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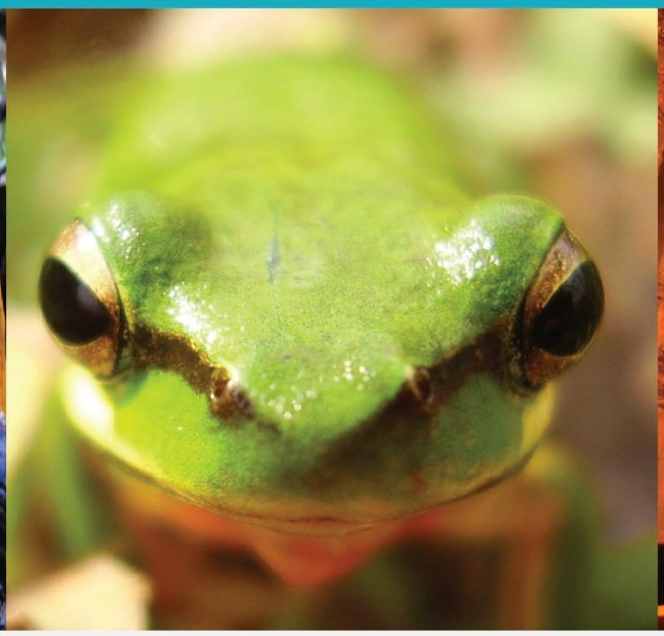


BUSHFIRE PROTECTION ASSESSMENT

Multi Storey Mixed Use Development

Lot 1, DP 1194024

10 Young Street

West Gosford

Under Section 100B of the Rural Fires Act (1997)

22 July 2022

(REF: 18WTP04.2)

BUSHFIRE PROTECTION ASSESSMENT

Proposed multi storey and mixed-use development

Lot 1, DP 1194024 10 Young Street, West Gosford

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File:	18WTP04.2

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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 bushfire protection assessment has been undertaken for the proposed mixed-use multi-storey development within Lot 1 DP1194024, No. 10 Young Street, West Gosford. The proposal also includes the two neighbouring lots at; 61 Central Coast Highway - Lot 201 DP1201057 and 1 Racecourse Road, West Gosford, Lot 11 DP1201715. The proposed development involves the construction of a twelve (12) storey building containing ground floor retail uses, above ground car parking, hotel component and residential units.

The proposed hotel component is identified by the NSW Rural Fire Service (NSW RFS) as being a special fire protection purpose (SFPP) development and, as a result, this classification requires the NSW RFS to issue a bushfire safety authority (BSA) in accordance with Section 100b of the *Rural Fires Act 1997 (RF Act).*

This proposal has been assessed in accordance with *Planning for Bush Fire Protection 2019 (PBP). PBP* dictates that the subsequent extent of bushfire attack that can potentially impact a SFPP building must not exceed a radiant heat flux of 10kW/m^2. This rating assists in determining the size of the asset protection zone (APZ) to provide the necessary defendable space between hazardous vegetation and a building.

This assessment has found that the nearest bushfire hazard is located over 100m from the proposed building footprint in the south and over 50m from grassland vegetation in the west.

This assessment has concluded that the proposed future development can provide:

- APZs exceeding the setbacks outlined within *PBP* (Table A1.12.1 7 Table A1.12.5 FFDI 100);
- Provision of access in accordance with the acceptable solutions outlined in *PBP.*
- Water, electricity and gas supply in compliance with the acceptable solutions outlined in *PBP;* and
- Emergency management and evacuation in compliance with *PBP* and NSW RFS guidelines for the *Preparation of an Emergency / Evacuation Plan*.

GLOSSARY OF TERMS

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

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ATTACHMENTS

1. INTRODUCTION

Travers bushfire & ecology has been engaged to undertake a bushfire protection assessment for the proposed development located at Lot 1, DP 1194024, Lot 201, DP1201057 & Lot 11, DP1201715, West Gosford. The proposal, containing mixed uses, has been assessed as a SFPP development under Section 100B of the *Rural Fires Act 1997 (RF Act)* and is located on land identified as bushfire prone on the Central Coast Council bushfire prone land map (refer Figure 1-1). This triggers the need for an integrated referral to the NSW RFS and an assessment against *PBP* for any future development application within the site. This will also require the NSW RFS to consider issuing a bushfire safety authority (BSA).

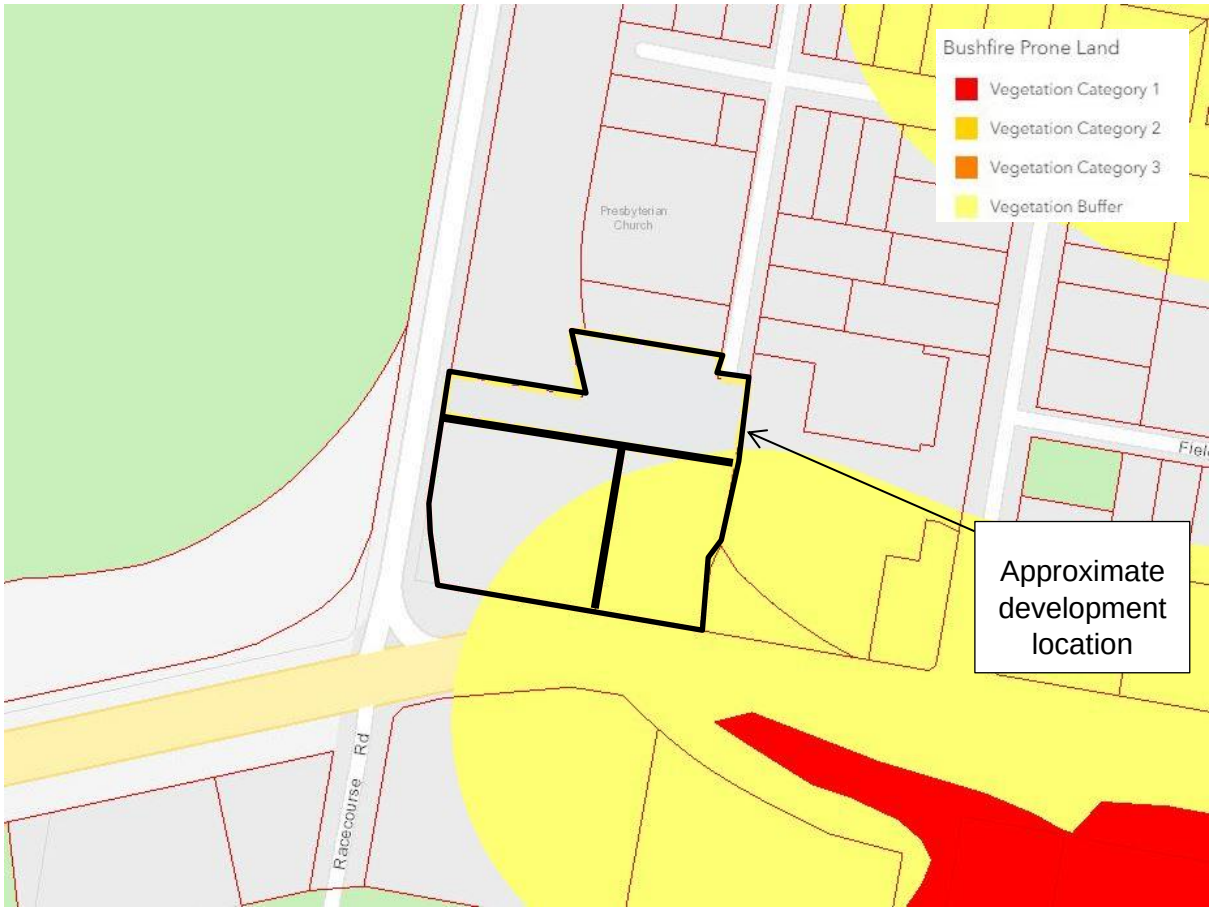

Figure 1-1 – Bushfire Prone Land Map

(source: Planning Portal, 2022)

1.1 Aims of the assessment

The aims of the bushfire protection assessment are to:

- review the bushfire threat to the landscape
- undertake a bushfire attack assessment in accordance with *PBP*
- provide advice on mitigation measures, including the provision of asset protection zones (APZs), construction standards and other specific fire management issues
- review the potential to carry out hazard management over the landscape.

1.2 Proposed development

As depicted in Figure 1.2 -1.3, the proposed development will include a twelve (12) storey mixed use development containing ground floor retail uses, above ground parking, hotel and residential units (as shop-top housing).

Primary access to the facility will be provided via an 8m wide right of easement extension linking Young Street in the north-east to Racecourse Road in the west. This carriageway width is 7m with parking provided outside of this width.

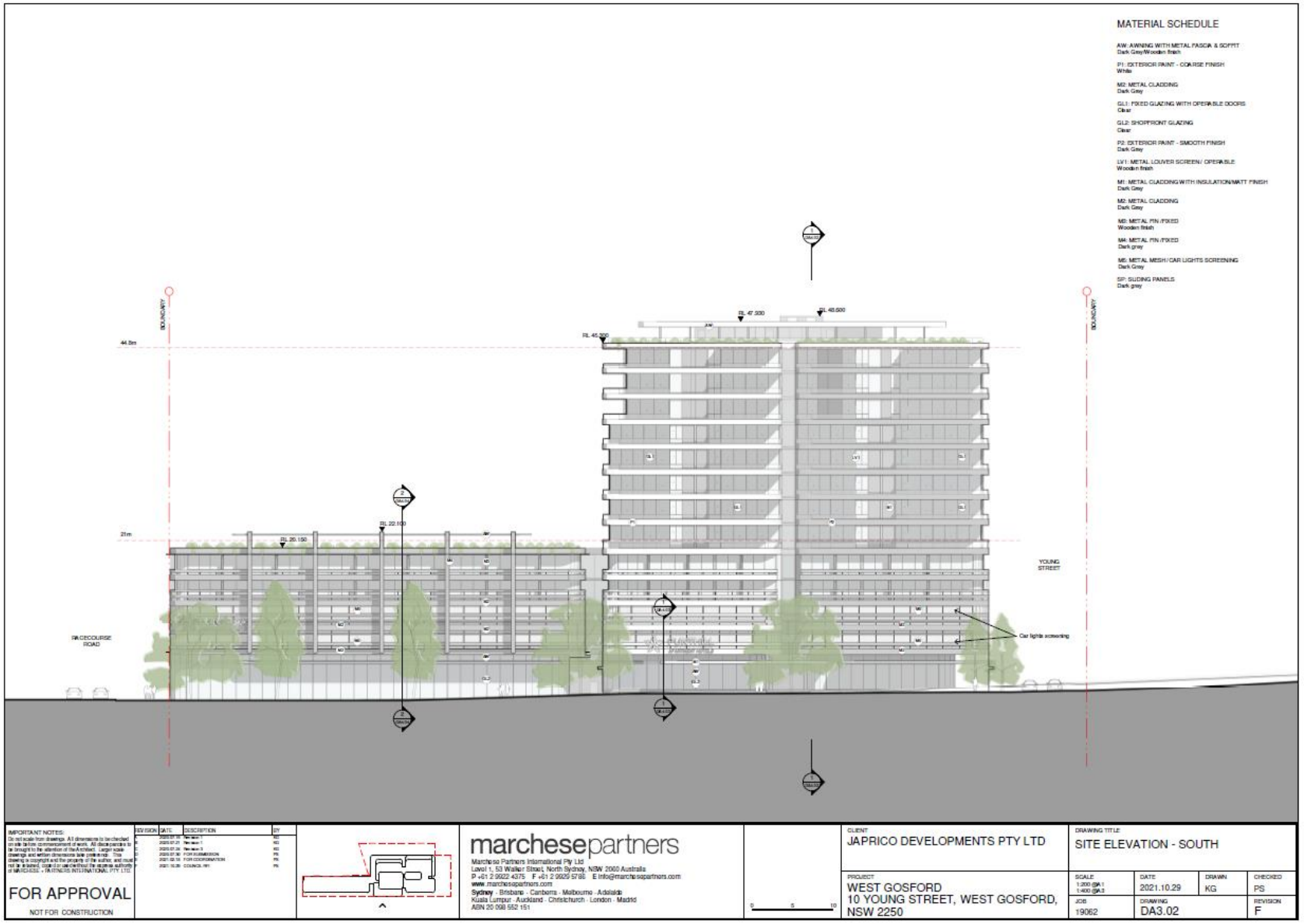

Figure 1-2 – Site Elevation

(Source: Marchese partners. Dwg. ref –DA3.02, Rev F, dated 29/10/2021)

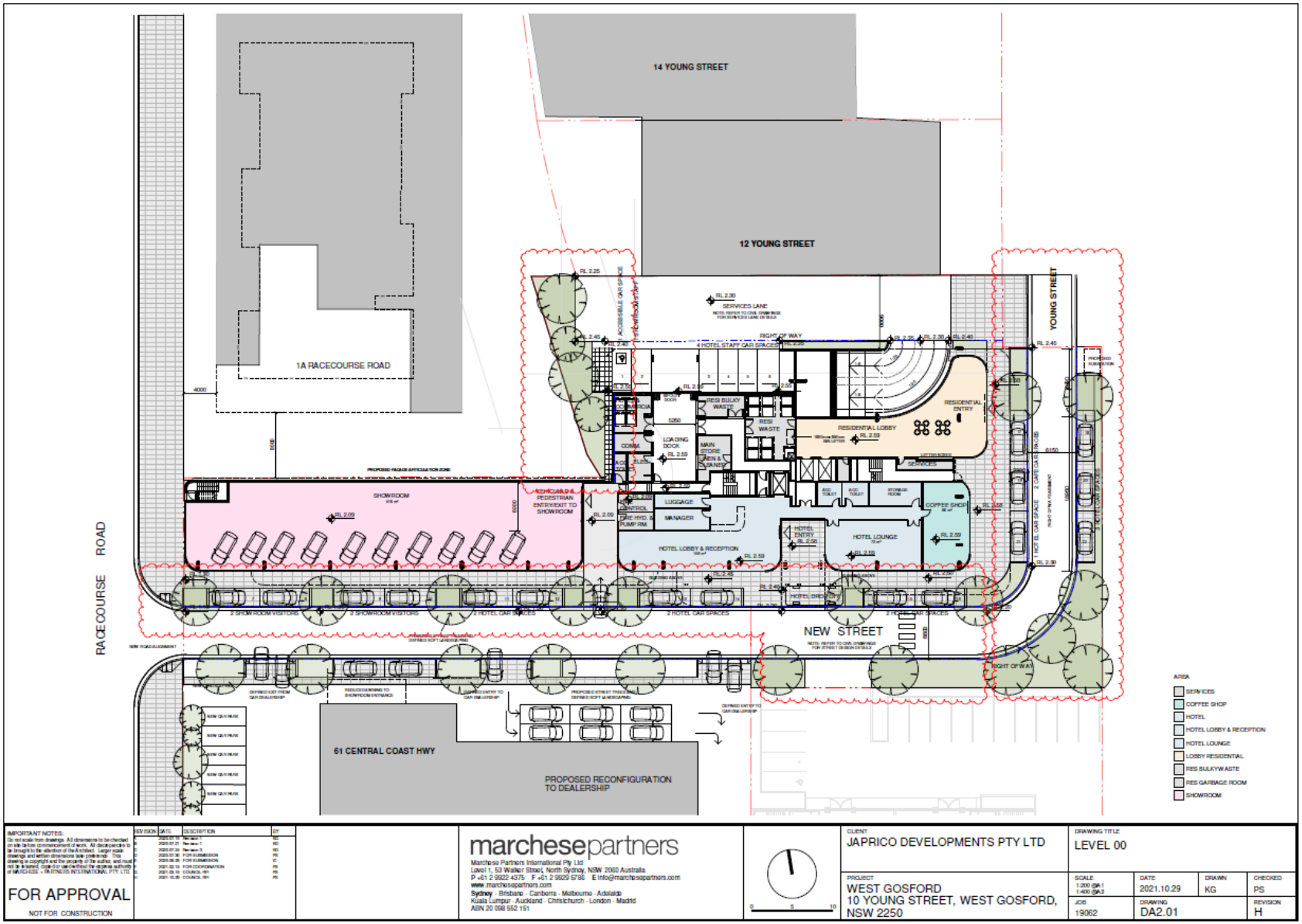

Figure 1-3 – Overall Masterplan D.A. No. 2

(Source: Marchese partners. Dwg. ref –DA2.01, Rev H, dated 29/10/2021)

1.3 Information collation

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

- Sit plan, sections etc. prepared by Marchese Partners on the 29/10/2021
- *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)*

An inspection of the proposed development site and surrounds was undertaken to assess the topography, slopes, aspect, drainage, vegetation and adjoining land use. The identification of existing bushfire measures and a visual appraisal of bushfire hazard and risk were also undertaken.

1.4 Site description

The site is located within 10 Young Street, West Gosford, and includes Lot 1, DP 3781794, along with Lot 11, DP1201715 & Lot 201, DP1201057.

The development site is located within the local government area (LGA) of Central Coast Council and is located 20m east of Gosford Race Course and approximately 1.3 km from Gosford CBD (refer Figure 1-4).

The site is currently comprised of a carpark, car dealership and vacant land, the entire site is flat with the closest bushland over 100m away. The entire site is zoned B6 Enterprise Corridor.

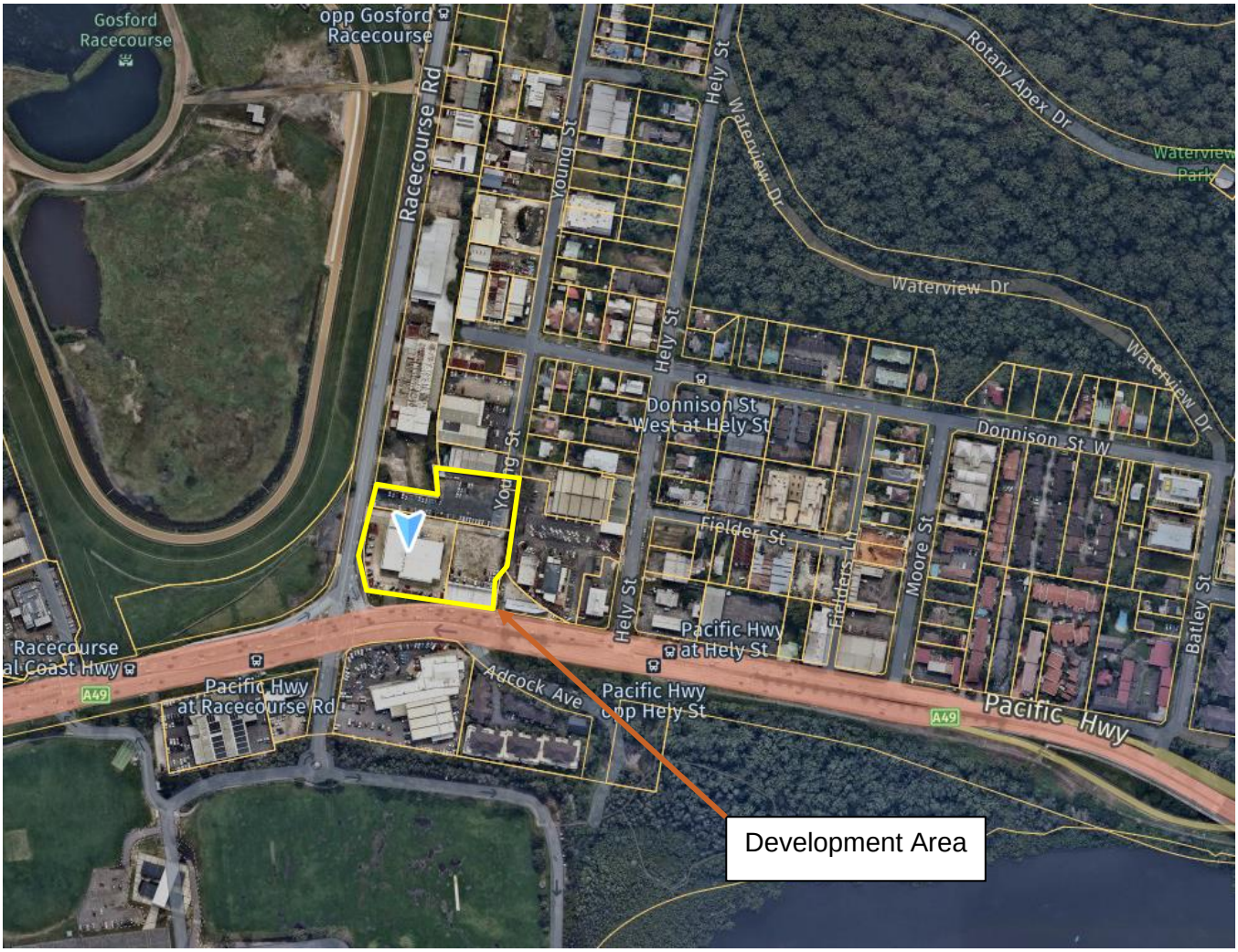

Figure 1-4 – Aerial appraisal

(Source: NearMap, 2022)

1.5 Legislation and planning instruments

Is the site mapped as bushfire prone?	Yes
Proposed development type	Multi-storey Residential Development
Is the development considered integrated for the purposes of Section 100B of the *Rural Fires Act 1997*?	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	No Known
Details of any Aboriginal heritage	No Known (Refer to Appendix 2 – AHIMS Search)
Does the proposal rely on an alternative solution?	No

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.

2.1 Hazardous fuels

PBP guidelines require the identification of the predominant vegetation formation in accordance with David Keith (2004) if using the simplified acceptable solutions in PBP 2019, or alternatively the vegetation class if adopting the comprehensive vegetation fuel loads (as allowable when undertaking an assessment under Method 2 of AS3959). The hazardous vegetation is calculated for a distance of at least 140m from a proposed building envelope.

The vegetation posing a bushfire threat to the proposed development includes:

Table 2-1 - Vegetation

Vegetation community	*Vegetation formation*	*Vegetation classification*	*Comprehensive fuel loads (t/ha)*	*Acceptable solution fuel loads (t/ha)* (PBP 2019)
Narrabeen Coastal Blackbutt Forest	Wet Sclerophyll Forest (Grassy)	Northern Hinterland Wet Sclerophyll Forest	20/33.1	22/36.1
Swamp Mahogany – Paperbark Forest	Saline Wetlands	Mangrove Swamp	8.2/15.1	10.5/20.2

The following assessment has adopted *PBP 2019* (column 5) fuel loads identified above for all aspects.

2.2 Effective slope

The effective slope (post earthworks) 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.

The effective slope within the hazardous vegetation is described in detail within Table 2-2 below.

2.3 Bushfire attack assessment

The following assessment has determined the APZ and BAL levels via the following approaches;

- Table A1.12.1 of *PBP 2019*;

Table 2-2 provides a summary of the bushfire attack assessment based on residential development and the methodologies identified above.

Table 2-2 – Bushfire attack assessment

Aspect	*Vegetation formation within 140m of development*	*Effective slope of land*	*Minimum APZ Requirement Commercial development (BAL-40)*	*Minimum APZ Requirement residential development (BAL-29)*	*APZ required for SFPP development (metres)*	*APZ Provided*	*Building construction standards*
North & East	Managed Land - Low-threat (Roads, paths, buildings)	Level to upslope	N/A	N/A	N/A	>100m	BAL-12.5
South East	Forest	Level	18m	24m	67m	>100m	BAL-12.5
South	Low-threat (Roads, paths, buildings & parkland)	N/A	N/A	N/A	N/A	N/A	N/A
West	Grassland	Level	8m	10m	36m	>50m	BAL-12.5

3. SPECIFIC PROTECTION ISSUES

3.1 Asset protection zones (APZs)

Table 3.1 outlines the proposal's compliance with the performance criteria for APZs.

Table 3-1 – Performance criteria for asset protection zones (PBP 2019 guidelines pg. 43)

Performance criteria	*Acceptable solutions*	*Acceptable solution*	*Performance solution*	*Comment*
Radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not be experienced on any part of the building	The building is provided with an APZ in accordance with Table A1.12.1	☑	☐	Complies
APZ maintenance is practical, soil stability is not compromised and potential for crown fires is minimised	The APZ is not located on lands with a slope exceeding 18°	☑	☐	Complies
APZs are managed and maintained to prevent the spread of a fire towards the building	The APZ is managed in accordance with the requirements of Appendix 4 of this document, and is wholly within the boundaries of the development site	☑	☐	APZ is comprised of public roads and building
	Other structures located within the APZ need to be located further than 6m from the refuge building	☑	☐	Complies
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Landscaping is in accordance with Appendix 4	☑	☐	Can be a condition of consent.
Note 1: Section 7.6 of PBP states that all fences in bush fire prone areas should be made of either hardwood or non-combustible material. However, in circumstances where the fence is within 6m of a building or in areas of BAL 29 or greater, they should be made of non-combustible material only.				

3.2 Building protection

Building construction standards (bushfire attack level (BAL) 12.5) for the proposed future buildings located within 100m of forest / woodland vegetation or within 50m of grassland are to be applied in accordance with *AS3959 Construction of buildings in bushfire prone areas (2018)* or NASH Standard and Section 7.5 of *Planning for Bush Fire Protection 2019*.

Building construction standards have been outlined within Table 2.2 and are depicted in Schedule 1 attached.

3.3 Hazard management

APZs are required to be managed in accordance with RFS guidelines *Standards for Asset Protection Zones* (RFS, 2005), with landscaping design to comply with Appendix 4 of *PBP*.

A summary of the guidelines for managing APZs (including landscaping guidelines) is attached as Appendix 2 to this report.

3.4 Access for firefighting operations

The proposal's compliance with the acceptable solutions outlined in *PBP 2019* is detailed within ***Table 3-2*** below.

Table 3-2 – Performance criteria for access within Residential Subdivisions (PBP 2019) Guidelines pg. 44)

Performance criteria		*Acceptable solution*	*Acceptable solution*	*Performance solution*	*Comment*
ACCESS	Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	SFPP access roads are two-wheel drive, all-weather roads.	☑	☐	Complies, will be a condition of consent.
		Access is provided to all structures	☑	☐	Complies.
		Traffic management devices are constructed to not prohibit access by emergency services vehicles.	☑	☐	Complies, will be a condition of consent.
		Access roads must provide suitable turning areas in accordance with Appendix 3.	☑	☐	All access roads are through roads.
		One-way only public access roads are no less than 3.5mm wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to	☑	☐	Complies, will be a condition of consent.

Performance criteria		Acceptable solution	Acceptable solution	Performance solution	Comment
		reticulated water for fire suppression.			
ACCESS	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.	☑	☐	Complies, will be a condition of consent.
	There is appropriate access to water supply.	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.	☑	☐	Complies, will be a condition of consent.
		Hydrants are provided in accordance with *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.	☑	☐	N/A – reticulated water available.
PERIMETER ROADS	Perimeter roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	There are two-way sealed roads.	☑	☐	Complies
		Minimum 8m carriageway width kerb to kerb.			
		Parking is provided outside of the carriageway width.			
		Hydrants are located clear of parking areas.			
		There are through roads, and these are linked to the internal road system at an interval of no greater than 500m.			
		Curves of roads have a minimum inner radius of 6m.			

Performance criteria		Acceptable solution	Acceptable solution	Performance solution	Comment
		The maximum grade road is 15° and average grade is 10°.			
		The road crossfall does not exceed 3°.			
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.			
NON-PERIMETER ROADS	Non-perimeter access roads are designed to allow safe access and egress for firefighting vehicles while occupants are evacuating	Minimum 5.5m width kerb to kerb.	☑	☐	Complies, will be a condition of consent.
		Parking is provided outside of the carriageway width.	☑	☐	Complies, will be a condition of consent.
		Hydrants are located clear of parking areas.	☑	☐	Complies, will be a condition of consent.
		There are through roads, and these are linked to the internal road system at an interval of no greater than 500m.	☑	☐	There are no dead-end roads proposed.
		Curves of roads have a minimum inner radius of 6m.	☑	☐	Complies, will be a condition of consent.
		The maximum grade road is 15° and average grade is 10°.	☑	☐	Complies.
		The road crossfall does not exceed 3°.	☑	☐	Complies.
		A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	☑	☐	Complies, will be a condition of consent.

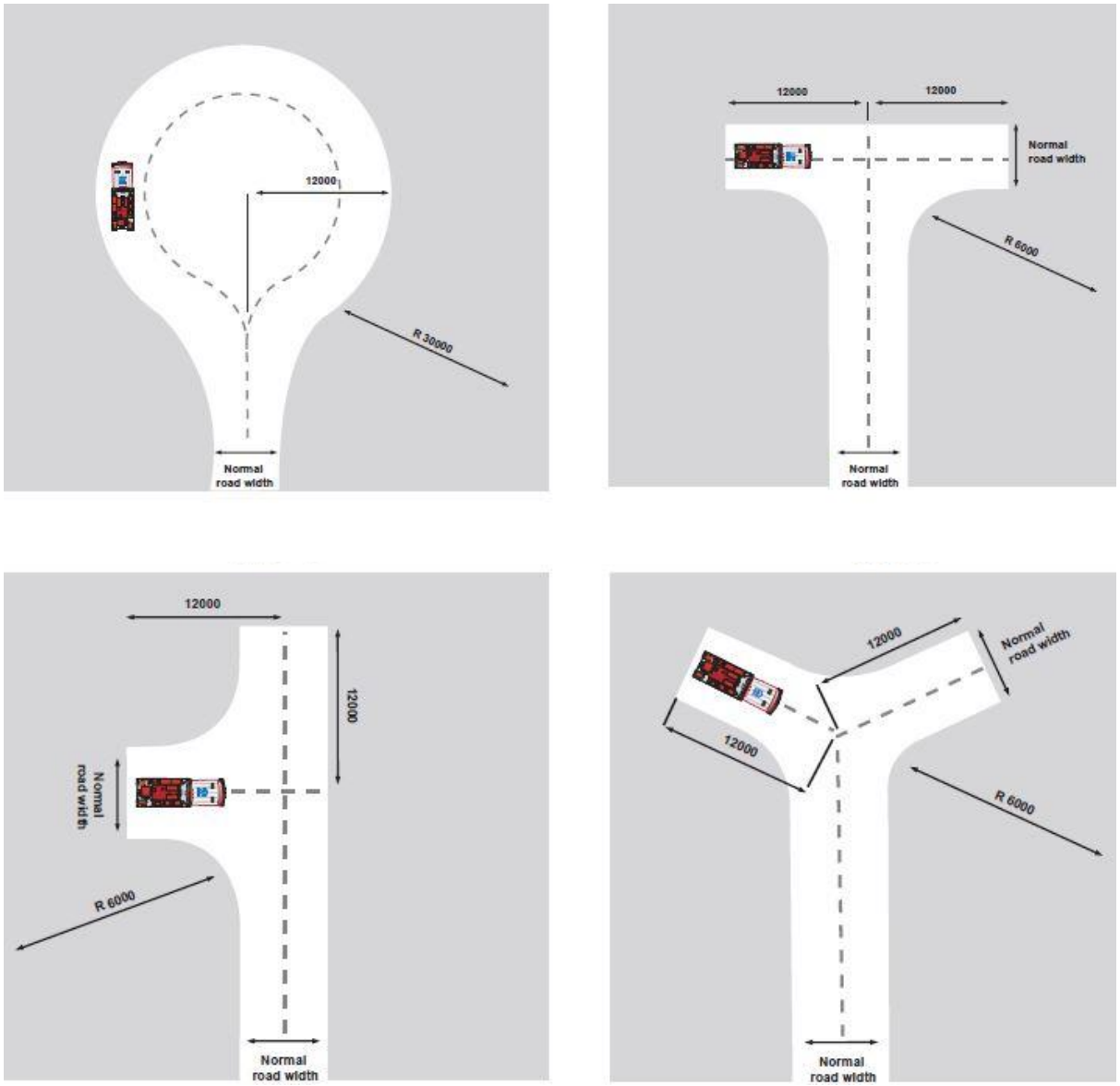

Figure 3-1 – Turning head dimensions

3.5 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. Table 3-3 outlines the proposal's compliance with the acceptable solutions for reticulated water supply.

Table 3-3 – Performance criteria for reticulated water supplies (PBP guidelines pg. 47)

Performance criteria	*Acceptable solutions*	*Acceptable solution*	*Performance solution*	*Comment*
Adequate water supplies are provided for	Reticulated water is to be provided to the development, where available.	☑	☐	Complies

Performance criteria	Acceptable solutions	Acceptable solution	Performance solution	Comment
firefighting purposes.	A static water supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed	☑	☐	N/A
	Static water supplies shall comply with Table 5.3d.	☑	☐	N/A
Water supplies are located at regular intervals. The water supply is accessible and reliable for firefighting operations.	Fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard *AS 2419.1:2005.*	☑	☐	Can be a condition of consent.
	Hydrants are not located within any road carriageway.	☑	☐	Can be a condition of consent.
	Reticulated water supply to urban subdivisions uses a ring main system for areas for areas with perimeter roads.	☑	☐	Can be a condition of consent.
Flows and pressure are appropriate.	Fire hydrant flows and pressures comply with the relevant clauses of *AS 2419.1:2005.*	☑	☐	Can be 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.	☑	☐	Can be a condition of consent.
	Above ground water storage tank shall be of concrete or metal	☑	☐	Can be a condition of consent.

3.7 Gas

The intent of measures is to locate gas so as not to contribute to the risk of fire to a building. Table 3-4 outlines the required acceptable solutions for gas supply.

Table 3-4 – Performance criteria for gas supplies (PBP Guidelines pg. 47)

Performance criteria	Acceptable solutions	Acceptable solution	Performance solution	Comment
Location of gas services will not lead to the ignition of surrounding bushland or the fabric of buildings.	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.	☑	☐	Can be 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.	☑	☐	
	Connections to and from gas cylinders are metal.	☑	☐	
	Polymer sheathed flexible gas supply lines are not used.	☑	☐	
	Above ground gas service pipes are metal, including and up to any outlets.	☑	☐	

3.8 Electricity

The intent of measures is to locate electricity so as not to contribute to the risk of fire to a building. Table 3-5 outlines the required acceptable solutions for the subdivision's electricity supply.

Table 3-5 – performance criteria for electricity services (pbp guidelines pg. 47)

Performance criteria	Acceptable Solutions	Acceptable solution	Performance solution	Comment
Location of electricity services limit the possibility	Where practicable, electrical transmission lines are underground.	☑	☐	Can be a condition of consent

Performance criteria	Acceptable Solutions	Acceptable solution	Performance solution	Comment
of ignition of surrounding bushland or the fabric of buildings.	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 ISSC3 Guideline for Managing Vegetation Near Power Lines.	☑	☐	Can be a condition of consent

3.93.8 Emergency and evacuation planning

Table 3.6 outlines the required performance criteria for the proposal's emergency procedures

Table 3.6 – Performance criteria for emergency and evacuation planning

Performance criteria	Acceptable Solutions	Acceptable solution	Performance solution	Comment
A bushfire emergency and evacuation management plan is prepared	A bushfire emergency management and evacuation plan is prepared consistent with the: • The NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan* • NSW RFS *Schools Program Guide* (where applicable) • Australian Standard *AS 3745:2010 Planning for emergencies in facilities*; and Australian Standard *AS 4083:2010 Planning for emergencies – Health care facilities* (where applicable),	☑	☐	Can be a condition of consent
Note: A copy of the Bush Fire Emergency Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.				
Suitable management arrangements are established for consultation and implementation of the emergency	An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual.	☑	☐	Can be a condition of consent

Performance criteria	Acceptable Solutions	Acceptable solution	Performance solution	Comment
and evacuation plan.	Detailed plans of all emergency assembly areas including 'on-site' and 'off-site' arrangements as stated in AS 3745 are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.			

4. CONCLUSION & RECOMMENDATIONS

4.1 Conclusion

This bushfire protection assessment has been undertaken for the proposed multi-storey residential development at 10 Young Street, West Gosford.

This assessment has found that the bushfire hazard to this site is low, there is adequate space between the development and the nearest vegetation threat. There is a low chance of the bushland in the area subjecting the development to potential radiant heat and ember attack

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

- APZs in accordance with the minimum setbacks outlined within *PBP 2019* (Table A1.12.1)
- Provision of access in accordance with the acceptable solutions outlined in *PBP 2019*;
- Water, electricity and gas supply in compliance with the acceptable solutions outlined in *PBP 2019;*
- Future building construction in compliance with the appropriate construction sections of *AS3959-2009*, and *PBP 2019*.
- Emergency management and evacuation in compliance with *PBP* and 'NSW RFS guidelines for the *Preparation of an Emergency / Evacuation Plan*.

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

4.2 Recommendations

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

Recommendation 2 - APZs are to be provided to the proposed development as outlined in Table 2-2 and as generally depicted within SCHEDULE 1.

Recommendation 3 – APZs are to be maintained in perpetuity and managed as outlined in Appendix 4 of *Planning for Bush Fire Protection 2019* and the NSW RFS document *'Standards for asset protection zones'.*

Recommendation 4 - Building construction standards (BAL 12.5) for the proposed future buildings located within 100m of forest / woodland vegetation or within 50m of grassland are to be applied in accordance with *AS3959 Construction of buildings in bushfire prone areas (2018)* or NASH Standard and Section 7.5 of *PBP.*

Recommendation 5 - A Bushfire Emergency Management and Evacuation Plan is to be prepared to comply with Section 6.8.4 of *PBP.*

Recommendation 6 - Access is to comply with the acceptable solutions outlined in Section 5.3.2 of *Planning for Bush Fire Protection 2019.*

Recommendation 7 - Building construction standards for the proposed future dwellings within 100m of bushfire prone land are to be applied in accordance with *AS3959 Construction of buildings in bushfire prone areas (2018)*, and *Planning for Bush Fire Protection 2019.*

Recommendation 8 - Water, electricity and gas supply is to comply with Section 5.3.3 of *Planning for Bush Fire Protection 2019.*

Recommendation 9 - Fencing is to comply with Section 7.6 of PBP. All fences in bush fire prone areas should be made of either hardwood or non-combustible material. However, in circumstances where the fence is within 6m of a building or in areas of BAL 29 or greater, they should be made of non-combustible material only.

5. REFERENCES

Australian Building Codes Board (2019) – *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.*

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

Legend

- Contour 1m (source: LiDAR)
- Site boundary (source:LPI)
- Proposed development (source: CAD)
- Asset Protection Zone (APZ)
- Edge of vegetation (source: TBE GPS (collected 20.05.2020))

Aerial source: Nearmap

0 25 50 m

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.

PROJECT & MXD REFERENCE	DATE & ISSUE NUMBER	SCALE & COORDINATE SYSTEM
Young St, West Gosford 18WTP04_BF001	10/05/2022 Issue 1 KM	1:1,000 @A3 GDA 1994 MGA Zone 56

TITLE

Schedule 1 - Bushfire Protection Measures

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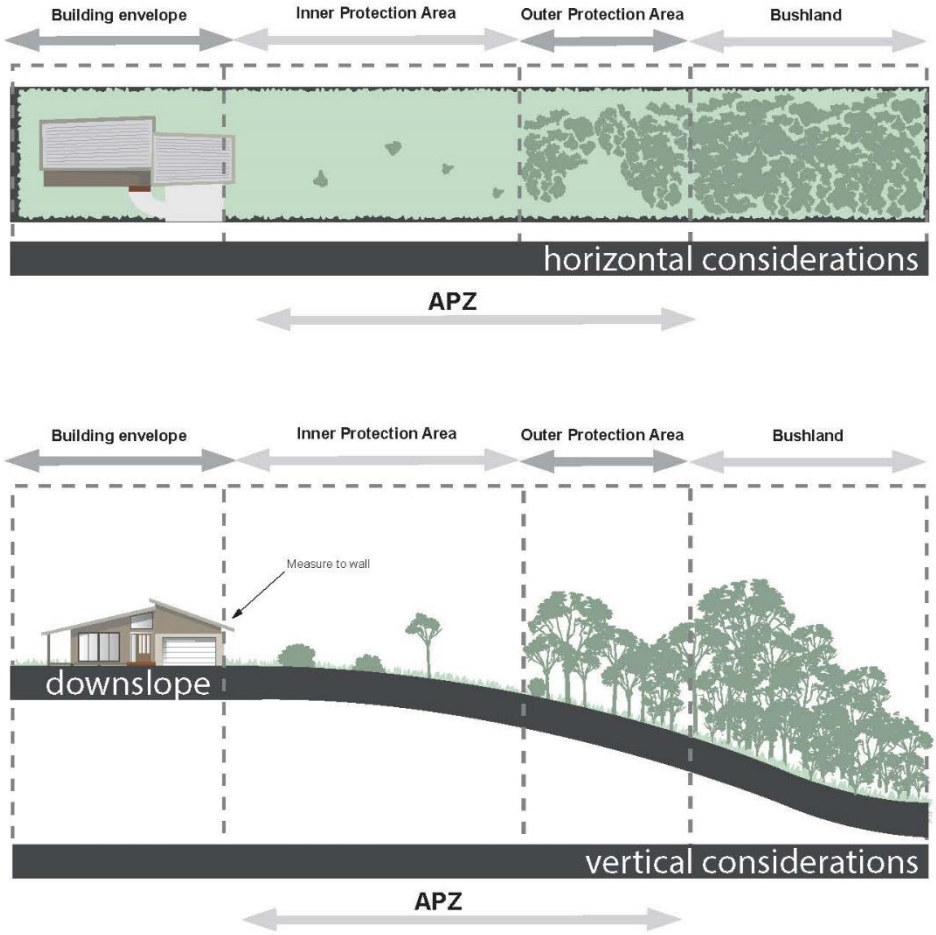
APPENDIX 1. MANAGEMENT OF ASSET PROTECTION ZONES

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*.

The APZ generally consists of two subordinate areas, an inner protection area (IPA) and an outer protection area (OPA). The OPA is closest to the bush and the IPA is closest to the dwellings. The property is to be managed to IPA standards only. 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 provides maintenance advice for vegetation within the IPA and OPA. The APZ is to be maintained in perpetuity and should be undertake regularly, particularly in advance of the bushfire season.

	Inner Protection Area	Outer Protection Area
Trees	➢ Tree canopy cover should be **less than 15%** at maturity; ➢ Trees at maturity should not touch or overhang the building; ➢ Lower limbs should be removed up to a height of **2m above the ground**; ➢ Tree canopies should be separated by **2 to 5m**; and ➢ Preference should be given to retaining smooth barked and evergreen trees.	➢ Tree canopy cover should be **less than 30%;** and ➢ Canopies should be separated by **2 to 5m**.
Shrubs	➢ Large discontinuities or gaps in the vegetation should be provided to slow down or break the progress of fire towards buildings; ➢ Shrubs should not be located under trees; ➢ Shrubs should form **less than 10%** ground cover; and ➢ Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.	➢ Shrubs should not form a continuous canopy; and ➢ Shrubs should **form less than 20%** of ground cover.
Grass and Leaf Litter	➢ Grass should be kept mown to a height of **less than 100mm**; and ➢ Leaves and other debris should be removed	➢ Grass should be kept mown to a height of **less than 100mm**; and ➢ Leaf and other debris should be removed.
	All Management Zones	
Weeds	➢ All weeds should be removed in accordance with best practice guidelines, and measures taken to prevent their further spread	
Landscaping	➢ Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways; ➢ Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come into contact with the building; ➢ When considering landscape species consideration needs to be given to estimated size of the plant at maturity; ➢ Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies; ➢ Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown; ➢ Avoid planting of deciduous species that may increase fuel at surface / ground level (i.e. leaf litter); ➢ Avoid climbing species to walls and pergolas; ➢ Locate combustible materials such as woodchips / mulch, flammable fuel stores away from the building; ➢ Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and ➢ Use of low flammability vegetation species.	

APPENDIX 2. AHIMS SEARCH

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 10 Young St

Client Service ID : 681181

Morgan Jeffery

52 The Avenue
Kariong New South Wales 2099

Attention: Morgan Jeffery

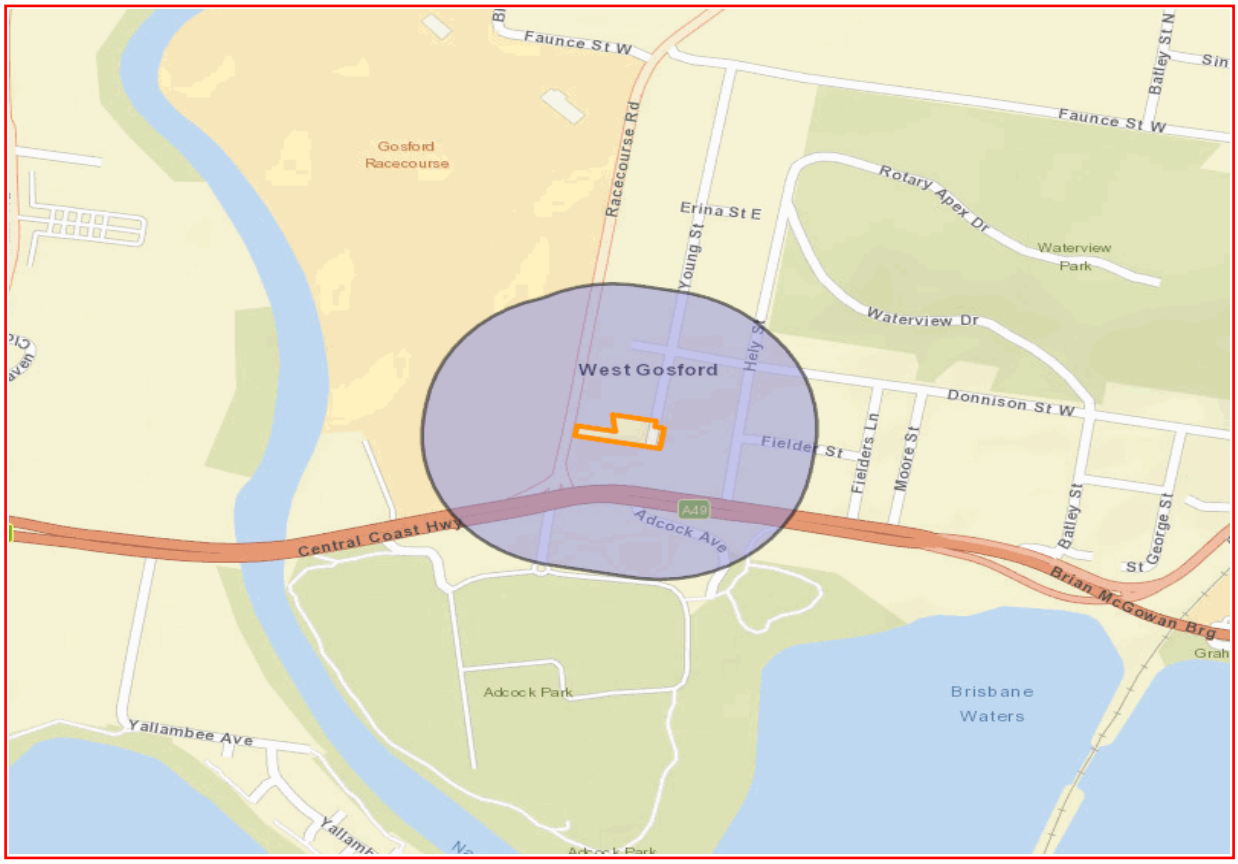
Email: mjeffery@traversecology.com.au

Date: 09 May 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 1, DP:DP1194024, Section : - with a Buffer of 200 meters, conducted by Morgan Jeffery on 09 May 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:

0	**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) 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 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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