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NEWCASTLE SYDNEY

Bushfire Threat Assessment

Proposed Manufactured Home Estate

16 Denton Close and 10 River Road, Windella, NSW 2320

Prepared for: Mavid Development Pty Ltd

19 December 2023

AEP Ref: 3154

Revision: 01

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Document Control

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Project Number	3154
Client Name	Mavid Development Pty Ltd
AEP Project Team	Edouard Loisance Samuel Rayfield Chris Wark Natalie Black

Revision

Revision	Date	Author	Reviewed	Approved
Draft 01	24/05/2023	Chris Wark	Natalie Black	Edouard Loisance
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Distribution

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Draft 01	24/05/2023	Chris Speek	Mavid Development Pty Ltd
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01	19/12/2023	Chris Speek	Mavid Development Pty Ltd

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1.0 Introduction

At the request of Mavid Development Pty Ltd (the Client), Anderson Environment & Planning (AEP) have undertaken the necessary investigations to inform the production of a Bushfire Threat Assessment (BTA) report addressing the proposed development of construction of a Manufactured Home Estate with at 16 Denton Close and 10 River Road, Windella NSW (the Proposal).

This BTA is specifically intended to assess the bushfire protection measures required by the NSW Rural Fire Service's *Planning for Bushfire Protection 2019* (PBP) and the construction requirements of the proposed development in accordance with the provisions of the *Building Code of Australia – Volume 2, Edition 2010 and Australian Standard 3959-2018 (AS 3959) – "Construction of buildings in bushfire-prone areas".*

The proposed development involves the construction Manufactured Homes, refuge building and community spaces along with associated road, sewer and landscaping, in accordance with the PBP 2019, under the Special Fire Protection Purpose (SFPP).

The development is assessed under 100B of the Rural Fires Act as Integrated development under Section 4.46 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). In combination with Section 100B of the *Rural Fires Act 1997* (RF Act), a Bushfire Safety Authority (BSA) is required from the Rural Fire Service (RFS) to enable the development to proceed. This BTA addresses the required heads of consideration relevant to obtaining approval.

For the purposes of referencing, this document should be referred to as:

> Anderson Environment & Planning (December 2023). *Bushfire Threat Assessment for Manufactured Home Estate, 16 Denton Close and 10 River Road, Windella NSW*. Unpublished report for Mavid Development Pty Ltd.

2.0 Site Particulars

Table 1 – Site Particulars

Detail	Comments
Client	Mavid Development Pty Ltd
Address	16 Denton Close and 12 River Road, Windella NSW 2320
Title(s)	Lot 9 DP 553872 and Lot 1 DP 245953
Subject Site	The Subject Site consists of the entirety of the above lots, and is proposed be developed into a Manufactured Home Estate.
LGA	Maitland
Zoning	RU2 – Rural Landscape
Current Land Use	The site currently contains a series of small paddocks across undulating terrain. These paddocks are predominantly cleared and are primarily comprised of pasture improved exotic grasses. Dwellings, ecotourism facilities and associated infrastructure are present within the site. The site comprises stands of native vegetation, with sparse tree coverage at the northern end of the site; denser and mature Eucalypts in the west and east; and segregated stands of She-oaks in the south-east. Grassland occurs in the south-west.
Surrounding Land Use	The Subject Site is within a small locality of residential acreages. The site is bounded by the New England Highway to the south. To the east, beyond the adjacent lot, is Maitland Airport. To the north and west are residential acreages, with River Road bounding the western side of the site.

Figure 1 depicts the extent of the Subject Site overlain on an aerial photograph of the locality.

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Figure 1: Location Map

Date: Dec 2023

Location: 10 River Road and 16 Denton Close, Windella, NSW

Client: Mavid Development Pty Ltd

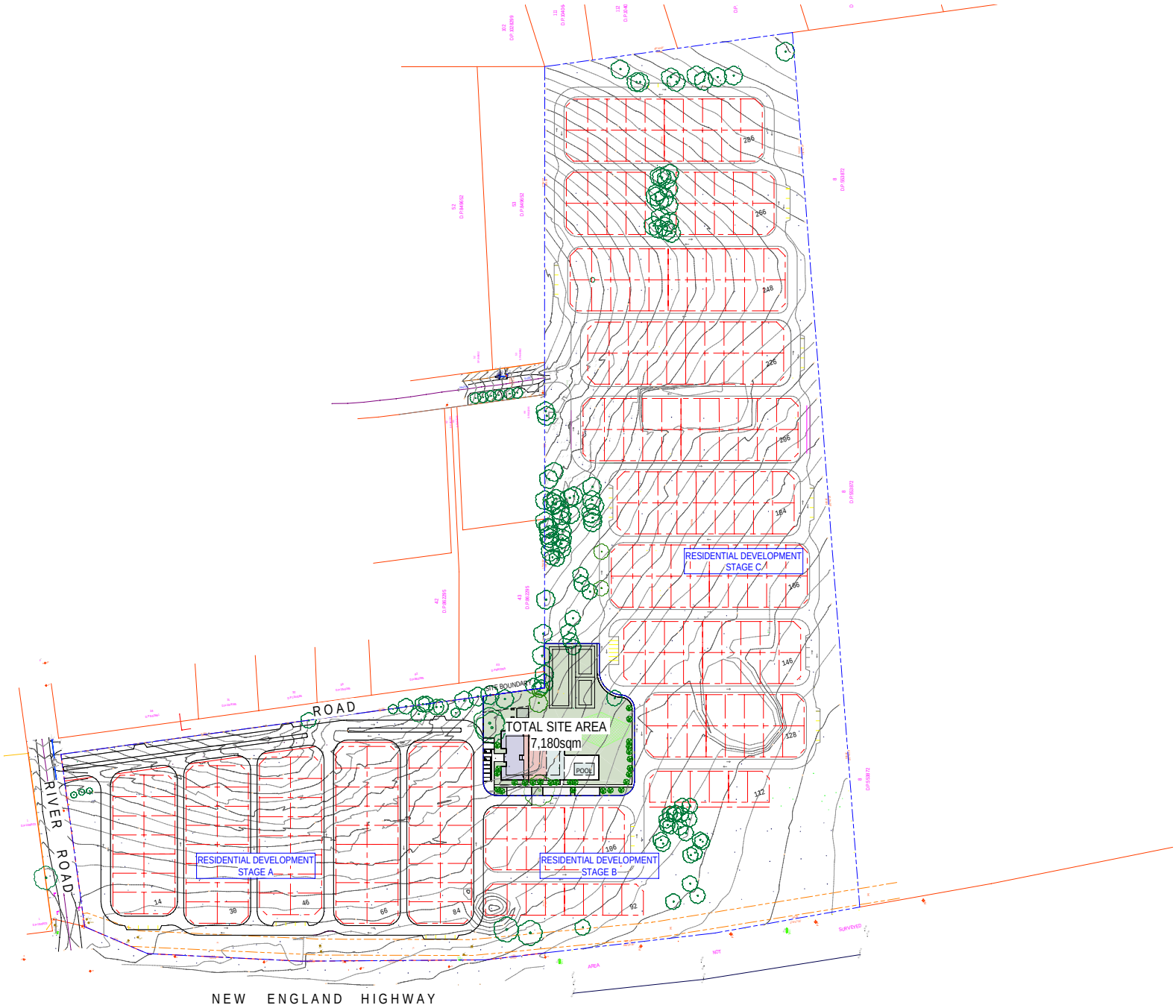
AEP Ref: 3154

3.0 Proposed Development

The Proposal involves the construction of a Manufactured Home Estate over approx. 14.3ha, including a community building, which will act as a refuge building, administration building and associated roads, carparking, stormwater infrastructure and landscaping.

As the proposal is a Manufactured Home Estate, Special Fire Protection Purpose (SFPP) provisions apply with regard to APZs and other design constraints.

Figure 2 depicts the proposed development plan within the Site.



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ISSUE	DESCRIPTION	DATE
A	TOWN PLANNING ISSUE	12.12.23

ISSUED FOR TOWN PLANNING PURPOSES ONLY

PROPOSED CLUB HOUSE @
16 DENTON CLOSE, WINDELLA

PROPOSED OVERALL SITE PLAN

Date. NOV 23 Drawn. AK
Job No. 3239 Scale@A1 1 : 1250

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TP 010 A

4.0 Bushfire Hazard Assessment

4.1 Bushfire Prone Land Mapping

Examination of NSW Planning Portal, Bushfire Prone Land (BPL) Mapping (2021) confirmed that the Subject Site is mapped as “Bushfire Prone Land – Vegetation Category 3 and Vegetation Buffer”. This designation has triggered the need for the assessment (**Figure 3**).

Appendix 1 of the PBP provides the steps required to determine the level of bushfire hazard that applies to the site. Factors influencing the hazard level include:

- The formation of vegetation surrounding the site (as defined by Keith 2004);
- The distance between vegetation and the site (or proposed buildings therein);
- The effective slope for each patch of vegetation; and
- The Fire Danger Index (FDI) of the council area within which the development occurs.

These factors together provide an indication of the level of threat posed to the development from any vegetation retained within the site and surrounding vegetation in the event of a bushfire, and the required mitigation measures to be taken in the form of defendable space. These measures are detailed further in **Section 5** below.

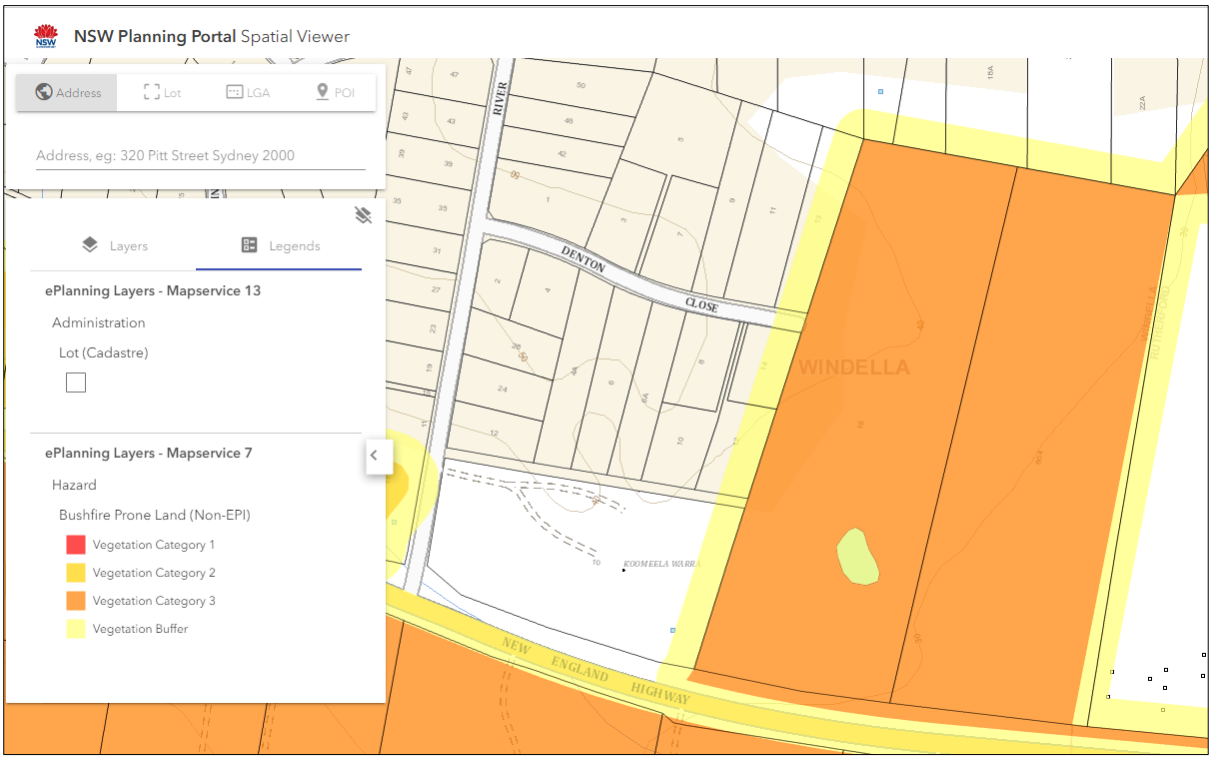

Figure 3 – Bushfire Prone Land Map

4.2 Vegetation and Slope Analysis

The Subject Site and surrounds occur within the Maitland Council LGA, with existing vegetation subsequently classified with a Fire Danger Index (FDI) of 100 as NSW Rural Fire Service (2017) NSW Local Government Areas FDI.

Vegetation communities present within the 140m surrounding the development and slope assessment within 100m from hazard vegetation are shown in **Table 2** and **Figure 4.** Due to the shape of the development some aspects have additional vegetation associated with them.

Table 2 – Hazard Vegetation and Slope Assessment

Aspect	Hazard Vegetation (140m)	Slope (100m)	SFPP APZs (140m)
North	Woodland	0-5 degrees Downslope	50
North	Unmanaged Grassland	0-5 degrees Downslope	40
North	Managed lands	Upslope / Flat	N/A
North East	Woodland	0-5 degrees Downslope	50
North East	Unmanaged Grassland	0-5 degrees Downslope	40
North East	Managed Lands	Upslope / Flat	N/A
East	Unmanaged Grassland	Upslope / Flat	36
South East	Unmanaged Grassland	0-5 degrees Downslope	40
South	Unmanaged Grassland	0-5 degrees Downslope	40
South West	Unmanaged Grassland	0-5 degrees Downslope	40
West	Forest	Upslope / Flat	67
North West	Managed Lands	Upslope / Flat	N/A
North West	Unmanaged Grassland	0-5 degrees Downslope	40

Appendix A contains photos showing the vegetation types within the 140m vegetation assessment buffer around the Subject Site.

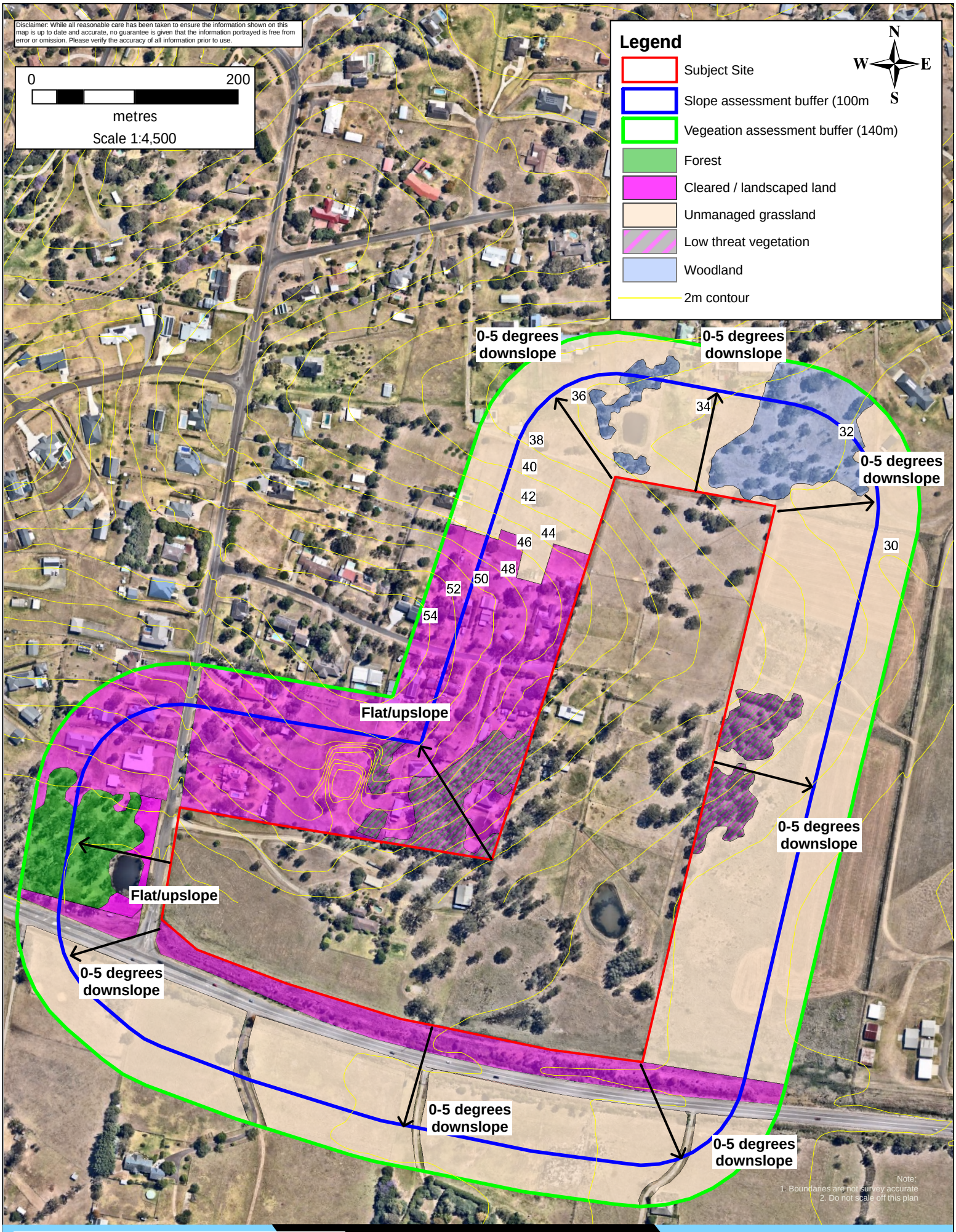

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Figure 4: Slope and Vegetation Assessment

Date: Dec 2023

Location: 10 River Road and 16 Denton Close, Windella, NSW

Client: Mavid Development Pty Ltd

AEP Ref: 3154

4.3 PBP Performance Criteria Assessment

Tables 3 assesses the proposed development against the Objectives, demonstrating compliance against the Special Fire Protection Purpose Development guidelines. It is noted that the dwellings

Table 3 – Performance Criteria Measures for SFPP

Performance Criteria	Acceptable Solutions	Comments
Asset Protection Zones		
Radiant heat levels of greater than 10kW/ m² (calculated at 1200K) will not be experienced on any part of the refuge building	The refuge building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1.	The proposed refuge building associated with the development is located outside of the SFPP APZs and as such will not be exposed to Radiant Heat levels of greater than 10kW/m^2. All APZs will be located on flat or gently sloping ground. No APZs will be located on slopes of 18 degrees or more. APZs will be managed in accordance with Appendix 4 of the PBP 2019. APZs are contained wholly within the boundaries of the development.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are located on lands with a slope less than 18 degrees.	
APZs are managed and maintained to prevent the spread of fire to the building.	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.	
The APZ is provided in perpetuity.	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.	
Manufactured home estates: APZs achieve radiant heat levels that are commensurate with the construction standard for the proposed dwellings.	An APZ in accordance with Table A1.12.1 in Appendix 1 of this document is provided to all new dwellings.	A Special Fire Protection Purpose (SFPP) APZ is provided for all dwellings not built to BAL 29. These dwellings will be located outside of the SFPP and built to BAL 12.5.
	An APZ in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document is provided where it is demonstrated that all new dwellings will be constructed in accordance with BAL-29.	All buildings that are proposed to be built within the SFPP APZ will be built to BAL 29.
Landscaping		
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Landscaping is in accordance with Appendix 4.	Landscaping will be in accordance with Appendix 4 of the PBP 2019
	Fencing is constructed in accordance with Section 7.6.	Fencing will be constructed in accordance with Section 7.6 of PBP 2019.
The proposed refuge buildings can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	A construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	The refuge building is located outside of the SFPP APZ and will be built to no less than BAL 12.5.
Construction Standards		
The proposed refuge buildings can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	A construction level of BAL-12.5 under AS 3959 or NASH Standard and section 7.5 of PBP is applied.	The proposed refuge building will be built to a minimum of BAL 12.5.

Performance Criteria	Acceptable Solutions	Comments
Manufactured home estates: the proposed manufactured home can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	Where an APZ is provided in accordance with Table A1.12.1 in Appendix 1 of this document the construction standards for BAL-12.5 shall apply.	A Special Fire Protection Purpose (SFPP) APZ is provided for all dwellings not built to BAL 29. These dwellings will be located outside of the SFPP and built to BAL 12.5.
	Where an APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1 of this document the construction standards for BAL-29 shall apply.	All dwellings that are proposed to be built within the SFPP APZ will be built to BAL 29.
Access		
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	SFPP access roads are two-wheel drive, all-weather roads.	All roads are two-wheel drive and all weather.
	Access is provided to all refuge buildings.	Road access is provided to the refuge building(s).
	Traffic management devices are constructed to not prohibit access by emergency services vehicles.	Traffic management devices will not prohibit access by emergency service vehicles.
	Access roads must provide suitable turning areas in accordance with Appendix 3.	Access roads are 8m in width and through roads.
	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.	There are no one-way only public access roads proposed.
The capacity of access roads is adequate for firefighting vehicles.	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.	The capacity of road surfaces will be sufficient to carry fully loaded firefighting vehicles (23 tonnes). No bridges or causeways are proposed.
There is appropriate access to water supply.	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.	Hydrants will be located outside of parking reserved and road carriageways.
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021.	Hydrants will be provided in accordance with AS 2419:2021.
	There is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available.	N/A – development will be serviced by reticulated supply.
Perimeter Roads		
Perimeter access roads are designed to allow safe access	There are two-way sealed roads;	A perimeter road is provided where the development is adjacent to

Performance Criteria	Acceptable Solutions	Comments
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.	Minimum 8m carriageway width kerb to kerb	hazard vegetation as mapped in **Figure 4**. Perimeter roads are shown in **Figure 5**. It is expected that the New England Highway will act as a perimeter road to enable access to this part of the development for the purposes of firefighting. In those locations, the perimeter road will be a minimum carriageway width of 8m. Parking will be provided in designated spaces, outside of the carriageway. Hydrants will not be located in parking areas. All roads are through roads and linked to the internal road system at distances less than 500m. Curves will have a minimum inner radius of 6m and the maximum grade will be less than 10 degrees. Road crossfall will not exceed 3 degrees. A minimum 4m vertical clearance will be provided on all roads.
	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	
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	
Non- Perimeter Roads		
Non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.	Minimum 5.5m carriageway width kerb to kerb.	Internal non-perimeter roads will all be a minimum of 5.5m carriageway width. These roads are located where the development is not adjacent to hazard vegetation as mapped in **Figure 4**. Internal roads are shown in **Figure 5**.
	Parking is provided outside of the carriageway width.	Parking will be provided in designated spaces, outside of the carriageway.
	Hydrants are located clear of parking areas.	Hydrants will not be located in parking areas.
	There are through roads, and these are linked to the internal road system at an interval of no greater than 500m.	All roads are through roads and linked to the internal road system at distances less than 500m.
	Curves of roads have a minimum inner radius of 6m.	Curves of roads will be a minimum 6m inner radius.
	The maximum grade road is 15 degrees and average grade of not more than 10 degrees.	The maximum grade will be less than 10 degrees.
	The road crossfall does not exceed 3 degrees.	The crossfall of the road will not exceed 3 degrees.

Performance Criteria	Acceptable Solutions	Comments
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	A minimum 4m vertical clearance will be provided on all roads.
Water Supply		
An adequate water supply for firefighting purposes is installed and maintained.	reticulated water is to be provided to the development, where available.	The development will be serviced by a reticulated water supply.
	A 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	N/A – development serviced by reticulated water supply.
Water supplies are adequate in areas where reticulated water is not available	A 10,000 litres minimum static water supply for firefighting purposes is provided for each occupied building where no reticulated water is available.	N/A
	A connection for fire-fighting purposes is located within the Inner Protection Area or non-hazard side and away from the structure; a 65mm Storz outlet with ball valve is fitted to the outlet.	N/A
	Ball valve and pipes are adequate for water flow and are metal.	N/A
	Supply pipes from tank to ball valve have the same bore size to ensure flow volume.	N/A
	Underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank.	N/A
	A hardened ground surface for truck access is supplied within 4m of the access hole.	N/A
	Above-ground tanks are manufactured from concrete or metal.	N/A
	Tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters.	N/A
	Underground tanks are clearly marked.	N/A
	All exposed water pipes external to the building are metal, including fittings.	N/A
	Where pumps are provided, they have a minimum 5hp or 3kw petrol or diesel-powered pump, and are shielded against bush fire attack; Any hose and reel for firefighting	N/A

Performance Criteria	Acceptable Solutions	Comments
	connected to the pump shall be 19mm internal diameter.	
	Fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with the relevant clauses of AS 2441:2005 installation of fire hose reels.	Fire hose reels will be constructed in accordance with AS 1221:1997 and installed in accordance with AS 2441:2005.
Water supplies are located at regular intervals. the water supply is accessible and reliable for firefighting operations.	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2021.	Fire Hydrant spacing, design and sizing will comply with AS 2419.1:2021.
	Hydrants are not located within any road carriageway.	Hydrants will not be located in the road carriageway.
	Reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads.	The reticulated water supply will use a ring main system for perimeter road areas.
Flows and pressure are appropriate	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	Fire Hydrant pressures will comply with AS 2419.1:2005.
	The integrity of the water supply is maintained.	The integrity of water supply will be maintained.
Electricity Services		
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Where practicable, electrical transmission lines are underground.	All electrical transmission is proposed to be located underground.
	Where overhead, electrical transmission lines are proposed as follows: lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines.	N/A
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.	Reticulated or bottled gas will be installed and maintained in accordance with AS 1596:2014 and all metal piping will be used.
	All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side.	All fixed gas cylinders will be kept a minimum distance of 10m from flammable materials and shielded from hazard vegetation.
	Connections to and from gas cylinders are metal.	All gas connections will be metal.
	If gas cylinders need to be kept close to the building, safety valves are directed away from the building and at least 2m away from any	Gas cylinders will have safety valves directed away from buildings and be located at least 2m away from combustible material.

Performance Criteria	Acceptable Solutions	Comments
	combustible material, so they do not act as a catalyst to combustion.	
	Polymer-sheathed flexible gas supply lines to gas meters adjacent to buildings are not to be used.	All gas fittings are to be metal.
	Above-ground gas service pipes external to the building are metal, including and up to any outlets.	All service pipes and fittings external to buildings are to be metal.
Emergency Management		
Bush Fire Emergency Management and Evacuation Plan is prepared.	Bush Fire Emergency Management and Evacuation Plan is prepared consistent with the: The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan. Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable).	A Bush Fire Emergency Management and Evacuation plan will be prepared and consistent with the NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan; Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities (where applicable).
	The Bush Fire Emergency Management and Evacuation Plan should include planning for the early relocation of occupants.	The BEMP will include 7planning controls for early relocation of occupants in the case of a nearby bushfire.
Appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan.	An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual.	An Emergency Planning Committee will be established to consult with residents in the development and implementation of Emergency Management Procedures. Detailed plans of all emergency assembly areas will be clearly displayed and an annual emergency evacuation will be conducted as part of the Emergency Management.
	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.	

5.0 Bushfire Hazard Assessment

5.1 Construction Standards – AS 3959-2021

The identification of proximate hazards post development has resulted in the need for APZs, because of the Manufacture Housing Estate designation, SFPP APZs apply. Any Refuge buildings need to be built outside of the SFPP APZ and to BAL 12.5 standards. Dwellings located outside of the SFPP APZ must be built to a minimum BAL 12.5, while other dwellings built within the SFPP APZ must be built to BAL 29 standards.

The Australian Standard 3959-2021 Construction of buildings in bushfire prone areas, details six (6) levels of construction standards that are required for buildings, depending upon the expected impact of a bushfire from adjacent areas. These Bushfire Attack Levels (BALs) are measured from the edge of the hazard and incorporate vegetation type and slopes (see above) to determine the relevant distance for each BAL rating (and associated construction standard).

The relationship between the expected impact of a bushfire and the BAL rating is provided in **Table 4** below.

Table 4 – BAL Construction Standard

Bushfire Attack Level	Maximum radiant heat impact (kW/m^2)	Level of construction standard under AS 3959-2018
Low		No special construction requirements
12.5	≤12.5	BAL – 12.5
19	12.6 to 19.0	BAL – 19
29	19.1 to 29	BAL - 29
40	29 to 40	BAL – 40
Flame Zone	≥40	BAL – FZ (Not deemed to satisfy provisions)

The BAL construction standards that apply to the Subject Site are presented in **Table 5**

Table 5 – Hazard Vegetation and Slope Assessment

Aspect	Slope	≤12.5	19	29	40	Flame Zone
North (woodland)	0-5 degrees Downslope	100	32	23	16	12
North (grassland)	0-5 degrees Downslope	50	25	17	12	9
North East (woodland)	0-5 degrees Downslope	100	32	23	16	12
North East (grassland)	0-5 degrees Downslope	50	25	17	12	9
East (grassland)	Upslope / Flat	50	25	17	12	9
South East (grassland)	0-5 degrees Downslope	50	25	17	12	9
South (grassland)	0-5 degrees Downslope	50	25	17	12	9
South West (grassland)	0-5 degrees Downslope	50	25	17	12	9
West (Forest)	Upslope / Flat	100	45	33	24	18
North West (grassland)	0-5 degrees Downslope	50	25	17	12	9

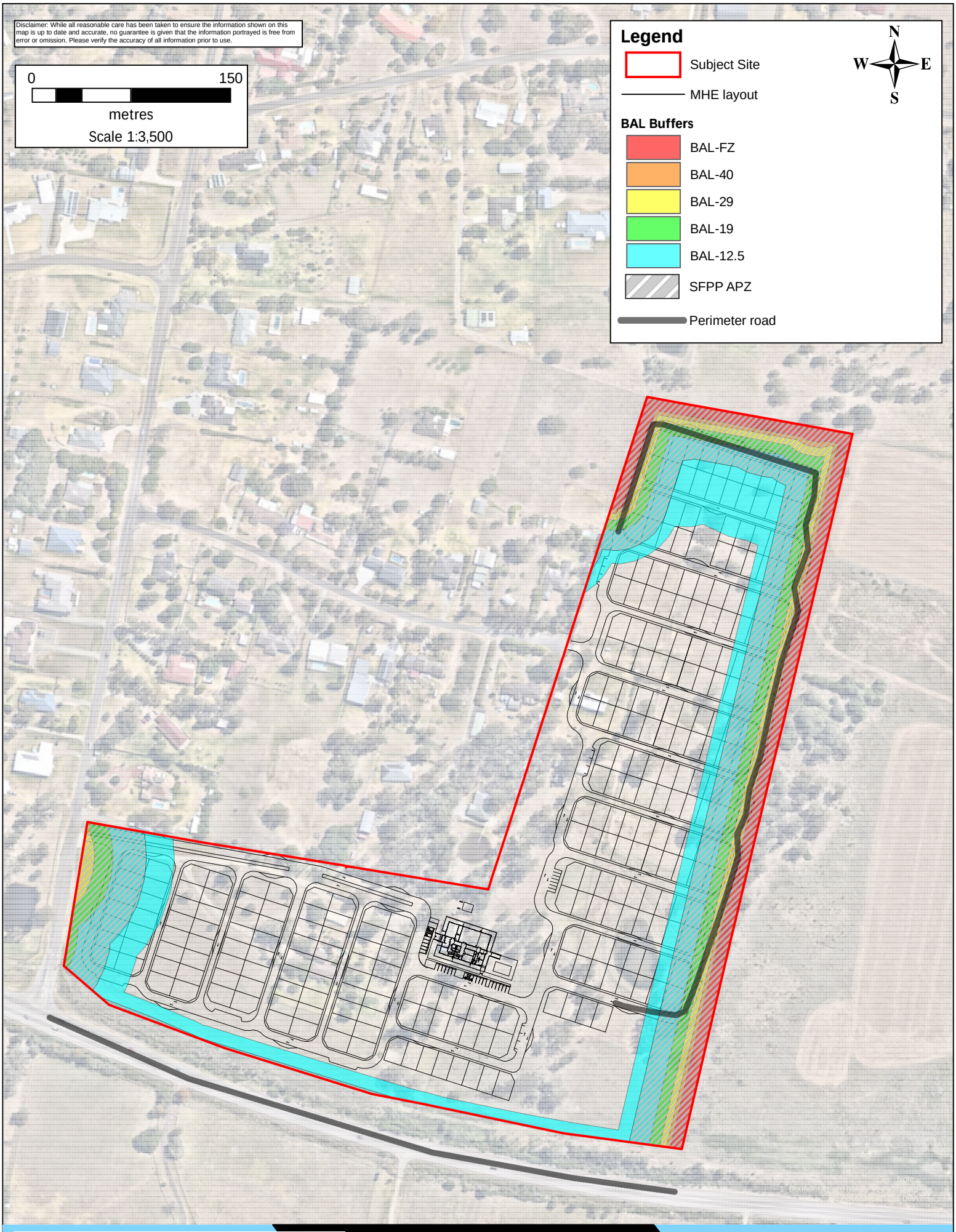

Figure 5: APZs and BAL buffers

Date: Dec 2023

Location: 10 River Road and 16 Denton Close, Windella, NSW

Client: Mavid Development Pty Ltd

AEP Ref: 3154

6.0 Other Considerations

The following analysis applied to the Subject Site in reference to environmental features present.

Table 6 – Other Considerations

Considerations	Assessment
Riparian Corridors	No riparian corridors are present within the Subject Site
State Environmental Planning Policy (Resilience and Hazards) 2021	Addressed within the Ecological Assessment of the Subject Site accompanying this report
State Environmental Planning Policy (Biodiversity Conservation) 2021	Addressed within the Ecological Assessment of the Subject Site accompanying this report
Areas of geological interest	Nil known
Environmental protection zones or steep lands (>18º)	Nil present
Land slip or flood prone areas	Nil present
National Parks estate or various other reserves	Nil present
Threatened species matters	Addressed within the Ecological Assessment of the Subject Site accompanying this report
Aboriginal Heritage	Nil known to be present

7.0 Conclusion

Investigations undertaken for this Bushfire Threat Assessment have revealed that the proposed development will be affected by hazardous vegetation.

The refuge building (community building) meets the required SFPP APZs distances required and will be built to a minimum BAL12.5 standard. Manufactured Home Estate located outside the SFPP APZs will be built to BAL 12.5, while Manufactured homes built within the SFPP APZ will be built to BAL 29. No Manufactured Homes will be built in areas of BAL 40 or BAL FZ.

It is considered that the distance between the hazard vegetation and the proposed development construction standards comply with the requirements of PBP.

Services will be supplied in accordance with that required in *Planning for Bushfire Protection 2019*.

The proposed development will be serviced by a reticulated water system with Hydrants being provided in accordance with the relevant standards.

Access and egress will be provided by all-weather roads from River Road, which connects to the New England Highway within 200m. A perimeter road is provided as part of the development with the New England Highway acting as the southern perimeter road for firefighting purposes. Internal access roads are all through roads and it is considered that, with any required road upgrades, the access and egress arrangements would be appropriate and no issues would be identified with evacuation, safe haven zones, or firefighting logistics.

A Bush Fire Emergency Management and Evacuation Plan will be conditioned on Approval of the development and will contain provisions as set out in the PBP 2019.

When applied, these measures should provide adequate protection to life and property within the proposed development in the event of a bushfire occurring in the immediate locality. However, it can never be guaranteed that the site and property therein will not at some stage be affected by a bushfire event.

8.0 References

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NSW Government (2021). Planning Portal website. Accessed 22/05/2023.

Standards Australia (2018) AS-3959 Construction of Buildings in Bushfire-Prone Areas. Standards Australia, Sydney. November 2018.

Standards Australia (2010) AS-3745 Planning for Emergencies in Facilities. Standards Australia, Sydney. November 2010.

Standards Australia (2021), AS-2419.1:2021 Fire Hydrant Installations – Part 1: System Design, Installation and Commissioning. Standards Australia, September 2021.

Appendix A – Site Photos

Plate 1: Vegetation looking north over grassland and woodland hazard

Plate 2: Vegetation looking north towards managed lands

Plate 3: Vegetation looking east over unmanaged grassland

Plate 4: Vegetation looking southeast over unmanaged grassland and gas pipeline and Electricity services easement.

Plate 5: Vegetation looking south towards New England Highway over gas pipeline and Electricity services easement.

Plate 6: Vegetation to the south west over the corner of New England Highway and River Road

Plate 7: Forest Hazard Vegetation looking west

Plate 8: Vegetation looking north west towards residential dwellings

Plate 9 – Woodland vegetation to the Northeast of the Subject Site