



Department of Planning
and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 10630

Granted on the 13 September 2022

Signed M Brown

Sheet No 3 of 10

Project: Alterations & Additions to Existing Tourist Accommodation 20 Mountain Drive, Thredbo NSW Lot 612 DP 1118588

DATE: NOVEMBER 2020

REPORT NO: 20121

REVISION: 01

PREPARED FOR: MARK BEATON

PREPARED BY: COMPLETE TOWN PLANNING PTY LTD

- Preparation of Bushfire Reports for Development in Bushfire Prone Areas
- Bushfire Attack Level (BAL) Certificates
- Bushfire Evacuation Plans
- Construction Solutions & Advice for Bushfire Prone Areas



Accreditation No: BPD - 27149



BUSHFIRE HAZARD ASSESSMENT

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ASSESSOR & QUALIFICATIONS

A handwritten signature in black ink, appearing to read 'M Stewart', is positioned above the name Matthew Stewart.

Matthew Stewart

FPAA BPAD Accredited Bushfire Practitioner – No 27149

DISCLAIMER

The recommendations provided in the summary of this report are a result of the analysis of the proposal in relation to the requirements of Planning for Bushfire Protection 2019. Utmost care has been taken in the preparation of this report however there is no guarantee of human error. The intention of this report is to address the submission requirements for Development Applications on bushfire prone land. There is no implied assurance or guarantee the summary conditions will be accepted in the final consent and there is no way Complete Town Planning Pty Ltd is liable for any financial losses incurred should the recommendations in this report not be accepted in the final conditions of consent.

This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

EXECUTIVE SUMMARY

This bushfire assessment is for the proposed alterations and additions to an existing tourist accommodation dwelling located at Lot 612 DP1118588, 20 Mountain Drive, Thredbo NSW 2625.

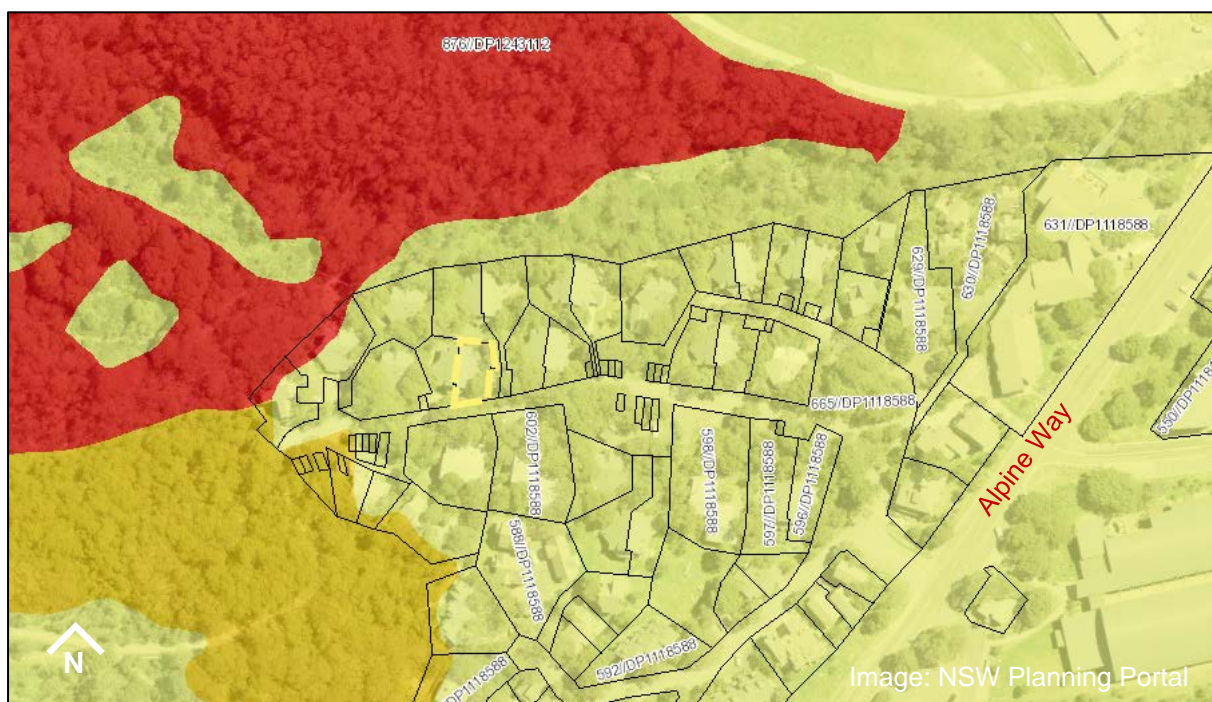
The land is zoned tourist accommodation and has been identified as being in bushfire prone land, and hence as outlined in *Planning for Bushfire Protection – PBP 2019* (NSW RFS 2019) is considered Special Fire Protection Purpose (SFPP) and is required to obtain a BFSA from the RFS under section 100B of the RF Act.

A bushfire safety authority was issued by NSW Rural Fire Service for an outdoor patio and landscaping development (DA10247) on 21 May 2020 for the exterior alterations to comply to BAL19 construction requirements. As the proposed alterations and additions will alter the fabric of the accommodation building an increased BAL rating is proposed to enhance the protection to occupants in line with recommendations and requirements of SFPP development under *Planning for Bushfire Protection 2019*.

The required Bushfire Attack Level for the alterations and additions to the tourist accommodation unit will be:

- **Bushfire Attack Level of BAL 29.**

A combination of measures is proposed within this report, to satisfy the requirements of Chapter 6 Special Fire Protection Purpose ($\leq 10\text{kW/m}^2$ at 1200K) and Chapter 7 Residential Infill Development of PBP 2019.



The assessment confirms the lot is located on Bushfire Prone Land and identifies the following:

- The bushfire threat is forest vegetation to the North of the existing dwelling.
- Thredbo Resort maintains vegetation and APZ of the village for bushfire protection as per the *Thredbo Bush Fire Preparation Map*.
- All allotments are maintained as inner protection areas.
- Clearing will not exceed the clearing threshold permissible above which the Biodiversity

Assessment Method (BAM) and offsets scheme to apply.

- The proposed works are not within the identified terrestrial biodiversity areas.
- No changes to existing road access are proposed as part of this application.
- BAL29 construction is proposed for the alterations and additions to the existing tourist accommodation dwelling.
- Thredbo is serviced by reticulated water and hydrant system with nearest hydrants located on Mountain Drive.

ASSET PROTECTION ZONES

The landscaped areas of the allotment shall be maintained as an inner protection area.

To allow for emergency service personnel and residents to undertake property protection activities, a defensible space that permits unobstructed pedestrian access is to be provided around the building.

CONSTRUCTION

To BAL 29 as per AS3959-2018, with the exception that the construction requirements shall be varied to comply with the requirements of Section A3.7 of the NSW Rural Fire Service Addendum to Appendix 3 of *Planning for Bushfire Protection 2019*.

UTILITIES

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

WATER

All above ground water pipes external to the building are to be metal

Thredbo Resort is serviced by reticulated water. A hydrant system is located along Mountain Drive. The location and distance to the hydrants is consistent with the requirements of PBP 2019.

GAS

No new gas connections proposed as part of this development.

EVACUATION AND EMERGENCY MANAGEMENT

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments.

To achieve this, the following conditions shall apply:

A building evacuation diagram, site layout diagram and Statement of Action are to be provided in each building in accordance with the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.

1. PROPOSAL

This Bush Fire Assessment Report has been compiled for submission to the Department of Planning for the purpose of assessment under Section 100B of the RF Act and is also considered “integrated development” under Section 4.46 of *Environmental Planning and Assessment Act 1979* (EP&A Act).

The report has been prepared in accordance with the submission requirements of Appendix 2 of *Planning for Bush Fire Protection* (NSW RFS 2019) and identifies the proposal can meet the appropriate objectives and performance criteria of Chapter 6 Special Fire Protection Purpose and Chapter 7 Residential Infill Development.

The assessment confirms the subject lot is mapped as bushfire prone.

Complete Town Planning was commissioned to provide this bushfire assessment. Accredited bushfire assessor, Matthew Stewart inspected the site on 1 July 2020.

- Figure 1 – shows the subject lot location
- Figure 2 – provides a broad scale aerial view of the subject site
- Figure 3 – shows the proposed plans

Assessment Methodology: Bushfire Protection Measures in Combination

Vegetation for bushfire protection within Thredbo Resort is managed under the *Thredbo Bush Fire Preparation Map*. All allotments are required to maintain vegetation to meet the requirements of inner protection areas and remaining land within the resort is managed by Thredbo. For this reason, it is proposed that APZ to meet the requirements for BAL29 construction can be achieved as per Table A1.12.7 as adjoining allotments are maintained as inner protection areas and the remaining areas within the APZ are maintained by Thredbo Resort.

The construction of the alterations and additions are to meet the requirements of BAL29.

Thredbo Resort is serviced by reticulated water. A hydrant system is located along Mountain Drive. The location and distance to the hydrants meets the requirements of the PBP 2019.

It is considered that this suite of measures will provide suitable life safety for the occupants and improve the capacity for bushfire protection.

FIGURE 1 SITE LOCATION

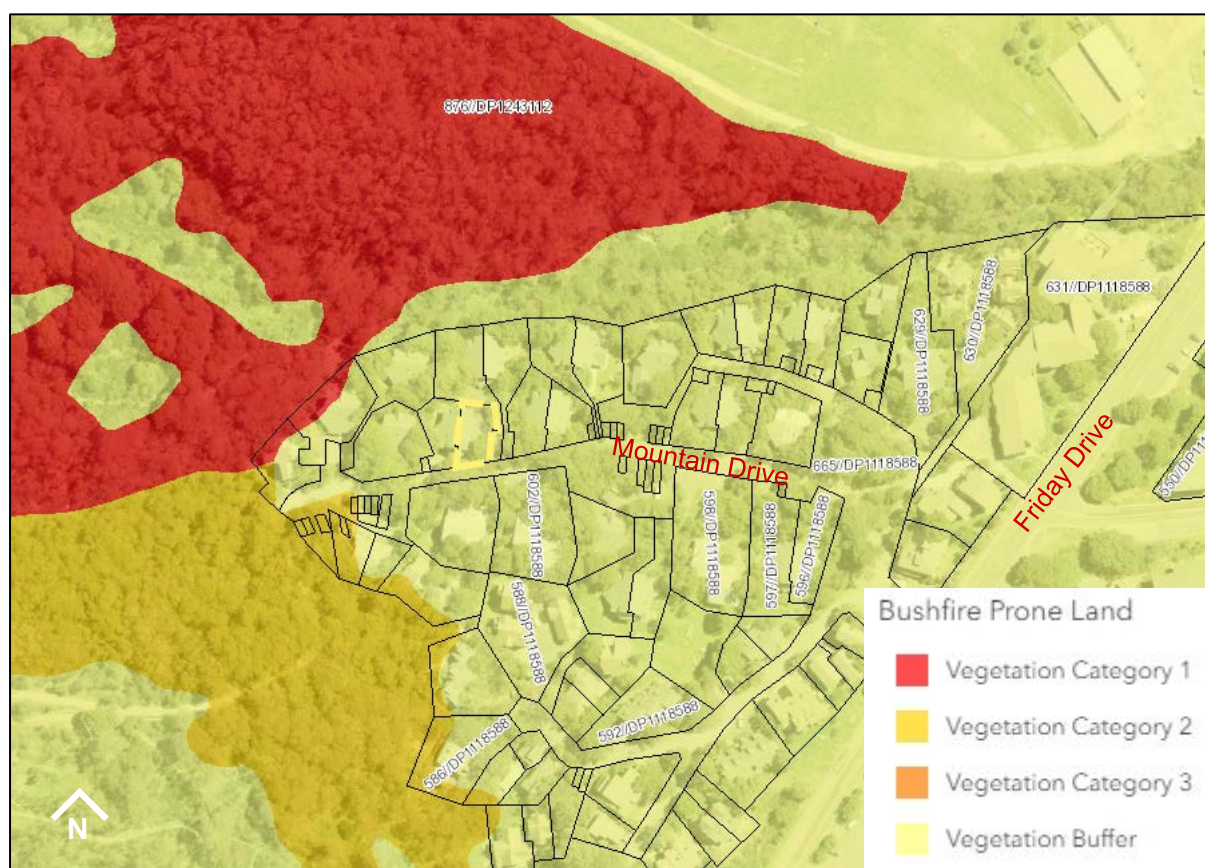


FIGURE 2 BROAD SCALE AERIAL VIEW OF THE SUBJECT SITE



FIGURE 3 CLOSE UP AERIAL VIEW OF SUBJECT LOT

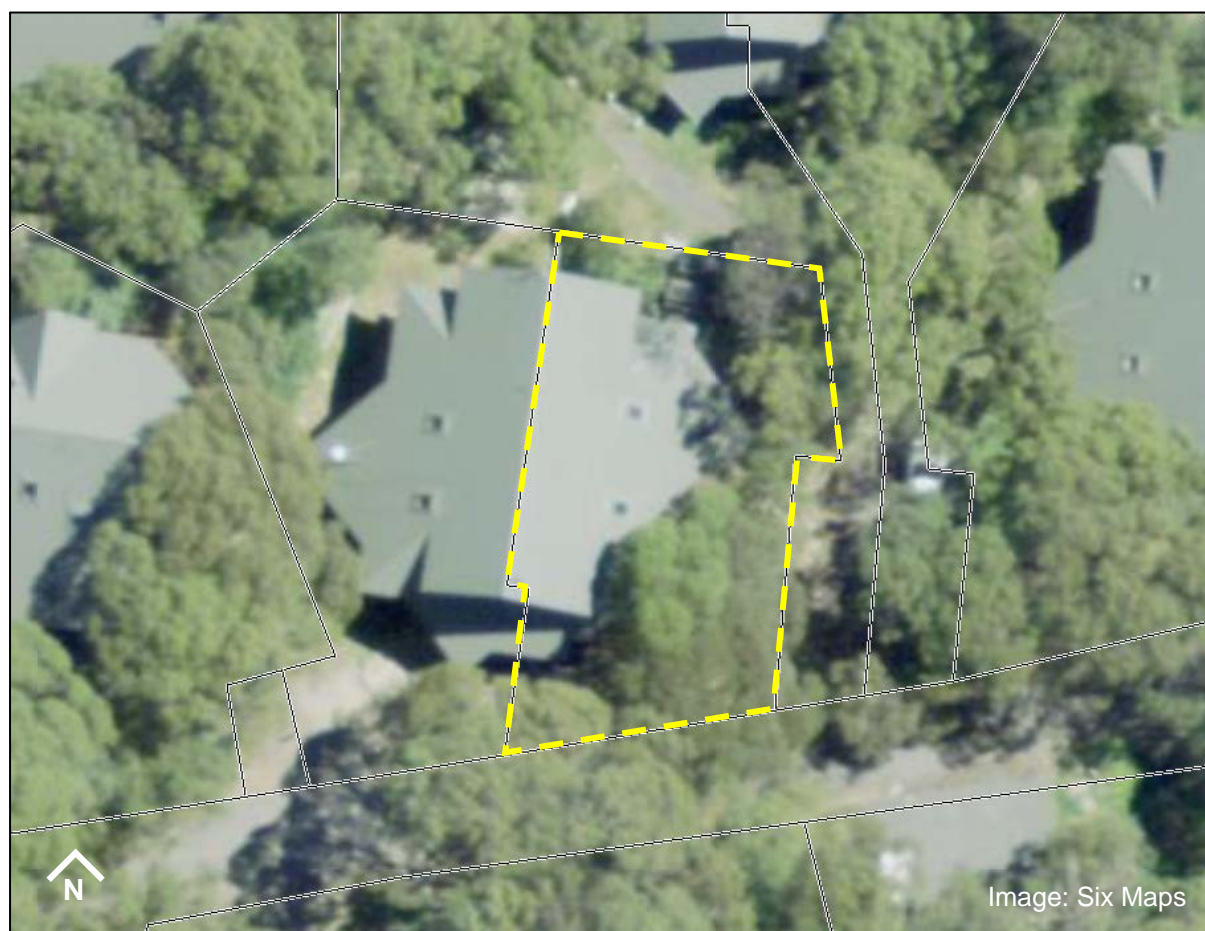
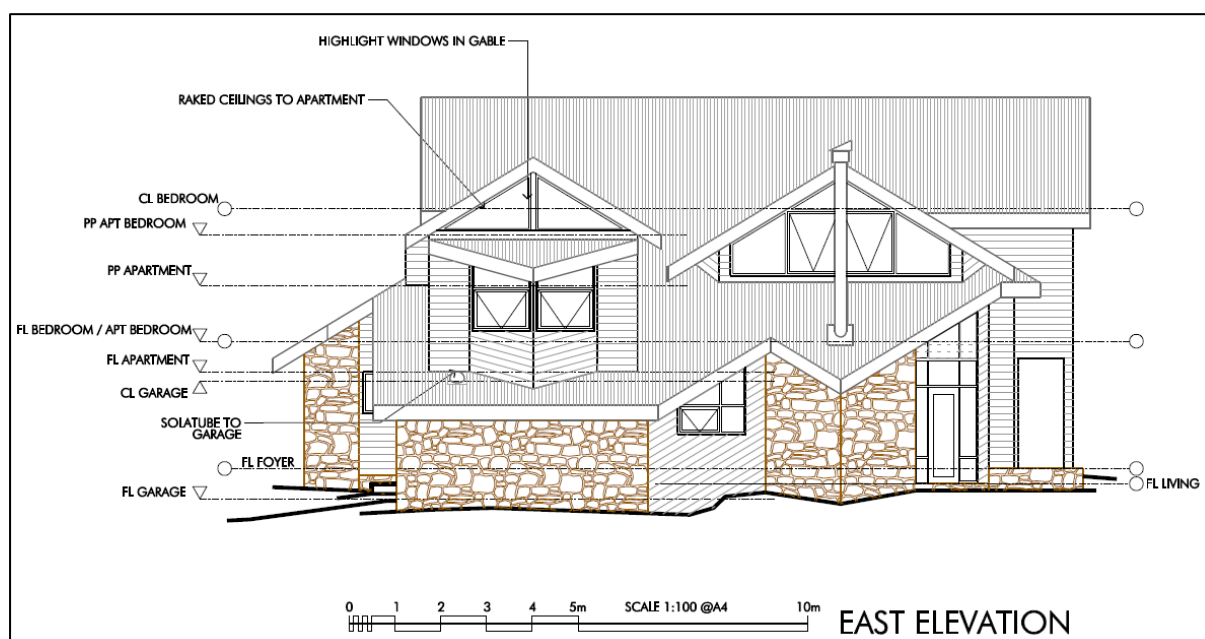
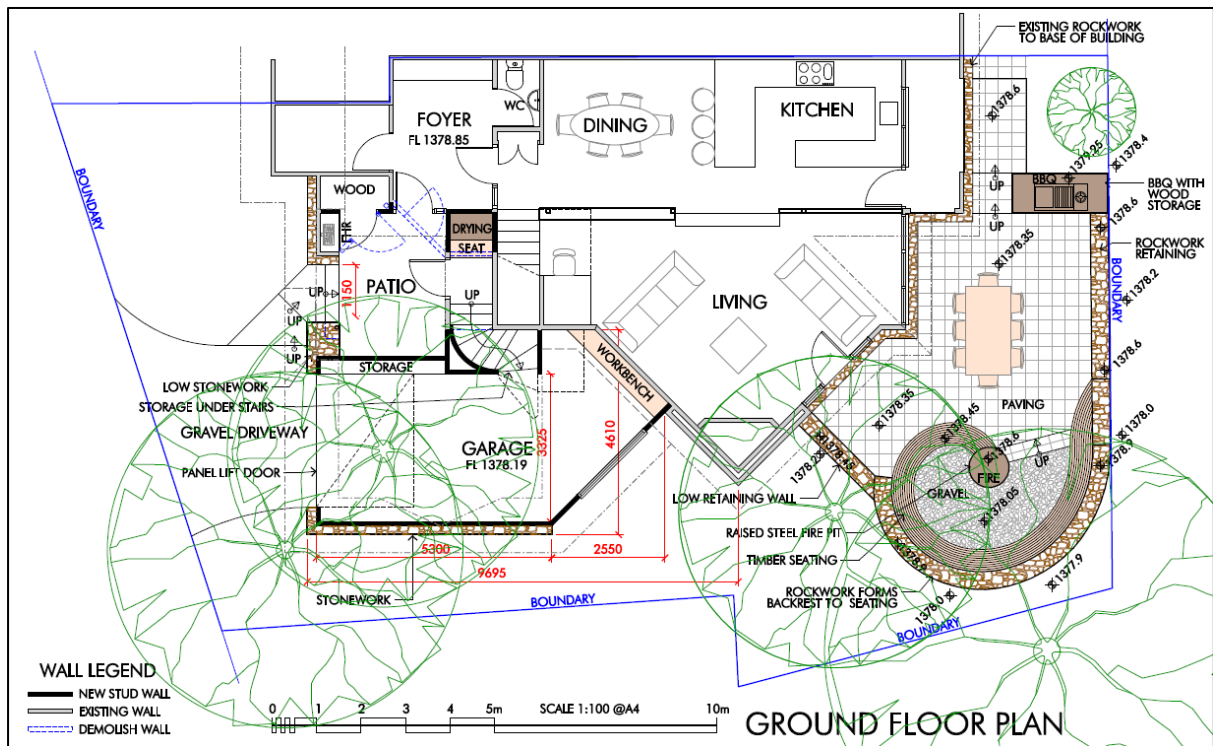
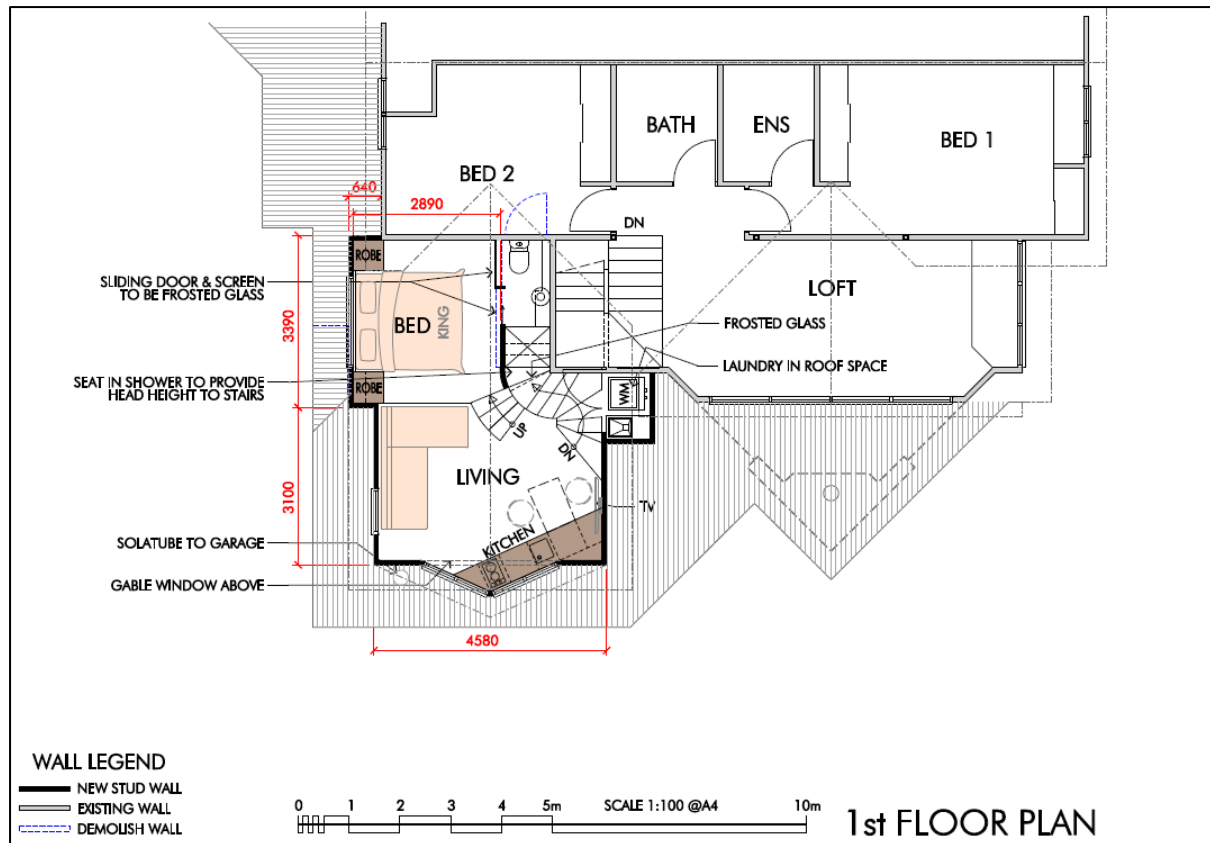


FIGURE 4 PROPOSED PLANS







2. PLANNING LAYERS

The following planning layers are described in Table 1 and shown in the Figures below:

TABLE 1 PLANNING LAYERS

MAP	FIGURE	DESCRIPTION
Bushfire Prone Land Map	5	The subject lot is mapped "Vegetation Buffer"
LEP Zone Map	6	The subject lot is zoned as "E1 – National Parks and Nature Reserves"
Vegetation Mapping	7	The vegetation within 140m of the existing tourist accommodation dwelling is mapped as: - Sub-alpine Shrub-Grass Woodland According to Keith (2004) this formation is classified as "Forest".
Biodiversity Values Map	8	Not identified as an area with high biodiversity values. See Biodiversity and Aboriginal Heritage Assessment provided.

FIGURE 5 BUSHFIRE PRONE MAP

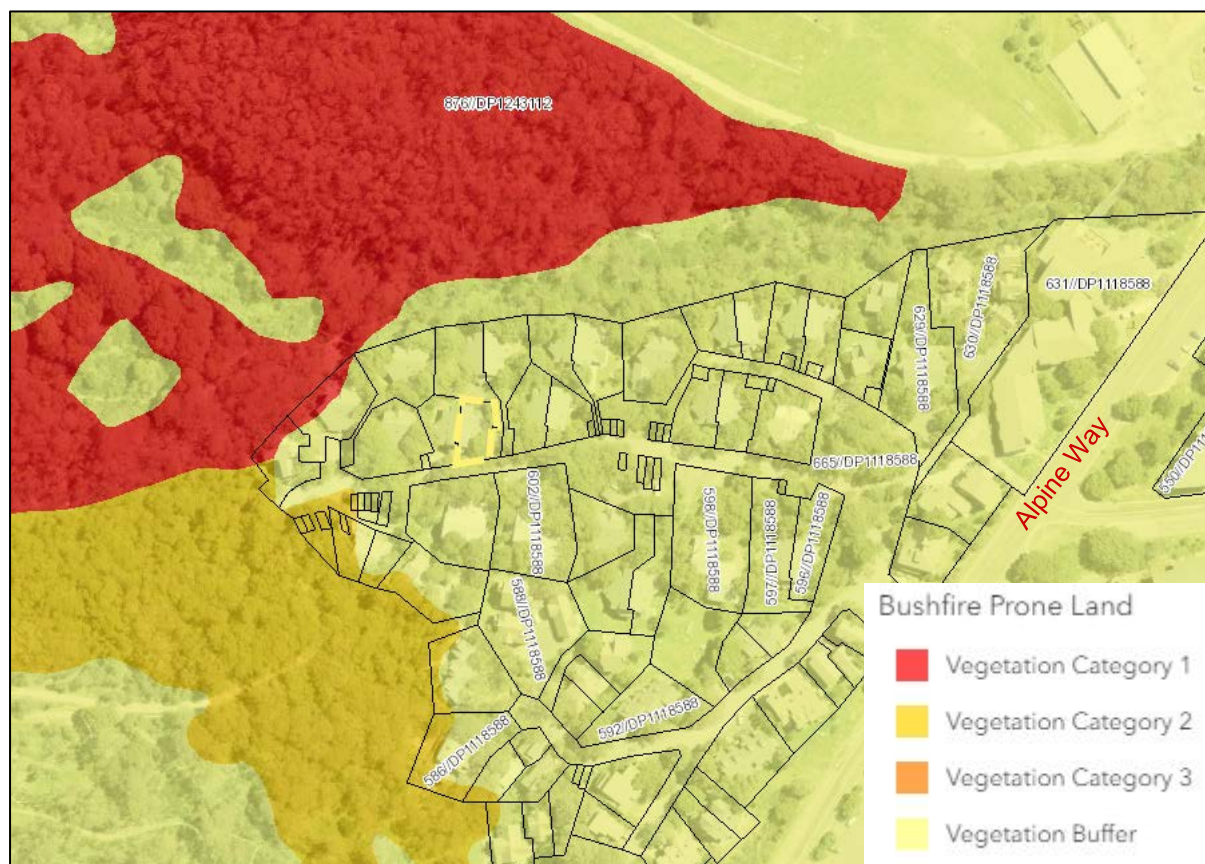


FIGURE 8 BIODIVERSITY VALUES MAP



3. SITE DESCRIPTION

3.1. Slope and aspect of the site within 100 m of the site

The slope that would most significantly influence fire behaviour was determined to be to the North with *Forest* vegetation across the natural stream upslope approximately 45m from the subject allotment with shielding also provided by the tourist accommodation building behind the subject unit.

The Australian Standard AS3959-2018 identifies that the slope of the land under the classified vegetation is much more important than the slope between the site and the edge of the classified vegetation.

As can be seen in Figure 9 the land surrounding the existing tourist accommodation building exhibits an upwards slope to the North and West with a gentle downslope to the East and South through managed land.

FIGURE 9 SLOPE



3.2. Vegetation formation within 140 m of proposed dwelling

Thredbo Village is comprised of managed land at the base of the valley. Within 140m of the site, the area is managed land within a ski resort with the majority comprised of other existing lodges as well as Forest 45 metres to the North of the allotment across a natural stream, 80 metres to the West and 60 metres to the South-West. The vegetation of the area surrounding the chalet is characterised as sub-alpine shrub-grass woodland. Outside of the 140m, there is a small area of developed sub-alpine herb field as well as tableland acacia moist herb forest within the valley.

As seen in Figure 7, within 140m of 20 Mountain Drive, Thredbo vegetation is comprised of Sub-Alpine Shrub-Grass Woodland

Above the lodge, to the north is a dense path of Sub-Alpine Shrub-Grass Woodland, which is comparable to the *Forests* classification of *Keith* as it is comprised of an open tree canopy which is dominated by eucalypt species over 10m in height. Below the canopy there is a prominent understory varying between species from hard-leaved shrubs to soft-leaved shrubs ferns and herbs.

The majority of the remaining area is comprised of managed land as cleared and maintained for ski runs during winter and a mountain bike park during the summer months as well as each allotment maintained as inner protection areas. Common land within the resort is managed by Kosciuszko Thredbo.

The vegetation formations are described below and summarised in Table 2.

TABLE 2 PREDOMINATE VEGETATION CLASSIFICATION

	Vegetation Formation	Effective Slope	APZ Proposed	Photo
North	Managed Land (Forest)	Upslope	Entire Lot to be Managed as IPA	1
East	Managed Land	Downslope 0-5°	Entire Lot to be Managed as IPA	2
South	Managed Land	Downslope 0-5°	Entire Lot to be Managed as IPA	3
West	Managed Land (Forest)	Upslope	Entire Lot to be Managed as IPA	4

Photo 1 View to North



Photo 2 View to East



Photo 3 View to South



Photo 4 View to West



4. BUSHFIRE THREAT ASSESSMENT

4.1. Asset Protection Zones (APZ)

PBP 2019 Table A1.12.4 and A1.12.7 has been used to determine the width of the required APZ for the proposed development using the vegetation and slope data identified. An FFDI of 50 was used for this location. An APZ should be maintained from the commencement of building works and maintained for perpetuity.

The vegetation classification for bushfire purposes for this site is Managed Land and "Forest". Forest vegetation can be managed as an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is critical for providing a defendable space and managing heat intensities at the building surface. The OPA serves to reduce the potential length of flames, filtering embers and reducing the likelihood of crown fires.

The IPA should provide a tree canopy cover less than 15% and any tree canopies must be located greater than 2 metre from any part of the proposed dwelling roofline. Garden beds of flammable shrubs should not be located under trees and should be no greater than 10m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 metres above ground.

An OPA should provide a tree canopy cover of less than 30% and should have understory managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (September).

Table 3 below shows the APZ and BAL Determination for proposed dwelling.

TABLE 3 APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
Gradient	Upslope	Downslope 0-5°	Downslope 0-5°	Upslope
Vegetation	Managed Land (Forest)	Managed Land	Managed Land	Managed Land (Forest)
Proposed distance to be provided between edge of building and vegetation	Entire Lot to be Managed as IPA	Entire Lot to be Managed as IPA	Entire Lot to be Managed as IPA	Entire Lot to be Managed as IPA
APZ required by PBP 2019 for BAL 29	15-<22 m	18-<26 m	18-<26 m	15-<22 m
BAL Proposed	BAL 29	BAL 29	BAL 29	BAL 29

4.2. Relevant Construction Standard

The Australian Standard AS 3939 – 2018 is the enabling standard that addresses the performance requirements of both parts 2.3.4 and Part GF5.1 of the Building Code of Australia for the construction of the Class 1, 2 and Class 3 buildings within a designated Bushfire Prone Area.

The following was determined for this site:

Relevant fire danger index..... FFDI 50

The applicant proposes alterations and additions to the existing tourist accommodation building will meet BAL 29.

4.3. Safe Operational Access

The Planning for Bushfire Protection requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

The PBP (2019) requires the provision of safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area.

- Mountain Drive and Friday Drive are both sealed public roads. They're two-wheel drive, all weather roads. The widths and design would allow safe access for firefighters while residents are evacuating an area. The capacity of road surfaces is sufficient to carry fully loaded firefighting vehicles.

4.4. Emergency Management

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments.

To achieve this, the following conditions shall apply:

A building evacuation diagram, site layout diagram and Statement of Action are to be provided for the proposed development in accordance with Building Emergency Procedures and Bush Fire Evacuation Plan, the NSW Rural Fire Service Guidelines for the Preparation of Emergency/Evacuation Plan and with Australian Standard AS 3745 2010 'Planning for Emergencies in Facilities'.

The owners are advised to obtain the NSW Rural Fire Service – “Guidelines for the Preparation of Bush Fire Evacuation Plans” & ‘Bush Fire Survival Plan’ In the event of emergency, the owners should ensure they are familiar with the RFS Bush Fire Alert Levels and use their Bush Fire Survival Plan.

4.5. Adequate Water and Utility Services

Thredbo Resort is serviced by reticulated water. A hydrant system is located along Mountain Drive. The location and distance to the hydrants will be consistent with the requirements of the PBP 2019.

Any bottled gas will be installed and maintained in accordance with AS1596 and the requirements of the relevant authority. If gas cylinders need to be kept close to the buildings, the release valves must be directed away from the building and away from any combustible material. Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

5. LANDSCAPING

An APZ is required to be established and should be maintained for perpetuity as specified.

When landscaping, vegetation should be located greater than 2 m from any part of the roofline of a dwelling or the shed. Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10 m from an exposed window or door. Trees should have lower limbs removed up to a height of 2 m above the ground.

Appendix 4 (PBP 2019) provides guidelines for landscaping and Bushfire Provisions within the APZ. To incorporate bushfire protection measures into future development, the owner is advised to consider the following:

- Avoid planting trees species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopy.
- Avoid planting deciduous species that may increase fuel at surface/ground level by the fall of leaves.
- Avoid climbing species to walls and pergolas.
- Locate combustible materials such as woodchips/mulch, flammable fuel stores (LPG gas bottles) away from the building.
- Locate combustible structures such as garden sheds, pergolas and materials such as timber furniture away from the building.
- Ensure any vegetation planted around the house is a suitable distance away so these plants do not come into physical contact with the house as they mature.

The property should be developed to incorporate suitable impervious area surrounding the house, including courtyards, paths and driveways.

6. HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION

DEMONSTRATION COMPLIANCE UNDER SECTION 6.4 – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
<ul style="list-style-type: none"> provide an appropriate defensible space 	☑	See Table 3 for APZ distances.
<ul style="list-style-type: none"> site the building in a location which ensures appropriate separation from the hazard to minimise potential for material ignition 	☑	Addition to existing building is not closer to the significant bushfire risk and is located on the south-east corner of the building which presents the lowest bushfire risk.
<ul style="list-style-type: none"> provide a better bush fire protection outcome for existing buildings 	☑	Proposed additions to comply with requirements of BAL29.
<ul style="list-style-type: none"> new buildings should be located as far from the hazard as possible and should not be extended towards or situated closer to the hazard than the existing buildings (unless they can comply with section 6.8); 	☑	No new buildings proposed as part of this application.
<ul style="list-style-type: none"> ensure there is no increase in bush fire management and maintenance responsibility on adjoining land owners without their written confirmation 	☑	The APZ does not propose new maintenance requirements outside of the existing leasehold area.
<ul style="list-style-type: none"> ensure building design and construction enhances the chances of occupant and building survival 	☑	Proposed works to comply with BAL29 requirements. This will enhance the design and construction of the existing building.
<ul style="list-style-type: none"> provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads) 	☑	<p>Access to property provided via Mountain Drive which is an all-weather two wheel drive access road.</p> <p>Emergency Evacuation plan will be provided in accordance with Kosciuszko Thredbo Ski Resort evacuation management plan. An individual evacuation plan will be prepared as described in section 4.4. of this report.</p>

DEMONSTRATION COMPLIANCE UNDER SECTION 6.6 – SPECIFIC OBJECTIVES PLANNING FOR BUSHFIRE (2019)

Performance Criteria	Complies	Acceptable solutions
The intent may be achieved where:		
<ul style="list-style-type: none"> provide an appropriate defensible space 	<input checked="" type="checkbox"/>	See Table 3 for APZ distances.
<ul style="list-style-type: none"> provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures) 	<input checked="" type="checkbox"/>	Proposed additions to comply with requirements of BAL29.
<ul style="list-style-type: none"> ensure new building work complies with the construction standards set out in AS 3959; 		Proposed additions to comply with requirements of BAL29. This will enhance the design and construction of the existing building.
<ul style="list-style-type: none"> to ensure ongoing management and maintenance responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area 		The APZ does not propose new maintenance requirements outside of the existing leasehold area.
<ul style="list-style-type: none"> written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area 	<input checked="" type="checkbox"/>	The APZ does not propose new maintenance requirements outside of the existing leasehold area.
<ul style="list-style-type: none"> 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 	<input checked="" type="checkbox"/>	<p>The APZ does not propose new maintenance requirements outside of the existing leasehold area.</p> <p>APZ to be maintained in perpetuity.</p>
<ul style="list-style-type: none"> ensure building design and construction standards enhance the chances of occupant and building survival; 	<input checked="" type="checkbox"/>	Proposed works to comply with BAL29 requirements. This will enhance the design and construction of the existing building.
<ul style="list-style-type: none"> provide safe emergency evacuation procedures. Any additional construction requirements should be commensurate with the following: <ul style="list-style-type: none"> 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 the cost associated with the proposed upgrade of any building. 	<input checked="" type="checkbox"/>	<p>Access to property provided via Mountain Drive, which is an all-weather two wheel drive access road.</p> <p>Emergency Evacuation plan will be provided in accordance with Kosciuszko Thredbo Ski Resort evacuation management plan. An individual evacuation plan will be prepared as described in section 4.4. of this report.</p> <p>Proposed works to comply with BAL29 requirements.</p>

6. BUSHFIRE PROTECTION MEASURES

ASSESSMENT IN RELATION TO SECTION 6.8 – SFPP – PBP 2019

Section 6.8 of The NSW Rural Fire Services' *Planning for Bushfire Protection* (PBP 2019) provides the standards, performance criteria and acceptable solutions for SFPP development in bushfire prone areas and satisfaction of these by the proposed development is outlined below.

ASSET PROTECTION ZONES PBP 2019 (Table 6.8a)		
Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
<ul style="list-style-type: none"> radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building. 	<ul style="list-style-type: none"> the building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1. 	Proposed APZ distances comply with Table A1.12.7 in Appendix 1 of PBP 2019.
<ul style="list-style-type: none"> APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised. 	<ul style="list-style-type: none"> APZs are located on lands with a slope less than 18 degrees. 	Not applicable. APZ is on slopes that are <18°.
<ul style="list-style-type: none"> APZs are managed and maintained to prevent the spread of fire to the building. the APZ is provided in perpetuity. 	<ul style="list-style-type: none"> the APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site; APZ are wholly within the boundaries of the development site; and other structures located within the APZ need to be located further than 6m from the refuge building. 	The APZ does not propose new maintenance requirements outside of the existing leasehold area.

LANDSCAPING PBP 2019 (Table 6.8a)		
Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
<ul style="list-style-type: none"> landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions. 	<ul style="list-style-type: none"> landscaping is in accordance with Appendix 4; and fencing is constructed in accordance with section 7.6. 	Entire allotment to be maintained as an IPA.

CONSTRUCTION STANDARDS PBP 2019 (Table 6.8a)

Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
<ul style="list-style-type: none"> the proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact. 	<ul style="list-style-type: none"> a construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied. 	Proposed additions to comply with requirements of BAL29.

ACCESS PBP 2019 (Table 6.8b)

Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
<ul style="list-style-type: none"> firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation. 	<ul style="list-style-type: none"> SFPP access roads are two-wheel drive, all-weather roads; access is provided to all structures; traffic management devices are constructed to not prohibit access by emergency services vehicles; access roads must provide suitable turning areas in accordance with Appendix 3; and 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. 	<p>No changes to existing access proposed.</p> <p>Hydrant system serviced by reticulated water system is provided on Mountain Drive.</p>
<ul style="list-style-type: none"> the capacity of access roads is adequate for firefighting vehicles. 	<ul style="list-style-type: none"> 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. 	Mountain Drive is a two-wheel drive, sealed all-weather road suitable for providing access to firefighting vehicles.
<ul style="list-style-type: none"> there is appropriate access to water supply. 	<ul style="list-style-type: none"> hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and there is suitable access for a Category 1 fire appliances to 	Access to dedicated water supply will be provided for firefighting purposes and serviced by reticulated water and hydrant system accessible from Mountain Drive.

	within 4m of the static water supply where no reticulated supply is available.	
<ul style="list-style-type: none"> perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface. 	<ul style="list-style-type: none"> there are two way sealed roads; minimum 8m carriageway width kerb to kerb; parking is provided outside of the carriageway width; hydrants are to be located clear of parking areas; there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; curves of roads have a minimum inner radius of 6m; the maximum grade road is 15 degrees and average grade of not more than 10 degrees; the road crossfall does not exceed 3 degrees; and a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 	<p>No changes to existing access roads proposed.</p> <p>Mountain Drive is a two-wheel drive all weather road.</p>
<ul style="list-style-type: none"> non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating. 	<ul style="list-style-type: none"> minimum 5.5m carriageway width kerb to kerb; parking is provided outside of the carriageway width; hydrants are located clear of parking areas; there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; curves of roads have a minimum inner radius of 6m; the maximum grade road is 15 degrees and average grade of not more than 10 degrees; the road crossfall does not exceed 3 degrees; and a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 	<p>No changes to existing access roads proposed.</p> <p>Mountain Drive is a two-wheel drive all weather road.</p>

SERVICES – WATER, GAS AND ELECTRICITY PBP 2019 (Table 6.8c)		
Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
WATER SUPPLIES <ul style="list-style-type: none"> an adequate water supply for firefighting purposes is installed and maintained. water supplies are located at regular intervals. the water supply is accessible and reliable for firefighting operations. flows and pressure are appropriate. the integrity of the water supply is maintained. water supplies are adequate in areas where reticulated water is not available (N/A). water supplies are adequate in areas where reticulated water is not available (N/A). 	<ul style="list-style-type: none"> reticulated water is to be provided to the development, where available; or a 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available. fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; hydrants are not located within any road carriageway; and reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads. fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005. all above-ground water service pipes external to the building are metal, including and up to any taps. 	<p>Thredbo Resort is serviced by reticulated water and hydrant system consistent with the requirements of PBP 2019 is provided.</p> <p>Hydrant system has been designed to meet the requirements of AS2419.1:2005.</p> <p>Nearest hydrants located on Mountain Drive.</p>
ELECTRICITY SERVICES <ul style="list-style-type: none"> location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings 	<ul style="list-style-type: none"> where practicable, electrical transmission lines are underground where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas no part of a tree is closer to a power line than the distance set out in ISSC3 <i>Guideline for Managing Vegetation Near Power Lines</i>. 	<p>DA to be conditioned with recommendations outlined in this report.</p>

GAS SERVICES <ul style="list-style-type: none"> location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings. 	<ul style="list-style-type: none"> reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - <i>The storage and handling of LP Gas</i>, the requirements of relevant authorities, and metal piping is used all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side connections to and from gas cylinders are metal polymer-sheathed flexible gas supply lines are not used above-ground gas service pipes are metal, including and up to any outlets. 	<p>No gas proposed as part of this application.</p> <p>To form part of the recommendations of this report if installed at future date.</p>
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EMERGENCY MANAGEMENT PLANNING PBP 2019 (Table 6.8d)		
Performance Criteria	Acceptable solutions	Compliance
The intent may be achieved where:		
<ul style="list-style-type: none"> a Bush Fire Emergency Management and Evacuation Plan is prepared. 	<ul style="list-style-type: none"> Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: The NSW RFS document: <i>A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i>; <i>NSW RFS Schools Program Guide</i>; Australian Standard AS 3745:2010 <i>Planning for emergencies in facilities</i>; and Australian Standard AS 4083:2010 <i>Planning for emergencies – Health care facilities</i> (where applicable). the Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants. 	<p>To be provided prior to occupation of any of the proposed developments.</p> <p>DA to be conditioned accordingly.</p>
<ul style="list-style-type: none"> appropriate and adequate management arrangements are established for consultation and implementation of the Bush 	<ul style="list-style-type: none"> an Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation 	<p>To be provided prior to occupation of any of the proposed developments.</p>

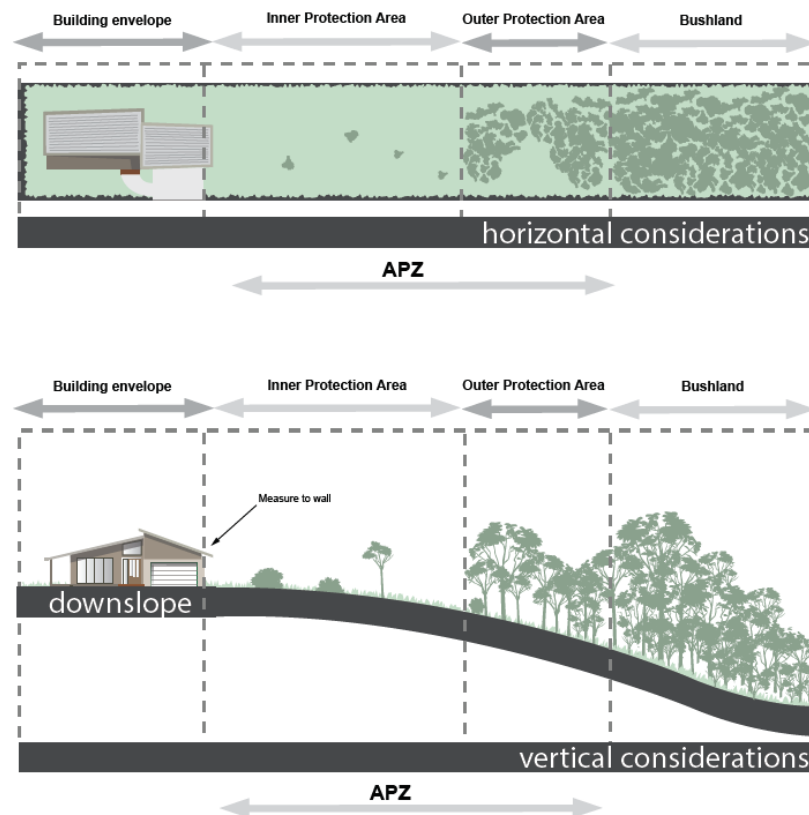
Fire Emergency Management and Evacuation Plan.	<p>and schools) and staff in developing and implementing an Emergency Procedures Manual; and</p> <ul style="list-style-type: none"> • detailed plans of all emergency assembly areas including on site and off-site arrangements as stated in AS 3745:2010 are clearly displayed, and an annually emergency evacuation is conducted. 	DA to be conditioned accordingly.
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APPENDIX I DEFINITION OF ASSET PROTECTION ZONES

Vegetation within the APZ should be managed in accordance with APZ specifications for the purposes of limiting the travel of a fire, reducing the likelihood of direct flame contact and removing additional hazards or ignition sources. The following outlines some general vegetation management principles for APZs:

1. Discontinuous shrub layer (clumps or islands of shrubs not rows)
2. Vertical separation between vegetation stratum
3. Tree canopies not overhanging structures
4. Management and trimming of trees and other vegetation in the vicinity of power lines and tower lines in accordance with the specifications in "Vegetation Safety Clearances" issued by Energy Australia (NS179, April 2002)
5. Maintain low ground covers by mowing / whipper snipper / slashing; and
6. Non-combustible mulch e.g. stones and removing stores of combustible materials
7. Vegetation to be planted should consist of fire retardant/ less flammable species strategically located to reduce attack from embers (i.e. as ember traps when in small clumps and short wind breaks).

Typical Inner and Outer Protection Areas.



(Planning for Bushfire Protection 2019)