

BUSHFIRE HAZARD ASSESSMENT REPORT



INSTALLATION OF A CONTAINER KIOSK AND COOLROOM

AVALANCHE CAFE
FRIDAY DRIVE, THREDBO VILLAGE
KOSCIUSZKO NATIONAL PARK NSW 2625
LOT 862 DP1128686

DATE: JANUARY 2024
REPORT NO: 23122
REVISION: 01
PREPARED FOR: STEVEN ASHE
PREPARED BY: ACCENT TOWN PLANNING

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- 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

BUSHFIRE HAZARD ASSESSMENT REPORT

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WRITTEN BY:

Tammy Stewart
Town Planner

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 Accent 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.

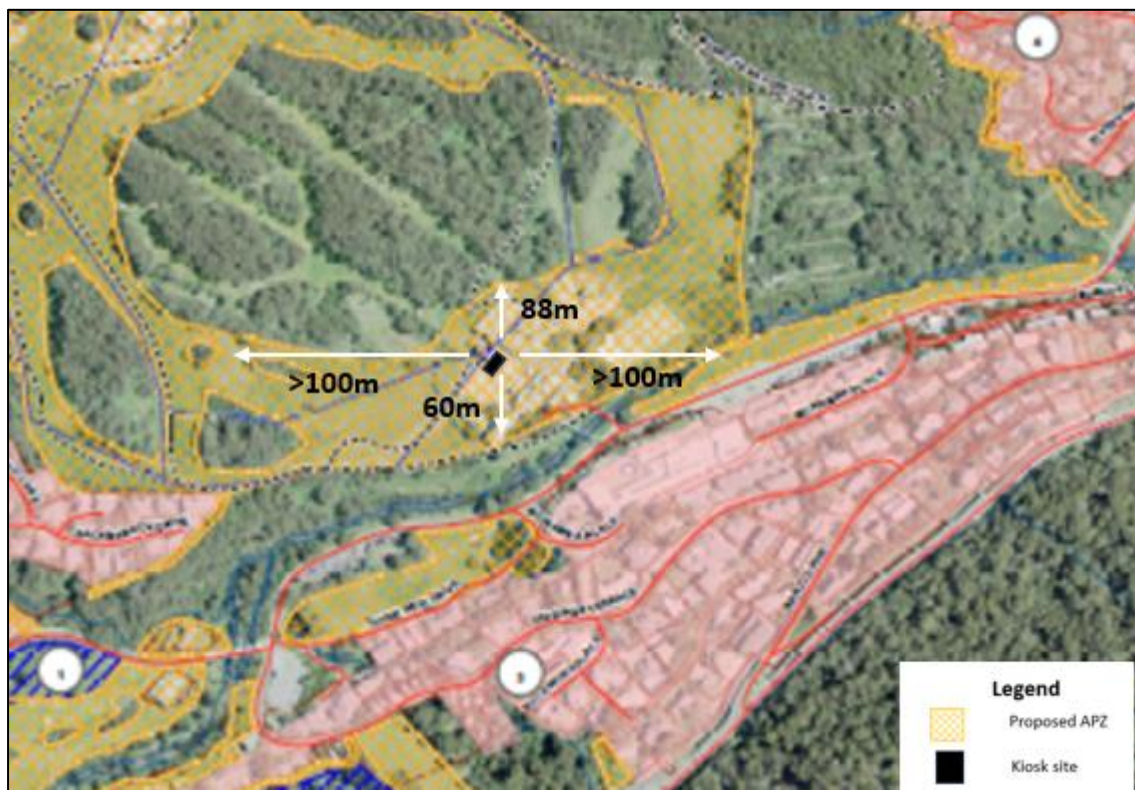
This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

EXECUTIVE SUMMARY

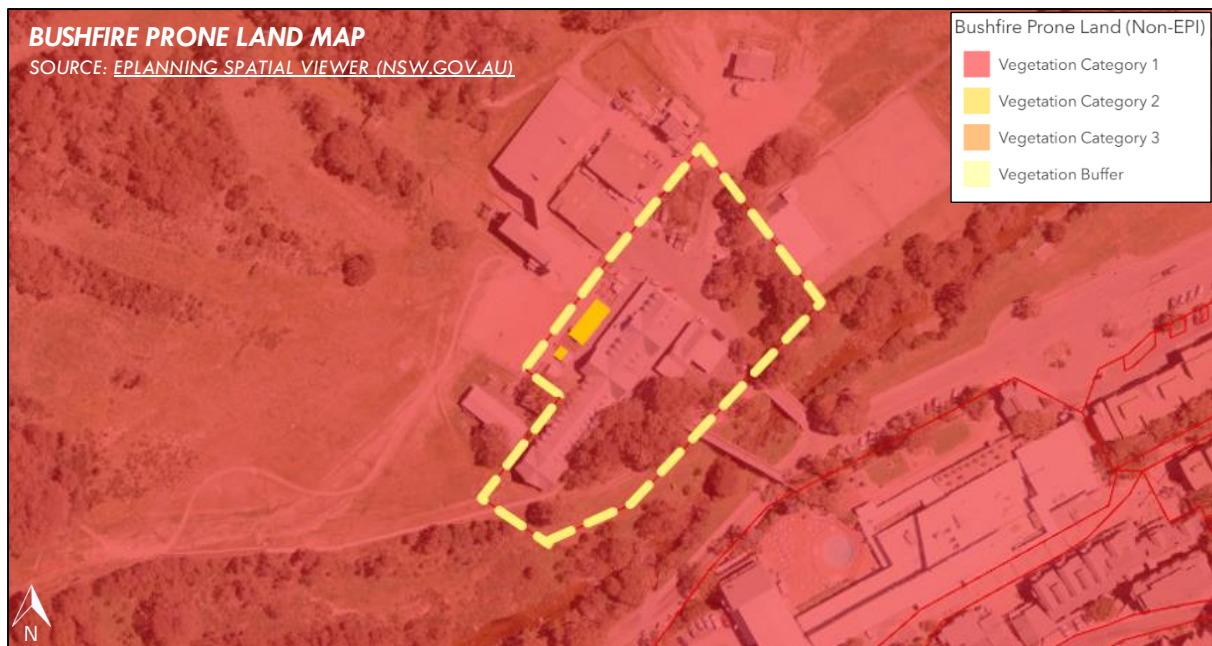
Accent Town Planning has been engaged by Steven Ashe to prepare a Bushfire Hazard Assessment Report (BHAR) in accordance with the *Planning for Bushfire Protection 2019* (PBP 2019) for upgrade works to the existing kiosk known as Avalanche Café and the storage room utilised by the facility in Thredbo Village. Avalanche Café is located in Lot 862 DP1128686, Thredbo Village, NSW 2625.

The land is zoned C1: *National Parks and Nature Reserves* and is identified as being in bushfire prone land on mapping 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.

- ***The proposed updated kiosk and storage space are to meet BAL 12.5 construction requirements as per AS 3959.***
- ***The proposed works will be required to meet BAL 12.5 construction on North and South elevations and BAL Low on the East and West as per the requirements of AS 3959. For the purpose of the proposed work we have determined that all new work is to meet the requirements of BAL 12.5 on all sides in order to achieve a better Bush Fire outcome.***
- ***Under the Thredbo Bush Fire Preparation Map (Appendix II) there is an existing APZ around the Thredbo Valley Terminal Building and the Café site. Based on this existing APZ the land immediately around the subject site is deemed to be Managed Land, with a threat of Sub-Alpine Woodland beyond this.***



Pending compliance with the recommendations outlined in this report. The performance criteria and deemed to satisfy provisions of minor development in SFPP facilities in an Alpine Resort Area. The proposed works have been assessed in accordance with Section 6.6 of PBP 2019.



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

- The subject site is surrounded by *Managed Land* under the Thredbo Bush Fire Preparation Map in the immediate vicinity and *Sub-Alpine Woodland* beyond this.
- Clearing will not exceed the clearing threshold permissible above which the Biodiversity Assessment Method (BAM) and offsets scheme to apply.
- The areas where works are proposed, do not contain High Biodiversity Value areas.
- No changes to existing road access are proposed as part of this application.
- Thredbo is serviced by reticulated water and a hydrant system

ASSET PROTECTION ZONES

Asset protection zones are the most strategically valuable defence against radiant heat and flame, and to lesser extent embers. 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.

The subject land surrounding the kiosk primarily consists of *Managed Land*. As defined within the *PBP 2019* Managed Land is “*Land that has vegetation removed or maintained to a level that limits the spread and impact of bush fire. These areas are managed to meet the requirements of an APZ.*” The Thredbo Bush Fire Preparation Map specifically identifies the areas immediately surrounding the site as a dedicated APZ, so therefore, this can be classified as Managed Land for the purposes of this report.

CONSTRUCTION

The proposed upgrade work will include:

- The removal of the existing kiosk facilities and replacement with pre-constructed structure to be used for kitchen and servery facilities
- Addition of external cladding to enclose storage space around servery
- The removal of existing metal roof sheeting and replacement plus extension with like-for-like product.
- The removal of existing storage facility and placement of new pre-constructed storage facility from a suitable material to be used as a coolroom

No earthworks are required as part of this development.

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 firefighting activities. To achieve this, the following conditions shall apply:

WATER

The subject site is serviced by reticulated water and has access to a nearby fire hydrant. All above ground water pipes external to the building are to be metal.

GAS

If gas is connected to the building on the subject land, the following criteria must be met:

- Bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. Metal piping is to be used.
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.
- If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.
- Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.

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 and Environment 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 4 of *Planning for Bush Fire Protection* (NSW RFS 2019) and identifies the proposal can meet the appropriate objectives and performance criteria of Section 6.6 *Planning for Bush Fire Protection* (NSW RFS 2019).

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

Accent Town Planning was commissioned to provide this bushfire assessment. Accent Town Planning inspected the site on 14 May 2023.

- **FIGURE 1** – Shows the subject lot location.
- **FIGURE 2** – Provides a broad scale aerial view of the subject site.
- **FIGURE 3** – Shows a close-up aerial view of the site.

FIGURE 1 SITE LOCATION



FIGURE 2 BROAD SCALE AERIAL VIEW OF THE SUBJECT SITE

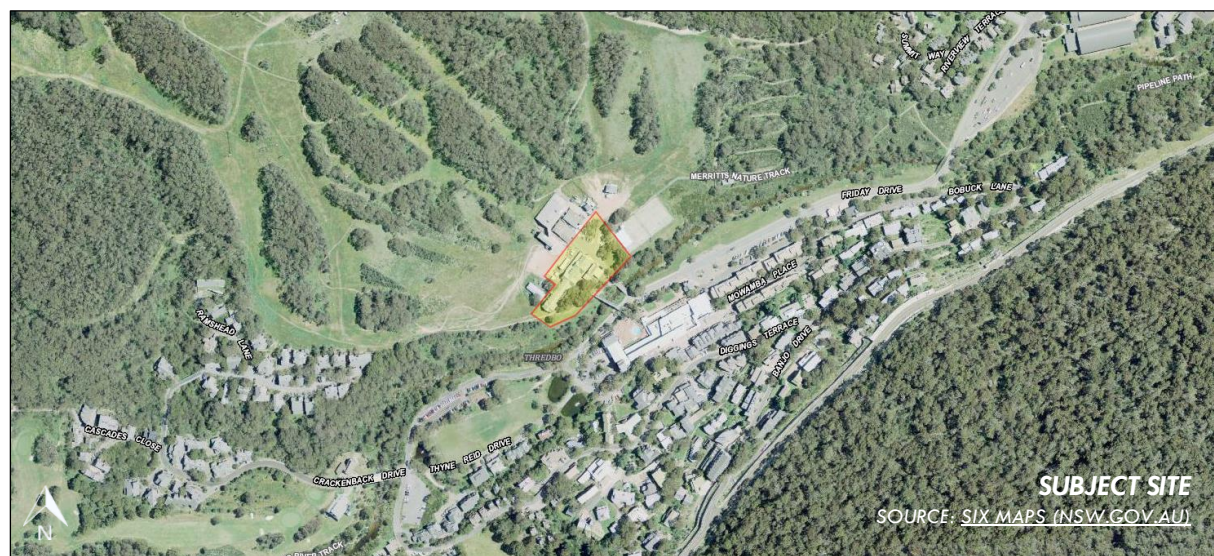


FIGURE 3 **CLOSE UP AERIAL VIEW OF THE SITE**



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	4	The subject lot is mapped as “Vegetation Category 1”.
LEP ZONE MAP	5	The subject lot is zoned as “C1 – National Parks and Nature Reserves”.
VEGETATION MAPPING	6	<p>The vegetation surrounding the kiosk and surrounding buildings has been mapped as:</p> <ul style="list-style-type: none"> - SUB-ALPINE SHRUB-GRASS WOODLAND <p>According to Keith (2004) this formation is classified as both “Woodland” and “Forest” depending on the density of the vegetation. Thredbo Valley primarily consists of <i>Sub Alpine Woodland</i> vegetation formations.</p>
BIODIVERSITY VALUES MAP	7	The subject lot does contain areas of High Biodiversity Values, which includes the Thredbo River and a small buffer on either side of the river. The proposed works will not be occurring in the areas identified with High Biodiversity Values, and the works do not have the potential to negatively impact upon these areas.

FIGURE 4 BUSHFIRE PRONE MAP

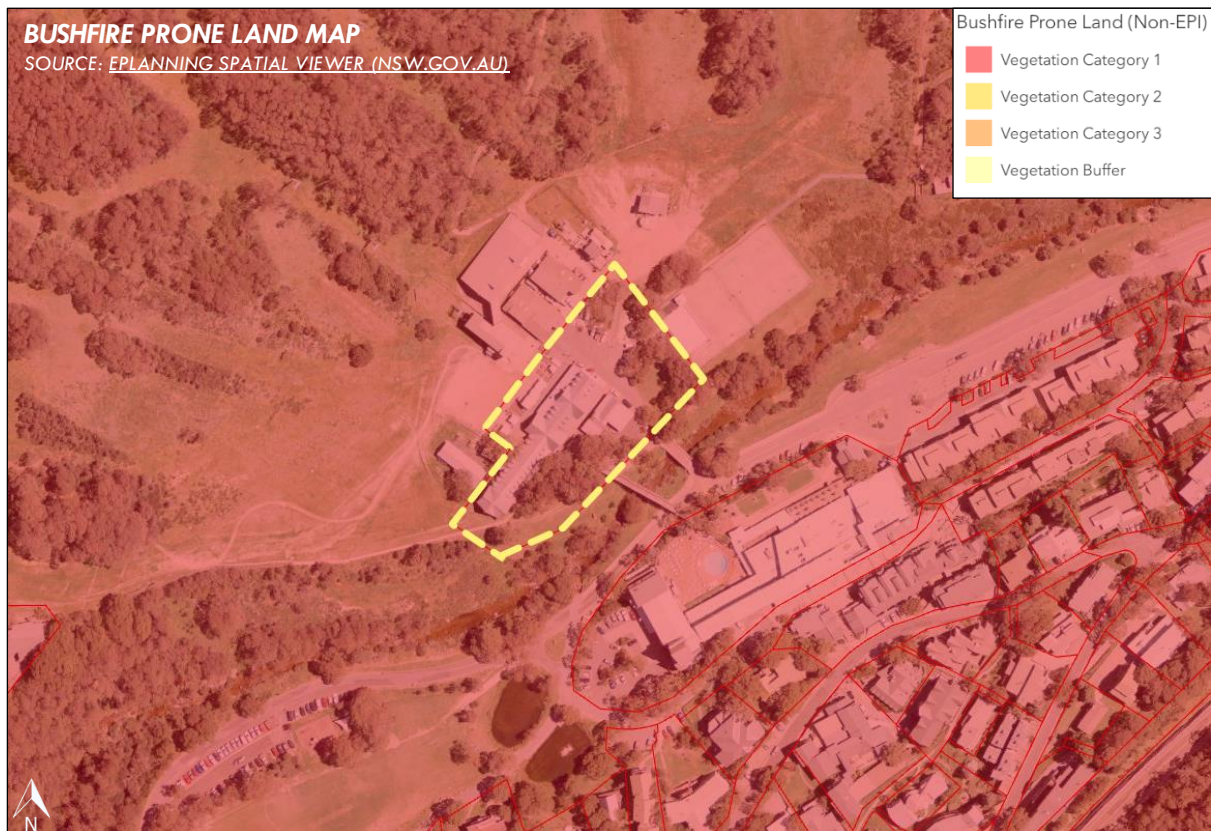


FIGURE 5 LEP MAP

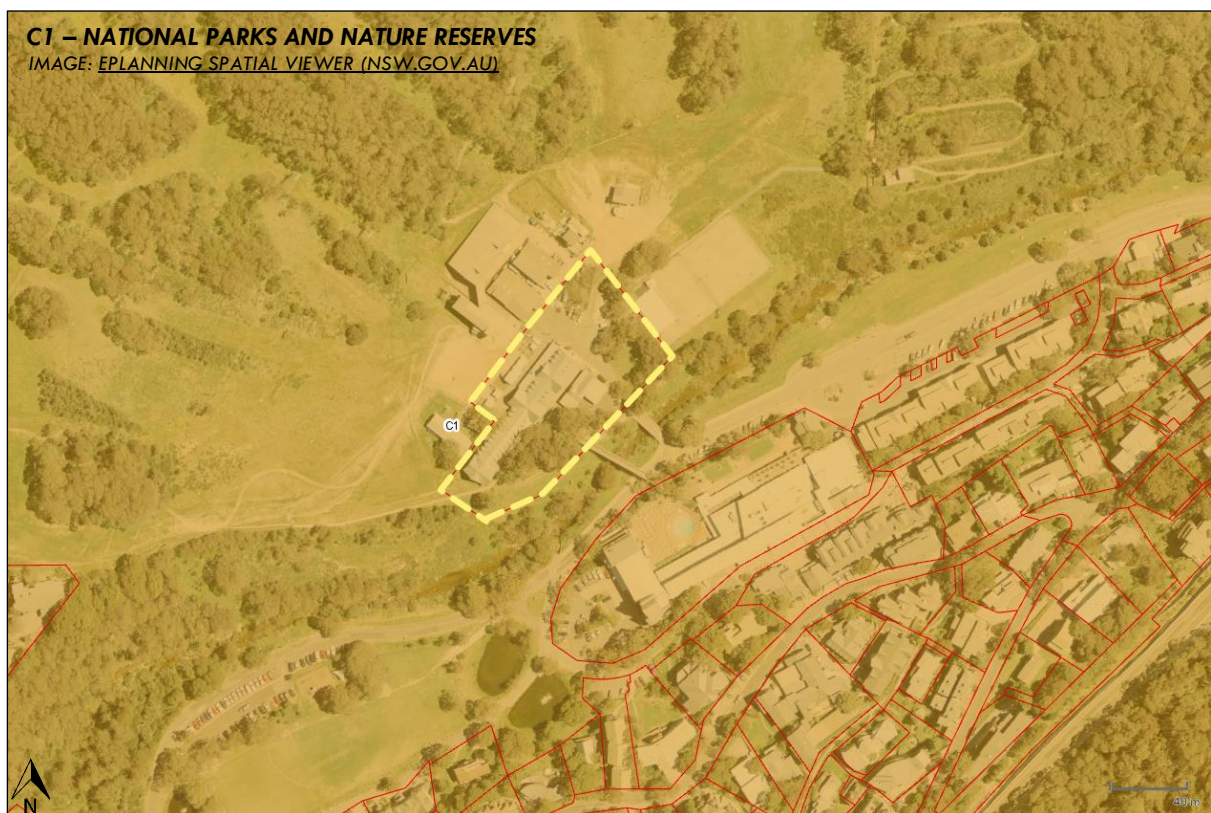


FIGURE 6 **VEGETATION MAPPING**

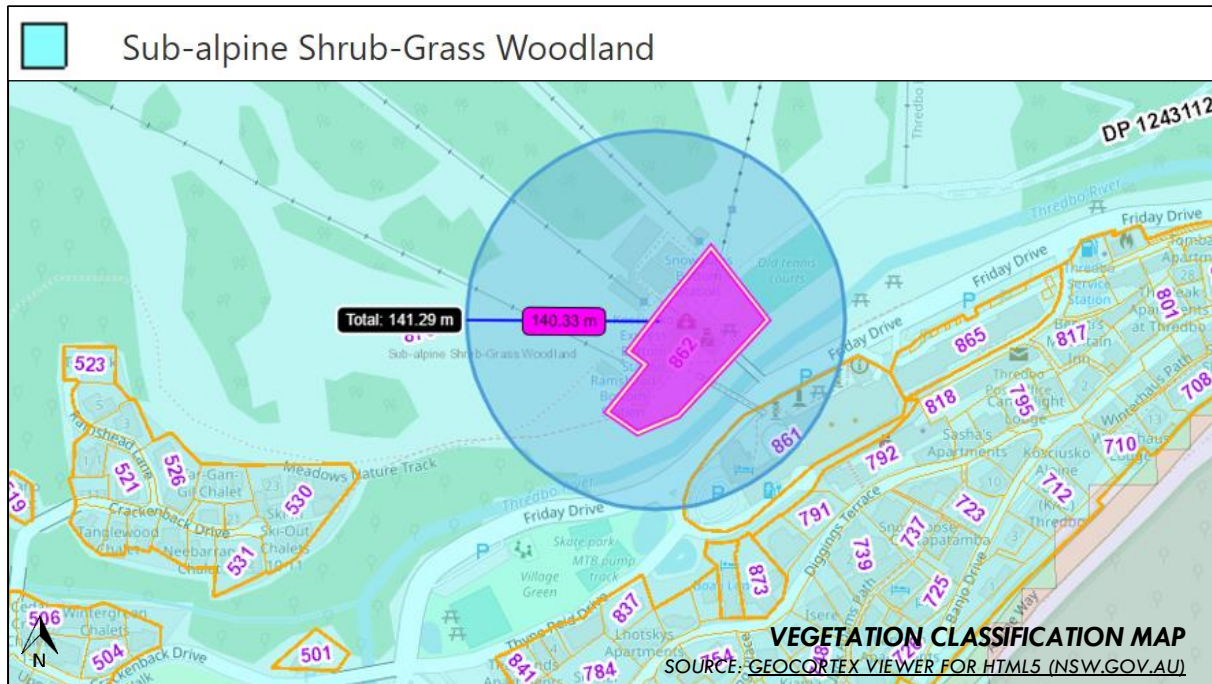


FIGURE 7 **BIODIVERSITY VALUES MAP**



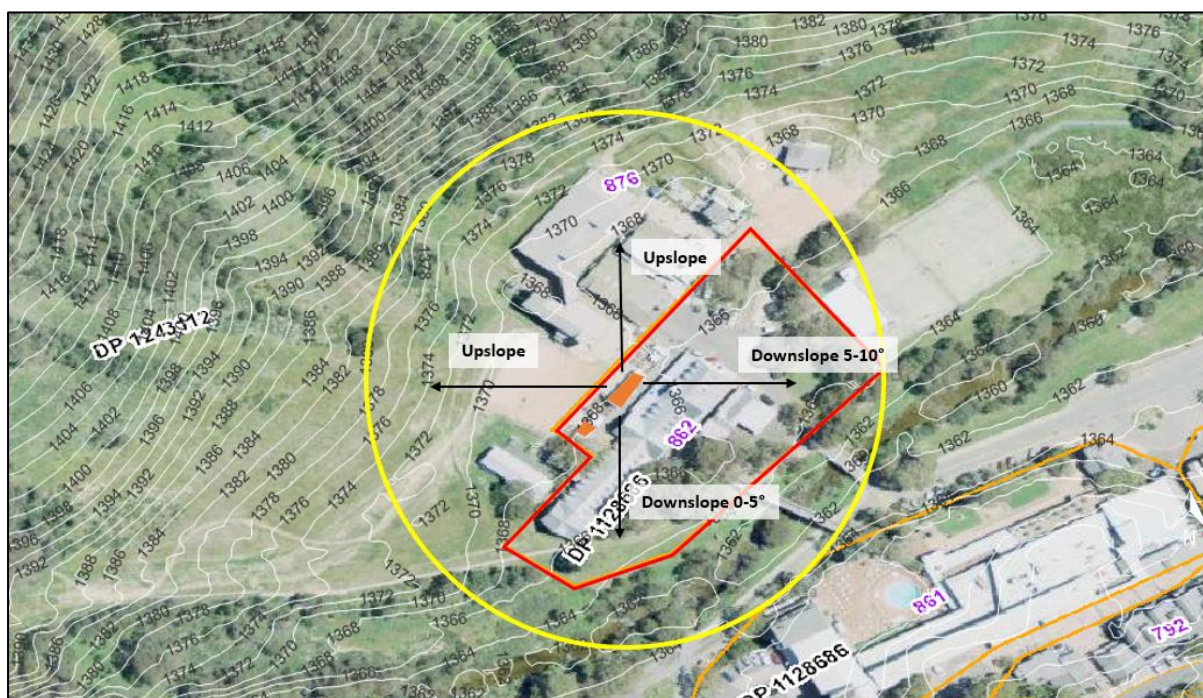
3. SITE DESCRIPTION

3.1. SLOPE AND ASPECT OF THE SITE WITHIN 100 M OF THE SITE

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 8 below, the land within 100m of the North and West elevations presents a gentle upslope which traverses across *Managed Land*. The land within 100m of the South elevation presents a 0 – 5° downslope across the Thredbo Valley Terminal building and towards the Thredbo River across *Managed Land*. The land within 100m of the East elevation presents a 5 – 10° downslope across the Thredbo Valley Terminal building and towards the Thredbo River across *Managed Land*. Beyond the Managed Land on all elevations the vegetation is *Sub-Alpine Woodland*, which is the vegetation classification used for the purpose of determining the BAL.

FIGURE 8 SLOPE



3.2. VEGETATION FORMATION WITHIN 140 M OF THE SUBJECT SITE

Thredbo Village is primarily comprised of *Sub Alpine Woodland* and *Managed Land* at the base of the valley. Within 140m of the site, the area is a combination of *Sub Alpine Woodland* and *Managed Land* vegetation.

As seen in Figure 6, within 140m of the subject site there is one vegetation type:

→ SUB-ALPINE SHRUB-GRASS WOODLAND

Areas identified as *Sub-alpine Shrub-Grass Woodland* on mapping to the North and West are dominated by *Managed Land* that primarily consists of Grassland at the base of the ski slope nearest to Kosciuszko Express chairlift. There are some areas of *Sub-alpine Shrub-Grass Woodland* within the outer areas of the 140m, these areas present a discontinuous canopy and are appropriately separated from the kiosk.

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

TABLE 2 PREDOMINATE VEGETATION CLASSIFICATION

	VEGETATION FORMATION	EFFECTIVE SLOPE	PHOTOS
NORTH	Managed Land	Upslope	1
EAST	Managed Land	Downslope 5 – 10°	2
SOUTH	Managed Land	Downslope 0 – 5°	3
WEST	Managed Land	Upslope	4

SITE PHOTOS**1: NORTH ELEVATION**

2: EAST ELEVATION



3: SOUTH ELEVATION



4: WEST ELEVATION



4.0 BIODIVERSITY ASSESSMENT

4.1 BIODIVERSITY OFFSETS SCHEME ASSESSMENT

It is vital that all development and clearing follows the Biodiversity Offsets Scheme which has been created to avoid, minimise and offset impacts on biodiversity.

There are two key elements to the Biodiversity Offsets Scheme, as follows:

- A. Developers and landholders who undertake development or clearing, generating a credit obligation which must be retired to offset their activity.
- B. Landholders who establish a biodiversity stewardship site on their land, generating credits to sell to developers or landholders who require those credits, to securely offset activities at other sites.

This report will address and assess the proposed development under element A. To complete this assessment, we will evaluate two of the four triggers and demonstrate that the proposed repair works should not trigger the Biodiversity Offsets Scheme and therefore the owner will not be required to offset their proposed activities.

4.1.1 CLEARING THRESHOLD

FIGURE 10 CLEARING THRESHOLD

Minimum lot size associated with the property	Threshold for clearing, above which the BAM and offsets scheme apply
Less than 1 ha	0.25 ha or more
1 ha to less than 40 ha	0.5 ha or more
40 ha to less than 1000 ha	1 ha or more
1000 ha or more	2 ha or more

The proposed works do not require any tree removal or land clearing, as the works will be occurring in the location of the existing kiosk and storage room. As a result, no offsets for the proposed works would be required due to this trigger.

4.1.2 BIODIVERSITY VALUES MAP

In order to assess if the development is located within an area identified with Biodiversity Values, we have completed a search using the Biodiversity Values Map. As shown in Figure 7, the subject allotments do contain areas with high biodiversity values. However, no building works are proposed within these areas and the proposed works will not negatively impact these areas and hence does not trigger the Biodiversity Offsets Scheme.

4.1.3 BIODIVERSITY OFFSET SCHEME CONCLUSION

After our assessment of these triggers it is evident that the biodiversity offsets scheme will not be triggered by the proposed new kiosk and storage room upgrade works. Upon assessment by the consent authority (ie Department of Planning) further assessment by a suitably qualified consultant may be required if they deem the other two triggers relevant.

5.0 BUSHFIRE THREAT ASSESSMENT

5.1 ASSET PROTECTION ZONES (APZ)

PBP 2019 Table 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.

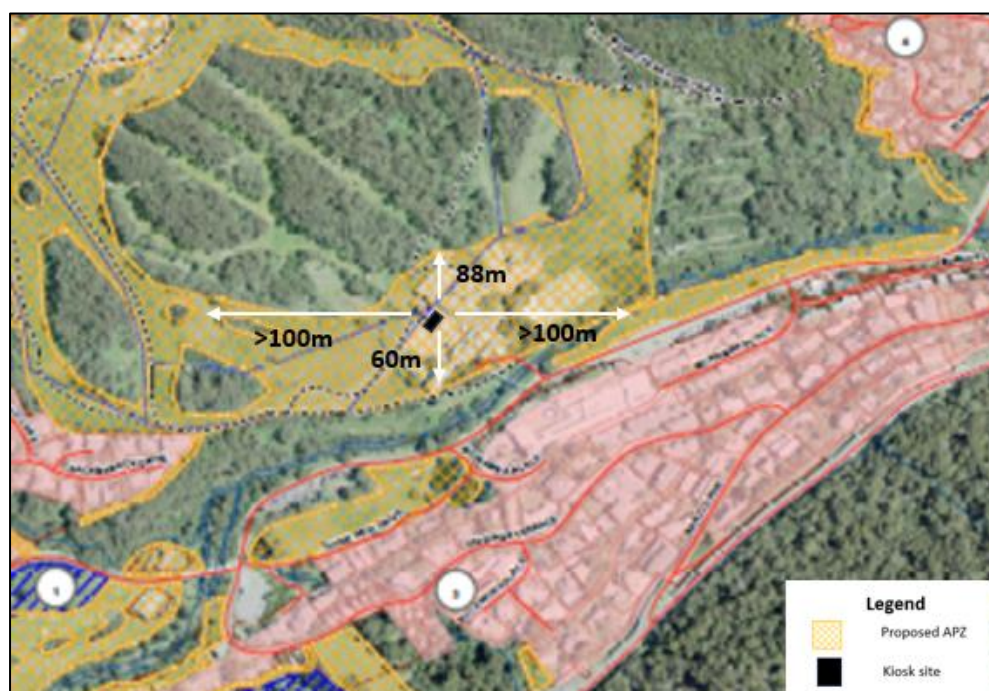
The subject land surrounding the kiosk and storage room primarily consists of *Managed Land*. As defined within the *PBP 2019* Managed Land is “*Land that has vegetation removed or maintained to a level that limits the spread and impact of bush fire. These areas are managed to meet the requirements of an APZ.*”

There is an existing appropriate defensible space surrounding the proposed development. The Valley Terminal area in Thredbo has substantial separation from the nearest bushfire threat, this allows emergency service personnel and staff to undertake property protection activities in the area to limit the potential spread and impact of bushfire.

Table 3 below shows the APZ and BAL Determination for existing lodge.

TABLE 3 APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
GRADIENT	Upslope	Downslope 5 – 10°	Downslope 0 – 5°	Upslope
VEGETATION	Managed Land	Managed Land	Managed Land	Managed Land
PROPOSED APZ	88 m	>100 m	60 m	>100 m
APZ REQUIRED BY PBP 2019 UNDER TABLE A1.12.7	30-<100 m	>100 m	36-<100 m	>100 m
BAL PROPOSED	BAL 12.5	BAL LOW	BAL 12.5	BAL LOW



5.2. 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 proposed works will be required to meet BAL 12.5 construction on North and South elevations and BAL Low on the East and West as per the requirements of AS 3959. For the purpose of the proposed work we have determined that all new work is to meet the requirements of BAL 12.5 on all sides in order to achieve a better Bush Fire outcome.

5.3. 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.

- Friday Drive is a two-wheel drive, all weather road. 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.

5.4. 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.

5.5. ADEQUATE WATER AND UTILITY SERVICES

Thredbo is serviced by reticulated water and hydrant systems. 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.

7. HOW THIS PROPOSAL MEETS DEEMED TO SATISFY SOLUTION**DEMONSTRATION COMPLIANCE UNDER SECTION 6.6 – SPECIFIC OBJECTIVES****PLANNING FOR BUSHFIRE (2019)**

PERFORMANCE CRITERIA	COMPLIES	ACCEPTABLE SOLUTIONS
THE INTENT MAY BE ACHIEVED WHERE:		
→ provide an appropriate defensible space	<input checked="" type="checkbox"/>	There is an existing APZ in place as per the Thredbo Bush Fire Preparation Map.
→ provide a better bush fire protection outcome for existing structures (e.g. via ember protection measures)	<input checked="" type="checkbox"/>	The proposed development will ensure the protection of assets and occupants by ensuring the condition of the building is maintained.
→ ensure new building work complies with the construction standards set out in AS 3959;	<input checked="" type="checkbox"/>	The proposed works are to comply with construction standards for BAL 12.5 as per AS 3959.
→ to ensure ongoing management and upgrade responsibilities are in place where APZs are proposed outside of the sub lease or leasehold area	<input checked="" type="checkbox"/>	No APZ is proposed outside of the leasehold area.
→ written consent from the land managers is provided for all proposed works outside of the sub lease or leasehold area	<input checked="" type="checkbox"/>	No APZ is proposed outside of the 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	<input checked="" type="checkbox"/>	No APZ is proposed outside of the leasehold area.
→ ensure building design and construction standards enhance the chances of occupant and building survival;	<input checked="" type="checkbox"/>	The proposed development will ensure the protection of assets and occupants by ensuring the condition of the building is maintained.
→ 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"/>	Access to the development is provided via Friday Drive, which is an all-weather two-wheel drive access road. Emergency Evacuation plan will be provided in accordance with Thredbo Resort evacuation management plan. An individual evacuation plan will be prepared as described in section 4.4. of this report.

8.0 CONCLUSION

Pending the satisfaction of recommendations outlined in this report, the level of bushfire hazard risk identified in relation to the subject land and the proposed work is not considered to be such that the proposal should be denied due to bushfire considerations.

- ***The proposed updated kiosk and storage space are to meet BAL 12.5 construction requirements as per AS 3959.***
- ***The proposed works will be required to meet BAL 12.5 construction on North and South elevations and BAL Low on the East and West as per the requirements of AS 3959. For the purpose of the proposed work we have determined that all new work is to meet the requirements of BAL 12.5 on all sides in order to achieve a better Bush Fire outcome.***
- ***Under the Thredbo Bush Fire Preparation Map (Appendix II) there is an existing APZ around the Thredbo Valley Terminal Building and the Café site. Based on this existing APZ the land immediately around the subject site is deemed to be Managed Land, with a threat of Sub-Alpine Woodland beyond this.***

This proposal meets a “deemed to satisfy” outcome for Bushfire Protection.

This report does not find that the proposal should be rejected due to bushfire considerations provided the recommendations are undertaken as proposed.

WRITTEN BY:

Tammy Stewart
Town Planner

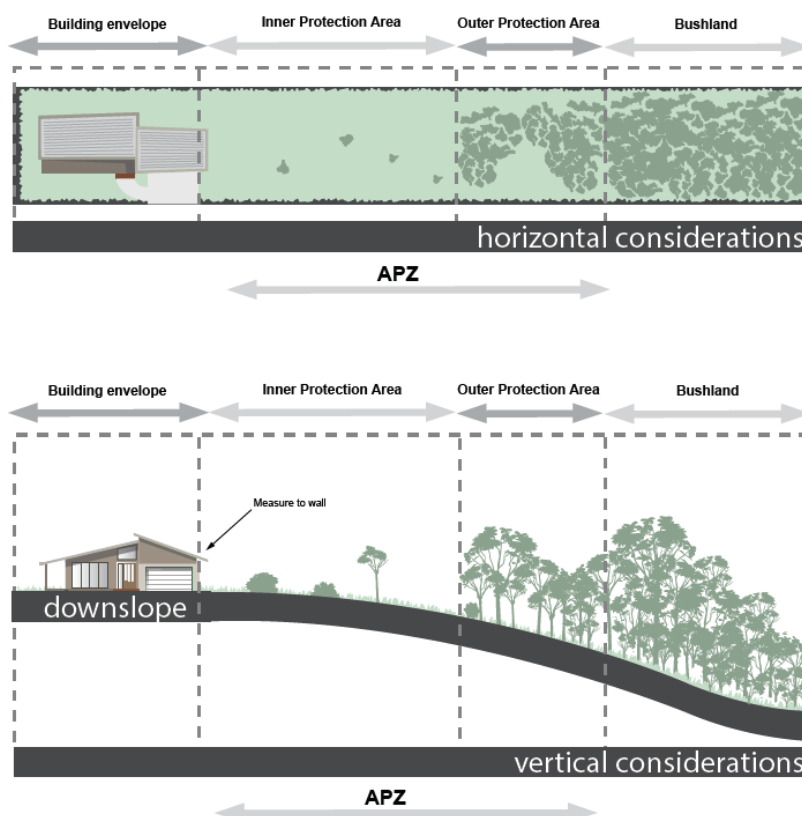
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APPENDIX I DEFINITION OF ASSET PROTECTION ZONES

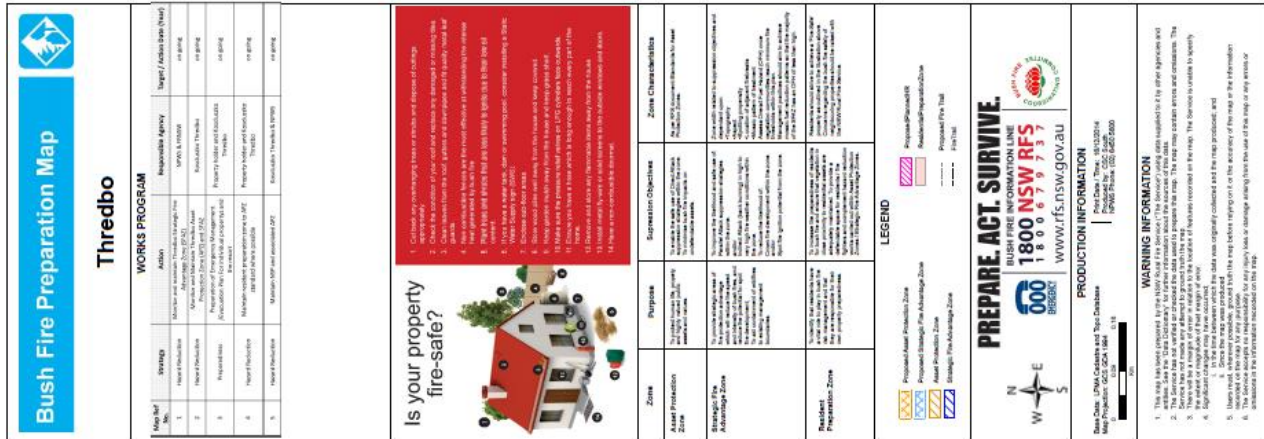
Vegetation within the APZ should be managed in accordance with APZ specifications for the purposes of limiting the travel of a fire, reducing the likelihood of direct flame contact and removing additional hazards or ignition sources. The following outlines some general vegetation management principles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



APPENDIX II THREDBO BUSH FIRE PREPARATION MAP



BUSH FIRE SURVIVAL PLAN

Have you prepared your Bush Fire Survival Plan?
Download a copy of the Bush Fire Survival Plan from www.rfs.nsw.gov.au