



# AUSTRALIAN BUSHFIRE CONSULTING SERVICES



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## Bush Fire Assessment Report



Proposed rezoning E3 Environmental  
Management to IN2 Light Industrial:

**87 Oakdale Road,  
Gateshead, NSW 2259.**

22<sup>nd</sup> November 2020  
Reference 20-579

## Contents:

	<u>Page No.</u>
Abbreviations	2
1.0 Introduction	3
2.0 Property details	3
3.0 Legislative context	3 - 4
4.0 Referenced documents and people	5
5.0 Copyright, scope and disclaimer	5
6.0 Images and maps	6 - 8
7.0 Bushfire hazard assessment	9 - 19
8.0 Conclusion	20
9.0 List of attachments	21

## Abbreviations:

ABCS	Australian Bushfire Consulting Services Pty Ltd
APZ	Asset Protection Zone
AS2419	Australian Standard 2419.1:2017 Fire hydrant installations System design
AS3959	Australian Standard 3959 – 2018 Construction of buildings in bushfire prone areas
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Lake Macquarie City Council
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
FR NSW	Fire & Rescue NSW
IPA	Inner Protection Area
LGA	Local Government Area
NCC	National Construction Codes
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection – 2019
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

## 1.0 Introduction.

The development seeks an amendment to Lake Macquarie Local Environmental Plan 2014 to rezone vacant and cleared land at 87 Oakdale Road, Gateshead, NSW from E3 Environmental Management to IN2 Light Industrial. The subject site is mapped as bushfire prone land and therefore to accord with the Local Planning Directions issued under section 9.1(2) of the *Environmental Planning and Assessment Act 1979* direction 4.4 the application must have due regard to *Planning for Bushfire Protection 2019* (PBP 2019) as may be appropriate for the type of development proposed.

The objectives of Direction 4.4 are to *protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and to encourage sound management of bush fire prone areas.*

The aims of PBP 2019 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.*

There is no new development proposed as part of the planning proposal and section 6 of Direction 4.4 is not relevant, however the aims of this report is to demonstrate that the site has the capacity to support future development that can comply with the requirements of both section 6 and PBP 2019.

## 2.0 Property details.

Address: 87 Oakdale Road Gateshead, NSW.  
 Lot/DP: Lot 100 DP 717604  
 Zoned: Current E3 Environmental Management / Proposed IN2 Light Industrial  
 LGA: Lake Macquarie City Council

The site has street frontage to Oakdale Road to the south and abuts IN2 Light Industrial allotments to the west, a thin parcel of E3 Zoned land to the north (closely followed by land zoned as deferred matter (DM)) and DM Zoned land to the east. South beyond Oakdale Road is a single area of RU6 Transition land surrounded by E2 Environmental Conservation areas.

## 3.0 Legislative context.

This planning proposal must comply with Direction 4.4 issued by the Minister for Planning under Section 9.1(2) of the EP&A Act 1979 which is as follows:

### 4.4 Planning for Bushfire Protection Objectives

1. *The objectives of this direction are:*
  - a) *to protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and*
  - b) *to encourage sound management of bush fire prone areas.*

*Where this direction applies*

2. *This direction applies to all local government areas in which the responsible Council is required to prepare a bush fire prone land map under section 146 of the Environmental Planning and Assessment Act 1979 (the EP&A Act), or, until such a map has been certified by the Commissioner of the NSW Rural Fire Service, a map referred to in Schedule 6 of that Act.*

*When this direction applies*

3. *This direction applies when a relevant planning authority prepares a planning proposal that will affect, or is in proximity to land mapped as bushfire prone land.*

What a relevant planning authority must do if this direction applies

4. In the preparation of a planning proposal the relevant planning authority must consult with the Commissioner of the NSW Rural Fire Service following receipt of a gateway determination under section 56 of the Act, and prior to undertaking community consultation in satisfaction of section 57 of the Act, and take into account any comments so made,
5. A planning proposal must:
  - a) have regard to Planning for Bushfire Protection 2006,
  - b) introduce controls that avoid placing inappropriate developments in hazardous areas, and
  - c) ensure that bushfire hazard reduction is not prohibited within the APZ.
6. A planning proposal must, where development is proposed, comply with the following provisions, as appropriate:
  - a) provide an Asset Protection Zone (APZ) incorporating at a minimum:
    - i. an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and
    - ii. an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road,
  - b) for infill development (that is development within an already subdivided area), where an appropriate APZ cannot be achieved, provide for an appropriate performance standard, in consultation with the NSW Rural Fire Service. If the provisions of the planning proposal permit Special Fire Protection Purposes (as defined under section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with,
  - c) contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,
  - d) contain provisions for adequate water supply for firefighting purposes,
  - e) minimise the perimeter of the area of land interfacing the hazard which may be developed,
  - f) introduce controls on the placement of combustible materials in the Inner Protection Area.

### Consistency

A planning proposal may be inconsistent with the terms of this direction only if the relevant planning authority can satisfy the Director-General of the Department of Planning (or an officer of the Department nominated by the Director-General) that the council has obtained written advice from the Commissioner of the NSW Rural Fire Service, to the effect that, notwithstanding the non-compliance, the NSW Rural Fire Service does not object to the progression of the planning proposal.

### Planning for Bush Fire Protection 2019

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

- ensuring land is suitable for development in the context of bush fire risk;
- ensuring new development on BFPL will comply with PBP;
- minimising reliance on performance-based solutions;
- providing infrastructure associated with emergency evacuation and firefighting operations; and facilitating appropriate ongoing land management practices.

Following rezoning of the subject site future development applications or complying development certificates will be necessary to permit further development. These will be assessed under either s4.14 of the EP&A Act 1979, s100B of the Rural Fires Act 1997 or SEPP Exempt and Complying Development (Codes SEPP) at that time. Any form of development that is considered Special Fire Protection Purpose Development or development that requires a Bush Fire Safety Authority under s100B of the Rural Fires Act 1979 must be reviewed and vetted by the NSW Rural Fire Services as part of a future development application through Council. As such any future development that may be considered not appropriate for the site having regard to the bushfire risk can still be regulated by the consent authority regardless of the proposed rezoning of the subject site.

## 4.0 Referenced documents and people.

The following documents have been referenced in the preparation of this report;

- Lake Macquarie Local Environmental Plan 2014,
- Lake Macquarie Development Control Plan 2014, Revision 24 2020,
- Lake Macquarie City Council's Bushfire Prone Land Map,
- AS3959 – 2018 Construction of buildings in bushfire prone areas,
- Planning for Bush Fire Protection 2019,
- Rural Fires Act 1997
- Rural Fires Regulation 2013
- 10/50 Vegetation Clearing Code of Practice,
- NSW RFS Guide for bush fire prone land mapping V5b Nov 2015,
- Ocean Shores to Desert Dunes – David Andrew Keith 2004,

The Planning Proposal report by JW Planning Pty Ltd Ref 1521771 June 2020 has been reviewed and relied upon in the preparation of this assessment. I undertook an inspection of the property in the course of preparing this report, at that time free access was available within the subject site and views into the bushfire hazard were suitable for an accurate assessment of the bushfire hazardous vegetation.

## 5.0 Copyright, scope and disclaimer.

This assessment of possible bushfire impact (including smoke, ember, radiant heat and flame contact) and compliance with other matters such as access and service supply is pertinent to the subject site only. Where reference has been made to the surrounding lands, this report does not assess impact to those lands rather it is an assessment of possible bushfire progression and impact on or from those lands towards the subject site.

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This report has been prepared as a submission document in support of a planning proposal and cannot be relied upon for commencement of works or construction.

The statements and opinions contained in this report are given in good faith and in the belief that such statements and opinions are correct and not misleading.

AS3959 – 2018 states that “...*there can be no guarantee that a building will survive a bushfire event of every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire and extreme weather conditions*”.

The NSW RFS state “*Homes are not designed to withstand fires in catastrophic conditions*”.

Correspondingly any representation, statement of opinion, or advice expressed or implied in this document is made on the basis that Australian Bushfire Consulting Services Pty Ltd is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice made by Australian Bushfire Consulting Services Pty Ltd.



## 6.0 Images and maps.



Image 01: Aerial image extract from Nearmaps Data 2<sup>nd</sup> Sept 2020

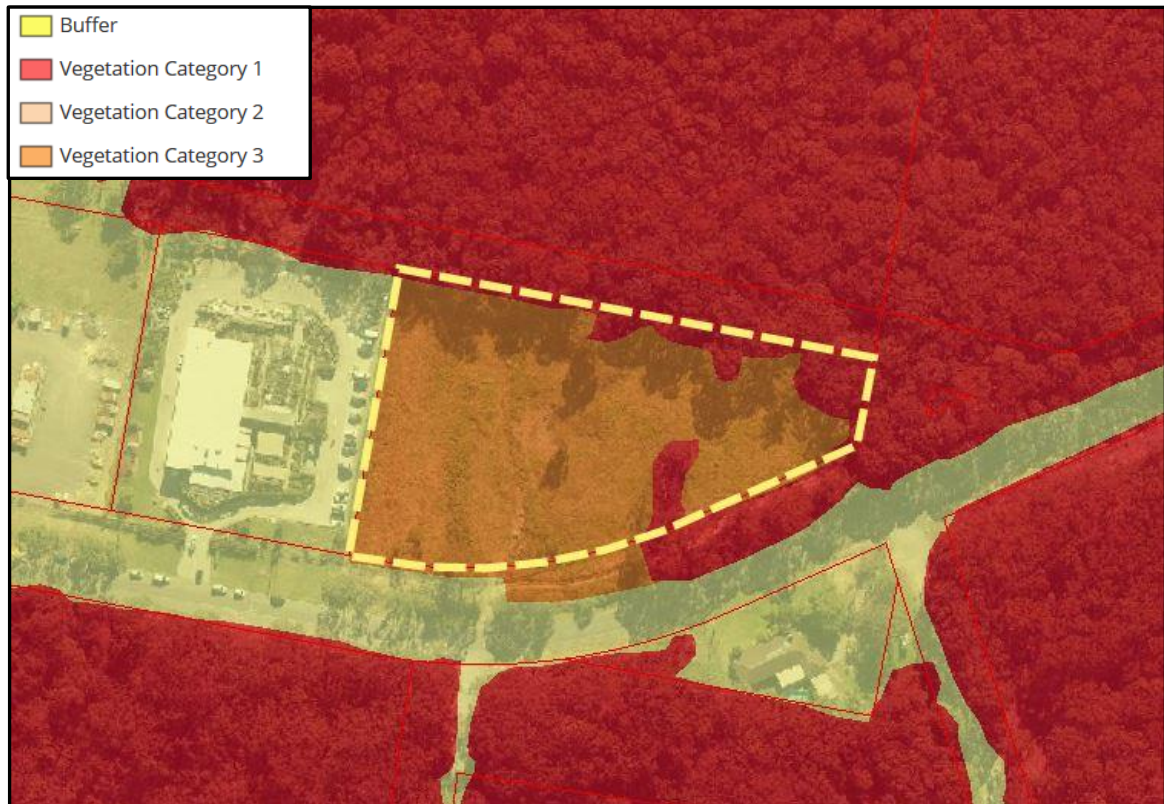


Image 02: Extract of Council's Bushfire Prone Land Map from Dept Lands Property Information



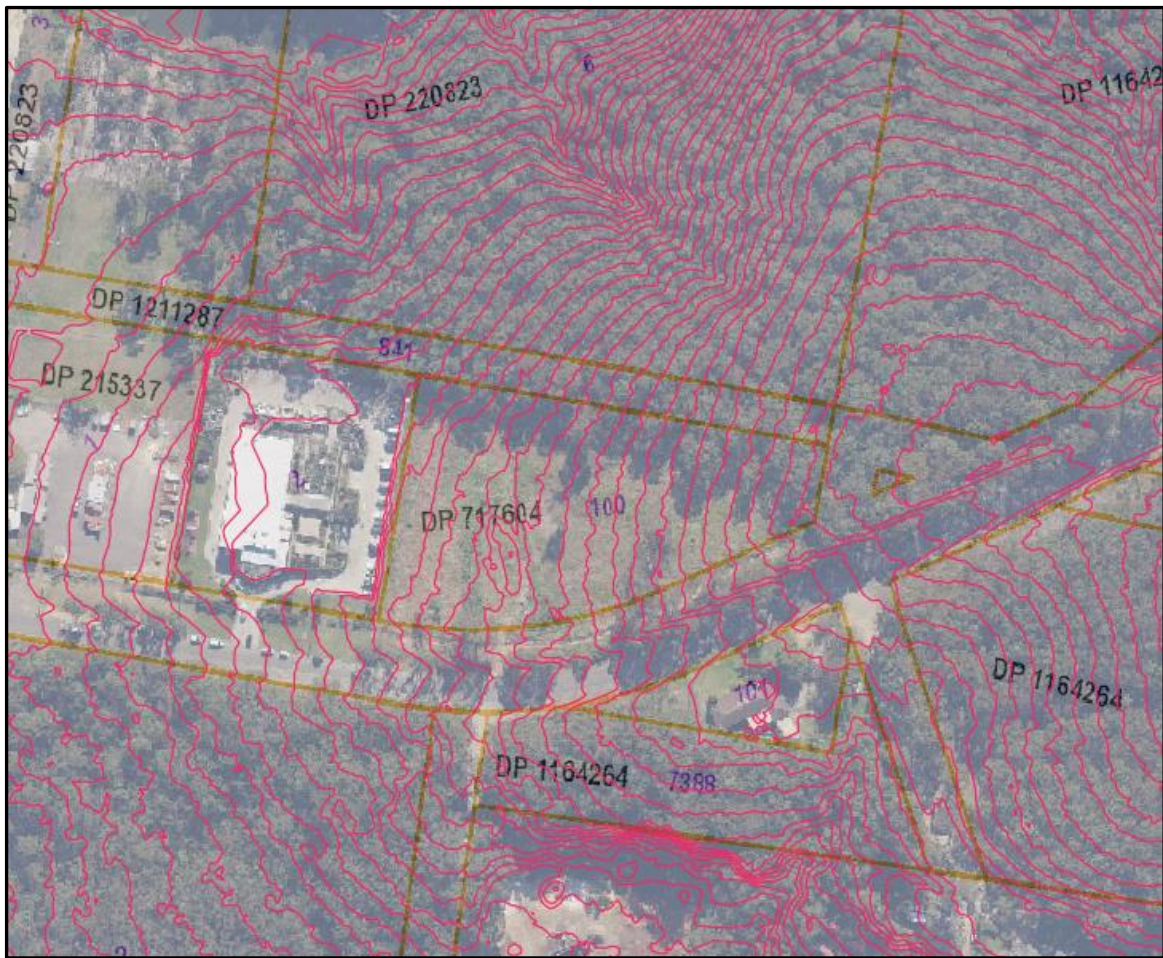


Image 03: 1 metre topographic data from NSW Gov. Elevation Foundation Spatial Data

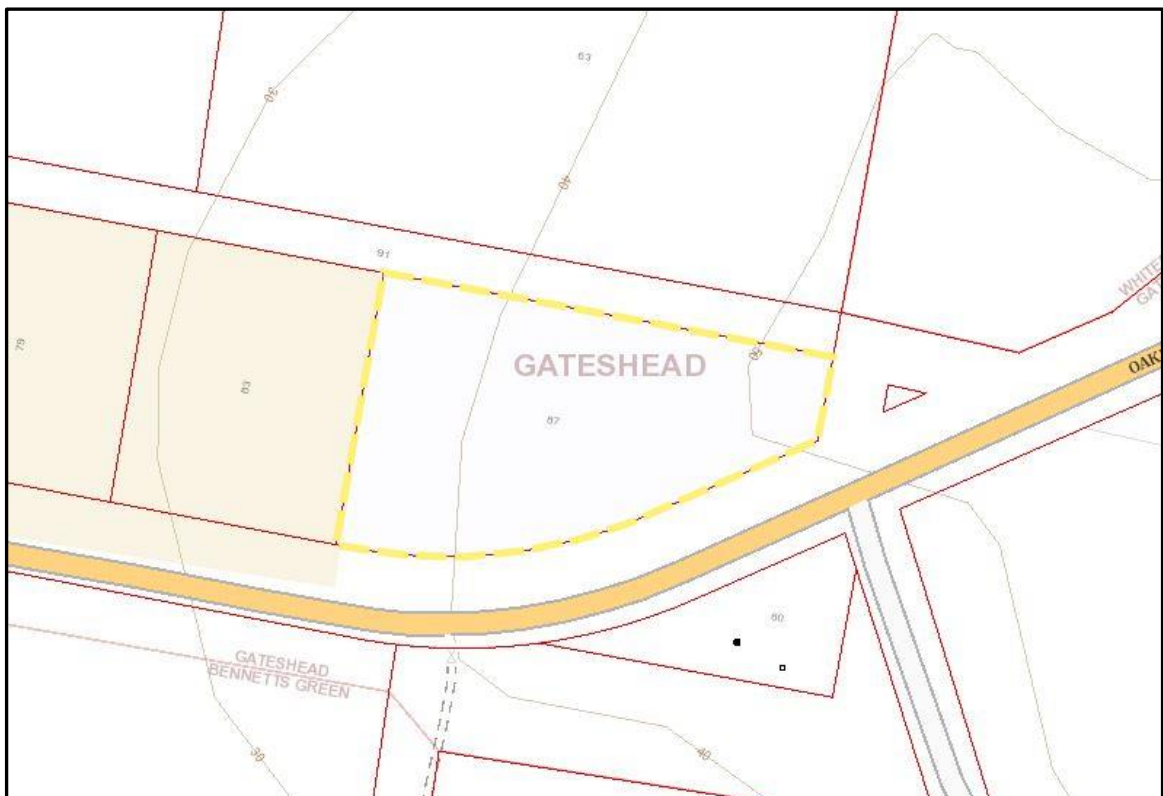


Image 04: 10 metre topographic data from NSW Gov. SIXMaps Spatial Data



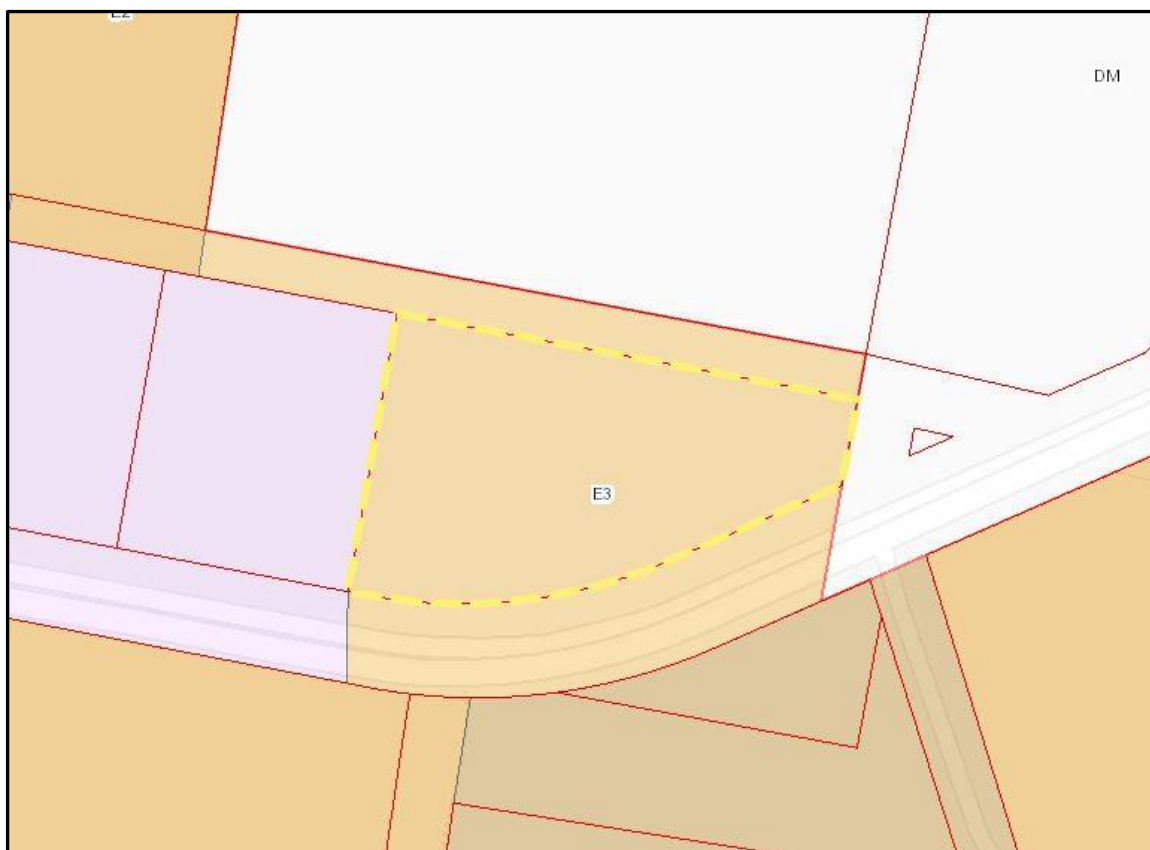


Image 05: Extract of Council's LEP Zones Land Map from Dept Lands Property Information



Image 06: Proposed Zone (From Planning Proposal report by JW Planning Pty Ltd Ref 1521771 June 2020)

## 7.0 Bushfire hazard assessment

Properties considered to be bushfire prone land are identified on Councils Bushfire Prone Land Map as being:

- *within or within 100 m of Category 1 (high) hazards or,*
- *within or within 30 m of Category 2 (low) hazards or,*
- *within or within 30 m of Category 3 (medium) hazards.*

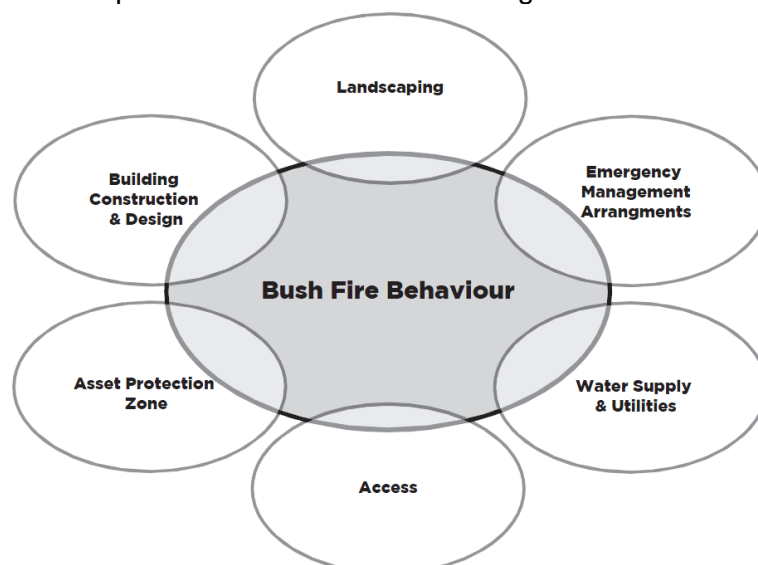
The NSW RFS document PBP – 2019 is applicable to all development on bushfire prone land, this includes an assessment of the proposals adequacy in providing an appropriate combination of bushfire protection measures in terms of asset protection zones, landscaping, access and service supply. This document also provides a means of determining the necessary level of building construction under AS3959 - 2019. Infill development proposals on BFPL must be accompanied by bush fire assessments and reports demonstrating compliance with PBP 2019.

In particular, the following must be addressed:

- a statement that the site is BFPL;
- the location, extent and vegetation formation of any bushland on or within 140 metres of the site;
- the slope and aspect of the site and of any BFPL within 100 metres of the site;
- any features on or adjoining the site that may mitigate the impact of a bush fire on the proposed development;
- a statement assessing the likely environmental impact of any proposed BPMs;
- a site plan showing access, water supplies, APZs, BAL requirements and building footprint in relation to the bush fire hazards; and
- calculated BAL construction levels.

By incorporating bush fire protection measures into a development, the six objectives of PBP 2019 are addressed:

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



## 7.1 Site

The site has street frontage to Oakdale Road to the south and abuts IN2 Light Industrial allotments to the west, a thin parcel of E3 Zoned land to the north (closely followed by land zoned as deferred matter (DM)) and DM Zoned land to the east. South beyond Oakdale Road is a single area of RU6 Transition land surrounded by E2 Environmental Conservation areas.

Councils Bushfire Prone Land Map depicts the subject site containing Category 1 & Category 3 Vegetation.

## 7.2 Vegetation

PBP 2019 requires a classification of the vegetation on and surrounding the property out to a distance of 140 metres from the property boundary (or building footprint). The subject site is cleared land and a review of historic aerial photos documents a history of management back as far as at least 2010. The surrounding neighbouring industrial allotments to the west comprise of managed or hard surfaced and built upon areas.

The area identified as a bushfire hazard to the subject site is within RU6 land to the south, E2 Zoned areas to the southeast and southwest and within neighbouring allotments zoned E3 and DM Deferred Matter to the north and northeast. The vegetation to all aspects was similar in structure and consisted of trees with a dense canopy cover overlapping crowns and an understorey of smaller trees and shrubs with a ground cover of native plants and grasses.

The vegetation is mapped on NSW Gov. SEED portal as a NSW Formation: Dry sclerophyll forests, NSW Class: Sydney Coastal Dry Sclerophyll Forests, Map Unit: Red Bloodwood/ Smooth-barked Apple/ Scribbly Gum/ Old Man Banksia heathy woodland on sandstone ranges of the Central Coast. For the purpose of bushfire assessment, a Forest class is to be used to all three aspects.

Along the roadside verge within Oakdale Road reserve is a narrow strip of retained vegetation approx. 5 – 15 metres wide and variable width between the subject site and the formed areas of Oakdale Road. This vegetation provides a less than 50 metre fire run towards the subject site and, for the most part of its length, there is no backing forest south of Oakdale Road due to the managed areas within the adjoining RU6 land.

For the purpose of bushfire assessment, a Remnant classification is applied to the roadside vegetation which allows for it to be assessed as a Rainforest hazard regardless of the actual floristic structure present.

## 7.3 Topography

The slope must be assessed over a distance of at least 100m from the existing property boundary (or building footprint) towards the various vegetation communities constituting the hazard. In assessing the slope, it may be found that there are a variety of slopes covering different distances. The gradient within the hazard (vegetation) which will most significantly influence the fire behaviour must be determined.

The hazard to the northeast and southeast is on relative flat land, increasing to a prevailing upslope grade in an easterly direction. To the north the land falls on a gentle slope of 3- 4 degrees for a distance of approx. 100 metres, thereafter there is a small steeper incline down to Bulls Creek, and on the northern side of the creek an upslope away from the site. Bulls Creek flows on a downslope in an east to west direction almost parallel to the subject sites boundary.

Along the roadside verge with Oakdale Road there is a small steep batter of land approximately 3-4 metres wide immediately adjacent to Oakdale Road. Between the roadside batter and the subject site, the land is relatively flat for approximately 10-15 metres in width and a fire trail / 4WD access track is located in this area. Any fire within the steeper batter would be an incipient fire and there is very limited depth for the grade to influence fire behaviour and impact towards the subject site. The steeper roadside batter has not been considered an effective slope in assessing likely fire behaviour in this remnant vegetation and the wider flatter land closer to and adjacent to the subject site has been recorded as effective slope for this assessment.

The slope was assessed onsite using an inclinometer and verified from topographic mapping to be.

- 0 degrees level land or upslope within the forest to the east and northeast
- 0 -5 degrees downslope within the forest to the north and southwest
- 0 -5 degrees downslope within the remnant vegetation along Oakdale Road





Photograph 01: View north across the subject site.



Photograph 02: View northeast taken east of the subject site.



Photograph 03: View west along the roadside vegetation between the subject site and Oakdale Road

## 7.4 Asset Protection Zones

An APZ is a buffer zone between a bush fire hazard and buildings, which is managed progressively to minimise fuel loads and reduce potential radiant heat levels, flame, ember and smoke attack. An appropriate APZ is a fundamental component of the package of the bushfire protection measures applied

The proposed rezoning is intended to facilitate future commercial and industrial development within the subject site. There are no minimum APZs required for commercial and industrial development however section 8.3.10 of PBP 2019 for commercial and industrial development states:

*Commercial and industrial development on BFPL is captured by EP&A Act s.4.14 where a manager's residence is included in the proposal. Where no residential component is included, commercial and industrial development is addressed through the aim and objectives of PBP (see Chapter 1 of this document).*

*A suitable package of BPMs should be proposed commensurate with the assessed level of risk to the development. The scale of the development and numbers of people likely to be occupying the building will be directly relevant to the BPMs proposed.*

*The provisions within Chapter 7 of this document should be used as a base for the development of a package of measures. Each development will be assessed on its own individual merits.*

The provisions of Chapter 7 of PBP 2019 requires that an APZ is provided in accordance with Table A1.12.2 in Appendix 1. APZs in accordance with Table A1.12.2 are such that, during a bushfire event, a building footprint is not exposed to greater than 29 k/Wm<sup>2</sup>. APZs can be determined from either deemed to satisfy tables within PBP or by alternate solutions using bushfire design fire modelling. As noted above future commercial and industrial development will be assessed on its own individual merits at the time of future development applications and variations to the APZ requirements of Table 1.12.2 may be applied in consultation with the NSW RFS at that time.

**Table 1.12.2 PBP 2019.**

KEITH VEGETATION FORMATION	EFFECTIVE SLOPE	
	Up slopes and flat	>0°-5°
	Distance (m) from the asset to the predominant vegetation formation	
Rainforest (or remnant forest vegetation)	11	14
Forest (Shrubby and Grassy)	24	29
Allowable outer protection areas from forest vegetation	10	10

A bushfire attack level (BAL) Ribbon diagram is provided at Image 09 within this report. This diagram clearly demonstrates the sites potential to provide for a suite of development options where BAL 29 or less impact is expected. Therefore future development has the capacity to comply with the requirements of section 8.3.10 of PBP 2019 for commercial and industrial development.

Following rezoning of the subject site future development applications or complying development certificates will be necessary to permit further development. These will be assessed under either s4.14 of the EP&A Act 1979, s100B of the Rural Fires Act 1997 or SEPP Exempt and Complying Development (Codes SEPP) at that time.

The rezoning may permit additional uses that could be considered Special Fire Protection Purpose Development such as assembly buildings and places of worship. Any form of development that is considered Special Fire Protection Purpose Development or development that requires a Bush Fire Safety Authority under s100B of the Rural Fires Act 1979 must be reviewed and vetted by the NSW Rural Fire Services as part of a development application through Council. As such any future development that may be considered not appropriate for the site having regard to the bushfire risk can still be regulated by the consent authority regardless of the proposed rezoning of the subject site.



The landowner of the subject site has a duty of care under the Rural Fires Act to prevent the spread of fire on or from the land. Therefore it is my recommendation that in perpetuity, all grounds within the subject property are continued to be maintained as an Asset Protection Zone / Inner Protection Area in accordance with the requirements detailed within Appendix 4 of Planning for Bush Fire Protection 2019 and the NSW RFS document Standards for an Asset Protection Zone.

The APZs are essentially existing and all that is required is ongoing maintenance of grasses below 100 mm, as such there is minimum adverse impact on the environment as a result of the bushfire protection measure.

## 7.5 Construction

AS3959 – 2018 *Construction of buildings in bushfire prone areas* provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. A Bushfire Attack Level (BAL) is a means of measuring the severity of a building's potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and is the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.

### FORMS OF BUSHFIRE ATTACK

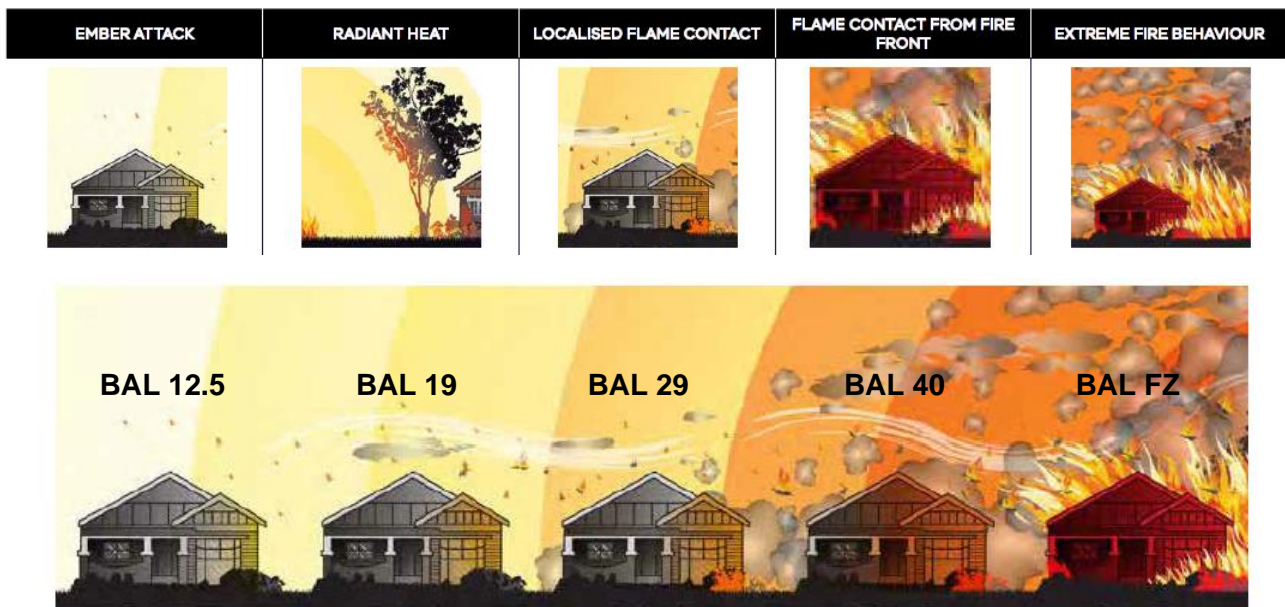


Image 7 & 8: Extract from *Planning Permit Applications, Bushfire Management Overlay. Technical Guide, September 2017*. Department of Environment Land Water and Planning, Victoria.

Section 8.3.1 PBP 2019 states;

*Under the building classification system within the NCC, Class 5 to 8 buildings include offices, shops, factories, warehouses, public car parks and other commercial and industrial facilities.*

*The NCC does not provide for any bush fire specific performance requirements for these particular classes of 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.*

*Whilst bush fire is not captured in the NCC for Class 5-8 buildings, the following objectives will be applied 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 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

In accordance with Table GV5.1 National Construction Codes the future industrial and commercial development is assigned an importance level of “1” and no bushfire design analysis for construction materials is necessary. Generally, the type of buildings are tilt up or slab wall construction providing an FRL of greater than 30/30/30 along boundaries and between buildings. They are provided with non-combustible roof covering with roller doors, hinged entry doors and windows.

There is no new development proposed as part of the planning proposal and the application of AS3959 – 2018 Construction of buildings in bushfire prone areas will be considered during future development proposals on a case by case basis. It is clear from the BAL Ribbon diagram below that the site has the capacity to provide for building footprints located in areas determined to be BAL 29 and below.

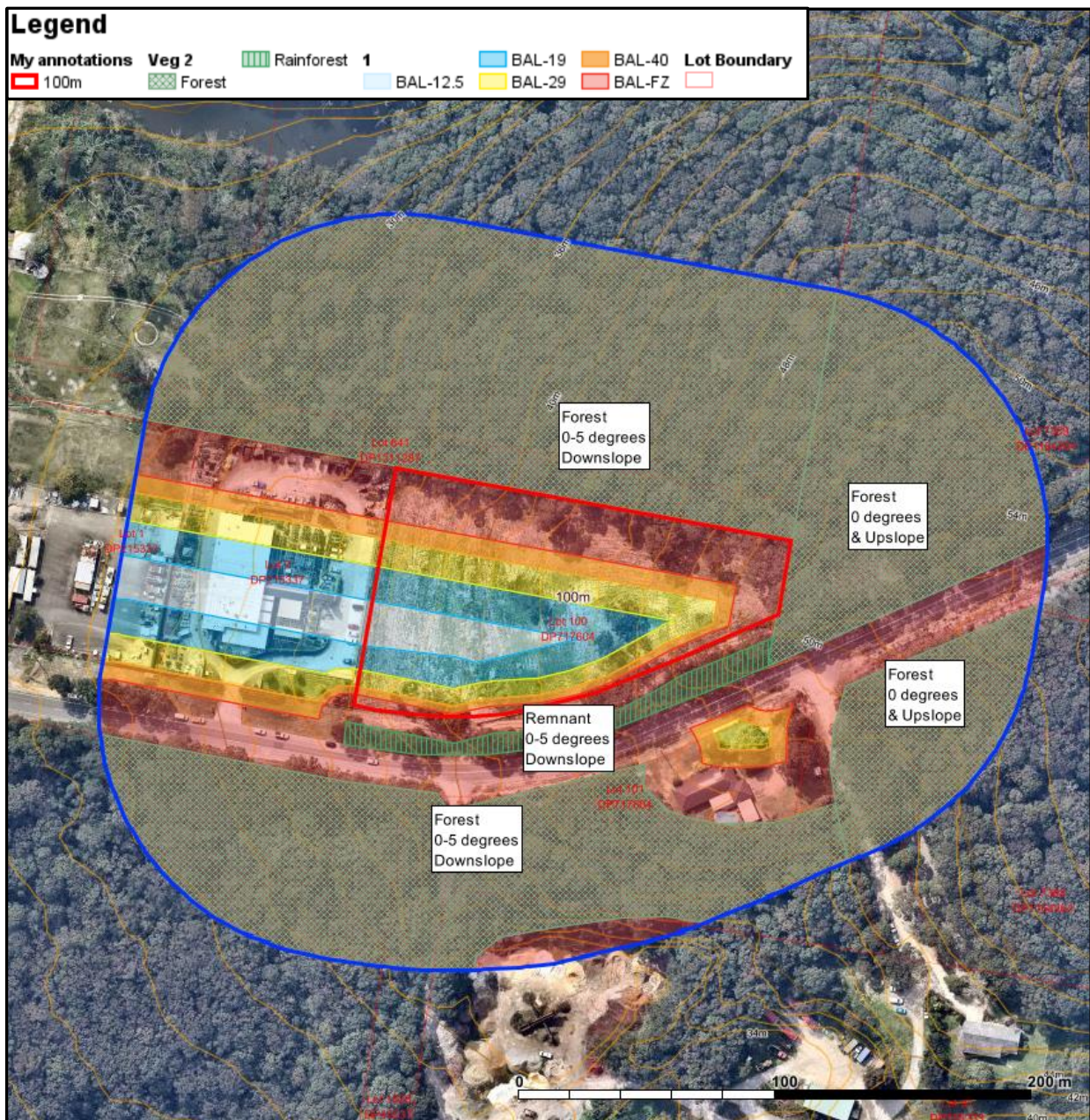


Image 09: BAL Ribbon Diagram over the subject site

## 7.6 Access & egress

The intent of measures required by PBP 2019 is to *provide safe access to / from the public road system for firefighters providing property protection during a bush fire and for occupants faced with evacuation. The performance requirement is that access to properties is provided in recognition of the risk to fire fighters and / or evacuating occupants.*

The most disadvantaged point of any future building within the subject site will in all probability be greater than 70 metres from a public through road that supports the operational use of fire appliances (hydrants) and therefore the property access requirements of Table 5.3b or 7.4a of PBP 2019 will be applicable to future development within the subject site.

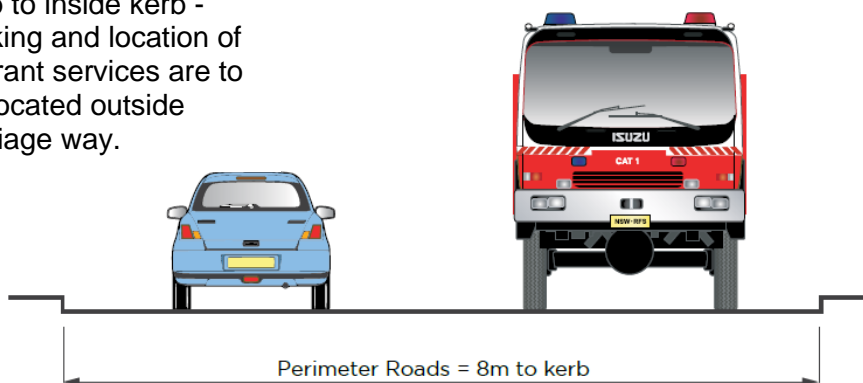
The site has the capacity to provide for the requirements of PBP 2019 and indeed development of the site will improve access to the hazard interface for fire suppression and hazard reduction activities. The applicable Rural Fire Service requirements of PBP 2019 for future development are;

- property access roads are two-wheel drive, all-weather roads; and
- traffic management devices are constructed to not prohibit access by emergency services vehicles; and
- maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient; and
- all roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; and

### Perimeter roads:

- perimeter roads are two-way sealed roads; and
- 8m carriageway width kerb to kerb; and
- parking is provided outside of the carriageway width; and
- hydrants are located clear of parking areas; and
- there are through roads, and these are linked to the internal road system at an interval of no greater than 500m; and
- curves of roads have a minimum inner radius of 6m; and
- the maximum grade road is 15° and average grade is 10°; and
- the road crossfall does not exceed 3°; and
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided

Perimeter road widths:  
8 metres wide - inside  
kerb to inside kerb -  
parking and location of  
hydrant services are to  
be located outside  
carriage way.

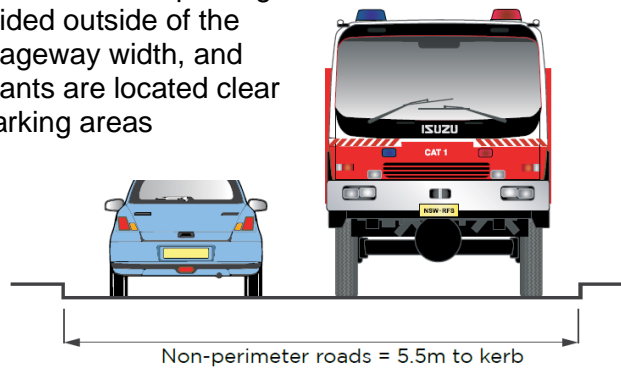




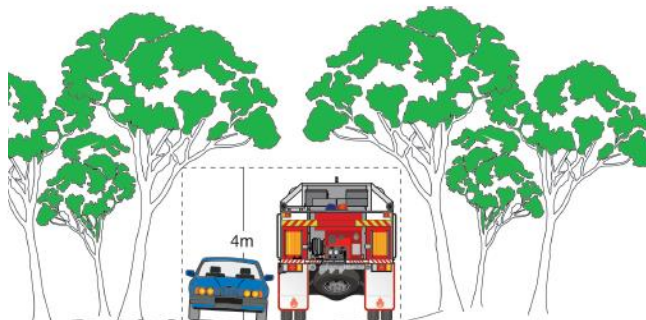
Non-perimeter roads:

- minimum 5.5m width kerb to kerb; and
- parking is provided outside of the carriageway width; and
- hydrants are located clear of parking areas; and
- roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m; and
- curves of roads have a minimum inner radius of 6m; and
- the road crossfall does not exceed 3°; and
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

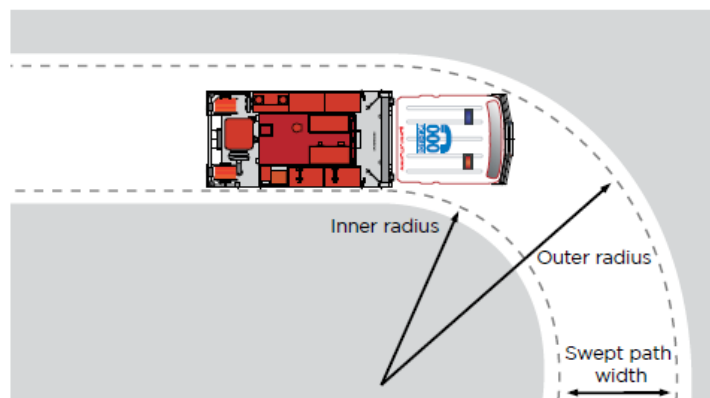
Non perimeter road widths:  
5.5 metres wide - parking is provided outside of the carriageway width, and hydrants are located clear of parking areas



A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches or buildings, is provided

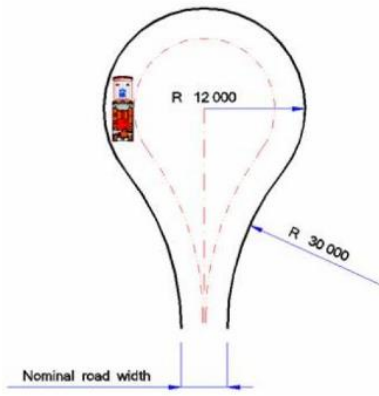


Swept path width for turning vehicles

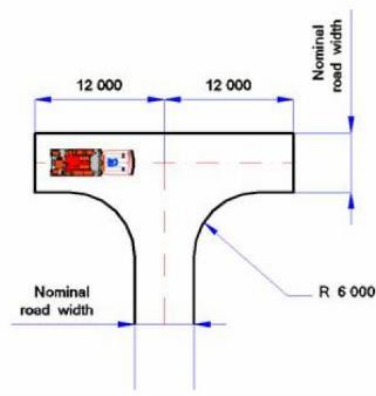


Curve radius (inside edge in metres)	Swept path (metres width)
< 40	4.0
40 - 69	3.0
70 - 100	2.7
> 100	2.5

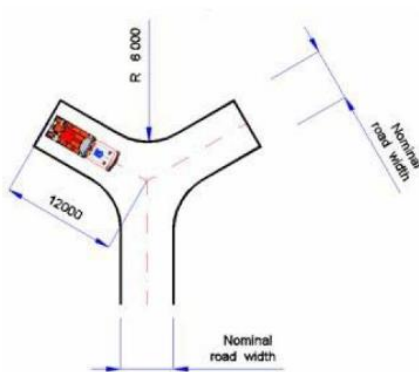




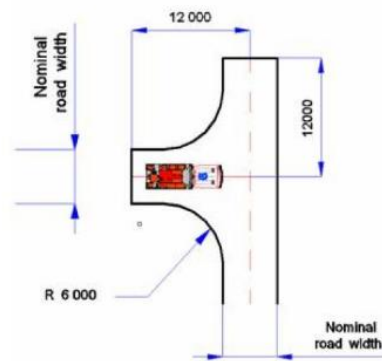
Type A



Type B



Type C



Type D

## 7.7 Services

### Water

Reticulated water mains is available to the southwestern corner of the subject site where hydrants are provided for along Oakdale Road and in a westerly direction. Future development of the subject site is anticipated to necessitate the extension of the water mains into the property for commercial needs.

As part of that development the National Construction Codes will dictate that services and equipment (fire protection measures including extinguishers and hose reels) are to be provided within buildings in accordance with Part E of the National Construction Codes. Where necessary this will include the installation of hydrants complying with the requirements of AS2419:2017. This will ensure that adequate services of water for the protection of future buildings during and after the passage of bush fire are supplied. If future development is of a smaller scale where hydrants are not required, static water supplies may be provided to satisfy bush fire services requirements.

### Electricity

Existing overhead supply is available to the subject site. The extension of any electricity supply to service new the future development of the site will be required to comply with Table 7.4a of Planning for Bush Fire Protection 2019. In particular the location of electricity services is to be installed so that it limits the possibility of ignition of surrounding bush land or the fabric of buildings. This requires

- where practicable, electrical transmission lines are underground; and
- where overhead, electrical transmission lines are proposed as follows:
  - 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 accordance with the specifications in ISSC3 *Guideline for Managing Vegetation Near Power Lines*.

## Gas

There is no reticulated gas mains available in this area. The installation of any tank or bottled gas supply to service future development of the site will be required to comply with Table 7.4a of Planning for Bush Fire Protection 2019. In particular the location and design of gas services shall be such that it will not lead to ignition of surrounding bushland or the fabric of buildings.

- bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities, and metal piping is used;
- all fixed gas cylinders are kept clear of all 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; and
- above-ground gas service pipes are metal, including and up to any outlets.

## 7.8 Emergency Management

Evacuation is possible by utilising existing road infrastructure which is not altered as part of this planning proposal. Traditional fire paths on hot dry days generally coincide with north and north-westerly prevailing weather conditions. The land to the west and northwest of the site is almost completely developed and there are no fire paths or significant tracks of vegetation located to the aspect where traditionally severe fire impacts occur from.

Fire history in this area includes the Gateshead Fire which impacted east of this site in 2013-2014 and the Redhead Fire which impacted south of the site in 2006 – 2007. Neither fire is recorded as directly impacting within the subject property.

Future development will be afforded an appropriate combination of bushfire protection measures and, when combined with a suitable and specific Bushfire Emergency Management and Evacuation Plans, the evacuation risk from this site is considered to be low.

## 7.9 PBP 2019 Bushfire Strategic Study Summary

Issue	Detail	Proposed Development Determinations
Bush Fire Landscape Assessment	A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	<p>Traditional fire paths on hot dry days generally coincide with north and north-westerly prevailing weather conditions. The land to the west and northwest of the site is almost completely developed and there are no fire paths or significant tracks of vegetation located to the aspect where traditionally severe fire impacts occur from.</p> <p>Fire history in this area includes the Gateshead Fire which impacted east of this site in 2013-2014 and the Redhead Fire which impacted south of the site in 2006 – 2007. Neither fire is recorded as directly impacting within the subject property.</p>
Land Use Assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	<p>It is clear from the BAL Ribbon diagram provided that the site has the capacity to provide for building footprints located in areas determined to be BAL 29 and below.</p> <p>There is no new development proposed as part of the planning proposal and the application of <i>AS3959 – 2018 Construction of buildings in bushfire prone areas</i> will be considered during future development proposals on a case by case basis.</p>

Issue	Detail	Proposed Development Determinations
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	<p>The site has the capacity to provide for the access requirements of PBP 2019.</p> <p>It is a relatively short distance for future occupants of the site to relocate safer areas in a westerly direction.</p> <p>Future development will be afforded an appropriate combination of bushfire protection measures and, when combined with a suitable and specific Bushfire Emergency Management and Evacuation Plans, the evacuation risk from this site is considered to be low.</p>
Emergency services	An assessment of the future impact of new development on emergency services provision.	<p>The development does not limit or hinder the ability of emergency services to access the hazard to carry out fire suppression or hazard reduction activities.</p> <p>Opening the land for the proposed uses provides improved access to the hazard interface for fire suppression and hazard reduction activities</p> <p>The creation of asset protection zones associated with future development of this site improves separation of the existing industrial estate to the west and RU6 land to the south from unmanaged vegetation areas.</p>
Infrastructure	An assessment of the issues associated with infrastructure provision.	<p>Reticulated water systems is expected to be provided within the site and hydrants will in all likelihood be available for emergency services use. If future development is of a smaller scale where hydrants are not required, static water supplies may be provided to satisfy bush fire services requirements.</p> <p>Electrical network will also be supplied in accordance with PBP.</p> <p>There are no known impediments to the supply of necessary infrastructure.</p>
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	<p>All bushfire protection measures will be able to be incorporated within the development site. Service supply can be established and have regard for preventing the ignition of surrounding bushland through compliance with PBP.</p> <p>There is no increased pressure on adjoining landowners to introduce or increase bushfire protection measures as a result of this proposed change in land use.</p> <p>Opening the land for the proposed uses provides improved access to the bushfire hazard interface.</p>



## 8.0 Conclusion

The subject site is determined to be bushfire prone land. The proposal must demonstrate that proposed land uses the rezoning allows for can achieve compliance with the aims and objectives of Planning for Bush Fire Protection 2019. As such site constraints should be determined at this planning proposal stage and the sites capacity to comply with these requirements should be demonstrated.

This bushfire hazard and determination has been made on a site-specific basis which includes an assessment of the local bushland area and its possible impact to the subject property. This assessment has demonstrated that future development of the site can provide for appropriate asset protection zones which is a fundamental component of the package of the bushfire protection measures applied.

In addition to an APZs, suitable access, services supply and means of maintaining the bushfire protection measures for the life of the development can be applied to future development and land uses the rezoning permits. Where necessary construction measures will also be included.

In terms of bush fire risk, the site is considered capable of accommodating the proposed future land uses the rezoning permits.

I am therefore in support of the planning proposal, namely the "Proposed Rezoning - 87 Oakdale Road, Gateshead, NSW".

Australian Bushfire Consulting Services Pty Ltd



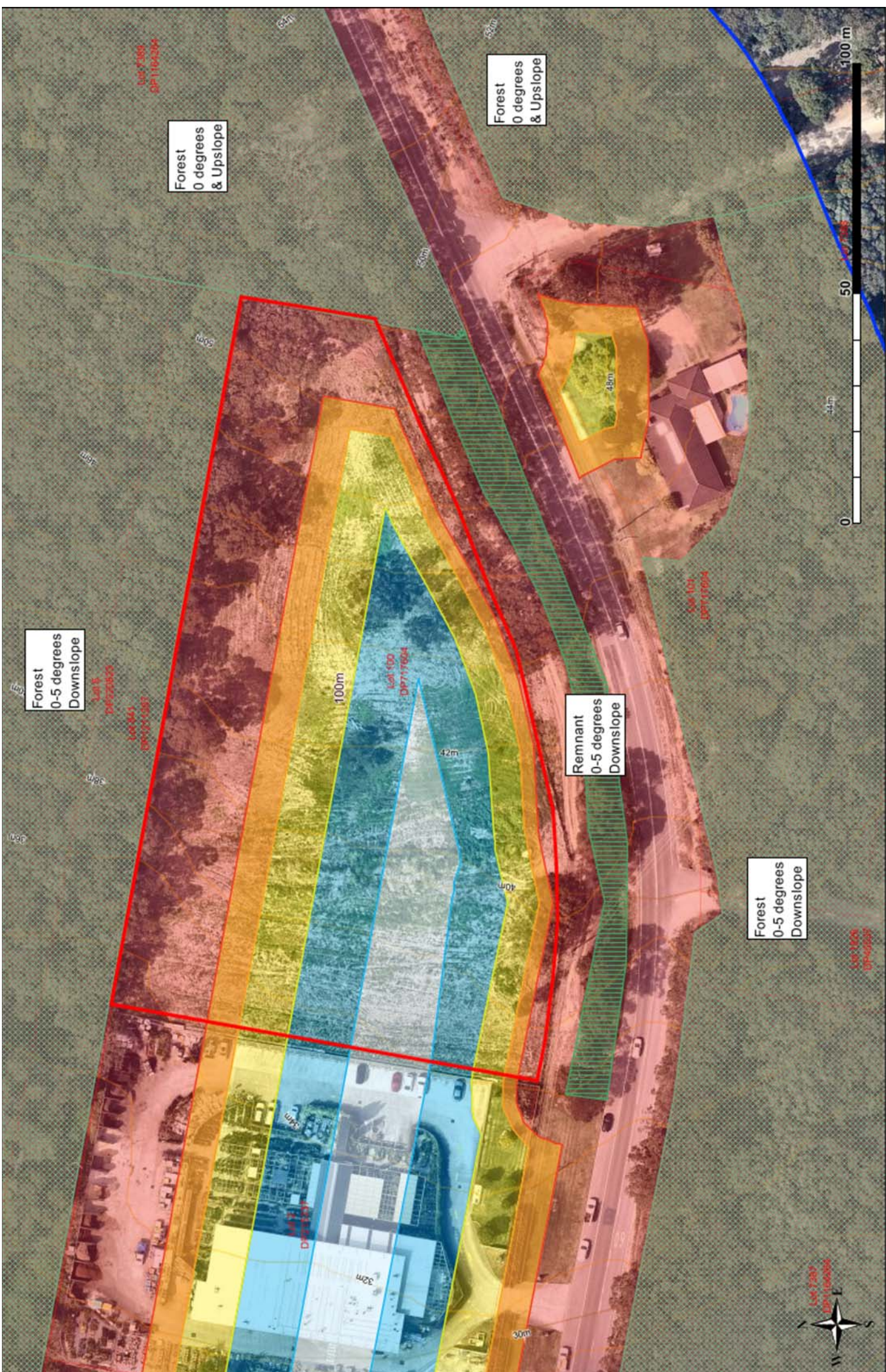
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## 9.0 List of attachments

Attachment 01: BAL Ribbon Diagram





Forest  
0-5 degrees  
Downslope

Forest  
0 degrees  
& Upslope

Forest  
0 degrees  
& Upslope

Remnant  
0-5 degrees  
Downslope

Forest  
0-5 degrees  
Downslope

### Legend

- My annotations Veg 2 ■ Rainforest 1 ■ Forest ■
- 100m ■ BAL-12.5 ■ BAL-19 ■ BAL-29 ■ BAL-40 ■ BAL-FZ
- Lot Boundary — Contours — Medium Scale — Large Scale