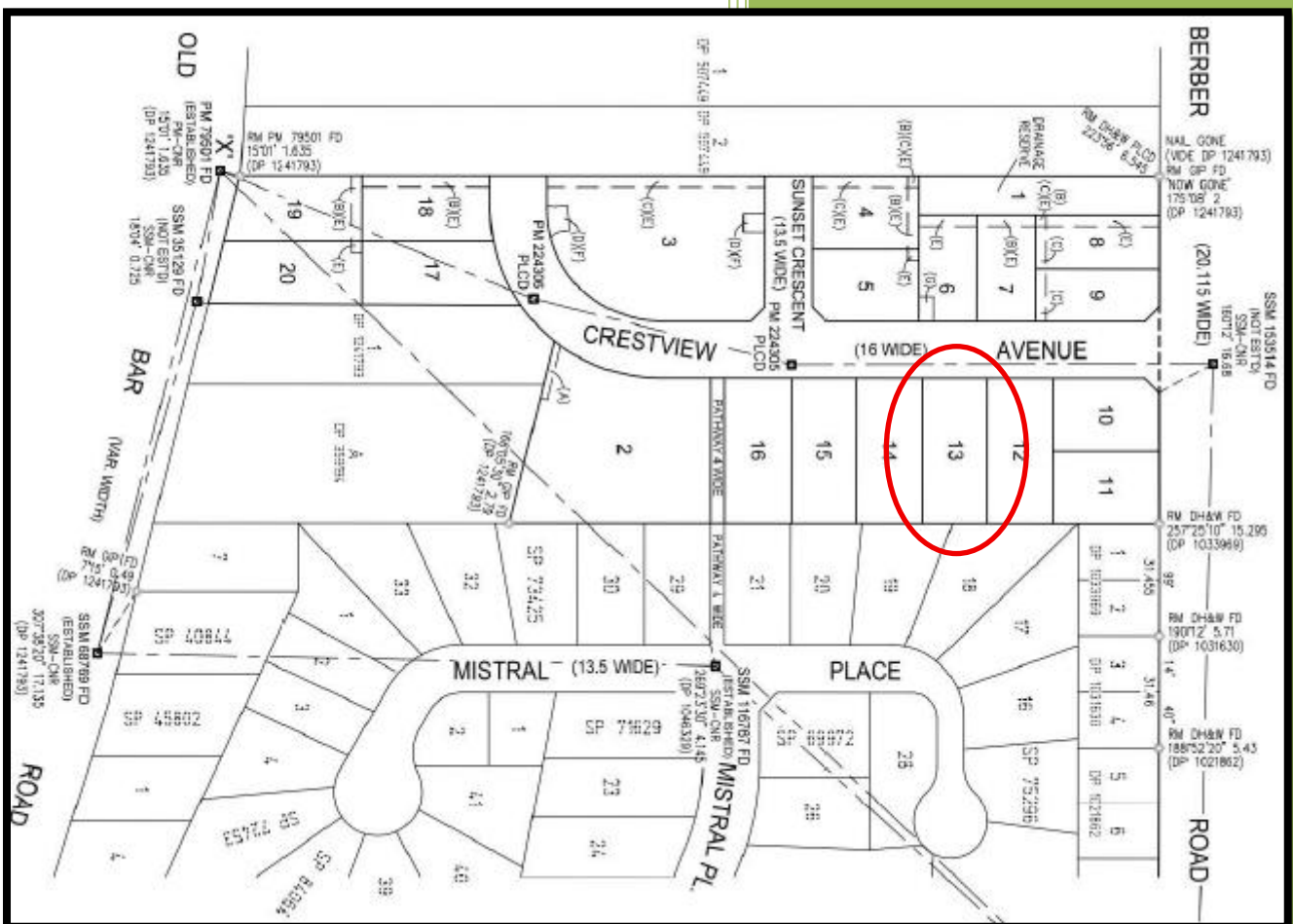


2025

Bush Fire Assessment

Dual Occupancy
Residential Development

Lot 13 Crestview Avenue
Old Bar NSW



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Executive Summary

The following Bushfire Assessment has been carried out to inform the property owners, builders, Certifying Authority, NSW Rural Fire Service and other stakeholders of the bushfire planning requirements for the construction of the proposed dual occupancy residential development at Lot 13 Crestview Avenue, Old Bar NSW.

The development was assessed under Section 100B of the Rural Fires Act 1997 as well as Section 4.14 of the EP & A Act. The requirements listed in Clause 44 of the Rural Fires Regulation 2008 were addressed. A Bushfire Safety Authority (BFSA) will need to be issued before the development can be approved.

This report provides an assessment of the bushfire protection measures required for the development to guard against the potential impact of bushfires. Recommendations have been made in respect of APZ fuel management, construction standards, access and services.

This document assesses how the development will conform to the aims, objectives and performance criteria set out in Planning for Bushfire Protection 2019.

The objectives for PBP 2019 have been met by:

- Providing for the minimum 25 metre Asset Protection Zone distance between the proposed buildings and the hazard
- Providing safe access and egress for emergency services and residents
- Providing services for fire fighters
- Recommending construction requirements, landscaping and upkeep requirements to maintain the bushfire protection measures

Disclaimer

The following report is based on the assessment undertaken by S & K Johnson Constructions Pty Ltd in September 2025.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack. The report examines ways of reducing the risk of bushfire attack upon the proposed development.

Whilst the assessors use their best endeavors to ensure that the information contained within this report is valid and comprehensive, the company makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which might be incurred as a result of the data being inaccurate or incomplete in any way and for any reason.

Section 1 Introduction

1.1 Introduction

This Bushfire Assessment Report has been prepared by *S & K Johnson Constructions Pty Ltd* on behalf of the owners of the property for two (2) residential dwellings on one (1) lot (dual occupancy).

The site is identified as **bushfire prone** by Mid Coast Council despite not being mapped as such. With the mapping being old and inaccurate an assessment was requested to confirm the nearby hazards and the impact upon the site. Note that the image below is of the Parent Lot, not the individual site.



Dual or multi occupancy developments on bushfire prone land are classified as 'Integrated development'. They are covered by Section 91 of the EP&A Act 1979 and Section 100B of the Rural Fires Act 1997

Residential dwelling developments are covered by Section 4.14 of the EP & A Act but are assessed by the NSW Rural Fire Service under Section 100B of the Rural Fires Act when it involves multiple dwellings, a subdivision or change of boundary at the same time. Section 100B notes the need for approval by the NSW RFS and the issuance of a Bushfire Safety Authority (BFSA) before the development can be approved.

Clause 44 of the Rural Fires Regulation 2002 outlines the requirements to be submitted for the approval and issuance of a Bushfire Safety Authority. This assessment will cover these requirements for the proposed development.

In NSW, *Planning for Bushfire Protection 2019* (PBP 2019) sets out the aims, objectives and performance criteria required for development in bushfire prone areas. This proposed development will be assessed against these aims and objectives.

The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.

The objectives are to:

- i. afford buildings and their occupants protection from exposure to a bush fire
- ii. provide for a defendable space to be located around buildings
- iii. provide appropriate separation between a hazard and buildings which, in combination with other measures, minimises material ignition
- iv. ensure that appropriate operational access and egress for emergency service personnel and residents is available
- v. provide for ongoing management and maintenance of BPMs
- vi. ensure that utility services are adequate to meet the needs of firefighters.

The purpose of this report is to:

- Identify the site
- Provide an assessment of the bushfire hazard
- Address the relevant requirements of Clause 44 of the Rural Fires Regulation 2002 and *Planning for Bushfire Protection 2019*
- Identify if the development complies with the aims and objectives of *Planning for Bushfire Protection 2019*
- Provide the relevant information for the New South Wales Rural Fire Service (NSW RFS) and Certifying Authority to make a determination for granting a Bushfire Safety Authority or development approval.

The references referred to during this assessment are:

- *Planning for Bushfire Protection 2019*
- *Building Code of Australia*
- *AS 3959 – Building in Bushfire Prone Areas 2018*
- *Keith, D Ocean Shores to Desert Dunes 2004*
- *Overall Fuel Hazard Guide Forest Science Centre Victoria 2003*

1.2 Legislation

As noted earlier, this development will be assessed as a dual occupancy residential subdivision development under Section 100B of the Rural Fires Act 1997. This section requires that the proposed development meet the aims and objectives of *PBP 2019*. It also requires that a Bushfire Safety Authority be issued by the NSW RFS before development approval is granted.

PBP 2019 notes specific objectives for dual/multi occupancy subdivision developments.

5.2 Specific objectives

The specific objectives for residential and rural residential subdivisions with a dwelling entitlement are as follows:

- minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);
- minimise vegetated corridors that permit the passage of bush fire towards buildings;
- provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;
- ensure that separation distances (APZs) between a bush fire hazard and future dwellings enable a radiant heat level not to exceed 29kW/m^2 ;
- ensure the ongoing maintenance of APZs;
- provide adequate access from all properties to the wider road network for residents and emergency services;
- provide access to hazard vegetation to facilitate bush fire mitigation works and property protection; and
- ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.

Not all of these objectives are relevant here, given the small scale of the subdivision, but they still must be considered. This proposal will need to meet the objectives listed above along with the Performance Criteria noted in Chapter 5 of *PBP 2019*.



Lot 13 Crestview Ave Old Bar NSW



Crestview Avenue – facing north

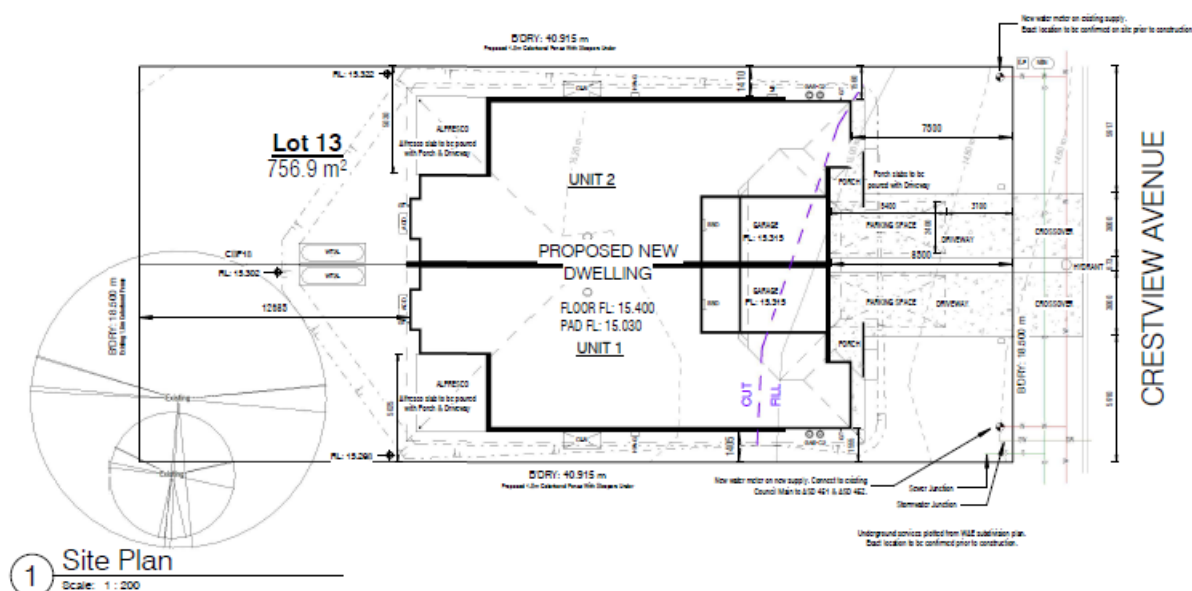


Crestview Avenue – facing south

2.2 Proposed Development

The proposal is to construct a dual occupancy development – two (2) attached dwellings, separated by a Party Wall System, Colorbond fence and open space. The development will be assessed under the provisions of Section 100B of the Rural Fires Act 1997 which require a Bushfire Safety Authority for development approval. It is assumed that the units will be subdivided, either upon completion or sometime in the future.

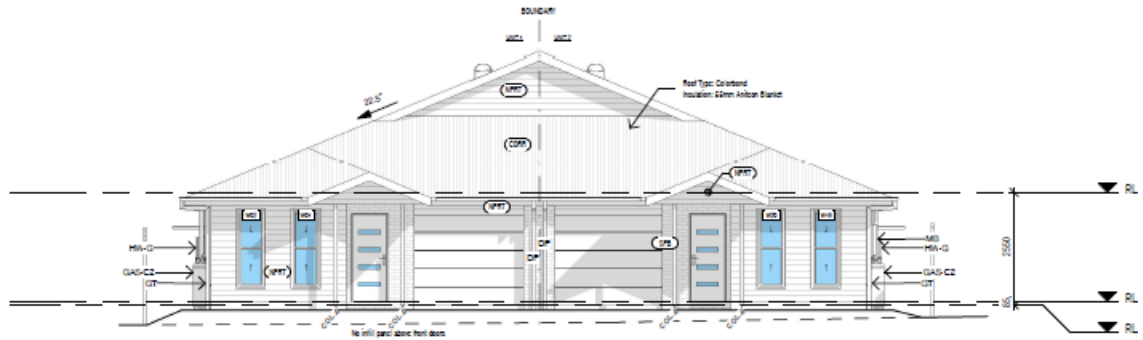
Preliminary Plans have been prepared and can be found below.



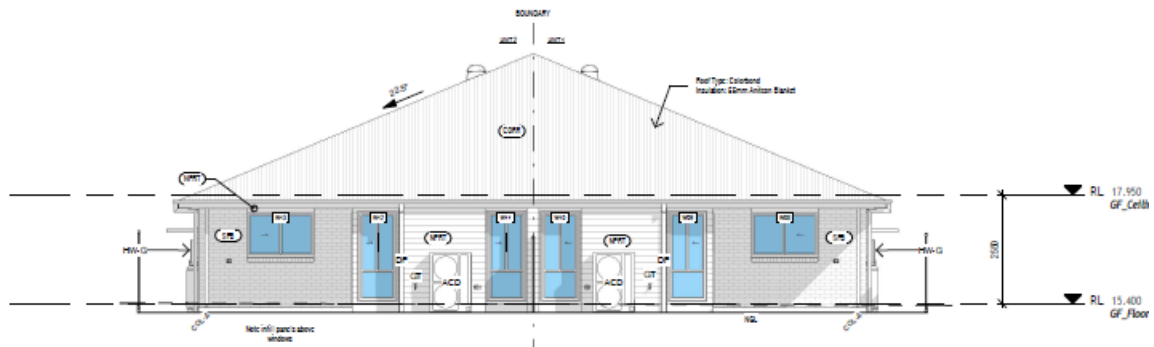
The units will be accessed from a shared driveway from Crestview Avenue. No new public roads or access roads are required.

The intended building materials are – concrete slab, masonry and cladding external walls, aluminium framed windows and concrete roof tiles.

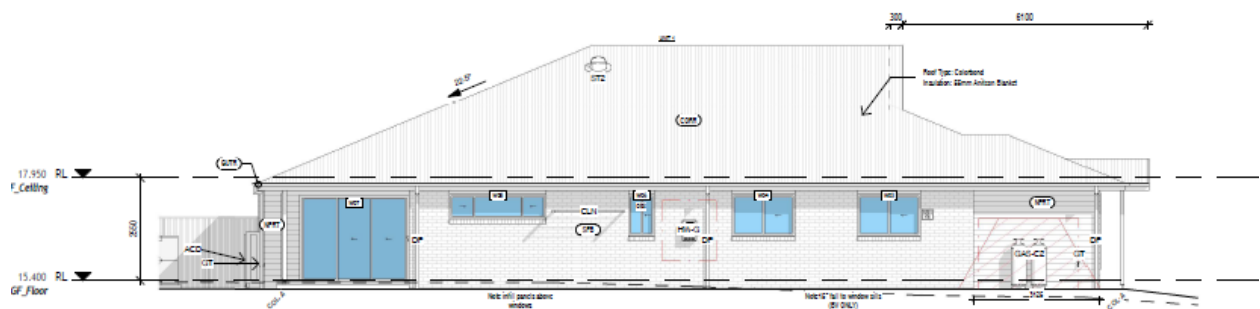




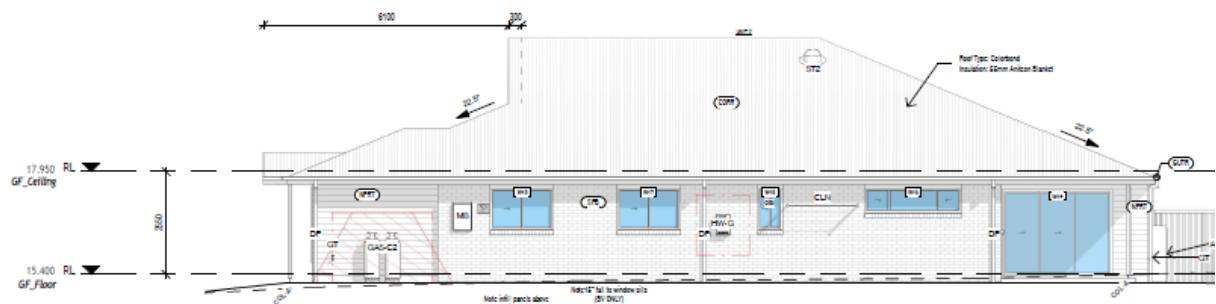
① West Elevation
Scale: 1 : 100



② East Elevation
Scale: 1 : 100



① North Elevation
Scale: 1 : 100



② South Elevation
Scale: 1 : 100

2.3 Vegetation

The type and arrangement of vegetation plays a major role in determining how a bushfire will behave. The vegetation types occurring on the site and on land adjacent to the site are capable of supporting fires of varying severity. The vegetation present is discussed below and includes photographic examples.

Site –

There is no vegetation on the lot – only cleared soil and mowed grass



External –

To the north, east and south of the site there are new vacant residential lots as part of this subdivision before meeting with established residential lots. This is present for greater than 140 metres to these elevations, all classed as managed land.



Lot 13 Crestview Ave Old Bar NSW

The first 20 metres of undeveloped land is well managed (mowed grass and scattered trees) before meeting with a 30 metre strip of unmanaged land with tall grasslands and connecting tree canopy present. This bushland is expanding into the larger parcel of undeveloped land further west and considered to be a developing forest hazard. While not presently mapped as a bushfire hazard, this is due to the old mapping being used, not its lack of presence. This land may well be developed in the future and the hazard eliminated but at the time of assessment the land and vegetation are unmanaged and a conservative approach to the assessment has been taken.



The developing forest is found 75 metres from the site, separated by roadways and managed land.





Vegetation Hazard Summary and Distance to Hazard

North

- Vacant and developed residential land for greater than 140 metres
- No bushfire hazard identified

East

- Vacant and developed residential land for greater than 140 metres
- No bushfire hazard identified

South

- Vacant and developed residential land for greater than 140 metres
- No bushfire hazard identified

West

- Developing Forest on undeveloped residential land.
- Located 75 metres from the site.

The hazard impacting this site is from the west. For this assessment the classification of Forest of Tables A1.12.3 and A1.12.6 will be used.

2.4 Slope

The site itself is on land that has been shaped and flattened during its construction phase. The hazard bushland communities are on only very slight downslopes as it travels away from the lot:

Forest vegetation to the West

0-5 Downslopes

2.5 Environment and Heritage Issues

There are no known Cultural, Heritage or Environmental issues present on the site.

It is not anticipated that any vegetation will be removed to facilitate this development.



Section 3 Bushfire Hazard Assessment

This bushfire hazard assessment was determined using the site assessment methodology set out in Appendix 1 of *PBP 2019*.

3.1 Vegetation formation

The vegetation impacting upon this site is made up of:

Forest vegetation to the West

3.2 Effective Slope

The slope under the hazard vegetation is:

Forest vegetation to the West **0-5 Downslopes**

3.3 Fire Weather

The subject site is located within the Mid Coast Council Local Government Area in the North Coast Region. The Forest Fire Danger Index for the North Coast Region is rated at **80** for use in determining asset protection zone requirements and categories for bushfire attack.

3.4 Bushfire Attack Level (BAL)

Using Table A1.12.6 of PBP 2019 the BAL rating for this development is as follows, using the worse case and closest hazard vegetation.

1. Unit 1 Dwelling – BAL 12.5
2. Unit 2 Dwelling – BAL 12.5

Table A1.12.6

Determination of BAL, FFDI 80 – residential development

KEITH VEGETATION FORMATION		BUSH FIRE ATTACK LEVEL (BAL)				
		BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
		Distance (m) asset to predominant vegetation class				
ALL UPSLOPE AND FLAT LAND	Rainforest	< 7	7 –< 9	9 –< 14	14 –< 20	20 –< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 15	15 –< 20	20 –< 29	29 –< 40	40 –< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 8	8 –< 11	11 –< 16	16 –< 22	22 –< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 6	6 –< 8	8 –< 12	12 –< 18	18 –< 100
	Tall Heath	< 12	12 –< 16	16 –< 23	23 –< 32	32 –< 100
	Short Heath	< 7	7 –< 9	9 –< 14	14 –< 20	20 –< 100
	Arid-Shrublands (acacia and chenopod)	< 5	5 –< 6	6 –< 9	9 –< 14	14 –< 100
	Freshwater Wetlands	< 4	4 –< 5	5 –< 7	7 –< 11	11 –< 100
	Grassland	< 7	7 –< 10	10 –< 14	14 –< 20	20 –< 50
	Grassland	< 9	9 –< 12	12 –< 17	17 –< 25	25 –< 100
> 0 < 5 DEGREES – DOWNSLOPE	Rainforest	< 9	9 –< 12	12 –< 17	17 –< 25	25 –< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 19	19 –< 25	25 –< 35	35 –< 47	47 –< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 10	10 –< 13	13 –< 19	19 –< 28	28 –< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 8	8 –< 10	10 –< 15	15 –< 22	22 –< 100
	Tall Heath	< 13	13 –< 18	18 –< 26	26 –< 36	36 –< 100
	Short Heath	< 8	8 –< 10	10 –< 15	15 –< 22	22 –< 100
	Arid-Shrublands (acacia and chenopod)	< 5	5 –< 7	7 –< 11	11 –< 16	16 –< 100
	Freshwater Wetlands	< 4	4 –< 6	6 –< 8	8 –< 12	12 –< 100
	Grassland	< 8	8 –< 11	11 –< 16	16 –< 23	23 –< 50
	Grassland	< 8	8 –< 11	11 –< 16	16 –< 23	23 –< 50
> 5 < 10 DEGREES – DOWNSLOPE	Rainforest	< 11	11 –< 15	15 –< 22	22 –< 32	32 –< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 24	24 –< 31	31 –< 43	43 –< 57	57 –< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 12	12 –< 17	17 –< 24	24 –< 34	34 –< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 10	10 –< 13	13 –< 20	20 –< 28	28 –< 100
	Tall Heath	< 15	15 –< 20	20 –< 29	29 –< 40	40 –< 100
	Short Heath	< 9	9 –< 12	12 –< 18	18 –< 25	25 –< 100
	Arid-Shrublands (acacia and chenopod)	< 6	6 –< 8	8 –< 12	12 –< 18	18 –< 100
	Freshwater Wetlands	< 5	5 –< 6	6 –< 10	10 –< 14	14 –< 100
	Grassland	< 9	9 –< 12	12 –< 18	18 –< 26	26 –< 50
	Grassland	< 9	9 –< 12	12 –< 18	18 –< 26	26 –< 50

3.5 Asset Protection Zone Distance & Defendable Space

Table A1.12.4 Appendix 1 of *Planning for Bushfire Protection 2019* presented below shows the APZ requirements for this development:

Table A1.12.4
Minimum distances for APZs – residential subdivision development, FDI 80 areas (<29kW/m²)

KEITH VEGETATION FORMATION	EFFECTIVE SLOPE				
	Up slopes and flat	>0°-5°	>5°-10°	>10°-15°	>15°-20°
Distance (m) from the asset to the predominant vegetation formation					
Rainforest	9	12	15	20	25
Forest (Shrubby and Grassy) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	20	25	31	39	48
Woodland (grassy and woody)	11	13	17	21	27
Forested Wetland	8	10	13	17	22
Tall Heath	15	16	18	21	23
Short Heath	10	11	13	14	16
Arid-Shrublands (acacia and chenopod)	7	8	9	10	11
Freshwater Wetlands	6	7	8	9	10
Alpine Complex	7	8	8	10	11
Grassland	10	11	12	14	16

This report needs to show that this distance can be adequately met for all the new dwellings; not requiring vegetation removal from an external lot.

The sites are located within a new residential estate with cleared vacant and newly developed land surrounding them.

- There is a minimum of 75 metres of managed land between the closest proposed dwelling and the unmanaged Forest bushland to the west

Elevation	Hazard/s	APZ required	APZ available	APZ met?
North	Managed >140m	0m	>140m	Yes
East	Managed >100m	0m	>140m	Yes
West	Forest	25m	75m	Yes
South	Managed >140m	0m	>140m	Yes

It is noted that the requirement for Asset Protection Zones as set out in *Planning for Bushfire Protection 2019*, can be satisfied for the proposed development.

3.6 Construction Standards

1. Unit 1 Dwelling – BAL 12.5
2. Unit 2 Dwelling – BAL 12.5

New construction shall comply with Section 3 and 5 (BAL 12.5) Australian Standard AS3959-2018 'Construction of buildings in bush fire-prone areas' and Section 7.5.2 of Planning for Bushfire Protection 2019 (NSW Variation).

This is the deemed-to-satisfy solution.

3.7 Access

For these developments no new public roads will need to be established. Each new dwelling will be accessed along a driveway directly from Crestview Avenue. This connects with other streets to provide easy access to further built up areas.

The road network was approved as part of the BFSA and assumed to be compliant. The scale of this development is not expected to have an adverse effect on the movement of traffic within the road network.

3.8 Services – Gas, Water and Electricity Supply

The vacant lots are to be connected to mains supplied power and water. An extension/expansion of these services will be required for the additional dwellings but this will not affect the supply to any extent to warrant additional services.

Reticulated gas is not available in the area. Should bottled gas be used it will need to be installed to comply with the requirements listed in Table 7.4a.

GAS SERVICES	location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	- reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used; - 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; and - above-ground gas service pipes are metal, including and up to any outlets.
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3.9 Emergency and Evacuation Management Plan

A formal emergency/evacuation plan does not need to be prepared for this development. However, any owners of the new dwellings should create their own plan and ensure all occupants are aware of the risks. Should a bushfire threaten these properties it is essential that all residents are skilled to deal with it. Set procedures with decisions already made will reduce confusion and panic during any emergency.

Section 4 Recommendations

The following measures are recommended to reduce the risk of bushfire on the proposed dwellings. These recommendations are linked to the Performance Criteria set out in *PBP 2019*. It is believed that by implementing these recommendations the aims and objectives of *PBP 2019* will be met.

4.1 Performance Criteria – Asset Protection Zone (5.3.1)

- Radiant heat levels to not exceed 29 kW/m² on a proposed building
- APZs are managed to prevent fire spread
- APZs are provided in perpetuity
- APZ maintenance is practical
- Landscaping is managed to minimize flame contact and radiant heat to the building

Recommendation

- Each entire new lot is to be maintained as an Inner Protection Zone in perpetuity
- This will require little effort as the lots are clear of vegetation but this does cover future vegetation that may be planted as gardens
- The requirements for vegetation within an Inner Protection Zone:
 - Minimal fine fuel at ground level
 - Grass mowed
 - Trees and shrubs planted as clumps or islands and do not take up more than 20% of the area
 - Minimal plant species that keep dead material or drop large quantities of ground fuel
 - The canopy cover must be less than 15%
 - Any canopy must be located more than 2 metres from any roofline
 - Trees separated by 2-5 metres and do not provide a continuous canopy from the hazard to the building
 - Trees should have lower limbs removed up to a height of 2 metres above the ground (4 metres if emergency vehicles need to park next to or drive around them).
 - Shrubs / gardens need to be 1.5m away from exposed windows and doors

4.2 Performance Criteria – Access (5.3.2)

- Fire fighting vehicles are provided with safe, all weather access to structures
- There is appropriate access to water supply
- Road surface and bridge capacity is sufficient to carry fully loaded fire fighting vehicles
- Road widths and design enables safe access for vehicles – both fire fighting and residents

Recommendations

- The existing public road network is sufficient
- No new public or private access roads are required for this development.
- The concrete driveways shown on plan are sufficient.

4.3 Performance Criteria – Services – Water, Electricity & Gas (5.3.3)

- A water supply reserve dedicated for firefighting purposes is installed and maintained.
- Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings
- Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings

Recommendations

- The existing reticulated water supply should be accessed
- New electrical transmission lines should be located underground
- If gas bottles are used their location and fittings are to meet the requirements listed in Table 7.4a, in particular to have the release valve facing away from the building

4.4 Performance Criteria – Construction Standards

- The proposed building can withstand bush fire attack in the form of wind, smoke, embers, radiant heat and flame contact.

Recommendation

- **Unit 1 Dwelling – BAL 12.5**
- **Unit 2 Dwelling – BAL 12.5**
- New construction shall comply with Section 3 and 5 (BAL 12.5) Australian Standard AS3959-2018 'Construction of buildings in bush fire-prone areas' and Section 7.5.2 of Planning for Bushfire Protection 2019 (NSW Variation).

4.5 Performance Criteria – Landscaping

- It is designed and managed to minimize flame contact and radiant heat to buildings, and the potential for wind driven embers to cause ignitions.

Recommendations

- Maintain an area of lawn or non-combustible material (such as concrete) adjacent to the new dwellings.
- Keep the area under fences, trees and gates raked and free of fuel.
- Use non-flammable ground covers – pebbles or rocks.
- Do not place plants and shrubs against building elements likely to fail – IE windows, any timber structure. They can ignite and bring flames closer to the building.
- Choose plants that are less flammable IE those with less oil, higher moisture content, dense growth pattern. Look for broad fleshy leaves and smooth bark.
- Do not restrict access around the dwelling with plants or structures
- The fencing used should be metal – timber and other combustible fences can ignite, bringing flames and heat closer to the building.
- Class 10b structures (e.g. retaining walls) must also meet the requirements of BAL 12.5
- The entire building must be maintained on a regular basis to reduce leaf and other flammable debris from building up around building and other structures.
- Check for branches overhanging roofs and driveways – trim as required
- Maintain all building elements – e.g. window screens, roof tiles/sheeting, draught seals, and hoses. Ensure all are in good working repair.

Section 5 Conclusion

The site has been studied, and it has been determined that there is significant vegetation present within 140 metres of the lots which could carry a bushfire in extreme fire conditions – this makes the lots ‘bushfire prone’. Any further development of these lots will require additional protection measures to reduce the impact a bushfire could have on the buildings and its occupants.

As this development is a dual occupancy it is assessed under 100B of the Rural Fires Act. A Bushfire Safety Authority is required before the development can be approved. It is necessary to ensure that the objectives of *Planning for Bushfire Protection 2019* can be met, in particular those relating to Asset Protection Zones and minimum BALs.

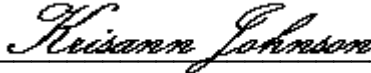
The report notes that the proposed development can satisfy the aim and objectives of PBP 2019.

The objectives of PBP 2019 have been achieved by:

- Providing more than the minimum 25 metre Asset Protection Zone distance between the building and the hazard
- Providing safe access and egress for emergency services and residents
- Providing services for fire fighters
- Recommending construction requirements, landscaping and upkeep requirements to maintain the bushfire protection measures

Whilst the protection measures outlined in this report will greatly improve the chances of a future building surviving a bushfire event, it does not guarantee it. The unpredictable nature of bushfire events precludes any such guarantee. It is the responsibility of the owner to ensure the ongoing maintenance and upkeep of the building, roads and landscaping – without it the whole system will fail.

If there are queries or concerns about the assessment or the recommendations please feel free to contact myself on 0402 318073.

Prepared by Krisann Johnson 

16th September 2025

UTS Planning for Bushfire Prone Areas
UWS G.Dip. Design for Bushfire Prone Areas
BPAD-D Certified Practitioner BPD-PD-18578

