



s4.55 Modification Special Fire Protection Purpose Development

**Jindabyne Central School Agricultural Unit
207 Barry Way, NSW**

Prepared for

NSW Department of Education



Version 1.0

30 October 2022

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Document Control

Version	Primary Author(s)	Description	Date Completed
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Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373

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Glossary of Terms

APZ	Asset protection zone
AS2419	<i>Australian Standard – Fire hydrant installations</i>
AS3745	<i>Australian Standard – Planning for emergencies in facilities</i>
AS3959	<i>Australian Standard – Construction of buildings in bushfire-prone areas 2009</i>
BAL	<i>Bushfire attack level</i>
BCA	<i>Building Code of Australia</i>
BSA	Bushfire safety authority
EPA Act	<i>Environmental Planning & Assessment Act 1979</i>
FDI	Fire danger index
ha	Hectare
m	Metres
PBP 2006	<i>Planning for Bush Fire Protection 2006</i>
PBP 2019	<i>Planning for Bush Fire Protection 2019</i>
RF Act	<i>Rural Fires Act 1997</i>

1. Introduction

Blackash Bushfire Consulting has been engaged by the NSW Department of Education to provide a Section 4.55 Modification (s4.55) for a new agricultural building, plots and a number of ancillary changes within the existing school at the new Education Campus at Jindabyne (New Primary and High School) at 207 Barry Way, Jindabyne (Figure 1) which is legally known as Lot 101//DP1019527 (the site).

This s4.55 modification is a relatively short report that utilises the Bushfire Hazard Assessment prepared by Blackash Bushfire Consulting dated 30/09/2021. As such, only aspects of the s4.55 modification are dealt with as the site assessment of the Blackash report dated 30/09/2021. The Blackash report should be referred to as the base document for the site assessment and consideration of the application requirements for a Bushfire Safety Authority in accordance with the Rural Fires Regulations (RF Reg).

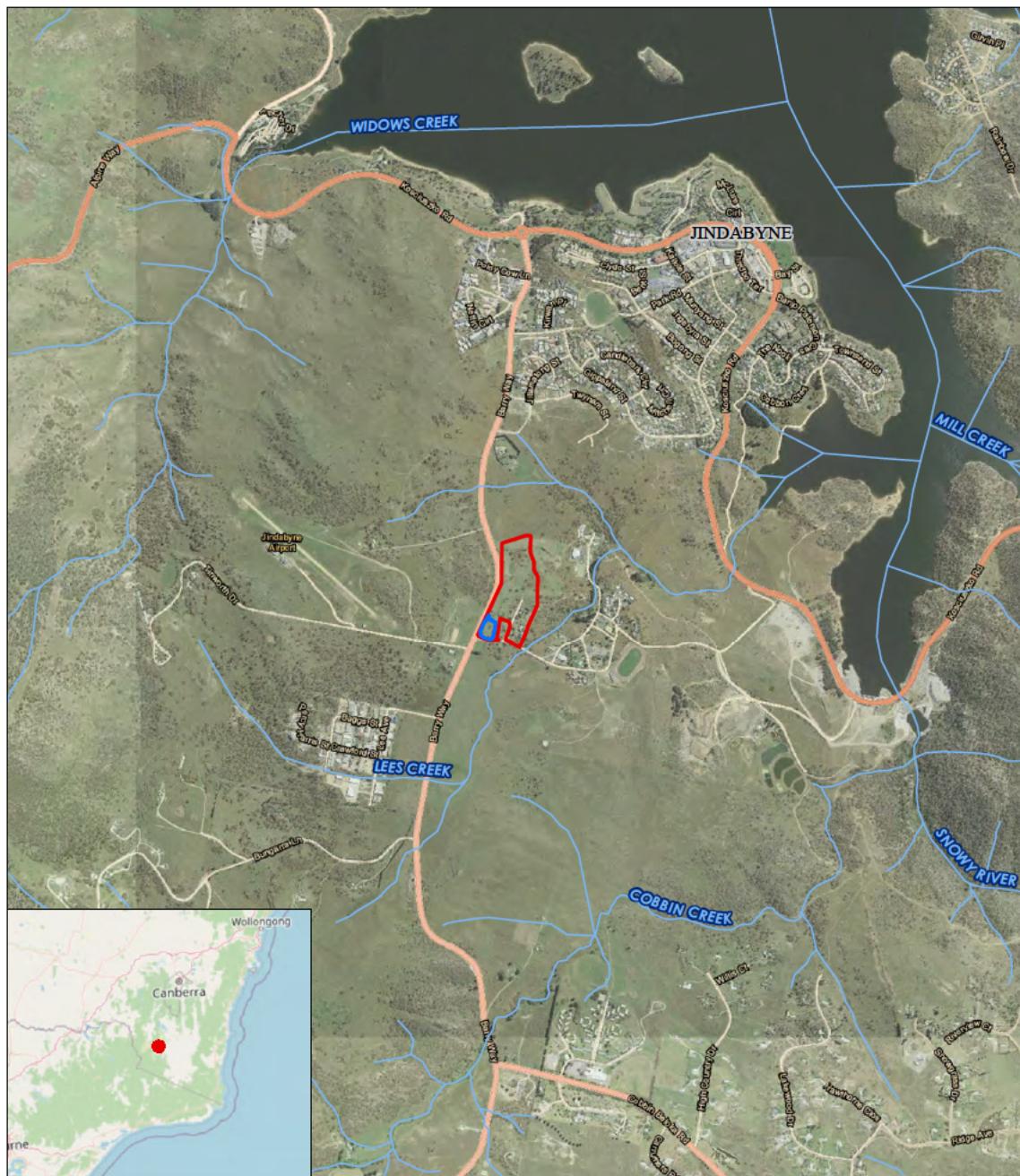
This modification and the design of the modifications, including the Agriculture Building and ag plat has been completed having regard to the NSW Rural Fire Service (RFS) Bushfire Safety Authority (BSA) supporting the original development (which was approved) of the site for a high school.

The RFS General Terms of Approval (GTA) were issued under Division 4.8 of the Environmental Planning and Assessment Act 1979 (EPA Act), and a BSA under section 100B of the Rural Fires Act 1997 (RF Act), was issued subject to a number of conditions. These condition (see Appendix 2) are reflected in this s4.55 modification.

Table 1 Bushfire Report Summary

Development Type	Integrated Development Special Fire Protection Purpose s4.55 modification
Subtype	School
Bushfire Safety Authority required	Yes – issued Friday 10 December 2021 S4.55 modification is seeking a BSA
Referral to NSW Rural Fire Service	Yes
Deemed to Satisfy or Performance	Deemed to satisfy
Performance aspects	Nil

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Legend

- ~~~~ Watercourse
- ~~~~ Agriculture - Study
- ~~~~ Area
- ~~~~ Subject Land

N
 DKGIS
 Date: 28/10/2022
 0 250 500 1,000 1,500
 Metres
 Coordinate System: GDA 1994 MGA Zone 55
 Imagery: © Dept. Customer Service

Figure 1 Jindabyne Education Campus Location

2. Proposal

The Education Campus is at 207 Barry Way, Jindabyne within the area managed by NSW Sport and Recreation (Figure 1). The site is within the area designated by the Snowy Special Activation Precinct (Snowy SAP) as an area for rapid development including residential subdivision. The s4.55 modifications are minor in nature and include:

- Design Development of Roof Structure and Facades (see Figure 2)
- Modification in Levels to assist with a better Accessibility outcome (Figure 5).
- Design Development of Agriculture Unit (see Figure 3) that does not include class rooms
- Design Development of overall project (Figure 2).

The ag plot (Figure 3) does not include classrooms and is not SFPP. The ag plot includes two Cola, chook shed, glass house, machine store, cattle ramp, cattle crush and pens. These elements are classified as "other" in PBP. The approved design is shown in Figure 4 and the proposed modifications are shown in Figure 5.

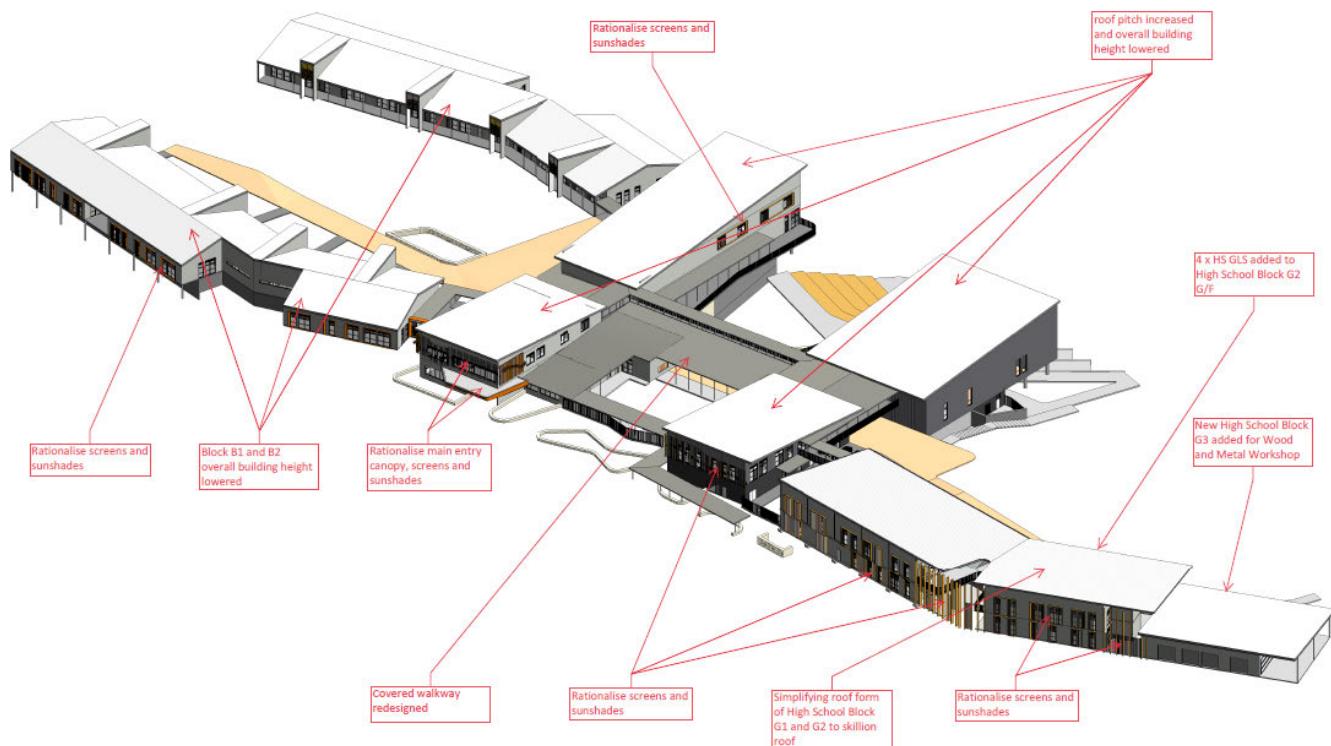


Figure 2 Minor Modifications to external facade of approved school

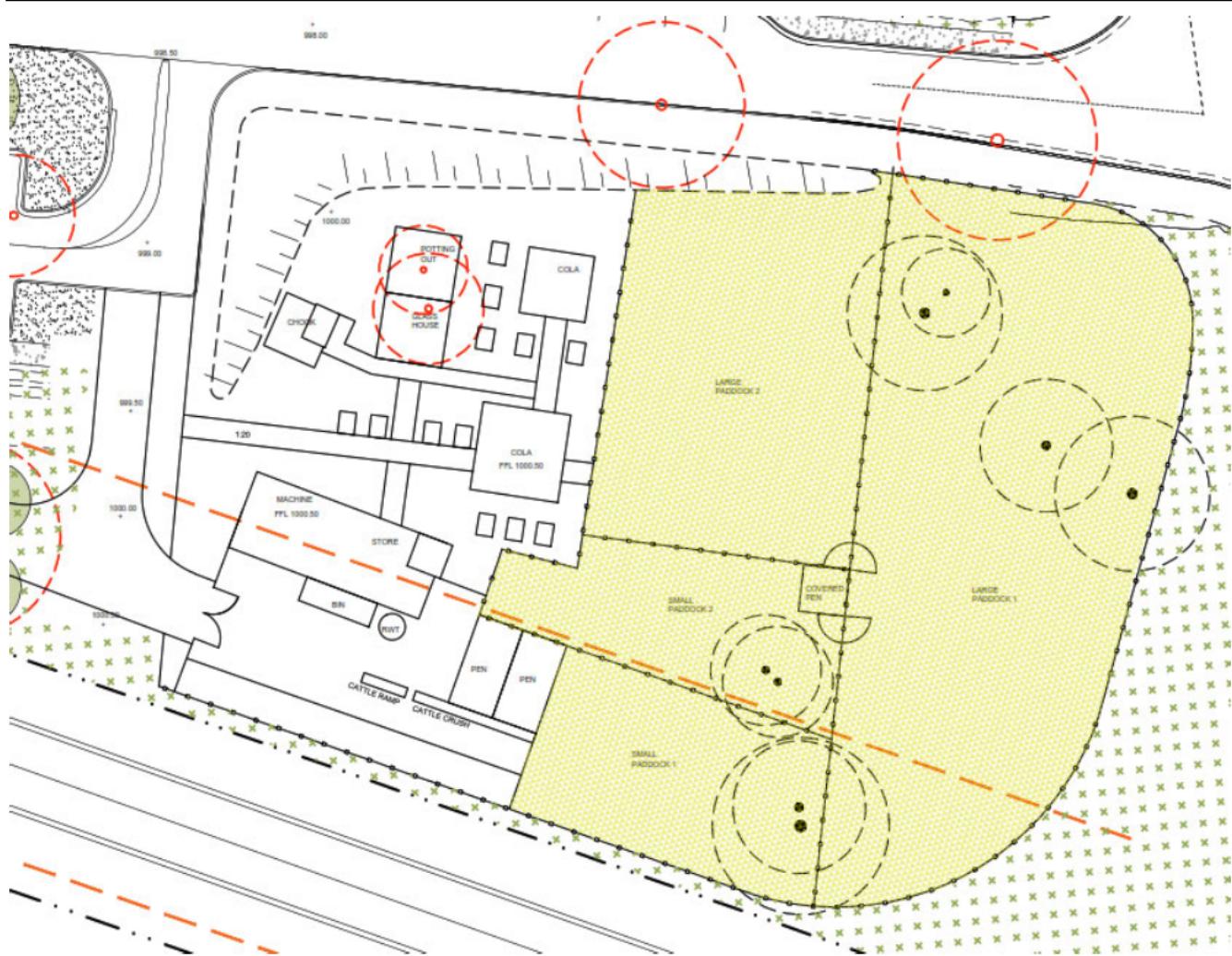


Figure 3 Proposed Agricultural Building and Ag Plot



 Department of Planning

Figure 4 Approved Design



Figure 5 Adjusted Design

3. Bushfire Prone Land

The 'bushfire prone land' map has recently been updated (Figure 6) and the site is designated as being bushfire prone.

Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land which can support a bushfire or is likely to be subject to bushfire attack (radiant heat, embers or flame). Bushfire prone land maps are prepared by local council and certified by the Commissioner of the RFS.

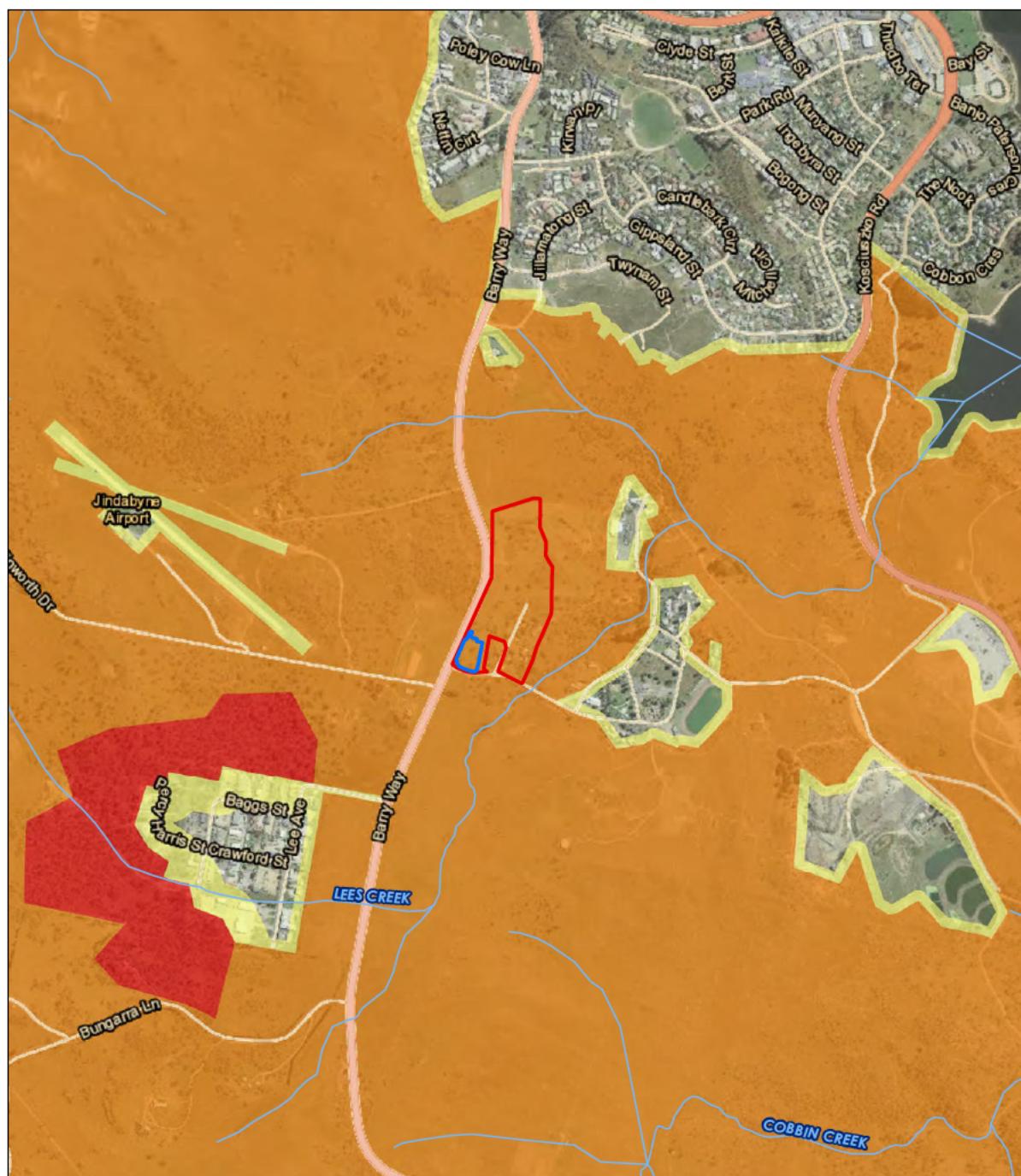
While the site was not designated as being Bushfire Prone in the original assessment, the NSW RFS letter of 1 April 2021 states:

Although the subject site is not currently mapped as bush fire prone land, the vegetation on and surrounding the site constitutes a bushfire hazard.

The original assessment considered the site and surrounding areas as though it was designated as being bushfire prone. The updated map does not have an impact on the assessment of bushfire risk for the s4.55 modification. (For the purposes of Section 10.3 of the EPA Act and the legislative requirements for developing bushfire prone lands are applicable.

The land surrounding the site is predominantly unmanaged grassland. Scattered trees are to the north west of the site which is woodland vegetation.

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Legend

- Watercourse
- Agriculture - Study Area
- Subject Land

Bushfire Prone Land

- Vegetation Category 1
- Vegetation Category 2

- Vegetation Category 3
- Vegetation Buffer

DKGIS
Date: 28/10/2022
Metres
Coordinate System: GDA 1994 MGA Zone 55
Imagery: © Dept, Customer Service

Figure 6 Bushfire Prone Land Map

4. Bushfire Threat Assessment

4.1. Bushfire Hazard

An assessment of the Bushfire prone land is necessary to determine the application of bushfire protection measures such as APZ locations, risk and Bushfire Attack Levels (BAL).

The vegetation formations (bushfire fuels) and the topography (effective slope) combine to create the bushfire threat that may affect bushfire behaviour at the site, and which determine the planning and building response of the bushfire planning framework and PBP 2019.

The bushfire hazard affecting the investigation area was assessed during site inspections and using recent aerial photographs for at least a distance of 140m from the perimeters of the investigation area (in line with PBP 2019).

This assessment identifies the potential bushfire threat from outside the site. The method used for this assessment is outlined in PBP 2019 and relies on consideration of vegetation and slope and is outlined below along with results.

4.2. Methodology

PBP 2019 provides a methodology to determine the size of any APZ that may be required to offset possible bushfire attack. These elements include the potential hazardous landscape that may affect the site and the effective slope within that hazardous vegetation.

The following assessment is prepared in accordance with Section 100B of the RF Act, Clause 44 of the RF Reg and PBP. This assessment is based on both a desktop assessment and numerous site inspections of the site assessment utilising the following resources:

- *Planning for Bushfire Protection* (NSW RFS, 2019)
- Council Bushfire Prone Land Map
- Aerial mapping
- Detailed GIS analysis
- Site inspection

The methodology used in this assessment is in accordance with PBP 2018 and is outlined in the following sections.

4.3. Fire Danger

For SFPP development, PBP has designated the appropriate fire areas and corresponding Forest Fire Danger Rating (**FDI**). The FDI within PBP 2019 is based on a historical fire weather assessment which assumes a credible worst-case scenario and an absence of any other mitigating factors relating to aspect or prevailing winds.

The 1:50 year fire weather scenario for most of the State was determined as FDI 80. However, a number of areas including the Greater Sydney, Greater Hunter, Illawarra, Far South Coast and Southern Ranges Fire Areas have higher FDIs which are set at 100 and does not take into account climate change.

The FDI for the Snowy Monaro is FFDI 80. However, PBP uses a DTS FFDI of 100 in Table A1.12.1. This approach has been used in this assessment.

4.4. Vegetation Assessment

PBP requires a classification of the vegetation on and surrounding the site out to a distance of 140 metres from the boundaries of the property in accordance with the system for classification of vegetation contained in PBP 2018.

The predominant vegetation is classified by structure or formation using the system adopted by *Ocean Shores to Desert Dunes* (Keith, 2004) and by the general description using PBP 2019. Vegetation types give rise to radiant heat and fire behaviour characteristics. The predominant vegetation is determined over a distance of at least 140 metres in all directions from the proposed site boundary. Where a mix of vegetation types exist, the type providing the greater hazard is said to predominate.

The vegetation is shown in Figure 7 and for assessment purposes has forest has been used as a basis to determine APZ and radiant heat loads within the site.

Figure 7 shows woodland vegetation to the north, north west and east of the site. A narrow band of remnant trees is within a gully to the south of the site. Grassland is to the south west and south east of the site. The grassland on the western side of Barry Way is within a horse riding school and is managed. However, we have assumed a conservative position that this grassland is not managed.

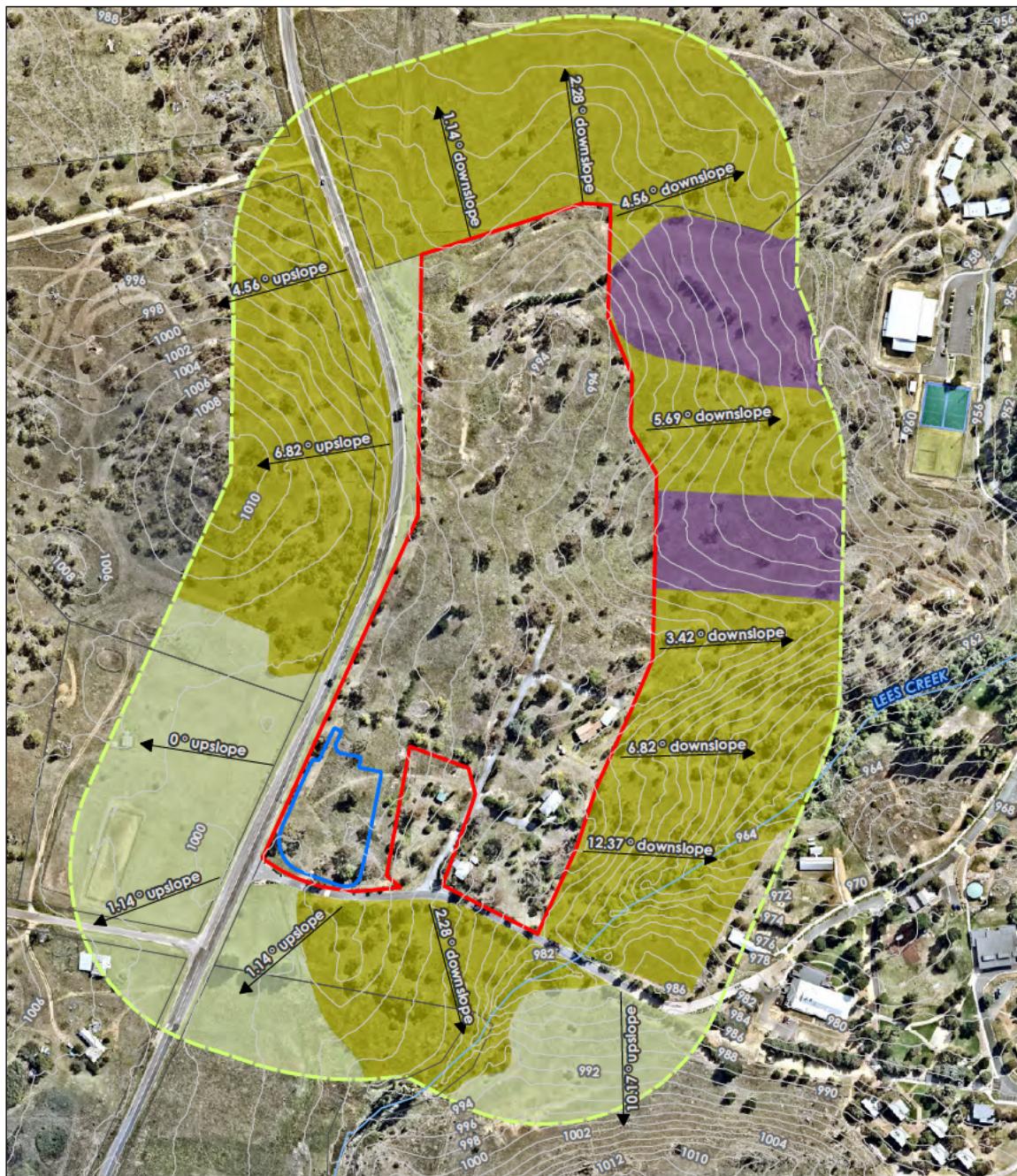
A narrow band of grassland is between the site western boundary and Barry Way. This area is regularly mowed as part of the RMS service.

4.5. Slopes Influencing Bushfire Behavior

The RF Reg requires an assessment of the slope of the land on and surrounding the property out to a distance of 100 metres from the boundaries of the property or from the proposed development footprint.

The 'effective slope' influencing fire behaviour approaching the sites has been assessed in accordance with the methodology specified within PBP and is shown in Figure 7. This is conducted by measuring the worst-case scenario slope where the vegetation occurs over a 100 m transect measured outwards from the development boundary or the existing/ proposed buildings.

- Slopes to the west are upslope.
- Slopes to the east are in the 5 – 10 degree downslope range
- Slopes to the south are upslope. A narrow run of downslope falls toward the gully
- Slopes to the north are 0 – 5 degrees downslope.



Legend

- Contour - 2m
- Watercourse
- Agriculture - Study Area
- Subject Land

- Cadastre
- Vegetation Assessment Area - 140m

Vegetation Formation

- Grassland
- Woodland
- Managed Land

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Date: 28/10/2022
Metres
Coordinate System: GDA 1994 MGA Zone 55
Imagery: © Nearmap

Figure 7 Vegetation and Slope Assessment

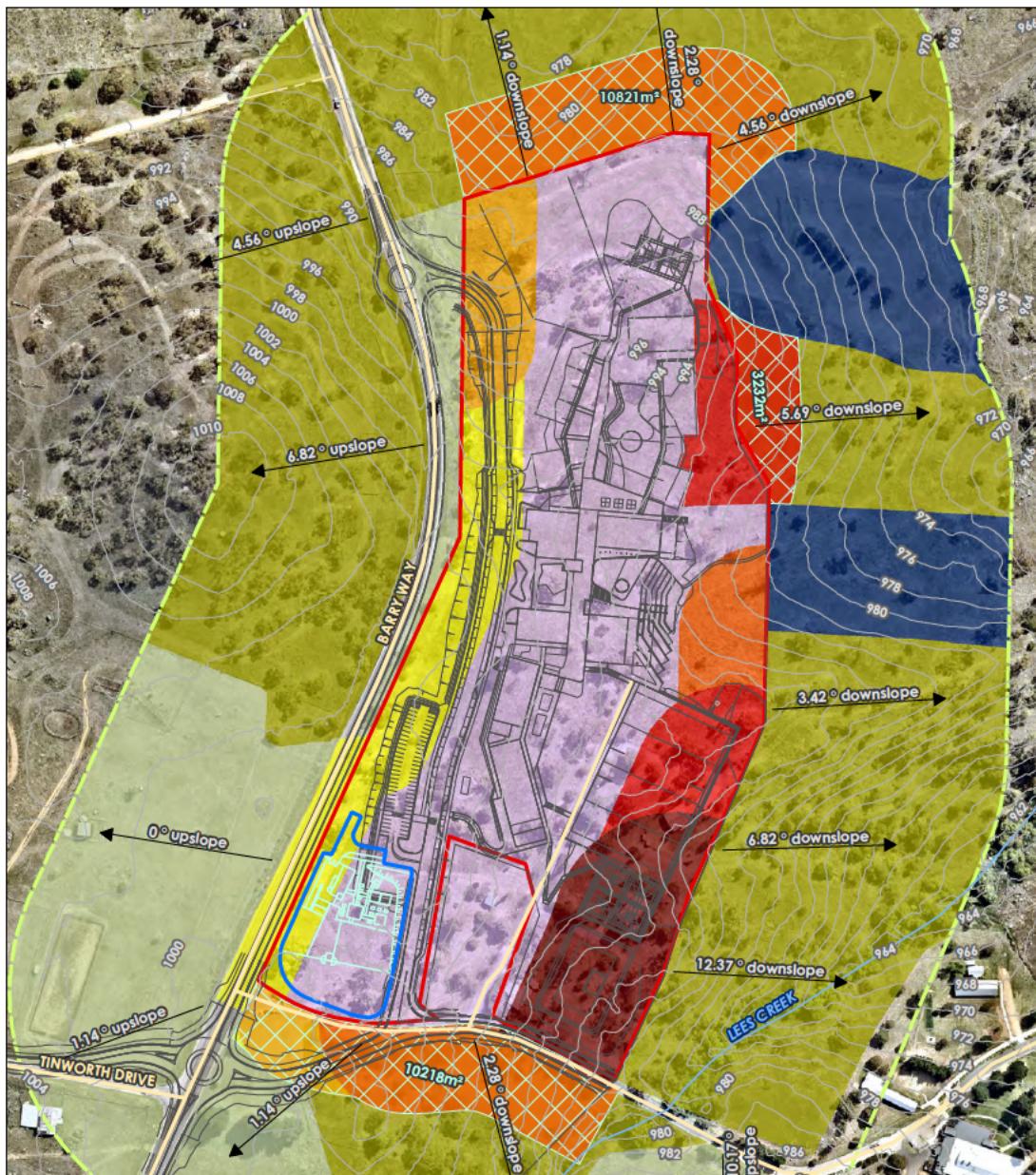
4.6. APZ and Construction Requirements

The site assessment identifies the potential bushfire threat from outside of the site area and provides an indication of required asset protection zones to meet the deemed to satisfy distances of PBP. The main campus buildings are within the original building footprints and achieve BAL 12.5 (see Figure 8). The ag plot does not have any classrooms and the structures are designated as “other” development within PBP. See section 2 for the proposed uses and Figure 3.

While part of the machinery store (approximately 2m) is within the SFPP APZ, when treated as “other” development (see Figure 10), it meets BAL 12.5 for the vegetation type and slope. This is in line with the remainder of the school and affords basic ember protection to the machinery shed.

All areas within the site (see Figure 8) and the small off site APZ (Figure 8) will be managed as an Inner Protection Area.

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Legend

- Site Plan
- Site Plan - Agriculture
- Contour - 2m
- Watercourse
- Road
- Track-Vehicular
- Agriculture - Study Area

- Subject Land
- Vegetation Assessment Area - 140m
- Vegetation Formation
- Grassland
- Woodland
- Managed - Ski Jumps

- APZ Management - SFPP
- Inner Protection Area/Developable Area

- Asset Protection Zone - 36m
- Asset Protection Zone - 42m
- Asset Protection Zone - 50m

- Asset Protection Zone - 60m
- Asset Protection Zone - 72m

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Date: 28/10/2022
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Metres

Coordinate System:
GDA 1994 MGA Zone 55
Imagery: © Nearmap

Figure 8 Asset Protection Zone showing the ag plot

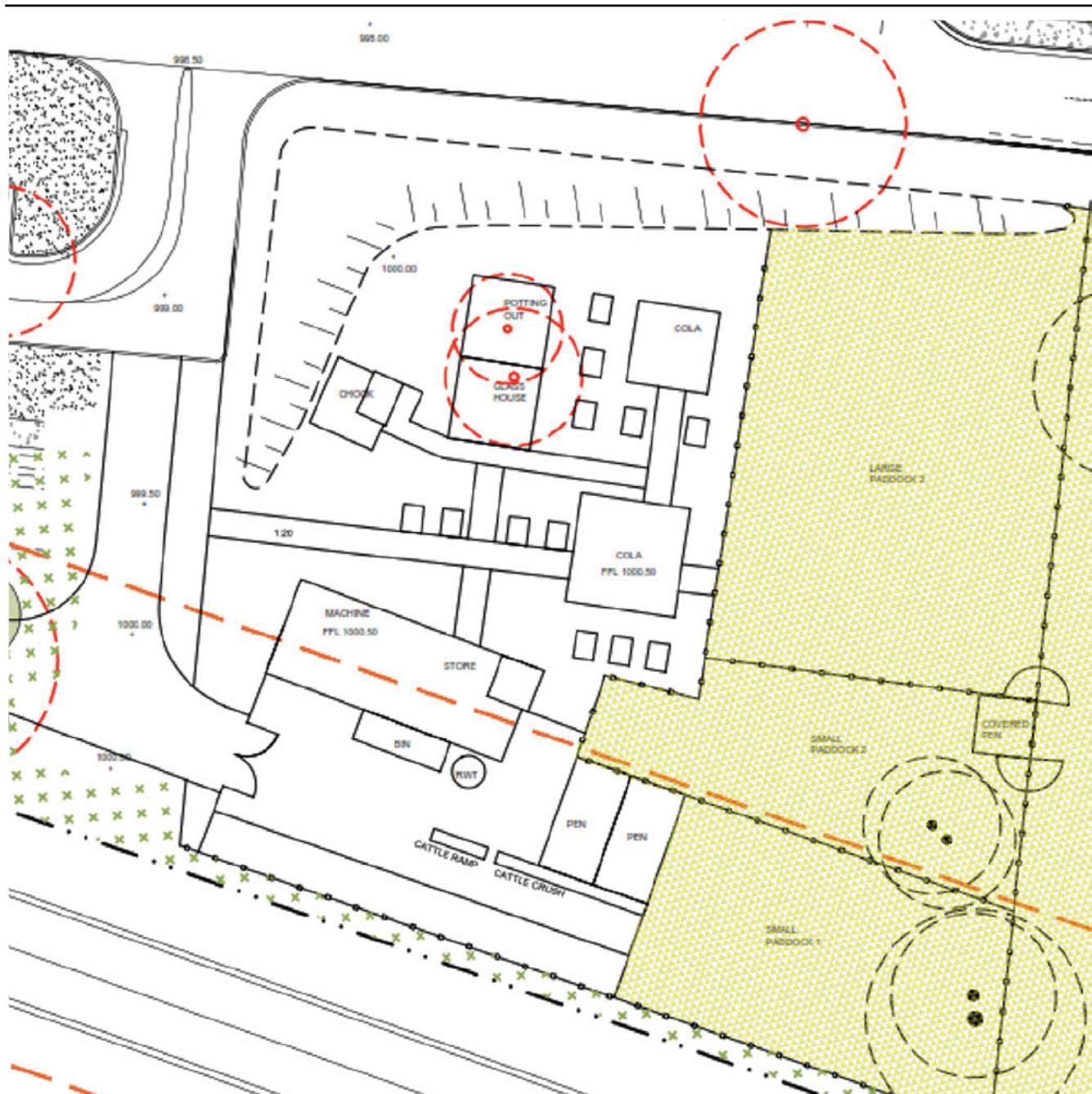


Figure 9 Ag plot uses

Table A1.12.6

Determination of BAL, FFDI 80 – residential development

KEITH VEGETATION FORMATION	BUSH FIRE ATTACK LEVEL (BAL)					
	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5	
		Distance (m) asset to predominant vegetation class				
ALL UPSLOPE AND FLATLAND	Rainforest	< 7	7 -< 9	9 -< 14	14 -< 20	20 -< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 15	15 -< 20	20 -< 29	29 -< 40	40 -< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 8	8 -< 11	11 -< 16	16 -< 22	22 -< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 6	6 -< 8	8 -< 12	12 -< 18	18 -< 100
	Tall Heath	< 12	12 -< 16	16 -< 23	23 -< 32	32 -< 100
	Short Heath	< 7	7 -< 9	9 -< 14	14 -< 20	20 -< 100
	Arid-Shrublands (acacia and chenopod)	< 5	5 -< 6	6 -< 9	9 -< 14	14 -< 100
	Freshwater Wetlands	< 4	4 -< 5	5 -< 7	7 -< 11	11 -< 100
	Grassland	< 7	7 -< 10	10 -< 14	14 -< 20	20 -< 50
	Rainforest	< 9	9 -< 12	12 -< 17	17 -< 25	25 -< 100
> 0 > 5 DEGREES - DOWNSLOPE	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 19	19 -< 25	25 -< 35	35 -< 47	47 -< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 10	10 -< 13	13 -< 19	19 -< 28	28 -< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 8	8 -< 10	10 -< 15	15 -< 22	22 -< 100
	Tall Heath	< 13	13 -< 18	18 -< 26	26 -< 36	36 -< 100
	Short Heath	< 8	8 -< 10	10 -< 15	15 -< 22	22 -< 100
	Arid-Shrublands (acacia and chenopod)	< 5	5 -< 7	7 -< 11	11 -< 16	16 -< 100
	Freshwater Wetlands	< 4	4 -< 6	6 -< 8	8 -< 12	12 -< 100
	Grassland	< 8	8 -< 11	11 -< 16	16 -< 23	23 -< 50
	Rainforest	< 11	11 -< 15	15 -< 22	22 -< 32	32 -< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 24	24 -< 31	31 -< 43	43 -< 57	57 -< 100
> 5 > 10 DEGREES - DOWNSLOPE	Grassy and Semi-Arid Woodland (including Mallee)	< 12	12 -< 17	17 -< 24	24 -< 34	34 -< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 10	10 -< 13	13 -< 20	20 -< 28	28 -< 100
	Tall Heath	< 15	15 -< 20	20 -< 29	29 -< 40	40 -< 100
	Short Heath	< 9	9 -< 12	12 -< 18	18 -< 25	25 -< 100
	Arid-Shrublands (acacia and chenopod)	< 6	6 -< 8	8 -< 12	12 -< 18	18 -< 100
	Freshwater Wetlands	< 5	5 -< 6	6 -< 10	10 -< 14	14 -< 100
	Grassland	< 9	9 -< 12	12 -< 18	18 -< 26	26 -< 50
	Rainforest	< 14	14 -< 20	20 -< 29	29 -< 40	40 -< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 30	30 -< 39	39 -< 52	52 -< 68	68 -< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 16	16 -< 21	21 -< 31	31 -< 42	42 -< 100
> 10 > 15 DEGREES - DOWNSLOPE	Forested Wetland (excluding Coastal Swamp Forest)	< 12	12 -< 17	17 -< 25	25 -< 35	35 -< 100
	Tall Heath	< 17	17 -< 22	22 -< 32	32 -< 44	44 -< 100
	Short Heath	< 10	10 -< 13	13 -< 20	20 -< 29	29 -< 100
	Arid-Shrublands (acacia and chenopod)	< 7	7 -< 9	9 -< 14	14 -< 20	20 -< 100
	Freshwater Wetlands	< 5	5 -< 7	7 -< 11	11 -< 16	16 -< 100
	Grassland	< 10	10 -< 14	14 -< 21	21 -< 30	30 -< 50
	Rainforest	< 19	19 -< 25	25 -< 36	36 -< 49	49 -< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 38	38 -< 48	48 -< 63	63 -< 81	81 -< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 20	20 -< 27	27 -< 38	38 -< 52	52 -< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 16	16 -< 22	22 -< 32	32 -< 43	43 -< 100
> 15 > 20 DEGREES - DOWNSLOPE	Tall Heath	< 19	19 -< 25	25 -< 36	36 -< 49	49 -< 100
	Short Heath	< 11	11 -< 15	15 -< 23	23 -< 32	32 -< 100
	Arid-Shrublands (acacia and chenopod)	< 7	7 -< 10	10 -< 16	16 -< 23	23 -< 100
	Freshwater Wetlands	< 6	6 -< 8	8 -< 13	13 -< 18	18 -< 100
	Grassland	< 12	12 -< 16	16 -< 24	24 -< 34	34 -< 50

Figure 10 Acceptable solution APZ at 34m = BAL 12.5

5. Access

Access is provided for MR trucks to the west of the ag plot to access the cattle crush and cattle ramp. If required fire appliances can access the ag plot from this hard stand area. The design of public access roads and property access (within a site) should enable safe access, egress and defendable space for fire fighters and emergency services. Access roads have been provided from Barry Way to provide through access. Access will be provided that complies with PBP.

6. Assessment Against the Aim and Objective of PBP

The RF Reg requires an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives and performance criteria set out in Chapter 4 (Performance Based Controls) of PBP. All development in Bushfire Prone Areas needs to comply with the aim and objectives of PBP. Table 2 shows the compliance with PBP.

Table 2 Compliance with Aim & Objectives of PBP

Aim	Meets Criteria	Comment
The aim of PBP is to use the NSW development assessment system to provide for the protection of human life (including fire fighters) and to minimise impacts on property from the threat of bushfire, while having due regard to development potential, onsite amenity and the protection of the environment.	Yes	Areas around the school will meet APZ requirements. The s4.55 modifications meet the requirements of PBP
Objectives	Meets Criteria	Comment
Afford occupants of any building adequate protection from exposure to a bushfire.	Yes	Built in accordance with AS3959.
Provide for defendable space to be located around buildings.	Yes	Defendable space and APZs are provided on all sides of the proposed development. The ag plot includes a machinery shed which is not SFPP and is assessed as other development.
Provide appropriate separation between a hazard and buildings, which, in combination with other measures, prevent direct flame contact and material ignition.	Yes	An asset protection zone is provided within the site.
Ensure that safe operational access and egress for emergency service personnel	Yes	The site has direct access to public roads, and access and egress for emergency vehicles and evacuation is adequate. A detailed evacuation plan will be

and occupants is available.		completed prior to occupation.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads, in the asset protection zone.	Yes	A bushfire management plan will be provided prior to completion of the building. A management plan is to be prepared that describes the maintenance measures required to maintain the APZ
Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).	Yes	

7. Recommendations

The following recommendations are made for the bushfire protection measures for the site.

1. Buildings within the site are built to BAL 12.5 in accordance with the *Australian Standard for Construction of Buildings in Bushfire Prone Areas*.
2. Prior to the issue of a Construction Certificate for the new building, the school shall update the *Bushfire Emergency Management and Evacuation Plan* that is locally relevant and tailored with key stakeholders to a range of scenarios.
3. APZs are provided in accordance with Figure 8 within this report.

8. Conclusion

The Bushfire Hazard Assessment is in response to the Planning Secretary's Environmental Assessment Requirements (SEAR) Section 4.12(8) of the *Environmental Planning and Assessment Act 1979* (EPA Act) Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (SSD-15788005). This report has addresses the Secretary's Environmental Assessment Requirements (SEARs), Condition 20 of the SEAR requires that the Department of Education and demonstrated that the new school is able to comply with *Planning for Bush Fire Protection (NSW RFS, 2019)*.

The proposed s4.55 modification is able to comply with *Planning for Bush Fire Protection* and ought to be supported by the NSW RFS. This report has been completed in accordance with PBP 2019 and demonstrates that the proposal can be supported by the NSW Rural Fire Service.



Lew Short | Principal
BlackAsh Bushfire Consulting
B.A., Grad. Dip. (Design for Bushfires), Grad. Cert. of Management (Macq), Grad. Cert. (Applied Management)
Fire Protection Association of Australia BPAD Level 3 BPD-PA 16373

Appendix 1 References

Australian Building Codes Board *Building Code of Australia Volumes 1&2*

Australian Standard AS/NZS 1596 'The storage and handling of LP Gas'

Councils of Standards Australia AS3959 (2009) – *Australian Standard Construction of buildings in bushfire-prone areas*

International fire engineering guidelines (2005) ABCB for the Australian Government, State and Territories of Australia 2005

Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT*. The Department of Environment and Climate Change

NSW Rural Fire Service (2015) *Guide for Bushfire Prone Land Mapping*

NSW Rural Fire Service (2011) Practice Note 1/11 Telecommunication Towers in Bushfire Prone Areas

NSW Rural Fire Service (RFS). 2006. *Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners*. Australian Government Publishing Service, Canberra

NSW Government (1979) *Environmental Planning and Assessment Act 1979*. NSW Government Printer.

Appendix 2 RFS Bushfire Safety Authority



NSW RURAL FIRE SERVICE

Snowy Monaro Regional Council
PO Box 714
COOMA NSW 2630

Your reference: (CNR-29818) 10.2021.313.1
Our reference: DA20211024004579-Original-1

ATTENTION: Sarah Brown

Date: Friday 10 December 2021

Dear Sir/Madam,

Integrated Development Application
s100B - SFPP - School
207 BARRY WAY JINDABYNE NSW 2627, 101//DP1019527

I refer to your correspondence dated 22/10/2021 seeking general terms of approval for the above Integrated Development Application.

The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted. General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and a Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997*, are now issued subject to the following conditions:

General Conditions

1. The development proposal is to generally comply with the layout identified on the drawing, prepared by Pedavoli Architects titled "Overall Site Plan" and dated 27/09/2021, except where modified by the following conditions.

Asset Protection Zones

Intent of measures: *To provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants. To achieve this, the following conditions shall apply:*

2. At the commencement of building works, and then in perpetuity, the property around the proposed educational facility building shall be managed, as follows:
 - The area; identified as the "Educational Precinct", noted to be the "Developable Area", and more specifically identified by violet shading in the plan titled "Figure 7 Asset Protection Zones", prepared by Blackash Bushfire Consulting and noted in their Bushfire Hazard Assessment report dated 30/09/2021, shall be managed as an APZ in accordance with the requirements of Appendix 4 of Planning for Bushfire Protection 2019, and

1

Postal address

NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
4 Murray Rose Ave
SYDNEY OLYMPIC PARK NSW 2127

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F (02) 8741 5550
www.rfs.nsw.gov.au



- The various areas located (generally) to the west, east and south, from the internal development site, shall be managed as APZs in accordance with the plan titled "Figure 7 Asset Protection Zones", prepared by Blackash Bushfire Consulting and noted in their Bushfire Hazard Assessment report dated 30/09/2021. Management shall be in accordance with the requirements of Appendix 4 of Planning for Bushfire Protection 2019.

Construction Standards

Intent of measures: To minimise the risk of bush fire attack and provide protection for emergency services personnel, residents and others assisting firefighting activities. To achieve this, the following conditions shall apply:

3. New construction shall comply with section 3 and section 5 (BAL 12.5) Australian Standard AS3959-2018 'Construction of buildings in bushfire-prone areas' or the relevant requirements of the NASH Standard - Steel Framed Construction in Bushfire Areas (incorporating amendment A - 2015). New construction must also comply with the construction requirements in Section 7.5 of 'Planning for Bush Fire Protection 2019'.

Access - Internal Roads

Intent of measures: To provide safe operational access for emergency services personnel in suppressing a bush fire while residents are accessing or egressing an area. To achieve this, the following conditions shall apply:

4. Access roads for special fire protection purpose (SFPP) developments shall comply with the following; general requirements, of Table 6.8b of 'Planning for Bush Fire Protection 2019', and the more specific requirements for non-perimeter roads:

General requirements

- a. SFPP access roads are two-wheel drive, all-weather roads;
- b. access is provided to all structures;
- c. traffic management devices are constructed to not prohibit access by emergency services vehicles;
- d. access roads must provide suitable turning areas in accordance with Appendix 3; and
- e. one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.
- f. The capacity of road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating.
- g. hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
- h. hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005;
- i. there is suitable access for a Category 1 fire appliance within 4m of the static water supply where no reticulated supply is available.

Non-perimeter roads;

- a. minimum 5.5m carriageway width kerb to kerb;
- b. parking is provided outside of the carriageway width;
- c. hydrants are located clear of parking areas;
- d. there are through roads, and these are linked to the internal road system at an interval of no greater than 500m;
- e. curves of roads have a minimum inner radius of 6m;
- f. the maximum grade road is 15 degrees and an average grade of not more than 10 degrees;
- g. the road cross fall does not exceed 3 degrees; and
- h. a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

Water and Utility Services

Intent of measures: To provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply:

5. The provision of water services shall comply with the following in accordance with Table 6.8c of Planning for Bush Fire Protection 2019:

- a. reticulated water with a hydrant system is to be provided to the development, where available; or
- b. a 10,000 litres (minimum) static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.
- c. fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005;
- d. hydrants are not located within any road carriageway; and
- e. reticulated water supply uses a ring main system for areas with perimeter roads.
- f. fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
- g. all above-ground water service pipes external to the building are metal, including and up to any taps.
- h. where static water supplies are provided:
 - 1. a connection for firefighting purposes is located within the IPA or non hazard side and away from the structure;
 - 2. a 65mm Storz outlet with a ball valve is fitted to the outlet;
 - 3. ball valve and pipes are adequate for water flow and are metal;
 - 4. supply pipes from tank to ball valve have the same bore size to ensure flow volume;
 - 5. underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
 - 6. a hardened ground surface for truck access is supplied within 4m of the access hole;
 - 7. above-ground tanks are manufactured from concrete or metal;
 - 8. raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F AS 3959);
 - 9. unobstructed access is provided at all times;
 - 10. tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and
 - 11. underground tanks are clearly marked,

6. The provision of electrical services shall comply with the following in accordance with Table 6.8c of Planning for Bush Fire Protection 2019:

- a. where practicable, electrical transmission lines are underground;
- b. where overhead, electrical transmission lines are proposed as follow:
 - i. lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and
 - ii. no part of a tree is closer to a power line than the distance set out in accordance with the specifications in ISSC3 Guideline for Managing Vegetation Near Power Lines.

7. The provision of any gas services shall comply with the following in accordance with Table 6.8c of Planning for Bush Fire Protection 2019:

- a. reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used;
- b. all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- c. connections to and from gas cylinders are metal;
- d. if gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any combustible material, so they do not act as a catalyst to combustion;
- e. polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used; and
- f. above-ground gas service pipes external to the building are metal, including and up to any outlets.

Landscaping Assessment

Intent of measures: *To provide suitable building design, construction and sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants. To achieve this, the following conditions shall apply:*

8. Landscaping shall be selected and maintained in accordance with the requirements of PBP 2019. The following are identified as acceptable solutions in concert:

- landscaping is in accordance with Appendix 4 (of PBP 2019); and
- any fencing is constructed in accordance with section 7.6 (of PBP 2019).

Emergency and Evacuation Planning Assessment

Intent of measures: To provide suitable emergency and evacuation arrangements for occupants of SFPP developments. To achieve this, the following conditions shall apply:

9. A Bush Fire Emergency Management and Evacuation Plan is to be prepared that is consistent with the following:
 - The NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*;
 - The NSW RFS Schools Program Guide;
 - The Australian Standard AS 3745:2010 *Planning for emergencies in facilities*.

The Bush Fire Emergency Management and Evacuation Plan shall include planning for the early relocation of occupants.

Note: A copy of the Bush Fire Emergency Management and Evacuation Plan shall be provided to the Local Emergency Management Committee for its information prior to occupation of the development.

Detailed plans of all emergency assembly areas, including on site and off-site arrangements as stated in AS 3745:2010, are to be clearly displayed and an annual emergency evacuation is conducted.

General Advice - Consent Authority to Note

- The above conditions, included in this Bushfire Safety Authority, relate to the development being a "Special Fire Protection Purpose" and located within a bushfire prone land area that is currently mapped as grassland (Vegetation Category 3).

For any queries regarding this correspondence, please contact Bradford Sellings on 1300 NSW RFS.

Yours sincerely,

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