

**STRATEGIC BUSHFIRE STUDY
ROSALIND PARK PLANNING PROPOSAL
LOT 58 in DP 632328, LOTS 1 – 3 in DP 622362 &
LOT 35 in DP 230946 No. 33 & No. 111
MEDHURST ROAD, MENANGLE PARK
&
LOT 1 in DP 589241 No. 101 MENANGLE ROAD,
MENANGLE PARK**

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LOT 1 in DP 589241,
No. 101 MENAGLE ROAD

MENANGLE PARK**

Report Number	Document	Preparation Date	Issue Date	Directors Approval
B213734 - 1	Final	03.06.2022	11.08.2022	<i>G.L. Swain</i>

EXECUTIVE SUMMARY

Australian Bushfire Protection Planners Pty Limited has been commissioned by *Leda Holdings Pty Ltd* to undertake the Bushfire Consultancy for the Planning Proposal for the rezoning of the land within The aim of this Strategic Bushfire Study is to inform and assist with the consideration of a Planning Proposal for the rezoning of land within Lot 58 in DP 632328, Lots 1- 3 in DP 622362, Lot 35 in DP 230946, No. 33 Medhurst Road and No. 111 Menangle Road Menangle Park and Lot 1 in DP 589241, No. 101 Menangle Road, Menangle Park.

The Campbelltown Bushfire Prone Land Map records the site as containing Category 2 Bushfire Prone Vegetation AND Buffer Zone.

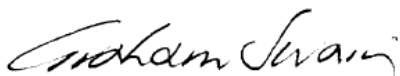
Section 4.1 of *Planning for Bush Fire Protection 2019* introduces a range of strategic planning considerations which are intended to be addressed via the preparation of a Strategic Bush Fire Study.

The broad principles which apply to a Strategic Bushfire Study are:

- Ensuring land is suitable for development in the context of bushfire risk;
- Ensure new development on Bushfire Prone Land will comply with *Planning for Bush Fire Protection 2019*;
- Minimise reliance on performance-based solutions;
- Provide adequate infrastructure associated with emergency evacuation and fire-fighting operations;
- Facilitate appropriate ongoing land management practices.

The relevant Bushfire Protection Measures in Chapters 5 – 8 of *Planning for Bush Fire Protection 2019* are to be considered at the strategic planning stage to ensure that future development can comply with *Planning for Bush Fire Protection 2019*.

This study considers the components of Table 4.2.1 of *Planning for Bushfire Protection 2019* and identifies that the proposal to rezone the land satisfies *Environmental Planning & Assessment Act* s.9.1 Direction 4.4 – ‘Planning for Bushfire Protection’ and ‘*Planning for Bushfire Protection 2019*’.



Graham Swain
Managing Director,
Australian Bushfire Protection Planners Pty Limited.

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SECTION 1

INTRODUCTION

1.1 Aim of this Assessment.

The aim of this Strategic Bushfire Study is to inform and assist with the consideration of a Planning Proposal for the rezoning of land within Lot 58 in DP 632328, Lots 1- 3 in DP 622362, Lot 35 in DP 230946, No. 33 Medhurst Road and No. 111 Menangle Road Menangle Park and Lot 1 in DP 589241, No. 101 Menangle Road, Menangle Park, in the Campbelltown Local Government Area (LGA).

The assessment detailed in this study seeks to establish the Planning Proposals compliance with the requirements and specifications of *Planning for Bushfire Protection 2019*.

1.2 Site Inspection.

Graham Swain of Australian Bushfire Protection Planners Pty Limited undertook a detailed inspection of the site and surrounding areas on the 30th of November 2021.

The site inspection of the rezoning precinct included:

- An assessment of the existing landuse within and external to the rezoning precinct;
- Topography of the land within and external to the rezoning precinct;
- The type and classification of the vegetation on the land within and external to the rezoning precinct;
- Potential fire paths;
- Bushfire Risk to the rezoning precinct;
- The location of water courses/overland flow paths within the site;
- Location of the entry road off Menangle Road.

A broader examination of the bushfire risk to the rezoning proposal was undertaken, including fire paths in the local area and access to and from the rezoning precinct.

1.3 Scope of the Assessment.

Chapter 4.1 of *Planning for Bushfire Protection 2019* identifies the principles and assessment considerations for strategic planning and identifies that bushfire protection measures are to be assessed at the strategic planning stage to determine the suitability of the proposal against the broader bushfire risk.

Chapter 4.2 of *Planning for Bushfire Protection 2019* states that a Strategic Bushfire Study must include the components of Table 4.2.1 of the document (refer to copy of Table 4.2.1 on Page 8).

Once the strategic issues have been addressed, an assessment of compliance with the requirements and specifications of *Planning for Bushfire Protection 2019* should be carried out.

Table 4.2.1 – Strategic Bushfire Study Requirements

ISSUE	DETAIL	ASSESSMENT CONSIDERATIONS
Bush fire landscape assessment	A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	<ul style="list-style-type: none"> ➤ The bush fire hazard in the surrounding area, including: <ul style="list-style-type: none"> ➤ Vegetation ➤ Topography ➤ Weather ➤ The potential fire behaviour that might be generated based on the above; ➤ Any history of bush fire in the area; ➤ Potential fire runs into the site and the intensity of such fire runs; and ➤ The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.
Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	<ul style="list-style-type: none"> ➤ The risk profile of different areas of the development layout based on the above landscape study; ➤ The proposed land use zones and permitted uses; ➤ The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site); and ➤ The impact of the siting of these uses on APZ provision.
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	<ul style="list-style-type: none"> ➤ The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile; ➤ The location of key access routes and direction of travel; and ➤ The potential for development to be isolated in the event of a bush fire.
Emergency services	An assessment of the future impact of new development on emergency services.	<ul style="list-style-type: none"> ➤ Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades; and ➤ Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	<ul style="list-style-type: none"> ➤ The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants; and ➤ Life safety issues associated with fire and proximity to high voltage power lines, natural gas supply lines etc.
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	<ul style="list-style-type: none"> ➤ Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.

1.4 Statutory Requirements.

This report has been prepared having regard to the following legislative and planning requirements:

1.4.1 Legislation.

(a) Environmental Planning and Assessment Act (EPA Act)

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1979* (EPA Act). The ACT provides a framework for the overall environmental planning and assessment of development proposals.

Consent Authorities considering the rezoning of bushfire prone land for residential purposes are to have regard to s.9.1 (2) Direction 4.3 of the EP&A Act.

The objectives of Direction 4.3 are:

- (a) To protect life, property and the environment from bushfire hazards, by discouraging the establishment of incompatible land uses in bushfire prone areas; and*
- (b) To encourage sound management of bushfire prone areas.*

Direction 4.3(1) instructs the relevant planning authority to:

- Consult with the Commissioner of the NSW Rural Fire Service and take into account any comments so made.

Direction 4.3(2) states that a planning proposal must:

- Have regard to *Planning in Bushfire Protection 2019*;
- Introduce controls that avoid placing inappropriate developments in hazardous areas; and
- Ensure that bushfire hazard reduction is not prohibited within the Asset Protection Zone (APZ).

Direction 4.3(3) states that a planning proposal must, where development is proposed, comply with the following provisions, as appropriate:

- (a) Provide an Asset Protection Zone (APZ) incorporating at a minimum:

- i. An Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development; and
 - ii. An Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road.
- (b) For Infill Development, where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the planning proposal permits Special Fire Protection Purposes, the APZ provisions must be complied with.
- (c) Contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks;
- (d) Minimise the perimeter of the area of land interfacing the hazard which may be developed;
- (e) Introduce controls on the placement of combustible materials in the Inner Protection Area.

Future development applications for the subdivision of lands and construction of buildings will require further assessment against the requirements and specifications of *Planning for Bushfire Protection 2019*

(b) Rural Fires Act 1997

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention;
- Protection of people and property from fires; and
- Protection of the environment.

In relation to the management of bushfire fuels on public and private lands within NSW, Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of the spread of bushfires.

1.4.2 Planning Policies.

Planning for Bushfire Protection – 2019 – (Rural Fire Service).

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision and Special Protection Developments in bushfire prone areas.

The Commissioner may determine additional measures that are considered necessary to protect the development against the impact of bushfire.

1.5 Documentation Reviewed in this Assessment.

The following documents were reviewed in the preparation of this report:

- Structure Plan prepared by Design and Planning;
- Proposed Land Use Zoning Plans prepared by Design and Planning;
- Ecological Constraints Report prepared Cumberland Ecology;
- *Planning for Bushfire Protection 2019* prepared by the NSW Rural Fire Service;
- Australian Standard AS3959 - 2018 *Construction of Buildings in Bushfire Prone Areas*;
- *Rural Fires Regulation 2021*;
- Campbelltown Bushfire Prone Land Map.

SECTION 2

PROJECT DESCRIPTION

2.1 Planning Proposal

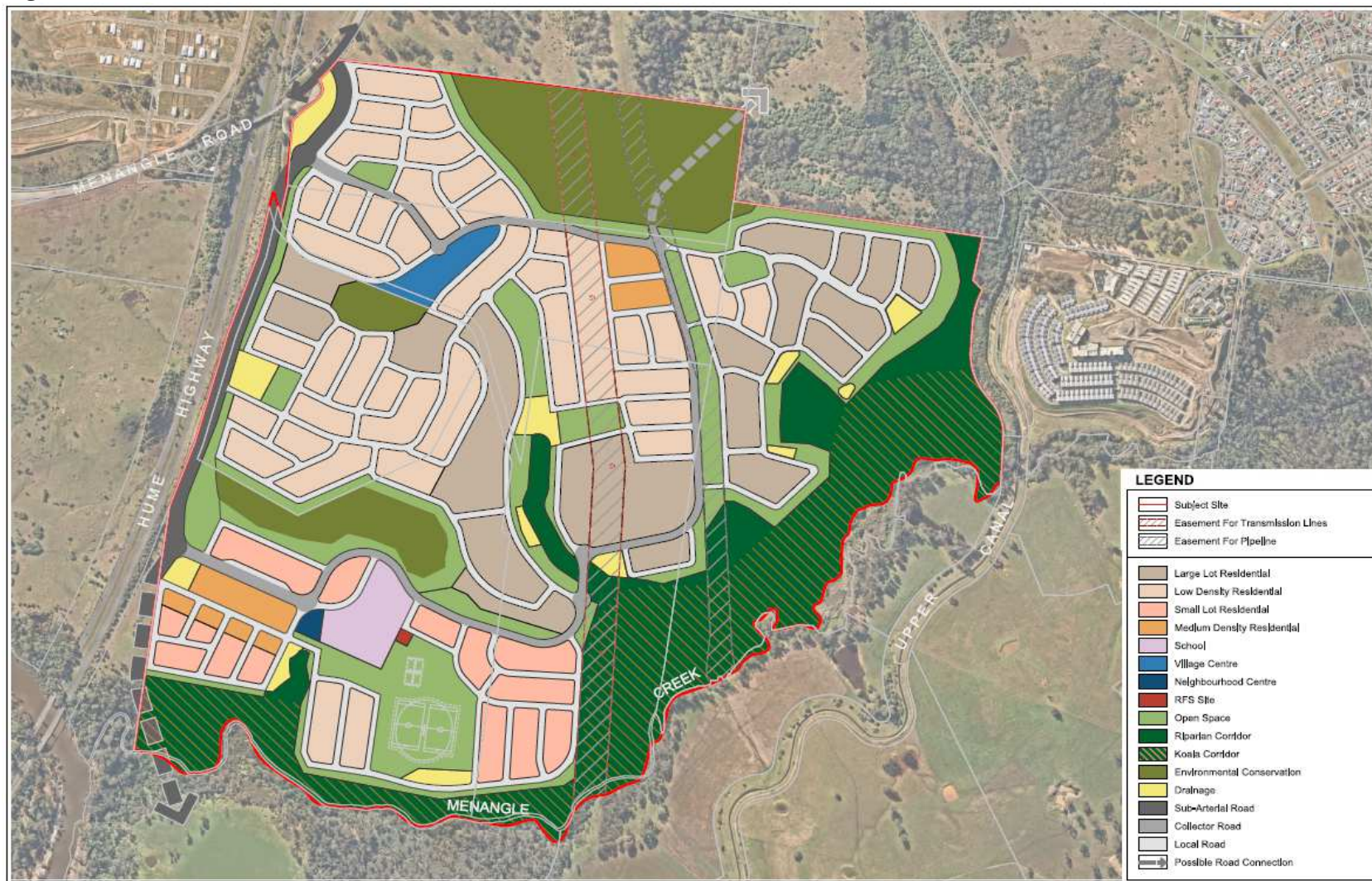
The Planning Proposal is over the land within Lot 58 in DP 632328, Lots 1- 3 in DP 622362, Lot 35 in DP 230946, No. 33 Medhurst Road and No. 111 Menangle Road Menangle Park and Lot 1 in DP 589241, No. 101 Menangle Road, Menangle Park, in the Campbelltown Local Government Area (LGA).

The Planning Proposal seeks approval to change the landuse zoning to permit the following landuse:

1. Larger Lot Residential Development;
2. Low Density Residential Development;
3. Smaller Lot Residential Development;
4. Medium Density Residential Development;
5. School;
6. Neighbourhood Centre;
7. Village Centre;
8. Rural Fire Service Fire Station;
9. Open Space;
10. Active Open Space;
11. Riparian / Koala Corridor;
12. Environmental Conservation Areas;
13. Water Quality Treatment Basins.

The following figures provide copies of the Structure Plan and proposed Land Use Map.

Figure 1 – Structure Plan.



SECTION 3

PROPERTY DESCRIPTION

3.1 Site Identification and Location.

The Planning Proposal is over the land known as 58 in DP 632328, Lots 1- 3 in DP 622362, Lot 35 in DP 230946, No. 33 Medhurst Road and No. 111 Menangle Road Menangle Park and Lot 1 in DP 589241, No. 101 Menangle Road, Menangle Park.

The site is located to the east of Medhurst Road, south of Menangle Road and contains 264 hectares of land. The southern and eastern boundary follows Menangle Creek

3.2 Existing Land Use.

The site contains Rosalind Park, a former Dairy Farm which is currently used for grazing. The farmhouse and associated sheds are located on the central ridgeline adjacent to the north boundary of Lot 3 in DP 622362.

An existing quarry operates in the south-western corner of the site.

3.3 Surrounding Land Use.

The land to the north of Lot 58 in DP 6350722 is zoned C3 – Environmental Management and is vacant land. The land to the north of Lot 1 in DP 589241 is zoned RU2 – Rural Landscape and contains vacant land.

The land to the west of the site contains the Medhurst Road and Hume Motorway corridor. The vacant land to the west of the Hume Motorway forms part of the Menangle Park Residential Release Area.

Menangle Creek forms the southern and south-eastern boundary of the site with vacant RU2 – Rural Landscape zoned land extending beyond the site boundary.

The land to the south of Menangle Creek forms part of the Mount Gilead Residential Release Area.

Figure 2 – Location of Planning Proposal Site.

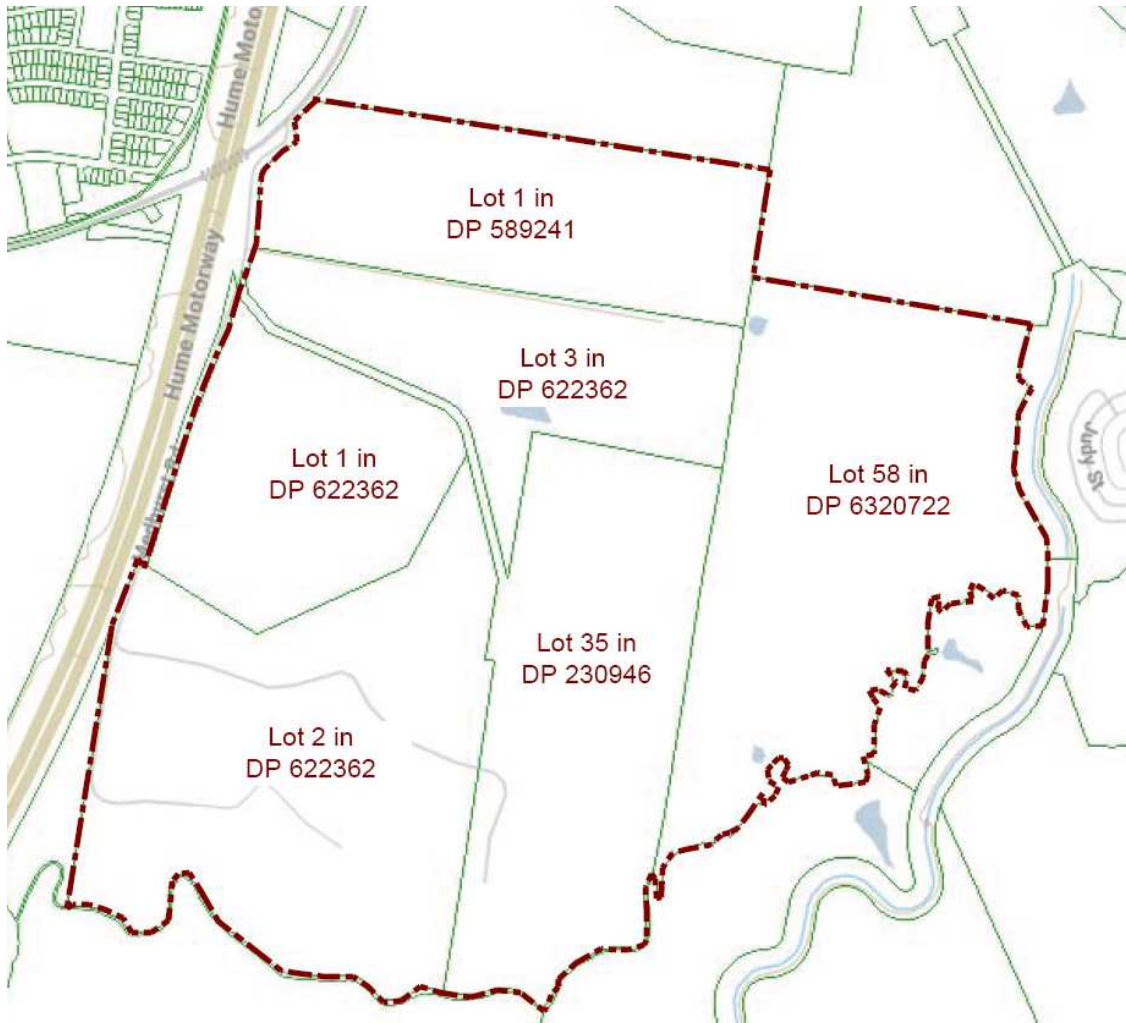


Figure 3 – Aerial Photograph showing the location of Planning Proposal Site.

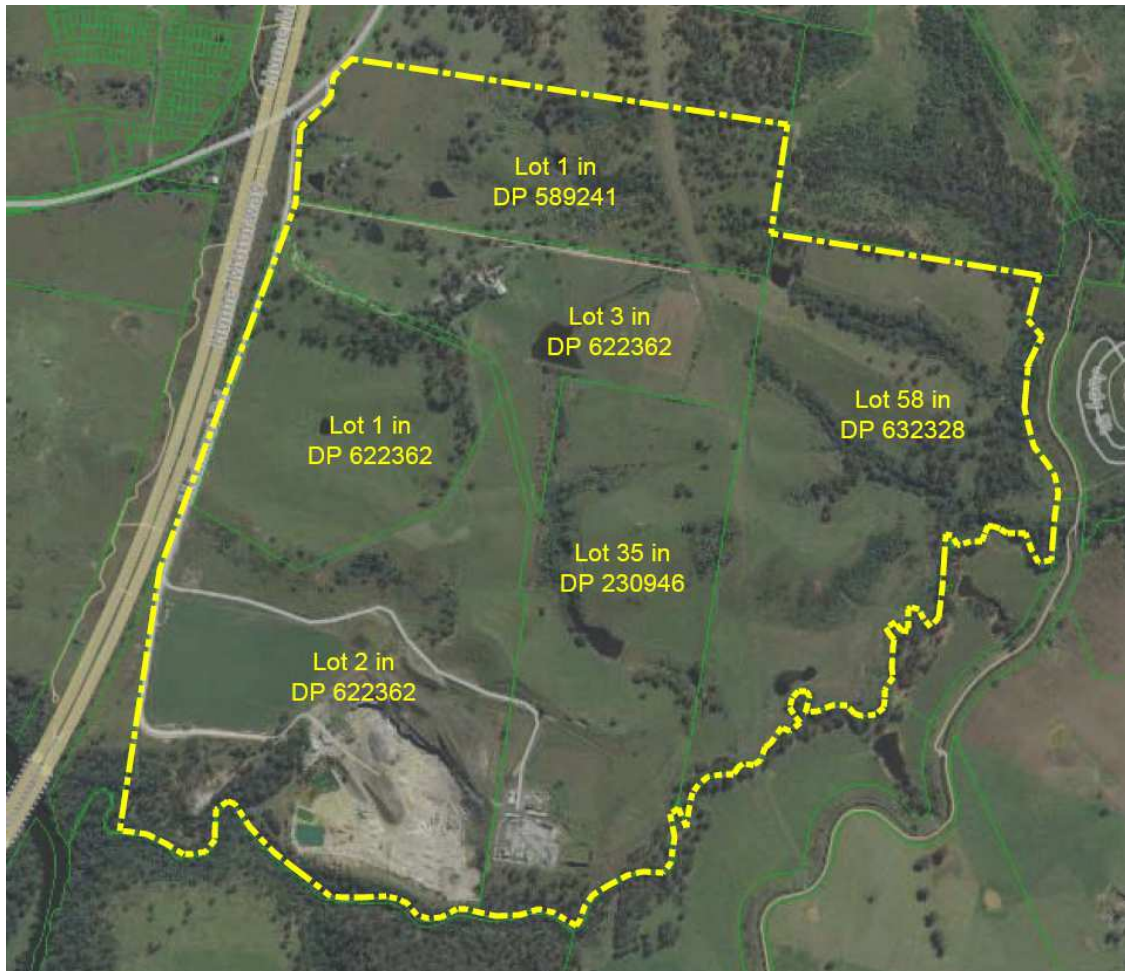
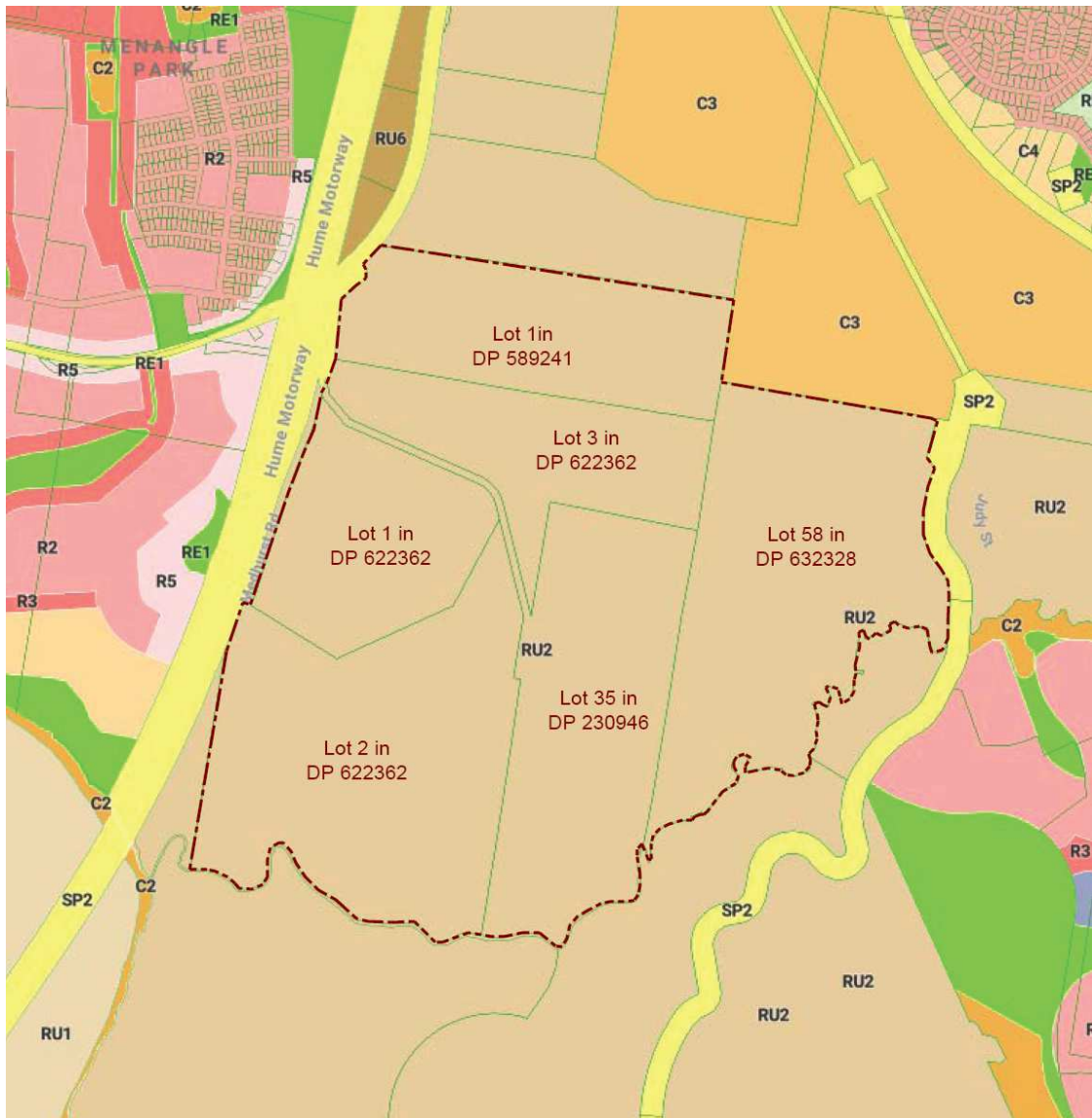


Figure 4 – Existing Landuse Zoning Plan of the Planning Proposal Site.



3.4 Topography.

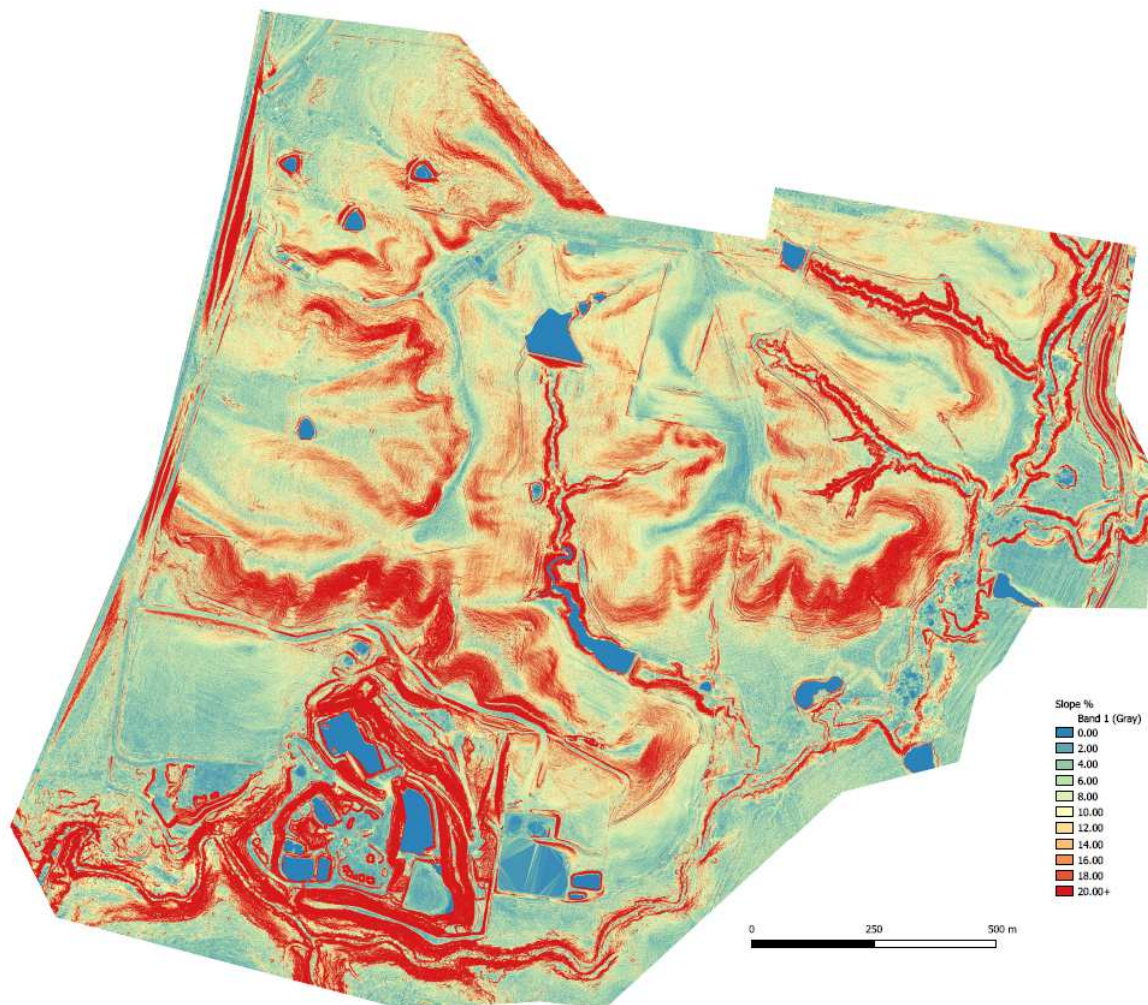
Appendix A1.5 of *Planning for Bushfire Protection 2019* establishes the protocols for determining the effective slope of under the classified bushfire prone vegetation.

The topography of the land within the site is undulating to steep, rising from the gently sloping land along Menangle Creek to form a series of ridgelines incised by watercourses that flow into the creek. The southern edge of the ridgeline adjacent to the creek corridor falls to the creek at 18 – 20 degrees.

The land to the south and southeast of Menangle Creek rises, upslope and away from the creek.

The land to the north and northeast of lot 58 in DP 632328 falls 9 degrees to the north and northeast into a watercourse. The land to the north of Lot 1 in DP 589241 falls to the northeast at 6 degrees and to the northwest at 4 degrees.

Figure 5 – Slope Diagram – Source Lidar.



3.5 Vegetation.

Appendix A1.2 of *Planning for Bushfire Protection 2019* provides a methodology for determining the predominant bushfire prone vegetation for at least 140 metres in all directions from the future development on the site. Vegetation is classified using Figure A2.1 of *Planning for Bushfire Protection 2019*, which classifies vegetation types into the following groups:

- (a) *Rainforest;*
- (b) *Wet Sclerophyll Forest;*
- (c) *Dry Sclerophyll Forest;*
- (d) *Woodland;*
- (e) *Tall Heath;*
- (f) *Short Heath;*
- (g) *Grassland.*

3.5.1 Vegetation within and on the land adjoining the Rezoning Precinct.

The vegetation within Planning Proposal site has been assessed by Cumberland Ecology.

The major part of the site contains exotic vegetation and cleared land.

The riparian corridor to Menangle Creek and the tributaries that flow into it contain Alluvial Woodland, River Oak Forest, Shale Sandstone Transition Forest, Moist Shale Woodland and Riparian Forest.

Larger areas of Shale Sandstone Transition Forest and Shale Plains Woodland occupy the steeper land within the eastern portion of the site.

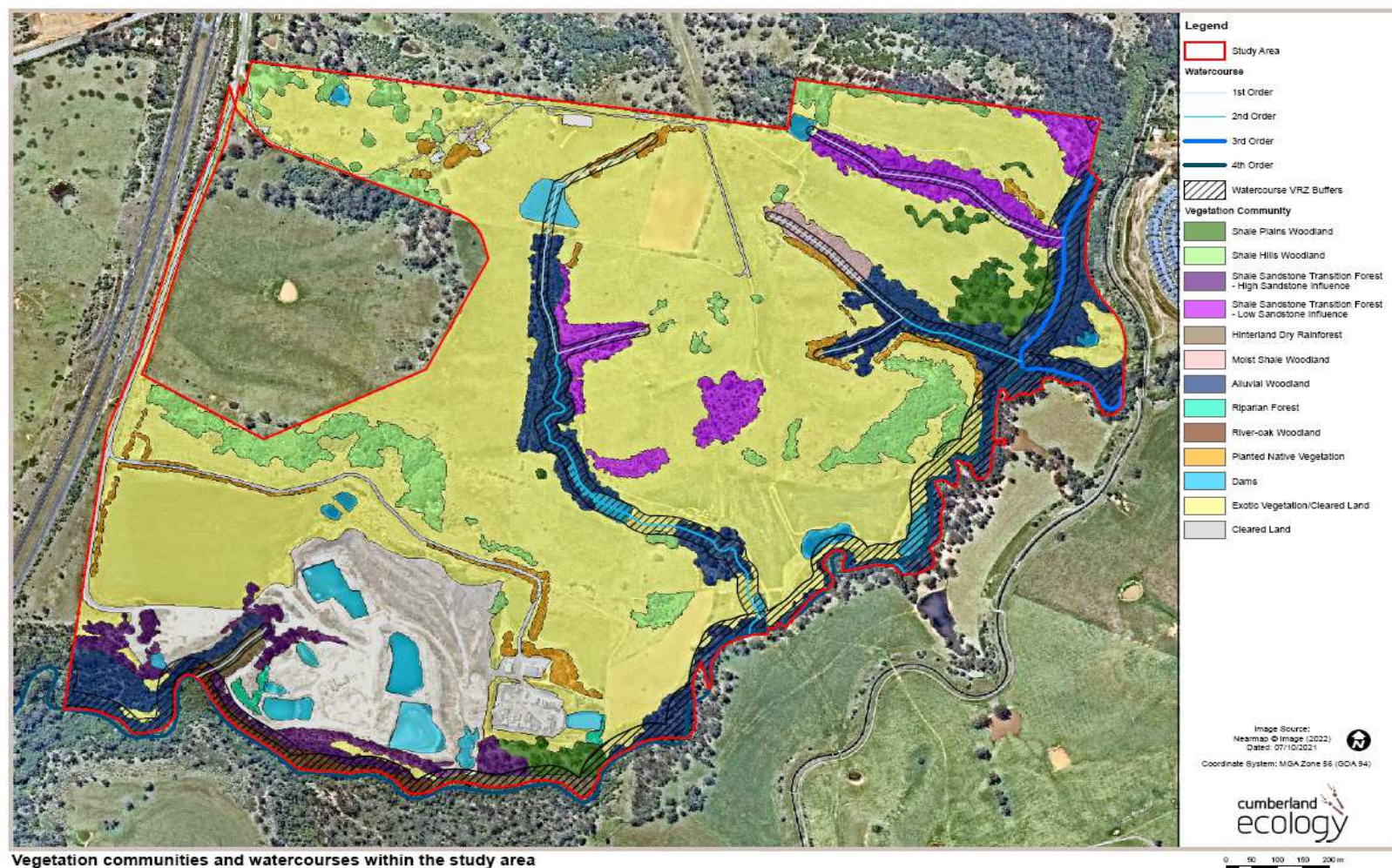
Shale Hills Woodland also occupies the steeper land within the central, western portion of the site with scattered pockets located in the north-western corner of the site.

The land to the north of the site contains Shale Sandstone Transition Forest.

Note:

The proposed Koala corridor along Menangle Creek will be rehabilitated with Shale Sandstone Transition Forest and Alluvial Woodland.

Figure 6 – Vegetation Communities Plan.



Vegetation communities and watercourses within the study area

SECTION 4

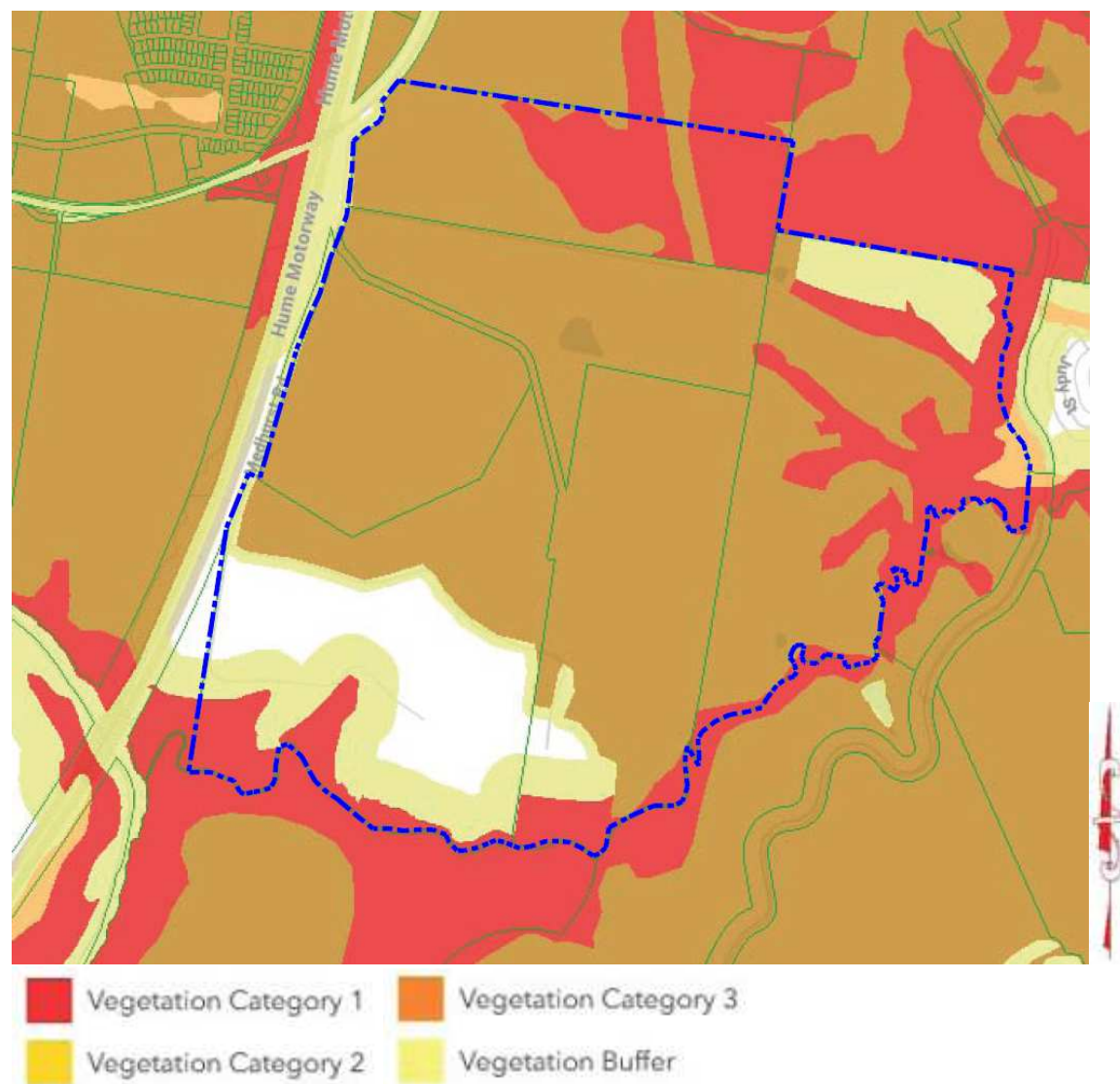
PRECINCT LEVEL ASSESSMENT

4.1 Precinct Level Assessment of Bushfire Prone Vegetation.

Section 10.3 of the *Environmental Planning & Assessment Act 2017* requires councils, where a Bushfire Risk Management Plan applies, request the Commissioner of the NSW Rural Fire Service to designate land within the area that the Commissioner considers, having regard to the bushfire risk management plan, to be bushfire prone land and must record any land so designated on a map.

Figure 8 below provides an extract from the Campbelltown Council Bushfire Prone Land Map which shows the Category 3 Bushfire Prone Vegetation on the land within and adjoining the site.

Figure 7 – Extract from the Campbelltown Bushfire Prone Land Map.



SECTION 5

BUSHFIRE STRATEGIC STUDY

5.1 Introduction.

Chapter 4.2 of *Planning for Bushfire Protection 2019* establishes the framework for preparing a Strategic Bushfire Study.

The following sections of this assessment examine the components identified in Table 4.2.1 of *Planning for Bushfire Protection 2019* in order to establish the strategic implications of future development for bushfire mitigation and management.

5.2 Bushfire Landscape Assessment.

A bushfire landscape assessment considers the likelihood of a bushfire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.

5.2.1 Bushfire Hazard in the Surrounding Area.

(a) Vegetation

The vegetation on the land surrounding the site consists of:

- Grassland to the west of the Hume Motorway;
- Grassy woodland on the land to the north;
- Forest on the land to the northeast;
- Grassland to the southeast of Menangle Creek; and
- Forest and grassland to the southwest of Menangle Creek.

(b) Topography

The topography of the land has been described in Section 3.6 and establishes that the site will be exposed to upslope fires from the southwest, west, northwest, north and northeast. There is also exposure to upslope fires burning in the riparian vegetation to Menangle Creek.

(c) Weather

The Fire Danger Index (FDI) for the region is 100.

The Macarthur Bushfire Risk Management Plan identifies the area as having a temperate climate with high summer rainfalls between January and March, low relative humidity with little variation throughout the year and predominantly northwest to southerly winds in summer.

Local climatic conditions are influenced by topography and rainfall patterns reflect elevation and distance from the coast.

The warmest months are November to March, with May to August being the cooler, drier months. The greatest period of fire danger occurs after a dry winter and spring, before the onset of rain in summer.

Occasional strong winds with colds fronts during summer can lead to extreme fire danger.

During the fire season, weather conditions of concern are hot, dry winds, particularly from the north-west, accompanied by temperatures above 30 degrees and low relative humidity. These conditions are sometimes followed by a rapid change producing strong southerly winds and high intensity storms, with concentrated periods of lightning with little rain.

5.2.2 Potential Fire Behavior.

Three key factors influence fire behaviour. These are fuel, topography and weather.

The unmanaged grassland and grassy woodland vegetation external to the site provides surface and near surface fuels that will ignite and spread rapidly across the landscape.

The availability of the fuels will depend on the amount of rainfall during the winter and spring months, the spring and early summer growth and whether the grassland fuels have been reduced by grazing.

Unmanaged near surface fuels that cover more than 60% of an area, at 50% dry (cured) have an extreme fuel hazard rating and will contribute significantly to fire spread without consuming the surface fuels.

The upslope fire paths will significantly increase the fire behaviour, particularly under northwest, west and southwest wind influences.

The behaviour of fire within the local area will depend on the weather conditions at the time and the topography of the land across which the fire spreads.

5.2.3 Bushfire History.

The Macarthur Bushfire Risk Management Plan (2012) identifies that the area averages 417 bushfires per year of which 5 on average can be considered too be major fires.

The Macarthur BFMC has an average five large scale fires occurring within the BFMC especially within the Campbelltown portion. The Table below lists the larger fires affecting the BFMC area.

Year	Cause	Extent
25 September 1965	Arson	13,179ha across Cataract, O'Hares Creek and Woronora catchments. 8,727ha of the area burnt was in the O'Hares Creek catchments, including the National Park and Wildlife Service (NPWS) reserves Commonwealth and Private Lands.
28 October 1968	Escaped back burn from Cataract Fire. Joined by main fire from Wedderburn.	9,421ha of bushland and five houses; Woronora and O'Hares Creek catchments burnt, including Private and NPWS Estate.
11 November 1990 23 December 1990	Arson	1665ha including the eastern part of O'Hares Creek catchments. 7,572ha including the western part of O'Hares. Fire started near the town of Appin, jumped the Appin Rd and Lysaghts trail and entered the reserves. The above two fires burnt the majority of the NPWS reserves.
25 December 2001	Power lines arcing.	44,970ha including all of the NPWS reserves. Fire started near the town of Appin, jumped the Appin Rd and Lysaghts trail and entered the reserves, continuing east to Helensburgh.

5.2.4 Potential Fire Paths.

The rezoning precinct is currently surrounded by undeveloped land which is subject to upslope fire events from the north, northwest, west, southwest southeast and northeast – refer to Figures 9 & 10 – Plan of Potential Fire Paths.

Future development to the west of the Hume Motorway, within the Menangle Park Residential Release Area, will mitigate the bushfire risk from the northwest and west. The land to the southwest is zoned RU4 and will remain a fire path from the southwest, towards the south-western corner of the site.

The land to the south and southwest the site is under a Planning Proposal for the Mount Gilead future residential release area.

The development of this land will mitigate the bushfire risk from the south and southeast direction.

The land to the northeast of the site is zoned C3 and will be retained for conservation. The northeast fire path will remain in perpetuity. Refer to Figure 11 – Plan of potential Fire Paths – post development of surrounding land.

**Figure 8 – Plan of potential Northwest and Southeast Fire Paths.
– pre-development of surrounding land.**



Figure 9 – Plan of potential Southwest and Northeast Fire Paths – pre-development of surrounding land.

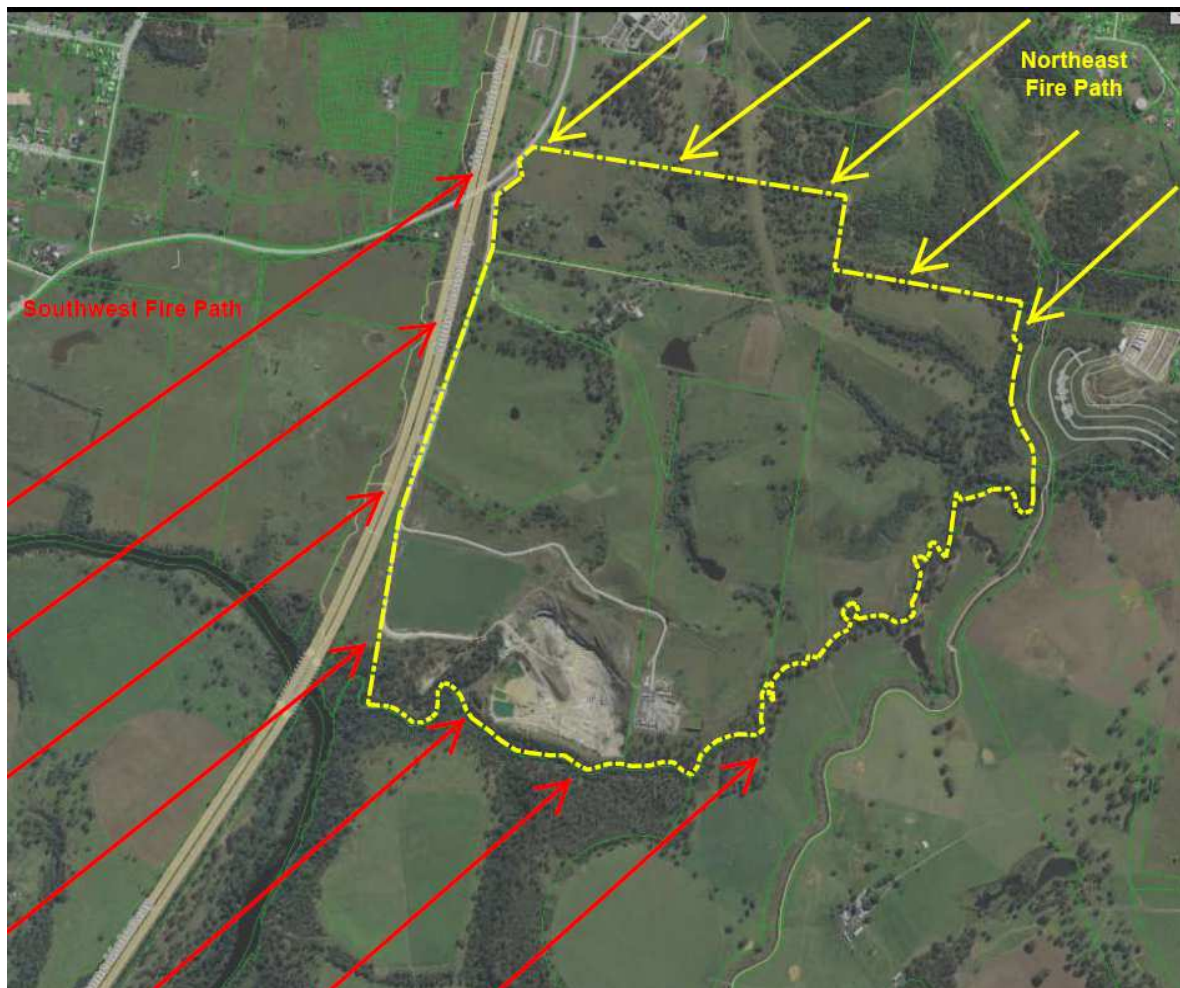
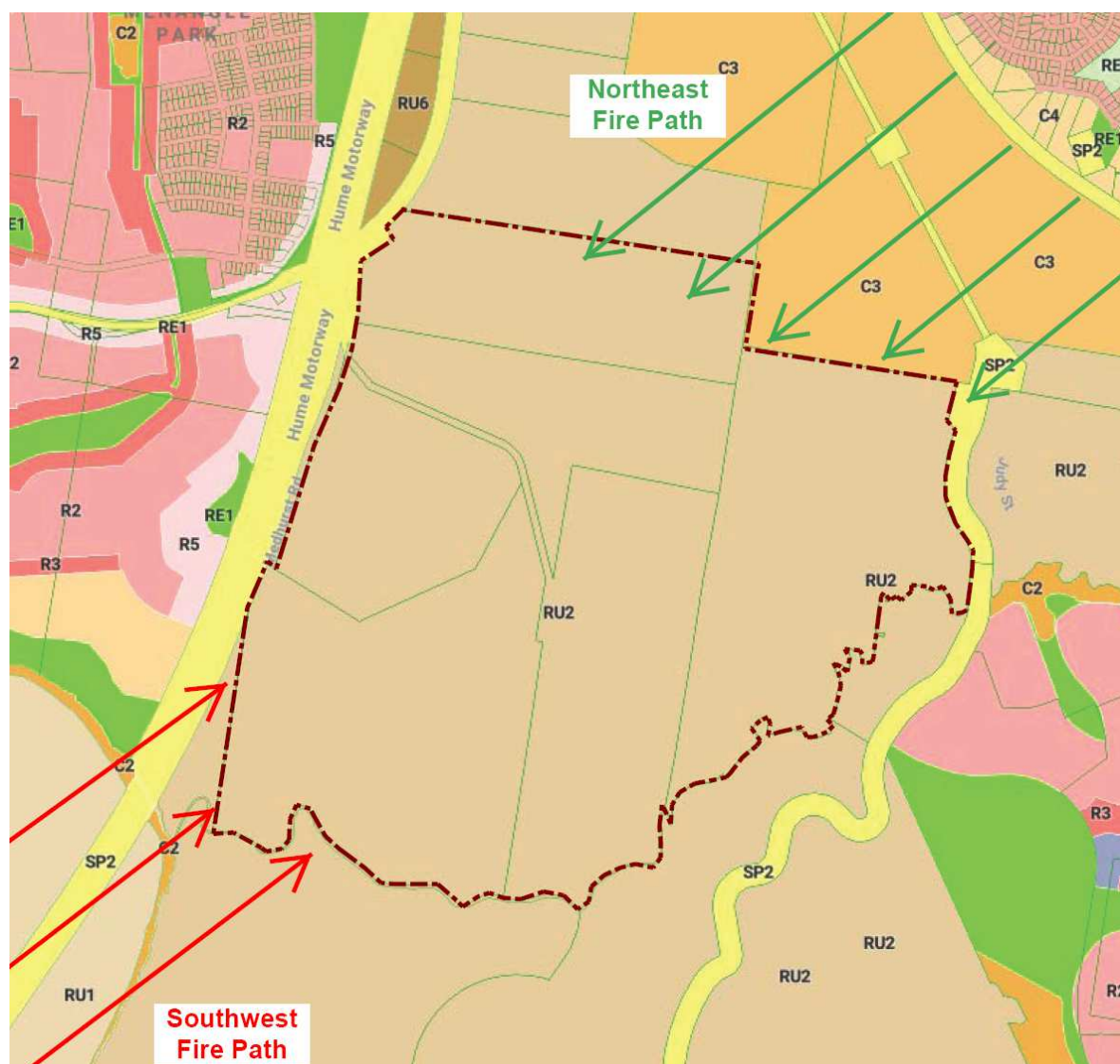


Figure 10 – Plan of potential fire paths – Post Development of surrounding land.



5.2.5 Fire Management Operations.

This section examines the difficulty in accessing and suppressing a fire, the continuity of bushfire hazards and the fragmentation of landscape fuels and the complexity of the associated terrain.

Assuming that the bushfire risk to the northwest and west of site will be removed by the future development of the Menangle Park Growth Area and the future urban development on the land to the south and southeast of the site, there remains two areas which present an external bushfire risk to the site.

The first external hazard is from the vegetation within the C3 zoned land to the northeast and the second external hazard is the vegetation on the RU4 zoned land, to the southwest of the site – west of the Hume Motorway.

The retention of vegetation within the site, including in the riparian corridor to Menangle Creek and internal open space areas will present areas of internal risk to the proposed urban development.

The external and internal bushfire risk will be examined in Section 5.8 of this report.

Access for fire-fighting operations to the vegetation on the land to the northeast is available via the existing roads and internal access tracks. The landform does not limit fire-fighting access.

Access for fire-fighting operations to the vegetation on the RU4 zoned land located to the west of the Hume Motorway is available from Menangle Road, across the undulating farmland.

Access to the hazard areas within the site is examined in Section 5.4 of this report

5.3 Landuse Assessment.

The landuse assessment determines the most appropriate locations within the Structure Plan for the proposed land uses.

The bushfire risk to the site is reduced by the development of the land to the west of the Hume Motorway and the vacant land to the south and southeast of the site.

The residual external risk is from the vegetation on the C3 zoned land to the northeast and the vegetation on the RU4 zoned land to the southwest, west of the Hume Motorway.

The northeast fire path is across woodland/forest vegetation, spreading under north-easterly winds. These winds contain higher levels of humidity and therefore mitigate fire behaviour and reduce the level of risk to low-moderate.

The southwest fire path across grassland vegetation on the rural land west of the Hume Motorway typically occurs during periods of high temperatures and low humidity with a wind change from the northwest to the southwest.

The risk of this fire event on the southwest corner of the site is high to extreme, reduced to moderate – high by the width of the Hume Motorway and the upgraded Medhurst Road.

The Structure Plan proposes low and medium density residential development within the site.

Due to the overall low level of external bushfire risk to the site this is the most appropriate type of landuse for the site as the low density of development permits the establishment of Asset Protection Zones to a width which minimises the bushfire risk to the dwellings and occupants.

5.3.1 Determine the Risk Profile for the Development:

The Structure Plan locates medium density residential development on land that has a low level of risk from significant bushfire events in the local area.

The provision of Asset Protection Zones to a width which lowers the radiant heat exposure on the buildings to less than 29kW/m² reduces the risk to low/moderate.

5.4 Access and Egress.

The access and egress assessment examines the existing and proposed road network within and external to the Structure Plan.

5.4.1 Examine the capacity of the road network to deal with emergencies, based on the existing and future community profile:

The primary access to the site is off Menangle Road via an upgraded Medhurst Road to Sub-Arterial which runs along the western side of the site, parallel to the Hume Motorway.

The Sub-Arterial road is planned to extend to the south, across Menangle Creek into the Mount Gilead urban development on the adjoining land.

The Structure Plan provides for perimeter roads to the external and internal bushfire hazards with two entry/exit points on Medhurst Road. The layout does not provide for a secondary access onto Menangle Road.

Menangle Road is to be upgraded to two lanes each-way, increasing the capacity of the road network to deal with emergencies.

5.4.2 Examine the location of the key access routes and direction of travel capacity of the road network to deal with emergencies, based on the existing and future community profile:

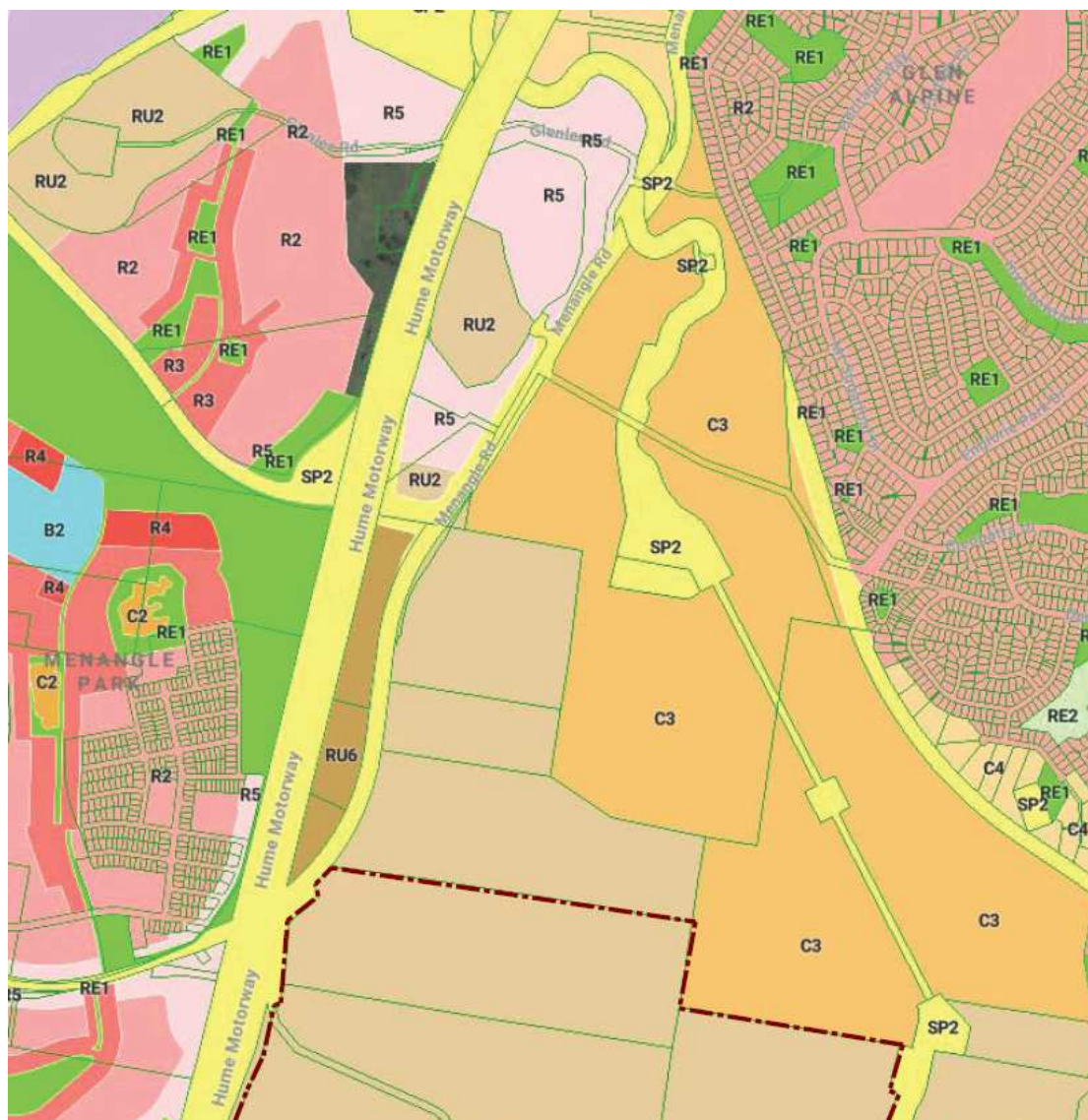
Access to the site is from Menangle Road which currently traverses undeveloped land that contains Category 3 Bushfire Prone Vegetation.

A review of the Campbelltown LEP Land Zoning Plan identifies that the vacant land between Menangle Road and the Hume Motorway is zoned RU2 – Rural Landscape; R5 – Large Lot Residential. The land to the west of the Hume Motorway is zoned R2 – Medium Density Residential and RU2 – Rural Landscape. The development of the land will remove the bushfire hazard to the northwest of Menangle Road.

The Campbelltown LEP Land Zoning Plan identifies the land to the southeast of Menangle Road is zoned C3 – Environmental Management. The retention of the unmanaged vegetation on the land to the southeast of Menangle Road will create a moderate – high level of risk under a fire burning through the C3 zoned land under south-easterly wind driven bushfire.

Campbelltown LEP Land Zoning Plan also indicates that a new road link (Spring Farm Parkway connection) is proposed from Menangle Road, to the Hume Motorway. This link will remove the need for the use of that section of entangle Road exposed to the hazard in the C3 zoned land – refer to Figure 11 - Extract of the Campbelltown LEP Land Zoning Plan showing the future landuse zoning and road network to the north of the site.

Figure 11 – Extract of Campbelltown LEP Land Zoning showing the future landuse zoning and road network to the north of the Site.



5.5 Emergency Services.

The NSW Fire & Rescue closest station is located at No. 66 Broughton Street, Campbelltown, approximately 8 klm to the northeast of the site.

The Campbelltown F&R Station is a permanently manned (full time) station.

The Menangle NSW Rural Fire Service Station is located at 90 Menangle Road, Menangle, approximately 4 klm from the site. This is a volunteer station which is not permanently manned.

The Structure Plan provides land for the establishment of a new NSW Rural Fire Service Brigade Station in the new estate. This will allow for the construction of a station capable of providing service coverage to the new estate and the future urban development to the north and south.

The site will be large enough to accommodate carparking for fire-fighters.

The centrally located fire station and the increased population in the new estate will promote an increase in brigade numbers, providing a greater ability of the brigade to carry out fire suppression in a fire emergency.

5.6 Infrastructure.

The Structure Plan allows for extension of a reticulated water supply to service the residential development.

The reticulated water supply will provide hydrants that meet the pressure, flows and spacing specifications of A.S. 2419.1.2005.

5.7 Adjoining Land.

The establishment of residential development on the site will provide better bushfire management of the vegetation than currently exists.

The development will not impact on the ability of adjoining landowners to undertake bushfire management on their land.

5.8 Determination of Asset Protection Zones.

Appendix 1 of *Planning for Bushfire Protection 2019* provides a site assessment methodology to determine the widths of Asset Protection Zones and Bushfire Attack Levels for residential and rural residential development which is deemed to be bushfire prone. This includes the following assessment process:

- (a) *Determine vegetation formations as follows:*
- Identify all vegetation in all directions from the site for a distance of 140 metres;
 - Consult Table A1.2 to determine the predominant vegetation type.
- (b) *Determine the effective slope of the land under the predominant vegetation Class.*
- (c) *Determine the appropriate fire [weather] areas.*
- (d) *Consult Table A1.12.5 and determine the appropriate setback [Asset Protection Zone] for the assessed land use, vegetation formation and slope range.*

5.8.1 Determination of Asset Protection Zones.

Structure Plan contains residential development on the bushfire hazard interface.

The predominant vegetation adjacent to the residential component of the site is forest on the land that has a downslope gradient of 15 – 20 degrees.

The FDI for the region is 100.

Table A.1.12.5 of *Planning for Bushfire Protection 2019* identifies that for forest vegetation with an effective slope under the vegetation of 15 - 20 degrees downslope the width of Asset Protection Zone is 56 metres.

For simplicity, the Asset Protection Zones shown on the Structure Plan have been provided at 56 metres. This width will be re-examined at the subdivision design stage to achieve a maximum construction standard of BAL 29 to the future dwellings.

Refer to Figure 12 – Plan of Asset Protection Zones

5.8.2 Determination of Asset Protection Zones to the Neighbourhood Safe Place (NSP).

The Structure Plan provides for the establishment of a Neighbourhood Safer Precinct (Community Hub), sited in the central portion of the estate.

The aim of an NSP is to provide a greater chance of survival for human life during the onset and passage of a bushfire. The assessment criteria for a Neighbourhood Safer Place is defined in Section 7.1 of the NSW Rural Fire Service's *Guideline for Identification and Inspection of Neighbourhood Safer Places in NSW* – refer to copy below:

7.1 Assessment Criteria for a Neighbourhood Safer Place:

	Performance Criteria	Acceptable Solution
Radiant Heat	Building is located and constructed to enhance the chance for survival for humans in attendance from the radiant heat of a bush fire	Building is situated to prevent direct flame contact, material ignition and radiant heat levels of 10kW/m ² ; or Provide 139 metres separation distance from a bush fire hazard
	Open Space is located to enhance the chance for survival for humans in attendance from the radiant heat of a bush fire	Open Space is situated and maintained to prevent direct flame contact, material ignition and radiant heat levels of 2kW/m ² ; or Provide 310 metres separation distance from a bush fire hazard
Maintenance of the Site and the Land Adjacent	Area between bush fire hazard and the site is maintained to a level that ensures the radiant heat levels at the Building/Open Space meet the Performance Criteria for Radiant Heat.	The site and land adjacent to the site between the Building/Open Space and the bush fire hazard is managed land or maintained in accordance with NSW RFS document <i>Standards for Asset Protection Zones</i>

The NSP building will be located within a larger Community Hub including the RFS Brigade Station, Sports Field. The radiant heat exposure will be less than 2kW/m²

This precinct will be maintained to the specifications of an Inner Protection Area (IPA).

The NSP will provide a safe refuge for the proposed estate and the future urban development to the south of the site.

Section 7.2 of the NSW Rural Fire Service Guideline provides the principles for Site Identification - refer to copy below.

7.2 Principles for Site Identification

Consideration	Principles
Site Selection	> An NSP should provide a safer place for the community.
	> The community should be moving away from the bush fire hazard to access the NSP over short distances where possible.
	> NSP locations should reflect community need and bush fire risk.
Moving to a NSP	> An NSP should not be isolated from the community.
	> The community should not be impeded from reaching the NSP area in a bush fire situation.
Capacity	> Additional NSPs should be sought where it is likely current or potential NSPs cannot accommodate those likely to use it.
	> Demand for use of an NSP reflects a community's level of bush fire preparedness.

The location of the NSP addresses the site identification principles outlined in Section 7.2 of the Guideline.

Refer to Figure 12 – Plan of Asset Protection Zones

Figure 12 – Plan of Asset Protection Zones.



5.8.3 Assessment of Bushfire Attack (Construction Standards).

Part 2.3.4 of the Building Code of Australia states that a Class 1 building that is constructed in a *designated bushfire prone area* must be designed and constructed to reduce the risk of ignition from a bushfire while the fire front passes.

The Asset Protection Zones provided to the future dwellings, as shown on Figure 14 [based on forest being the predominant vegetation classification], have been determined to mitigate the impact of bushfires to the extent that radiant heat levels will be less than 29 kW/m².

The future dwellings and ancillary buildings directly exposed to the bushfire hazard shall be constructed to comply with Section 3 and Section 7 [BAL 29] specifications, pursuant to A.S. 3959 – 2018 – ‘*Construction of Buildings in Bushfire Prone Areas*’.

All remaining dwellings located within 100 metres of the bushfire hazard shall be constructed to comply with Section 3 and Section 5 [BAL 12.5] specifications pursuant to A.S. 3959 – 2018 – ‘*Construction of Buildings in Bushfire Prone Areas*’.

In addition, roof gutters and valleys shall have fitted a non-combustible protection device which minimises the accumulation of combustible materials in the gutter/valley.

8.5.4 Bushfire Hazard Management.

The intention of bushfire hazard management is to prevent flame contact with a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimize the potential for wind driven embers to cause ignition and to reduce the effects of smoke on residents and fire-fighters.

Careful attention shall be given to species selection of landscaping near the future dwellings, their location relative to their flammability, avoidance of continuity of vegetation [separation horizontally and vertically] and ongoing maintenance to remove flammable fuels. Methods of bushfire hazard management include mowing of lawns within the immediate curtilage to the dwelling, slashing within the road reserves.

A Positive Covenant, pursuant to Section 88B of the Conveyancing Act 1909, shall be established for the maintenance of the Asset Protection Zones on the lots containing the prescribed Asset Protection Zone/s

8.5.6 Bushfire Maintenance Plans and Fire Emergency Procedures.

There shall be prepared an Emergency Management Plan (EMP) for the estate.

The EMP will provide protocols for the safe relocation of residents and visitors within the estate to the Neighbourhood Safer Place.

The EMP should be included in the Local Disaster Plan and the Campbelltown Bush Fire Risk Management Plan (BFRMP).

SECTION 6

CONCLUSION

This Strategic Bushfire Study has been prepared for the Planning Proposal for the rezoning of land within as 58 in DP 632328, Lots 1- 3 in DP 622362, Lot 35 in DP 230946, No. 33 Medhurst Road and No. 111 Menangle Road Menangle Park and Lot 1 in DP 589241, No. 101 Menangle Road, Menangle Park.

The vegetation within the site has been mapped as Bushfire Prone Vegetation, therefore Sections 4.46 & 4.47 of the *Environmental Planning & Assessment Act* applies to the residential subdivision of the land and a *Bushfire Safety Authority* is required under Section 100B of the *Rural Fires Act*.

This Strategic Bushfire Study has examined the requirements of Chapter 4 of *Planning for Bushfire Protection 2019* and found that the site is currently located in a high bushfire risk area.

Examination of the future development on the land surrounding the site has found that, once this development is completed, the only external risk to the site will be from a fire that occurs in the C3 zoned land to the northeast and the vegetation on the farmland to the west of the Hume Motorway, southwest of the site.

Internal risk exists from the unmanaged vegetation in the riparian corridor to Menangle Creek and the open spaces within the site.

The provision of Asset Protection Zones to the external and internal hazards address the requirements of Table A1.12.5 of *Planning for Bushfire Protection 2019* and reduce the bushfire risk to the residential development.

A review of the access provisions has found that the future development of the land to the north of the site will remove the hazard to the north of Menangle Road. A hazard remains to the southeast of Menangle Road – the primary emergency exit from the site. There is no alternate egress from the site.

To address this non-compliance access requirement as Neighborhood Safer Place has been recommended, combined with the provision of a site for a new Rural Fire Service fire station that will provide coverage for the estate and surrounding development.

The following table summarises the extent to which the development proposal conforms with [or deviates from] the requirements of Section 44(1) of the *Rural Fires Regulation 2013* and the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019* relating to the provision of:

- Asset Protection Zones to the future dwellings in the estate;
- The provision of a Neighbourhood Safer Place (NSP that addresses to emergency access provisions;
- The provision of water supplies for fire-fighting operations;
- Construction standards to the future buildings; and
- The management of bushfire fuels.

Table 1. Compliance with the deemed-to-satisfy provisions of *Planning for Bushfire Protection 2019*.

Bushfire Protection Measure	Compliance with deemed-to-satisfy provisions of <i>Planning for Bushfire Protection 2019</i>.
Asset Protection Zone setbacks	The widths of the Asset Protection Zones comply with Table A1.12.5 of <i>Planning for Bushfire Protection 2019</i> .
Siting & adequacy of water supplies for firefighting operations	Reticulated water supply provided complete with hydrants installed to satisfy the specifications of A.S. 2419.1 – 2021.
Capacity of public roads to handle increased volumes of traffic in the event of a bushfire emergency	The proposed and existing public roads provide for increased volumes of traffic in the event of the bushfire emergency.
Fire trail network	No. Fire Trails are provided or required.
Adequacy of emergency response access and egress	Neighbourhood Safer Place provide to address the Centre non-compliance egress from the site.
Adequacy of Bushfire Maintenance Plans and fire emergency procedures	A Bushfire Management Plan is required. A Bushfire Emergency Management Plan should be prepared for the broader urban development including this site and the development on the land to the south.
Building construction standards	Asset Protection Zones recommended reduce the expected level of radiant heat on the future dwellings to less than 29kW/m ² .
Adequacy of sprinkler systems & other fire protection measures	Not applicable

The proposed Structure Plan and Indicative Layout Plan prepared by Design & Planning achieves compliance with the Strategic Planning provisions of Chapter 4.1 and Chapter 4.2 *Planning for Bushfire Protection 2019* and the aim and objectives of *Planning for Bushfire Protection 2019*.



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11.08.2022

REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2019*;
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires Regulation 2022*;
- *Biodiversity Conservation Act 2016*;
- *Campbelltown Bushfire Prone Land Map*;
- Building Code of Australia;
- Australian Standard A.S 3959-2018 “*Construction of Buildings in Bushfire Prone Areas*”.