

Bushfire Hazard Assessment Report



Project: Installation of New Deck and Door.
Apartment 2, Aspen Creek, 8B Chimneys Way,
Thredbo Village NSW 2627
Lot 555 DP 1118421

DATE: FEBRUARY 2022
REPORT NO: 22102
REVISION: 02
PREPARED FOR: WAYNE AND MAREE LAZARUS
PREPARED BY: ACCENT TOWN PLANNING PTY LTD



Department of Planning
and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No DA 22/4975

Granted on the 3 June 2022

Signed Sandria Butler

Sheet No 8 of 9

- 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

WRITTEN BY:

Katy Murphy
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A handwritten signature in black ink, appearing to read 'Katy Murphy'.

REVIEWED BY:

A handwritten signature in black ink, appearing to read '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 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.

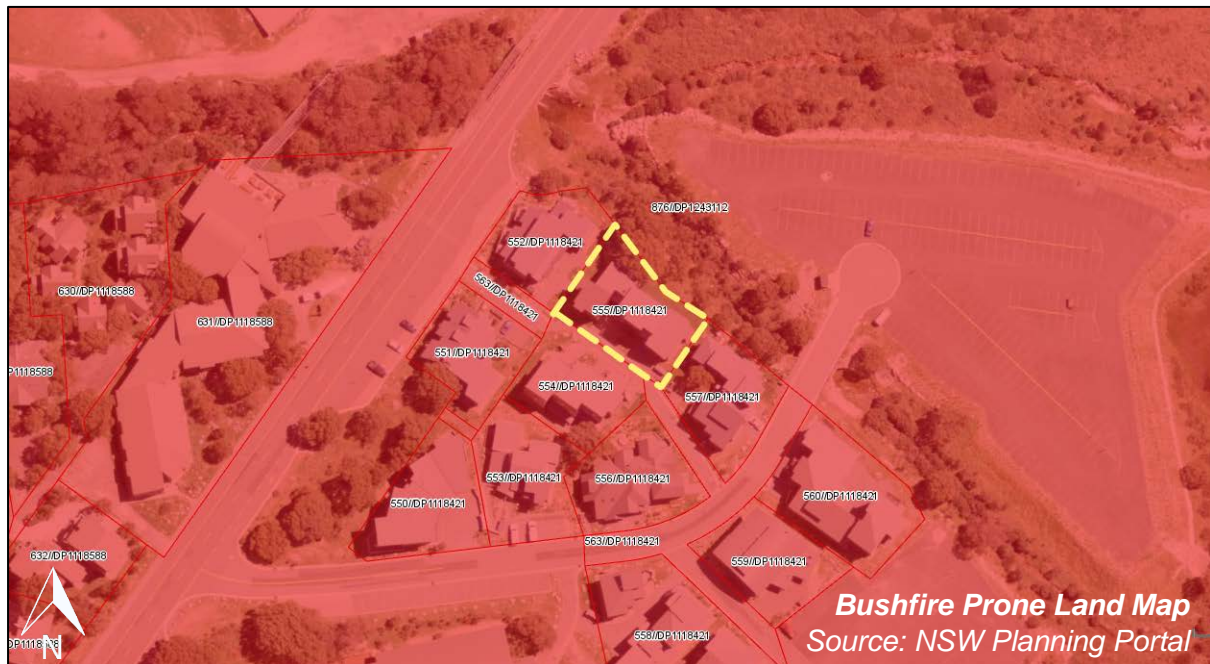
This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

EXECUTIVE SUMMARY

This bushfire assessment is for the installation of a new deck, to existing Unit known as Apartment 2, Aspen Creek, located at Lot 555 DP1118421, 8B Chimneys Way, Thredbo Village NSW 2627.

The Northern elevation has been identified as BAL FZ; the proposed external works will occur on the Northern elevation only.

Pending compliance with the recommendations outlined in this report. The performance criteria and deemed to satisfy provisions of Special Fire Protection Purpose (SFPP) development within the Alpine Resorts outlined in Section 6.4, 6.5 and 6.6 of PBP 2019 are found to be satisfied.



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

- The predominant bushfire threat is *Open Woodland* vegetation to the North of the existing unit.
- 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 (IPA's).
- No changes to existing road access are proposed as part of this application.
- Thredbo is serviced by reticulated water and hydrant system with nearest hydrants located on Chimneys Way.

ASSET PROTECTION ZONES

The landscaped areas of the allotment shall be maintained as an Inner Protection Area.

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 defendable space that permits unobstructed pedestrian access is to be provided around the building.

The landscaping shall maintain the Inner Protection Area effectively free of available fuel. Landscaping plants may be used in this area so long as they are selected for their low combustibility, by virtue of high moisture content, low volatile oil content, high leaf minerals, large fleshy leaves, absence of shredding bark. They should be placed so as not to provide either vertical or horizontal connectedness of plant material and avoid overhanging roof lines or contact with the building.

CONSTRUCTION

PBP 2019 requires new work to the existing unit on the Northern elevation to be constructed to BAL FZ as per AS3959-2018.

The proposed new deck will be constructed of steel mesh, balustrades will be constructed of steel, and the new door is double glazed to BAL 40 with a BAL FZ roller shutter and BAL FZ frame.

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

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 Chimneys Way with a hydrant located within close proximity to the subject property. The location and distance to the hydrants will be consistent with the requirements of the PBP 2019.

GAS

If gas is connected to the lodge on the subject land, must perform as per the following criteria:

- 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

The report has been prepared in accordance with the submission requirements of Appendix 1 of *Planning for Bush Fire Protection* (NSW RFS 2019) and identifies the proposal can meet the appropriate objectives and performance criteria of Section 6 *Planning for Bush Fire Protection* (NSW RFS 2019).

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

Accent Town Planning was commissioned to provide this bushfire assessment.

- **Figure 1** – Shows the subject lot location.
- **Figure 2 & 3** – Provide a broad scale aerial view and site scale view of the subject site.
- **Figure 4** – Shows the proposed site plan, floor plan and elevations.

FIGURE 1 SITE LOCATION

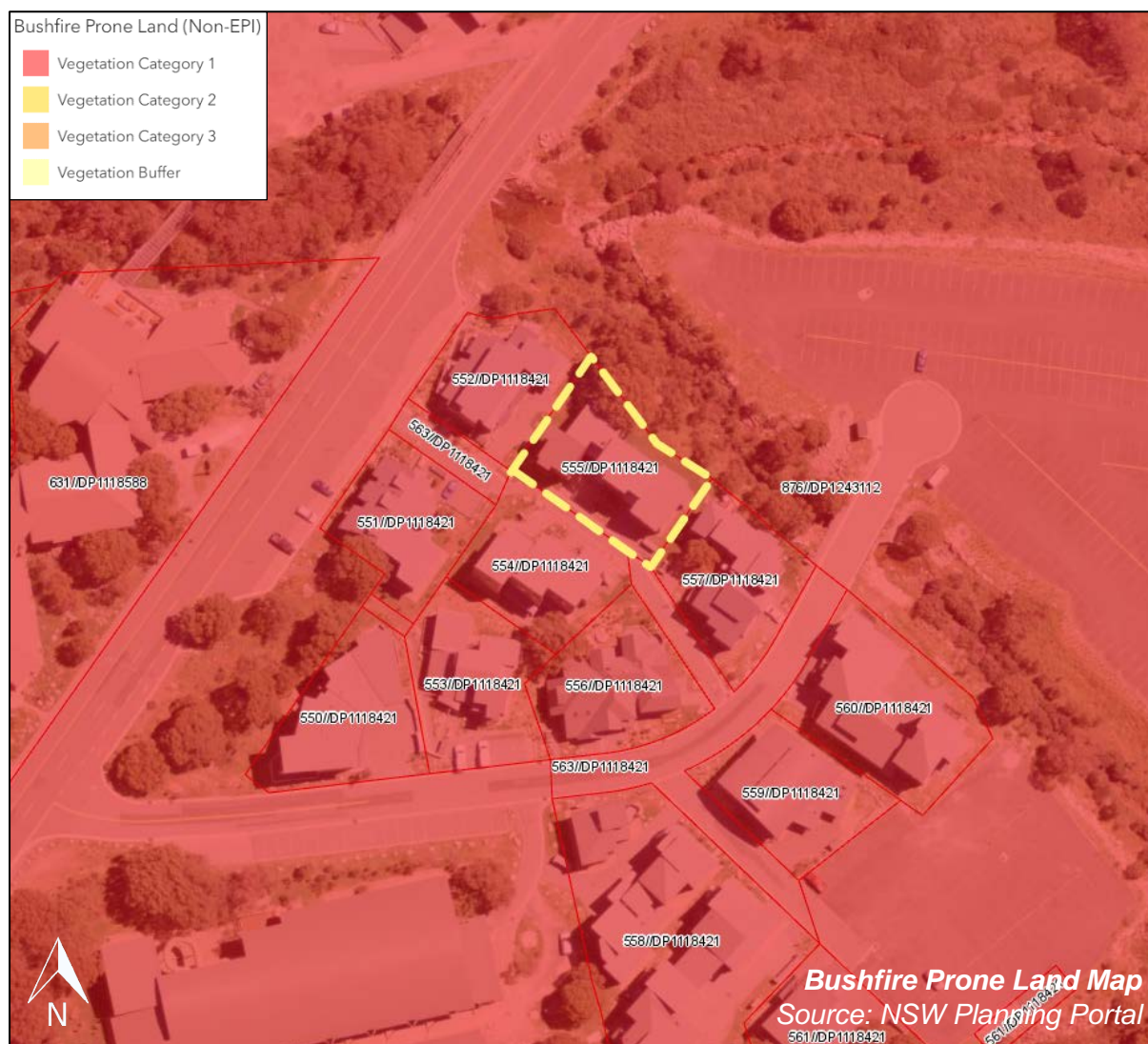


FIGURE 2 BROAD SCALE AERIAL VIEW OF THE SUBJECT SITE



Context of the site within the locality. Source: SIX Maps.

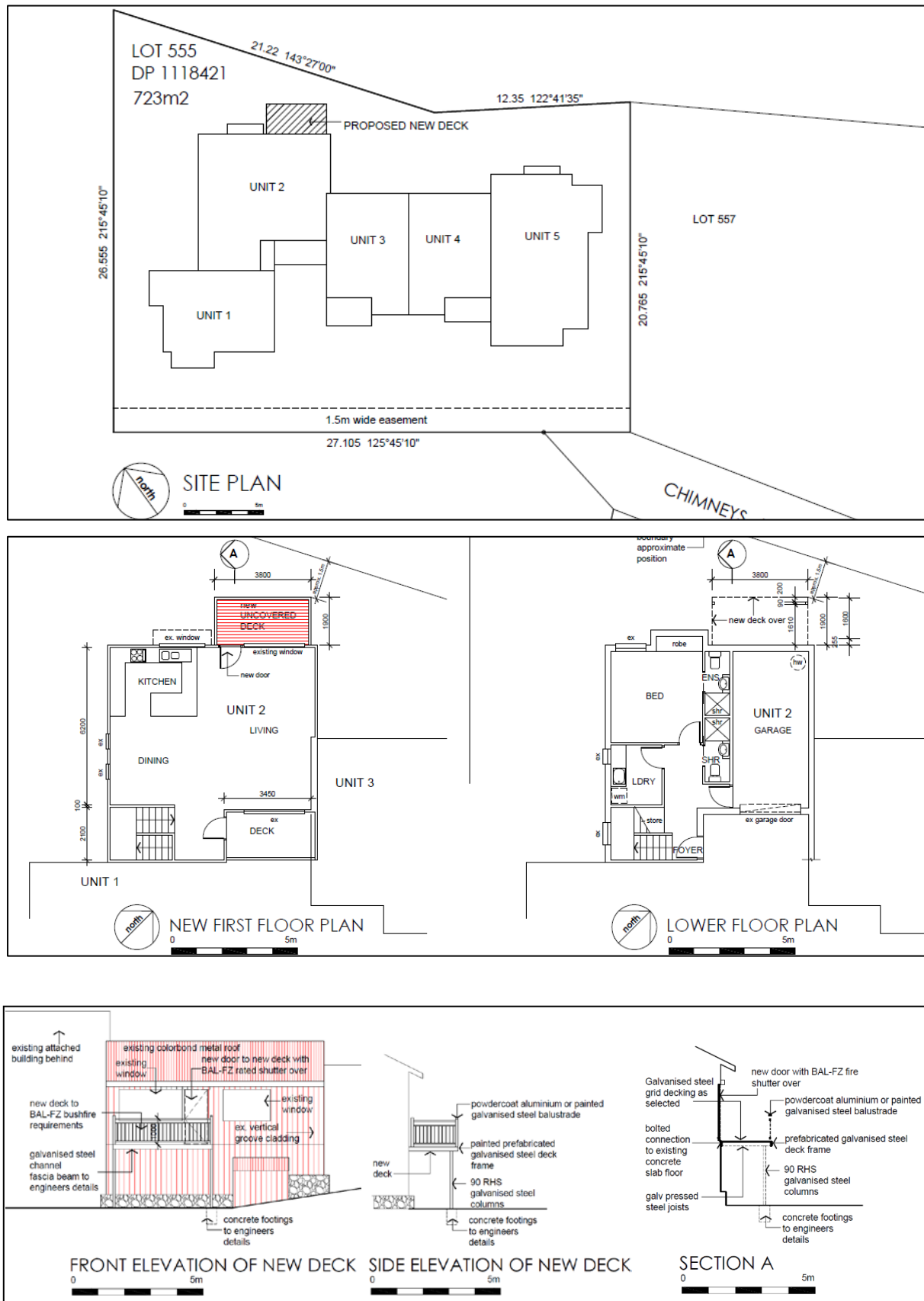
FIGURE 3 SUBJECT SITE



Subject site. Source: SIX Maps.

FIGURE 4 PROPOSED PLANS

SITE PLAN, FLOOR PLAN AND ELEVATIONS



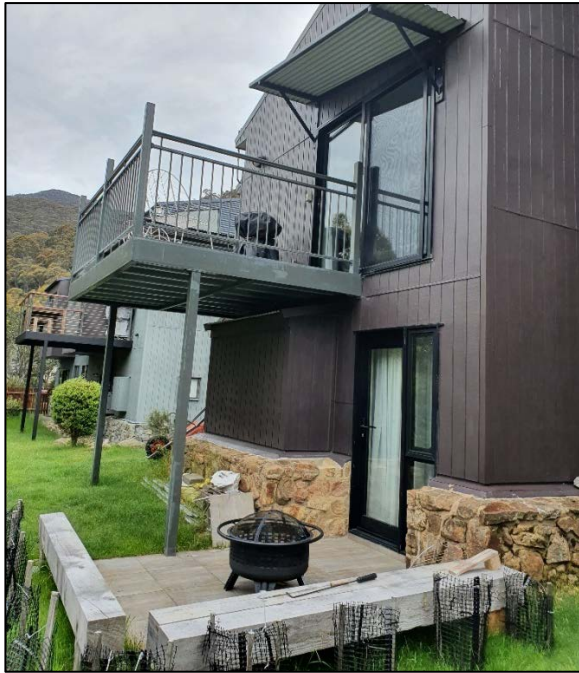
SITE PHOTOS



New deck location at the rear of the Unit.



New deck location at the rear of the unit.



Existing decks on Unit's 3 and 4.



New Deck Location.

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 Category 1"
Vegetation Mapping	6	The vegetation surrounding the existing lodge has been mapped as: <ul style="list-style-type: none"> - Sub-alpine Shrub-Grass Woodland - Sub-alpine Herbfield According to Keith (2004) this formation is classified as
Thredbo Bushfire Protection Map	7	Nearest forest vegetation to the North of the existing unit.

FIGURE 5 BUSHFIRE PRONE MAP

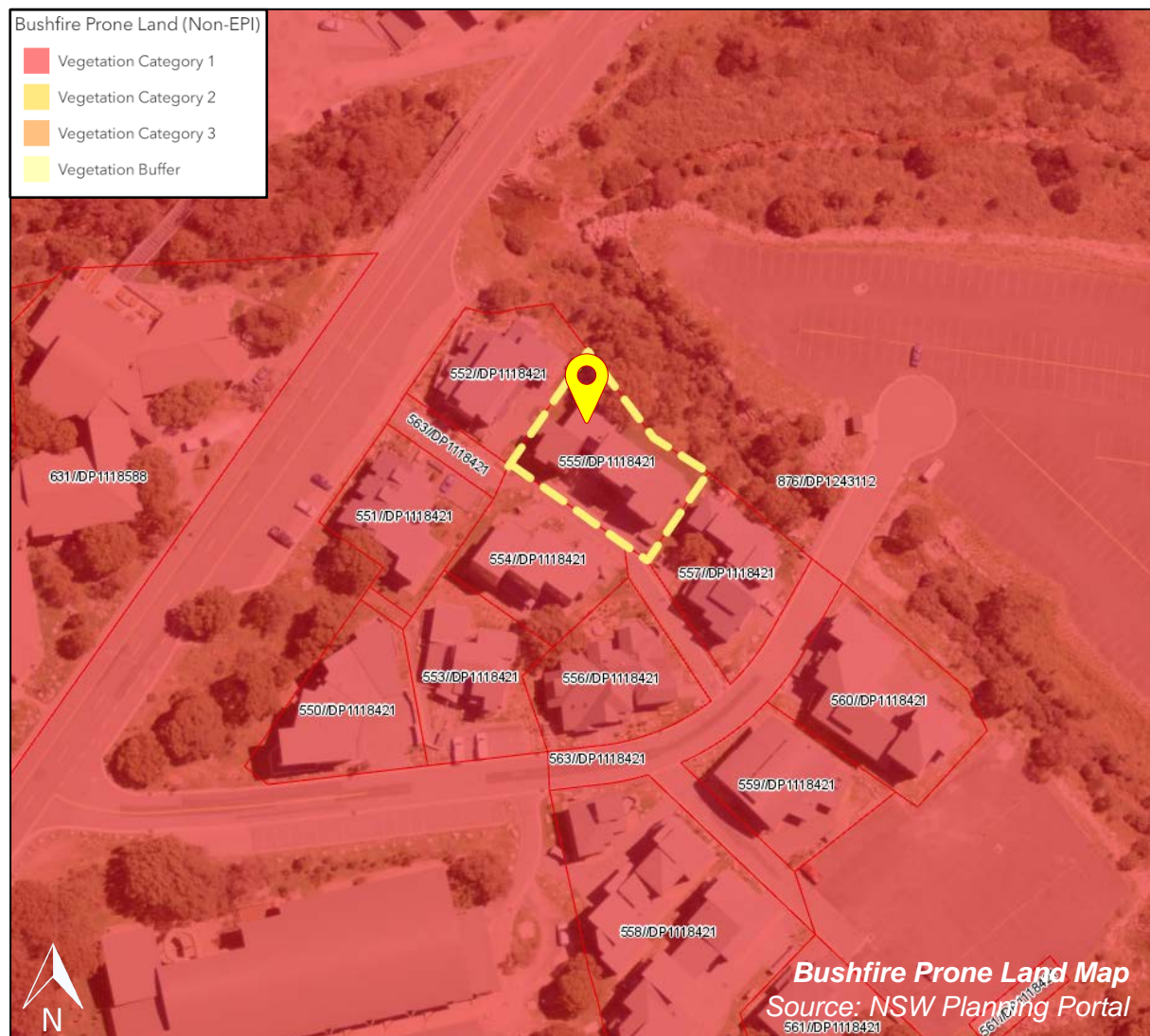


FIGURE 6 VEGETATION MAPPING

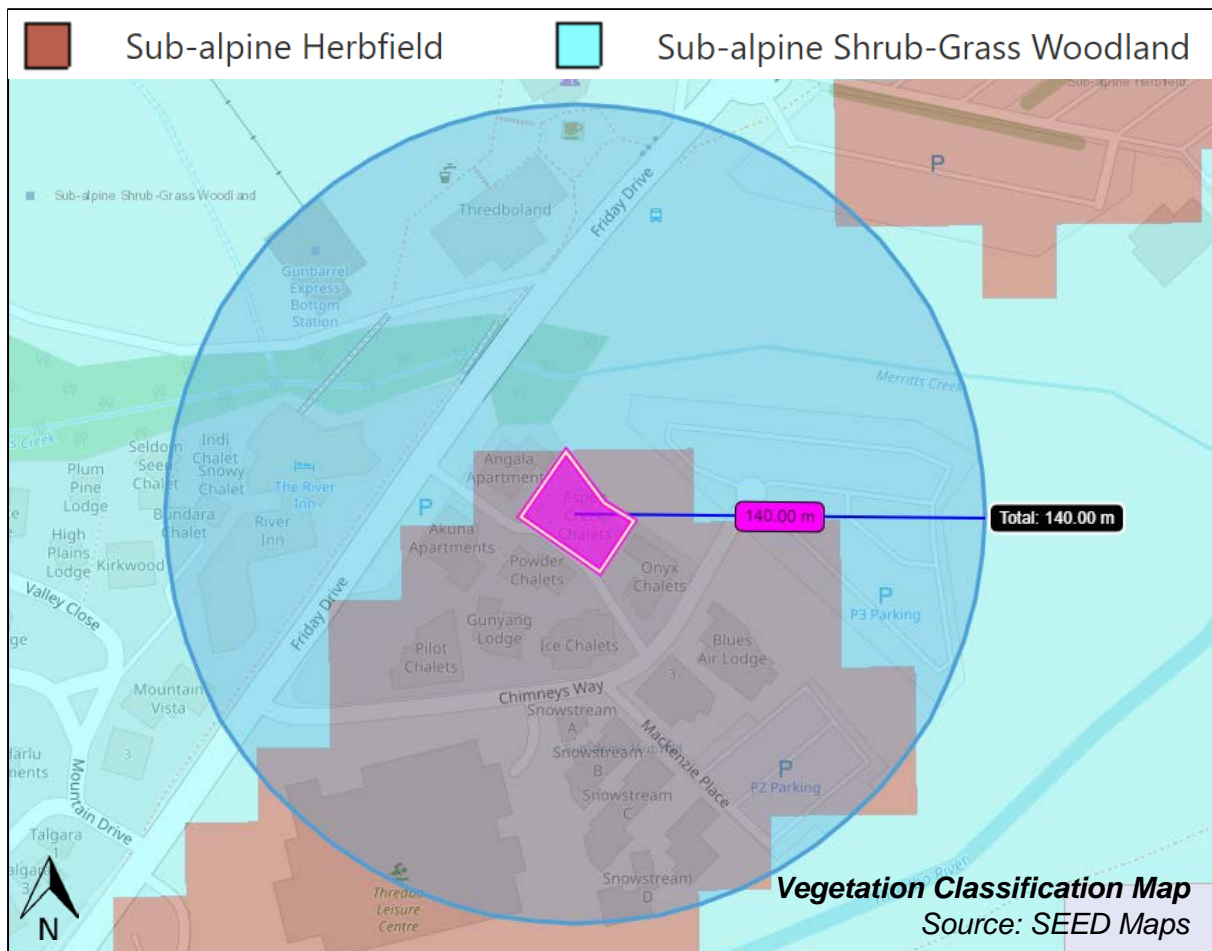


FIGURE 7 THREDBO BUSHFIRE PROTECTION PLAN



3. SITE DESCRIPTION

3.1. Vegetation formation within 140m of existing Unit

Thredbo Village is primarily comprised of *Managed Land* at the base of the valley. Within 140m of the site, the area is *Managed Land* within the ski resort with the majority of land comprised of other existing lodges as well as *Open Woodland* vegetation outside of the Thredbo Asset Protection Zone and Residential Preparation Zone.

The land immediately surrounding Aspen Creek 2 to the East, South and West can be described as "*Managed Land*". The land directly to the North of the unit consists of a vegetated creek/stream (for 20m), beyond the creek is a sealed concrete parking area.

As seen in Figure 6, within 140m of Apartment 2, 8B Chimneys Way, the predominant vegetation is:

- Sub-alpine Shrub-Grass Woodland
- Sub-alpine Herbfield

The majority of the area surrounding Aspen Creek 2 is comprised of *Managed Land*, each allotment being maintained as Inner Protection Areas. Common land within the resort is managed by Kosciuszko Thredbo (KT).

TABLE 2 APZ AND BAL DETERMINATION

	NORTH	EAST	SOUTH	WEST
Gradient	Flat/Upslope	Downslope 0 – 5°	Flat/Upslope	Flat/Upslope
Vegetation	Open Woodland	Managed Land	Managed Land	Managed Land
Proposed distance to be provided between edge of building and vegetation	1.5 m 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 FZ under Table A1.12.7	< 6m	-	-	-
BAL Proposed	BAL FZ	-	-	-

3.2. Predominant Vegetation Category

The predominant vegetation is classified as "*Managed Land*" and "*Open Woodland*".

The separation distance between the building and a bushfire hazard is to be managed progressively to minimise fuel loads. This area is known as an APZ and usually consists of an Inner Protection Area (IPA).

The IPA provides a defensible space and manages heat intensities at the building surface and the OPA provides a reduction in fuel loading which slows the intensity of an approaching fire, by reducing the potential length of flames (PBP 2019).

It is recommended the entire property be maintained as an Inner Protection Area in accordance PBP 2019 Appendix 5 and the NSW Rural Fire Service's document *Standards for 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:

- Tree canopy separation (by at least 2 metres where possible);
- Discontinuous shrub layer (clumps or islands of shrubs not rows);
- Vertical separation between vegetation strata;
- Tree canopies not overhanging structures;
- Maintain low ground covers by mowing / whipper snipper / slashing; and
- Non-combustible mulch e.g. stones and removing stores of combustible materials;
- 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).

4. BUSHFIRE THREAT ASSESSMENT

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 6.4, 6.5 & 6.6 *Planning for Bush Fire Protection* (NSW RFS 2019).

The Northern elevation has been identified as BAL FZ; the proposed external works will occur on the Northern elevation only.

4.1. 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 vegetation classification for bushfire purposes for this site is "Forest". Forest vegetation can be managed as an Inner Protection Area (IPA). The IPA is critical for providing a defensible space and managing heat intensities at the building surface.

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.

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 proposed are required to meet BAL FZ on the Northern elevation.

Safe Operational Access

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.

- Chimneys Way is a sealed public road. It 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.

4.3. 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.

4.4. Adequate Water and Utility Services

Thredbo Resort is serviced by reticulated water. A hydrant system is located along Chimneys Way with a hydrant located in close proximity to the subject property. The location and distance to the hydrants will be consistent with the requirements of the PBP 2019.



5. LANDSCAPING

Appendix 5 (PBP) provides guidelines for landscaping and Bushfire Provisions within the APZ. To incorporate bushfire protection measures into future development, the owners are advised to consider the following:

To incorporate bushfire protection measures into future development, the owner is advised to consider the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the house;
- Ensure any pastures within APZ are regularly slashed;
- 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 	<input checked="" type="checkbox"/>	See Table 2 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 	<input checked="" type="checkbox"/>	No change to existing building location. Proposed new works will not adversely impact the bushfire protection of the existing building.
<ul style="list-style-type: none"> provide a better bush fire protection outcome for existing buildings 	<input checked="" type="checkbox"/>	The proposed new deck will be constructed of steel mesh, balustrades will be constructed of steel, and the new door is double glazed to BAL 40 with a BAL FZ roller shutter and BAL FZ frame to provide a better bushfire protection outcome for the unit.
<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); 	<input checked="" type="checkbox"/>	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 landowners without their written confirmation 	<input checked="" type="checkbox"/>	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 	<input checked="" type="checkbox"/>	The proposed new deck will be constructed of steel mesh, balustrades will be constructed of steel, and the new door is double glazed to BAL 40 with a BAL FZ roller shutter and BAL FZ frame to provide a better bushfire protection outcome for the unit.
<ul style="list-style-type: none"> provide for safe emergency evacuation procedures including capacity of existing infrastructure (such as roads) 	<input checked="" type="checkbox"/>	<p>Access to the unit is provided via Chimneys Way 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 2 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"/>	New works will not adversely impact the bushfire protection of the building.
<ul style="list-style-type: none"> ensure new building work complies with the construction standards set out in AS 3959; 	<input checked="" type="checkbox"/>	New works are to comply with the requirements of AS 3959.
<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. 	<input checked="" type="checkbox"/>	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"/>	The APZ does not propose new maintenance requirements outside of the existing leasehold area. APZ to be maintained in perpetuity.
<ul style="list-style-type: none"> ensure building design and construction standards enhance the chances of occupant and building survival; 	<input checked="" type="checkbox"/>	The proposed new deck will be constructed of steel mesh, balustrades will be constructed of steel, and the new door is double glazed to BAL 40 with a BAL FZ roller shutter and BAL FZ frame to provide a better bushfire protection outcome for the unit.
<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 lodge provided via Chimneys Way 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>No increase in bed numbers as part of this application.</p>

7. 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 new deck and door is not considered to be such that the proposal should be denied due to bushfire considerations.

The proposed new deck will be constructed of steel mesh, balustrades will be constructed of steel, and the new door is double glazed to BAL 40 with a BAL FZ roller shutter and BAL FZ frame to provide a better bushfire protection outcome for the unit.

The proposed deck is to be constructed in the existing lease boundary is not expected to have any detrimental environmental impact.

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:

Katy Murphy
Town Planner



23 February 2022

REVIEWED BY:



Matthew Stewart
FPAA BPAD Accredited Bushfire Practitioner – No 27149

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.
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.

