BLACKASH
BUSHFIRE CONSULTING

Bushfire Hazard Assessment

s4.55 Modification

Special Fire Protection Purpose Development

Jindabyne Education Campus

163 Barry Way, Jindabyne NSW 2627

Prepared for

NSW Department of Education

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Version 1.2

15 October 2024

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Contents

Glossary of Terms

APZ	Asset protection zone
AS2419	*Australian Standard – Fire hydrant installations*
AS3745	*Australian Standard – Planning for emergencies in facilities*
AS3959	*Australian Standard – Construction of buildings in bushfire-prone areas 2018*
BAL	*Bushfire attack level*
BCA	*Building Code of Australia*
BSA	Bushfire safety authority
EPA Act	*Environmental Planning & Assessment Act 1979*
FDI	Fire danger index
ha	Hectare
m	Metres
PBP 2006	*Planning for Bush Fire Protection 2006*
PBP 2019	*Planning for Bush Fire Protection 2019*
RF Act	*Rural Fires Act 1997*

SEP

1. Introduction

Blackash Bushfire Consulting (Blackash) has been engaged by the NSW Department of Education to provide a bushfire assessment in support of a Section 4.55 Modification (s4.55) for the updated surrounding land use at the new Education Campus at Jindabyne (New Primary and High School) at 163 Barry Way, Jindabyne (Figure 1) which is legally known as Lot 1 DP1294413 (the site).

The modification relates to two separate components of the approved Asset protection Zones (APZ) for the development, which include:

- The APZs for the individual buildings have been realigned to be offset from the building footprints, as opposed to the original bushfire assessment report that had the APZs offset from the site boundary. The APZ distances have not changed. The only change is that the APZ map has been refined so that the APZs are now offset from the 'asset', being the developments building footprints; and
- The land parcel to the south-west of the site being revised from 'Grassland' vegetation to formalised 'managed land'. As a result of the revised managed land application, the associated Asset protection Zone (APZ) related to the previous Grassland vegetation to the southwest has been removed.

The APZ realignment and removal of the south-western APZ is the subject of this s4.55 Modification Report.

This s4.55 modification is a relatively short report that utilises the previously prepared Blackash assessment documents:

- Bushfire Hazard Assessment dated 30/09/2021; and
- s4.55 Modification Report (Mod-01) addressing the addition of an agricultural unit to the school grounds dated 30 October 2022.

The above two Blackash reports should be referred to in conjunction with this s4.55 Modification Report for the site assessment and consideration of the application requirements for a Bushfire Safety Authority in accordance with the Rural Fires Regulations (RF Reg).

The APZ refinement and modification to the surrounding land use and associated removal of APZ to the south-west has been completed having regard to the existing NSW Rural Fire Service (RFS) Bushfire Safety Authority (BSA) supporting the approved development, and the specific Conditions of Consent A20 – A23, B32, and D35.

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. The conditions (see Appendix 2) are consistent with this s4.55 Modification Report and the modification does not impact the development's ability to comply with the conditions under the GTA.

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

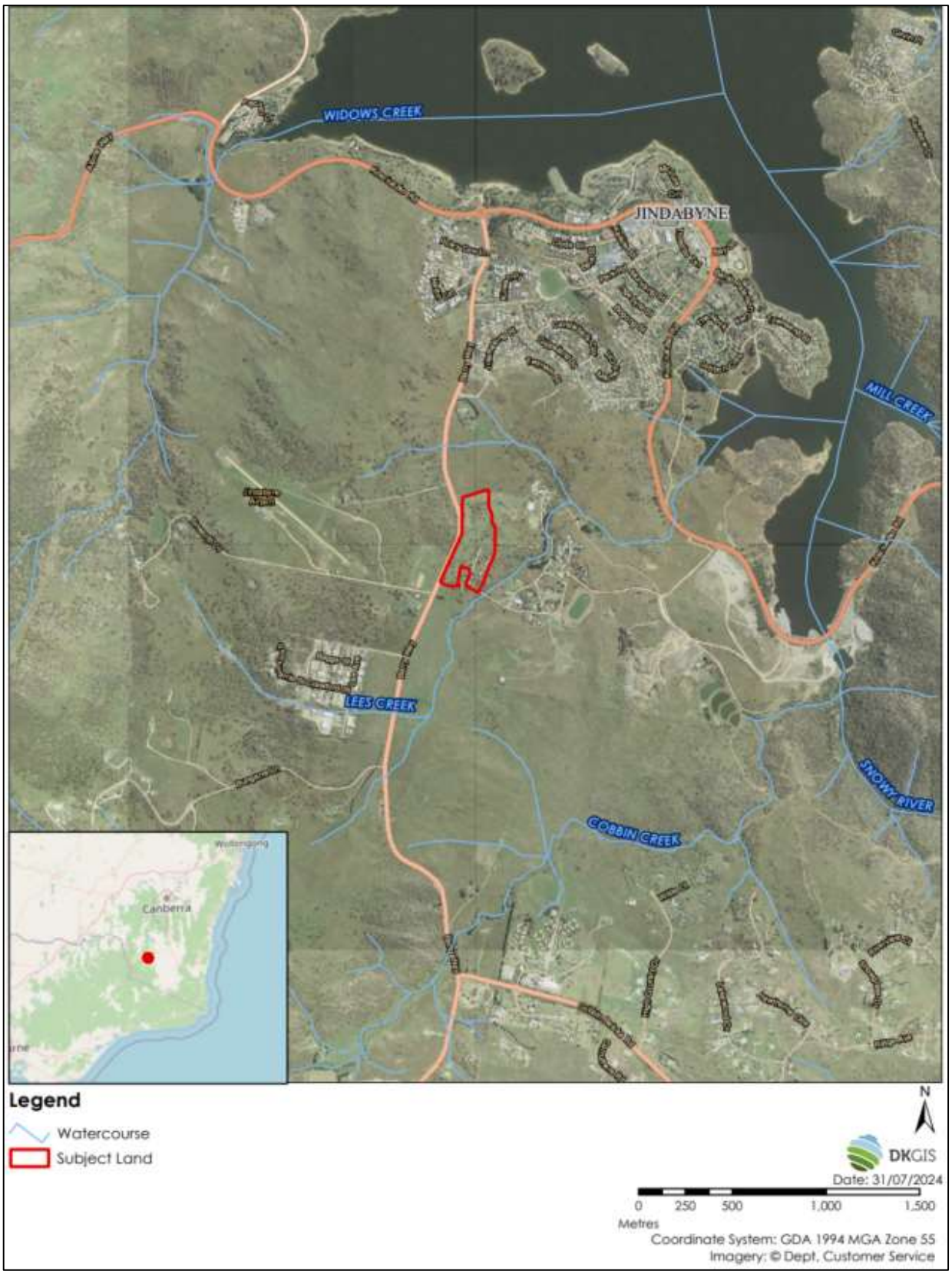

Figure 1: Jindabyne Education Campus Location

2. Proposal

The Education Campus is located 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).

The modification relates to two separate components of the approved Asset protection Zones (APZ) for the development, which include:

- The APZs for the individual buildings have been realigned to be offset from the building footprints, as opposed to the original bushfire assessment report that had the APZs offset from the site boundary. The APZ distances have not changed. The only change is that the APZ map has been refined so that the APZs are now offset from the 'asset', being the developments building footprints; and
- The land parcel to the south-west of the site being revised from 'Grassland' vegetation to formalised 'managed land'. As a result of the revised managed land application, the associated Asset protection Zone (APZ) related to the previous Grassland vegetation to the southwest has been removed.

For the modification relating to the land parcel to the south-west of the site being revised from Grassland vegetation to formalised 'managed land', Blackash has performed two separate site inspections of the subject land. It was evident during both site inspections that subject land to the south-west was under active management by the Jindabyne Pony Club (refer Figure 2).

Planning for bushfire protection 2019 (PBP 2019) addresses managed Grassland vegetation on page 111, which states:

> *'Grass, whether exotic or native, which is regularly maintained at or below 10cm in height (including maintained lawns, golf courses, maintained public reserves, parklands, nature strips and commercial nurseries) is regarded as managed land.'*

Following the two site inspections performed on the 13th of October 2023 and 24th of July 2024, Blackash confirm that the grassland vegetation in the identified lot is being regularly mowed at or below 10cm and therefore regarded as managed land in accordance with PBP 2019.

As a result of the revised managed land application, the associated Asset protection Zone (APZ) related to the previous Grassland vegetation to the southwest has been removed. The removal of the south-western APZ is reflected in the updated APZ Map included at Figure 5.

Figure 2: Jindabyne Pony Club Location (Source; Google Maps)

3. Bushfire Prone Land

The 'bushfire prone land' map is included at Figure 3 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 grassland, with sections of scattered trees associated with the woodland type vegetation – refer Figure 4.

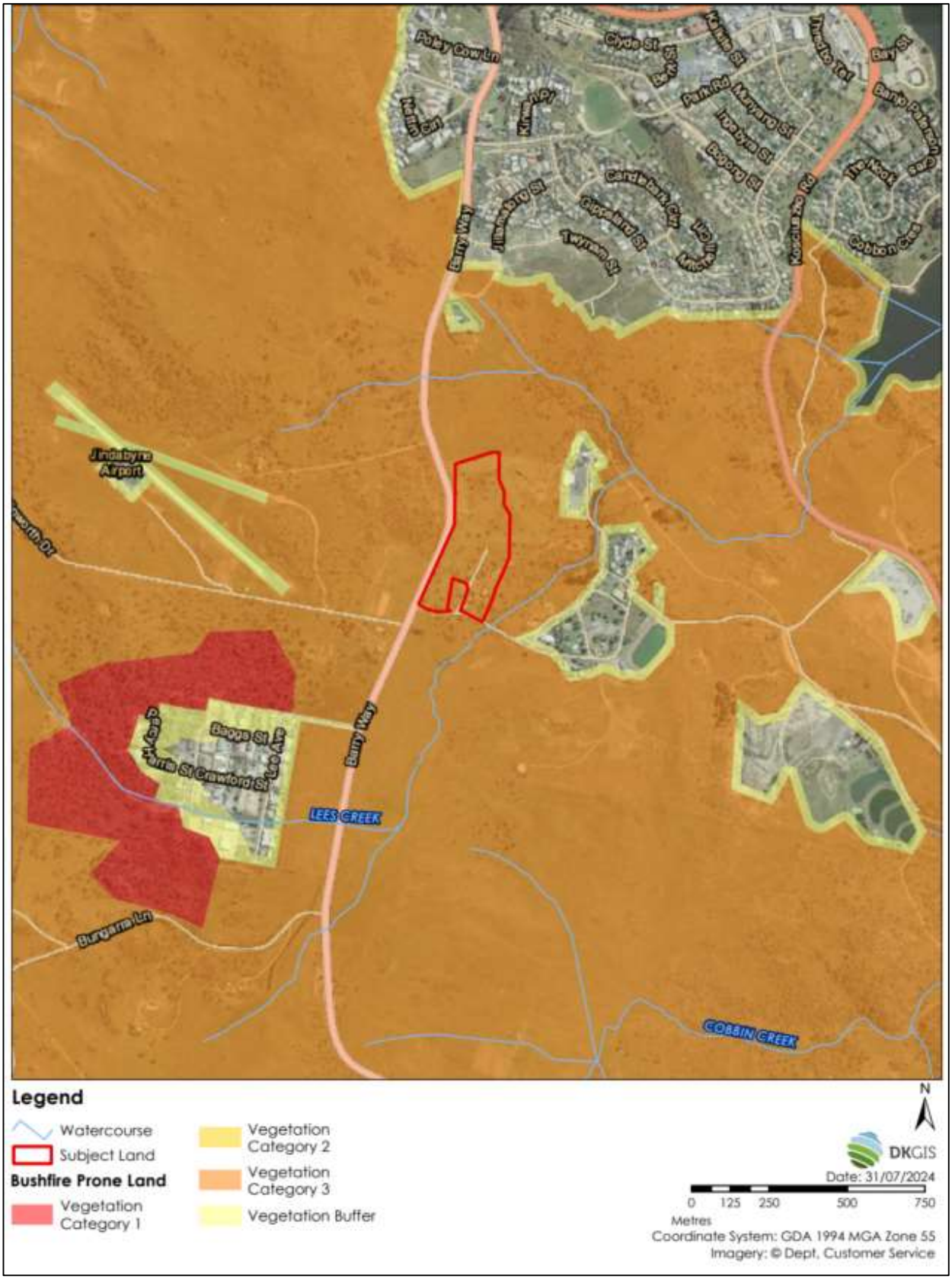

Figure 3: Bushfire Prone Land Map

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; and
- Site inspections.

The methodology used in this assessment is in accordance with PBP 2019 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 4, which has been used as the basis to determine APZ and radiant heat loads within the site.

Figure 4 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 mapped to the south-west and south-east of the site. The grassland to the south-west is within the lot that is under active management by the Jindabyne Ponyclub and is managed land – refer to site inspection photos 1 – 6 below.

A narrow band of grassland is between the site western boundary and Barry Way. This area is regularly mowed as part of Council's maintenance regime and is regarded as managed land.

Reference photos taken during Site inspection on the 13.10.2023:

Photo 1: Looking south-west at the managed grassland vegetation

Photo 2: Looking west at the managed grassland vegetation

Reference photos taken during Site inspection on the 24.07.2024:

Photo 3: Looking south at the managed grassland vegetation

Photo 4: Looking south-west at the managed grassland vegetation

Photo 5: Looking west at the managed grassland vegetation

Photo 6: Looking north-west at the managed grassland vegetation

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 4. 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; and
- Slopes to the north are 0 – 5 degrees downslope.

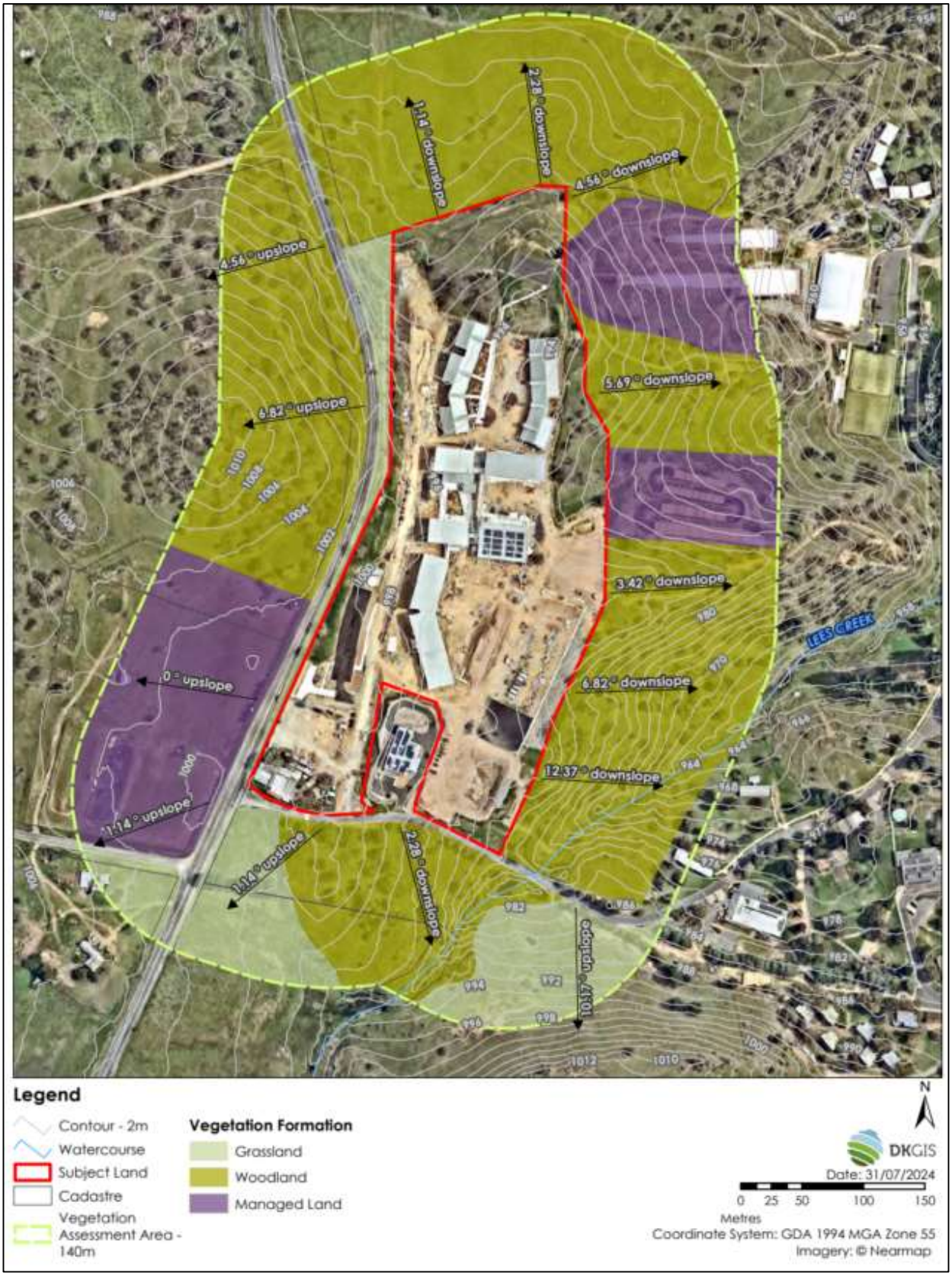

Figure 4: Vegetation and Slope Assessment

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 2019. The buildings achieve BAL 12.5 (refer Figure 5).

All areas within the site and the section of off-site APZ to the north-east will be managed as an Inner Protection Area (IPA) in accordance with Figure 5.

N.B The APZs for the individual buildings have been realigned to be offset from the building footprints, as opposed to the original bushfire assessment report that had the APZs offset from the site boundary. The APZ distances have not changed. The only change is that the APZ map has been refined so that the APZs are now offset from the 'asset', being the developments building footprints.

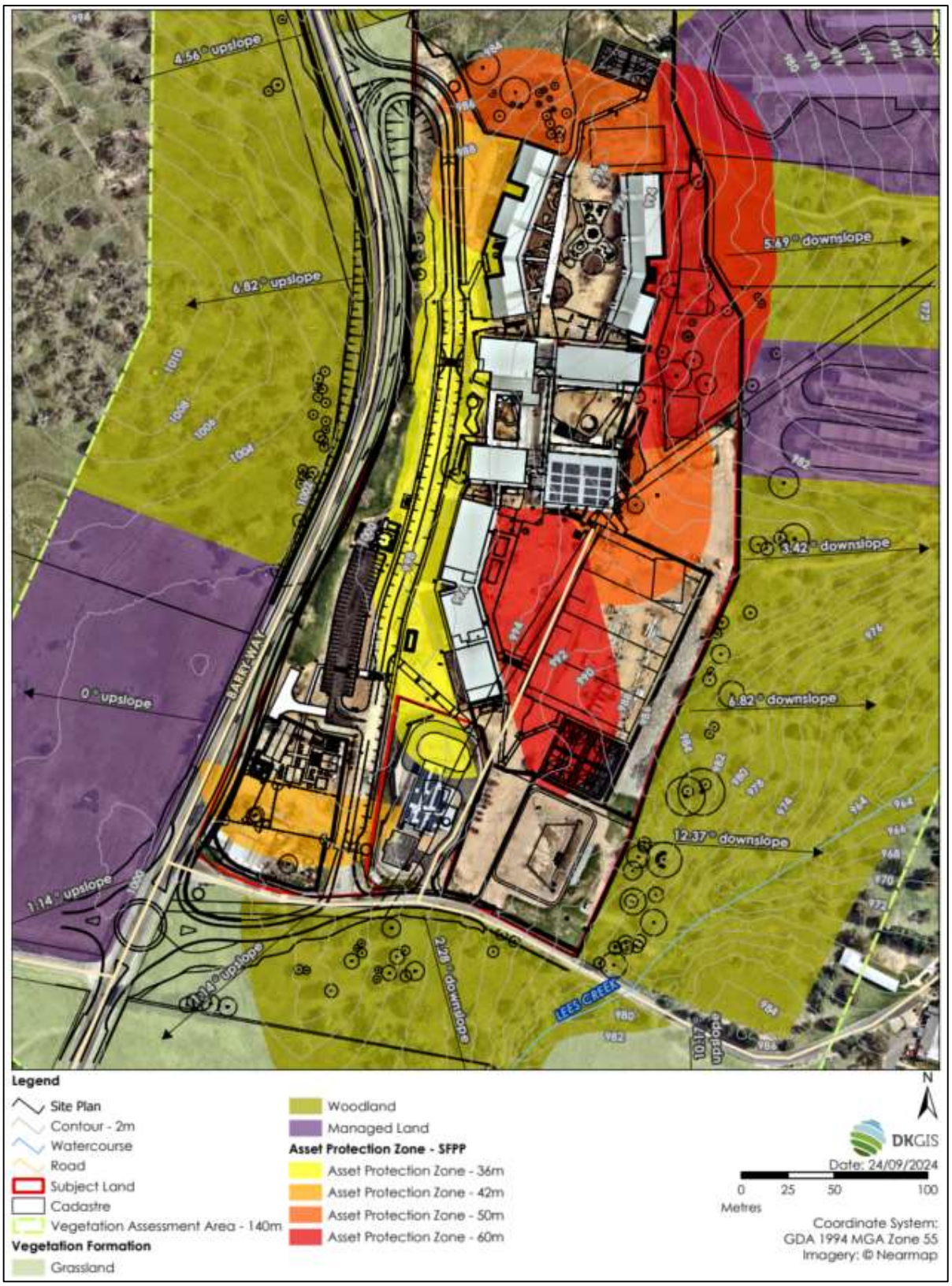

Figure 5: Asset Protection Zone (APZ)

5. 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	The s4.55 modification meets the requirements of PBP 2019 for the management of grassland vegetation to be regarded as 'managed land'.
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.
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 and the section of off-site APZ to the north-east (Figure 5).
Ensure that safe operational access and egress for emergency service personnel and occupants is available.	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 completed prior to occupation.
Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads, in the asset protection zone.	Yes	An APZ Management Plan will be provided prior to completion of the buildings. 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	Utility services are adequate to meet the needs of firefighters (and others assisting in bushfire fighting).

6. 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 (2018)*.
   ***N.B. Blackash has issued a Bushfire Compliance Certificate dated 04 October 2024,* that confirms that the new buildings have been constructed in accordance with AS3959:2018 for BAL 12.5.**
2. Prior to the occupation of the new buildings, 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 5 of this s4.55 Modification Report.

7. Conclusion

The s4.55 Modification Report 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), and the Environmental Planning and Assessment Regulation 2021 (SSD-15788005).

The proposed s4.55 modification *complies* with *Planning for Bush Fire Protection 2019* 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 RFS.

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

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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 GOVERNMENT | 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

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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
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- 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 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,

Martha Dotter
Supervisor Development Assessment & Plan
Built & Natural Environment

Appendix 3: APZ Requirements

APPENDIX 4

ASSET PROTECTION ZONE REQUIREMENTS

In combination with other BPMs, a bush fire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be done by designing and managing landscaping to implement an APZ around the property.

Careful attention should be paid to species selection, their location relative to their flammability, minimising continuity of vegetation (horizontally and vertically), and ongoing maintenance to remove flammable fuels (leaf litter, twigs and debris).

This Appendix sets the standards which need to be met within an APZ.

A4.1 Asset Protection Zones

An APZ is a fuel-reduced area surrounding a building or structure. It is located between the building or structure and the bush fire hazard.

For a complete guide to APZs and landscaping, download the NSW RFS document *Standards for Asset Protection Zones* at the NSW RFS Website www.rfs.nsw.gov.au.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows for suppression of fire;
- an area from which backburning or hazard reduction can be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property.

Bush fire fuels should be minimised within an APZ. This is so that the vegetation within the zone does not provide a path for the spread of fire to the building, either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the building;
- damage to the building asset from intense radiant heat; and
- ember attack.

The methodology for calculating the required APZ distance is contained within Appendix 1. The width of the APZ required will depend upon the development type and bush fire threat. APZs for new development are set out within Chapters 5, 6 and 7 of this document.

In forest vegetation, the APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

A4.1.1 Inner Protection Areas (IPAs)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

A4.1.2 Outer Protection Areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

Because of the nature of an OPA, they are only applicable in forest vegetation.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m.

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

Extract from Appendix 4 of PBP 2019 (p. 107)