



## **Bushfire Assessment**

**Planning Proposal &  
Neighbourhood Plan**

**Bluescope Lands  
Kembla Grange**

**Cardno  
29 June 2020  
(Ref: 18156)**

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report by  
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# 1 Introduction

|                                  |                                                                                            |                       |
|----------------------------------|--------------------------------------------------------------------------------------------|-----------------------|
| <b>Street or property name:</b>  | 84 Sheaffes Road, 178 and 261 West Dapto Road                                              |                       |
| <b>Suburb, town or locality:</b> | Kembla Grange                                                                              | <b>Postcode:</b> 2526 |
| <b>Lot/DP no:</b>                | Lot 1 DP 588139; Lot 2 DP 230137; Lot 1 DP 588140; Lot 1002 DP 1192327                     |                       |
| <b>Local Government Area:</b>    | Wollongong City Council                                                                    |                       |
| <b>Type of proposal:</b>         | Rezoning and endorsement of Neighbourhood Plan for future residential and light industrial |                       |

## 1.1 Background

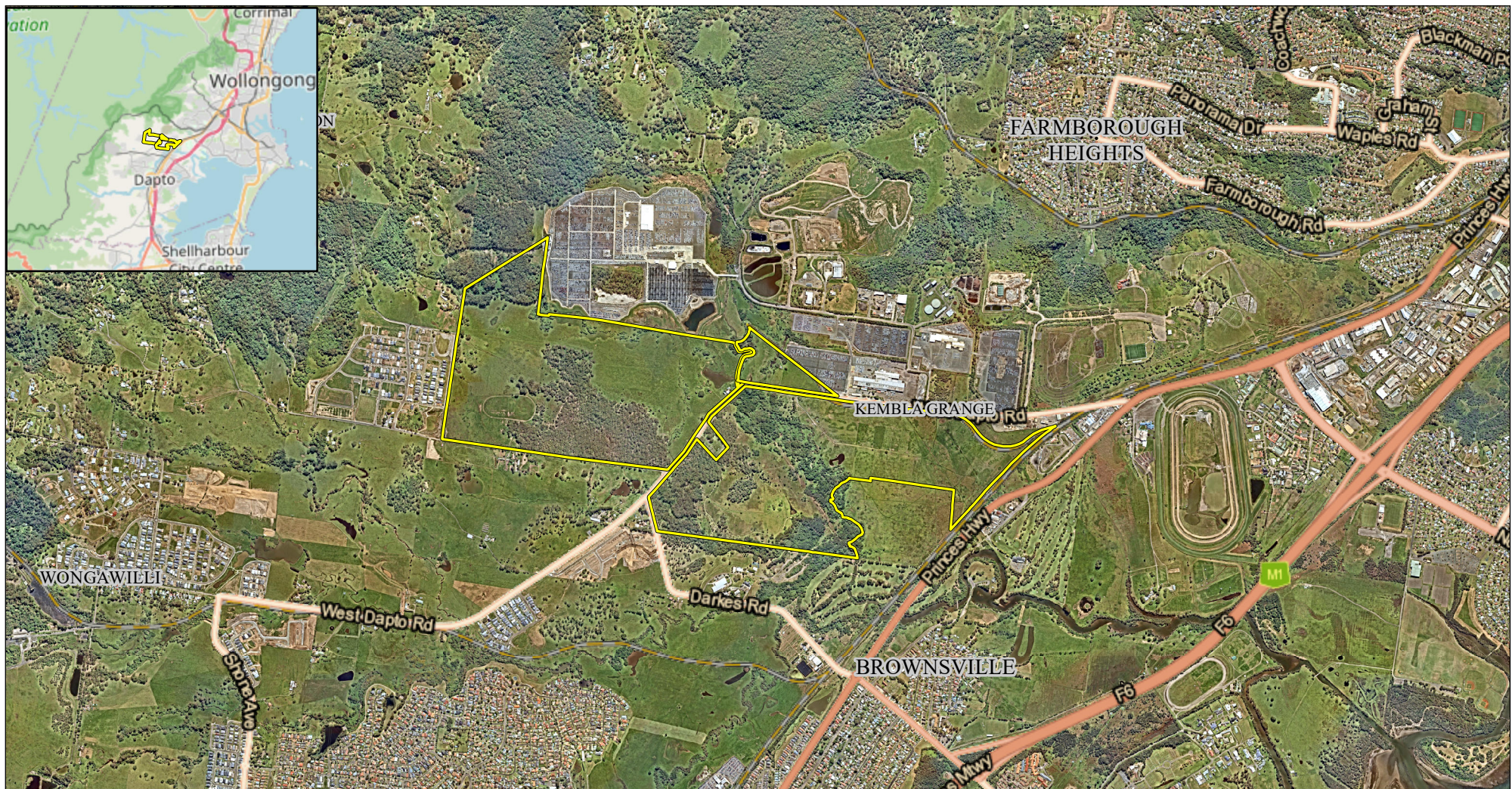
Cardno commissioned Peterson Bushfire to prepare a Bushfire Assessment Report to inform the development of a Planning Proposal and Neighbourhood Plan for land owned by Bluescope Steel at Kembla Grange in the Wollongong local government area. This report presents the assessment and recommendations to ensure compliance with the relevant bushfire protection legislation and policy.

This bushfire assessment has been prepared by a consultant accredited by the Fire Protection Association of Australia's BPAD scheme (Accreditation No. BPD-L3-18882).

## 1.2 Location and description of subject land

The subject land comprises of four lots totaling an approximate area of 225 hectares that straddle West Dapto Road, Kembla Grange at the location of West Dapto Cemetery. The location of the subject land is shown on Figure 1. The lots support a mixture of cleared paddocks and native vegetation. The predominant features are a large patch of woodland adjacent Sheaffes Road on the western side of West Dapto Road and riparian forest along Dapto Creek and Sheaffes Creek on the eastern side of Dapto Road (see Section 2 for full hazard description).





#### Legend

Subject Land



Date: 29/06/2020

0 250 500 1,000  
Metres

**Figure 1: The Location of the Subject Land**

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap



### 1.3 Description of development proposal

This Bushfire Assessment Report has been prepared to inform and support both a Planning Proposal that seeks to refine zoning boundaries and a Neighbourhood Plan that will facilitate future subdivision applications.

The purpose of the Planning Proposal is to:

- a) Rezone a portion of the R2 Low Density Residential to R3 Medium Density Residential;
- b) Rezone a small portion of E3 Environmental Management to R3 Medium Density Residential at the corner of West Dapto Road and Darkes Road;
- c) Rezone E3 Environmental Management to E2 Environmental Conservation near the corner of West Dapto Road and Darkes Road;
- d) Rezone various small areas of E3 Environmental Management to IN2 Light Industrial;
- e) Rezone small area of E2 Environmental Conservation to IN2 Light Industrial east of West Dapto Road; and
- f) Rezone a portion of the corridor zoned SP2 Infrastructure to IN3 Heavy Industrial.

Figure 2 shows the proposed rezoning described above.

The purpose of the Neighbourhood Plan is to facilitate subdivision applications. Planning issues and controls are addressed and the Neighbourhood Plan stage so that subdivision applications can be prepared, submitted and assessed with clear understanding of the requirements. Figure 3 shows the proposed Neighbourhood Plan.





# Legend

 Site Plan  
 Subject Land

## Zone

 E2 Environmental Conservation  
 E3 Environmental Management

 IN2 Light Industrial  
 IN3 Heavy Industrial  
 R2 Low Density Residential  
 R3 Medium Density Residential  
 RE1 Public Recreation

 RE2 Private Recreation  
 SP2 Infrastructure  
**Proposed Rezoning**  
 E2 Environmental Conservation  
 IN2 Light Industrial

 IN3 Heavy Industrial  
 R3 Medium Density Residential



Date: 29/06/2020

0 150 300 600  
 Metres

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap

Figure 2: Rezoning Plan





# Legend

-  Site Plan
-  Subject Land



Date: 29/06/2020

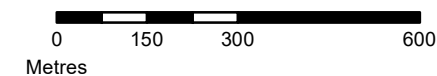


Figure 3: Neighbourhood Plan

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap



## 2 Assessment requirements

The subject land is identified as 'bush fire prone land' as shown on Figure 4. Planning Proposal submissions involving bush fire prone land must have regard to Section 9.1(2) Direction 4.4 – 'Planning for Bush Fire Protection' of the *Environmental Planning and Assessment Act 1979* as well as the NSW Rural Fire Service document 'Planning for Bush Fire Protection 2019' (referred to as 'PBP' throughout this report).

### 2.1 Direction 4.4 requirements

The objectives of Direction 4.4 are:

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

Direction 4.4 instructs councils on the bushfire matters which need to be addressed when drafting and amending Local Environmental Plans (LEP). They are as follows:

- *A draft LEP shall:*
  - *have regard to the document Planning for Bush Fire Protection 2006;*
  - *introduce controls that avoid placing inappropriate developments in hazardous areas; and*
  - *ensure that bushfire hazard reduction is not prohibited within the asset protection zone.*
- *A draft LEP shall, where development is proposed, comply with the following provisions, as appropriate:*
  - *provide an asset protection zone incorporating at a minimum:*
    - *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,*
    - *an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road.*
  - *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 draft LEP permit Special Fire Protection Purposes (as defined*



*under Section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with,*

- *contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,*
- *contain provisions for adequate water supply for fire-fighting purposes,*
- *minimise the perimeter of the area of land interfacing the hazard which may be developed,*
- *introduce controls on the placement of combustible materials in the Inner Protection Area.*

## **2.2 Planning for Bush Fire Protection 2019 (PBP) requirements**

Most of the Direction 4.4 provisions regarding Asset Protection Zones and access are specified within PBP. This report addresses both Direction 4.4 and PBP, combining responses to requirements where there is commonality.

PBP also specifies the type of bushfire assessment and level of information and detail required for Planning Proposal submissions. PBP Section 4 'Strategic Planning' outlines the submission requirements. The Planning Proposal is to be assessed in accordance with PBP Section 4.4.1 whereby the nature, scale and risk of the proposal and its potential impact on the wider infrastructure network is such that a Strategic Bush Fire Study (SBFS) is not required in accordance with PBP Section 4.2. A SBFS is required for strategic development proposals whereby new uses are proposed or new areas are to be developed. The proposed rezoning is minor in nature and the Planning Proposal does not seek to introduce uses with a higher risk profile than current zoning.

### **2.2.2 PBP assessment objectives for development other than residential and SFPP**

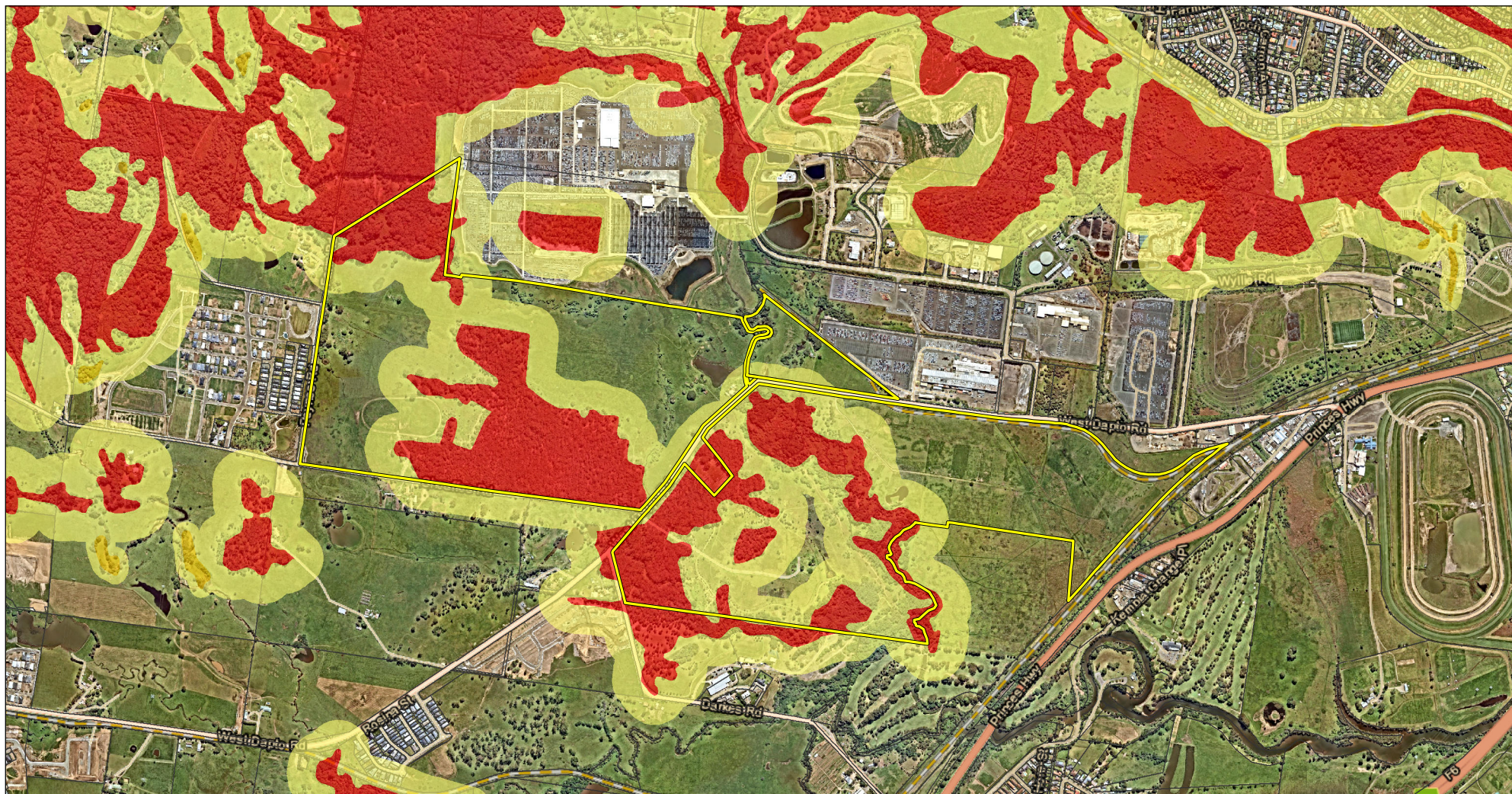
The requirements for Planning Proposals are aimed at residential and Special Fire Protection Purpose (SFPP) development. The subject land involves both residential land zonings and light industrial land zoning. Section 8.3 of 'Planning for Bush Fire Protection 2019' (PBP) prescribes the assessment methodology and bushfire protection measures for industrial uses that do not involve a habitable dwelling (Class 1, 2 or 3) or Special Fire Protection Purpose (SFPP) development. The National Construction Code (NCC) does not provide for any bushfire specific performance requirements for buildings of Class 5-8 under the (NCC). As stated within Section 8.3.1 of PBP, Asset Protection Zones (APZ)s and Bushfire Attack Levels (BALs) do not apply as deemed-to-satisfy provisions for bushfire protection for industrial uses. Whilst bushfire is not captured in the NCC for Class 5-8 buildings, the following objectives are to be applied in relation to access, water supply and services, and emergency and evacuation planning:

1. Provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
2. Provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;



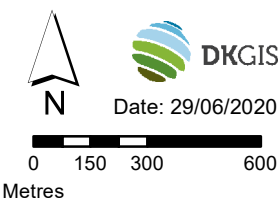
3. Provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
4. Provide for the storage of hazardous materials away from the hazard wherever possible.





# Legend

- Subject Land
- Vegetation Category 2
- Bushfire Prone Land**
- Vegetation Buffer
- Vegetation Category 1



**Figure 4: Bushfire Prone Land**

Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap



## 3 Bushfire hazard

An assessment of the bushfire hazard is necessary to determine the application of bushfire protection measures such as Asset Protection Zone (APZ) location and dimension. The following sub-sections provide a detailed account of the vegetation communities (bushfire fuels) and the topography (effective slope) that combine to create the bushfire hazard that may affect bushfire behaviour at the site.

### 3.1 Predominant vegetation

The vegetation within 140 m of the subject land has been assessed in accordance with the methodology specified by PBP. Figure 5 identifies the hazard interface with the developable zones and varying vegetation types as mapped by Ecoplanning (2020).

There are two hazard types adjacent to and within the subject land. Forest hazard (Moist Coastal White Box Forest) occurs to the north of the large residential zone, and the riparian corridors that form the E3 zones are classified as forest hazard, albeit heavily weed infested or in a regenerating state. Woodland hazard forms the two E2 zones, being the large remnant of Illawarra Lowlands Grassy Woodland on the western side of West Dapto Road and the smaller patch on the eastern side of West Dapto Road surrounding the cemetery.

### 3.2 Effective slope

The 'effective slope' influencing fire behaviour has been assessed in accordance with the methodology specified within PBP. This is conducted by measuring the slope that would most influence fire behaviour where the vegetation occurs over a 100 metre transect measured outwards from the hazard interface. The effective slope was assessed using a 2 m contour layer (refer to Figure 5).

The hazards adjacent the large residential zone are situated on a gradient within the PBP slope class of 'downslope 5-10 degrees' to the north and 'downslope 0-5 degrees' to the north-east. Similarly, the forest hazard adjacent the proposed R3 zone at the corner of West Dapto Road and Darkes Road is situated on a slope class of 'downslope 0-5 degrees'.

The IN2 zoning is predominantly adjacent a slope class of 'downslope 0-5 degrees' representative of the surrounding riparian corridors.

The slope classes are indicated on Figure 5.



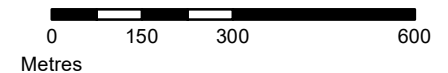


#### Legend

|              |                               |                               |                          |                                         |                         |
|--------------|-------------------------------|-------------------------------|--------------------------|-----------------------------------------|-------------------------|
| Contour - 2m | <b>Zone</b>                   | R2 Low Density Residential    | <b>Proposed Rezoning</b> | <b>Asset Protection Zone - PBP 2019</b> | <b>Defendable Space</b> |
| Hydrology    | E2 Environmental Conservation | R3 Medium Density Residential | E2                       | Asset Protection Zone - 12m             | Defendable Space 6m     |
| Site Plan    | E3 Environmental Management   | RE1 Public Recreation         | IN2                      | Asset Protection Zone - 16m             |                         |
| Subject Land | IN2 Light Industrial          | RE2 Private Recreation        | IN3                      | Asset Protection Zone - 29m             |                         |
|              | IN3 Heavy Industrial          | SP2 Infrastructure            | R3                       | Asset Protection Zone - 36m             |                         |

**Figure 5: Bushfire Hazard Analysis and Asset Protection Zone**

Date: 29/06/2020



Coordinate System: GDA 1994 MGA Zone 56

Imagery: © Nearmap



## 4 Addressing compliance

This section details how compliance with the assessment requirements listed in Section 2 are addressed. The response to requirements is set out following the structure of Direction 4.4, followed by PBP. There is duplication of requirements between Direction 4.4 and PBP; in these cases, the relevant report subsection is referred to for the appropriate response.

### 4.1 Direction 4.4

The objectives of Direction 4.4 can only be satisfied once the provisions are achieved. Demonstration of achieving the provisions is provided below (Section 4.1.2). Statements of how the objectives are achieved are as follows:

#### 4.1.1 Objectives

##### **Objective 1**

*“To protect life, property and the environment from bushfire hazards, by discouraging the establishment of incompatible land uses in bushfire prone areas”*

The intention of the objective is to avoid a development outcome that is faced by or poses a risk that cannot be managed to an acceptable level. The assessment of ‘incompatible’, ‘inappropriate’ and ‘acceptable’ is a subjective one, and one that is not defined within PBP, legislation or related policy. To guide an assessment, reference should be made to the measures specified by *Planning for Bush Fire Protection 2019* (see Section 4.2), such as the ability to establish and maintain an adequate Asset Protection Zone (APZ), and the assurance of acceptable access and evacuation.

The proposed rezoning does not introduce new uses to that already approved for the subject land. The increased density permitted by R3 Medium Density Residential and the additional areas of IN2 Light Industrial are not considered incompatible with the surrounding bushfire prone area. Compliant APZs coupled with adequate access designed to address the bushfire risk produces a use not incompatible with the surrounding environment.

##### **Objective 2**

*“To encourage sound management of bushfire prone areas”*

The recommended bushfire protection measures demonstrate sound management of the of the site for the intended use. The provisions and how they are to be addressed are listed in Section 4.1.2.



### 4.1.2 Provisions

#### Provision 1

“have regard to Planning for Bush Fire Protection”

Addressing this provision is detailed in Section 4.2. The Planning Proposal complies with PBP.

#### Provision 2

“introduce controls that avoid placing inappropriate developments in hazardous areas”

The proposed zoning is not significantly different to the current zoning and is not considered inappropriate. Controls (bushfire protection measures) will be set in place to ensure compliance with PBP. The controls are set out in Section 4.2.

#### Provision 3

“ensure that bushfire hazard reduction is not prohibited within the asset protection zone”

Proposed APZs will be contained wholly within land that will be regularly managed so as not to conflict with objectives of the E3 and E2 zones.

#### Provision 4

“provide an asset protection zone incorporating at a minimum:

- 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,
- an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road”

APZs will be provided to comply with the distances prescribed by PBP as detailed in Section 4.2 and shown on the Neighbourhood Plan. Perimeter access is also proposed.

#### Provision 5

“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 draft LEP permit Special Fire Protection Purposes (as defined under Section 100B of the Rural Fires Act 1997), the APZ provisions must be complied with”

Section 4.2 details APZs compliant with the Acceptable Solutions.



**Provision 6**

*“contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks”*

The Neighbourhood Plan features two-way public roads and a compliant road layout. More detail on the proposed access is detailed in Section 4.2.

**Provision 7**

*“contain provisions for adequate water supply for fire-fighting purposes”*

All aspects of future development will have a hydrant supply that complies with PBP. More details are provided at Section 4.2.

**Provision 8**

*“minimise the perimeter of the area of land interfacing the hazard which may be developed”*

The proposed rezoning seeks to improve the hazard perimeter for the IN2 zones. Otherwise the zones containing the hazard (E3 and E2) are fixed from previous rezoning approval.

**Provision 9**

*“introduce controls on the placement of combustible materials in the Inner Protection Area”*

Section 4.2 details the how the site and any APZs are to be maintained.

**4.2 Planning for Bush Fire Protection 2019 (PBP)**

Compliance with *Planning for Bush Fire Protection 2019* (PBP) is achieved by addressing the standards for bushfire protection. The standards consist of ‘Acceptable Solutions’ and corresponding ‘Performance Criteria’ for the provision of APZs, access and services (e.g. water supply). Discussion on the standards and statements on how each protection measure can be complied with are listed in the subsections below.

**4.2.1 Asset Protection Zones (APZ)**

Using the hazard parameters of vegetation and slope discussed in Section 3, APZ distances have been determined (see Table 1 on the following page and Figure 5). The APZ distances for the residential zones are 12 m, 16 m, 29 m and 36 m.

The 16 m APZ for the eastern interface of the residential zone on the western side of West Dapto Road will fall partially within the adjacent biobanking site (Biobanking Agreement No. 421) for the width of the fire management trail that runs the full length of the boundary. A stand of trees will be retained within the R2 zone where it is adjacent the biobanking site. The trees will be retained within the rear yards of deeper lots and will be maintained as an APZ to an Outer Protection Area (OPA) standard so that the trees do not act as a bushfire hazard. Existing mature, woodland trees will be permitted with touching canopies and maintained understorey and grasses will ensure compliance with APZ standards.

PBP does not prescribe a specific APZ dimension for industrial uses (refer to Section 2.2.2). The general fire safety requirements of the NCC are accepted as adequate bushfire protection for the development of building Class 5 to 8 which includes industrial facilities, warehouses and office space. However, PBP does require the consideration of a managed hazard-separation area for fire-fighting purposes referred to as 'defendable space'. A defendable space is an area between the building and the bushfire hazard that provides an environment in which fire-fighters can undertake property protection after the passage of a bushfire with some level of safety. The defendable space dimension is defined by the ability to gain access around an asset and conduct defensive fire-fighting operations. Relying on a defendable space in lieu of an APZ is deemed acceptable whereby construction materials are typically non-combustible and meet NCC building and structural fire requirements.

Future buildings are to have a defendable space to the hazard consisting of a public road or fire access road of minimum 6 m wide. The design requirements for roads are specified in Section 4.2.3 below.

**Table 1: APZ calculation**

| Location <sup>1</sup>                             | Vegetation <sup>12</sup> | Slope class <sup>3</sup>           | APZ <sup>4</sup>                |
|---------------------------------------------------|--------------------------|------------------------------------|---------------------------------|
| <b>Residential zoning west of West Dapto Road</b> |                          |                                    |                                 |
| North                                             | Forest                   | Downslope 5-10°                    | 36 m                            |
| North-east                                        | Forest                   | Downslope 0-5°                     | 29 m                            |
| East                                              | Woodland                 | Downslope 0-5°                     | 16 m                            |
| <b>Residential zoning east of West Dapto Road</b> |                          |                                    |                                 |
| East                                              | Forest                   | Downslope 0-5°                     | 29 m                            |
| South                                             | Woodland                 | Upslope/Flat                       | 12 m                            |
| <b>Light industrial zoning</b>                    |                          |                                    |                                 |
| Various                                           | Woodland and forest      | Upslope/Flat and<br>Downslope 0-5° | Minimum 6 m<br>defendable space |

<sup>1</sup> Location as shown on Figure 5.

<sup>2</sup> Predominant vegetation classification over 140 m from development boundary.

<sup>3</sup> Effective slope assessed over 100 m from development boundary where the bushfire hazard occurs.

<sup>4</sup> Asset Protection Zone (APZ) required by 'Planning for Bush Fire Protection 2019'.

#### **4.2.2 Vegetation management**

Future subdivision and development applications will need to demonstrate that the developable zones can be managed and landscaped to achieve the fuel management standard of an Inner Protection Area (IPA) as described within Appendix 4 of PBP. An exception is the stand of trees



within the R2 zone adjacent the biobanking site which can be maintained as an Outer Protection Area (OPA). The following guide has been designed to achieve the IPA and OPA at this site:

### Trees

- IPA:
  - Tree canopies at maturity should not be within 2 m of a dwelling/building roofline.
  - Tree canopies should not be connected between the hazard and a dwelling/building. Gaps between crowns or groups of crowns are to be maintained at distances of 2 to 5m.
- OPA:
  - Tree canopies at maturity should not be within 2 m of a dwelling/building roofline.
  - Tree canopies may touch with limited overlapping.

### Shrubs

- Shrubs are to be limited and be within managed garden beds to prevent the spread of fire towards buildings.
- Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

### Groundcovers

- Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height).
- Fine fuels on the ground such as leaves and twigs should be regularly removed.
- Organic mulch is not to be used within 1 m of a dwelling/building.

## **4.2.3 Access**

### ***Alternate access and egress***

PBP requires an access design that enables safe evacuation whilst facilitating adequate emergency and operational response.

The Neighbourhood Plan demonstrates that the residential zones will benefit from multiple access/egress points in alternate directions.

The industrial zones also have adequate access as shown on the Neighbourhood Plan. East of West Dapto Road the IN2 zone is accessed by a single road within a 50 m wide managed corridor (comprising of the road reserve and adjacent lots) that does not exceed 200 m in length

between West Dapto Road and the internal loop road. The IN2 zones on the western side of West Dapto Road either have an access road less than 200 m or a connecting road.

### **Perimeter access**

The Neighbourhood Plan shows public subdivision roads providing perimeter access between future lots and the bushfire hazard for the residential zones. The perimeter access road to the eastern interface of the residential zone on the western side of West Dapto Road is complemented by the fire management trail that runs the full length of the interface within the adjacent biobanking site.

As discussed in Section 4.2.1, all hazard interface areas within the industrial zones will feature an access road acting as defendable space. The defendable space will vary between a public road and a minimum 6 m wide fire access road to be provided within lots. The fire access road will be a requirement for future subdivision and development applications.

### **Design and construction standards**

The public roads will be designed in accordance with the PBP Acceptable Solutions for the design and construction of roads for residential subdivision as required by PBP Table 5.3b. The requirements are repeated below.

PBP design standards for roads servicing residential subdivision:

- *Property access roads are two-wheel drive, all weather roads.*
- *Perimeter roads are provided for residential subdivisions of three or more allotments.*
- *Subdivisions of three or more allotments have more than one access in an out of the development.*
- *Traffic management devices are constructed to not prohibit access by emergency service vehicles.*
- *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.*
- *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.*
- *Where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road.*
- *Where access/egress can only be achieved through forest, woodland or heath vegetation, secondary access shall be provided to an alternate point on the existing public road system.*



- *The capacity of perimeter and non-perimeter road surfaces and any bridges and causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); Bridges/causeways to clearly indicate load rating.*
- *Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression.*
- *Hydrants are provided in accordance with AS 2419.1:2005.*
- *There is suitable access for a Category 1 fire appliance to within 4 m of the static water supply where no reticulated supply is available.*
- *Perimeter roads are:*
  - *two-way sealed roads;*
  - *8 m carriageway width kerb to kerb;*
  - *parking is provided outside of the carriageway width;*
  - *hydrants are located clear of parking reserves;*
  - *there are through roads, and these are linked to the internal road system at an interval of no greater than 500 m;*
  - *curves of roads have a minimum inner radius of 6 m;*
  - *the maximum road grade is 15° and average grade is 10°;*
  - *the road crossfall does not exceed 3°;*
  - *a minimum vertical clearance of 4 m to any overhanging obstruction, including tree branches, is provided.*
- *Non-perimeter roads are:*
  - *Minimum 5.5 m width kerb to kerb;*
  - *parking is provided outside of the carriageway width;*
  - *hydrants are located clear of parking reserves;*
  - *there are through roads, and these are linked to the internal road system at an interval of no greater than 500 m;*
  - *curves of roads have a minimum inner radius of 6 m;*
  - *the road crossfall does not exceed 3°;*
  - *a minimum vertical clearance of 4 m to any overhanging obstruction, including tree branches, is provided.*

#### **4.2.4 Water supply for fire-fighting**

Future development will require fire hydrants to be installed to comply with *AS 2419.1 – 2005 Fire Hydrant Installations - System Design, Installation and Commissioning* (AS 2419) so that all sides of a building envelope are within 70 m of a hydrant by lay of the hose (or 90 m with a tanker parked in-line maximum 20 m from the hydrant).



## 5 Conclusion and recommendations

The information presented in this Bushfire Assessment Report demonstrates that the proposal to amend the zoning at the subject land for future residential and light industrial development can satisfy the Ministerial Direction No. 4.4 – ‘Planning for Bush Fire Protection’ and the requirements of *Planning for Bush Fire Protection 2019*. This is achieved by providing compliant bushfire protection measures such as APZs and adequate access.

The proposed Neighbourhood Plan demonstrates the application of compliant APZs and access and will facilitate future subdivision applications. A Bushfire Assessment Report will also be required at the subdivision application stage to demonstrate compliance of the detailed subdivision design with *Planning for Bush Fire Protection 2019*.

Bushfire protection measures for the proposed rezoning and Neighbourhood Plan recommended within this report to achieve the requirements are listed below:

- Provision of APZs to the residential zones ranging from 12 m to 36 m.
- Provision of defendable space to the light industrial zones consisting of public roads and minimum 6 m wide fire access roads.
- Vegetation management across all developable zones to achieve IPA standard.
- Adequate access for emergency response and evacuation consisting of alternate access to the existing road network for the residential zones.
- Compliant road widths and design for all zones.
- Adequate water supply for all developable zones to allow fire-fighting operations by fire authorities.



David Peterson



# References

NSW Rural Fire Service (RFS). 2019. *Planning for Bush Fire Protection: A Guide for Councils, Planners, Fire Authorities, and Developers*. State of New South Wales through the NSW Rural Fire Service, 2019.

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