

**BUSHFIRE PROTECTION ASSESSMENT  
FOR THE PROPOSED  
200 ALDINGTON ROAD INDUSTRIAL ESTATE  
ON LOTS 20 - 23 in DP 255560  
&  
LOTS 30 - 32 in DP 258949  
ALDINGTON ROAD, KEMPS CREEK**

***Australian Bushfire Protection Planners Pty Limited***

ACN 083 085 474  
32 Old Dog Trap Road  
SOMERSBY 2250 NSW  
Phone: (02) 43622112  
Email: [abpp@bigpond.net.au](mailto:abpp@bigpond.net.au)



Australian Bushfire  
Protection Planners Pty Ltd  
ABN 48 935534 462

Bushfire Mitigation Consultants

**BUSHFIRE PROTECTION ASSESSMENT**

**FOR THE PROPOSED**

**200 ALDINGTON ROAD INDUSTRIAL**

**ESTATE**

**ON**

**LOTS 20 - 23 in DP 255560**

**&**

**LOTS 30 – 32 in DP 258949**

**ALDINGTON ROAD**

**KEMPS CREEK**

<b>Assessment Number</b>	<b>Document</b>	<b>Preparation Date</b>	<b>Issue Date</b>	<b>Directors Approval</b>
B203518 - 5	Final	20.08.2020	23.09.2021	<i>G.L. Swain</i>

## PROJECT SUMMARY AND CHRONOLOGY

This section provides a summary of the Project description as lodged (11 November 2020) and publicly exhibited and subsequent amendments to the project to address issues raised by the DPIE and in submissions from agencies, Penrith City Council and the public.

The section concludes with a description of the SSDA for which development consent is now sought.

### 1. Summary of project as lodged and publicly exhibited (October 2020)

As lodged and exhibited, the SSDA sought approval for the following development:

- A concept Masterplan with an indicative total building area of 375,755 sqm, comprising:
  - 357,355 sqm of warehouse gross floor area (**GFA**);
  - 18,200 sqm of ancillary office GFA;
  - 200 sqm of café GFA;
  - 13 individual development lots for warehouse buildings with associated hardstand areas and two lots for drainage infrastructure purposes;
  - Internal road layouts and road connections to Aldington Road;
  - Provision for 1700 car parking spaces;
  - Associated concept site landscaping.
- Detailed consent for progressive delivery of site preparation, earthworks and infrastructure works (i.e., Stage 1 works) on the site, including:
  - Demolition and clearing of all existing built form structures
  - Drainage and infill of existing farm dams and any ground dewatering
  - Clearing of all existing vegetation
  - Subdivision of the site into 15 individual lots
  - Construction of a warehouse building with a total of 50,930 sqm of GFA, including:
    - 48,430 sqm of warehouse GFA;
    - 2,500 sqm of ancillary office GFA;
    - 231 car parking spaces.
  - Bulk earthworks including 'cut and fill' to create flat development platforms for the warehouse buildings, and site stabilisation works (if required);
  - Roadworks and access infrastructure;
  - Stormwater and drainage works including stormwater basins, diversion of stormwater lines, gross pollutant traps and associated swale works;
  - Sewer and potable water reticulation;
  - Inter-allotment, road and boundary retaining walls.



## 2. Response to Submissions (March 2021)

Following the public exhibition of the Project, changes were undertaken in response to the issues raised during the public exhibition. This included a full assessment of the Project against the Draft Mamre Road Precinct Development Control Plan (**draft MRP DCP**) which was released subsequent to lodgement of the SSDA.

The key changes and additional information on the Project included:

- A revised riparian solution in the north east corner of the site which relocated the existing first order water course and re-established the riparian corridor with a 10-metre buffer on each side in accordance with the Natural Resources Access Regulator (NRAR) guidelines;
- An evidence-based case for the proposed location of the high order road south of the site's northern boundary which was seen to provide a more logical and feasible road network outcome (for both FKC and its northern neighbour) compared to that envisioned under the draft MRP DCP;
- Revised technical inputs for the flood assessment to address the submissions raised, including revised flood modelling which addresses post development conditions in the 2-, 20- and 100-year ARI events, and providing further commentary on the flooding impacts of surrounding and downstream land;
- An integrated water management solution which can effectively allow the progressive redevelopment of the site to occur while still recognising and meeting stormwater runoff targets set out in the draft and eventual final MRP DCP;
- A revised Visual Impact Assessment showing the impact of proposed landscaping mitigation over time;
- Rationale for minor departures from the draft MRP DCP in relation to building design and siting, pylon signage and retaining walls.

## 3. Request for Additional Information (April 2021)

Further changes to the Project (which are the subject of this RTS Report) are the result of further correspondence received by DPIE (dated 28 April 2021). The changes to the Project further align the proposed development with the relevant provisions of the draft MRP DCP (especially in relation to the proposed road network) and exclude prohibited components of development from the RE2 Private Recreation zone. The Summary of key changes to the project are:

Concept Master Plan:

- Reconfiguration of the internal road network and external road connections to be generally consistent with the draft Mamre Road Precinct DCP including:
  - Provision of a land reservation corridor along the northern boundary to facilitate half the required future DCP road and intersection with Aldington Road;
  - Inclusion of the open space edge road in the north-east section of the site with connections through to the adjoining properties to the north and east;
  - Intersections with Aldington Road; signalised south intersection and roundabout northern intersection;
  - Amendments to road corridor widths.

- Reconfiguration of Lot G to facilitate the open space edge road to the adjoining eastern property and to locate the proposed warehouse footprint wholly within the IN1 zone;
- Relocation of on-site detention basin within Lot D to be outside the RE2 Private Recreation zone in within the IN1 zone;
- Retention of existing farm dams within the RE2 zoned area in the north-east corner of the site;
- Consequential amendments to bulk earthwork pads, retaining walls, lot and future warehouse layout, car parking and landscaping.

#### Stage 1 works:

- Overall revisions to site preparation, earthworks and infrastructure consistent with the revised concept master plan;
- Inclusion of an interim access road and temporary junction connecting to Aldington Road in the northern portion of the site to facilitate site access prior to the implementation of the northern boundary road;
- Revision to the internal road network in line with the concept master plan revisions with the provision of temporary turning heads at the site boundary where those roads will connect to properties to the east and north in the future. The road levels at the boundary interface of the site will align with existing ground level (or as required to contain stormwater).

#### **4. Description of Project, as amended, for which development consent is now sought:**

The amended SSDA seeks approval for the following development:

A concept Masterplan with an indicative total building area of 347,955 sqm comprising:

- 330,950 sqm of warehouse gross floor area (**GFA**);
- 17,005 sqm of ancillary office GFA;
- Thirteen (13) individual development lots for warehouse buildings with associated hardstand areas and two lots for drainage infrastructure purposes (each including a bio-retention basin);
- Roads, including:
  - o Internal road layouts;
  - o Southern road connection to Aldington Road;
  - o Northern boundary road (half road corridor) connecting to Aldington Road;
  - o Road connections to adjoining landholdings to the north and east;
  - o Provision for 1549 car parking spaces and
  - o Associated concept site landscaping.
- Detailed consent for progressive delivery of site preparation, earthworks and infrastructure works (i.e., Stage 1 works) on the site, including:
  - o Demolition and clearing of all existing built form structures;
  - o Drainage and infill of existing farm dams and any ground dewatering;
  - o Clearing of all existing vegetation;
  - o Subdivision of the site into 15 individual lots;
  - o Construction of a warehouse building with a total of 50,930 sqm of GFA, including:

- 48,430 sqm of warehouse GFA;
- 2,500 sqm of ancillary office GFA and 219 car parking spaces;
- Bulk earthworks including 'cut and fill' to create flat development platforms for the warehouse buildings, and site stabilisation works (if required);
- Roadworks and access infrastructure, including an interim access road and temporary junction with Aldington Road;
- Stormwater and drainage works including stormwater basins, diversion of stormwater lines, gross pollutant traps and associated swale works;
- Sewer and potable water reticulation; and
- Inter-allotment, road and boundary retaining walls.

This report addresses the amended project for which development consent is now sought. It is a stand-alone report and supersedes the previous reports and supplementary information prepared for the original development application and subsequent response to submissions.

## EXECUTIVE SUMMARY

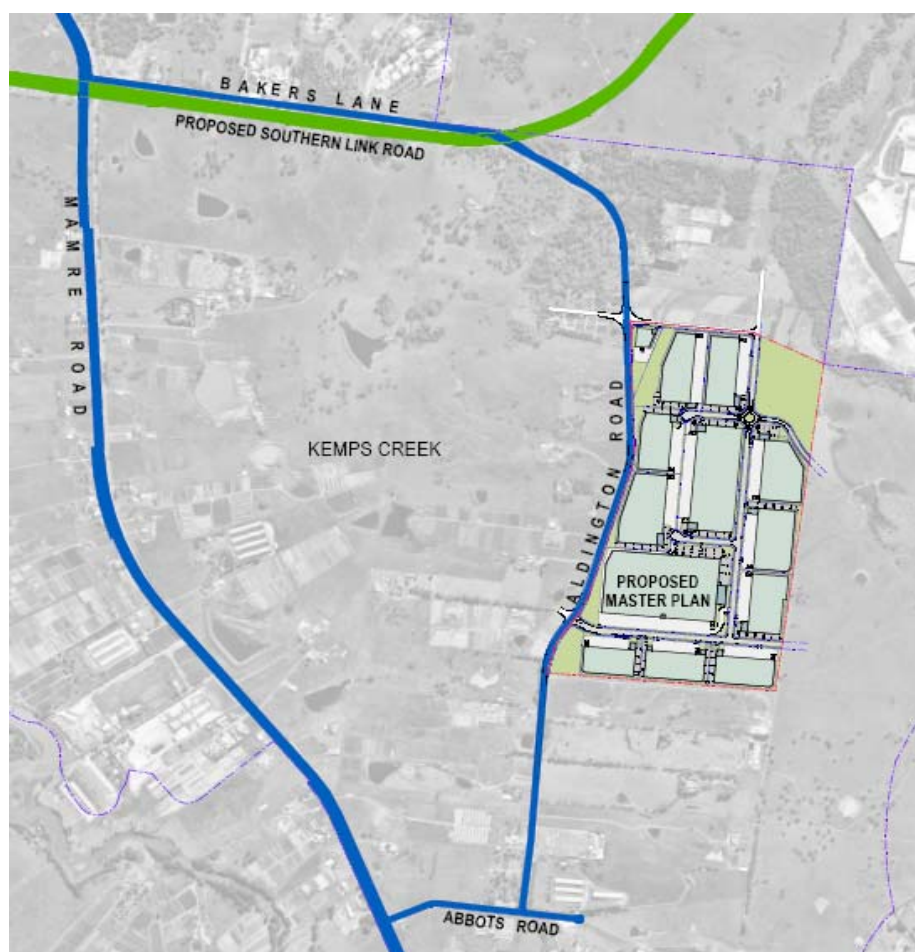
*Australian Bushfire Protection Planners Pty Limited*, at the request of the Trustee for the *Fife Kemps Creek Trust*, undertook the bushfire consultancy to inform the State Significant Development Application [SSDA] on the bushfire protection measures required for the development of the proposed 200 Aldington Road Industrial Estate, No. 106 - 228 Aldington Road, Kemps Creek, here-in known as the 'development site'.

Legally described as Lots 20 – 23 in DP 255560 and Lots 30 – 32 in DP 258949, with an area of approximately 72ha, the Site is located east of Aldington Road, Kemps Creek within the Penrith City Council Local Government Area (LGA).

The Site has approximately 1250m of direct frontage to Aldington Road with a proposed signalised intersection providing vehicular access via Aldington Road to the proposed Southern Link Road.

The Site is located approximately 4km north-east from the future Western Sydney Nancy-Bird Walton Airport, 13km south-east of the Penrith CBD and 40km west of the Sydney CBD.

**Figure 1 – Location of the 200 Aldington Road Industrial Estate**



The site forms part of the Mamre Road Precinct and is zoned for IN1 – General Industrial uses as defined within the State Environmental Planning Policy (Western Sydney Employment Area) 2009 (SEPP WSEA).

The Penrith Council Bushfire Prone Land Map indicates that the site and adjacent lands contains Category 2 Bushfire Prone Vegetation.

Therefore, this amended report undertakes an assessment to examine the measures required to minimise bushfire risk on the modified development and determines the deemed-to-satisfy bushfire protection requirements in accordance with the provisions of *Planning for Bushfire Protection 2019* and provides recommendations on the provision of Asset Protection Zones [Defendable Spaces] to the future buildings in the 200 Aldington Road Industrial Estate.

This amended report also assesses the adequacy of fire-fighting access and water supplies; construction standards of the buildings, the management of the Asset Protection Zones [Defendable Spaces] and evacuation protocols necessary to address the bushfire risk to the proposed development and to address the aim and objectives of *Planning for Bushfire Protection 2019*.

The amended report has found that the requirements of *Planning for Bushfire Protection 2019* have been met and the Key Issue – Bushfire of the SEARs has been satisfactorily addressed.



Graham Swain, Managing Director,  
**Australian Bushfire Protection Planners Pty Limited**



## **TABLE OF CONTENTS**

PROJECT SUMMARY AND CHRONOLOGY .....	3
EXECUTIVE SUMMARY .....	7
TABLE OF CONTENTS .....	9
SECTION 1 .....	10
INTRODUCTION .....	10
1.1 Aim of this Report. ....	10
1.2 Statutory Requirements. ....	10
1.2.1 Legislation. ....	11
1.2.2 Planning Policies. ....	11
1.3 Development Proposal. ....	11
1.4 Documentation reviewed in this Assessment. ....	15
1.5 Site Inspection. ....	15
SECTION 2 .....	16
PROPERTY DESCRIPTION.....	16
2.1 Location.....	16
2.2 Existing Land Use. ....	17
2.3 Adjoining Land Use. ....	17
2.4 Topography. ....	18
2.5 Vegetation. ....	19
2.7 Significant Environmental Features within the Site. ....	19
2.8 Known Threatened Species, Population or Ecological Community on the Site. ....	19
2.9 Details and location of Aboriginal Relics or Aboriginal Place. ....	19
SECTION 3 .....	21
PRECINCT LEVEL ASSESSMENT.....	21
3.1 Certified Bushfire Prone Land Map.....	21
SECTION 4 .....	22
BUSHFIRE PROTECTION ASSESSMENT .....	22
4.1 Introduction. ....	22
4.2 The provision of Defendable Space/s [Asset Protection Zones]. ....	23
4.3 Construction Measures to Buildings. ....	26
4.4 Access Standards for Firefighting Operations. ....	27
4.5 Water Supplies for Firefighting Operations. ....	28
4.6 Emergency Management for Fire Protection / Evacuation. ....	28
4.7 Bushfire Hazard Management. ....	28
SECTION 5 .....	29
BUSHFIRE MANAGEMENT STRATEGIES .....	29
5.1 Strategy 1 – Defendable Space management Requirements: ....	29
5.2 Strategy 2 – Water Supplies/Utilities for Firefighting Operations:.....	29
5.3 Strategy 3 – Construction Standards to the buildings located adjacent to the bushfire hazard: ....	29
5.4 Strategy 4 – Access Standards for Firefighting Operations.....	31
SECTION 6 .....	32
CONCLUSION .....	32
REFERENCES: .....	34

## SECTION 1

### INTRODUCTION

#### 1.1 Aim of this Report.

The aim of this amended Bushfire Protection Assessment is to examine the modifications to the Concept Masterplan and Stage 1 Application to address the requirements of the Secretary's Environment Assessment Requirements [SEARS], Application Number SSD-10479 – July 2020, which require an assessment to be undertaken against the requirements of *Planning for Bushfire Protection 2019*.

To achieve the specific bushfire requirement of the SEARS the following will be examined:

- Determine the classification of the vegetation on and surrounding the site in accordance with the vegetation classification system contained in *Planning for Bushfire Protection 2019*;
- Undertake an assessment to determine the slope of the land on and surrounding the development site;
- Undertake a Bushfire Protection Assessment to determine bushfire protection strategies for the proposed development that address the following matters:
  - (i) The provision of building setbacks (Defendable Space) from vegetated areas and the siting of buildings to minimize the impact of radiant heat and direct flame contact;
  - (ii) Fire fighting water supplies;
  - (iii) Access requirements for emergency service vehicles;
  - (iv) Construction standards to be used for the future buildings within the proposed development to minimize the vulnerability of buildings to ignition from radiation and ember attack;
  - (v) Land management responsibilities; and
  - (vi) Evacuation management.

#### 1.2 Statutory Requirements.

This assessment has been prepared having regard to the following legislative and planning requirements:

### **1.2.1 Legislation.**

#### ***Environmental Planning and Assessment Act - 1979 (EPA Act)***

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1997* (EPA Act).

In relation to bushfire planning for new developments (including Industrial Development) in bushfire prone areas in NSW, Section 4.14 of the Act requires a consent authority to determine if a proposed development that is located within a designated Bushfire Prone Area or the buffer zone to the Bushfire Prone Land complies with *Planning for Bushfire Protection 2019*;

### **1.2.2 Planning Policies.**

#### ***Planning for Bushfire Protection – 2019. [Rural Fire Service]***

This document provides guidance on the planning and development control processes in relation to bushfire protection measures for rural residential and residential subdivision, “*Special Fire Protection*” and Class 5 – 8 and 10 buildings in bushfire prone areas [Industrial buildings are Class 7 as defined by the Building Code of Australia].

These measures include the provision of defendable space requirements and access/water supply provisions to Class 5 – 8 & 10 developments in bushfire prone areas.

Provision for the assessment of construction standards to buildings and management / maintenance of the Asset Protection Zones/defendable space to buildings is also provided.

### **1.3 Development Proposal.**

This amended report has been prepared to support a modified State Significant Development Application (SSDA) under Part 4.55 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The amended SSDA seeks approval for the following development:

A concept Masterplan with an indicative total building area of 347,955 sqm comprising:

- Warehouse gross floor area (GFA) of 330,950 sqm;
- Ancillary office GFA of 17,005 sqm;
- Thirteen (13) individual development lots for warehouse buildings with associated hardstand areas and two lots for drainage infrastructure purposes (each including a bio-retention basin);
- Roads, including:

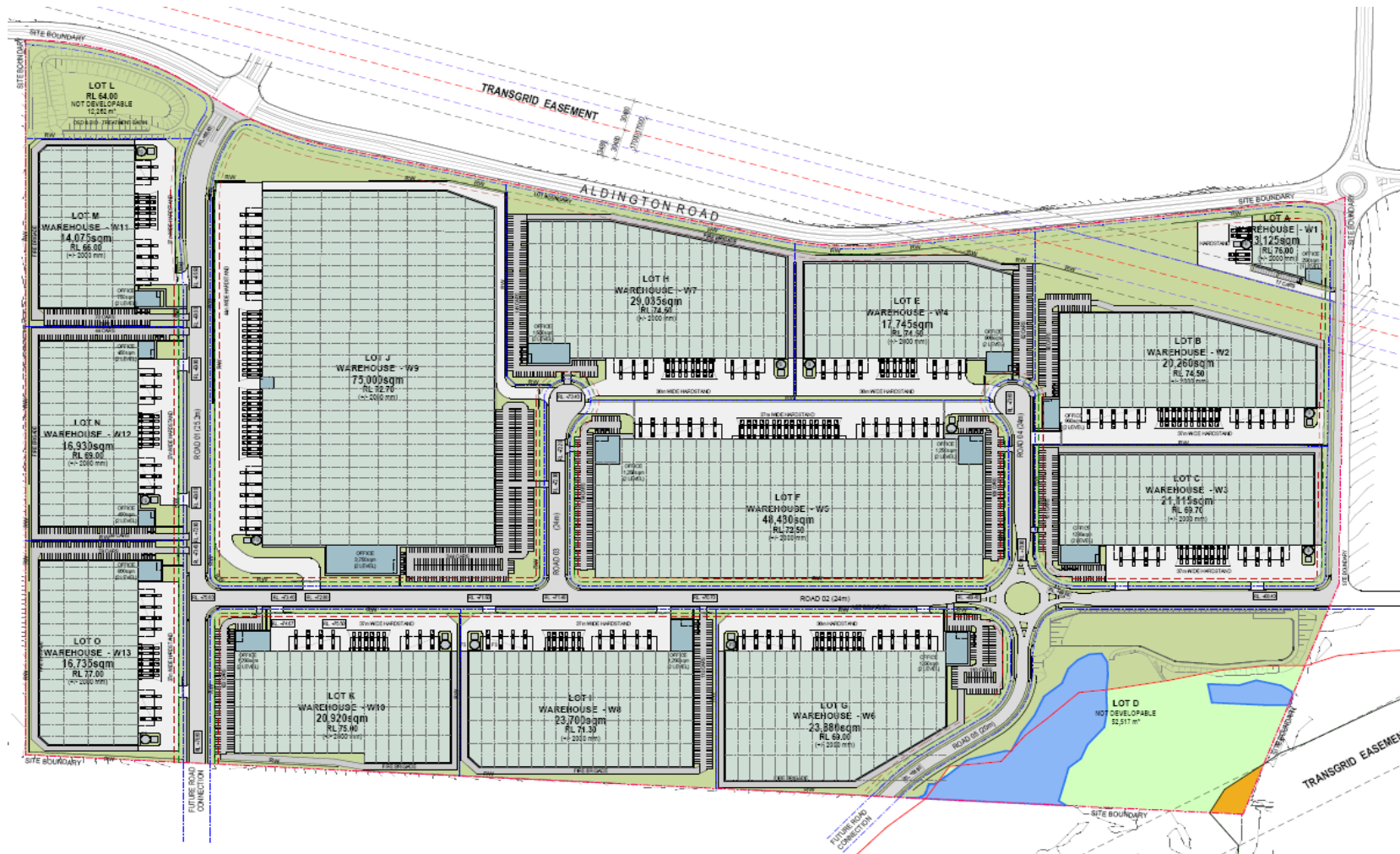
- Internal road layouts;
  - Southern road connection to Aldington Road;
  - Northern boundary road (half road corridor) connecting to Aldington Road;
  - Road connections to adjoining landholdings to the north and east;
  - Provision for 1549 car parking spaces and
  - Associated concept site landscaping.
- Detailed consent for progressive delivery of site preparation, earthworks and infrastructure works (i.e., Stage 1 works) on the site, including:
    - Demolition and clearing of all existing built form structures;
    - Drainage and infill of existing farm dams and any ground dewatering;
    - Clearing of all existing vegetation;
    - Subdivision of the site into 15 individual lots;
    - Construction of a warehouse building with a total of 50,930 sqm of GFA, including:
      - Warehouse GFA of 48,430 sqm;
      - Ancillary office GFA of 2,500 sqm and 219 car parking spaces;
  - Bulk earthworks including 'cut and fill' to create flat development platforms for the warehouse buildings, and site stabilisation works (if required);
  - Roadworks and access infrastructure, including an interim access road and temporary junction with Aldington Road;
  - Stormwater and drainage works including stormwater basins, diversion of stormwater lines, gross pollutant traps and associated swale works;
  - Sewer and potable water reticulation; and
  - Inter-allotment, road and boundary retaining walls

Refer to Figure 2 – Estate Master Plan of the 200 Aldington Road Industrial Estate on Page 13.

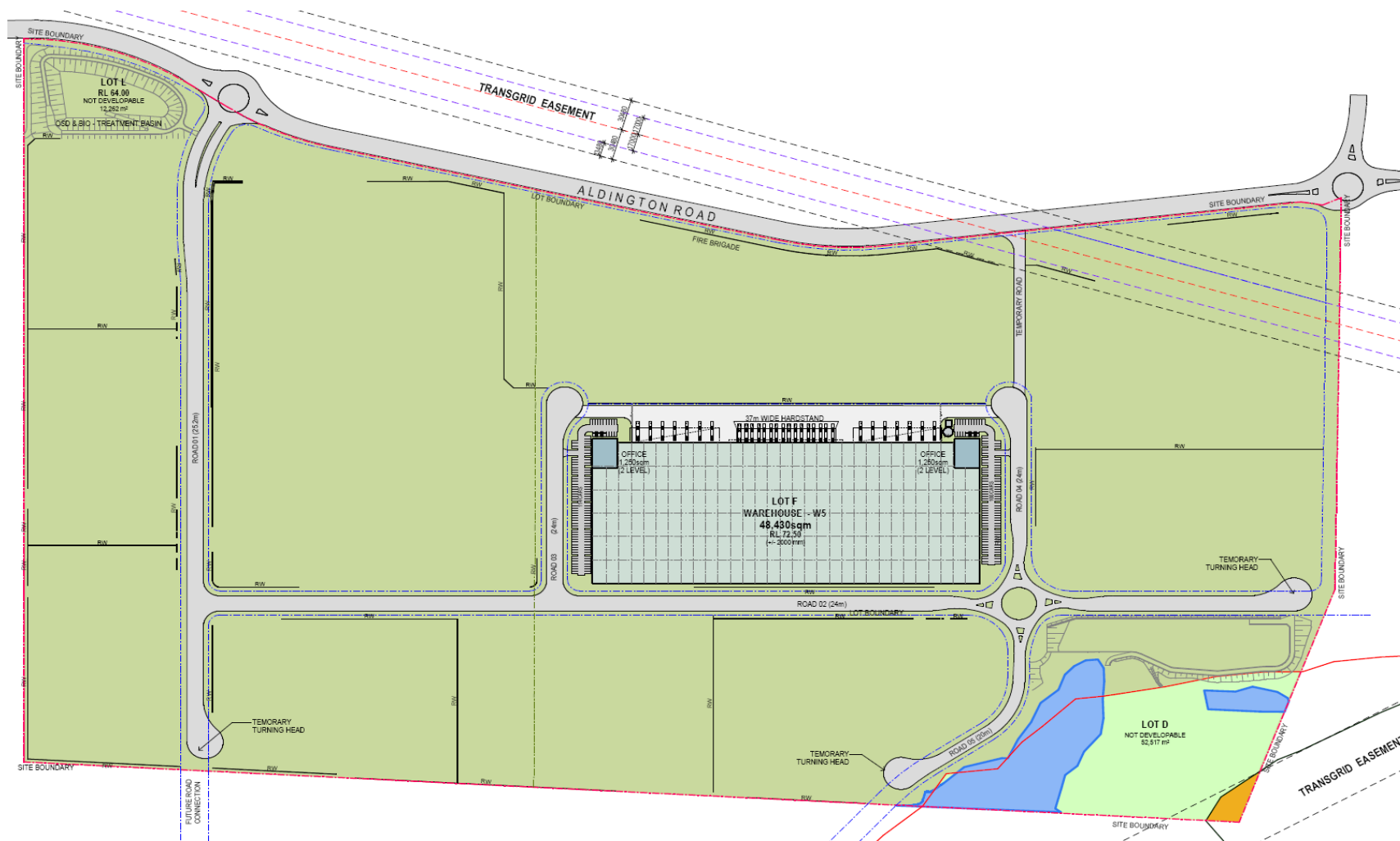
Refer to Figure 3 – Stage 1 Works Plan on Page 14.



**Figure 2 – SSDA Concept Masterplan of the 200 Aldington Road Industrial Estate.**



**Figure 3 – Stage 1 Works Plan.**



#### 1.4 Documentation reviewed in this Assessment.

To achieve the aim of this report, a review of information relevant to the property and proposed development was undertaken. Information sources reviewed included the following documents:

- Secretary's Environmental Assessment Requirements (SEARs) – SDD-10479 – dated July 2020;
- Cover Sheet & Location prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Constraints Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Amended SSDA Estate Master Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Amended Stage 1 Works Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Zoning Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Subdivision Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- Fire Protection Plan prepared by SBA Architects – 2<sup>nd</sup> September 2021;
- The Biodiversity Report undertaken by Ecological Australia;
- *Planning for Bushfire Protection 2019* prepared by the NSW Rural Fire Service/Planning N.S.W;
- Australian Standard AS3959 - 2018 *Construction of Buildings in Bushfire Prone Areas*;
- *Rural Fires Regulation 2013*;
- Penrith City Council *Certified Bushfire Prone Land Map*.

#### 1.5 Site Inspection.

Graham Swain of **Australian Bushfire Protection Planners Pty Limited** inspected the development site on the 15<sup>th</sup> of August 2020 to assess the topography, gradients of the land within and external to the site and vegetation classification within and adjoining the development property, existing bushfire mitigation measures and a visual assessment of bushfire threat.

The land adjoining the development site was also inspected to determine the surrounding land use / land management practices and extent of bushfire prone vegetation.

## SECTION 2

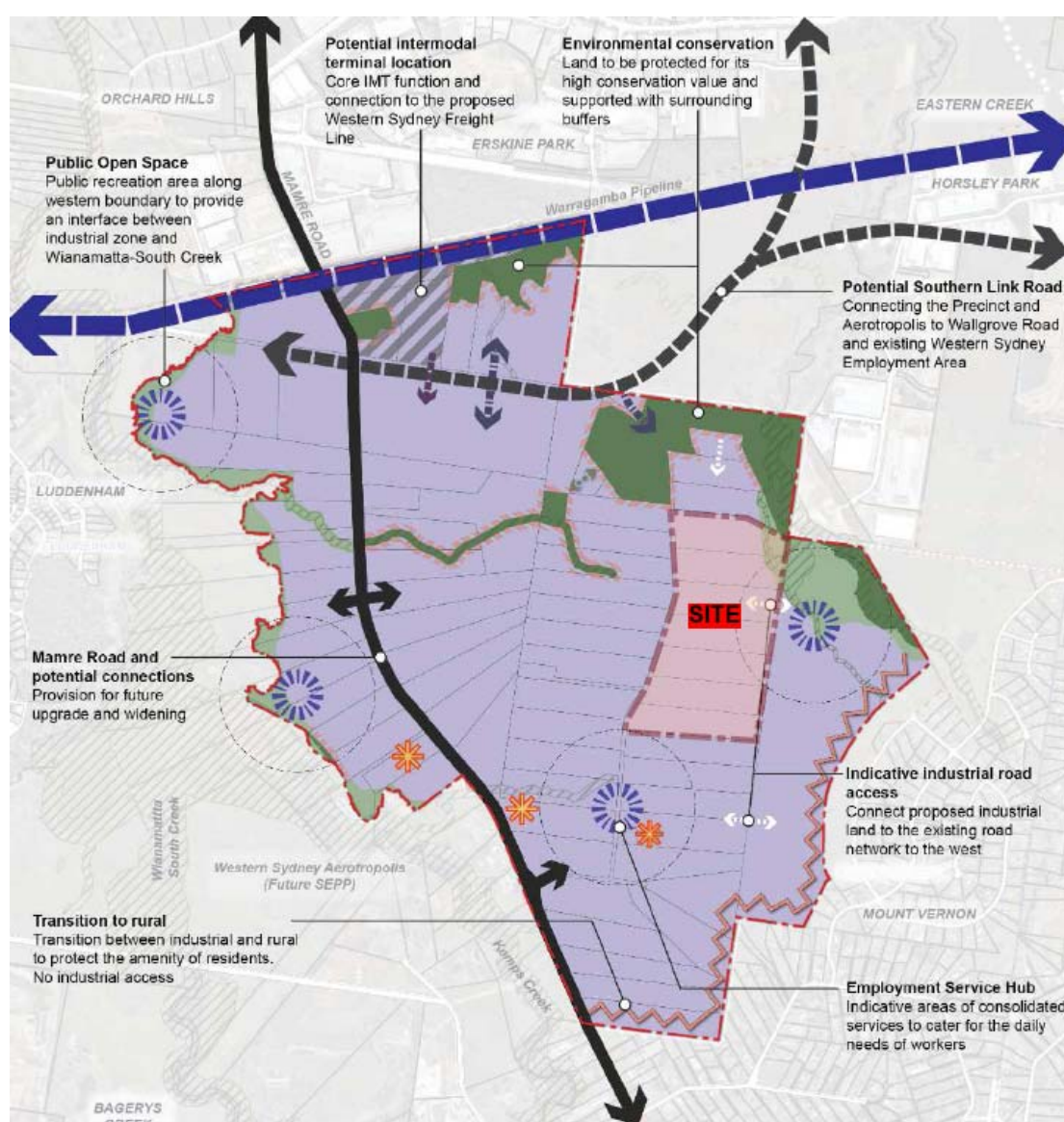
### PROPERTY DESCRIPTION

#### 2.1 Location.

The estate occupies Lots 20 - 23 in DP 255560 & Lots 30 - 32 in DP 258949, Aldington Road Kemp's Creek and is located in the Local Government Area [LGA] of Penrith City Council.

The site is outlined in red on Figure 4 and forms part of the wider proposed SEPP WSEA amendment to include the entire green area on Figure 4, within the WSEA as IN1 – General Industrial development.

**Figure 4 – Location of Development Site within the proposed SEPP WSEA Amendment.**



Source: NSW Department of Planning, Industry & Environment.



## 2.2 Existing Land Use.

The site has a frontage to Aldington Road of 1,245 metres and contains existing rural residential land with existing landuse consisting of grazing, and market gardens. The adjoining properties contain similar landuses - refer to Figure 5 below.

**Figure 5 – Aerial Photograph of the 200 Aldington Road Industrial Estate Site showing adjoining landuse**



## 2.3 Adjoining Land Use.

The land use to the north of the development site consists of market gardens.

The land to the east of the development site contains vacant grazing land which has been identified as future industrial and rural residential development.

The land to the south of the development site has been approved for the construction of the new Temple. The land to the west of Aldington Road is zoned for future industrial development and contains rural and rural residential landuse.

## 2.4 Topography.

The landform within the site is undulating, generally sloping to the northeast, falling towards Ropes Creek and contains a number of large water storage dams.

**Figure 6 – Topographic Map showing the location of the 200 Aldington Road Industrial Estate outlined in Blue.**



## **2.5 Vegetation.**

A Biodiversity Constraints Report has been prepared by Ecological Australia and identified that the vegetation within the site contains cleared land with pockets of Cumberland Plain Woodland (CPW), Swamp Oak Floodplain Forest and River Flat Eucalypt Forest (RFEF).

The adjoining property to the north contains managed farming land (market garden). The property to the east contains grassland vegetation which is periodically grazed.

The property to the south of the development site was formerly a market garden which contains grassland vegetation.

The Ropes Creek corridor to the northeast contains River Flat Eucalypt Forest (RFEF) and Swamp Oak Floodplain Forest – refer to Figure 7 – Threatened Ecological Communities plan on Page 20.

## **2.7 Significant Environmental Features within the Site.**

The land within the development site does not contain significant environmental features such as Koala Habitat; SEPP 14 Wetlands, SEPP 26 Littoral Rainforests; land slip areas or National Parks Estate; areas of geological interest or steep lands [>18 degrees].

A Riparian Constraints Assessment was undertaken by Ecological Australia and identified the north-eastern corner of the site contains the riparian corridor to Kemps Creek.

## **2.8 Known Threatened Species, Population or Ecological Community on the Site.**

The Biodiversity Constraints Report prepared by Ecological Australia identified that the site contains pockets of Cumberland Plain Woodland (CPW), Swamp Oak Floodplain Forest and River Flat Eucalypt Forest (RFEF) – refer to Figure 7.

## **2.9 Details and location of Aboriginal Relics or Aboriginal Place.**

There are no known Aboriginal relics or Aboriginal places on the site.



**Figure 7 – Threatened Ecological Communities**



- |   |  |
|---|--|
| <b>Threatened Ecological Community (TEC)</b>  | Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South East Corner Bioregions (BC Act only)                                    |
| <p data-bbox="300 1608 657 1709">River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions (BC Act only)</p> <p data-bbox="242 1648 272 1671">■</p> | <p data-bbox="671 1653 1083 1709">Cumberland Plain Woodland in the Sydney Basin Bioregion (BC Act only)</p> <p data-bbox="671 1671 702 1693">■</p> |

**Source: Ecological Australia**



## SECTION 3

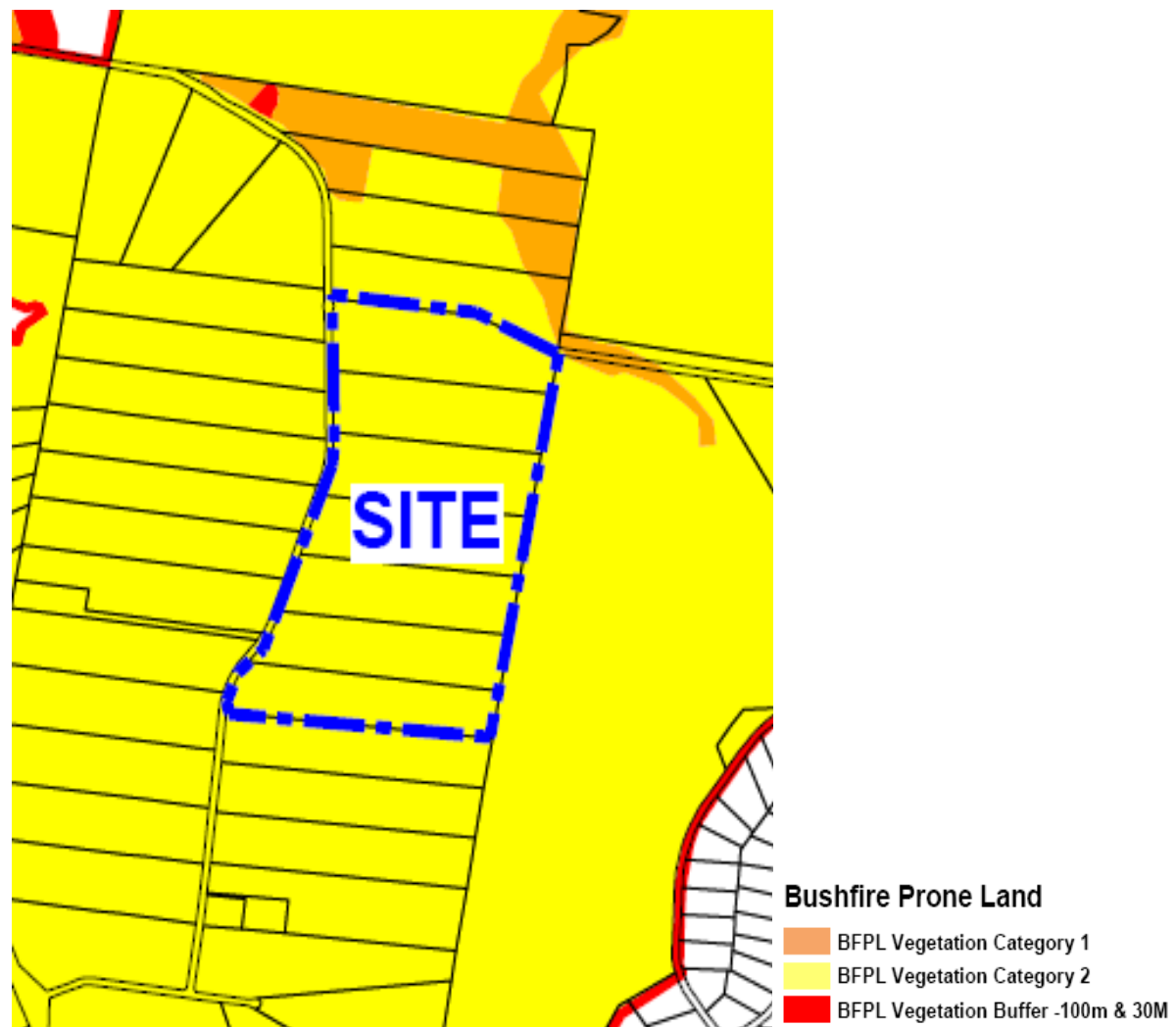
### PRECINCT LEVEL ASSESSMENT

#### 3.1 Certified Bushfire Prone Land Map.

Section 10.3 of the *Environmental Planning & Assessment Act 1979* requires councils, where a Bushfire Risk Management Plan applies, to prepare a Bushfire Prone Land Map in consultation with the Commissioner of the NSW Rural Fire Service.

The Commissioner will designate lands to be Bushfire Prone within an area and, when satisfied that the lands have been recorded on a map, will certify the map as a Bushfire Prone Land Map for the purposes of this or any other Act. Figure 8 provides an extract from the Penrith Bushfire Prone Land Map.

**Figure 8 – Extract from the Penrith Bushfire Prone Land Map.**



## SECTION 4

### BUSHFIRE PROTECTION ASSESSMENT

#### 4.1 Introduction.

The Penrith Council Bushfire Prone Land Map indicates that the site and adjacent lands contains Category 2 Bushfire Prone Vegetation.

Therefore, the construction of the proposed Warehouse buildings is required to comply with the provisions of Section 4.14 of the *Environmental Planning & Assessment Act 1979*.

Section 4.14 of the *Environmental Planning and Assessment Act* requires that the proposed development comply with the requirements of *Planning for Bushfire Protection 2019* with respect to the protection of persons, property and the environment from the danger that may arise from a bushfire.

The aim of *Planning for Bushfire Protection 2019* is to 'provide for the protection of human life and minimise impacts on property from the threat of bushfire while having due regard to development potential and protection of the environment'.

Bushfire protection can be achieved through a combination of strategies which are based on the following principles:

- (i) Control the types of development permissible in bushfire prone areas;
- (ii) Minimise the impact of radiant heat and direct flame contact by separating development from bushfire hazards;
- (iii) Minimise the vulnerability of buildings to ignition and fire spread from flames, radiant heat and embers;
- (iv) Enable appropriate access and egress for the public and fire-fighters;
- (v) Provide adequate water supplies for bushfire suppression and operations;
- (vi) Focus on property preparation, including emergency planning and property maintenance requirements; and
- (vii) Facilitate the maintenance of Asset Protection Zones (APZs), fire trails, access for fire-fighting and on site equipment for fire suppression.

The document provides the following objectives for Class 5 to 8 buildings:

- (i) *Provide safe access to/from the public road system for fire-fighters providing property protection during bushfire and for occupant egress for evacuation;*
- (ii) *Provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;*
- (iii) *Provide adequate services of water for protection of buildings during and after the passage of bushfire and to locate gas and electricity so as not to contribute to the risk of a fire to a building; and*
- (iv) *Provide for the storage of hazardous materials away from the hazard.*

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

*Planning for Bushfire Protection 2019* does not specify specific deemed-to-satisfy protection measures for Class 5 to 8 buildings as defined by the Building Code of Australia. However, compliance with A.S.3959 - 2018 must be considered when meeting the aims and objectives of *Planning for Bushfire Protection 2019*.

Section 4.2 of this report examines the 200 Aldington Road Industrial Estate layout in relation to the provision of a suitable “defendable space” between the bushfire hazard and the industrial buildings.

The bushfire construction standards to the buildings is examined in Section 4.3 and the provision of access and water supplies for fire-fighting operations management of the defendable space [Asset Protection Zone] and evacuation planning are examined in Sections 4.4 – 4.9 of this report.

#### **4.2 The provision of Defendable Space/s [Asset Protection Zones].**

Defendable Spaces/Asset Protection Zones [APZs] have been assessed for the future industrial development in accordance with *Planning for Bushfire Protection 2019* and Australian Standard A.S. 3959 – 2018 (using effective slope and predominant vegetation communities).

The assessment is based on the predominant vegetation on the adjoining land being grassland and the vegetation within the Ropes Creek corridor consisting of River Flat Eucalypt Forest/Swamp Oak Floodplain Forest.

The NSW Rural Fire Service’s requirement for industrial buildings is to provide a setback from the bushfire prone vegetation which will minimise flame contact on a building.

Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that to prevent flame contact on the future warehouses located adjacent to unmanaged grassland vegetation on the land to the south, east and north a minimum defendable space width of 9.0 metres is required.

This requirement applies to the northern aspect to Warehouse W2 and W3, to the eastern aspect to Warehouse W6; Warehouse W8; Warehouse W10 and Warehouse 13 and the southern aspect to Warehouse W11; Warehouse W12 and Warehouse W13 – pending construction of the Temple on the land to the south and the industrial and rural residential development on the land to the east and industrial development on the land to the north of the site

Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that to prevent flame contact on the future warehouses located adjacent to unmanaged River Flat Eucalypt Forest vegetation a minimum defendable space width of 22.0 metres is required.

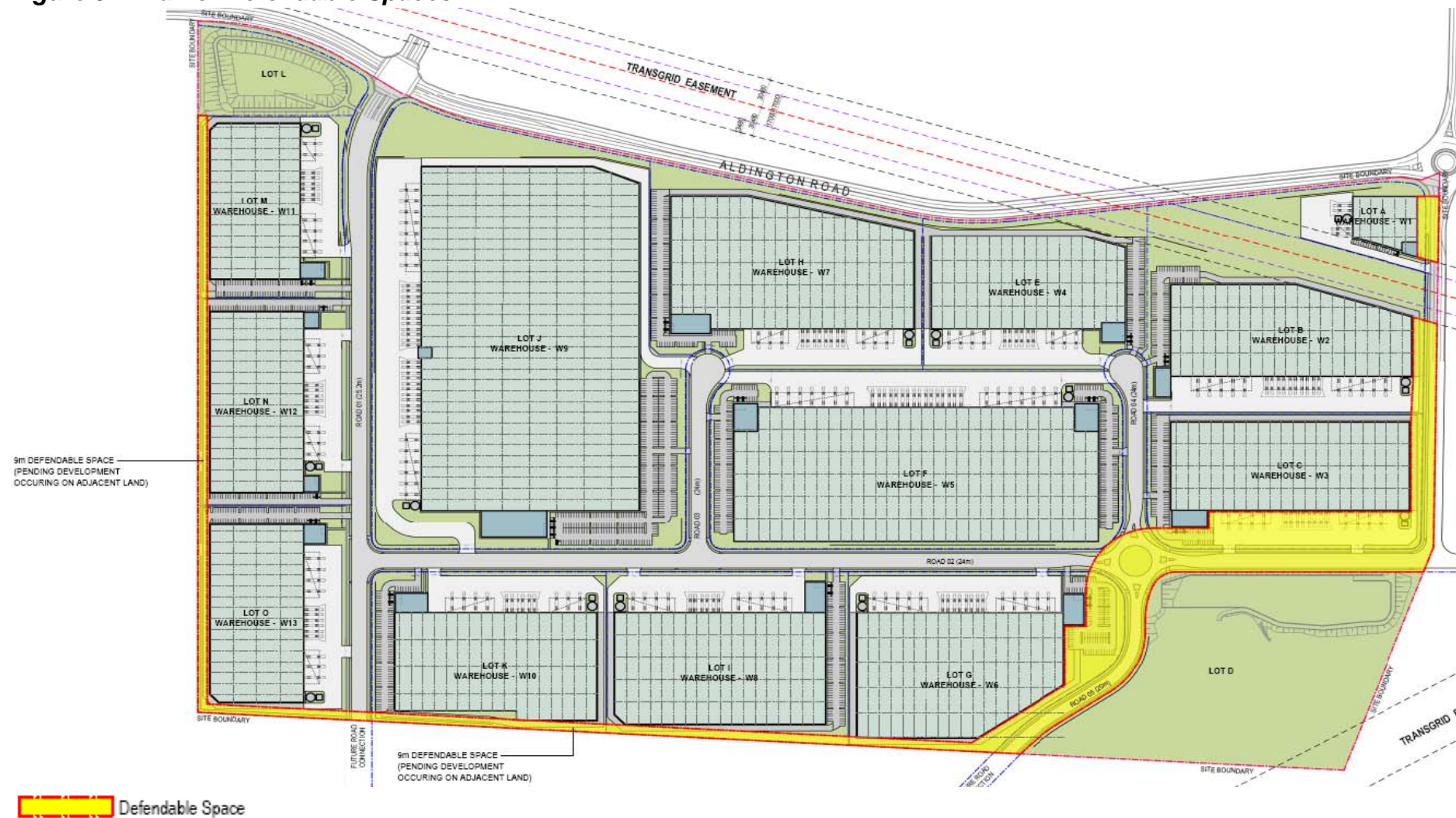
This vegetation is located in the Ropes Creek riparian Corridor, adjacent to the northeast corner of the development site.

The Master Plan provides for the establishment of a perimeter road to the east of Warehouse W3 and to the north and northeast of Warehouse W6. The provision of the perimeter road and building setback provides a defendable space which exceeds the minimum 22.0 metres required to satisfy A1.12.5 of *Planning for Bushfire Protection 2019*.

Refer to Figure 9 – Fire Protection (Defendable Space) Plan requirements on Page 25.



**Figure 9 – Plan of Defendable Spaces.**



### 4.3 Construction Measures to Buildings.

Table 1 examines the bushfire construction standards required to be implemented to comply with A.S. 3959 – 2018 – ‘*Construction of Buildings in Bushfire Prone Areas*’.

These standards will be applicable pending development of the adjoining land to the south and east of the development site and apply to Warehouse W6; Warehouse W8; Warehouse W10; Warehouse W11; Warehouse W12 and Warehouse W13.

**Table 1. Determination of Bushfire Construction Standards.**

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation Class	Effective Slope of Land	Width of Defendable Space provided to fixed assets	Bushfire Construction Standard – A.S. 3959 – 2018
South of Warehouse W11; W12 & W13	Unmanaged Grassland	Grassland	Level	Minimum 9 metres	BAL 40 to southern elevation
East of Warehouse W6; W8; W10 & W13	Unmanaged Grassland	Grassland	0 – 5 degrees downslope	Minimum 9 metres	BAL 40 to eastern elevation
North of Warehouse W2 & W3	Unmanaged Grassland	Grassland	0 – 5 degrees downslope	Minimum 25 metres	BAL 12.5 to northern elevation
East of Warehouse W3	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 40 metres to Office	BAL 19 to eastern elevation
North of Warehouse W6	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 60 metres to Office	BAL 12.5 to northern elevation
Northeast of Warehouse W6	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 30 metres	BAL 29 to north-east elevation

For unmanaged grassland vegetation on 0-5 degrees downslope BAL 40 construction standards apply between 9 – 12 metres. BAL 29 applies between 12 – 17 metres. BAL 19 applies between 17 – 25 metres and BAL 12.5 applies between 25 – 50 metres from the southern and eastern boundaries.

For unmanaged River Flat Forest vegetation on 0-5 degrees downslope BAL 29 construction standards apply between 29 – 40 metres and BAL 12.5 applies between 54 – 100 metres.

The following additional measures also apply:

- Access doors [PA and Vehicle] to the buildings shall be fitted with seals that seal the bottom, stiles and head of the door against the opening/frame to prevent the entry of embers into the building.

Particular attention shall be given to the gap at the head of the curtain of the roller doors, where mohair type seals can be used;

- External timber doors shall be fitted with a stainless steel/Colorbond kick plate of 400mm high on the outside of the door;
- External glazed doors and windows shall comply with the requirements for glazing less than 400mm above finished ground level; paths / pavement and elevated roofs;
- Any external vents, grilles and ventilation louvres shall have stainless steel mesh with a maximum aperture of 2mm square fitted to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm.

Should the available Defendable Space widths increase from the widths listed in Table 1 or the adjacent land is developed and the bushfire hazard is removed, reassessment of the construction standards shall be undertaken.

#### **4.4 Access Standards for Firefighting Operations.**

Appendix 3 “Access” of *Planning for Bushfire Protection 2019* provides specifications on the access provisions for fire-fighting operations within developments which are subject to bushfire attack.

Vehicular access to the proposed 200 Aldington Road Industrial Estate will be provided from Aldington Road.

The proposed internal access roads will be constructed to provide heavy rigid and articulated vehicle access to each of the proposed buildings. This internal road network provides suitable access for fire-fighting appliances similar to NSW Rural Fire Service Category 1 Tankers and Fire & Rescue NSW Composite and Aerial Appliances.

Fire Appliance access shall be provided to the perimeter of each lot, either by a perimeter road or by vehicular access to the future buildings or parking areas incorporated into the defendable space setback.

#### **4.5 Water Supplies for Firefighting Operations.**

A reticulated water supply for potable water supply and fire hydrants is to be extended into the site.

The fire-fighting water supply to the new buildings shall comply with the Building Code of Australia [BCA] and A.S. 2419.1 – 2005.

#### **4.6 Emergency Management for Fire Protection / Evacuation.**

The new buildings located adjacent to the bushfire hazard are unlikely to be subject to a fire event that may necessitate evacuation of the buildings.

Due to the low bushfire risk there is no requirement for the preparation of a specific Bushfire Evacuation Plan or a Bushfire Management Plan for the estate.

#### **4.7 Bushfire Hazard Management.**

The intention of bushfire hazard management is to prevent flame contact with a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimize the potential for wind driven embers to cause ignition and to reduce the effects of smoke on occupants and fire-fighters.

The management of the Defendable Spaces and the lots generally shall comply with the recommendations of Appendix 4 of *Planning for Bushfire Protection 2019* and *Standards for Asset Protection Zones*.

Management of the Defendable Spaces within the development shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the buildings; Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
- Keep areas under shrubs and trees raked and clear of combustible fuels;
- Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understorey vegetation is not continuous [retained as clumps].

## **SECTION 5**

### **BUSHFIRE MANAGEMENT STRATEGIES**

Bushfire management strategies for the estate are as follows:

#### **5.1 Strategy 1 – Defendable Space management Requirements:**

Management of the defendable spaces/landscaped areas within the development site shall comply with the following:

- Maintain a clear area of low cut lawn or pavement adjacent to the building;
- Keep areas under shrubs and trees raked and clear of combustible fuels;
- Utilise non-flammable materials such as Scoria, pebbles and recycled crushed bricks as ground cover to landscaped gardens in close proximity to building;
- Trees and shrubs should be maintained in such a manner that tree canopies are separated by 2 metres and understorey vegetation is not continuous [retained as clumps].

#### **5.2 Strategy 2 – Water Supplies/Utilities for Firefighting Operations:**

The fire-fighting water supply to the proposed buildings shall comply with the Building Code of Australia [BCA] and Australian Standard A.S. 2419.1 – 2005.

Electricity and gas supplies will be laid underground and therefore address the performance standard of Chapter 4 of *Planning for Bushfire Protection 2019*.

#### **5.3 Strategy 3 – Construction Standards to the buildings located adjacent to the bushfire hazard:**

Table 2 identifies the bushfire construction standards required to be implemented to comply with A.S. 3959 – 2018 – '*Construction of Buildings in Bushfire Prone Areas*'.



**Table 1. Bushfire Construction Standards to Warehouse Building W3, W6, W8, W10, W11, W12 & W13**

Aspect	Vegetation within 140m of development	Predominant Vegetation Formation Class	Effective Slope of Land	Width of Defendable Space provided to fixed assets	Bushfire Construction Standard – A.S. 3959 – 2018
<i>South of Warehouse W11; W12 &amp; W13</i>	Unmanaged Grassland	Grassland	Level	Minimum 9 metres	BAL 40 to southern elevation
<i>East of Warehouse W6; W8; W10 &amp; W13</i>	Unmanaged Grassland	Grassland	0 – 5 degrees downslope	Minimum 9 metres	BAL 40 to eastern elevation
<i>North of Warehouse W2 &amp; W3</i>	Unmanaged Grassland	Grassland	0 – 5 degrees downslope	Minimum 25 metres	BAL 12.5 to northern elevation
<i>East of Warehouse W3</i>	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 40 metres to Office	BAL 19 to eastern elevation
<i>North of Warehouse W6</i>	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 60 metres to Office	BAL 12.5 to northern elevation
<i>Northeast of Warehouse W6</i>	Unmanaged River Flat Forest	Forest	0 – 5 degrees downslope	Minimum 30 metres	BAL 29 to north-east elevation

For unmanaged grassland vegetation on 0-5 degrees downslope BAL 40 construction standards apply between 9 – 12 metres. BAL 29 applies between 12 – 17 metres. BAL 19 applies between 17 – 25 metres and BAL 12.5 applies between 25 – 50 metres from the southern and eastern boundaries.

For unmanaged River Flat Forest vegetation on 0-5 degrees downslope BAL 29 construction standards apply between 29 – 40 metres and BAL 12.5 applies between 54 – 100 metres.

The following additional measures also apply:

- Access doors [PA and Vehicle] to the buildings shall be fitted with seals that seal the bottom, stiles and head of the door against the opening/frame to prevent the entry of embers into the building. Particular attention shall be given to the gap at the head of the curtain of the roller doors, where mohair type seals can be used;

- External timber doors shall be fitted with a stainless steel/Colorbond kick plate of 400mm high on the outside of the door;
- External glazed doors and windows shall comply with the requirements for glazing less than 400mm above finished ground level; paths / pavement and elevated roofs;
- Any external vents, grilles and ventilation louvres shall have stainless steel mesh with a maximum aperture of 2mm square fitted to prevent the entry of embers into the building or be fitted with a louvre system which can be closed in order to maintain a maximum aperture or gap of no more than 2mm.

Should the available Defendable Space widths increase from the widths listed in Table 2 or the adjacent land is developed and the bushfire hazard is removed, reassessment of the construction standards shall be undertaken.

#### **5.4 Strategy 4 – Access Standards for Firefighting Operations.**

Fire Appliance access shall be provided to the perimeter of each lot, either by a perimeter road or by vehicular access to the future buildings or parking areas incorporated into the defendable space setback.

The Fire Brigade access adjacent to the southern and eastern boundaries shown on the Master Plan shall be linked across the lot boundaries to provide continuous access for fire appliances.

The access provisions shall satisfy the NSW Rural Fire Service and Fire & Rescue NSW appliance requirements.

## SECTION 6

### CONCLUSION

A State Significant Development Application [SSDA] is being lodged for the development of the proposed 200 Aldington Road Estate on Lots 20 - 23 in DP 255560 & Lots 30 - 32 in DP 258949, No. 106 – 228 Aldington Road, Kemps Creek.

The SEARS [Secretary's Environmental Assessments Requirements] were issued in July 2020 under SSD-10479 and contain a requirement that the EIS for the Master Plan and Stage 1 works must include an assessment against the requirements of *Planning for Bushfire Protection 2019*.

The Penrith Bushfire Prone Land Map records the development site and adjacent land as containing Category 2 bushfire prone vegetation.

The proposed development, not being the subdivision of bushfire prone land for the purpose of rural residential or residential development or for the construction of a 'Special Fire Protection Purpose Development' is not integrated development as defined by Section 4.46 of the *Environmental Planning & Assessment Act 1979*.

The subdivision of bushfire prone land for industrial purposes is assessed under the provisions of Section 4.14 of the *Environmental Planning & Assessment Act 1979* and requires compliance with the aim and objectives of *Planning for Bushfire Protection 2019*.

This report has examined the objectives of *Planning for Bushfire Protection 2019*, in relation to the provision of bushfire protection measures to the future construction of industrial buildings on the lots created in the subdivision, and has provided recommendations on:

- The provision of a combination of defensible space [separation of the buildings from the bushfire hazard] and the construction standards to the buildings;
- Access and water supply provisions for fire-fighting operations;
- Management of the fire protection measures, including the defensible spaces; and
- Emergency management [evacuation] planning.

Table 3 summarises the extent to which the development conforms to the aim and objectives of *Planning for Bushfire Protection 2019* in order to address the SEARS.

**Table 3. Compliance with the aim and objectives of *Planning for Bushfire Protection 2019*.**

<b>Bushfire Protection Measure</b>	<b>Compliance with the aim and objectives of <i>Planning for Bushfire Protection 2019</i>.</b>
Defendable Space setbacks/construction standards to future industrial buildings	The combination of a Defendable Space and construction standards to the future industrial buildings located adjacent to the bushfire hazard addresses the requirement that the occupants are afforded adequate protection from exposure to a bushfire and that the buildings will not be exposed to material ignition.
Access for fire-fighting operations	The proposed public access roads comply with the specifications of Appendix 3 of <i>Planning for Bushfire Protection 2019</i> and provide satisfactory emergency access for fire-fighting appliances. Access for fire-fighting operations to be provided to the perimeter lots adjoining the bushfire hazard [located within the Defendable Space setback]. Positive Covenant to be recorded on title of each lot located adjacent to the bushfire hazard for access for fire-fighting operations.
Water supplies for fire fighting	Hydrant supply to be installed in accordance with AS 2419.1 – 2005.
Management of the fire protection measures, including the defendable spaces	Each lot owner responsible for the maintenance of the recommended fire protection measures and provision of the perimeter fire access road. Positive Covenant to be recorded on title of each lot.
Emergency Management	Owners of buildings shall address protocols for the management of staff and site facilities during bushfire occurrences

I confirm that the proposed development complies with the aim and objectives of *Planning for Bushfire Protection 2019* and the deemed to satisfy requirements of Section 8.3.10 of *Planning for Bushfire Protection 2019* – Buildings of Class 5 to 8 and Class 10 of the Building Code of Australia in respect to the provision of asset protection zones [defendable spaces], access and water/utilities as required by the SEARS.



Graham Swain,  
Managing Director,  
***Australian Bushfire Protection Planners Pty Limited.***

***Fire Protection Association Australia Member No: 48781***

## REFERENCES:

- N.S.W Rural Fire Service – *Planning for Bushfire Protection 2019*;
- *Environmental Planning & Assessment Act – 1979*;
- *Rural Fires Act – 1997*;
- *Rural Fires Regulation 2013*;
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2015*;
- *Bushfire Environmental Assessment Code 2006*;
- Building Code of Australia;
- Australian Standard A.S 3959-2018 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Penrith City Council Bushfire Prone Land Map*.