authority (BFSA) for the development of a Rural Tourism Facility (RTF) on Bushfire Prone Land at 18 Aidenes Rd, Wilsons Creek in the Byron Shire Council (BSC) local government area, Lot 14 DP 755722.

The Bushfire Attack Level (BAL) for this RTF has been assessed using Method 1 in Planning for Bushfire Protection 2019 (PBP) (NSW RFS, 2019) and in Australian Standard 3959 – Construction of Buildings in Bushfire-prone Areas 2009 (AS3959) (Standards Australia, 2009a) and is determined to be BAL 10 for the RTF cabins. Additionally each point outlined in the Rural Fire Regulation 2008 (RFR), Section 44 specifies detailed conditions which are to be addressed in application for a BFSA.

The proposed RTF, providing all recommendations within this report, including but not limited to maintenance of satisfactory Asset Protection Zone (APZ), provision of suitable water supply for fire fighting purposes and an emergency management plan for Special Fire Protection Purpose development are implemented, will comply with the requirements and specifications of PBP, AS3959, RFA, the Building Code of Australia (BCA), RFR and planning and development controls of BSC.

It must be remembered, by all parties, that while every effort has been made to obtain true and accurate data and analysis of this data was conducted within the framework of PBP and AS3959 as well as other standards, there is no guarantee when it comes to bushfire. While all recommendations contained in this report need to be complied with to meet the requirements of PBP and AS3959, Environmental Planning and Assessment (EP&A) and hence BSC's planning requirements, any fire event could pose a threat to both the property and the people therein.

Additionally it is incumbent upon the owners and operators and all future owners and operators to, in perpetuity, comply with all the conditions outlined here and in the Bushfire Safety Authority.

Introduction

This report has been produced for Ricky Singh and is to form part of submissions to BSC for a Development Application of an RTF.

The proposed development site is classified as bushfire prone land on BSC's Bushfire Prone Land Maps which have been ratified by the Commissioner, NSW Rural Fire Service (RFS). An application for a Bushfire Safety Authority is required under section 100B of the Rural Fires Act as this is, under this act, a Special Fire Protection Purpose (SFPP) development.

To assess the development and reach the conclusions and recommendations contained in this report, Planning for Bushfire Protection 2019 (PBP) (NSW RFS, 2019), Australian Standard – Construction of buildings in bushfire prone areas incorporating Amendment Nos 1, 2 and 3 (AS3959) (Standards Australia, 2009b), Rural Fires Act (1997) and Rural Fires Regulation (2000) and other documents and standards, as noted throughout the report, were consulted.

This assessment and report has been conducted in accordance with PBP, the Rural Fires Act 100B and Rural Fires Regulation 46a.

Details required by the RFS so that they may make a determination on this development are:

a) Site

Location

The development site is located at 18 Alidenes Rd, Wilsons Creek. Lot 14 DP 755722 (Fig 1).

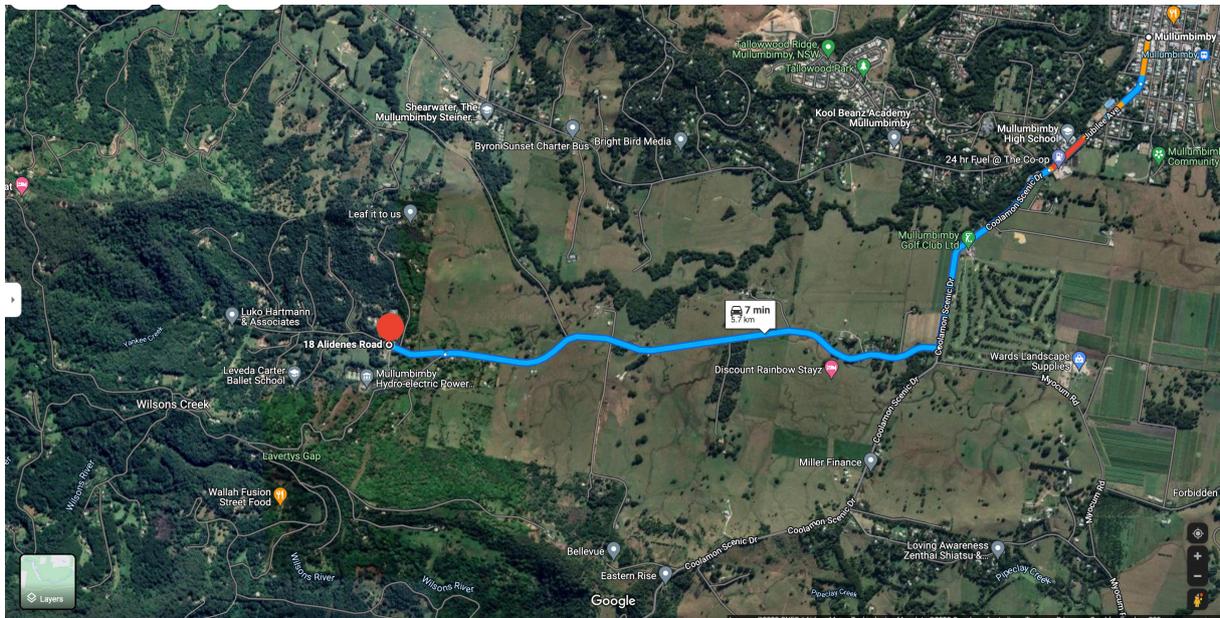


Figure 1: Locality Map for 18 Alidenes Rd, indicted in red.

The site is approximately 5.7km from Mullumbimby and has two road frontages, Alidenes Rd and Yankee Creek Rd.

The proposal is for a 4 cabin RTF which will be accessed from Yankee Creek Rd, the northern end of the property (Fig 2).

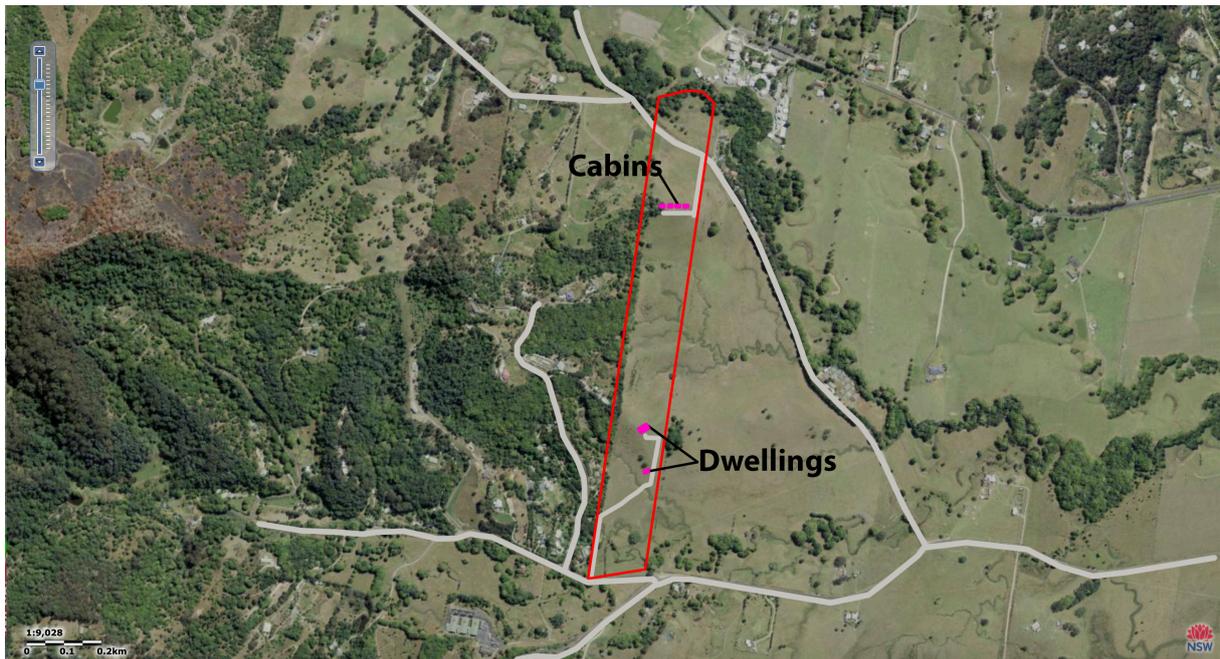


Figure 2: Layout for the development, boundary of property in red.

b) Vegetation

The vegetation is mapped as bushfire prone by BSC as outlined in *Guide to Bush Fire Prone Land Mapping* (NSW Rural Fire Service, 2014).

Vegetation was assessed in accordance with *Ocean Shores to Desert Dunes* (Keith, 2004), PBP (Table A2.1) and AS3959 to a distance of 140m from each margin of the development (Figs 3 and 4).



Figure 3: Vegetation within 140m radius of the RTF. Yellow = Grassland, Dark Green = Rainforest, Orange = Managed land.

The dominant vegetation for both parts of the development is Grassland with some Rainforest to the west of the RTF.

c) Slope

Slope and aspect were assessed in accordance with PBP and AS3959 to a distance of 100m, using 10m contour map, from each margin of the development (Figs 5 and 6).

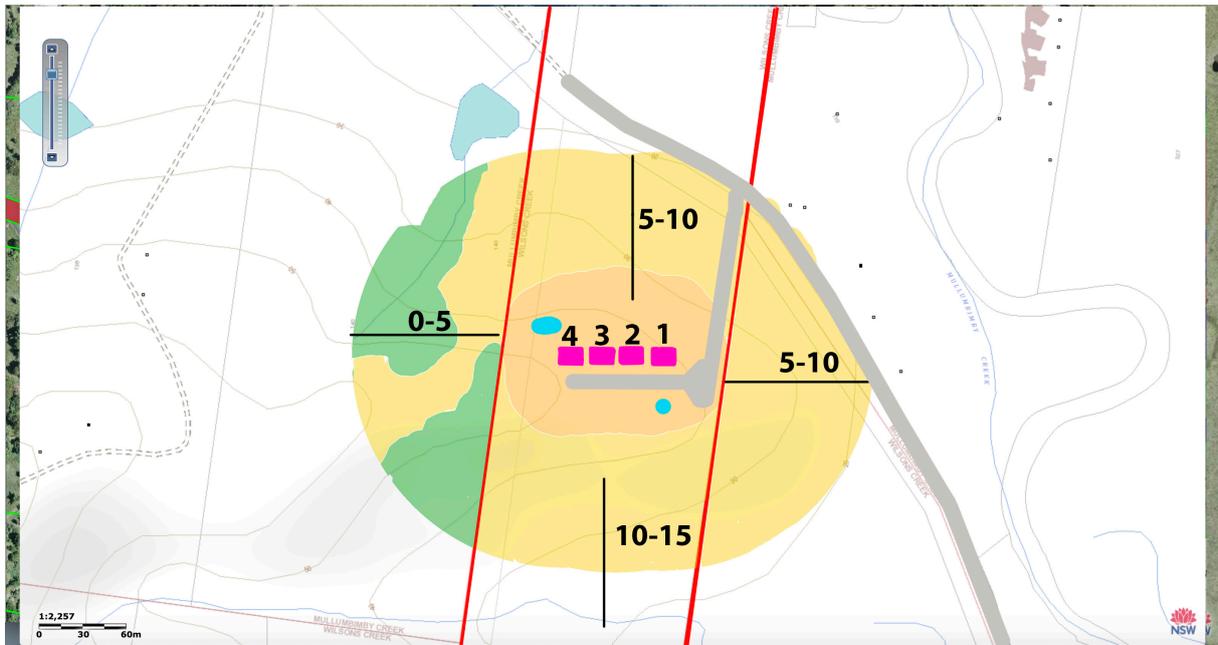


Figure 5: 10m contour topographic map with slopes under classified vegetation around the RTFs.

The results are presented with vegetation classification in Table 1 below.

Table 1: Principle factors affecting bushfire impact on the development site

Building	Aspect	Vegetation classification	Distance between vegetation and development (m)	Effective slope under vegetation degrees	BAL
Cabin 1	North	Grassland	45	5 – 10	10
	East	Grassland	45	5 – 10	10
	South	Grassland	50	5 – 10	10
	West	Rainforest	100	0 – 5	10
Cabin 2	North	Grassland	45	5 – 10	10
	East	Grassland	63	5 – 10	10
	South	Grassland	50	5 – 10	10
	West	Rainforest	85	0 – 5	10
Cabin 3	North	Grassland	45	5 – 10	10
	East	Grassland	73	5 – 10	10
	South	Grassland	50	5 – 10	10
	West	Rainforest	68	0 – 5	10
Cabin 4	North	Grassland	45	5 – 10	10
	East	Grassland	95	5 – 10	10
	South	Grassland	50	5 – 10	10
	West	Rainforest	50	0 – 5	10

d) Significant environmental features

There are no significant environmental features on the property where this development is proposed.

The development is not near a riparian zone, there are no areas of geological interest near the development and there is no evidence of Koala presence near the development.

e) Details of threatened species, populations, endangered ecological communities and critical habitat known to the applicant

There are no threatened species, populations, endangered ecological communities or critical habitat known to the applicant or observed at time of assessment. There are no past studies or surveys of this site or the immediate vicinity.

f) Details of Aboriginal heritage known to the applicant

The applicant is not aware of any Aboriginal heritage on the site nor in the immediate vicinity of the site. There are no past surveys or information held by DEC regarding this site.

g) Bushfire assessment

Fire danger index (FDI)

From AS3959 Table 2.1 the FDI rating for the Far North Coast of NSW, where this development is located, is 80.

BAL assessment

Using Method 1 in AS3959, as set out in PBP Appendix 1, the Bushfire Attack Level (BAL) has been determined as set out in Table 1 above.

a. Asset protection zone (APZ)

From PBP Table A1.12.1 the minimum APZs required for the cabins, an SFPP, to maintain BAL 10 in perpetuity are listed in Table 2.

Table 2: Minimum APZ distances to maintain current BAL ratings.

Building	Aspect	Vegetation classification	Effective slope under vegetation degrees	BAL	Minimum APZ distance (m)
Cabin 1	North	Grassland	5 – 10	10	45
	East	Grassland	5 – 10		45
	South	Grassland	5 – 10		45
	West	Rainforest	0 – 5		47
Cabin 2	North	Grassland	5 – 10	10	45
	East	Grassland	5 – 10		45
	South	Grassland	5 – 10		45
	West	Rainforest	0 – 5		47
Cabin 3	North	Grassland	5 – 10	10	45
	East	Grassland	5 – 10		45
	South	Grassland	5 – 10		45
	West	Rainforest	0 – 5		47
Cabin 4	North	Grassland	5 – 10	10	45
	East	Grassland	5 – 10		45
	South	Grassland	5 – 10		45
	West	Rainforest	0 – 5		47

These APZs satisfy requirements.

b. Water supply

A total of 40,000L of fire fighting water supply is required for the cabins, this may be separate tanks or one tank as the cabins are close together (PBP Table 6.8c).

These water supplies shall (PBP 6.4c):

- Have access point located within the IPA but away from structures (>5m and <20m)
- Have a hardened ground surface for truck access within 4m of the access point
- Have all above ground fittings and pipes of metal
- Be either above or below ground
 - Above ground tanks shall:
 - Be of metal or concrete construction
 - Have 65mm metal Storz fitting with gate or ball valve
 - Have an inner diameter of minimum 50mm for all fittings
 - Have above ground pipes of metal
 - Below ground tanks shall:

- Be clearly marked
- Have an access hole of 200mm

Other acceptable solutions for water supply, providing they meet volume, location and access criteria above, are inground pools and dams (PBP 3.5).

c. Capacity of public roads

The RTF on this property is accessed from Alidenes Rd, a two laned sealed road, then Yankee Creek Rd, a well maintained unsealed road.

This development will have no significant impact on the capacity of these roads to support the access and egress of residents, guests and emergency services to this or any other of the many properties in the area.

d. Public road links to fire trails

There are no fire trails of relevance to this development.

e. Access and egress

Access to the RTF (Figs 7 and 8) shall be:

- two wheel drive all weather road
- a minimum carriageway width of 4m with an additional 1m wide strip on each side of the trail (clear of bushes and long grass) except for a couple of locations where a solitary but environmentally significant tree/s is/are standing in this 1m wide strip.
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches is provided.
- a slope on the carriageway is not more than 10° unless sealed. For sealed sections the slope is not more than 15°.
- a crossfall of the carriageway is not more than 10° at any point.
- curves have a minimum inner radius of 6m.
- regular passing bays with distances between passing bays of less than 200m – the passing bays shall be an additional 2m in width and 20m in length.
- ample areas for fire fighting appliances (RFS Cat 1) to turn around at both dwellings in accordance with PBP A3.
- Have turning areas at the RTF and the dwellings in accordance with PBP A3.3 (Fig 9).



Figure 7: Access to RTF sites.

f. Adequacy of maintenance and emergency plans

Maintenance

RTF buildings and both dwellings shall be maintained in perpetuity by:

- regularly removing all litter from gutters and roof
- ensuring external painted surfaces are in good condition
- ensuring water supply is available and tanks and outlets are in good working order
- maintaining driveways in good condition
- ensuring roofing materials are firmly fixed
- screens on windows and doors are in good order with no gaps or holes
- doors are fitted with draft seals to ensure no gaps of greater than 2mm
- mats are of non-combustible materials
- woodpiles, garden sheds and other combustible materials are located away from the dwellings

Gardens and APZs shall be maintained in perpetuity as outlined in PBP A4 and NSW RFS Standards for Asset Protection Zones by:

- a clear area of low cut lawn, ground cover or pavement adjacent to the dwelling
- woodpiles, garden sheds and other combustible materials are located away from the dwellings
- areas under fences, near fence posts and under trees raked and cleared of fuels
- non-combustible fencing and retaining walls
- canopy not continuous, that is gaps between tree canopies

Carrying out this level of maintenance in perpetuity meets the requirements of PBP in particular Appendix 4 Asset Protection Zone Standards.

Emergency measures

A comprehensive Emergency Management Plan shall be developed prior to application for Occupancy Certificate. This plan shall encompass all aspects of emergency management, particularly in Bushfire situations and will include indicators of days when the facility will not be open because of fire danger ratings as well as the need to hold briefings for guests as they arrive and instructions on emergency evacuation. This plan will bear in mind the special needs of visitors who may be very transitory and therefore have no knowledge of the area.

This plan will meet the requirements of PBP.

Construction measures

Construction shall be in accordance with AS3959 Section 3 - Construction General and Section 5 – Construction for Bushfire Attack Level 12.5 (BAL-12.5) and PBP 7.5.2 NSW State Variations.

h) An assessment of how the development complies with the acceptable solutions, performance requirements and relevant specific objectives within Chapter 4 of PBP

The measures proposed above for this development conform fully to the standards, specific objectives and performance criteria set out in PBP.

References

KEITH, D. 2004. *Ocean shores to desert dunes: the native vegetation of New South Wales and ACT*, Hurstville, NSW, Department of Environment and Conservation (NSW).

NSW RFS 2019. *Planning for Bush Fire Protection 2019*, Sydney, NSW RFS.

NSW RURAL FIRE SERVICE. 2014. Guide for Bush Fire Prone Land Mapping. [Accessed Apr 2015].

STANDARDS AUSTRALIA 2009a. *Australian Standard Construction of building in bushfire-prone areas - AS3959*, Sydney, Australia, SAI Global Limited.

STANDARDS AUSTRALIA 2009b. Australian Standard Construction of building in bushfire-prone areas - AS3959. *In: AUSTRALIA, S. (ed.)*. Sydney, Australia.