



BUSHFIRE ASSESSMENT REPORT

GUNUMA LODGE, PLUM PINE RD,
SMIGGIN HOLES, KOSCIUSZKO
NATIONAL PARK

Lot 24 DP 7756697

Additions and alteration to an existing Alpine Lodge

Prepared for Gunuma Lodge Committee



September 25, 2024

EXECUTIVE SUMMARY

EMBER Bushfire Consulting has been engaged by the Gunuma Lodge Committee, to prepare a bushfire assessment report for additions and to Gunuma Lodge at Pine Plum Road, Smiggin Holes.

The development proposal is located on declared bushfire prone land and as a result is subject to Section 4.46 of the Environmental Planning and Assessment Act (1979) (EP&A Act) and Section 100B of the Rural Fires Act (1997).

The proposed modification is for the building works to include the replacement of all external windows and doors and refurbishing the bathroom and toilets.

This report establishes the level of bushfire threat to the proposed development and examines the protection of the structure through measures such as asset protection, access, water supplies, landscaping, construction and emergency management requirements.

The recommendations made in this report are intended to deliver a Better Bush Fire Outcome than if the development didn't go ahead or if strict compliance with the NCC was applied.

The proximity of Lodge to the allotment at its closest point to the Lodge is ~2.8 m (to the South), placing physical constraints on the size of the APZ that can be achieved. The resultant APZ yields a high BAL rating of BAL-FZ.

In lieu of strict adherence with the assessed bushfire attack level, a performance-based solution is proposed which seeks the Better Bushfire Outcome pathway for the proposed works, by retaining a high construction standard (BAL 40), but including additional ember protection for the openable windows and doors and formalisation of an APZ as extra measures.

By undertaking a Better Bushfire Outcome approach, more cost effective, high fire-resistant windows and doors (BAL-40) can still be used but with the added benefit of improved ember protection for existing parts of the lodge and a better managed APZ, providing a more wholistic bushfire protection solution, commensurate with the scale of works.

Access is well provided for and firefighting water supplies, electricity and gas services will all be capable of meeting or exceeding the requirements of PBP 2019.

Firefighting water supplies is provided, and gas and electricity supplies have been deemed to meet the requirements of PBP 2019.

Based on the bushfire assessment and the recommendations contained in this report the proposed development is deemed to comply with the specific and broad objectives of PBP 2019 and therefore suitable for submission to the NSWRFSA for the issuing of a bush fire safety authority.

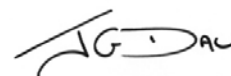
CERTIFICATION STATEMENT

Document Title:	Bushfire Assessment Report Gunuma Lodge, Plum Pine Road, Smiggin Holes
EMBER Reference:	JD.g8.24
Lot & DP Number	Lot 24 DP 7756697
Street Address	Gunuma Lodge, Plum Pine Road, Smiggin Holes, Kosciuszko NP
Local Government Area	Snowy Monaro Regional Council
Description of the development	Additions & alteration to existing short-term tourist accommodation (Class 3 building)
Type of assessment under Planning for Bushfire Protection (2019)	Section 6.6 – Alpine resorts 100b Bush Fire Safety Authority for Special Fire Protection Purpose Development
Is referral of the proposal to the NSW RFS required?	Yes - Per Section 4.46 EP&A Act 1979 this project is integrated development.
Has a pre-DA lodgment or bush fire design brief been provided to the NSW RFS?	No
Highest radiant heat flux determined for the development.	>40 kW/m ²
Highest level of construction applicable:	Bushfire Attack Level (BAL) – 40 as part of a Better Bushfire Outcome
Accreditation Scheme / Level of accreditation	Bushfire Planning and Design (BPAD) Accreditation Scheme administered by the Fire Protection Association Australia (FPAA)
Prepared by:	Jeff Dau – BPAD 33128 - Level 3
Verified by:	Rob McGregor – BPAD 33130 – Level 2

The author (Jeffrey Dau) hereby certifies that:

- A thorough, in-person survey of the subject site was carried out on 13 February 2024;
- A subsequent bushfire hazard assessment was undertaken of the site and the proposal per the relevant sections of the NSW Rural Fire Service (NSW RFS) document Planning for Bushfire Protection 2019 (PBP 2019);
- A detailed bush fire assessment report is attached per the submission requirements of Appendix 2 of PBP, together with recommendations needed to satisfy the specifications and requirements of PBP;
- That I am a person recognised by NSW RFS as a qualified consultant in bush fire risk assessment; and
- That subject to the recommendations in this report, the proposed development conforms to the relevant specifications and requirements of PBP.

Furthermore, I am aware that this report is to be submitted in support of a development application for this site and will be relied upon by Council to ensure that the bushfire risk management aspects of the proposal have been addressed per PBP.



25/9/24

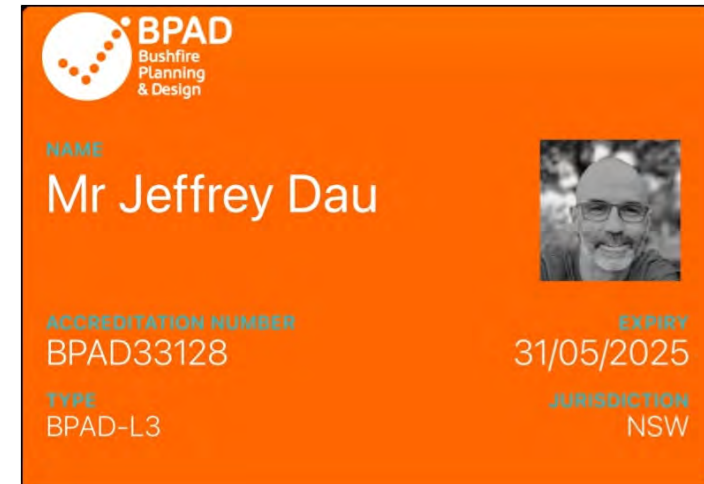


DOCUMENT CONTROL

Information	Detail
Document Title:	Bushfire Assessment Report Gunuma Lodge, Plum Pine Rd, Smiggin Holes
EMBER Reference:	JD.98.24
Version:	1.0
Version Control:	1.0 – First issue – 2.6.24 2.0 - Minor amendments – 25.9.24
Status:	Issued

KEY DETAILS OF THE DEVELOPMENT

Information	Detail
Zoning of the subject land	E1 – National Parks and Nature Reserves
Zoning of adjoining lands	E1 – National Parks and Nature Reserves
Lot size	1660 m ²
Staging issues	Nil
Development classification	Additions & alteration to short-term tourist accommodation – Class 3 building.
Type of assessment	Section 6.6 – Alpine resorts 100b Bush Fire Safety Authority for Special Fire Protection Purpose Development
Fire weather area	Alpine
Fire Danger Index	50 (Adjusted to 100 for SFPP assessment)
Predominant vegetation	Sub-Alpine Woodland (Forest)
Slope	Ranging from upslope to 0°-5° downslope
Environmental constraints	Nil Known
Cultural constraints	Nil known
Method of meeting performance requirements	Performance based design – Better Bushfire Outcome.

**BPAD-L3****Bushfire Planning and Design Accreditation Scheme**

The holder of this card is accredited, in accordance with the FPA Australia Bushfire Planning and Design Accreditation Scheme, to assess potential bushfire risk and provide advice to manage the risk for existing buildings and for future developments using the follow methods:

1. The determination of Bushfire Attack Levels using simplified methods and the applicable Deemed-to-Satisfy construction requirements.
2. The development of planning and building applications and reports by applying the prescribed design requirements in accordance with local regulatory requirements.
3. The development of planning and building applications and reports by developing alternative design solutions in accordance with local regulatory requirements.

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HOW TO READ THIS DOCUMENT -

Section 1 Introduction – Introduction and overview of the subject site and proposed development.

Section 2 Bushfire Attack Assessment - Assessment of the critical factors contributing to the potential bushfire attack of the proposed development, planning considerations and assessment of the overall bushfire hazard.

Section 3 Bushfire Protection Measures – Assessment and discussion of the recommended bushfire protection measures in response to the Bushfire Attack Assessment, necessary for life safety and compliance purposes.

Section 4 Conclusion – Concluding statement.

DEFINITIONS -

Asset Protection Zone (APZ) - A fuel-reduced area surrounding a built asset or structure which provides a buffer zone between a bush fire hazard and an asset. The APZ includes a defensible space within which firefighting operations can be carried out. The size of the required APZ varies with slope, vegetation and FFDI.

Bushfire attack - Attack of a built asset or structure by burning embers, radiant heat or flame generated by a bush fire.

Bushfire hazard - Any vegetation that can potentially burn and threaten lives, property or the environment.

Bushfire prone land (BFPL) - An area of land that can support a bushfire or is likely to be subject to bushfire attack, as designated on a bush fire prone land map.

Bush fire protection measures (BPMs) - A range of measures used to minimise the risk from a bush fire that needs to be complied with. BPMs include APZs, construction provisions, suitable access, water and utility services, emergency management and landscaping.

Bushfire risk - This is the likelihood and consequence of a bushfire igniting, spreading and causing life loss or damage to buildings of value to the community. Note: This assessment does not intend to determine the likelihood of bushfire impacting the subject site. Instead, it focuses on assessing the degree of bushfire attack, its expected consequences and the BPMs needed to moderate this attack.

Managed land - Land with vegetation removed or maintained to a level that limits the spread and impact of bush fire. This may include developed land, roads, golf course fairways, playgrounds, sports fields, vineyards, orchards, cultivated ornamental gardens and commercial nurseries. The most common will be gardens and lawns within the curtilage of buildings. These areas are managed to meet the requirements of an APZ.

1 INTRODUCTION AND OVERVIEW

1.1 BACKGROUND

EMBER Bushfire Consulting has been engaged by Gunuma Lodge Committee to prepare a bushfire assessment report in support of a Development Application for proposed alterations to Gunuma Lodge (the Subject Site) at Plum Pine Rd Smiggin Holes, Kosciuszko National Park.

The development proposal is located in an area identified as an Alpine Resort and on land that is designated bushfire prone land. As a result the proposal is subject to Section 4.46 of the EP&A Act and Section 100B of the Rural Fires Act (1997).

Under the EP&A Act the development proposal must be shown to conform with the broad aims and objectives of the NSW RFS document Planning for Bushfire Protection (2019) (PBP 2019) and is therefore the key reference document for this assessment.

This assessment has been prepared through a desktop study of the Subject Site and an in-person area survey completed on 13.2.24 by Level 3 Accredited Bushfire Practitioner Jeff Dau from EMBER Bushfire Consulting.

1.2 AIM AND OBJECTIVES

The aim of this report is to:

- Evaluate the potential bushfire hazard to the subject site, and
- Assess the capacity of the proposed development as planned to provide the protection measures necessary to offer life safety to the occupants, improve property protection and facilitates fire service intervention during a bushfire event.
- Assess the capacity of the proposed development to achieve the relevant performance criteria using the acceptable solutions provided in PBP 2019.

The specific objectives expected of the proposed development is detailed in Chapter 6.6 – Special Fire Protection Purpose Developments – Alpine Resorts, PBP 2019.

The specific objectives for SFPP developments are to:

- provide an appropriate defensible space;
- provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures);
- ensure new building work complies with the construction standards set out in AS 3959;

- to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area;
- written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area;
- proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity;
- ensure building design and construction standards enhance the chances of occupant and building survival; and
- provide safe emergency evacuation procedures.

Any additional construction requirements should be commensurate with the following:

- the scope of the proposed works, including any increase in size and footprint of the building;
- any additional capacity for the accommodation of guests and/or staff on site; and
- the cost associated with the proposed upgrade of any building.

Accordingly, the following bushfire protection measures are to be assessed:

- Asset Protection Zones (APZs) and Landscaping,

- Access,
- Water Supplies and Utilities,
- Construction Standards, and
- Emergency Management.

The NSW RFS has an expectation that a better bush fire outcome is achieved where new development is proposed in association with existing facilities and as a result a “Better Bush Fire Outcome” approach has been taken in this assessment with a corresponding performance-based solution proposed to address a reduction in construction standards.

1.3 LIMITATIONS AND DISCLAIMER

This report is primarily concerned with assessing the capacity of the proposed development to withstand the impacts of a bushfire, including ember attack, radiant heat exposure and flame contact.

Where necessary protection measures will be recommended to provide a level of protection to the occupants and the structures themselves.

It should be kept in mind that the measures recommended cannot guarantee the proposed development will survive a bushfire event on every occasion. This is primarily due to the dependence on ongoing vegetation management, the unpredictable behaviour of fire, and extreme weather conditions.

EMBER Bushfire Consulting has prepared this report with all reasonable diligence. The information contained in this report has been gathered from

field investigations of the site as well as plans provided by the building designer and discussions held with the property owner.

1.4 COPYRIGHT NOTICE

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1.5 THE DEVELOPMENT PROPOSAL

The proposed development is for the replacement of all external windows and doors and refurbishing the bathroom and toilets. (Figure 1 & 2).

Under PBP 2019, proposals that involve internal alterations, are not subject to any specific requirements unless and therefore the refurbishment of the bathroom renovations are outside the scope of this assessment

The purposes of the works are to replace the existing worn, weathered and poorly insulated windows with new, more thermally efficient windows. The occupant capacity however will not be increased by the proposal.

The proposed works will affect the following external parts of the lodge –

- External doors
- External windows

All proposed works are to the existing Lodge and remains within the property allotment.

The works are considered minor in nature, with the recommendations made in this report commensurate with the scale of works.

THE DEVELOPMENT PROPOSAL



Figure 1 – 3D render of the lodge (Provided by Gabbie Mitchell, 2022)

THE DEVELOPMENT PROPOSAL

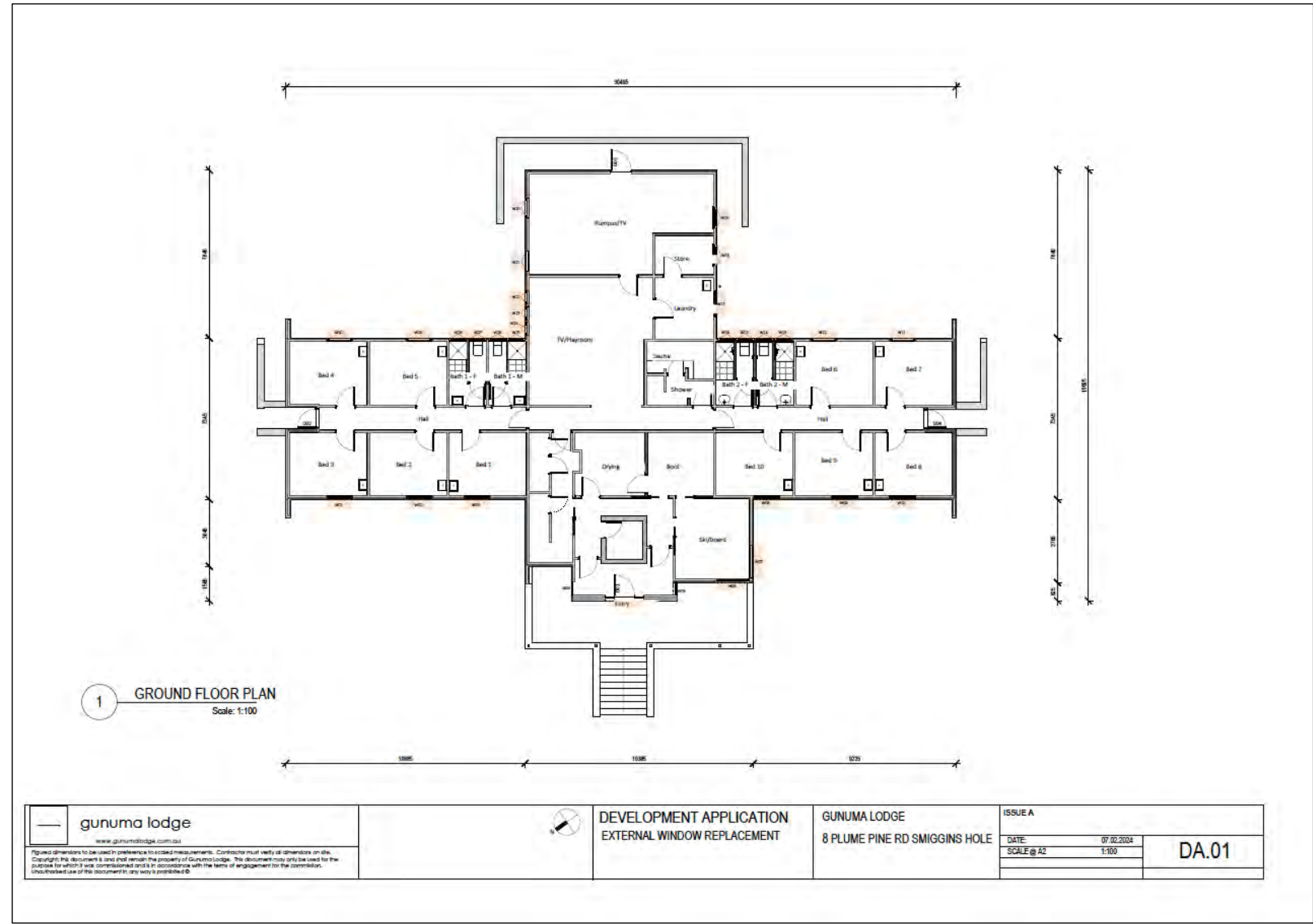


Figure 2 – Lower Floor Plan (Provided by Gabbie Mitchell, 2024)

THE DEVELOPMENT PROPOSAL

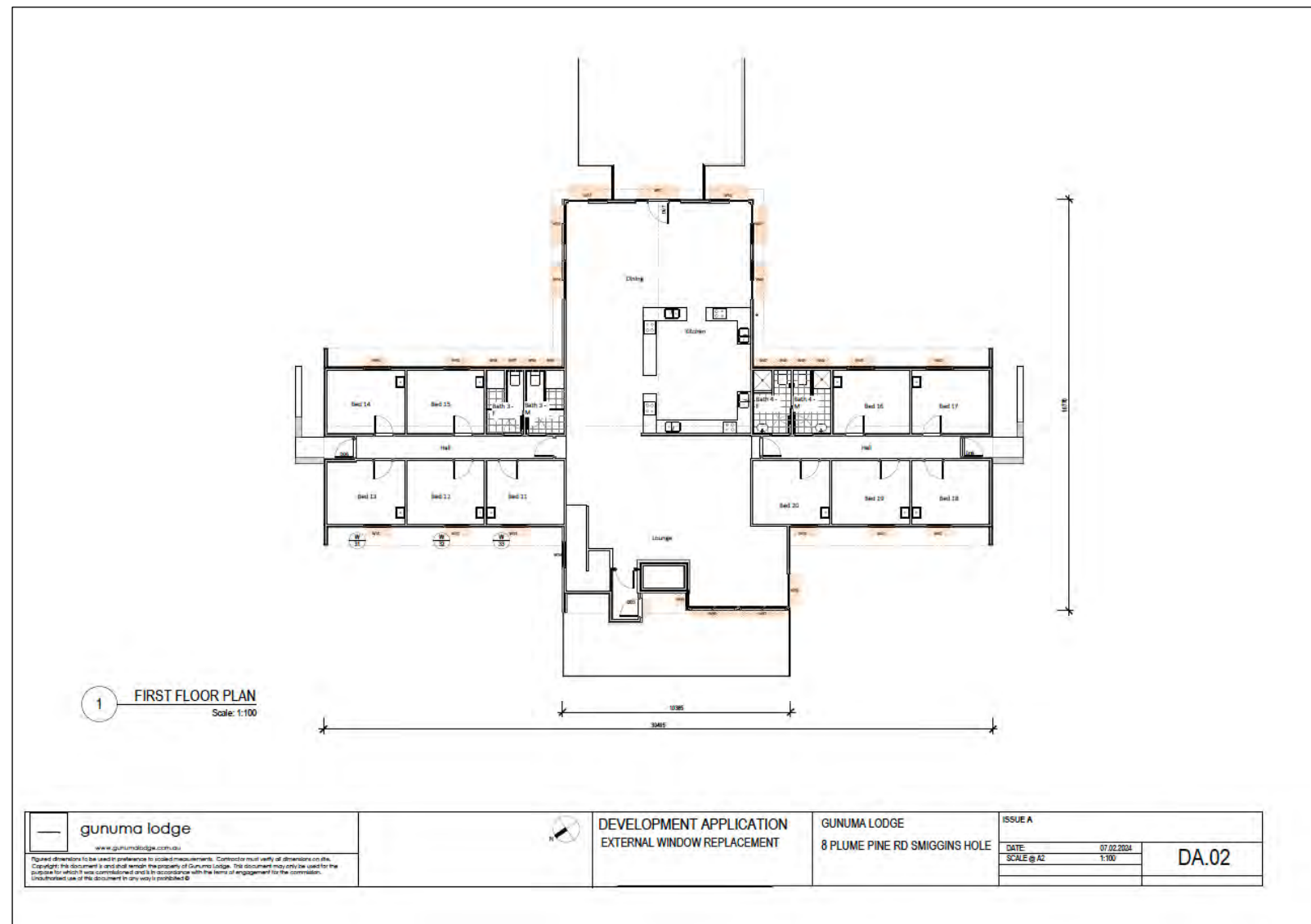


Figure 3 – First Floor Plan (Provided by Gabbie Mitchell, 2024)

1.6 SUBJECT SITE LOCATION

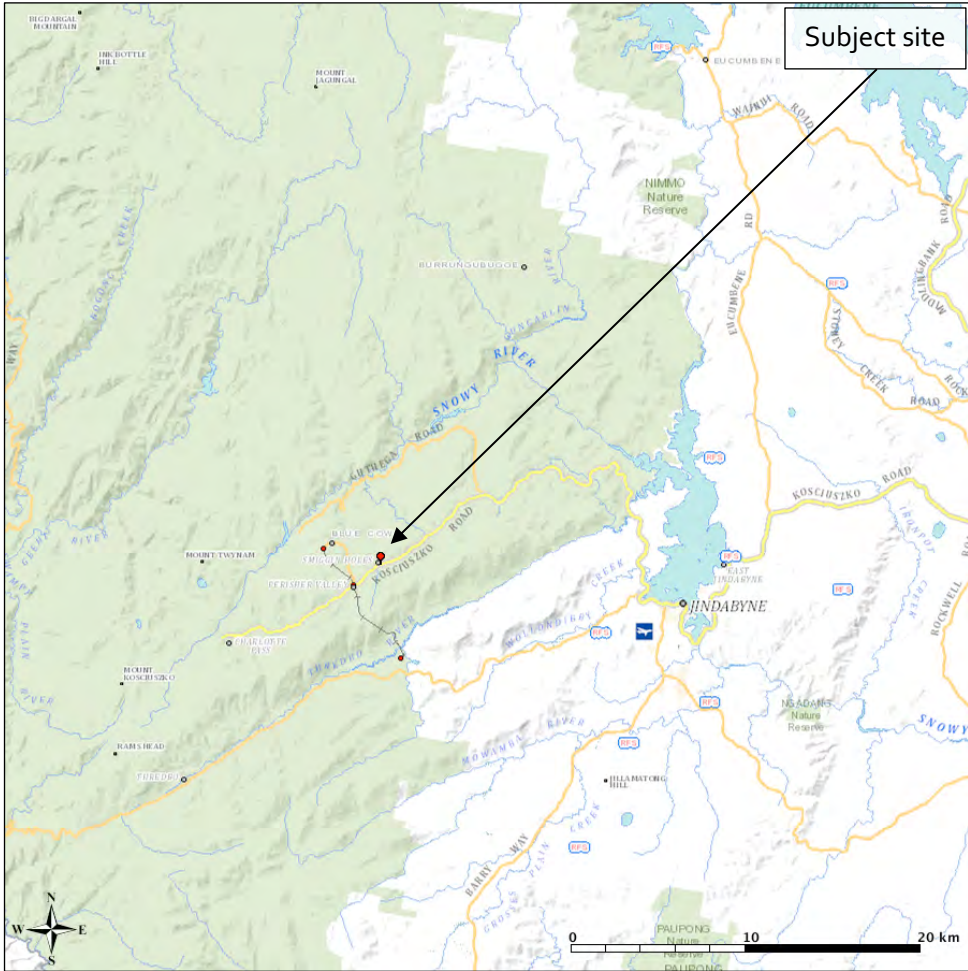


Figure 4 – Regional context of subject site (FPA FireMaps, 2024)

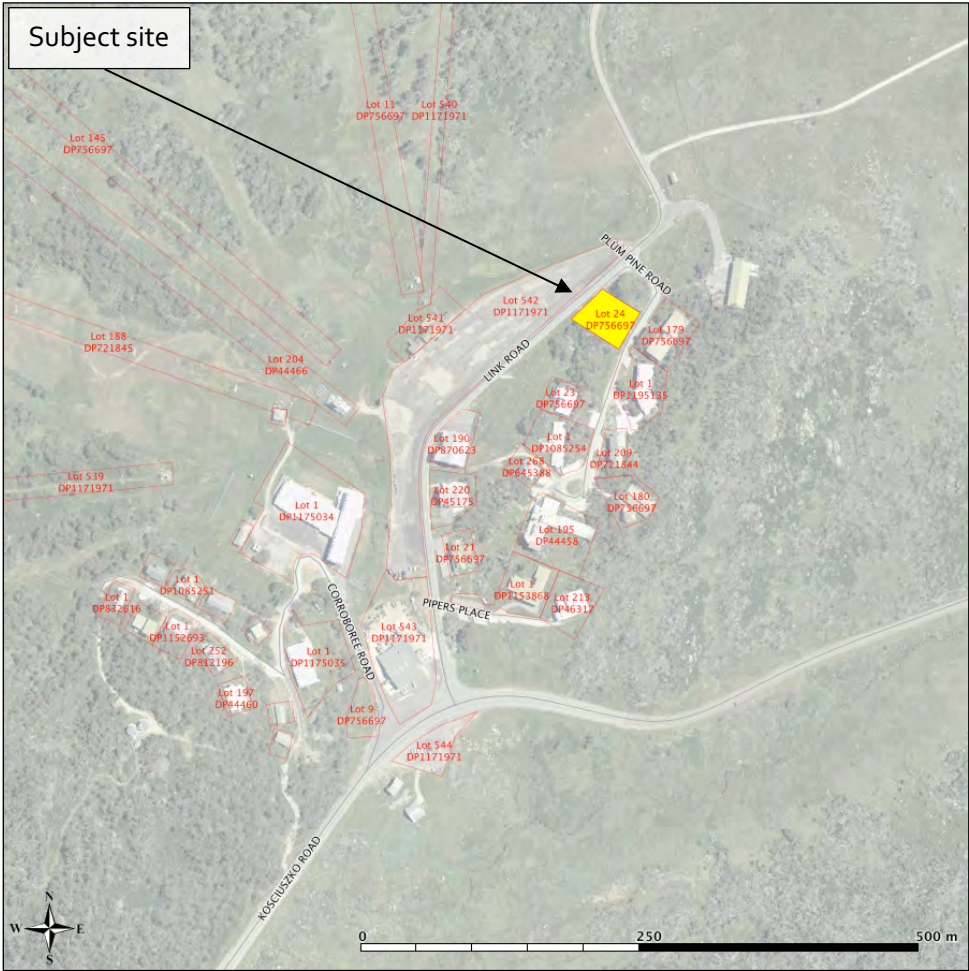


Figure 5 – Local context of subject site (FPA FireMaps, 2024)

2 BUSHFIRE HAZARD ANALYSIS

2.1 METHODOLOGY

The methodology adopted by this report is as follows:

Table 1 - Report methodology

Method	Task	Considerations
Desktop analysis	Review available mapping resources, policy documents & development plans	Online Maps Development Control Plans Local Environmental Plan
Site inspection	Evaluate context of site, determine bushfire hazard, options for asset protection zones, access roads and infrastructure.	Ground truth online mapping data, validate vegetation class, obtain site measurements, assess existing structures and infrastructure.
Assessment of proposal against the NSW RFS Planning for Bushfire Protection (PBP 2019).	Assess the development proposal against the performance criteria of PBP 2019.	Does the proposal comply with the acceptable solutions provided under of PBP 2019.
Report	Preparation and publication of bushfire assessment report	Demonstrate the proposal can meet the aims and objectives of PBP 2019.

2.2 DESIGN FIRE ATTRIBUTES

To determine the potential bushfire hazard posed to the subject site (design fire), the following bushfire attributes are adopted.

Table 2 – Design fire attributes

Factor	Value
Fire Weather Area	Alpine Areas
FDI	50 (Adjusted to 100 for SFPP assessment)
Dominant Vegetation Formations	Isolated pockets of Sub-Alpine Woodland (Woodland) Broad areas of Sub-Alpine Woodland (Forest)
Slope	Upslope to 0°-5° downslope

Note:

- *Vegetation formations within 140 m of the subject site were identified and classified in accordance with Appendix A1.2 of PBP 2019.*
- *Slopes within 100 m of the APZ have been calculated in accordance with A1.4 & A1.5 of PBP 2019.*
- *The fire danger index for the site has been determined in accordance with the NSW Rural Fire Service.*

2.3 SUBJECT SITE BUSHFIRE PRONE MAPPING

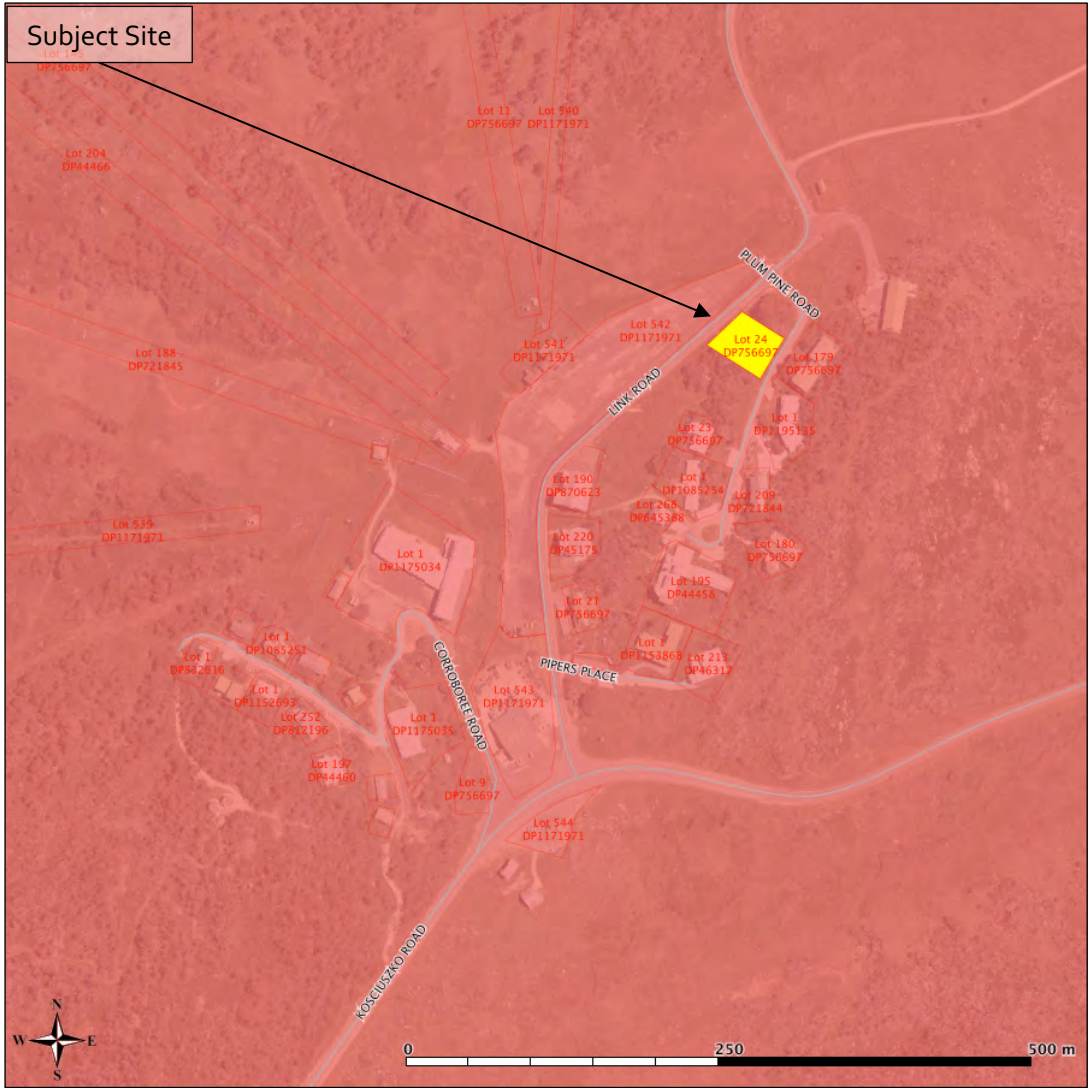


Figure 6 – Subject site bushfire prone land map. (FPAA Fire Maps, 2024)

Bushfire prone mapping relative to the subject site (Figure 6) showing adjacent land and the subject site containing areas of Category 1 identified as bush fire prone land by Council and NSW RFS.

During the site survey conducted on 13th February 2024, these vegetation categories were verified, and the bushfire prone map found to be a relatively accurate representation of the identified hazard, with the exception that developed and non-vegetated areas (roads, infrastructure and lodges) are incorrectly included as Vegetation Category 1.

Hazard classification key:



2.4 SUBJECT SITE VEGETATION FORMATIONS (BROADSCALE)

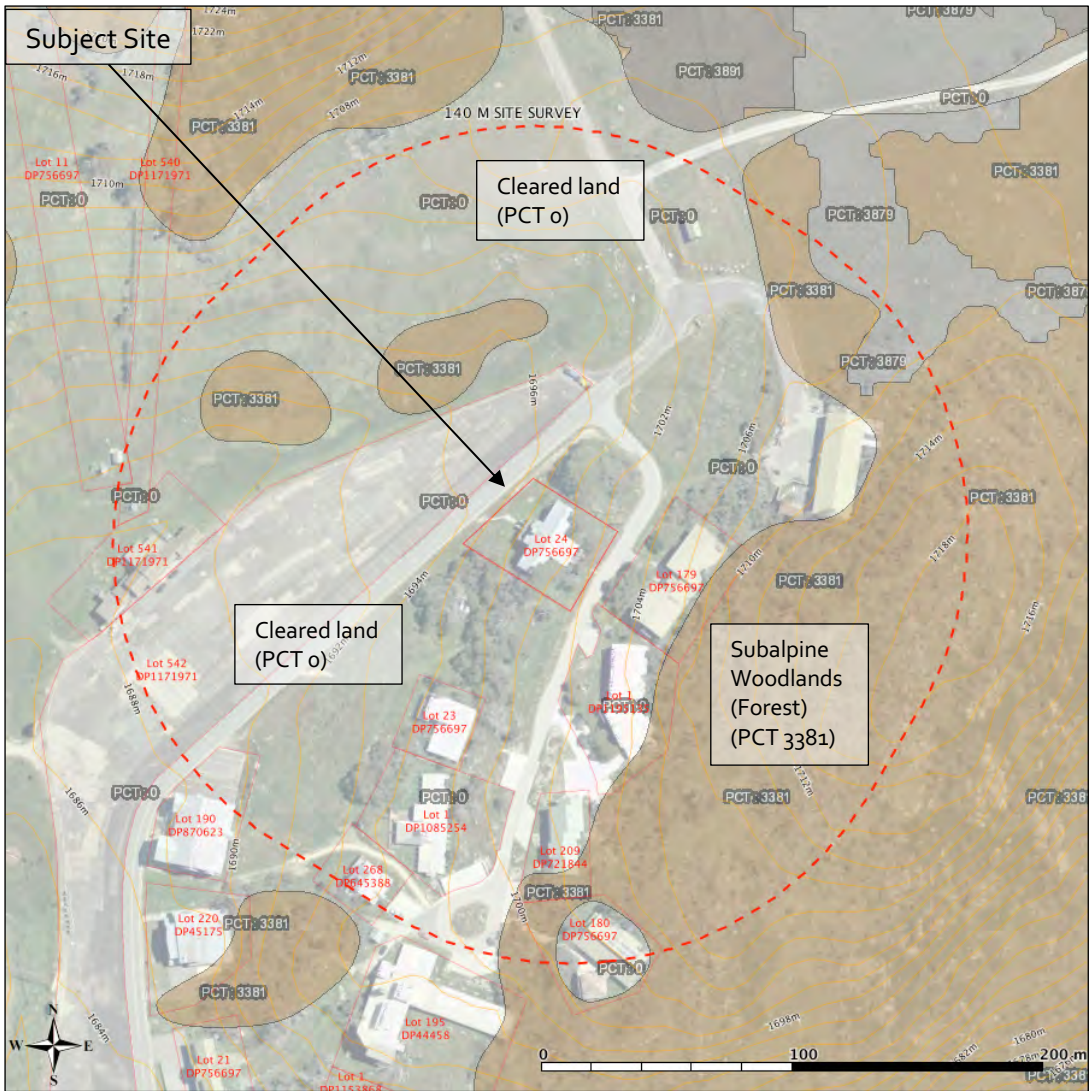


Figure 7 – Subject site vegetation classification. (Seed, 2024)

State based vegetation classification

Subject site vegetation formations (Figure 7) as defined by SEED (NSW Government, 2024) NSW State Vegetation Type Map.

Vegetation mapping indicates that the subject site is dominantly influenced by –

- Cleared Land (Grassland)
- Sub-Alpine Woodland (PCT 3381)

2.5 BUSHFIRE HAZARD ANALYSIS

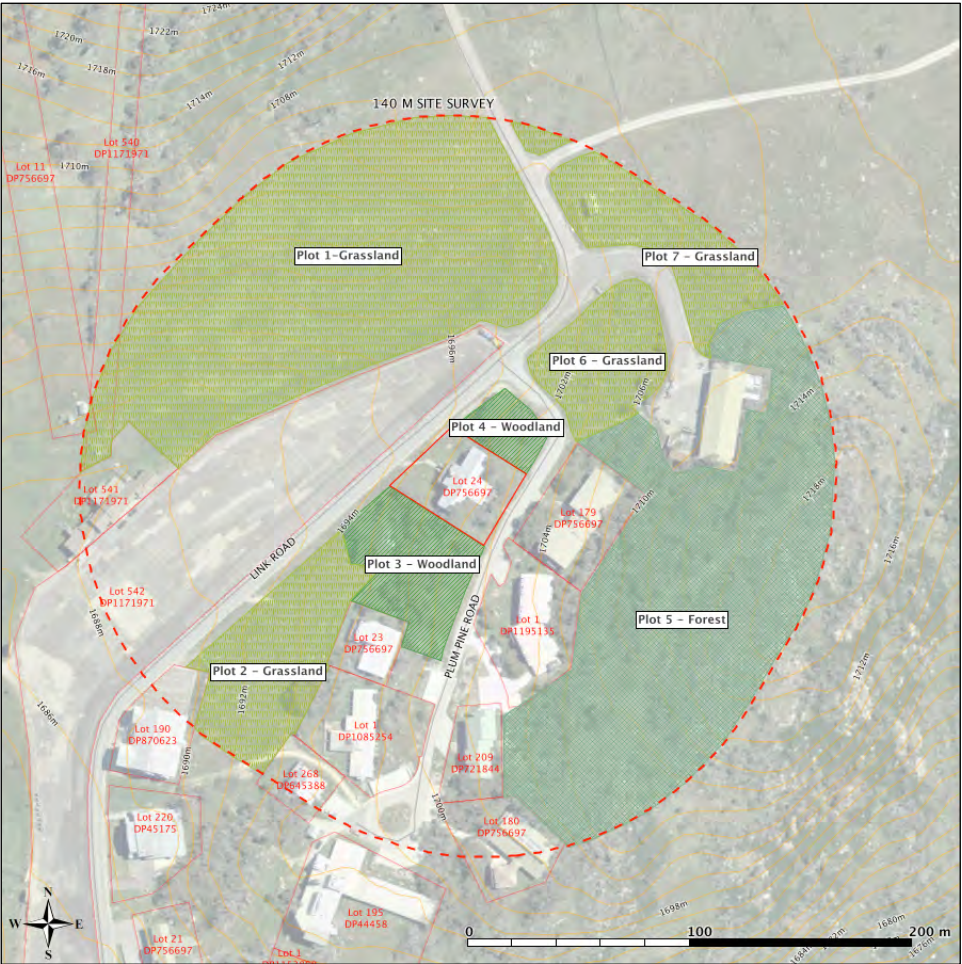


Figure 8 - Showing subject site and classified vegetation formations. Indicative only. (Dau, 2024)

HAZARD and APZ ASSESSMENT:

Vegetation Classification

Grassland (North, Northwest, West, Southwest)

Isolated pockets of Sub-Alpine Woodland (Woodland) (North & South)

Broad areas of Sub-Alpine Woodland (Forest) (East)

Setbacks required for creation of APZ

The distances below are the minimum setbacks available, measured from the proposed external works to surrounding unmanaged vegetation and take into consideration that the Subject Site is managed as an APZ.

North: 4 m

Southeast: 50 m

South: 2.8 m

Northwest: 50 m

2.6 SLOPE ANALYSIS AND PHOTO POINTS

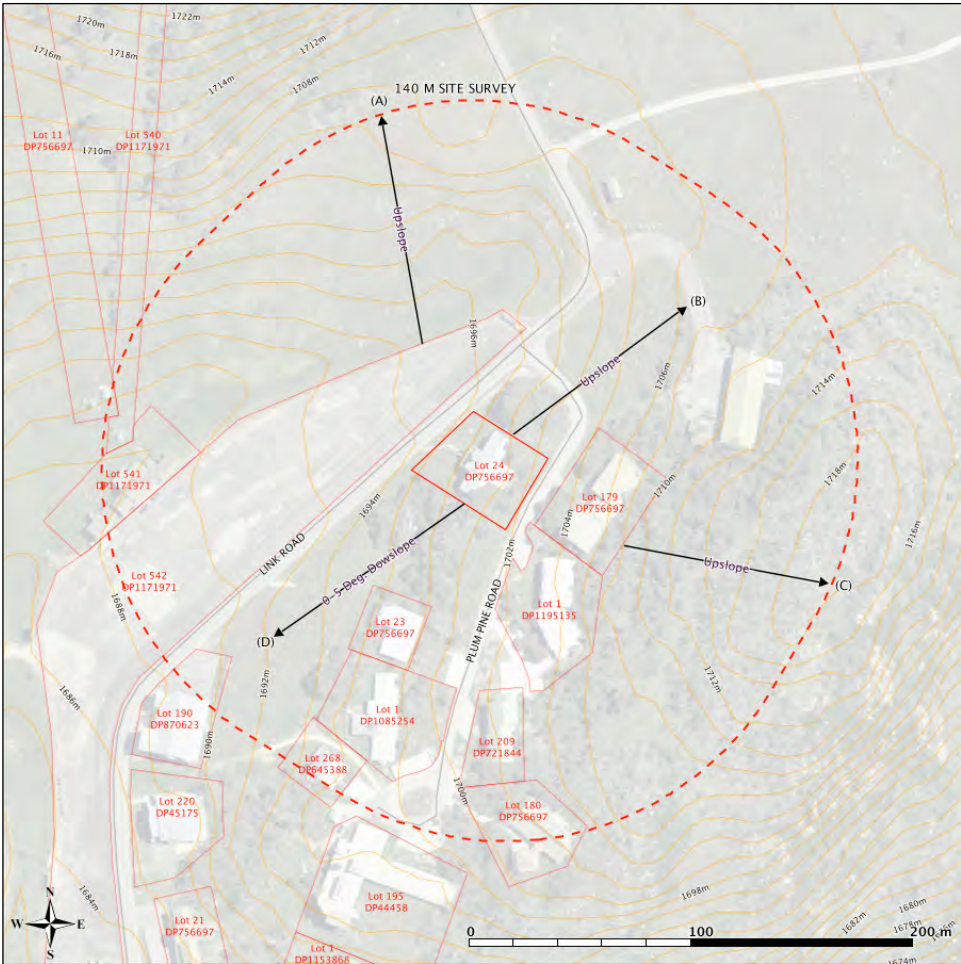


Figure 9 – Site slope analysis. (Dau, 2024)



Figure 10 – Subject Site photo points. (Dau, 2024)

2.7 GROUND OVERVIEW OF SITE VEGETATION



Photo Point 1 – Looking eastwards towards the Lodge from the carpark. (Dau, 2024)



Photo Point 3 – Looking northwest towards the front of the Lodge, showing adjacent carpark area. (Dau, 2024)



Photo Point 2 – Looking eastwards towards the front of the Lodge, showing adjacent vegetation outside the leasehold area. (Dau, 2024)



Photo Point 4 – Looking the front of the Lodge. (Dau, 2024)

2.8 GROUND OVERVIEW OF SITE VEGETATION



Photo Point 5 – Looking eastwards showing adjacent Woodland vegetation outside the leasehold area. (Dau, 2024)



Photo Point 7 – Looking westwards showing adjacent Woodland vegetation outside the leasehold area. (Dau, 2024)



Photo Point 6 – Looking northwest towards the front of the Lodge, showing landscape and vegetation within the allotment and the adjacent carpark area. (Dau, 2024)



Photo Point 8 – Looking northwest showing adjacent Woodland vegetation outside the leasehold area. (Dau, 2024)

2.9 GROUND OVERVIEW OF SITE VEGETATION



Photo Point 9 – Looking east at the rear of the Lodge, showing adjacent staff accommodation. (Dau, 2024)



Photo Point 11 – Looking westward towards the rear of the Lodge showing landscape and vegetation within the allotment. (Dau, 2024)



Photo Point 10 – Looking westward towards the rear of the Lodge showing landscape and vegetation within the allotment. (Dau, 2024)

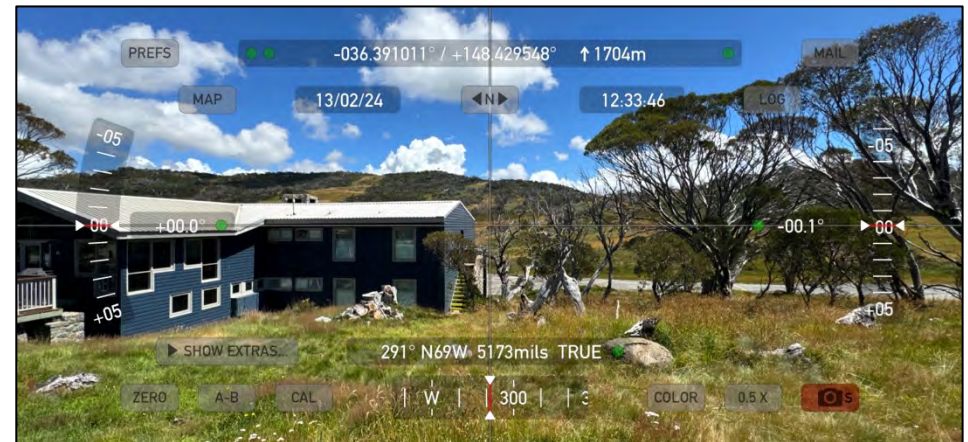


Photo Point 12 – Looking westwards showing adjacent Woodland vegetation outside the leasehold area. (Dau, 2024)

2.10 BUSHFIRE HAZARD ANALYSIS CONCLUSIONS

2.10.1 VEGETATION FORMATIONS

Vegetation formations within 140 m of the subject site were identified and classified in accordance with Appendix A1.2 of PBP (2019).

Aspect	Formation
North	Woodland
East	Forest
South	Woodland
West	Grassland

2.10.2 RELEVANT FIRE DANGER INDEX

The fire danger index for the site has been determined in accordance with the NSW Rural Fire Service.

NSW Fire Area	Fire Danger Index (FDI)
Southern Ranges	50 (Adjusted to 100 for SFPP assessment)

2.10.3 SLOPE, APZ AND BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT

Site slope, APZs (currently available and proposed) were assessed. The resultant BAL ratings (Table 1) were determined in accordance with Table A1.12.5 of PBP (2019).

Table 3 - Slope assessment and BAL Table

Transect	Aspect	Vegetation Formation	Slope	Setback available / proposed	BAL
A	N	Woodland	Upslope	4 m	BAL-FZ
B	E	Forest	Upslope	50 m	BAL-12.5
C	S	Woodland	>0° - 5° Downslope	2.8 m	BAL-FZ
D	W	Grassland	Upslope	50 m	BAL-12.5

2.10.4 GENERAL STATEMENT ON BUSHFIRE HAZARD

Given:

- the dense woodland and forest vegetation within and surrounding the subject site providing high fuel loads,
- the slight slopes surrounding the subject site moderating fire intensity making fire behavior predictable,
- the close proximity of the lodge to surrounding vegetation leading to high radiant heat exposure and flame contact,
- limited setbacks between the lodge and lot boundaries leading to an inability to provide adequate APZ dimensions,

the subject site presents as a high hazard bushfire environment and consequentially requires measures that provide a high level of protection.

3 BUSHFIRE PROTECTION MEASURES

In response to the bushfire hazard analysis, several Bushfire Protection Measures (BPMs) are proposed in accordance with Section 6.6 – Special Fire Protection Developments (SFPP) – Alpine development PBP 2019, commensurate with the scale of works, and with a specific performance-based approach adopted for a “Better Bushfire Outcome”.

A statement of compliance against the performance criteria and specific objectives of PBP 2019 is provided in Appendix A of this report.

3.1 ASSESSMENT OF ADDITIONS AND ALTERATIONS TO EXISTING SFPP DEVELOPMENTS:

Part 1.3 and 6.6 of PBP 2019 recognises the limitations and challenges that arise when additions and alterations are made to existing developments with limited or no existing BPMs in terms of the overall effectiveness the new protection measures may bring to the building.

In acknowledging these limitations, PBP 2019 makes a particular note that the measures proposed should reflect the “scale of works”.

With this in mind, the scale of works for this project is considered relatively modest and therefore, the corresponding scope and scale of the protection measures is also modest, while still seeking to provide a better bush fire outcome than currently exists.

3.2 A BETTER BUSH FIRE OUTCOME APPROACH:

Section 7.8 of PBP 2019 Better Bush Fire Outcomes continues on the theme of limitations and challenges of the development existing structures, questioning the value of strict compliance with the NCC over a more holistic approach to bushfire protection –

“Consideration should be given to whether strict compliance with the NCC is the best outcome for the property or whether a more balanced holistic outcome that addresses the entire building is more appropriate. Where it is determined that strict compliance with the NCC for the alterations and additions is not the best outcome for the site, a full performance-based solution should be prepared”. (Section 7.8 PBP 2019)

A Better Bush Fire Outcome approach is proposed for this development, with a range of protection measures put forward to improve the protection of the Lodge from a wholistic viewpoint, while gaining a concession on the strict adoption of the NCC for the proposed works. In doing so, the cost of the associated works will be kept to an acceptable level while still providing a level of protection that currently exists.

The Better Bush Fire Outcome proposal includes:

- The adoption BAL-40 level of construction (in-lieu of BAL-FZ) for windows and doors,
- The inclusion of metal mesh screens on all openable windows and door, and
- the establishment and ongoing maintenance of an APZ within the allotment.

3.3 ASSET PROTECTION ZONES (APZs)

Discussion:

Given the limited boundary setbacks and the leasehold arrangements of the allotment within the environmentally significant setting of Kosciuszko NP, the subject site presents challenges in achieving adequately sized APZs.

In relation to the existing APZs the following observations are made:

- Defendable space is provided 360 degrees around the Lodge.
- The proximity of Lodge to the allotment at its closest point to the Lodge is ~2.8 m (to the South), placing physical constraints on the size of the APZ that can be achieved.
- The resultant APZ yields a high BAL rating of BAL-FZ.
- At the time of the site assessment vegetation with in the allotment was found not to be managed per the APZ standards set by PBP 2019.

- APZs are not proposed to extend beyond the lot boundaries and will not encroachment into the KNP.
- A small section of land mapped as “Biodiversity Values” does encroach the subject lot along the southern boundary (fig 11). Given the scale and granularity of the Biodiversity Values map it is difficult to determine what is specifically captured or implied by this. Should this area not be able to be managed as APZ, it will not adversely alter or impact the Better Bush Fire Outcome strategy.



Figure 11 – Showing mapping of Biodiversity Values and encroachment into subject lot.

Recommendations:

- At the commencement of building works, and in perpetuity, all land within the allotment identified as Lot 24 DP 7756697 is to be managed as IPA in accordance with the requirements of Asset Protection Zone Standards - Appendix 4 of PBP (2019) (Attachment B).
- In establishing the APZ, special consideration should be given to the area identified as Biodiversity Values (Fig 11) and consultation with NPWS should occur to determine if vegetation management conflicts with this identified land.

3.4 LANDSCAPINGRecommendations:

- All landscape within the area identified as APZ is to be managed in perpetuity and in accordance with the requirements of Asset Protection Zone Standards - Appendix 4 of PBP (2019) (Attachment B).
- In establishing the APZ, special consideration should be given to the area identified as Biodiversity Values (Fig 11) and consultation with NPWS should occur to determine if vegetation management conflicts with this identified land.

3.5 CONSTRUCTIONDiscussion (Performance Based Solution):

In lieu of strict adherence with the assessed bushfire attack level (BAL-FZ) a performance-based solution is proposed which seeks the Better Bushfire Outcome pathway for the proposed works, by retaining a high construction standard (BAL 40), additional ember protection for the openable windows and doors and formalisation of an APZ.

Note, the previous bushfire assessment report (2013) recommended the Lodge adopt a construction level of BAL-29. This was supported by the NSW RFS. The recommendations made here are for the proposed works is to adopt a BAL-40 construction, offers a significant improvement over the previous recommendations.

Given the age of the Lodge, it can be assumed that the structure is not compliant with current bushfire construction standards and therefore most building elements of the lodge would have limited resistance to bushfire attack particularly given the BAL-FZ rating.

While the adoption a BAL-FZ construction would see an improvement (at considerable cost) in bushfire resilience of the Lodge, it is unlikely the Lodge would withstand this level of bushfire attack, resulting in the loss of the structure.

Put simply, the highly fire-resistant properties of the BAL-FZ windows and doors is unlikely to offset the less fire resistant components of the structure i.e. cladding, and have a noticeable impact on the overall resilience of the structure under BAL-FZ conditions.

By undertaking a Better Bushfire Outcome approach, more cost effective, high fire-resistant windows and doors (BAL-40) can still be used but with the added benefit of metal mesh screens for ember protection and a better managed APZ, providing a more wholistic bushfire protection solution, commensurate with the scale of works.

Recommendations:

- The new windows and doors to comply with:
 - Australian Standard AS3959-2018 'Construction of buildings in bushfire prone area' Sections 3 & 8 - BAL-40 as amended, or
 - NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate
- All doors and openable windows to be provided with metal mesh screens compliant with Clause 3.6.1 of AS3959.
- All landscape within the area identified as APZ is to be managed in perpetuity and in accordance with the requirements of Asset

Protection Zone Standards - Appendix 4 of PBP (2019) (Attachment B).

- In establishing the APZ, special consideration should be given to the area identified as Biodiversity Values (Fig 11) and consultation with NPWS should occur to determine if vegetation management conflicts with this identified land.

3.6 ACCESS REQUIREMENTS

Discussion:

- The Lodge fronts Plum Pine Road (a public road) and Link Road (a public road) which provides sealed egress to Kosciuszko Road and via it to the township of Jindabyne.
- Access is deemed to meet all the requirements of the acceptable solutions under PBP 2019.

Recommendations:

- Nil changes

3.7 WATER SUPPLIES

Discussion:

- The Lodge is provided with a hydrant within 10 m of the front of the structure, satisfying the requirement that reticulated water supply is required.

Recommendations:

- Nil requirements.

3.8 ELECTRICITY SERVICESDiscussion:

- The Lodge is served by underground electricity supplies that appear to comply with the acceptable solutions for electricity in PBP 2019.

Recommendations:

- Nil recommendations.

3.9 GAS SERVICESDiscussion:

- The Lodge is served by existing bottled gas supplies that appear to comply with the acceptable solutions for gas in PBP 2019.

Recommendations:

- Nil.

3.10 EMERGENCY MANAGEMENTRecommendations:

- A bush fire emergency management and evacuation plan is to be prepared consistent with the NSW RFS document: *"A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan"*,

and Australian Standard AS 3745:2010 *"Planning for emergencies in facilities"*.

- The emergency and evacuation management plan should include a mechanism for the early relocation of the facility users.
- An Emergency Planning Committee is to be established to consult with Council.
- Detailed plans of all emergency assembly areas including on-site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted.

4 CONCLUSION

This report documents the findings from a bush fire protection assessment conducted on proposed alterations (new windows and doors) to the existing Gunuma Lodge, Plum Pine Rd, Smiggin Holes.

The scale of works for this project is considered relatively modest and therefore, the corresponding scope and scale of the protection measures is also modest, while still seeking to provide a better bush fire outcome than currently exists.

The recommendations made in this report are intended to deliver a Better Bush Fire Outcome than if the development didn't go ahead or if strict compliance with the NCC was applied.

The proximity of Lodge to the allotment at its closest point to the Lodge is ~2.8 m (to the South), placing physical constraints on the size of the APZ that can be achieved. The resultant APZ yields a high BAL rating of BAL-FZ.

In lieu of strict adherence with the assessed bushfire attack level, a performance-based solution is proposed which seeks the Better Bushfire Outcome pathway for the proposed works, by retaining a high construction standard (BAL 40), additional ember protection for the openable windows and doors and formalisation of an APZ.

By undertaking a Better Bushfire Outcome approach, more cost effective, high fire-resistant windows and doors (BAL-40) can still be used but with the added benefit of improved ember protection for existing parts of the lodge and a better managed APZ, providing a more wholistic bushfire protection solution, commensurate with the scale of works.

Access is well provided for and firefighting water supplies, electricity and gas services will all be capable of meeting or exceeding the requirements of PBP 2019.

Based on the bushfire assessment and the recommendations contained in this report the proposed development is capable of:

- providing a defensible space;
- providing a better bush fire protection outcome for the Lodge;
- ensure new building work complies with the construction standards set out in AS 3959;
- ensure building design and construction standards enhance the chances of occupant and building survival; and
- provide safe emergency evacuation procedures.

Any additional construction requirements should be commensurate with the following:

- the scope of the proposed works, including any increase in size and footprint of the building;
- any additional capacity for the accommodation of guests and/or staff on site; and
- the cost associated with the proposed upgrade of any building.

The proposed development is deemed to comply with the broad objectives of PBP 2019 and therefore suitable for development approval.

Be advised that the NSWRFs may alter recommendations and/or impose additional conditions as it feels is necessary to offer further protection to the structures, occupants and fire fighters during a bush fire.

4.1 REFERENCE

- Keith D. (2004) "Ocean Shores to Desert Dunes", Department of Environment and Conservation, Sydney.
- NSW Rural Fire Service. (2019) "Planning for Bushfire Protection". Sydney
- Standards Australia, (2018) "AS/NZS 3959-2009 Construction of buildings in bush fire prone areas."
- Six Maps, NSW Department of Finance and Services, accessed 10 May 2024, <https://maps.six.nsw.gov.au/#>
- ePlanning Spatial Viewer, Department of Planning Industry and Environment, accessed 10 May 2024, <https://www.planningportal.nsw.gov.au/spatialviewer/#/find-a-property/address>

ATTACHMENT A – COMPLIANCE REPORT

The following compliance report tables the specific objectives to be met for the proposed development and details how this is achieved.

Objectives Required	Compliance	Comments / Details
Provide an appropriate defensible space;	Can Comply	<ul style="list-style-type: none">• The maximum setbacks allowable for the Lot have been provided.• Between 2.8 m and 4 m surrounding structure will be provided.• Landscape surrounding the lodge but within the subject lot is to be managed to inner APZ standards in perpetuity.• In establishing the APZ, special consideration should be given to the area identified as Biodiversity Values (Fig 11) and consultation with NPWS should occur to determine if vegetation management conflicts with this identified land.
Provide a better bushfire protection outcome for existing structures;	Can Comply	<ul style="list-style-type: none">• A Better Bushfire Outcome is sought.• The existing lodge will have improved<ul style="list-style-type: none">○ glazing,○ doors,○ ember protection of windows and doors,○ formalised APZ, and○ improved vegetation management in perpetuity.
Ensure new building work complies with the construction standard set out in AS3959	Can Comply	<ul style="list-style-type: none">• The proposed works must comply with Sections 3 & 8 (BAL-40) of Australian Standard AS3959-2018 Amd 2 Construction of buildings in bushfire-prone areas as amended, or• NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate, and• All doors and openable windows to be provided with metal mesh screens compliant with Clause 3.6.1 of AS3959.
To ensure ongoing management and maintenance responsibilities are in place where APZs are	Can Comply	<ul style="list-style-type: none">• No APZs are proposed outside the sublease or leasehold area

Objectives Required	Compliance	Comments / Details
proposed outside of the sub lease or leasehold area;		
Written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area;	Can Comply	<ul style="list-style-type: none"> No APZs are proposed outside the sublease or leasehold area
Proposed APZs outside of the sub lease or leasehold area are supported by a suitable legal mechanism to ensure APZs are managed under a binding legal agreement in perpetuity;	Can Comply	<ul style="list-style-type: none"> No APZs are proposed outside the sublease or leasehold area
Ensure building design and construction standards enhance the chances of occupant and building survival; and	Can Comply	<ul style="list-style-type: none"> The proposed works must comply with Sections 3 & 8 (BAL-40) of Australian Standard AS3959-2018 Amd 2 Construction of buildings in bushfire-prone areas as amended, or NASH Standard (1.7.14 updated) National Standard Steel Framed Construction in Bushfire Areas – 2014 as appropriate, and All doors and openable windows to be provided with metal mesh screens compliant with Clause 3.6.1 of AS3959.
Provide safe emergency evacuation procedures	Can Comply	<ul style="list-style-type: none"> bush fire emergency management and evacuation plan is to be prepared consistent with the NSW RFS document: "A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan", and Australian Standard AS 3745:2010 "Planning for emergencies in facilities". The emergency and evacuation management plan should include a mechanism for the early relocation of the lodge users. A copy of the bush fire emergency management plan should be provided to the Local Emergency Management Committee for its information prior to use of the lodge. Detailed plans of all emergency assembly areas including 'on-site' and 'off-site' arrangements as stated in AS 3745 are clearly displayed.

ATTACHMENT B – APZs & LANDSCAPING

Inner protection areas (IPAs)

The IPA is the area closest to the asset and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and be a defensible 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 dwelling, consisting of a mown lawn and well maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees:

- 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 ground
- canopies should be separated by 2 to 5m
- 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
- shrubs should not be located under trees
- shrubs should not form more than 10% ground cover
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass:

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

Outer protection areas (OPAs)

An OPA is located between the IPA and the unmanaged vegetation. Vegetation within the OPA can be managed to a more moderate level. The reduction of fuel in this area substantially decreases the intensity of an approaching fire and restricts the pathways to crown fuels; 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.

In practical terms the OPA is an area where there is maintenance of the understorey and some separation in the canopy.

When establishing and maintaining an OPA the following requirements apply:

Trees:

- tree canopy cover should be less than 30%
- trees should have canopy separation
- canopies should be separated by 2 to 5m

Shrubs:

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

Grass:

- should be kept mown (as a guide grass should be kept to no more than 100mm in height)
- leaf and other debris should be mown, slashed or mulched.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA to the standards given above should be undertaken on an annual basis, in advance of the fire season, as a minimum.

In Australia, bush fires are a natural and essential aspect of the landscape as many plants and animals have adapted to fire as part of their life cycle. However, development adjacent to bush land areas has increased the risk of fire impacting on people and their assets. The impact on property and life can be reduced with responsible preparation and management of bush fire hazards.

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

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 built asset or structure.

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

An APZ provides:

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

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset 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 asset
- damage to the built asset from intense radiant heat
- ember attack.

The APZ should be located between an asset and the bush fire hazard.

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. 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).