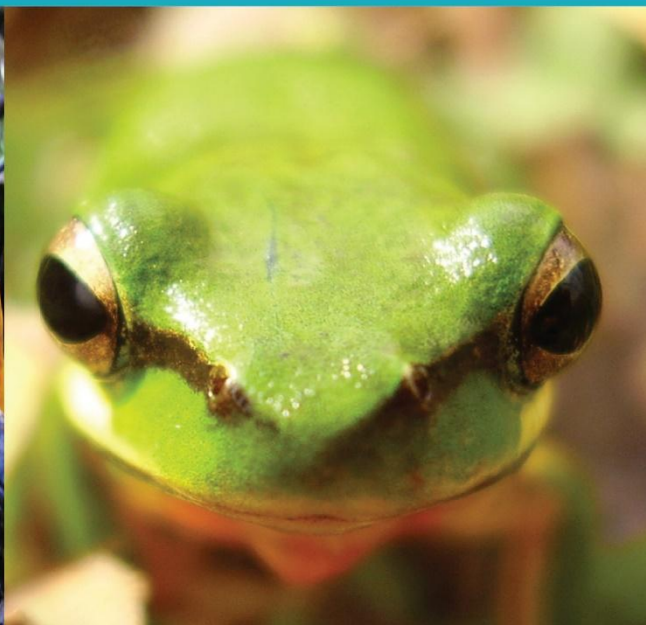




TRAVERS BUSHFIRE & ECOLOGY

A TBE ENVIRONMENTAL COMPANY



BUSHFIRE PLANNING PROPOSAL

Gilead Planning Proposal

Lots 1 & 4 DP 602888

715-717 Appin Road

Gilead

22 December 2025

(REF: OMA02.7)



BUSHFIRE PLANNING PROPOSAL

Lots 1 & 4 DP 602888, 715-717 Appin Road, Gilead

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The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features is to be confirmed by a registered surveyor.

EXECUTIVE SUMMARY

This strategic Bushfire Protection Assessment has been undertaken for the proposed rezoning of Lots 1 & 4 DP 602888, 715-717 Appin Road, Gilead.

This site is currently zoned Deferred Matter and part RU2, along with other properties to the north and south of the site.

The final use of the site is proposed to be largely residential at this point. This assessment has also considered a range of other possible uses, including some commercial, residential and Special Fire Protection Purposes; Schools or Seniors Living. Part of the land (Lot 715) is proposed to be zoned C4 Environmental Living.

Meadowvale Holdings Pty Ltd have submitted a modification application to the current Cumberland Plain Conservation Plan (CPCP) that was prepared collaboratively with the Department of Planning and Environment. The modification was prepared following detailed site investigation, which the initial CPCP mapping did not have the benefit of. The Master Plan has been redesigned on the assumption that the modification will be successful

Potential fire runs have been identified and assessed for bushfire mitigation measures.

There are important environmental and heritage considerations which this report cannot fully address. The extent to which these are a constraint to development needs to be considered separately. There are no known constraints arising from an Aboriginal heritage perspective that has been identified.

The proposed development will provide for a new collector road entry from Appin Road. Until land to the north, west or south is developed and additional access point formalised, a temporary access point to Appin Road will be provided.

The assessment has concluded that the site can be provided with a suitable range of bushfire protection measures to suit a number of different uses. The Master Plan proposes to ensure perimeter roads to the north, near the Beulah estate forest, and the placement of open space as a buffer in this area. Perimeter roads to the south will need to consider future development along the southern boundary.

This report assesses and identifies the potential protection measures which may be required. It is not suitable for submission for consent approval for specific land uses which should be assessed independently after the receipt of more detailed design layouts and information.

From a bushfire perspective, the site is capable of being rezoned for residential uses and if required there are opportunities for special fire protection purposes such as a school if required. Future fire brigade resources will be required over the development of the larger urban release area.

This Strategic Bushfire Study has identified that the site is capable of providing the necessary bushfire protection measures for both residential and special fire protection purpose developments if required.

GLOSSARY OF TERMS

AHIMS	Aboriginal Heritage Information System
APZ	asset protection zone
AS1596	<i>Australian Standard – The storage and handling of LP Gas</i>
AS2419	<i>Australian Standard – Fire hydrant installations</i>
AS3745	<i>Australian Standard – Planning for emergencies in facilities</i>
AS3959	<i>Australian Standard – Construction of buildings in bushfire-prone areas 2018</i>
BAL	<i>bushfire attack level</i>
BCA	<i>Building Code of Australia</i>
BSA	bushfire safety authority
DA	development application
DLUP	Development Land Use Plan
EEC	Endangered ecological community
EP&A Act	<i>Environmental Planning & Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
FFDI	forest fire danger index
IPA	inner protection area
LEP	Local Environmental Plan
LGA	local government area
m	metres
NCC	<i>National Construction Code</i>
OPA	outer protection area
PBP	<i>Planning for Bush Fire Protection 2019</i>
RF Act	<i>Rural Fires Act 1997</i>
RFS	NSW Rural Fire Service
SFR	short fire run
SFPP	special fire protection purpose
TBE	<i>Travers bushfire & ecology</i>

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1. INTRODUCTION

Travers bushfire & ecology (TBE) has been engaged by Meadowvale Developments Pty Ltd to undertake a strategic bushfire study for a planning proposal for the rezoning of Lots 1 & 4 DP 602888, 715-717 Appin Road, Gilead.

The proposal is located on land identified as bushfire prone on the Campbelltown bush fire prone land map (refer Figure 1-1). Part 3, Division 3.4 of the *Environmental Planning and Assessment Act 1979 (EP&A Act)* requires a planning proposal authority to consider the impact of development, including rezoning options in relation to the threat of bushfire on future use of a landholding and adjacent lands.



Figure 1-1 – Bushfire prone land map
(Source: Mecone Mosaic, 2023)

1.1 Aims of the assessment

Planning proposals are required to address the threat of bushfire to potential development. The objectives of this report are to;

- to protect life, property and the environment from bushfire hazards, by discouraging the establishment of incompatible land uses in bushfire prone areas, and
- to encourage sound management of bushfire prone areas.

The potential for future rezoning of the property, from a bushfire context, needs to ensure that future land uses are in a suitable location to minimise the risk and impact of bushfire attack. In addition, services and infrastructure to facilitate effective suppression of a bushfire also need to be provided.

The broad principles which should be applied to strategic level development are as follows:

- a) not all land is suitable for development in the context of bushfire risk
- b) any new development on bushfire prone land must be capable of complying with *PBP*
- c) infrastructure associated with emergency evacuation and firefighting operations must be provided
- d) appropriate ongoing land management practices must be facilitated.

Strategic planning should provide for the exclusion of inappropriate development in bushfire prone areas as follows:

- a) when the bushfire risk makes it inappropriate for new development to occur
- b) for development that is likely to be difficult to evacuate during a bushfire
- c) for development that will adversely affect other bushfire protection strategies or place existing development at increased risk
- d) for development that is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants
- e) where environmental constraints to the site cannot be overcome.

1.2 Proposed land uses

The proponent for the rezoning is Meadowvale Developments Pty Ltd. The proposed land use aims to rezone the existing site for the purposes of a future residential subdivision and associated infrastructure, including roads and open space. The site spans about 70.2 Ha with a perimeter of 4.72km, and has existing structures including the Meadowvale Cottage, along with gas and electrical easements. (Refer to figure 1-2). Additionally, there is a separate isolated block located within the site boundaries, under private ownership which forms an inholding.

The site was excluded from the *Campbelltown Local Environmental Plan 2015* because there was no heritage assessment, definition of curtilage and listing justification from Campbelltown City Council. The land has since been rezoned as DM- Deferred Matter (GLN 2023). Additionally, the proposed site is considered a part of the *Greater Macarthur 2040: An Interim Plan* and the *Cumberland Plain Conservation Plan*.

It should be noted that the planning proposal includes open space, as well as areas set aside for conservation and mixed residential purposes.

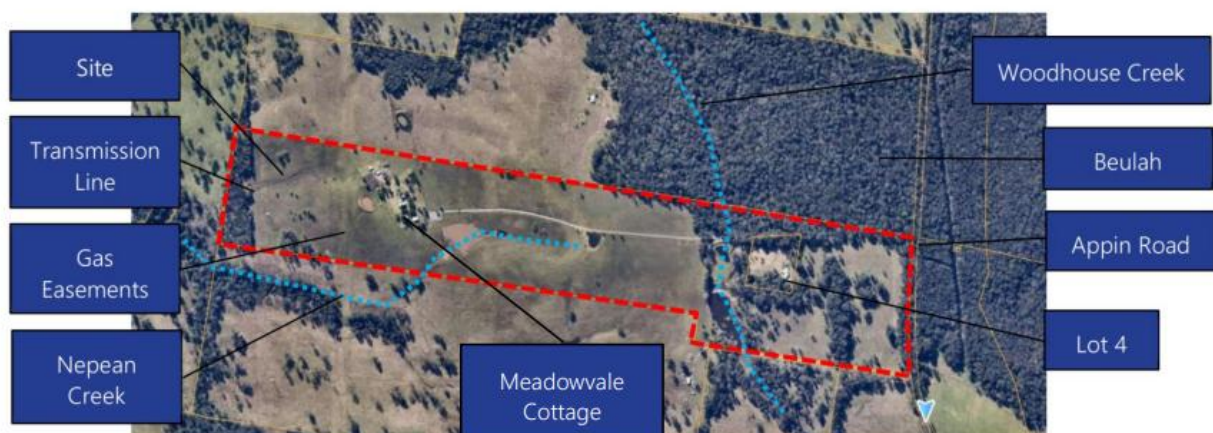


Figure 1-2 – Proposed site plan

(Source: Key features of the site, Figure 1 from Request for Fee Proposal, GLN , dated 18/925)

Under the *Greater Macarthur 2040: An Interim Plan*, the site is designated as 'Urban Capable Land'. (Refer to figure 1.4). However, it is important to acknowledge that specific sections of the east and west of the site are zoned as 'avoided land' as defined by the *Cumberland Plain Conservation Plan* as:

"avoided from development due to identified biodiversity values on the site, or because the land cannot legally or feasibly be developed due to its topography or due to an environmental feature such as a riparian corridor. In this instance, 'avoidance' refers to the approach the department has undertaken to avoid and minimise the impacts to biodiversity from development in the nominated areas, as required under the BC Act and EPBC Act." (Cumberland Plain Conservation Plan 2022).

Meadowvale Developments Pty Ltd is seeking a modification application with the Department of Planning and Environment to limit the extent of the 'avoided land' on the eastern portion of the site (see GLN 2023, 28 March 2023). (Refer figure 1-2, 1-3 and 2-8). This modification was prepared following detailed site investigation, which the initial CPCP mapping did not have the benefit of. The Master Plan has been designed on the assumption that this modification will be successful. Land east of Appin Road is not included in the rezoning.



Figure 1-3 – Proposed Site and Cumberland Plain Conservation Plan

(Source: Cumberland Plain Conservation Plan viewer, Department of Planning & Environment, dated: 2023)



Figure 1-4 – Proposed Site and Cumberland Plain Conservation Plan

(Source: TBE and DPHI, dated: 2025)

Figure 1-3 shows that the extent of the existing avoided land to the east of the site which provides an important corridor to the east of Appin Road, with the area to the west constituting urban capable land. This may change as a result of future changes to the CPCP (Figure 1-4).

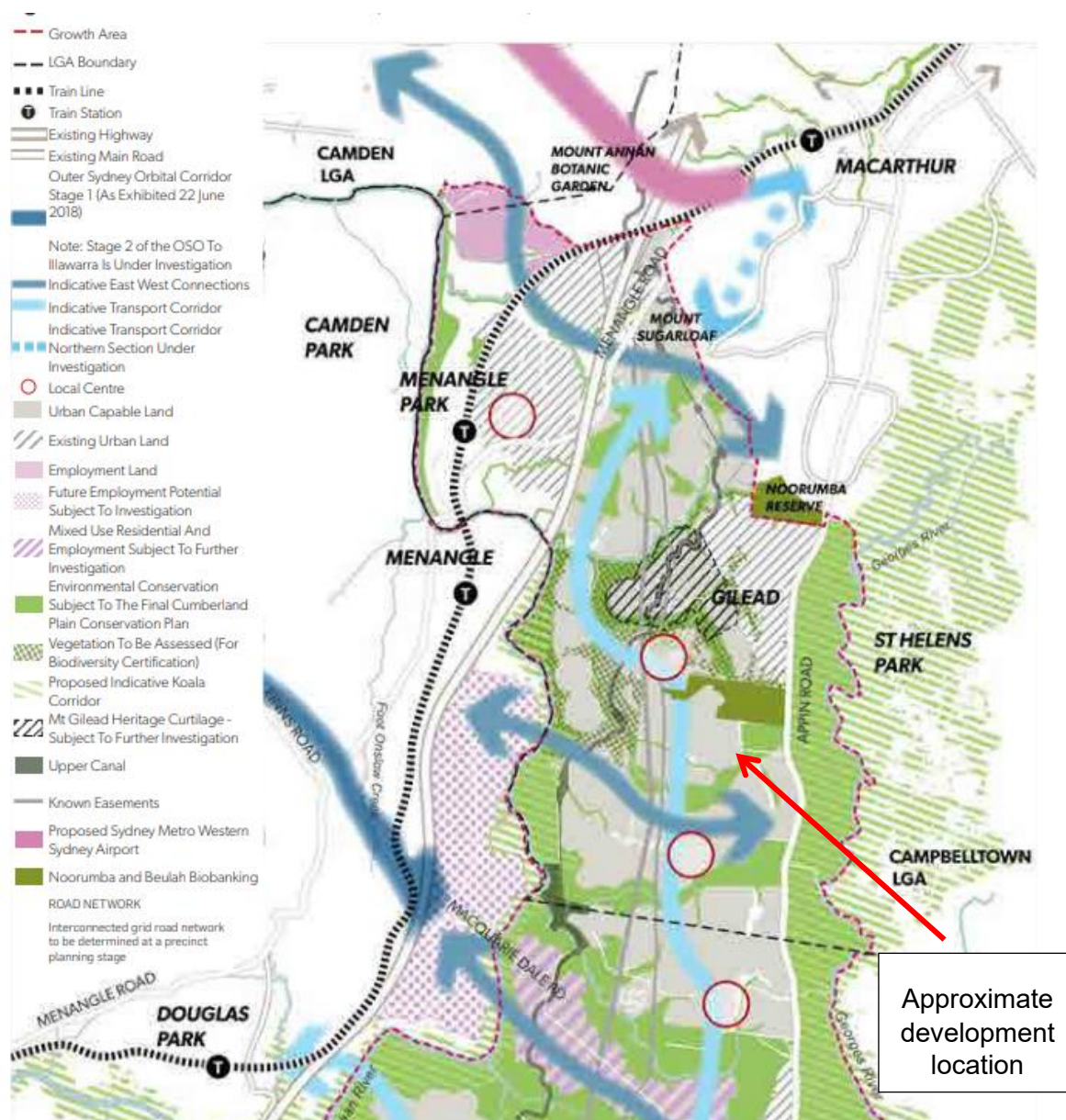


Figure 1-5 – Greater Macarthur 2040 layout plan

(Source: Greater Macarthur Structure Plan (land release areas), Figure 2 from Greater Macarthur 2040, NSWDE dated Nov 2018)

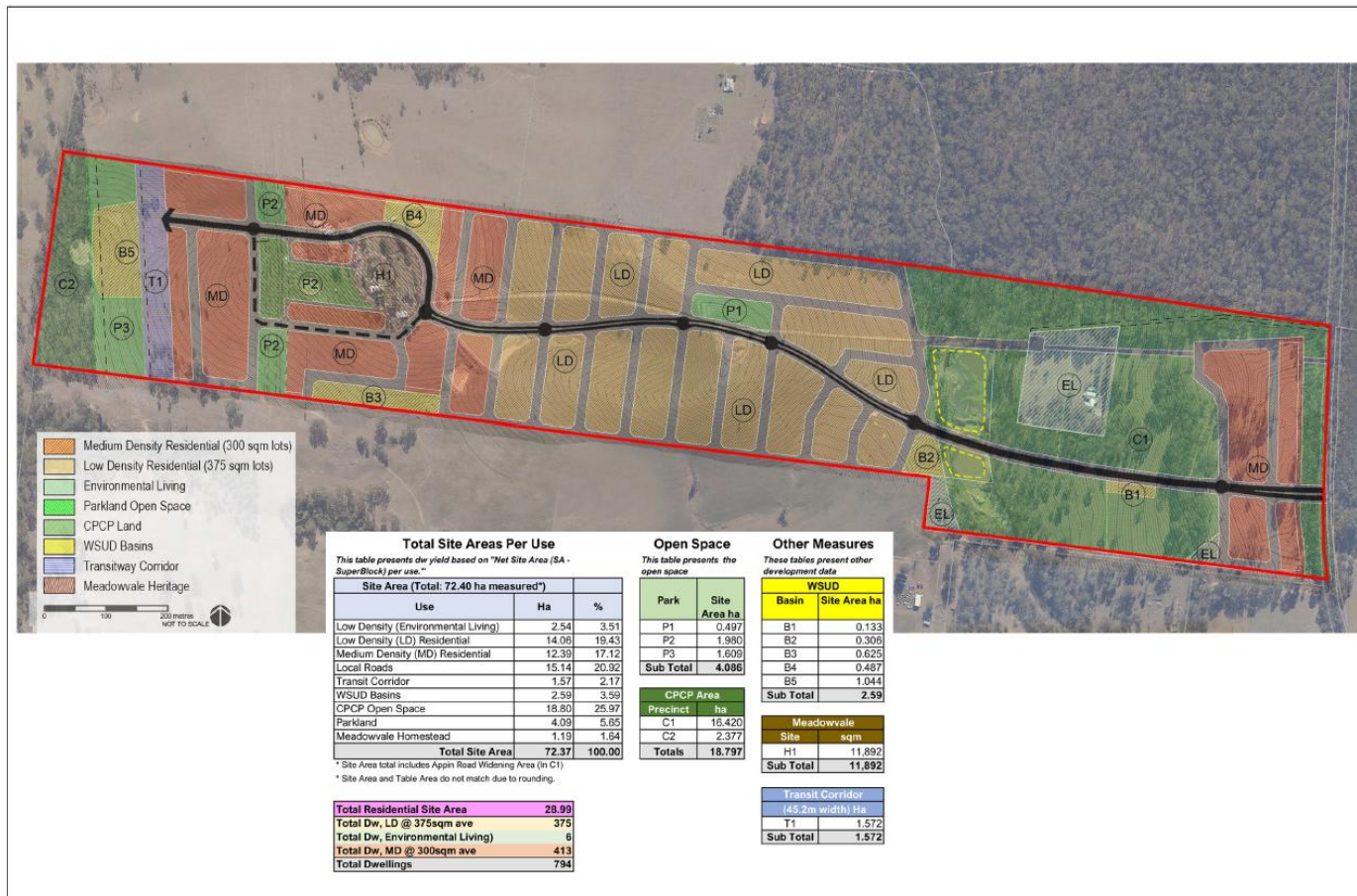


Figure 1-6 – Proposed Master Plan

(Source: Inspire Planning, Urban Design and Master Planning Study, Meadowvale- 717 Appin Road, Gilead, dated; 01 September 2025)

1.3 Site description

The site is located at Lots 1 & 4 DP 602888, 715-717 Appin Road, Gilead, approximately 3.32km south-east of Menangle train station, and is positioned between the Hume Motorway to its west and Appin Road to its east. (Refer figure 1-6). The current zoning of the site is DM-Deferred Matter and RU2 Rural Landscape as outlined in section 1.2, while the surrounding landscape is zoned as RU2- Rural Landscape. (Refer to figure 1-7).

The property currently has a total of seven (7) dams; 1 in the west, 1 in the north-west, 3 in the centre and two in the east. Nepean creek runs through the central dams in the middle of the site, flowing south until it connects to a wider creek system and the Nepean River. Woodhouse Creek also flows from north to south, where it intersects the two dams in the east. Moreover, there are also two above-ground transmission line corridors along the northern and western aspects of the property. (Refer to figure 2-7). The eastern portion of the site consists of native vegetation (forest), To the north lies the historical 'Beulah' property which contains a historic homestead and to the east a forested area which are of State Heritage Significance. The land to the south is identified as RU2 zoning and contains a grassland environment, connecting Nepean Creek with Woodhouse Creek and a corridor to the Georges River.

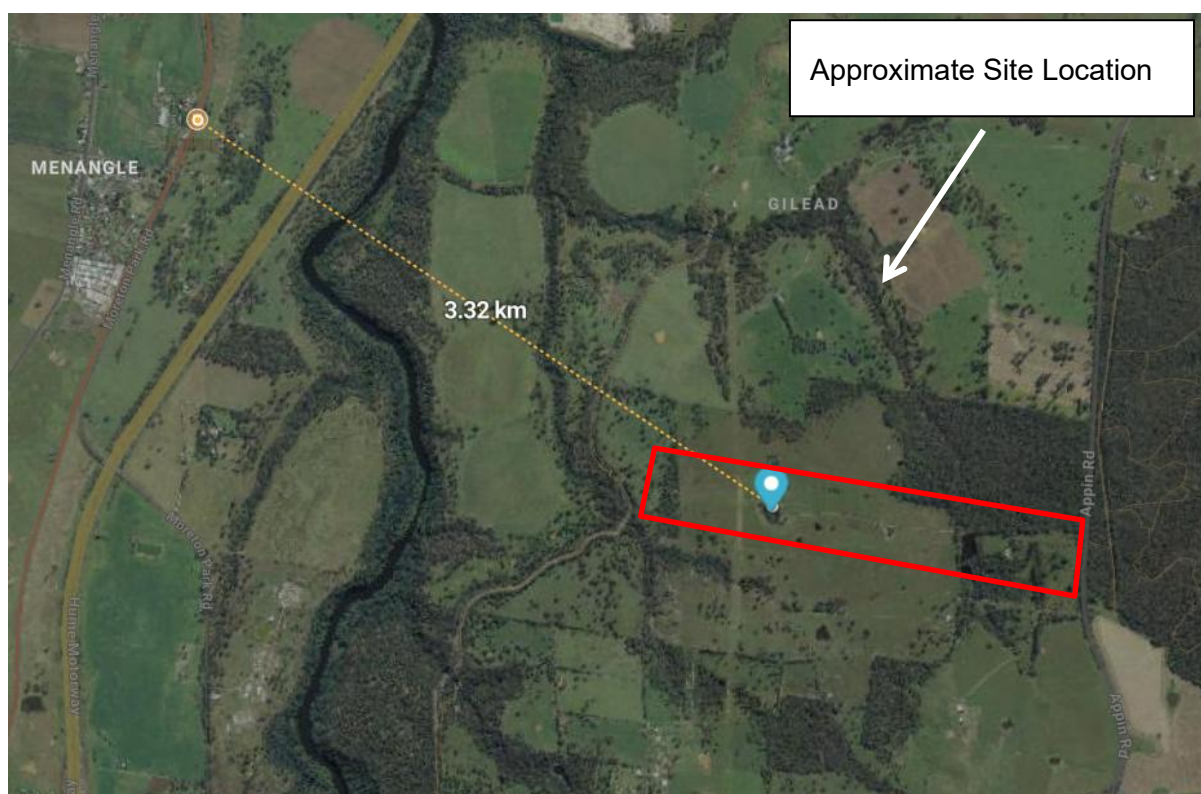


Figure 1-7 – Aerial appraisal
(Source Mecone Mosaic. 2023)

The RU2 zoned land (Lot 715) is proposed to be rezoned to C4 Environmental Living with approximately 4 lots.

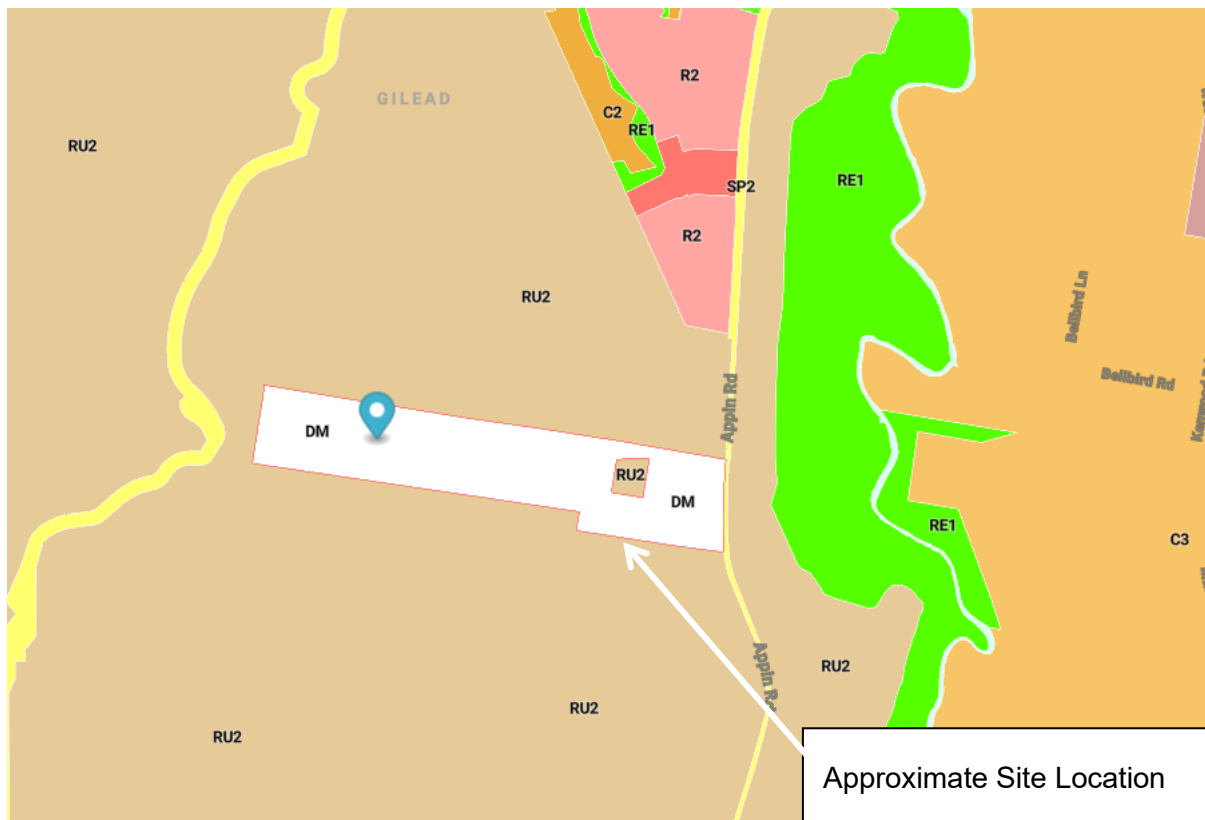


Figure 1-8 – Current zoning

1.4 Legislation and planning instruments

1.4.1 *Environmental Planning and Assessment Act (1979)* and bush fire prone land

The *EP&A Act* governs environmental and land use planning and assessment within New South Wales. It provides for the establishment of environmental planning instruments, development controls and the operation of construction controls through the *Building Code of Australia (BCA)*. The identification of bushfire prone land is required under Section 10.3 of the *EP&A Act*.

PBP stipulates that if a proposed amendment to land use zoning or land use affects a designated bushfire prone area then the Section 9.1(2) Direction No 4.3 of the *EP&A Act* must be applied.

This requires, “*in the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 3.34 of the Act*” and have regard to:

- the planning principles (Chapter 4) of *PBP*,
- contain provisions for two-way access roads which links to perimeter roads,
- contain provisions for adequate water supply for firefighting purposes,
- minimise the perimeter of the area of land interfacing the hazard which may be developed, and
- as a minimum provide an APZ, incorporating a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property.....”

1.5.2 Planning for Bush Fire Protection 2019 (PBP)

Strategic bushfire protection planning requires the consideration of the RFS planning document entitled *PBP*. *PBP* provides planning principles for rezoning to residential land as well as guidance on effective bushfire protection measures.

PBP identifies some key strategic planning principles when considering a rezoning. These provide for the exclusion of inappropriate development in bushfire prone areas, such as, if:

- the development area is exposed to high bushfire risk and should be avoided;
- the development is likely to be difficult to evacuate during a bushfire due to its siting in the landscape, access limitations, fire history, and/or size and scale;
- the development will adversely affect other bushfire protection strategies or place existing development at increased risk;
- the development is within an area of high bushfire risk where density of existing development may cause evacuation issues for both existing and new occupants; and
- the development has environmental constraints to the area which cannot be overcome.

1.5 Environmental and Aboriginal Heritage considerations

Submission requirements require the following environmental and heritage considerations that have the potential to be a constraint for implementing bushfire protection measures within the site and may require further assessments before construction proceeds within a site:

- identification of any significant environmental features on the property;
- the details of any threatened species, population or ecological community identified under the *Biodiversity Conservation Act 2016* that is known to the Applicant to exist on the property;
- the details and location of any Aboriginal object (within the meaning of the *National Parks and Wildlife Act 1974*) or Aboriginal place (within the meaning of that Act) that is known to the Applicant to be situated on the property;

The following sources databases were reviewed to determine whether any environmental and Aboriginal heritage constraints were present within the proposed site:

Potential constraint	Database
Aboriginal Heritage significant sites and places	Aboriginal Heritage Information Management System (AHIMS)
Threatened Ecological Communities (TECs)	Threatened Ecological Communities Greater Sydney Dataset (NSW SEED Portal)
Threatened species (flora and fauna)	NSW BioNet Species Sightings Data Collection (NSW SEED Portal)
Watercourses	NSW Hydrography Dataset (NSW SEED portal)
Cumberland Plain Conservation Plan	NSW Department of Planning Housing and Infrastructure (CPCP mapper)

Meadowvale Holdings Pty Ltd proposes to retain vegetation on-site based on the modification application to the Cumberland Plain Conservation Plan (CPCP). Removal of native vegetation is already restricted by the 'avoided land' zoning identified within the CPCP which Meadowvale Holdings P/L are seeking modification to its extent. (Refer figure 1-2c & section 1.2). Endangered

ecological communities have been identified on the site. There have also been 19 koala sightings observed either on site or within a 50m buffer between 1992-2023, 16 of which have been reported since 2017. The area represents a potential koala corridor from the Nepean River to the Georges River catchments. This is also reflected in the Cumberland Plain Conservation Plan which shows the eastern parts of the site as being future 'potential' corridors.

Woodhouse Creek (a known riparian corridors within the site) flows from south-east to north-west passing through two dams located within the eastern section of the site. (Refer to figure 2-5). An unidentified stream that originates in the centre of the site, passing through three dams and flows south-west into Nepean Creek south of the property. (Refer to figure 2-6). According to the Strahler system, Woodhouse Creek on site is a 1st order watercourse types which require 10m buffer zones either side of the creeks edge. (Refer to schedule 1 and figure 1-6). It is unclear if the second also requires any buffer.

A basic search was conducted on the Aboriginal Heritage Information System (AHIMS). The results show that there are 2 identified Aboriginal sites of significance within 50 m of the site or within. Neither location provides a constraint to the rezoning. A detailed 'due diligence' study undertaken by Umwelt further confirms that there are unlikely to be Aboriginal sites which constrain the site. A copy of the AHIMS search is attached in Appendix 2.

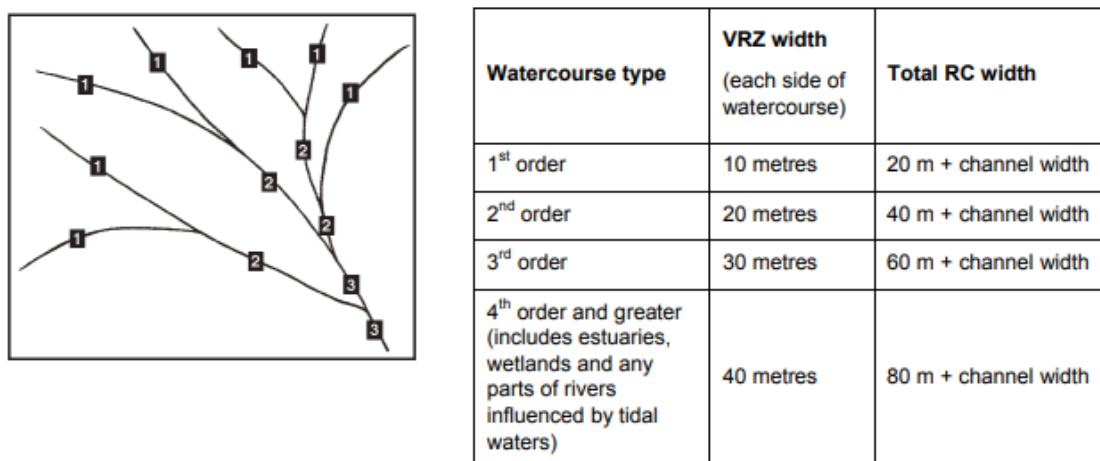


Figure 1-9– The Strahler System and recommended riparian corridor (RC) widths

(Source NSW Office of Water, Guidelines for riparian corridors on waterfront land, date: 2012)

The Meadowvale homestead is a significant heritage element and is located within the site and its location relative to open space provision and residential developments to the north, in what is largely a grassland environment, should provide sufficient bushfire protection, although some interim protective measures should be investigated and considered, whilst awaiting development of the site. The Homestead is currently vulnerable to future grassfires.

It is recognised that development will not proceed on this site until appropriate detailed environmental studies have been conducted to conclude the impact any development may have on present endangered ecological communities, riparian corridors and koala populations. However, the eastern conservation area, is a potential constraint.

2. BUSHFIRE THREAT ASSESSMENT

To assess the bushfire threat and to determine the required width of an APZ for a development, an assessment of the potential hazardous vegetation and the effective slope within the vegetation is required. These elements include the potential hazardous landscape that may affect the site and the effective slope within that hazardous vegetation.

In this section of the report, we will look at:

- fire history,
- vegetation formations and characteristics,
- slope and drainage, and
- bushfire attack assessment.

2.1 Fire History

A search of the NSW Government's SEED webmap shows no recent recorded fire history for the site.

There have been a number of wildfires and prescribed burns of varying size have occurred between 1964-2023 to the north-east, east and south-east of the site, the most significant occurring in 2001-02 which burnt 25,104.55ha. (Refer figure 2-1).

There has been an ongoing pattern of fires within the Holsworthy Range which have threatened areas around Appin and Campbelltown.

The fire history of the surrounding areas suggests the most likely fire impacting the site would be from these directions, although the fire weather conditions are more likely to be from north-west, west and southerly aspects of the site. The strips of forested vegetation directly connected to the site although fragmented, are continuous enough to connect to a significantly dense area of vegetation that extends to the Georges River, and then all the way to the coast.

The site does not provide a significant landscape risk once developed. The current landscape is a mosaic of grasslands, grassy woodlands and forest (including riparian). This is less conducive to landscape risks than other areas, further east of Appin Road.

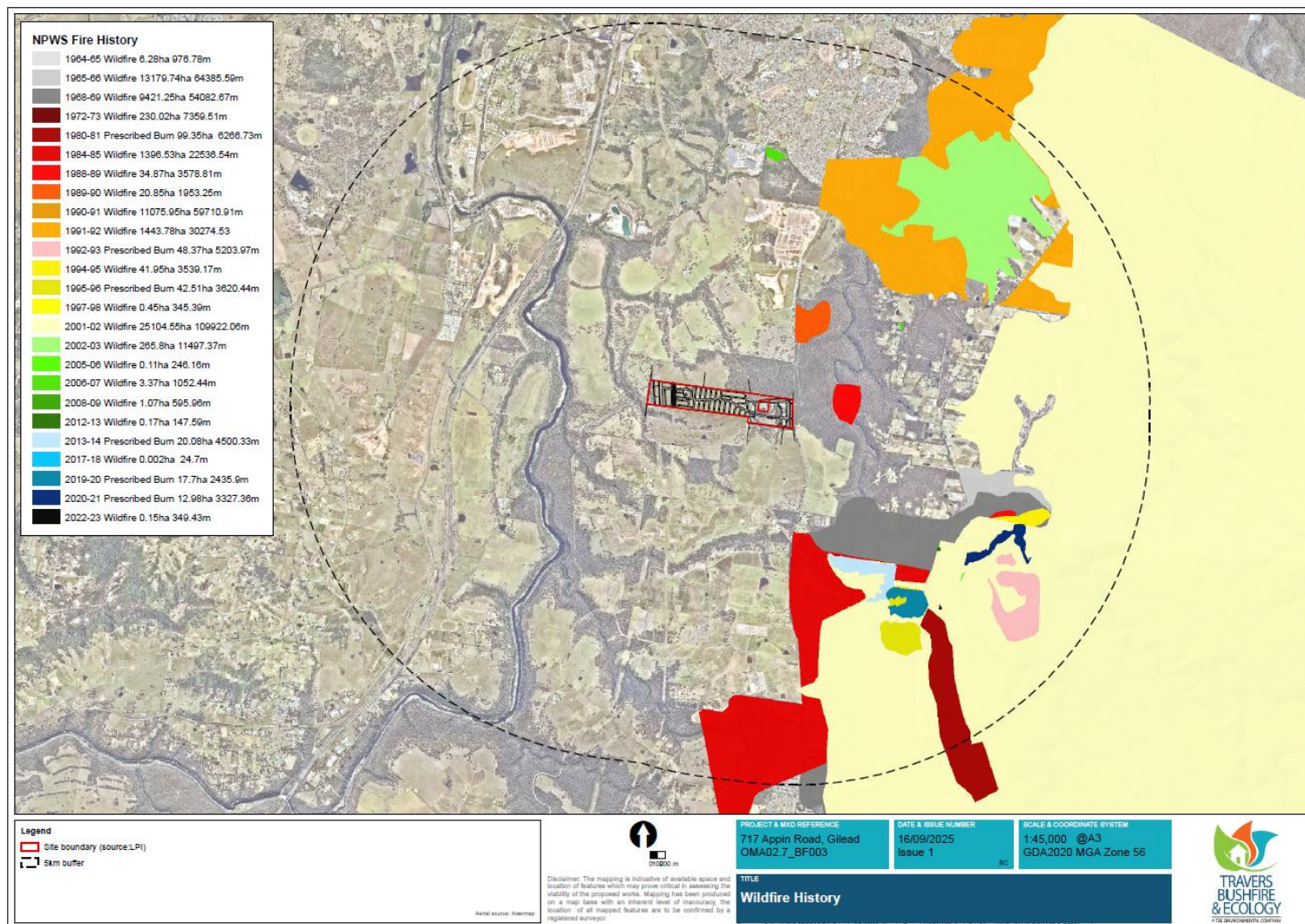


Figure 2-1 – Fire history within a 5km radius of proposed site

(Source: Wildfire History, Travers bushfire & ecology, dated: 16/09/2025)

2.2 Vegetation

PBP guidelines require the identification of the predominant vegetation formation in accordance with David Keith (2004) when using the simplified acceptable solutions in *PBP*. The vegetation is calculated for a distance of at least 140m from a proposed building envelope, although vegetation also needs to be considered at the macro-scale. The identified vegetation within 140m of the site was identified from the Geocortex viewer within the NSW SEED Portal which includes layers relating to NSW BioNet PCT sites and NSW State Vegetation Mapping. The vegetation formations were then assessed in light of Appendix 1 of *PBP 2019* and at a site visit. This includes the future Environment and Recreation (ENZ) zoned area within the western section of the site. The vegetation posing a bushfire threat to the proposed land uses includes:

Table 2-1 – Vegetation

Vegetation Community	Vegetation formation	Vegetation classification	<i>PBP</i> Classification	Acceptable fuel loads (t/ha) (surface/elevated) (<i>PBP</i>)
Castlereagh Ironbark Forest (PCT 3448)	Dry Sclerophyll Forests (shrub-grassy)	Cumberland Dry Sclerophyll Forests	Forest	22/ 36.1
Cumberland Shale Plains Woodland (PCT 3320)	Grassy Woodland	Coastal Valley Grassy Woodland	Grassy Woodland	10.5/ 20.2
Cumberland Shale-Sandstone Ironbark Forest (PCT 3321)	Grassy Woodland	Coastal Valley Grassy Woodland	Grassy Woodland	10.5/ 20.2
Remnant Forest	Remnant Forest			10/ 13.2
Unmanaged Grassland	Grassland			6.0/ 6.0
Sydney Hinterland Enriched Sandstone Bloodwood Forest (PCT 3619)	Dry Sclerophyll Forest (shrubby)	Sydney Hinterland Dry Sclerophyll Forests	Forest	22/ 36.1

The site features a diverse range of vegetation communities, the northern borders and within the site itself the land is predominantly cleared grassland with patches of Cumberland Shale Plains Woodland in the western, central and eastern sections of the property. Cumberland Shale Plains Woodland also borders the property in its south-east, west and south-west. Cumberland Shale-Sandstone Ironbark Forest borders and features within the properties north-east, south-west as well as bordering its eastern fringes. Castlereagh Ironbark Forest and Sydney Hinterland Enriched Sandstone Bloodwood Forest border the sites east and north-eastern fringes. There is also a patch of Cumberland Red Gum Riverflat Forest that transects the entire sites inner eastern fringe, extending further north-east and south-east. (Figure 2-2). For the purposes of assessment, much of the cleared vegetation to the east identified for conservation will require rehabilitation.

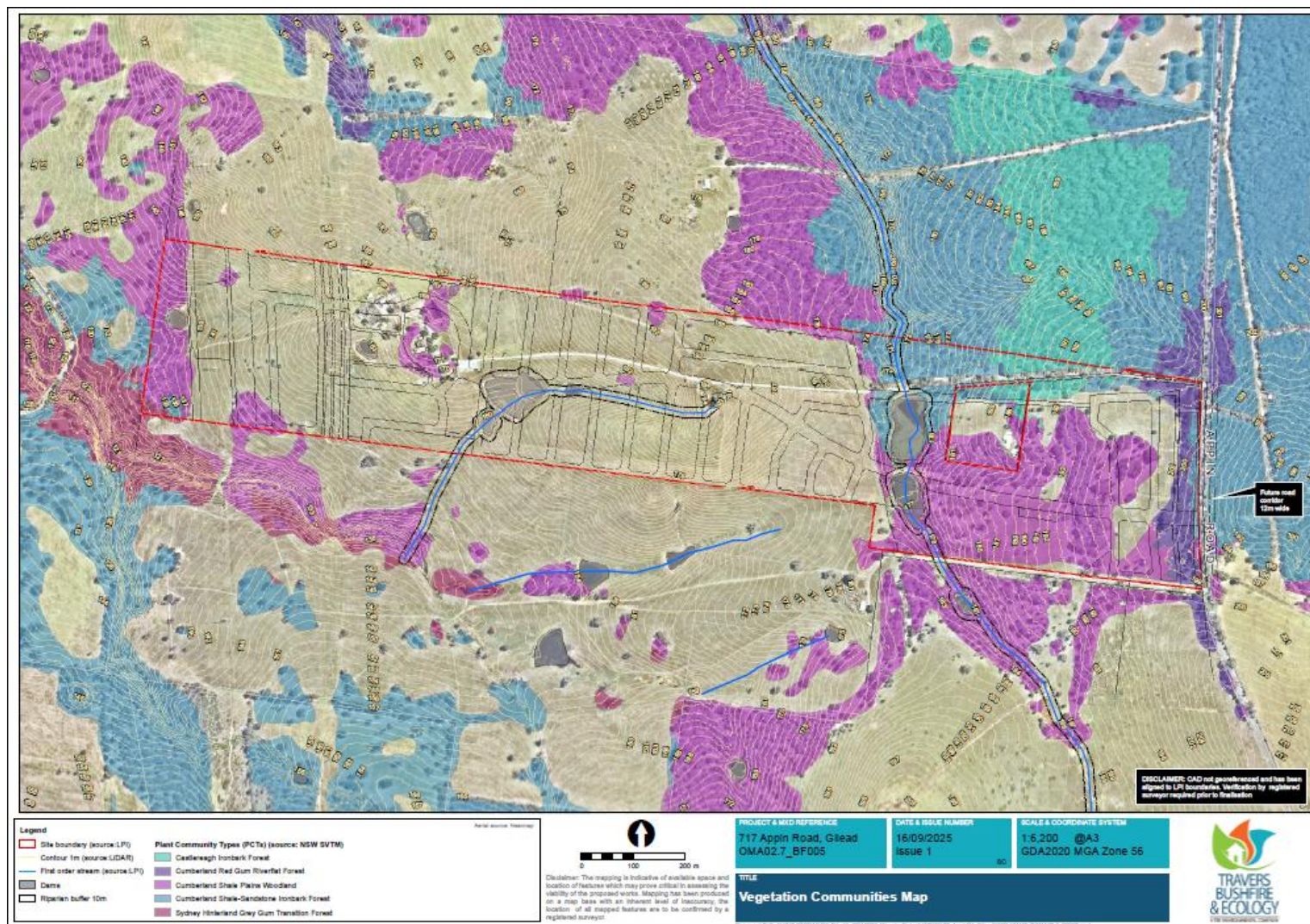


Figure 2-2 – Vegetation communities map

(Source SEED database, mapping by TBE 2025).

Photos of the site's vegetation are displayed within figures 2-2 to 2-8 below.



Figure 2-3 – Main access road via Appin Road in south-east corner of site



Figure 2-4 – Cumberland Red Gum Rivulet Forest (Forested Wetland) Southern Aspect



Figure 2-5 – Cumberland-Shale Sandstone Ironbark Forest (Grassy Woodland) and Cumberland Shale Plains Woodland (CPCP avoided land)



Figure 2-6 – Woodhouse Creek Riparian Corridor



Figure 2-7 – Riparian Corridor that flows into Nepean Creek



Figure 2-8 – Transmission line corridor along northern and western aspects of property



Figure 2-9 – Cumberland Plains Woodland (CPCP avoided land) along western aspect

2.3 Effective slope

The effective slope has been assessed for up to 100m from the development site. Effective slope refers to that slope which provides the most effect upon likely fire behaviour. A mean average slope may not in all cases provide sufficient information such that an appropriate assessment can be determined.

Schedule 1 shows the topography and drainage patterns of the site. This shows a progressive rise to the north and south from the existing dams. The effective slope within the hazardous vegetation off site is described within Table 2-2 below.

2.4 Bushfire attack assessment

Table 2-2 below provides a summary of the bushfire attack assessment based on residential development and the methodologies used. The following assessment has determined the APZ and BAL levels using Table A1.12.2 of *PBP* based on its location within the Greater Sydney region.

The APZs are required to be wholly within the site's boundaries and should not rely on being on adjoining land. APZs can extend beyond a site's boundaries in cases where structures or features of a landscape are considered permanent and act as barriers against fire spread. Examples are road carriageways, urban landscapes or land with vegetation that is considered managed.

The minimum APZ setback required for a residential building is a rating of BAL-29, which ensures buildings are not exposed to a radiant heat flux exceeding 29 kW/m².

Table 2-2 – Bushfire attack assessment summary

Aspect	Vegetation Formation	Effective Slope	Minimum APZ Required Non SFPP (BAL 29)	Comment
North	Grassland	5-10° downslope	12m	Directly borders the northern site boundary.
	Grassland	0-5° downslope	12m	
	Grassy Woodland	0-5° downslope	16m	Includes the proposed conservation areas and the basin site which is assumed to be restored to Forest based on the surrounding landscape.
	Grassy Woodland	Upslope	12m	
East	Forest	0-5° downslope	29m	Located offsite near Appin Road. The Road Reserve is included as part of the APZ.
	Grassy Woodland	0-5° downslope	16m	
South	Grassy Woodland	0-5° downslope	16m	Includes vegetation on adjoining land to the south, conservation and basin areas within the site.
	Grassy Woodland	Upslope	12m	
	Grassland	0-5° downslope	12m	Directly borders the site's southern boundary and includes the basin area which is assumed to be kept as Grassland vegetation based on the surrounding landscape.
	Grassland	5-10° downslope	13m	
West	Grassy Woodland	0-5° downslope	12m	Includes the proposed conservation area along the site's western boundary and adjoining land. Separated by Transit corridor.
RU2 lands (proposed C4)	Grassy Woodlands (south and east)	0-5° downslope	16m	Inholding will require internal APZs either around each dwelling or a minimal APZ from the boundary of the Lot.

Although the vegetation is generally mixed, with areas of grassland, grassy woodlands and forest, a generalised APZ/perimeter road network has been provided as indicative of future APZs. These are illustrated within Schedule 1 to this report.

3. STRATEGIC PROTECTION ISSUES

For strategic land use proposals on bushfire prone areas, *PBP* requires, as a minimum, assessment of the components in Table 3-1 below to address the planning principles in Chapter 4 of *PBP*. These issues are addressed where appropriate and within the constraints of the land being used for the purposes of a proposed residential subdivision.

Table 3-1 – Bushfire strategic considerations

Issue	Detail	Assessment Considerations	Comment
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.	The bushfire hazard in the surrounding area, including: • Vegetation • Topography • Weather The potential fire behaviour that might be generated based on the above; Any history of bushfire 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 bushfire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.	The broader landscape is one of extensive areas of pasture, which has been modified from the original woodland vegetation. There is currently little fragmentation of the landscape, although this may change with urbanisation over the longer term. Internally, there are three areas of bushfire hazard being at the southern edge of the site, along the northern boundary adjoining the Beulah estate, and in the eastern section associated with areas C1, C2 and C3 (figure 1-5 Master Plan). These are long fire runs associated with these pastures, notably from the west and north-west, which is the direction of the prevailing adverse fire weather. (NB Lend Lease's Stage 2 proposal is also found from this direction). This is also true of the south-west, in which a southerly change, may drive fire behaviour into the development. This is considered further in section 2 of this assessment.
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.	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	The Master Plan identifies the nature of proposed rezoning, which is largely for mixed residential purposes. There are no plans for an SFPP development on the site, although there does not appear to be any specific restrictions for this to be considered other than for Lot 715 propose to be zoned

Issue	Detail	Assessment Considerations	Comment
		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.	C4. In the supporting plans, the primary land-use for the site will be for a residential subdivision, with specific zones designated for transit corridors, heritage sites and parkland. A large amount of the site is also reserved for conservation (east and far west) consistent with the modification application for the CPCP. The site's proposed land-use is considered in more detail within section 1.2. The APZ provisions are considered in section 2. The site is not situated on ridgetops (although the land rises to the north) or having slopes greater than 18°. The required APZs can also be wholly within the site boundaries. The APZs will require further consideration when the final plans are completed. An essential aspect (at the development application stage) is to ensure the establishment of perimeter roads, especially on the northern adjoining the Beulah forests. Further west, these forests transition into pasture. Lot size and road design will need to consider the required APZs which vary up to 16 m. The siting of open space could be more effective and should be considered as part of the APZ to the residential development along the northern boundary.
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	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 Master Plan shows there will be two access/ egress points from Appin Road to the east and proposes linked roads along the northern and southern boundaries. Some of these to the north, will need to be resolved at the development assessment stage due to the heritage

Issue	Detail	Assessment Considerations	Comment
		The potential for development to be isolated in the event of a bushfire.	significance of the 'Beulah' property. Both neighbouring properties to the north (767 Appin Road) and south (677-681 Appin Road) are identified as a future mixture of 'Urban Capable Land' and land 'Subject to the final Cumberland Plain Conservation Plan' as outlined in the Greater Macarthur 2040 Layout Plan. (Refer to figure 1-3). The revised Master Plan includes perimeter roads for the northern and southern boundaries that would serve as a buffer against potential bushfire threats from vegetation on adjoining land. In some circumstances, temporary roadworks may be required along boundaries which provide APZ and access arrangements. The primary access road to the site from Appin Road extends more than 1.5km. (Refer to figure 1-5) and will require connection to the broader road network with future development. Other than perimeter roads, access roads within the development should be 5.5 m plus carparking.
Emergency services	An assessment of the future impact of new development on emergency services.	Consideration of the increase in demand for emergency services responding to a bushfire emergency including the need for new stations/ brigades; and Impact on the ability of emergency services to carry out fire suppression in a bushfire emergency.	The site's current location is approximately 6.3km away from fire services response, equating to an 8-km drive from the Rosemeadow Fire and Rescue Station. The site is also approximately 18.4km away, or a 19-minute drive from the Menangle Rural Fire Brigade. The site's relatively remote location and considerable distance from emergency services would increase demand for emergency services and their ability to carry out fire suppression in a bushfire emergency. Although this is not a present concern, the <i>Greater Macarthur</i>

Issue	Detail	Assessment Considerations	Comment
			<i>2040 interim plan</i> address these challenges. According to the 'Draft Infrastructure List' on page 87, there are plans to establish two additional permanently staffed fire and rescue stations in Gilead and Appin at an unspecified date in the future.
Infrastructure	An assessment of the issues associated with infrastructure and utilities.	The ability of the reticulated water system to deal with a major bushfire 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.	Indesco Services and Utilities have undertaken an assessment of the provision of water and electricity (plus other) services as part of the overall area's development. As part of an urban development program, water supplies will be capable of servicing the area, as will electricity.
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bushfire management.	Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bushfire Management Plans.	Although a large amount of the existing vegetation on the site, mainly grassland areas, will be developed, eliminating the bushfire threat to adjacent properties, the land designated for conservation ('avoided land') on the site provides the bushfire threat to residential properties to the north and south. Notably, the large area intended for conservation in the sites north-eastern corner will surround the battle-axed block Lot 4, DP at 715 Appin Road. The existing access road (easement) provides access to the inholding property through the conservation area. The Beulah estate will not be impacted as on-site bushfire protection measures are to be implemented through perimeter roads and APZs on-site.

The proposed Master Plan for the site has been used to guide future development considerations. In regards to any future development, *clause 2 of section 45* of the *NSW Rural Fires Regulation 2022* (RF Reg) states as a requirement for an application for a bushfire safety authority with respect to a residential or rural subdivision must include “(h) *an assessment of the extent to which the proposed development conforms with or deviates from Planning for*

Bush Fire Protection.”. *PBP*’s specific objectives for residential and rural subdivisions with a dwelling entitlement are as follows:

- minimise perimeters of the subdivision exposed to the bushfire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);
- minimise perimeters of the subdivision exposed to the bushfire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);
- provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;
- ensure that APZs between a bushfire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanisms;
- ensure the ongoing maintenance of APZs;
- provide adequate access from all properties to the wider road network for residents and emergency services;
- provide access to hazard vegetation to facilitate bushfire mitigation works and fire suppression; and
- ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.

Therefore, any future development within the proposed site should conform with the performance criteria and the acceptable solutions for APZs, access and services (water, electricity and gas) as stipulated within *section 5.3 of PBP*.

The revised plan includes a perimeter road (8 m kerb to kerb) around the subdivision boundary, including one that provides frontage access to the potential bushfire threats from the site’s north and south, which were absent from the site’s earlier Master Plan. Additionally, there should also be appropriate APZs as stated within section 2.4 and generally depicted in Schedule 1 of this report. This is also supported by the Urban Design and Master Planning Study by Inspire Planning (September, 2025).

APZs will need to be located within Lot 715 for the proposed C4 lots including access. Being rural-residential in nature, perimeter roads may not be required, however APZs will be required around each dwelling or along the internal boundary for Lot 715. These are not shown in Schedule 1 but should be noted.

The main access road, which is near the centre of the site from Appin Road passes through the Conservation Areas (C1 and C2 precincts) of the Master Plan, and traverses through the bushfire hazard, should be able to meet minimum road width requirements. It is noted that there are few options available than to pass through this area other than with a reduced road width but without car parking capacity. A secondary access (current access) to the north of the site provides access through Lot 715. The final alignment will need to be addressed at the time of subdivision but is not constrained from a bushfire perspective.

Greater strategic use of open space has been considered in the west to separate the neighbouring residential component of the transit Corridor and parklands.

4. CONCLUSIONS

This assessment found that bushfire can potentially affect the site from a number of areas of remnant vegetation onsite and on adjoining properties, notably from the Beulah estate to the north. The overall fire risk from this vegetation and after considering fire history, climate and available mitigation options is comparatively low, although the eastern portion of the site, represents a greater threat and challenge in relation to bushfire protection measures (mainly APZs and perimeter roads). Lot 715 is constrained to the extent that SFPP development are not readily accommodated and have been proposed to be rezoned C4.

The site (including Lot 715) can accommodate asset protection zones within its boundaries with a minimum of environmental disturbance, while still providing viable options for a number of development types. Bushfire hazards can be avoided with urban design having regard to bushfire threats.

This assessment has concluded that the rezoning of the site for residential purposes could comply with the planning principles of *PBP*. The revised Master Plan has made adjustments for the inclusion of perimeter roads and APZs along the northern and southern boundaries, in particular adjacent to the forested and grassy woodland areas of the Beulah estate. Any proposals for revegetation will also impact on the future of the site's urban capability. Much of this will depend on lot size and front setbacks.

A 'special fire protection purpose' such as a school or seniors living development could be catered for within the lot however is constrained within Lot 715. Clearly this is dependent on the size of such a facility. In the context of future urbanisation, however, this is not seen as a long-term constraint.

The revised Master Plan is supported by a utilities and services plan for the provision of water supplies, and it is envisaged that the Gilead Urban Release Areas will be adequately serviced with water and electricity in the future.

It is also anticipated that future fire brigade stations can be addressed in the overall strategic planning arrangements for the Appin/Gilead area.

This report assesses and identifies the potential protection measures and has been prepared to support this planning proposal. It is not suitable for submission for development consent approval for specific land uses which should be assessed independently after the receipt of more detailed design layouts and information.

5. SUPPORTING INFORMATION

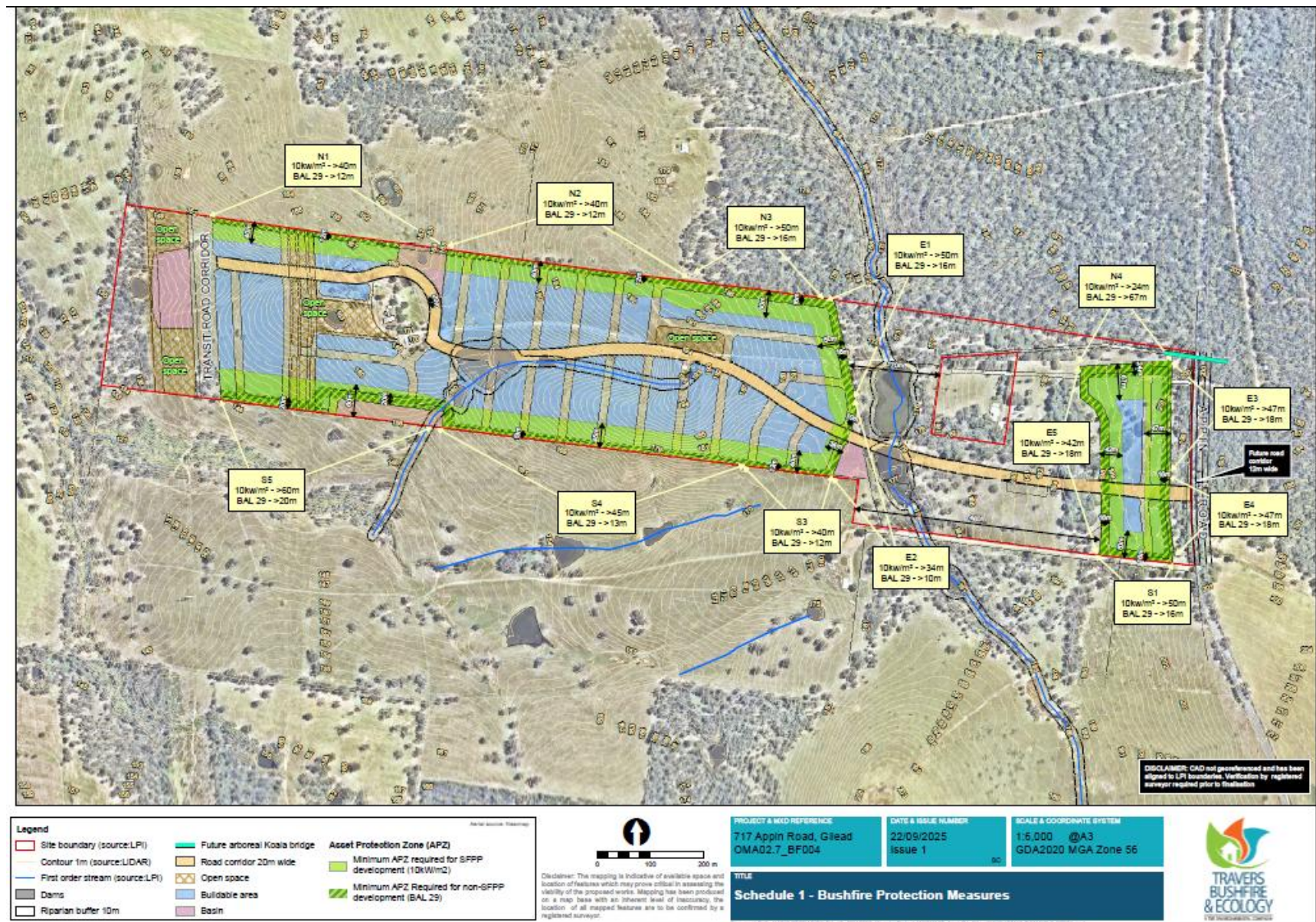
5.1 Bibliography

- Australian Building Codes Board (2022) – *Building Code of Australia*, Class 1 and Class 10 Buildings Housing Provisions Volume 2.
- Chan, K.W. (2001) – *The suitability of the use of various treated timbers for building constructions in bushfire prone areas*. Warrington Fire Research.
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5.2 References

- Inspire Planning, *Meadowvale- 717 Appin Road, Gilead- Urban design and Master Planning Study*, dated: 01 September 2025.
- Umwelt (Australia) P/L, *Aboriginal Heritage Due Diligence Report*, dated November, 2023.
- Cumberland Plain Conservation Plan: what we heard. 'Glossary,' pg. 30.
- NSW Department of Planning and Environment, *Greater Macarthur 2040*, November 2018.
- NSW Department of Planning and Environment, *Cumberland Plain Conservation Plan Viewer*, 18 May 2023.
- Australian Standard 3959 – 2018 Construction of buildings in bushfire-prone areas*
- Community Resilience Practice Notes 2/12 Planning Instruments and Policies*.
- Nearmap* aerial photography.
- NSW SEED Portal. *NSW BioNet Koala Species Sightings*. 19 May 2023.
- NSW SEED Portal. *Threatened Ecological Communities Greater Sydney*. 19 May 2023.
- NSW Rural Fire Service, *Planning for Bush Fire Protection*. November, 2019.
- Topographical maps *DLPI of NSW* 1:25,000.

SCHEDULE 1. BUSHFIRE PROTECTION MEASURES



SCHEDULE 2. AHIMS REPORT



AHIMS Web Services (AWS) Search Result

Your Ref/PO Number : Lot 3, DP 1238606

Client Service ID : 783352

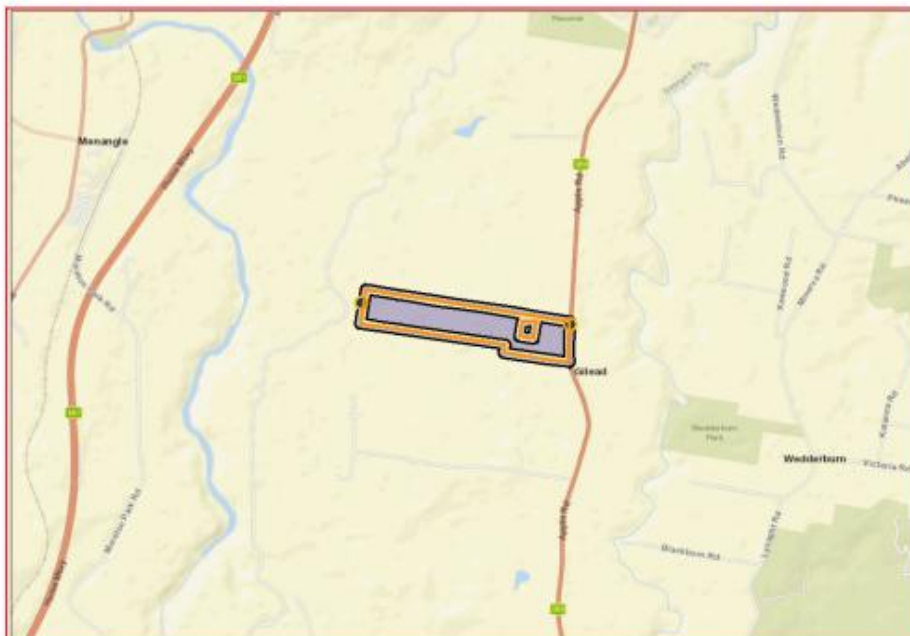
Luke Simpson
52 The Avenue
Karing New South Wales 2250
Attention: Luke Simpson
Email: lsimpson@traverseecology.com.au

Date: 18 May 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP602888, Section : - with a Buffer of 50 meters, conducted by Luke Simpson on 18 May 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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