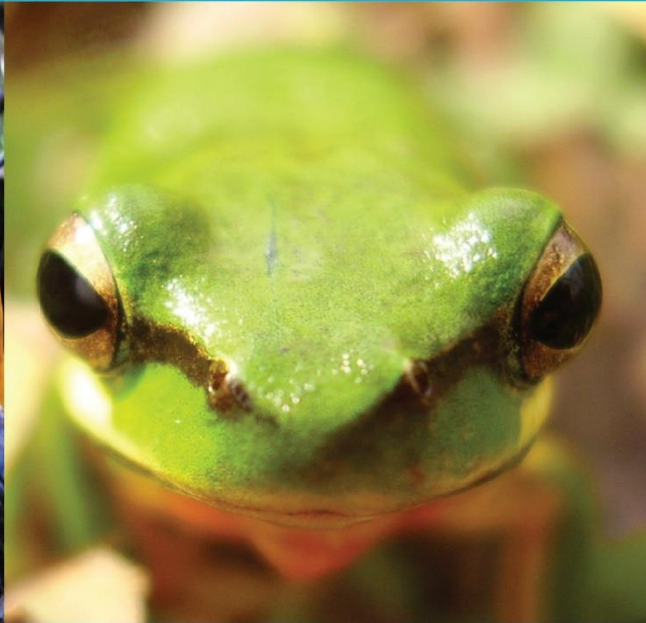




# TRAVERS BUSHFIRE & ECOLOGY

A TBE ENVIRONMENTAL COMPANY



## **BUSHFIRE PROTECTION ASSESSMENT**

### Proposed Industrial Development

Application for BFSA under s100b of the Rural Fires Act (1997)

Lots 71-74/DP810836, 6/DP801261, 11 &  
20/82/DP758466, 1/DP651249, 18/DP1100223,  
15/DP1100216, 13-14/DP1100206, 12/DP1100110 &  
16/DP1079150

At 7A, 9, 9A-11 Racecourse Rd, 1-3 Faunce Street  
West, 38 & 50 Young Street, West Gosford

14 December 2022

# BUSHFIRE PROTECTION ASSESSMENT

## Proposed Bus Depot

1-3 Faunce Street West, West Gosford

Report Authors:	Sam Ferguson B. EnvSc. GCert. Bushfire Protection – BPAD 52192 – Level 2
Plans prepared:	Sandy Cardow B.Sc.
Checked by:	Tony Hawkins, Manager of Bushfire Services – BPAD 48592 – Level 3
Date:	14/12/22
File:	18URB09

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### Disclaimer:

*This report has been prepared to provide advice to the client on matters pertaining to the particular and specific development proposal as advised by the client and / or their authorised representatives. This report can be used by the client only for its intended purpose and for that purpose only. Should any other use of the advice be made by any person, including the client, then this firm advises that the advice should not be relied upon. The report and its attachments should be read as a whole and no individual part of the report or its attachments should be relied upon as meaning it reflects any advice by this firm. The report does not suggest or guarantee that a bush or grass fire will not occur and or impact the development. This report advises on policies and specifications published by the NSW Rural Fire Service e.g., Planning for Bush Fire Protection 2019.*

*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 are to be confirmed by a registered surveyor.*

# EXECUTIVE SUMMARY

*Travers bushfire & ecology* has been engaged to undertake a bushfire protection assessment for the proposed Bus Depot at a site in West Gosford. The proposed development will involve the amalgamation of the Site which is comprised of 14 lots; at street addresses; 7A, 9, 9A-11 Racecourse Rd, 1-3 Faunce Street West, 38 & 50 Young Street, West Gosford. (Hereafter referred to as 'The Site').

The land is zoned B6 (Enterprise Corridor) in the Central Coast Local Environmental Plan (LEP); and State Environmental Planning Policy (Precincts—Regional) 2021.

The development application seeks to construct a new bus depot comprising workshop & office buildings, bus wash & fuel bays, car parking (approx. 144 spaces) & bus parking to accommodate approximately 96 buses.

The proposed development is categorised by the NSW Rural Fire Service (NSW RFS) planning policy document *Planning for Bush Fire Protection 2019* (PBP 2019) as 'other development', and more specifically 'commercial and industrial development'. A component of the proposal (the fuel storage tanks) may meet the definition of a hazardous industry under SEPP 33 & so report addressing the requirements of SEPP 33 may be required to determine if the proposal is a potentially hazardous or offensive development. If the provisions of SEPP 33 are determined to apply to the proposal, a preliminary hazard analysis will be required and must accompany the DA.

For this type of development, NSW RFS requires that development applications should satisfy the aims and objectives of PBP 2019, propose an appropriate combination of bushfire protection measures and provide evidence that the intent of each measure can be satisfied. In accordance with PBP 2019 this suite of bush fire protection measures is based on the requirements for industrial development.

As multiple lots will be consolidated this DA must be assessed under an integrated development pathway as under s100b of the Rural Fires Act (1979), a Bush Fire Safety Authority (BFSA) will be required from the Commissioner of the NSW RFS.

This assessment has found that bushfire may affect the proposed development, with potential exposure to radiant heat and ember attack from existing forest vegetation to the East.

In recognition of the bushfire risk posed to the site by nearby bushland, *Travers bushfire & ecology* propose the following combination of bushfire protection measures;

- Vegetation in the North-East of the Site must be managed as an APZ in perpetuity for a distance of not less than 11m,
- Building construction for exposed aspects in accordance with the requirements for BAL-40,
- Provision of access, water, electricity and gas supply in accordance with the acceptable solutions for residential infill development outlined in *PBP 2019*, and
- Preparation of a Bush Fire Emergency Management and Evacuation Plan
- If appropriate and required, a fire safety study must assess the risk of fuel storage facilities & recommend appropriate design & maintenance procedures in line with the NSW Dept. Planning Hazardous Industry Planning Advisory Paper No 2 - *Fire Safety Study Guidelines*.

In order to ensure compliance with PBP (2019) *Travers bushfire & ecology* propose the following Recommendations be adopted by the consent authority as conditions of consent;

**Recommendation 1** - The development is as generally indicated on the attached SCHEDULE 1, Plan for Bushfire Protection Measures.

**Recommendation 2** - APZs are to be provided within the proposed development in accordance with Table 3.1 of this report, as generally depicted within SCHEDULE 1 and maintained in perpetuity, in accordance with *Standards for Asset Protection Zones* (NSW RFS, 2005).

**Recommendation 3** - Access is provided in accordance with section 3.2 of this report including turning head requirements in line with *A3.3 of PBP 2019*.

**Recommendation 4** - Water, electricity and gas supply is provided in accordance with sections 3.3, 3.4 and 3.5 of this report.

**Recommendation 5** - Buildings are to be constructed in accordance with the findings of this report and the requirements of *AS3959 Construction of buildings in bushfire prone areas (2018)* and *the NASH standard*, as per *Planning for Bush Fire Protection 2019* for BAL-40. This is in addition to the general fire safety construction provisions and other requirements of the NCC.

**Recommendation 6** – A Bush Fire Emergency Management and Evacuation Plan should be prepared consistent with the NSW RFS publication: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, and AS3745:2010.

**Recommendation 7** – If appropriate and required, a fire safety study must assess the risk of fuel storage facilities & recommend appropriate design & maintenance procedures in line with the NSW Dept. Planning Hazardous Industry Planning Advisory Paper No 2 - *Fire Safety Study Guidelines*

# 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>
BFSA	Bush Fire Safety Authority
DA	development application
DLUP	Development Land Use Plan
EEC	Endangered ecological community
EP&A Act	<i>Environmental Planning &amp; 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 2019	<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 &amp; ecology</i>



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## 1. INTRODUCTION

*Travers bushfire & ecology* has been engaged to undertake a bushfire protection assessment for the proposed bus depot located at the Site in West Gosford.

The proposed development is identified as bushfire prone on the *NSW RFS* bushfire prone land map (refer Figure 1-1). This triggers a formal assessment in respect of the NSW Rural Fire Service (RFS) policy against the provisions of *Planning for Bush Fire Protection (PBP 2019)*.

All development on bushfire prone land must satisfy the Aim & Objectives of PBP (2019) & the specific objectives for the type & scale of development proposed.

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

The objectives are to:

- afford buildings and their occupants protection from exposure to a bush fire;
- provide for a defensible space to be located around buildings;
- provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;
- ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- provide for ongoing management and maintenance of BPMs; and
- ensure that utility services are adequate to meet the needs of firefighters.

The specific objectives which will be applied to this development in addition to the Aim & Objectives of PBP (2019) are in relation to access, water supply and services, and emergency and evacuation planning:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
- provide for the storage of hazardous materials away from the hazard wherever possible.

The NCC does not provide for any bush fire specific performance requirements for Class 5-8 buildings. As such AS 3959 and the NASH Standard are not considered as a set of Deemed to Satisfy provisions, however compliance with AS 3959 and the NASH Standard must be considered when meeting the aims and objectives of PBP.

The general fire safety construction provisions of the NCC are taken as acceptable solutions however construction requirements for bush fire protection will need to be considered on a case-by-case basis.



**Figure 1-1 – Bushfire Prone Land Map**  
(Mecone Mosaic 2022)



## 1.1 Aims of the assessment

The aims of the bushfire protection assessment are to:

- undertake a review the bushfire threat to the landscape
- prepare a bushfire assessment report in accordance with the requirements of Planning for Bush Fire Protection 2019 (PBP 2019) chapter 8, to accompany the development application.
- provide advice on Bush fire protection measures required to meet the Aim & objectives & the specific objectives of section 8.3.1 of PBP (2019), and guided by the performance requirements of Chapter 7 of PBP (2019).
- provide detailed information within the Bush Fire Assessment Report to be submitted to the NSW RFS as outlined in RF Reg cl. 44 & Appendix A2.1 of PBP (2019).

## 1.2 Proposed development

The development application seeks to construct a bus depot and associated facilities, as shown in Figure 1.2 below.

The proposed bus depot facility is comprised of a workshop & office building, bus wash & fuel bays, car parking (approx. 144 spaces) & bus parking to accommodate approximately 96 buses.

Then proposal will include the amalgamation of the site into 1 lot, from the 14 currently defined within the site boundary (being lots 71-74/DP810836, 6/DP801261, 11 & 20/82/DP758466, 1/DP651249, 18/DP1100223, 15/DP1100216, 13-14/DP1100206, 12/DP1100110 & 16/DP1079150).

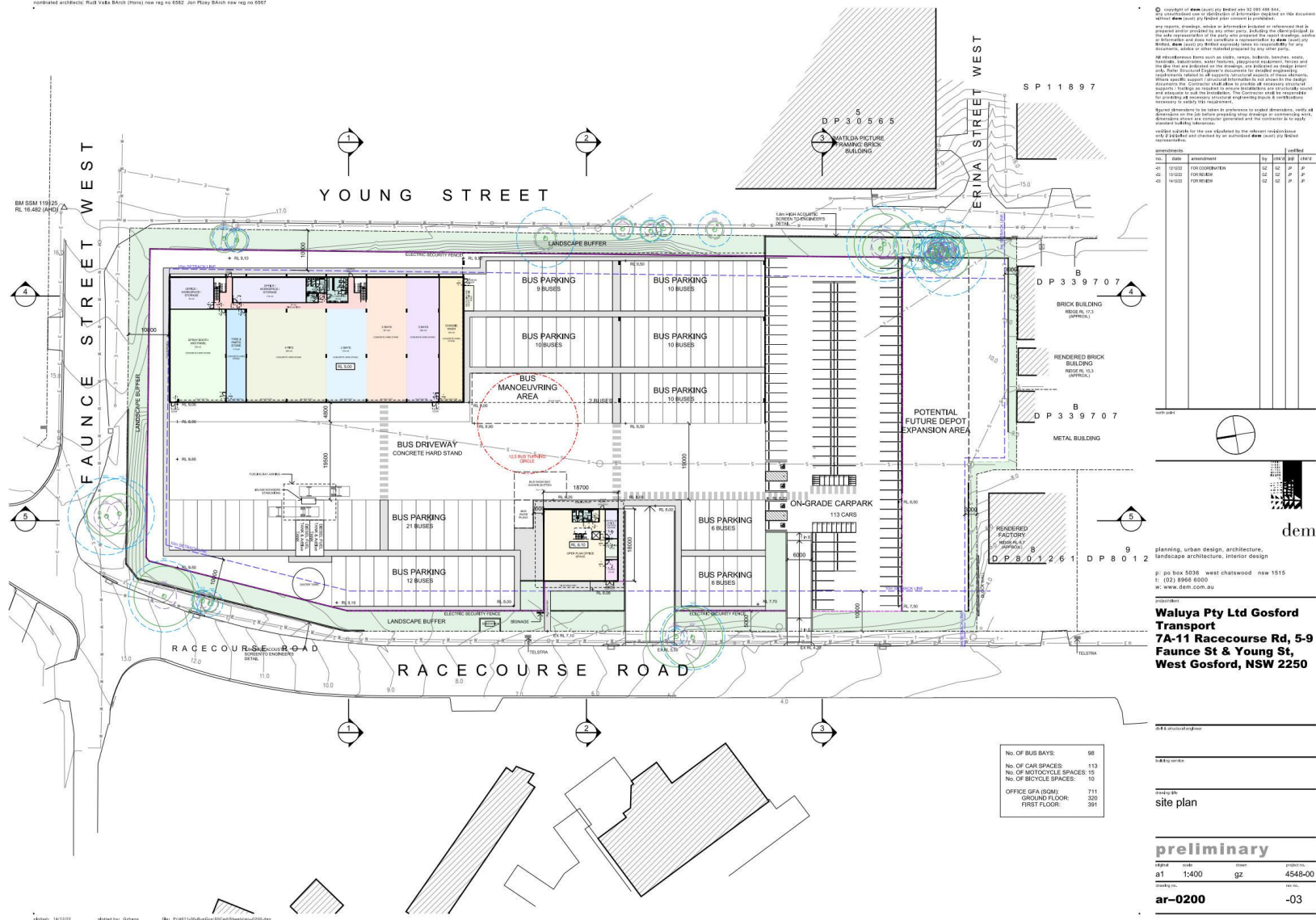


Figure 1-2– Depot plan

(Source: dem.com.au drwg no: arsk0200 14/12/2022)

The land is zoned B6 (Enterprise Corridor) in the State Environmental Planning Policy (Precincts—Regional) 2021— see Figure 1.3.



**Figure 1-3 – Land zoning map**

(source: eplanning spatial viewer 2022)



## 1.3 Information collation

Information sources reviewed for the preparation of this report include the following:

- Site Plan *Waluya Pty Ltd Gosford Transport Depot* prepared by *dem.com.au* (2022)
- *NearMap* aerial photography
- Topographical maps DLPI of NSW 1:25,000
- *Australian Standard 3959 Construction of buildings in bushfire-prone areas* (2018)
- *Planning for Bush Fire Protection 2019 (PBP)*

## 1.4 Site description

The subject land is located between Racecourse Rd, Young St and Faunce St West, in West Gosford. To the East of the site is the Gosford Race track & club. To the West is a row of commercial/industrial premises along Young Street, with residential houses further uphill & adjoining Waterview Park nature reserve. The Site is comprised of 14 lots which will be amalgamated into a new lot & DP, (see Figure 1-4).

The Site currently contains grassed areas with a perimeter of remnant unmanaged bushland and several empty industrial buildings. The SEED dataset SVTM\_NSW\_Extant\_PCT identifies the adjoining vegetation to the East as *Central Coast Escarpment Moist Forest*. With the vegetation formation: *Wet Sclerophyll Forests (Grassy sub-formation)* & Class: *Northern Hinterland Wet Sclerophyll Forests*.



**Figure 1-4 – Site extent**

(Source: NSW SIX imagery & cadastre)





**Figure 1-5 – Aerial appraisal**

Source: Nearmaps, 2022)



## 1.5 Legislation and planning instruments

Is the site mapped as bushfire prone?	Yes
Proposed development type	Bus Depot, industrial
Is the development considered integrated for the purposes of Section 100B of the <i>Rural Fires Act 1997</i> ?	Yes
Is the proposal located in an Urban Release Area as defined under Clause 273 of the EP&A Regulations?	No
Zoning	B6 – Enterprise Corridor
Significant environmental features	The majority of vegetation on site is young, and consequently lacks significant habitat features such as hollow-bearing trees and on-ground refugia. Much of the vegetation is moderately to heavily impacted by exotic weed species as well as planted <i>Melaleuca</i> in the central northern portion of the site. The narrow linear piece of vegetation along Racecourse Road on the lowest contours is recognised as an endangered ecological community, Swamp Sclerophyll Forest on Coastal Floodplains under the BC Act. It does not meet the condition threshold criteria for listing under the corresponding ecological community under the Commonwealth EPBC Act. No threatened flora species was sighted during the survey. No threatened fauna survey has been undertaken, although there is high probability that vegetation on site may be utilised as a foraging resource for a number of highly mobile threatened bird or bat species.
Details of any Aboriginal heritage	No, See Appendix 2
Does the proposal rely on an alternative solution?	Yes, APZ located partially offsite

## 1.6 Submission requirements for BFSA

a description (including the address) of the property on which the development the subject of the application is proposed to be carried out	See section 1.4 - Site description
a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection;	See section 2.1 - Vegetation Assessment
an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property)	See section 2.2 - Effective Slope Assessment

identification of any significant environmental features on the property	See section 1.4 - Site description & APPENDIX 3 - MNES search
the details of any threatened species, population or ecological community identified under the <i>Biodiversity Conservation Act</i> 2016 that is known to the applicant to exist on the property	See APPENDIX 3 - MNES search A Biodiversity Development Assessment Report has also been produced by TBE in support of this development.
the details and location of any Aboriginal object (within the meaning of the <i>National Parks and Wildlife Act</i> 1974) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property	AHIMS search included in APPENDIX 2 An Aboriginal Heritage Due Diligence Assessment has also been produced by TBE in support of this development.
a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters:	Included in Section 2 of this report; BUSHFIRE THREAT ASSESSMENT
(i) the extent to which the development is to provide for setbacks, including Asset Protection Zones;	Detailed in Section 3.1 of this report - Asset protection zones (APZs)
(ii) the siting and adequacy of water supplies for fire fighting;	Detailed in Section 3.3 of this report - Water supplies
(iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency;	Detailed in Section 3.2 of this report - Access for firefighting operations
(iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access;	Detailed in Section 3.2 of this report - Access for firefighting operations
(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response;	Detailed in Section 3.2 of this report - Access for firefighting operations
(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site;	Detailed in Section 3.6 of this report - Landscaping
(vii) the construction standards to be used for building elements in the development;	Detailed in Section 3.5 of this report - Construction standards
(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development;	Detailed in Section 3.3 of this report - Water supplies
(ix) an assessment of the extent to which the proposed development conforms with or deviates from the standards, specific objectives, performance criteria and acceptable solutions set out in Chapters 5-8 of PBP; and	Detailed in Section 4.1 of this report - Conclusion.
(x) identify any fire trails that exist on the property that are on the Register of Certified Fire Trails under RF Act s.62O	Detailed in Section 3.2 of this report - Access for firefighting operations

## 2. BUSHFIRE THREAT ASSESSMENT

To assess the bushfire threat and to determine the minimum required bushfire protection measures for the type & scale of proposed development, an assessment of nearby hazardous vegetation and the effective slope within the vegetation is required.

### 2.1 Vegetation Assessment

The vegetation hazard types within 140 metres have been classified according to Keith Class using the methodology of Appendix 1 of PBP 2019. Where access was not possible, vegetation types have been classified using Aerial Photo Interpretation (API) (NSW SIX & Google satellite Imagery & Nearmap Aerial Imagery). Where a mixture of vegetation types exists, the vegetation fuel loads having the most influence on fire behaviour have been used.

Mapped vegetation within 140m of the proposed building footprint includes woodland & forest-class hazard vegetation as well as a combination of grassland and un-managed forest-class vegetation within the Site. The results of this assessment are detailed in Table 2-1.

Other areas within the Site assessment area constitute low threat vegetation under section A1.10 of PBP 2019 and have been excluded from this assessment, being roads & road reserves, managed vegetation within private property & grass in a minimal fuel condition

### 2.2 Effective Slope Assessment

The effective slope has been assessed for up to 100m from the Site. The site and effective slopes were determined using the methodology of A1.4 & A1.5 of PBP 2019. The slope of the Site was measured via spatial data during map production. 1m DEM data was sourced from NSW Spatial Services and is accurate to 0.3m vertical and 0.8m horizontal (to a 95% Confidence Interval). In accordance with the methodology of PBP 2019 A1.4 & 1.5, the effective slope class in each direction is listed within Table 2-1.

### 2.3 Bushfire Attack Level Assessment

The following assessment determined the probable Bushfire Attack Level (BAL) using the above methodology & values from A1.12.5 of *PBP 2019*.

The BAL is a way of approximating the potential exposure of a building to ember attack, radiant heat and direct flame contact from the identified hazard vegetation. It is measured in increments of radiant heat (expressed in kilowatts/m<sup>2</sup>).

A forest fire danger index (FFDI) of 100 has been used to calculate bushfire behaviour on the site based on its location within the Greater Sydney Region. Table 2-1 provides a summary of the bushfire attack assessment. Figure 2.1 shows the extent of hazard vegetation during site assessment on 30/11/2022.



*Table 2-1 – Bushfire attack assessment*

<i>Aspect</i>	<i>Vegetation Formation</i>	<i>Effective Slope (class)</i>	<i>BAL FZ (Metres)</i>	<i>BAL 40 (Metres)</i>	<i>BAL 29 (Metres)</i>	<i>BAL 19 (Metres)</i>	<i>BAL 12.5 (Metres)</i>
North	<u>Low threat vegetation (excluded)</u>	N/A					
East	<u>Low threat vegetation (excluded)</u>	N/A					
South	<u>Low threat vegetation (excluded)</u>	N/A					
West	<u>Forest</u>	Flat/ upslope	< 18	18-< 24	24-< 33	33< 45	45-< 100

<sup>†</sup> **Note 1:** Existing areas of managed gardens and lawns within curtilage of buildings as well as non-vegetated areas such as roads & road reserves are identified as low threat vegetation exclusions under PBP (2019) A1.10 & are not required to be considered for the purposes of this assessment.



*Figure 2-1 – Vegetation along Eastern boundary, Northern boundary & Western boundary*

### 3. BUSHFIRE PROTECTION MEASURES

As stated in the introduction, class 5-8 commercial & industrial dwellings are not required to meet the below listed Performance Criteria via acceptable solutions for residential dwellings, instead they are used as a guide to ensure the proposal satisfies the Aim & Objectives of PBP & section 8.3.1 of PBP (2019).

The Aim & Objectives of PBP are to:

- afford buildings and their occupants protection from exposure to a bush fire;
- provide for a defensible space to be located around buildings;
- provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;
- ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- provide for ongoing management and maintenance of BPMs; and
- ensure that utility services are adequate to meet the needs of firefighters.

The specific objectives which will be applied to this development in addition to the Aim & Objectives of PBP (2019) are in relation to access, water supply and services, and emergency and evacuation planning:

- to provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- to provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
- provide for the storage of hazardous materials away from the hazard wherever possible.

As such the below listed performance criteria are a used to inform the consent authority, however strict compliance via acceptable solutions is not required in order to satisfy the Aims & Objectives listed above.

## 3.1 Asset protection zones (APZs)

**Table 3-1** outlines the proposed bushfire protection measure to ensure compliance with the aim & objectives of PBP relating to APZ.

The aims & objectives of PBP met by the solutions listed in table 3-1 are;

- afford buildings and their occupants protection from exposure to a bush fire;
- provide for a defensible space to be located around buildings;
- provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;

*Table 3-1 – Performance criteria for access (PBP 2019 Guidelines pg. 66)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
APZs are provided commensurate with the construction of the building; and a defensible space is provided.	APZ distances have been informed by Table A1.12.2 in Appendix 1 of <i>PBP 2019</i> .  An 8m APZ exists in the form of Young St, with a 11m APZ proposed within the Eastern boundary of the site to provide a minimum of 19m APZ separation from the hazard vegetation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No APZ required on North, Western or Southern boundaries.  Young street provides 8m of defensible space from hazard vegetation to the East.  Site design proposed min 11m offset from boundary, leaving 19m APZ in total.
APZs are managed and maintained to prevent the spread of a fire to the building.	APZs to be managed in perpetuity in accordance with the requirements of Appendix 4 of <i>PBP 2019</i> (see Appendix 1 of this document)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ongoing maintenance of APZs can be made a condition of consent.



<b>Performance</b>	<b>Project Solution</b>	<b>Compliance</b>		<b>Comment</b>
The APZ is provided in perpetuity. APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised	APZs are partially within the development site. APZs are located on lands with a slope less than 18 degrees.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11m APZ is provided within the development site, a further 8m offset exists due to width of Young Street. Vegetated buffer to be treated as an APZ, and will be on slope less than 18 degrees.

## 3.2 Access for firefighting operations

**Table 3-1** outlines the proposed performance solution and compliance with the performance criteria for access.

The aims & objectives of PBP met by the solutions listed in table 3-2 are;

- ensure that appropriate operational access and egress for emergency service personnel and occupants is available;

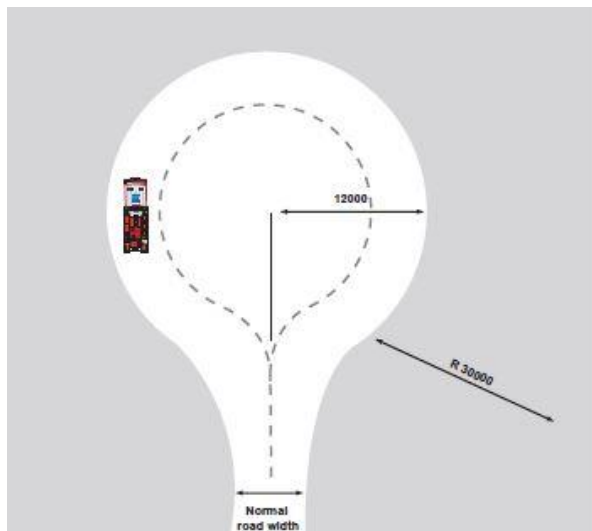
*Table 3-2 – Performance criteria for access (PBP 2019 Guidelines pg. 66)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	Property access roads are two-wheel drive, all weather roads.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
The capacity of access roads is adequate for firefighting vehicles.	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes), bridges and causeways are to clearly indicate load rating.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
There is appropriate access to water supply.	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies. Multiple hydrants located surrounding the site. A large hydrant connection will be provided within the Site.
Firefighting vehicles can access the building/s and exit the property safely.	The internal road network provides numerous alternative access routes for all buildings.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.

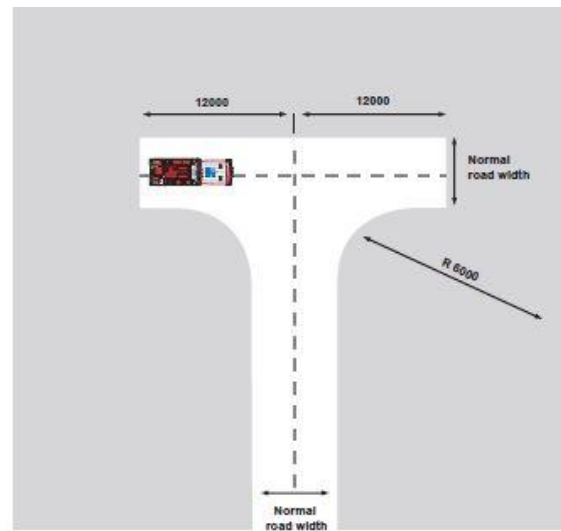
Performance	Project Solution	Compliance		Comment
	Access roads have a minimum 4m carriageway width;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
	In forest, woodland and heath situations, access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not applicable.
	A minimum vertical clearance of 4m is maintained to any overhanging obstructions, including tree branches;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
	Internal roads are through-roads, and large hard-stand areas provide suitable turning areas exceeding the requirements of Appendix 3 of PBP 2019;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Internal roads sufficient for buses to turn will meet or exceed the requirements of Appendix 3 of PBP 2019.
	Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
	The minimum distance between inner and outer curves is 6m;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
	The crossfall is not more than 10 degrees;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.
	Maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies.

<i>Performance</i>	<i>Project Solution</i>	<i>Compliance</i>	<i>Comment</i>
<b>BFSA criteria to be addressed;</b>		<b>Comments;</b>	
the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency;		In the event of a bush fire emergency the public roads in the vicinity are considered adequate to handle increased volumes of traffic. Hely Street & Young Street have access to the reserve, and multiple approaches are feasible.	
whether or not public roads in the vicinity that link with the fire trail network have two-way access;		A search of the NSW Fire Trail Register does not display any fire trails in the vicinity of this site.	
the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response;		For the purposes of an emergency response, arrangements for access & egress to the site appear adequate, as although one primary access point is proposed, it is a double-width driveway access that should allow rapid access & egress from the site.	

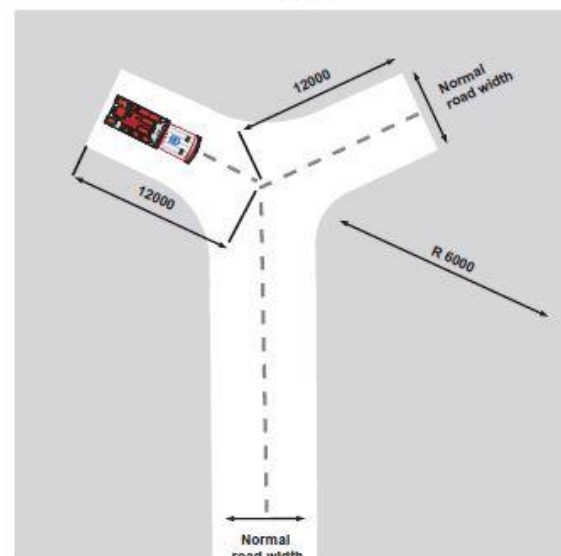
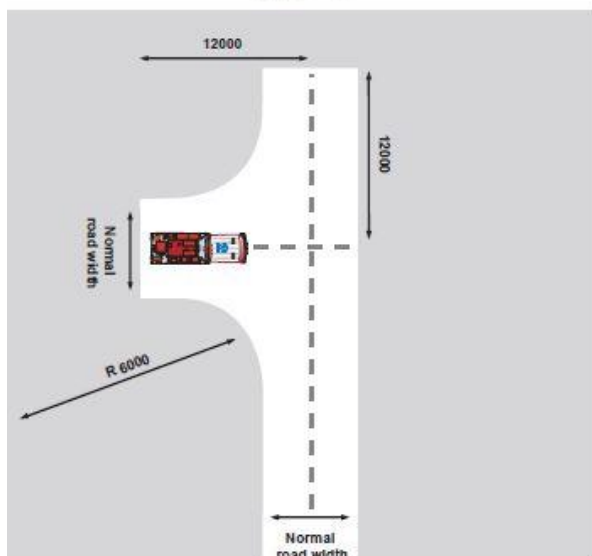




**Type C**



**Type D**



**Figure 3-1 – Turning head dimensions**

### 3.3 Water supplies

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of bushfire. Figure 1-5 outlines the proposal's compliance with the acceptable solutions for reticulated water supply.

The aims & objectives of PBP met by the solutions listed in table 3-3 are;

- ensure that utility services are adequate to meet the needs of firefighters.
- to provide adequate services of water for the protection of buildings during and after the passage of bush fire.

*Table 3-3 – Performance criteria for water supplies (PBP 2019 guidelines pg. 67)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
Adequate water supply is provided for firefighting purposes.	Reticulated water is to be provided to the development, where available; and a static water supply is provided where no reticulated water is available.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Reticulated water connection available. Supply considered adequate for fire-fighting purposes.
Water supplies are located at regular intervals, and The water supply is accessible and reliable for firefighting operations.	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2017; Hydrants are not located within any road carriageway;	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies. Can be made a condition of consent.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Complies. Can be made a condition of consent.
The integrity of the water supply is maintained.	All above-ground water service pipes are metal, including and up to any taps. Above ground water storage tank shall be of concrete or metal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
A static water supply is provided for firefighting purposes in areas where reticulated water is not available.	N/A – reticulated water is provided	N/A	N/A	Not applicable.

## 3.4 Electricity Services

Table 3-4 outlines the proposed performance solution and compliance with the performance criteria for electricity services.

The aims & objectives of PBP met by the solutions listed in table 3-4 are;

- ensure that utility services are adequate to meet the needs of firefighters.

*Table 3-4 – Performance criteria for electricity services (PBP 2019 guidelines pg. 68)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
locate gas and electricity so as not to contribute to the risk of fire to a building	Where practicable, electrical transmission lines are underground.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
	Where overhead electrical transmission lines are proposed: Lines are installed with short pole spacing (30m), unless crossing gullies, gorges or riparian areas; and No part of a tree is closer to a power line than the distance set out in <i>ISSC3 Guideline for Managing Vegetation Near Power Lines</i> .	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.

## 3.4 Gas services

Table 3-5 outlines the proposed performance solution and compliance with the performance criteria for gas supply.

The aims & objectives of PBP met by the solutions listed in table 3-5 are;

- ensure that utility services are adequate to meet the needs of firefighters.
- provide for the storage of hazardous materials away from the hazard wherever possible.

*Table 3-5 – Performance criteria for gas supplies (PBP 2019 Guidelines pg. 68)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
locate gas and electricity so as not to contribute to the risk of fire to a building	Reticulated or bottled gas bottles are to be installed and maintained in accordance with AS/NZS 1596 (2014), the requirements of relevant authorities and metal piping is to be used.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
	All fixed gas cylinders are to be kept clear of flammable materials to a distance of 10m and shielded on the hazard side.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
	Connections to and from gas cylinders are metal.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
	Polymer sheathed flexible gas supply lines are not used.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
	Above ground gas service pipes are metal, including and up to any outlets.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.



## 3.5 Construction standards

The NCC does not provide any bushfire specific requirements for buildings of Class 5-8 and as such AS 3959 and the NASH Standard are not considered as a set of Deemed to Satisfy provisions. Compliance with AS3959 and the NASH Standard should, however, be considered when meeting the aims and objectives of PBP 2019. Bushfire construction recommendations are dependent on the level of bushfire risk and the provision of adequate access.

Table 3-6 outlines the proposed solution and compliance with the performance criteria for construction standards.

The aims & objectives of PBP met by the solutions listed in table 3-6 are;

- afford buildings and their occupants protection from exposure to a bush fire.

*Table 3-6 – Performance criteria for construction standards (PBP 2019 Guidelines pg. 68)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
The proposed building can withstand bush fire attack in the form of embers, radiant heat and flame contact.	BAL has been determined in accordance with Table A1.12.5 of PBP 2019 to be BAL-40. Therefore, in addition to the general fire safety construction provisions and requirements of the NCC, bushfire protection construction standards of level BAL-40 should be considered via the NASH standard or AS 3959 (2018).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.
Proposed fences and gates are designed to minimise the spread of bush fire.	All fences within 6m of a building or in areas of BAL-29 or greater are to be constructed of non-combustible material.  All other fences are to be constructed of hardwood and/or non-combustible material.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.

<i>Performance</i>	<i>Project Solution</i>	<i>Compliance</i>		<i>Comment</i>
Proposed Class 10a buildings are designed to minimise the spread of bush fire.	Any class 10a buildings are either located >6m from other buildings (in which case no other bushfire protection measures are required) or, if located within 6m of other buildings, are constructed to the appropriate BAL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.

## 3.6 Landscaping

Table 3.7 outlines the proposed performance solution and compliance with the performance criteria for landscaping

The aims & objectives of PBP met by the solutions listed in table 3-7 are;

- provide for ongoing management and maintenance of BPMs.

*Table 3-7 – Performance criteria for construction standards (PBP 2019 Guidelines pg. 68)*

Performance criteria	Project Solution	Compliance		Comment
		Acceptable solution proposed	Performance criteria proposed	
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	<p>Compliance with the NSW RFS 'Asset protection zone standards' (see Appendix 1 of this document);</p> <p>a clear area of low-cut lawn or pavement is maintained adjacent to the building/s;</p> <p>fencing is constructed in accordance with section 7.6 of <i>PBP 2019</i> (see Table 3.6 above); and</p> <p>trees and shrubs are located so that:</p> <ul style="list-style-type: none"> <li>• the branches will not overhang the roof;</li> <li>• the tree canopy is not continuous; and</li> <li>• any proposed windbreak is located on the elevation from which fires are likely to approach.</li> </ul>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Can be made a condition of consent.

## 3.7 Specific Objectives for buildings of Class 5 to 8 under the NCC

Whilst bush fire is not captured in the NCC for Class 5-8 buildings, a number of objectives are applied under section 8.3.1 of *PBP 2019* in relation to access, water supply and services, and emergency and evacuation planning. Table 3.8 outlines the proposed performance solutions and compliance with the specific objectives for buildings of Class 5-8.

**Table 3-8 – Objectives and proposed solutions specific to buildings of Class 5-8 under the NCC**

<b>Objective</b>	<b>Project Solution</b>	<b>Compliance</b>
To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation.	Access provided in accordance with section 3.2 of this report.	<input checked="" type="checkbox"/>
To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development.	A Bush Fire Emergency Management and Evacuation Plan is to be prepared by the operator consistent with the NSW RFS publication: <i>A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan</i> , and AS3745:2010.	Can be made a condition of development consent
To provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building	Services provided in accordance with sections 3.3, 3.4, and 3.5 of this report.	<input checked="" type="checkbox"/>
Provide for the storage of hazardous materials away from the hazard wherever possible.	<p>Storage and handling of hazardous materials in accordance with:</p> <ul style="list-style-type: none"> <li>AS1940:2017 The storage and handling of flammable and combustible liquids</li> <li>The recommendations of any preliminary hazards assessment - in accordance with SEPP 33</li> </ul> <p>Due to proposed on-site fuel storage, a report addressing the requirements of SEPP 33 may be required to determine if the proposal is a potentially hazardous or offensive development. If the provisions of SEPP 33 are determined to apply to the proposal, a preliminary hazard analysis will be required.</p>	Can be made a condition of development consent



## 3.8 Hazardous Industry

Some developments are considered by their very nature to be hazardous, as much for their ability to start bush fires as their susceptibility to bush fire impacts. A portion of the proposal (fuel storage tank) falls under the section of PBP (2019) 8.3.9 *Hazardous Industry*.

As per the Pre-DA advice, due to the proposed on-site fuel storage a report addressing the requirements of SEPP 33 is required to determine if the proposal is a potentially hazardous or offensive development. If the provisions of SEPP 33 are determined to apply to the proposal, a preliminary hazard analysis will be required and must accompany the DA.

From a bushfire perspective, the siting of the fuel tanks does not raise substantial issues, being distant from identified hazard vegetation and easily accessible in case an emergency response is required. A fire suppression spray system & emergency response procedure is required in order to address this feature substantively. Regardless, the RFS may provide input when assessing this report, to determine if a performance-based solution or BFDB will be required.

## 4. CONCLUSION & RECOMMENDATIONS

### 4.1 Conclusion

This assessment has found that bushfire may affect the proposed development, with potential exposure to radiant heat and ember attack from existing forest-class vegetation to the East.

In recognition of the requirements of *PBP 2019* and the bushfire risk posed to the site by the identified hazard vegetation, *Travers Bushfire & Ecology* propose the following combination of bushfire measures;

- Vegetation in the North-East of the Site must be managed as an APZ in perpetuity for a distance of not less than 11m,
- Building construction for exposed aspects in accordance with the requirements for BAL-40,
- Provision of access, water, electricity and gas supply in accordance with the acceptable solutions for residential infill development outlined in *PBP 2019*, and
- Preparation of a Bush Fire Emergency Management and Evacuation Plan
- If appropriate and required, a fire safety study must assess the risk of fuel storage facilities & recommend appropriate design & maintenance procedures in line with the NSW Dept. Planning Hazardous Industry Planning Advisory Paper No 2 - *Fire Safety Study Guidelines*.

The following recommendations are provided to ensure that the development is in accordance with, or exceeds, the requirements of *PBP 2019*.

### 4.2 Recommendations

**Recommendation 1** - The development is as generally indicated on the attached SCHEDULE 1, Plan for Bushfire Protection Measures.

**Recommendation 2** - APZs are to be provided within the proposed development in accordance with Table 3.1 of this report, as generally depicted within SCHEDULE 1 and maintained in perpetuity, in accordance with *Standards for Asset Protection Zones* (NSW RFS, 2005).

**Recommendation 3** - Access is provided in accordance with section 3.2 of this report including turning head requirements in line with A3.3 of *PBP 2019*.

**Recommendation 4** - Water, electricity and gas supply is provided in accordance with sections 3.3, 3.4 and 3.5 of this report.

**Recommendation 5** - Buildings are to be constructed in accordance with the findings of this report and the requirements of *AS3959 Construction of buildings in bushfire prone areas (2018)* and the *NASH standard*, as per *Planning for Bush Fire Protection 2019* for BAL-40. This is in addition to the general fire safety construction provisions and other requirements of the NCC.

**Recommendation 6** – A Bush Fire Emergency Management and Evacuation Plan should be prepared consistent with the NSW RFS publication: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*, and AS3745:2010.

**Recommendation 7** – If appropriate and required, a fire safety study must assess the risk of fuel storage facilities & recommend appropriate design & maintenance procedures in line with the NSW Dept. Planning Hazardous Industry Planning Advisory Paper No 2 - *Fire Safety Study Guidelines*

## 5. REFERENCES

- 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.
- Councils of Standards Australia AS3959 (2018) – *Australian Standard Construction of buildings in bush fire-prone areas.*
- Craig & Rhodes (2020) – *Proposed Subdivision of Lots 830, 831 & 832 D.P.2475 35-55 TENTH AVENUE, AUSTRAL*
- Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT.* The Department of Environment and Climate Change.
- Rural Fire Service (2019) - *Planning for bushfire protection – a guide for councils, planners, fire authorities and developers.* NSW Rural Fire Service.
- Tan, B., Midgley, S., Douglas, G. and Short (2004) - *A methodology for assessing bushfire attack.* RFS Development Control Service.



**SCHEDULE 1.    PLAN OF BUSHFIRE PROTECTION MEASURES**





DISCLAIMER: CAD not georeferenced and has been aligned to georeferenced CAD 19881A01L.dwg. Verification by registered surveyor required prior to finalisation

#### Legend

- Site boundary (source:CAD)
- Contour 1m (source:LiDAR)
- Asset Protection Zone (APZ)

Aerial source: Nearmap



PROJECT & MXD REFERENCE  
Faunce & Young St, West Gosford  
18URB09\_BF001

DATE & ISSUE NUMBER  
14/12/2022  
Issue 1

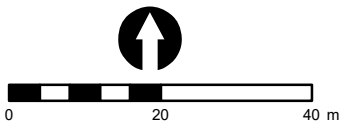
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SCALE & COORDINATE SYSTEM  
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GDA2020 MGA Zone 56

TITLE

**Schedule 1 - Bushfire Protection Measures**

Document Path: N:\GIS STORAGE\N Drive\1\_GDA2020\_MappingProjects\18URB09\_Faunce\_YoungSt\_WestGosford\MXD\18URB09\_BF001.mxd



Disclaimer: 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 are to be confirmed by a registered surveyor.

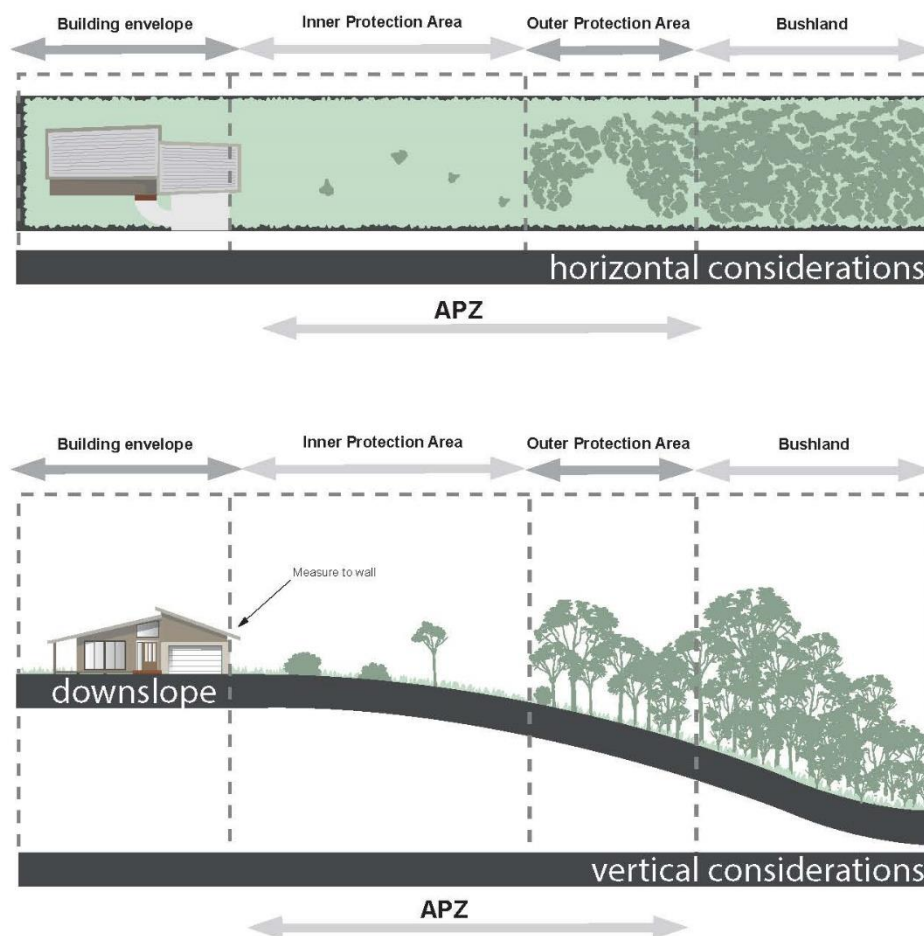


# APPENDIX 1. MANAGEMENT OF ASSET PROTECTION ZONES

The RFS provides basic advice in respect of managing APZs through documents such as, *Standards for Asset Protection Zones* (RFS, 2005), with landscaping to comply with Appendix 4 of *PBP*.

In forest vegetation an APZ may consist of two subordinate areas, an inner protection area (IPA) and an outer protection area (OPA). The IPA is the area immediately surrounding the building and the OPA (up to 30% of the total APZ width) is between the IPA and the hazard.

A typical APZ is graphically represented below.



**APZs and progressive reduction in fuel loads**  
(Source: *PBP*, 2019)

**Note:** Vegetation management as shown is for illustrative purposes only. Specific advice is to be sought regarding vegetation removal and retention from a qualified and experienced expert to ensure APZs comply with the RFS performance criteria.

The following table adapted from *PBP 2019* provides maintenance advice for vegetation within the IPA and OPA. The APZ is to be maintained in perpetuity and maintenance should be undertaken regularly, particularly in advance of the bushfire season.

	Inner Protection Area	Outer Protection Area
Trees	<ul style="list-style-type: none"> <li>➤ Tree canopy cover should be <b>less than 15%</b> at maturity;</li> <li>➤ Trees at maturity should not touch or overhang the building;</li> <li>➤ Lower limbs should be removed up to a height of <b>2m above the ground</b>;</li> <li>➤ Tree canopies should be separated by <b>2 to 5m</b>; and</li> <li>➤ Preference should be given to retaining smooth barked and evergreen trees.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Tree canopy cover should be <b>less than 30%</b>; and</li> <li>➤ Canopies should be separated by <b>2 to 5m</b>.</li> </ul>
Shrubs	<ul style="list-style-type: none"> <li>➤ Large discontinuities or gaps in the vegetation should be provided to slow down or break the progress of fire towards buildings;</li> <li>➤ Shrubs should not be located under trees;</li> <li>➤ Shrubs should form <b>less than 10%</b> ground cover; and</li> <li>➤ Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Shrubs should not form a continuous canopy; and</li> <li>➤ Shrubs should <b>form less than 20%</b> of ground cover.</li> </ul>
Grass and Leaf Litter	<ul style="list-style-type: none"> <li>➤ Grass should be kept mown to a height of <b>less than 100mm</b>; and</li> <li>➤ Leaves and other debris should be removed</li> </ul>	<ul style="list-style-type: none"> <li>➤ Grass should be kept mown to a height of <b>less than 100mm</b>; and</li> <li>➤ Leaf and other debris should be removed.</li> </ul>

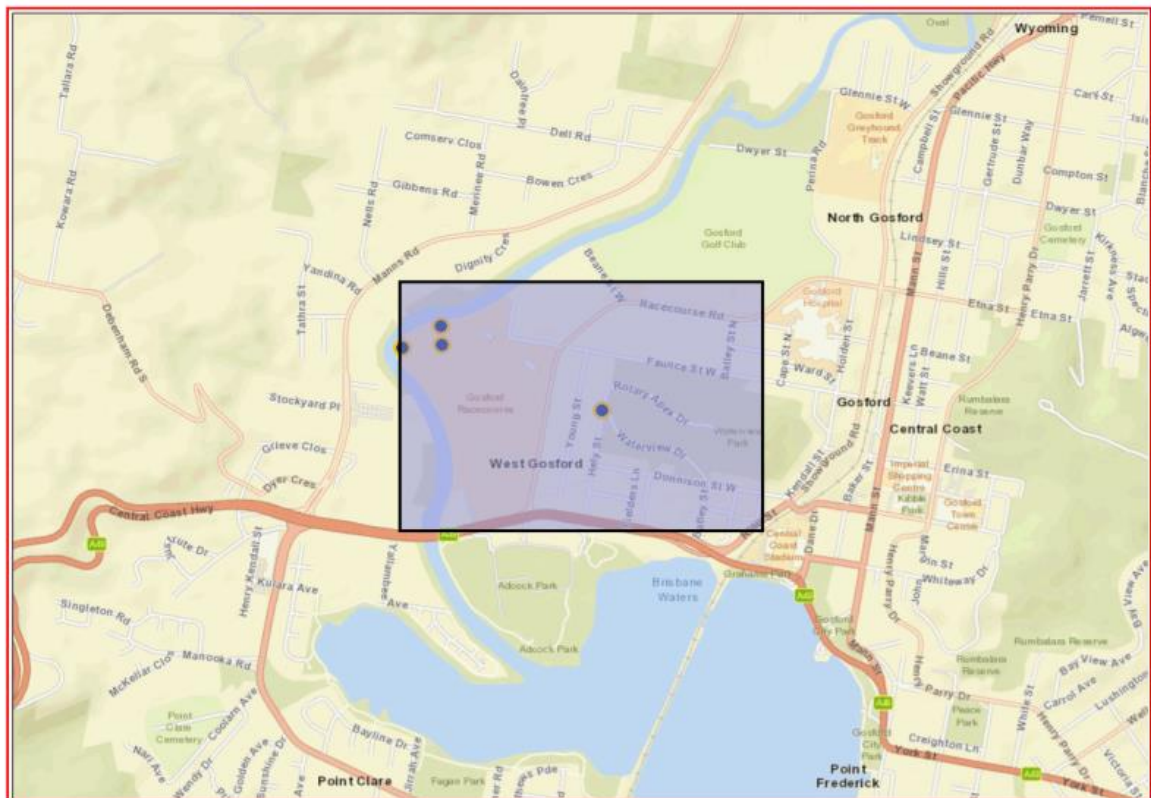
	All Management Zones
Weeds	<ul style="list-style-type: none"> <li>➤ All weeds should be removed in accordance with best practice guidelines, and measures taken to prevent their further spread</li> </ul>
Landscaping	<ul style="list-style-type: none"> <li>➤ Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways;</li> <li>➤ Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come into contact with the building;</li> <li>➤ When considering landscape species consideration needs to be given to estimated size of the plant at maturity;</li> <li>➤ Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;</li> <li>➤ Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;</li> <li>➤ Avoid planting of deciduous species that may increase fuel at surface / ground level (i.e. leaf litter);</li> <li>➤ Avoid climbing species to walls and pergolas;</li> <li>➤ Locate combustible materials such as woodchips / mulch, flammable fuel stores away from the building;</li> <li>➤ Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and</li> <li>➤ Use of low flammability vegetation species.</li> </ul>



## APPENDIX 2. AHMIS – ABORIGINAL HERITAGE – SITES AND PLACES SEARCH

AHIMS Web Service search for the following area at Lat, Long From : -33.4276, 151.3218 - Lat, Long To : -33.4186, 151.3372, conducted by Samuel Riley on 22 November 2022.

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:

	<b>4 Aboriginal sites are recorded in or near the above location.</b>
	<b>0 Aboriginal places have been declared in or near the above location. *</b>

## APPENDIX 3. MNES SEARCH



Australian Government

Department of Climate Change, Energy,  
the Environment and Water

# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 02-Dec-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

# Summary

## Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	None
<a href="#">Wetlands of International Importance (Ramsar</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	None
<a href="#">Listed Threatened Ecological Communities:</a>	3
<a href="#">Listed Threatened Species:</a>	73
<a href="#">Listed Migratory Species:</a>	46

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Lands:</a>	None
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	50
<a href="#">Whales and Other Cetaceans:</a>	None
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	None
<a href="#">Habitat Critical to the Survival of Marine Turtles:</a>	None

## Extra Information

This part of the report provides information that may also be relevant to the area you have

<a href="#">State and Territory Reserves:</a>	None
<a href="#">Regional Forest Agreements:</a>	1
<a href="#">Nationally Important Wetlands:</a>	1
<a href="#">EPBC Act Referrals:</a>	1
<a href="#">Key Ecological Features (Marine):</a>	None
<a href="#">Biologically Important Areas:</a>	None
<a href="#">Bioregional Assessments:</a>	1
<a href="#">Geological and Bioregional Assessments:</a>	None

# Details

## Matters of National Environmental Significance

Listed Threatened Ecological Communities

[ Resource Information ]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
<a href="#">Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community</a>	Endangered	Community likely to occur within area
<a href="#">Coastal Upland Swamps in the Sydney Basin Bioregion</a>	Endangered	Community likely to occur within area
<a href="#">River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria</a>	Critically Endangered	Community likely to occur within area

Listed Threatened Species

[ Resource Information ]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
<a href="#">Anthochaera phrygia</a> Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Botaurus poiciloptilus</a> Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Callocephalon fimbriatum</a> Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
<a href="#">Calyptorhynchus lathami lathami</a> South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea antipodensis gibsoni</a> Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Erythroriorchis radiatus</a> Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area
<a href="#">Grantiella picta</a> Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica baueri</a> Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pachyptila turtur subantarctica</a> Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pycnoptilus floccosus</a> Pilotbird [525]	Vulnerable	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche bulleri</a> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche bulleri platei</a> Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
FISH		
<a href="#">Epinephelus daemeli</a> Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Macquaria australasica</a> Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
<a href="#">Prototroctes maraena</a> Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thunnus maccoyii</a> Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area
FROG		
<a href="#">Heleioporus australiacus</a> Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Litoria aurea</a> Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Mixophyes balbus</a> Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Mixophyes iteratus</a> Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area
MAMMAL		
<a href="#">Chalinolobus dwyeri</a> Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Dasyurus maculatus maculatus (SE mainland population)</a> Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
<a href="#">Notamacropus parma</a> Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area
<a href="#">Petauroides volans</a> Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area
<a href="#">Petaurus australis australis</a> Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Petrogale penicillata</a> Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area
<a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a> Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area
<a href="#">Potorous tridactylus tridactylus</a> Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Pseudomys novaehollandiae</a> New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Pteropus poliocephalus</a> Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
<a href="#">Acacia bynoeana</a> Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area
<a href="#">Asterolasia elegans</a> [56780]	Endangered	Species or species habitat may occur within area
<a href="#">Baloskion longipes</a> Dense Cord-rush [68511]	Vulnerable	Species or species habitat may occur within area
<a href="#">Caladenia tessellata</a> Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Cryptostylis hunteriana</a> Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Eucalyptus camfieldii</a> Camfield's Stringybark [15460]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Genoplesium baueri</a> Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat likely to occur within area
<a href="#">Lasiopetalum joyceae</a> [20311]	Vulnerable	Species or species habitat may occur within area
<a href="#">Melaleuca biconvexa</a> Biconvex Paperbark [5583]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Melaleuca deanei</a> Deane's Melaleuca [5818]	Vulnerable	Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Persoonia hirsuta</a> Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat likely to occur within area
<a href="#">Pimelea curviflora var. curviflora</a> [4182]	Vulnerable	Species or species habitat may occur within area
<a href="#">Prostanthera askania</a> Tranquillity Mintbush, Tranquility Mintbush [64958]	Endangered	Species or species habitat may occur within area
<a href="#">Rhodamnia rubescens</a> Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Rhodomyrtus psidioides</a> Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Syzygium paniculatum</a> Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thesium australe</a> Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hoplocephalus bungaroides</a> Broad-headed Snake [1182]	Vulnerable	Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

SHARK		
<a href="#">Sphyrna lewini</a> Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[ <a href="#">Resource Information</a> ]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardenna grisea</a> Sooty Shearwater [82651]		Species or species habitat likely to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat may occur within area
<a href="#">Thalassarche bulleri</a> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Migratory Marine Species		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Lamna nasus</a> Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
<a href="#">Mobula alfredi as Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area
<a href="#">Mobula birostris as Manta birostris</a> Giant Manta Ray [90034]		Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Migratory Terrestrial Species		
<a href="#">Cuculus optatus</a> Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat likely to occur within area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat likely to occur within area
<a href="#">Symposiachrus trivirgatus as Monarcha trivirgatus</a> Spectacled Monarch [83946]		Species or species habitat may occur within area
Migratory Wetlands Species		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area

### Other Matters Protected by the EPBC Act

Listed Marine Species	[ Resource Information ]	
Scientific Name	Threatened Category	Presence Text
Bird		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat may occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
<a href="#">Ardenna grisea as Puffinus griseus</a> Sooty Shearwater [82651]		Species or species habitat likely to occur within area
<a href="#">Bubulcus ibis as Ardea ibis</a> Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
<a href="#">Diomedea antipodensis</a> Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea antipodensis gibsoni as Diomedea gibsoni</a> Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Diomedea epomophora</a> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Diomedea exulans</a> Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Diomedea sanfordi</a> Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
<a href="#">Fregata minor</a> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat may occur within area
<a href="#">Gallinago hardwickii</a> Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
<a href="#">Hirundapus caudacutus</a> White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Macronectes halli</a> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
<a href="#">Monarcha melanopsis</a> Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Myiagra cyanoleuca</a> Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
<a href="#">Neophema chrysostoma</a> Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pachyptila turtur</a> Fairy Prion [1066]		Species or species habitat likely to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Species or species habitat known to occur within area
<a href="#">Phaethon lepturus</a> White-tailed Tropicbird [1014]		Species or species habitat may occur within area



Scientific Name	Threatened Category	Presence Text
<a href="#">Rhipidura rufifrons</a> Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
<a href="#">Rostratula australis as Rostratula benghalensis (sensu lato)</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area
<a href="#">Symposiachrus trivirgatus as Monarcha trivirgatus</a> Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area
<a href="#">Thalassarche bulleri</a> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche bulleri platei as Thalassarche sp. nov.</a> Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche eremita</a> Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
<a href="#">Thalassarche impavida</a> Campbell Albatross, Campbell Black- browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
<a href="#">Thalassarche melanophris</a> Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
<a href="#">Thalassarche salvini</a> Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Thalassarche steadi</a> White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area
Mammal		
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat may occur within area
Reptile		
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

## Extra Information

Regional Forest Agreements

[ [Resource Information](#) ]

Note that all areas with completed RFAs have been included.

RFA Name	State
<a href="#">North East NSW RFA</a>	New South Wales

Nationally Important Wetlands

[ [Resource Information](#) ]

Wetland Name	State
<a href="#">Brisbane Water Estuary</a>	NSW

EPBC Act Referrals

[ [Resource Information](#) ]

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
<a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a>	2015/7522	Not Controlled Action	Completed

Bioregional Assessments			
SubRegion	BioRegion	Website	
Hunter	Northern Sydney Basin	<a href="#">BA website</a>	

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

## 3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.



# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
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- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

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Department of Climate Change, Energy, the Environment and Water

GPO Box 3090

Canberra ACT 2601 Australia

+61 2 6274 1111