

Bushfire Assessment

Proposed Manufactured Home Estate

Lot 39 DP 22919 & Lot 349 DP753848

Browns Lane, Oxley Vale

November 2024

Final

Prepared for
Land Dynamics Pty Ltd

Project No:24183

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TABLE of CONTENTS

1. INTRODUCTION	1
2. PROPOSED DEVELOPMENT	1
3. SITE DESCRIPTION	4
3.1 Site Details	4
3.2 Site Description	4
3.3 Services and Infrastructure	6
3.4 Bushfire Prone Vegetation Relative to Location of the Proposal	6
3.5 Environmental Features or Aboriginal Relics	8
3.6 Slope Assessment	8
3.7 Vegetation Classification	10
4. BUSHFIRE ASSESSMENT	13
4.1 Submission Requirements for BFSA	14
5. RELATIONSHIP OF PROPOSAL TO PLANNING FOR BUSH FIRE PROTECTION 2019	22
5.1 Issues Listed for the Specific Purpose for the Development set out in Chapter 8	22
5.2 Asset Protection Zones and Building Construction	23
5.3 Access	25
5.4 Services – Water, Gas and Electricity	27
5.5 Emergency Management Planning	28
6. CONCLUSION	29
7. RECOMMENDATIONS	29
8. REFERENCES	32

TABLES

Table 3.1: Access and Services	6
Table 3.2: Vegetation formations and classification (PBP / Keith, 2004) surrounding the site	11
Table 4.1: Analysis of minimum APZs	15
Table 4.2: Buildings / Dwellings and Construction Standards	19
Table 5.1: Performance criteria & acceptable solutions for APZs & construction	23
Table 5.2: Performance criteria & acceptable solutions for access	25
Table 5.3: Performance criteria & acceptable solutions for water, electricity & gas services	27
Table 5.4: Performance criteria & acceptable solutions for emergency management plans	28

FIGURES

Figure 2.1: Site Layout Plan Extract	2
Figure 2.2: Clubhouse Floor Plan Extract	3
Figure 3.1: Site Locality and Bushfire Prone Land Map	7
Figure 3.2: Slope Analysis	9
Figure 4.1: Minimum Separation Distances and APZs for residential development	16
Figure 4.2: Bushfire Attack Levels applying to sites and buildings	20

1. INTRODUCTION

This Bushfire Assessment has been prepared in relation to a proposed Manufactured Home Estate (MHE) and on land at Lot 39 DP 22919 & Lot 349 DP753848, Browns Lane, Oxley Vale (the “site”).

Land in the site is mapped as bushfire prone land (BFPL) for the purposes of Section 10.3 of the *Environmental Planning & Assessment Act 1979* (EP&A Act). MHEs, within the meaning of “*State Environmental Planning Policy (Housing) 2021*”, are prescribed as a Special Fire Protection Purpose (SFPP) development and would require the issue of a Bush Fire Safety Authority (BFSA) pursuant to Section 100B of the *Rural Fires Act 1997* (RF Act).

The purpose of this report is to carry out a bushfire assessment having regard to the provisions of the NSW Rural Fire Service guideline entitled *Planning for Bush Fire Protection 2019* (PBP) and the information requirements for obtaining a bushfire safety authority under Clause 45 of the Rural Fires Regulation 2022.

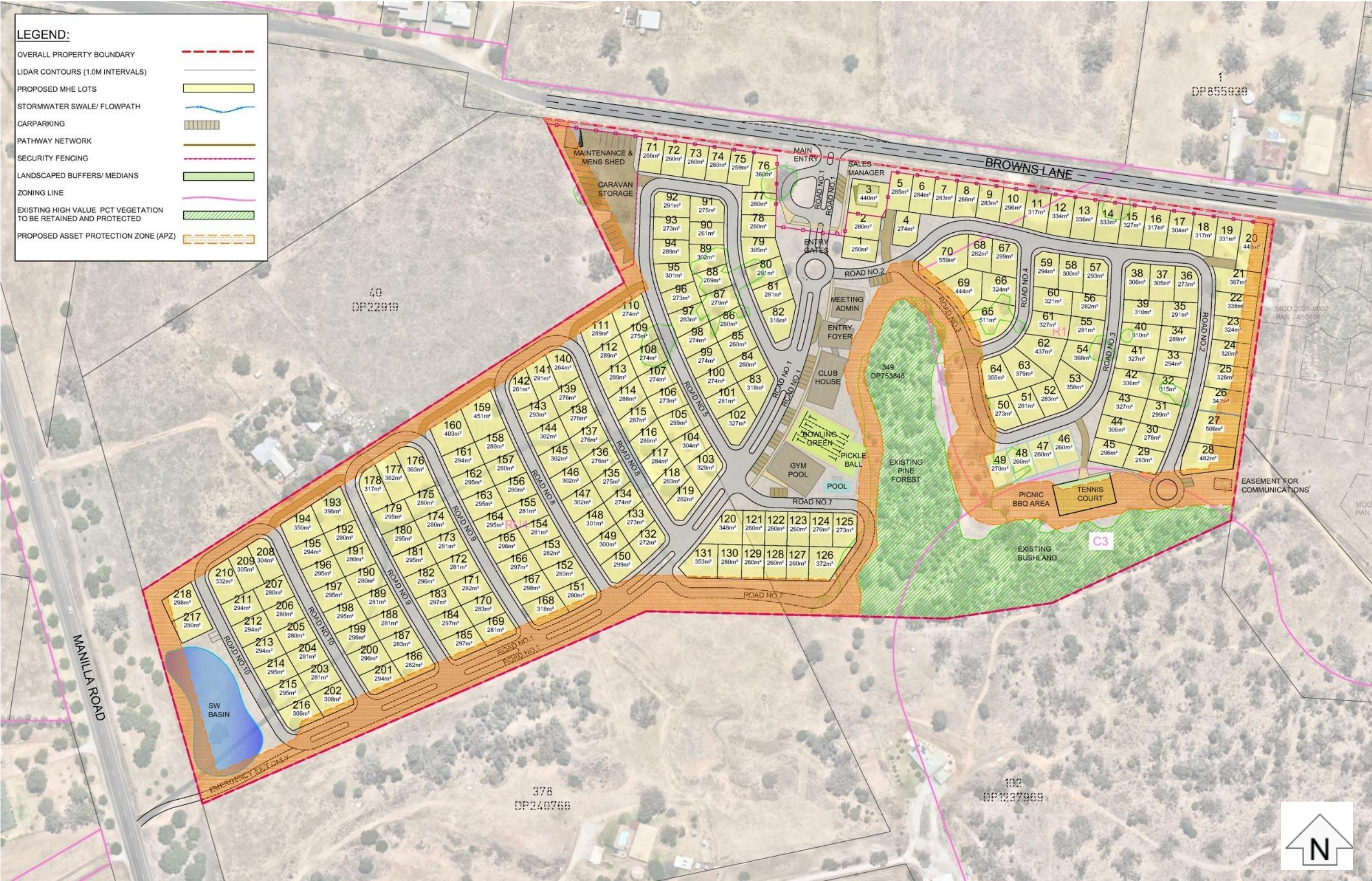
2. PROPOSED DEVELOPMENT

The proposed development involves construction of a MHE development providing 223 long-term sites and associated internal road network. The proposal also includes construction of community buildings, including Clubhouse building, Pool and Gym building, Men’s shed and recreation areas containing bowling green, tennis court and pickleball courts.

Manufactured Homes would be installed on each site in accordance with the Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2021 (the Regulation) subject to any conditions of consent for the proposed development.

The proposed Clubhouse building will have a total floor area of 1,254m² over three connected pavilion buildings and is likely to be partly classified as a Class 9b (assembly) building for the purposes of the National Construction Code (NCC). Detached structures are expected to be Class 10 buildings (depending on function).

The proposed development is shown on plans by Land Dynamics Australia, “*Lifestyle Community, Job No. 5668, Rev B*” dated 19/06/2024. An extract of the site and floor plan is at **Figure 2.1** and **Figure 2.2**.





CLUBHOUSE AREA SCHEDULE		
NO.	ROOM NAME	AREA
1	DROP OFF	43.29 m ²
2	OFFICE	16.25 m ²
3	RECEPTION	19.39 m ²
4	FOYER	79.19 m ²
5	CAFE	91.01 m ²
6	LOUNGE BAR	145.04 m ²
7	WC-M	15.45 m ²
8	WC-F	15.88 m ²
9	BIN ROOM	8.91 m ²

CLUBHOUSE AREA SCHEDULE		
NO.	ROOM NAME	AREA
10	STORE	8.91 m ²
11	KITCHEN	30.45 m ²
12	STORE	11.19 m ²
13	OFFICE	11.10 m ²
14	MEETING ROOM	30.92 m ²
15	MEETING ROOM	30.92 m ²
16	GAMING	65.68 m ²
17	LIBRARY	32.74 m ²
18	TERRACE	233.59 m ²

CLUBHOUSE AREA SCHEDULE		
NO.	ROOM NAME	AREA
19	MULTIPURPOSE ROOM	180.36 m ²
20	CINEMA	72.72 m ²
21	MEETING ROOM	13.16 m ²
22	ADMIN	10.17 m ²
23	OUTDOOR CAFE	38.42 m ²
24	TERRACE	49.73 m ²
		1254.46 m ²

Figure 2.2: Clubhouse Floor Plan Extract
Source: deBlanco Design Studio. Not to scale.

3. SITE DESCRIPTION

3.1 Site Details

Address	Browns Lane, Oxley Vale
Lot / DP	Lot 39 DP 22919 & Lot 349 DP753848
Area	13.68 hectares
Local EPI	Tamworth Regional Local Environmental Plan 2010
Zoning (Current)	RU4 - Primary Production Small Lots C3 - Environmental Management R1 - General Residential
Fire Weather District	Northern Slopes fire weather district (FDI 80)

3.2 Site Description

The site is located on the eastern side of Manilla Road and southern side of Browns Lane, approximately 1.7 kilometres north of the suburb of Oxley Vale.

Land within the site is gently undulating with a predominantly westerly aspect. The eastern part of the site is characterised by a more elevated ridgeline that continues south (within conservation zoned land) toward the suburb of Oxley Vale.

Vegetation within the site is largely characterised by grazing land (grassland) with scattered trees. Similar grasslands surround the site in north, east and western directions.

A patch of woodland occupies the far south-eastern part of the site (near the southern boundary of Lot 349) and forms the northern end of a vegetated landscape occupying landforms with higher elevations extending south toward Oxley Vale. Those vegetated landscapes are generally zoned C3 Environmental Management.

Photo 3.1, on the following page, shows the condition of the site and surrounding land.



Photo 3.1: Aerial view looking east across the site with approximate site boundary highlighted yellow

3.3 Services and Infrastructure

Table 3.1 summarises the services and infrastructure available to the site.

Table 3.1: Access and Services

Service	Availability
Access	The site has public road frontage at the northern boundary of Lot 349 (Browns Lane) and the western boundary of Lot 39 (Manilla Road). Both public roads servicing the site are bitumen sealed public roads providing two-way access.
Water	The site is serviced by reticulated water.
Electricity	Overhead electricity and telecommunications are available to the site.
Gas	There is no reticulated gas available to the site

3.4 Bushfire Prone Vegetation Relative to Location of the Proposal

Land in the site and surrounding land is mapped as BFPL comprising both Category 1 and Category 3 Vegetation, as shown in **Figure 3.1**.

Land within the site is partly mapped as both Category 1 and Category 3 and partly buffer to bushfire prone vegetation (including land Category 3 land mapped as occurring on land to the south-west and north-west of the site).

Category 3 land is described in the *RFS Guide for Bush Fire Prone Land Mapping* (V5b, November 2015) as medium bush fire risk vegetation and corresponds with areas of vegetation having formations of grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands (Keith, 2004).

Category 1 vegetation is described in the *RFS Guide for Bush Fire Prone Land Mapping Vegetation* as the highest risk for bush fire and corresponds with areas of vegetation having formations of forest and woodland. This vegetation category has the highest combustibility and likelihood of forming fully developed fires including heavy ember production.

Inspection of the site indicates that surrounding vegetation formations are representative of *grassland* (Category 3) and *grassy woodland* (Category 1) vegetation formations (Keith, 2004), generally consistent with the mapped BFPL.

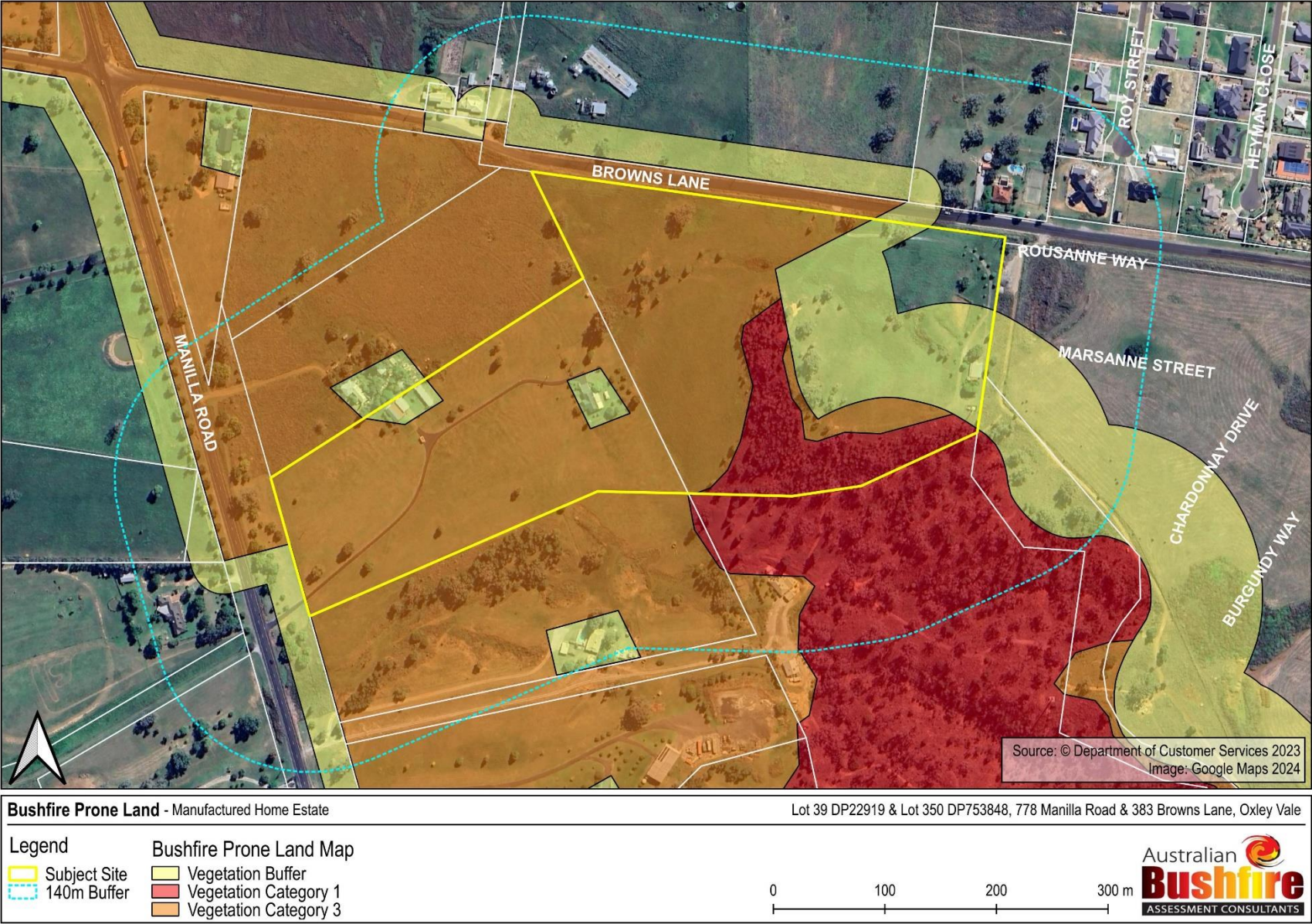


Figure 3.1: Site Locality and Bushfire Prone Land Map

3.5 Environmental Features or Aboriginal Relics

An AHIMS search indicates that there are no known Aboriginal sites recorded on the site and no Aboriginal places have been declared on or near the subject site. There are no known archaeological constraints at the subject site that might be relevant to bushfire protection measures for the proposed development (although the presence of undiscovered Aboriginal objects remains possible).

The development application is accompanied by a Biodiversity Development Assessment Report (BDAR) that describes the features of native vegetation within the site and surrounding land. The BDAR identifies native vegetation as comprising various condition zones of *PCT 589 – White Box - White Cypress Pine - Silver-leaved Ironbark grassy woodland on mainly clay loam soils on hills mainly in the Nandewar Bioregion*. PCT 589 is associated with White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland listed as a Critically Endangered Ecological Community under both the BC Act and EPBC Act.

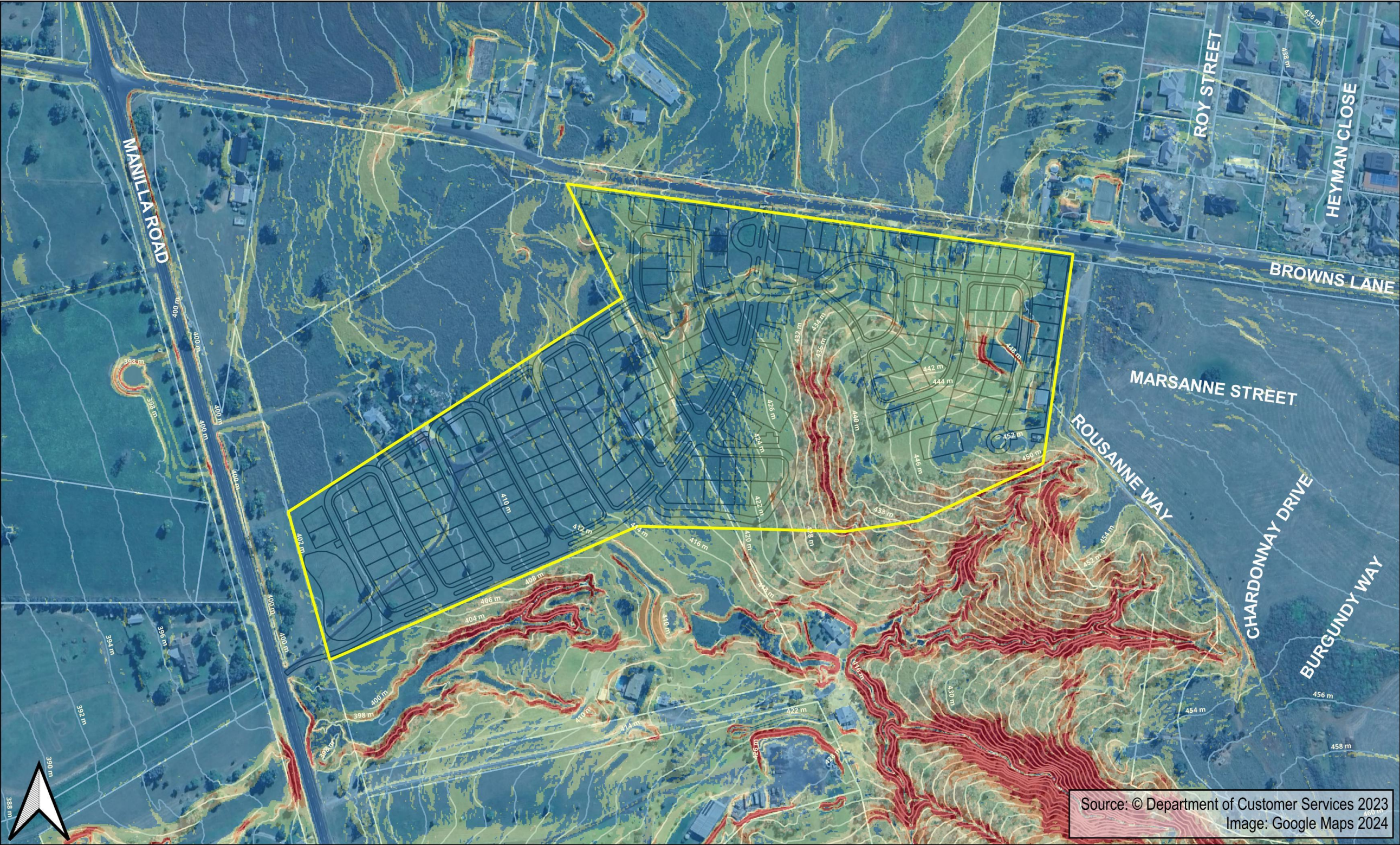
Native vegetation therefore presents a constraint to the provision of APZs and other fuel management strategies that may result in degradation of the community.

There is unlikely to be any other environmental constraints that have not been considered in the environmental assessment of the development on the site.

3.6 Slope Assessment

The assessment of slope has been undertaken in accordance with the methodology in Section A1.5 of PBP 2019. The assessment of slope was undertaken via analysis of Digital Elevation Model (DEM) and through field analysis using a hand-held inclinometer and range finder.

The slope of land most likely to influence bushfire behaviour is depicted in below in **Figure 3.2** and summarised in Table 4.2 .



Slope Map - Manufactured Home Estate

Lot 39 DP22919 & Lot 350 DP753848, 778 Manilla Road & 383 Browns Lane, Oxley Vale

Legend		
	Subject Site	
	Proposed Development	
	2m Contours	
Slope (Degrees)		
	< 5°	 5 - 10
	10 - 15	 15 - 20
	> 20°	

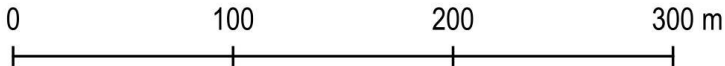


Figure 3.2: Slope Analysis

3.7 Vegetation Classification

As described above, vegetation formations (Keith, 2004) within and surrounding the site (to a distance of 140 metres) comprises as mix of:

- a) Grassy Woodland (*White Box - White Cypress Pine - Silver-leaved Ironbark grassy woodland*); and
- b) Grassland (pasture). While adjacent pasture appears to be regularly managed through slashing and grazing, it is assumed that the vegetation may present a hazard in the absence of any formal management regime.

Within the site, vegetation is proposed to be managed and landscaped such that any potential bushfire threats are removed from the areas proposed to be developed for homes sites, roads and recreation areas. Bushland will also be retained within the eastern part of the site and managed for conservation purposes.

Potential bushfire hazards therefore exist:

- Within land at Lot 40 DP22919 adjoining the northern boundary of Lot 39. That land contains predominantly grassland and an area of managed vegetation around the curtilage of a dwelling;
- Within land at Lot 378 DP240766 adjoining the southern boundary of Lot 39. That land contains a mix of grassland and woodland.
- Within land at Lots 102 DP1237969 and Lot 703 DP1260451 adjoining the southern and eastern boundary of Lot 349. That land contains predominantly woodland which is contiguous with woodland to be retained and conserved within the site.
- Within Lot 888 DP13302688 adjoining the eastern boundary of Lot 349. Land within Lot 888 contains pasture/grassland which is expected to be removed upon completion of an approved residential subdivision of that land.

The classification of vegetation on land within and surrounding the site is described in **Table 3.2** and depicted in **Figure 4.1** and **Photo 3.2** to **Photo 3.7**.

Table 3.2: Vegetation formations and classification (PBP / Keith, 2004) surrounding the site

Direction	Classification	Description
Lot 349 DP753848		
North	Grassland (20m separation via Browns Lane)	Pasture (grassland) is the predominant vegetation on land to the north of Browns Lane. Narrow row of trees within Browns Lane road corridor. It is expected that the road frontage may be maintained by the land-owner as Low Threat vegetation.
South	Woodland	Woodland vegetation on adjacent land at Lot 102 DP1237969 and Lot 703 DP1260451. Vegetation to the south of the site is contiguous with vegetation extending into the southern part of Lot 349 and zoned C3 Environmental Management.
East	Grassland	Pasture within neighbouring land adjoining the eastern boundary (Lot 888 DP13302688). Consent has been granted for subdivision of land at Lot 888 and any vegetation would be permanently removed or managed upon commencement of approved subdivision work. Until subdivision works commence, vegetation on Lot 888 has been conservatively classified as a grassland hazard.
West	Low Threat	Land to the west of Lot 349 is part of the development site (Lot 39) and is capable of being managed for bushfire hazard reduction to the extent necessary.
Lot 39 DP22919		
North	Low threat (excluded) Grassland (pasture)	Pasture within neighbouring land (Lot 40 DP22919) adjoining the northern boundary. An area of low threat vegetation also exists within the curtilage of an existing dwelling adjacent to the northern boundary.
South	Predominantly grassy woodland (worst case)	Vegetation on land to the south of the site (Lot 378 240766) is a mix of pasture/grassland and patches of woodland. While the grassland areas appear to be subject to regular slashing, vegetation to the south has been conservatively classified as woodland for the purposes of considering the 'worst case' scenario in the absence of any continuation of land management.
East	Woodland (>50m) Managed Land (within the site)	Land to the east of Lot 39 is part of the development site (Lot 349) and is capable of being managed for bushfire hazard reduction to the extent necessary. The nearest unmanaged vegetation comprises an area of retained woodland extending into the southern and central parts of Lot 349 and at least 50 metres, at the closest point, from any home sites proposed to be created on Lot 39
West	Woodland (Managed)	Scattered trees within Manilla Road verge with characteristics of woodland. While the site frontage is presently managed through slashing/mowing (and it is expected that the road frontage may continue to be maintained), the roadside vegetation has conservatively been classified as woodland for the purposes of determining BALs.



Photo 3.2: Looking south showing woodland on adjacent Lot 102 DP1237969



Photo 3.3: Woodland (Cyprus regrowth) in the central parts of Lot 349



Photo 3.4: Looking south-west showing woodland interface on adjacent Lot 378



Photo 3.5: Looking north-west showing vegetation within Lot 349 and land on the northern side of Browns Lane



Photo 3.6: Looking east across Lot 349 toward the eastern boundary



Photo 3.7: Looking south along the eastern boundary fence of Lot 349 (site is to the right)

4. BUSHFIRE ASSESSMENT

The proposed development is for a Manufactured Home Estate (land lease community) providing sites for permanent residential occupation.

MHEs are a specific residential-based SFPP for the purposes of Section 6.3.2 of PBP. Importantly, Section 6.3.2 of PBP states that *“where evidence can be provided which confirms that dwellings within the manufactured home estate will be constructed to the appropriate construction standards under AS 3959 or NASH Standard, an APZ can be provided which meets 29kW/m² in line with Tables A1.12.3”*.

It is expected that conditions of consent would be imposed to ensure that future dwellings (which do not necessarily require a Construction Certificate for placement on site) incorporate bushfire-resisting construction in accordance with the construction requirements for any identified Bushfire Attack Level (BAL).

While the Clubhouse building is likely to be partly classified as a Class 9b (assembly) building for the purposes of Volume 1 of the National Construction Code: Building Code of Australia (NCC/BCA), the clubhouse building does not include any uses that are consistent with the definition of SFPP development for the purposes of the RF Act.

As the clubhouse building is not SFPP development, the NCC does not specify any particular construction requirements for bushfire protection. The requirements contained in clause G5D4 of the NCC (including Specification 43 and Addendum to PBP November 2022) would not apply to that building.

As described in Section 8.3 of PBP, while AS3959 is not considered as a Deemed to Satisfy construction solution, compliance with AS3959 is to be considered when meeting the aim and objectives of PBP.

Section 4.1 is an assessment of BALs for the purposes of considering bushfire protection measures (BPMs), including construction requirements, for the proposed clubhouse building and other community buildings in the development.

4.1 Submission Requirements for BFSA

The following provides a summary of the submission requirements for a BFSA in relation to subdivision on BFPL, as per Clause 45 of the Rural Fires Regulation 2022.

4.1.1 *The extent to which the development is to provide for setbacks, including Asset Protection Zones*

Table 6.8a (Performance Criteria and Acceptable Solutions for APZs and construction for SFPP development) provides a variation for manufactured home estates, requiring that APZs are to be provided in accordance with Table A1.12.3 of PBP where it is demonstrated that all new dwellings will be constructed with BAL-29.

The site is in the Northern Slopes fire (weather) area and the relevant Fire Danger Index (FDI) is FDI 80.

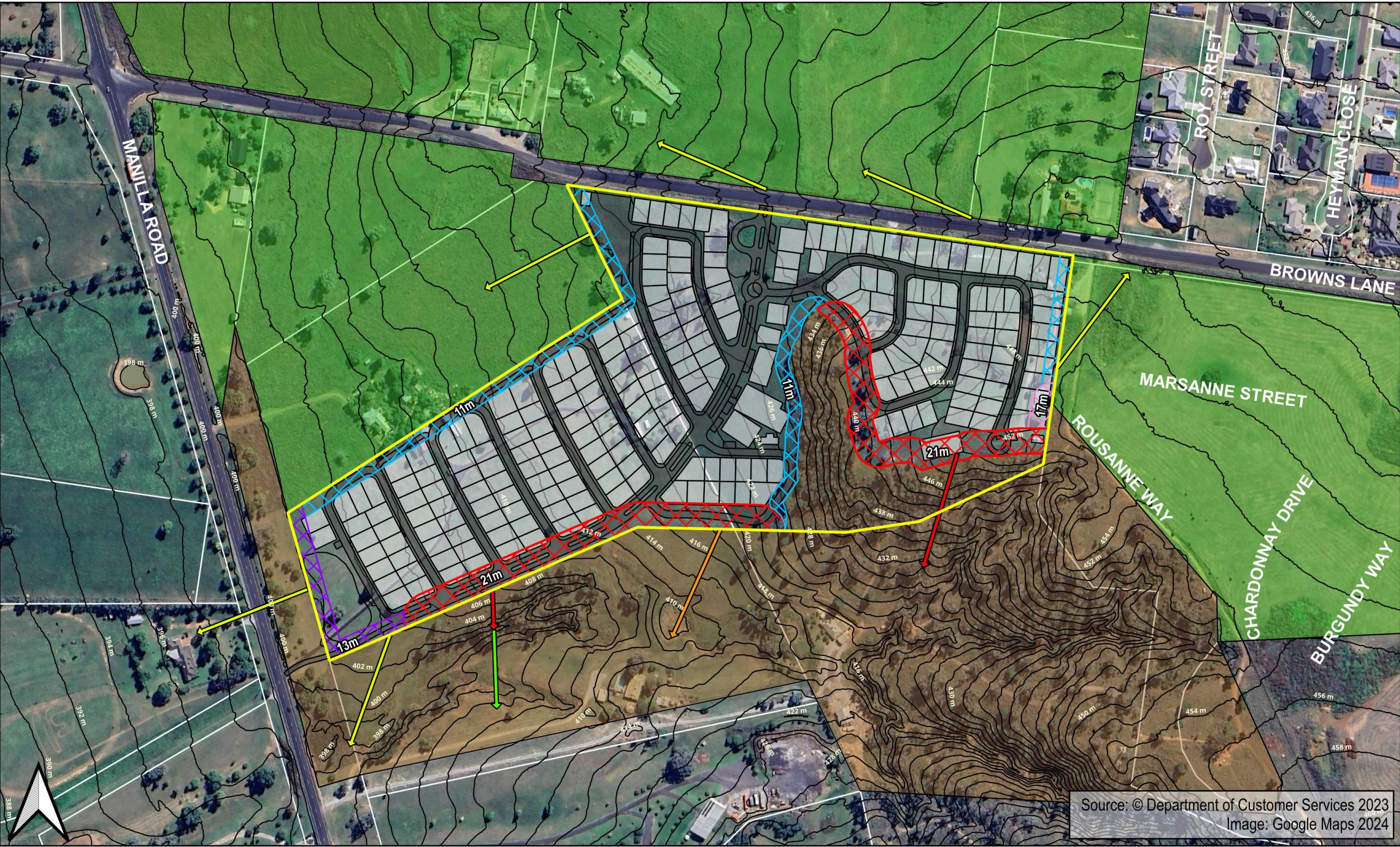
Appendix 1 of PBP 2019 provides the methods for determining the minimum APZs for residential development. Minimum APZs are based on maximum potential radiant heat levels $<29\text{kW/m}^2$ for any future dwelling(s) on the proposed residential sites when assessed in accordance with Table A1.12.3 of PBP 2019.

In relation to the slope and vegetation classification in Sections 3.6 and 3.7 of this assessment, and as per Table A1.12.3 of PBP, separation distances as set out in **Table 4.1**.

Table 4.1: Analysis of minimum APZs

Direction	Vegetation	Effective Slope	Minimum Separation (PBP, Table A1.12.3)
Lot 349 DP753848 (Vegetation external to the site)			
North	Grassland	>0-5° (downslope)	11 metres
South (Sites 126-131,29,45-49 & 45-49)	Grassy Woodland	>10-15° (downslope)	21 metres
East (Sites 20-26)	Grassland	>0-5° (downslope)	11 metres*
East (Sites 27&28)	Grassy Woodland	>5-10° (downslope)	17 metres*
West (Sites 92-95,71)	Grassland	>0-5° (downslope)	11 metres
Lot 349 DP753848 (Retained vegetation within the site)			
North (Sites 29 & 45-49)	Grassy Woodland	>10-15° (downslope)	21 metres
South	N/A	N/A	N/A
East (Sites 49,50,64,65,69)	Grassy Woodland	>10-15° (downslope)	21 metres
West (Sites 125,126, Clubhouse Facilities)	Grassland	>5-10° (downslope)	12 metres
Lot 39 DP22919 (Vegetation external to the site)			
North (Sites 218,208-210,193-194,176-178,159-160,140-142,110,111)	Grassland	>0-5° (downslope)	11 metres
South (Sites 216, 202, 201, 185-186,168, 169, 151, 150)	Grassy Woodland	>10-15° (downslope)	21 metres
East	Grassy Woodland (Lot 349)	Upslope	11 metres
West	Grassy Woodland	>0-5° (downslope)	13 metres

* Temporary separation requirements until adjacent land is developed and hazards are permanently removed



Minimum APZ Setbacks - Manufactured Home Estate

Lot 39 DP22919 & Lot 350 DP753848, 778 Manilla Road & 383 Browns Lane, Oxley Vale

Legend

Subject Site	Keith Vegetation Types Grassland	Slope (degrees) Upslope	Minimum Setbacks 11m
Proposed Sites	Woodland	Downslope >0-5°	13m
Proposed Road Network		Downslope 5-10°	17m
2m Contours		Downslope 10-15°	21m



Figure 4.1: Minimum Separation Distances and APZs for residential development

4.1.2 The siting and adequacy of water supplies for fire fighting

The proposed development will be serviced by reticulated water.

Clause 34 of the Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds, and Movable Dwellings) Regulation 2021 (LG Regulation) requires the provision of fire hydrants throughout the development so that no part of a dwelling site or community building is more than 90 metres from a fire hydrant.

Fire hydrant location, spacing, design and sizing is to be as per AS2419.1:2021.

The siting and adequacy of water supplies is considered in relation to the performance criteria of PBP in Section 4.2 of this assessment.

4.1.3 The capacity of nearby public roads to handle increased volumes of traffic when a bush fire emergency occurs

Browns Lane is a public road with apparent capacity to handle increased traffic. The capacity of public roads is considered in relation to the performance criteria of PBP (Section 5) in Section 4.2 of this assessment.

4.1.4 Whether or not nearby public roads that link with the fire trail network have two-way access

There is no fire trail network within the site. The adjacent road network has two-way access.

4.1.5 The adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response

The primary access will be provided via Browns Lane. The site layout also includes an alternative emergency access/egress point from Manilla Road (generally in the location of the existing property access road).

Two-way roads throughout the proposed development are to be constructed with a sealed width of 6 metres in accordance with Clause 21 of the LG Regulation. Minor roads (one way roads) are to have a constructed width of 4 metres.

The minimum constructed width of roads throughout the development is to be maintained via the provision of constructed parking bays. Other than parking within these constructed parking areas, parking within the road carriageways within the development is to be restricted to maintain the minimum required constructed width of roads.

The adequacy of arrangements for access to and egress from the development are considered in relation to the performance criteria of PBP 2019 (Chapter 6) in Table 4.3 to this assessment.

4.1.6 The adequacy of bushfire maintenance plans and fire emergency procedures for the development site

Recommendations are made for a *Bush Fire Emergency Management and Evacuation Plan* to be prepared in relation to the proposed development, consistent with the NSW RFS document "*Development Planning - A Guide to developing a bush fire emergency management and evacuation plan*" (December 2014) and AS3745:2010.

The proposed development also includes community open space that is to be managed for the purposes of conservation and/or bushfire hazard reduction purposes. The ongoing maintenance of APZs would be guided by a bushfire maintenance plan / Vegetation Management Plan (VMP) that details the management specification and maintenance frequency of any APZs.

Section 5 of this assessment provides an analysis of the development in relation to the performance criteria in Chapter 6 of PBP.

4.1.7 The construction standards to be used for building elements in the development

Manufactured homes are not "buildings" for the purposes of the NCC. Individual Manufactured Homes are "installed" on each site in accordance with the Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2021 (the Regulation) subject to any conditions of consent for the proposed development.

While there is no development consent process for installation of Manufacture Homes, it is understood that Manufacture Homes can be constructed in accordance with AS3959 (or NASH Standard) and the relevant construction requirements for each home is capable of being regulated through development consent conditions that nominate the construction standards to be incorporated into each home. If necessary, BALs and construction standards may also be identified in the Approval to Operate (ATO).

The development also includes construction of community buildings that are Class 10 & Class 9 assembly buildings. Construction standards have been identified for each building for the purposes of achieving the aim and objectives of PBP.

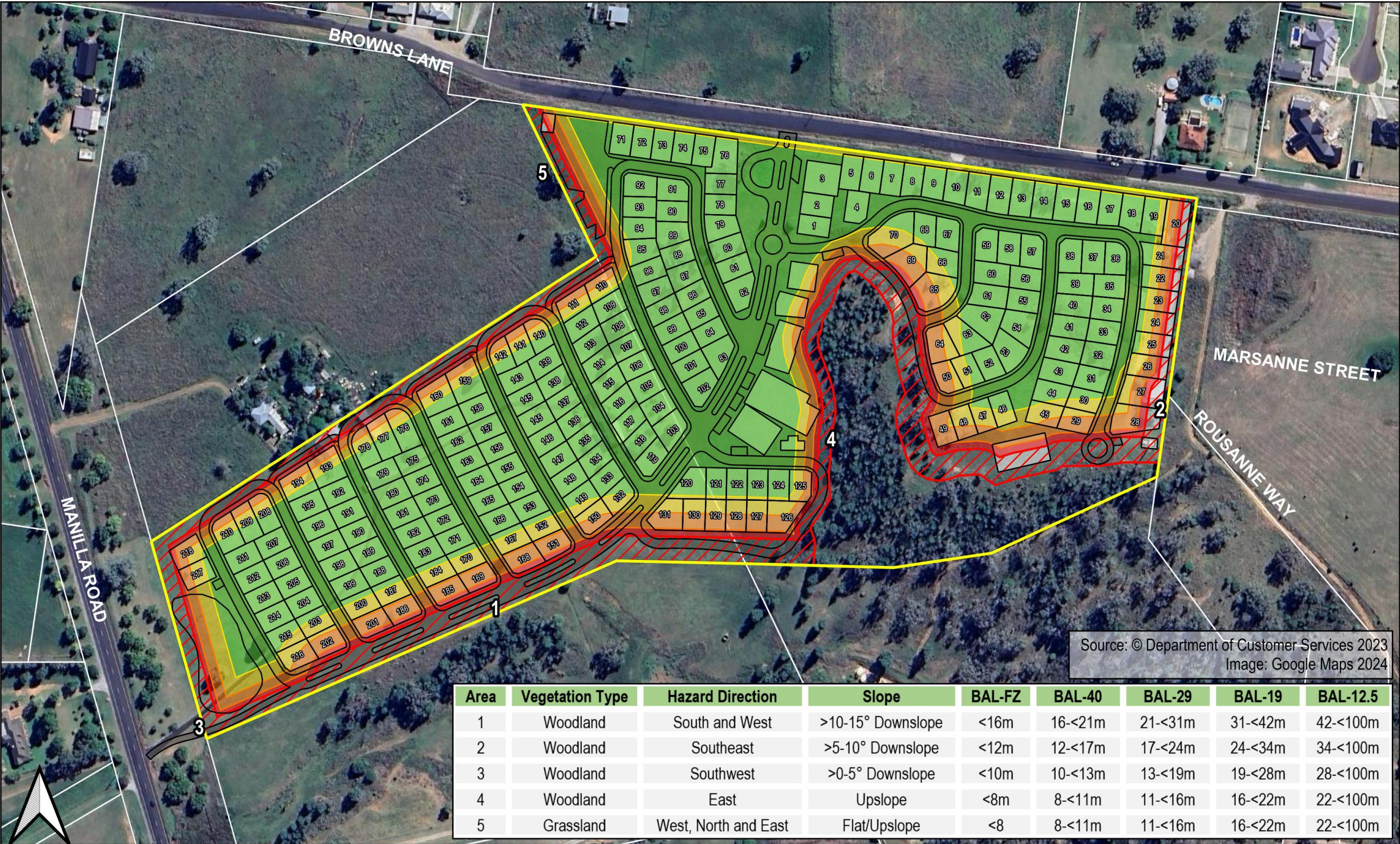
Appendix 1 of PBP provides the site assessment methodology for determining the applicable Bushfire Attack Level (BAL). Once the BAL is determined, construction requirements for the corresponding BAL apply subject to AS3959-2018: *Construction of buildings in bushfire-prone areas* subject to Section 7.5 of PBP.

Table 4.2 is a summary of construction standards applying to individual manufactured homes and community buildings.

Table 4.2: Buildings / Dwellings and Construction Standards

Site numbers / Facility	Construction
Community Facilities	
Meeting / Admin / Foyer	BAL-29
Club House	BAL-29
Pool / Gym	BAL-12.5
Men's Shed	BAL-FZ* (Non-Combustible)
Dwelling Sites	
Sites 20-29,45, 47-50, 64, 65, 69, 70, 110,111, 125, 126-131, 140-142, 150, 151, 159, 160, 168, 169, 176-176, 185, 186, 193, 194, 201, 202, 208, 209, 210 & 216	BAL-29
Sites 19, 30, 44, 46, 51, 66, 68, 132, 149, 152, 167, 170, 184, 187, 200, 203 & 215	BAL-19
All remaining sites	BAL-12.5

Note: The maintenance shed/men's shed is a Class 10a building not subject to any construction in accordance with AS3959. Recommendations are made for non-combustible construction to achieve the aim and objectives of PBP.



Bushfire Attack Level Determination - Manufactured Home Estate

Lot 39 DP22919 & Lot 350 DP753848, 778 Manilla Road & 383 Browns Lane, Oxley Vale

Legend

- Bushfire Attack Level (BAL)**
- Subject Site
 - Proposed Sites
 - Proposed Road Network
 - BAL-12.5
 - BAL-29
 - BAL-Flame Zone
 - BAL-19
 - BAL-40

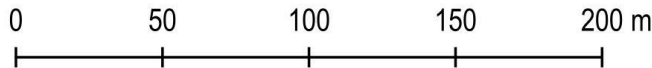


Figure 4.2: Bushfire Attack Levels applying to sites and buildings

4.1.8 The adequacy of sprinkler systems and other fire protection measures to be incorporated into the development

The proposed development does not involve the provision of sprinkler systems, unless required by the NCC for individual buildings. As mentioned previously, the relevant provisions of the *LG Regulation* require the provision of fire hydrants throughout the development (see discussion in Section 4.1.2 of this document).

4.1.9 Registered Fire Trails on the property

No registered fire trails exist on the property, and none are proposed.

4.1.10 An assessment of the extent to which the proposed development conforms with or deviates from Planning for Bush Fire Protection

Section 5 of this report provides an analysis of the development in relation to the performance criteria in Chapter 6 of PBP 2019 relating to SFPP developments.

5. RELATIONSHIP OF PROPOSAL TO PLANNING FOR BUSH FIRE PROTECTION 2019

Development for the purposes of a Manufactured Home Estate is subject to the specific considerations in Chapter 6 of PBP 2019 relating to SFPP developments.

The relevant performance criteria are considered in **Table 5.1** to **Table 5.4** and consider *the extent to which the proposed development conforms with or deviates from Planning for Bush Fire Protection 2019* for the purposes of Clause 45(2)(h) of the *Rural Fires Regulation 2022*.

5.1 Issues Listed for the Specific Purpose for the Development set out in Chapter 8

The proposed development includes construction of a Class 9b (assembly) building for the purposes of the NCC.

Section 8.3.11 *Public Assembly Buildings* of PBP provides relevant 'specific issues' for consideration when assessing compliance with the requirements of PBP. Importantly, Section 8.3.11 of PBP acknowledges the variation in risk associated with occupants of assembly buildings and recognises that a variety of bushfire safety solutions may apply based on the merits of the situation.

While the proposed building has a total floor area >500m², the floor area and occupant capacity of the building does not necessarily result in an increase to evacuation challenges during a bushfire emergency affecting the site. The following circumstances are unique to this particular proposal:

- The proposed building includes multiple individual uses/spaces that are used independently and do not necessarily attract a large number of occupants at any one time.
- Users / occupants of the Clubhouse facility will only be those residents of the estate. The occupants are not expected to be reliant on additional assistance of emergency services, for the purposes of assisting with an evacuation of the building, compared to the evacuation (if required) of the estate more generally.
- All dwelling sites are provided with separation from hazards consistent with Table A1.12.3 of PBP (the same as required for residential subdivision) and dwellings are required to be constructed to the assessed BAL. As such, the clubhouse is not required to function as a designated place of refuge during a bushfire emergency.
- Emergency management and evacuation plans are required to be prepared for the MHE and it is expected that those plans would include emergency procedures for the Clubhouse facility.

As the occupant characteristics of the Clubhouse (being residents of the overall site) are unique, and do not present the same evacuation challenges as normally expected with large public assembly buildings, the merits of the situation do not necessarily warrant the same level of separation to hazards as expected for SFPP developments (being $<10\text{kW/m}^2$ on any part of the building). Recommendations are made for the Clubhouse building to be constructed to BAL-29 consistent with the construction requirements for long-term residential dwellings in the MHE.

5.2 Asset Protection Zones and Building Construction

In relation to the provision of Asset Protection Zones, **Table 5.1** considers the proposal in relation to relevant performance criteria in Table 6.8a of PBP 2019.

Table 5.1: Performance criteria & acceptable solutions for APZs & construction

Performance criteria	Relationship of proposal to acceptable solutions	Meets Criteria?
Asset Protection Zones		
[Variation for manufactured home estates] <i>APZs achieve radiant heat levels that are commensurate with the construction standard for the proposed dwellings.</i>	<ul style="list-style-type: none"> All sites are to be long-term dwelling sites for permanent residential occupation. For the purposes of 6.3.2 of PBP 2019, the proposal is a manufactured home estate (with manufactured homes capable of being constructed to AS3959) and an APZ is to be provided which meets 29kW/m^2 in line with Table A1.12.3 of PBP. Minimum separation distances are described in Table 4.2. As depicted in Figure 4.1, each dwelling site and community building is capable of providing the minimum separation distances in Table A1.12.3 of PBP. It is noted that some sites are restricted by minimum separation distances and dwelling designs would need to consider the APZ restrictions applicable to those sites. 	Yes
<i>APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.</i>	<ul style="list-style-type: none"> APZs are located on land with a slope of <18 degrees and there are no apparent constraints for the practical maintenance of APZs without compromising soil stability. 	Yes
<i>APZs are managed and maintained to prevent the spread of fire towards the building.</i>	<ul style="list-style-type: none"> Land surrounding retained vegetation within Lot 349 is required to be managed to the standard of an APZ to the extent depicted in Figure 4.1. APZs are to be managed as an IPA to the requirements of Appendix 4 of PBP. 	Yes
<i>The APZ is provided in perpetuity.</i>	<ul style="list-style-type: none"> APZs are located entirely within the development site. 	Yes

Performance criteria	Relationship of proposal to acceptable solutions	Meets Criteria?
Landscaping		
<i>Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.</i>	<ul style="list-style-type: none"> Any site landscaping for those parts of the site required to be managed as an APZ is to be consistent with the principles in Appendix 4 of PBP 2019. 	Yes
Construction Standards		
<p>[Variation for manufactured home estates]</p> <p><i>The proposed manufactured home can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.</i></p>	<ul style="list-style-type: none"> Table 4.2 of this assessment details the applicable BALs for the residential sites within the development which range from BAL-29 to BAL-12.5. Subject to maintenance of APZs depicted in Figure 4.1, each dwelling would be provided with separation commensurate with <29kW/m². The assessed BALs for each dwelling site and community building is described in Table 4.2. Recommendations are made for each dwelling or building to incorporate bushfire construction standards in accordance with Table 4.2. 	Yes

5.3 Access

In relation to access, **Table 5.2** assesses the proposal against the relevant performance criteria in Table 6.8b of PBP 2019.

Table 5.2: Performance criteria & acceptable solutions for access

Performance criteria	Relationship of proposal to performance criteria	Meets criteria?
Access		
<i>Firefighting vehicles are provided with safe, all-weather access to structures.</i>	<ul style="list-style-type: none"> Internal roads are to be two-wheel drive, sealed all-weather roads that will provide access throughout the site. Loop roads and suitable turning areas will be provided to facilitate access by emergency service vehicles throughout the development. There are no public roads. Standards for internal access roads are provided in Table 6.8b of PBP and Clause 21 of the LG Regulation. It is noted that plans of the development indicate roads widths of 6m wide, except for minor connecting / service roads which have a width of 4m. Recommendations are made for internal roads to be provided in accordance with the LG Regulation and Table 6.8b of PBP to provide all weather access. 	Yes
<i>The capacity of access roads is adequate for firefighting vehicles.</i>	<ul style="list-style-type: none"> Recommendations have been made to ensure the capacity of the proposed internal roads is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes) and any bridges or causeways clearly indicate load rating (where appropriate). 	Yes
<i>There is appropriate access to water supply.</i>	<ul style="list-style-type: none"> Reticulated water is available to the site. (Subject to design) fire hydrant spacing, design and sizing is to be as per the relevant clauses of A2419.1:2021 and located outside of the road carriageway and/or parking bays (where applicable) to ensure accessibility to reticulated water for fire suppression. The LG Regulation requires the provision of fire hydrants within 90m of any dwelling site. 	Yes

Performance criteria	Relationship of proposal to performance criteria	Meets criteria?
Perimeter Roads		
<i>Perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.</i>	<ul style="list-style-type: none"> The internal road is not a public road and the acceptable solutions relating to public perimeter roads are not directly applicable to the development. While there are no public roads, the proposal provides for a road network that provides separation to any residential sites that have an interface with hazards. The proposed internal road is to have a 6 metre carriageway width as per Division 3 of the LG Regulation. The internal road network does not allow roadside parking, thus facilitating permanently clear carriageways with maintained verges for unobstructed access and egress. 	N/A
Non-Perimeter Roads		
<i>Non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating.</i>	<ul style="list-style-type: none"> Non-perimeter two-way access roads are to have a carriageway width of 6 metres (except minor connecting/service roads that have a width of 4 metres), with parking provided outside of the carriageway width. Minor connecting roads are not required for access to sites and structures. Hydrants are to be located clear of parking areas. Curves of roads to have a minimum inner radius of 6 metres. Road grades do not exceed the maximum grades identified in Table 6.8b of PBP 2019. The proposed road design and construction can facilitate crossfall not exceeding 3°. No overhanging obstructions exist above access roads. 	Yes

5.4 Services – Water, Gas and Electricity

In relation to services, **Table 5.3** assesses the proposal against the relevant performance criteria in Table 6.8c of PBP 2019.

Table 5.3: Performance criteria & acceptable solutions for water, electricity & gas services

Performance Criteria	Relationship of Proposal to Performance Criteria	Meets Criteria
Water Supply		
<i>An adequate water supply for firefighting purposes is installed and maintained.</i>	<ul style="list-style-type: none"> Reticulated water is available to the site. 	Yes
<i>Water supplies are located at regular intervals.</i> <i>The water supply is accessible and reliable for firefighting operations.</i>	<ul style="list-style-type: none"> (Subject to design) fire hydrant spacing, design and sizing is to be as per the relevant clauses of A2419.1:2021 and not located within any road carriageway. Clause 21 of the <i>LG Regulation</i> requires the provision of fire hydrants to be located not less than 90 metres from any dwelling site or community building. 	Yes
<i>Flows and pressure are appropriate.</i>	<ul style="list-style-type: none"> (Subject to design) fire hydrant flows and pressures are to comply with the relevant clauses of A2419.1:2021. 	Yes
<i>The integrity of the water supply is maintained.</i>	<ul style="list-style-type: none"> Recommendations are made for any above ground water service pipes external to the building to be metal, including and up to any taps. 	Yes
<i>Water supplies are adequate in areas where reticulated water is not available.</i>	<ul style="list-style-type: none"> Reticulated water is available to the site. 	N/A
Electricity Services		
<i>Location of electricity services limits the possibility of ignition of surrounding bush land or fabric of buildings.</i>	<ul style="list-style-type: none"> Electrical supply is to be underground. 	Yes
Gas Services		
<i>Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.</i>	<ul style="list-style-type: none"> Any future gas installations are to be consistent with performance criteria. 	Yes

5.5 Emergency Management Planning

In relation to emergency management planning, **Table 5.4** assesses the proposal against the relevant performance criteria in Table 6.8d of PBP 2019.

Table 5.4: Performance criteria & acceptable solutions for emergency management plans

Performance Criteria	Relationship of Proposal to Performance Criteria	Meets Criteria?
Emergency Management		
<i>A Bush Fire Emergency Management and Evacuation Plan is prepared</i>	<ul style="list-style-type: none"> Recommendations include preparation of a Bush Fire Emergency Management and Evacuation Plan (consistent with the NSW RFS document: <i>A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i>). 	Yes
<i>Appropriate and adequate management arrangements are established for consultation and implementation of the Bush Fire Emergency Management and Evacuation Plan</i>	<ul style="list-style-type: none"> As above. 	Yes

6. CONCLUSION

This Bushfire Assessment has been prepared in relation to the proposed Manufactured Home Estate on land at Lot 39 DP 22919 & Lot 349 DP753848, Browns Lane, Oxley Vale.

The proposal has been assessed against the relevant provisions of *Planning for Bush Fire Protection 2019* (PBP) including the objectives for Manufactured Home Estates described in 6.3.2 of PBP.

Table 4.2 of this assessment shows the applicable BALs for each proposed dwelling site and community building. Construction requirements under AS3959-2019 will apply to manufactured homes to be installed on the proposed long-term sites for the assessed BALs.

The following recommendations are made in relation to building construction standards, APZs, water supplies, servicing, landscaping and emergency management for the proposed development.

7. RECOMMENDATIONS

Asset Protection Zones

- A. Asset Protection Zones are to be provided to the proposed development in accordance with **Figure 4.1** of this report. APZs are to be established and managed to the standards of an Inner Protection Area for the purposes of Appendix 4 of PBP.
- B. Except as provided for in (C) below, APZs shall be subject to a restriction pursuant to section 88B of the Conveyancing Act 1919 to prohibit the installation of a manufactured home or associated structure within the affected area. *Note: The above restriction would constrain the placement of dwellings on some dwelling sites.*
- C. A temporary easement for Asset Protection Zone (at least 11 metres wide), measured perpendicular from any part of the easternmost boundary of the site with Lot 888 DP13302688, is to be provided until such time as land at Lot 888 DP13302688 is developed for residential purposes and bushfire hazards are permanently removed and maintained in conjunction with development of that land.
- D. Each proposed dwelling site is to be maintained in a manner consistent with the standard for an Inner Protection Area (IPA) for the purposes of Appendix 4 of PBP, and a clear area of lawn or pavement is maintained adjacent to any dwelling.

- E. The proposed Stormwater Basin is to be maintained in a minimal fuel condition consistent with the requirements of an IPA.
- F. A Vegetation Management Plan (VMP) is to be prepared for the areas of the proposed MHE required to be maintained to the standard of an APZ, including the stormwater basin. The VMP is to provide specifications for the establishment and ongoing maintenance of the nominated APZ areas and be incorporated into the Operational Management Plan (or equivalent).

Construction Standards

- G. Any manufactured homes or buildings within the development must incorporate construction that adheres with Australian Standard AS3959-2018 *Construction of buildings in bush fire-prone areas* (as amended by Section 7.5 of PBP), or NASH Standard (1.7.14 updated) 'National Association of Steel Framed Housing (2021) Steel Framed Construction in Bush Fire Areas', in accordance with the BAL identified in the table below:

Site numbers / Facility	Construction
Community Facilities	
Meeting / Admin / Foyer	BAL-29
Club House	BAL-29
Pool / Gym	BAL-12.5
Men's Shed	BAL-FZ* (Non-Combustible)
Dwelling Sites	
Sites 20-29,45, 47-50, 64, 65, 69, 70, 110,111, 125, 126-131, 140-142, 150, 151, 159, 160, 168, 169, 176-176, 185, 186, 193, 194, 201, 202, 208, 209, 210 & 216	BAL-29
Sites 19, 30, 44, 46, 51, 66, 68, 132, 149, 152, 167, 170, 184, 187, 200, 203 & 215	BAL-19
All remaining sites	BAL-12.5

Access

- H. Internal roads are to comply with Division 3, Subdivision 3 of the *Local Government (Manufactured Home Estates, Caravan Parks, Camping Grounds and Moveable Dwellings) Regulation 2021* and the applicable requirements of Table 6.8b of PBP 2019 as follows:
- Parking bays are to be provided outside of any road carriageway.
 - Any traffic management devices are to be constructed to facilitate access by emergency services vehicles.
 - A minimum vertical clearance of 4 metres is to be maintained to any overhanging obstructions, including tree branches.
 - Curves are to have a minimum inner radius of 6 metres and be minimal in number to allow for rapid access and egress.
 - The minimum distance between inner and outer curves is to be 6 metres. Curves are to have a minimum inner radius of 6 metres and be minimal in number to allow for rapid access and egress.
 - Internal perimeter roads are to incorporate roll top or flush kerbs.
- I. Any turning heads and loop roads are to be constructed in accordance with Appendix 3 of PBP. This includes the loop road adjacent to Site 29.
- J. New internal road surfaces are to be designed and constructed to have capacity to carry fully loaded fire fighting vehicles (up to 23 tonnes).
- K. The alternative access / egress road to Manilla Road is to be constructed to the comply with the Property Access requirements in Table 5.3b of PBP. Any gates or bollards are to be designed to provide unobstructed access for emergency fire fighting vehicles.

Services and Water Supplies

- L. Water, electricity and gas are to comply with Table 6.8c of 'Planning for Bush Fire Protection 2019' and Addendum November 2022, including provision of:
- i. Underground power; and
 - ii. Reticulated water supply using a ring main system (where applicable).

- M. The development is to incorporate a fire hydrant system in accordance with the relevant clauses of AS 2419.1 - *Fire hydrant installations System design, installation and commissioning*.
- N. All above-ground water service pipes external to the proposed manufactured homes or community buildings are to be metal, including and up to any taps.

Emergency Management

- O. A Bush Fire Emergency Management and Evacuation Plan is to be prepared consistent with the NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*.

NOTE & DISCLAIMER:

- 1. *This assessment relates only to the development described in Section 2 of this assessment.*
- 2. *This assessment has been based on bushfire protection guidelines as outlined in the document entitled Planning for Bush Fire Protection 2019 (PBP).*
- 3. *Notwithstanding the precautions recommended, it should always be remembered that bushfires burn under a range of conditions and an element of risk, no matter how small, always remains.*
- 4. *This assessment does not imply or infer any approval for the removal and/or thinning of vegetation for Asset Protection or other purposes. It is the responsibility of the client/landowner to obtain all necessary approvals in this regard.*

8. REFERENCES

NSW Rural Fire Service (2019)

Planning for Bush Fire Protection 2019

Standards Australia (2018)

AS 3959-2018 Construction of buildings in bushfire-prone areas