

**BUSHFIRE PROTECTION ASSESSMENT  
FOR THE CONSTRUCTION OF THE  
PROPOSED SYD05-06-07 DATA CENTRE  
ON**

**No. 706 – 769 MAMRE ROAD,  
KEMPS CREEK**



**ABPP**

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<b>Report Number</b>	<b>Document</b>	<b>Preparation Date</b>	<b>Issue Date</b>	<b>Directors Approval</b>
B203610	Final	16.03.2021	18.03.2021	<i>G.L.Swain</i>



## EXECUTIVE SUMMARY

*Australian Bushfire Protection Planners Pty Limited* has been commissioned by ARUP to prepare a report to provide advice on the bushfire protection measures required for the construction of the proposed SYD05-06-07 Data Centre on No. 706 - 769 Mamre Road, Kemps Creek.

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).

This report has been prepared to support a State Significant Development Application (SSDA) under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) for the construction and operations of a Data Centre and associated infrastructure.

The development site is located to the west of Mamre Road and contains vacant land. Access to the SYD05-06-07 complex is off Mamre Road via the proposed internal road network.

The SYD05-06-07 site is adjoined to the north by existing rural residential development on land which has been rezoned to IN1 Industrial.

The land to the south of the eastern portion of the SYD05-06-07 site is zoned IN1 Industrial and the land to the south of the western portion of the SYD-5-06-07 site is zoned RE1 – Local Open Space under the Mamre Road Development Control Plan (DCP).

The DCP identifies the land to the west of the SYD05-06-07 site as being zoned – Local Open Space.

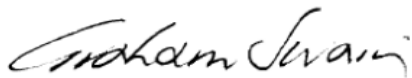
The Penrith Council Bushfire Prone Land Map indicates that the site and adjacent lands contains Category 2 Bushfire Prone Vegetation.

The Planning Secretary's Environmental Assessment Requirements (SEARs) Key Issues under Application Number SSD-1-1-1987 require an assessment to be undertaken against the requirements of *Planning for Bushfire Protection 2019*.

Therefore, this report undertakes an assessment to examine the measures required to minimise bushfire risk on the proposed 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 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 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.***

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

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## SECTION 1

### INTRODUCTION

#### 1.1 Aim of this Assessment.

The aim of this Bushfire Protection Assessment is to address the Secretary's Environment Assessment Requirements [SEARS], Application Number SSD-10101987, which requires 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.

###### (a) *Environmental Planning and Assessment Act (EPA Act)*

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act, 1979* (EPA Act).

In relation to bushfire planning for development in bushfire prone areas in NSW Section 4.14 requires the consent authority, prior to issuing consent for the development, to determine whether the development complies with '*Planning for Bushfire Protection 2019*'.

**(b) *Rural Fires Act 1997***

The objectives of the *Rural Fires Act* are to provide:

- The prevention, mitigation and suppression of fires;
- Coordination of bushfire fighting and prevention;
- Protection of people and property from fires; and
- Protection of the environment.

In relation to the management of bushfire fuels on public and private lands within NSW Sections 63(1) and 63(2) require public authorities and owners / occupiers of land to take all practicable steps to prevent the occurrence of bushfires on, and to minimize the danger of the spread of bushfires.

**(c) *Rural Fires Regulation 2013*.**

Section 44 of the *Rural Fires Regulation 2013* relates to planning for new residential, rural residential and special fire protection purpose developments in bushfire prone areas in NSW and provides details of the matters that are required to be addressed for the issue of a *Bushfire Safety Authority* under Section 100B of the *Rural Fires Act*.

**1.2.2 Planning Policies.**

***Planning for Bushfire Protection – 2019. (NSW 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 defensible 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/defensible space to buildings is also provided.



### 1.3 Documentation Reviewed.

The following documents were reviewed in the preparation of this assessment:

- Architectural documents for the proposed SYD05-06-07 Data Centre prepared by ARUP/Greenbox;
- Penrith Council Certified Bushfire Prone Land Map;
- *Planning for Bushfire Protection 2019* prepared by the NSW Rural Fire Service.

### 1.4 Site Inspection.

Graham Swain of *Australian Bushfire Protection Planners Pty. Limited* inspected the development site on the 12<sup>th</sup> March 2021 to assess the topography, slopes, vegetation classification and land use within and adjoining the development site. Visual assessment was undertaken to determine likely fire runs, influence of terrain on wind patterns within the bushfire prone vegetation and an assessment of access and egress to the development site.

Adjoining properties were also inspected to determine the surrounding land use / land management.

### 1.5 Development Proposal.

This report has been prepared to support a State Significant Development Application (SSDA) under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) for the construction and operations of the proposed SYD05-06-07 Data Centre Data Centre and associated infrastructure on No. 706 - 769 Mamre Road, Kemps Creek.

The proposed Data Centre consists of Administration Building and Data Hall SYD05-06; Administration Building and Data Hall SYD07; Substation Yard and Switch Room; internal access roads and carparking areas.

The Data Centre complex also includes fire-fighting water tanks and Pump Room; Industrial Water Tanks and Plant Room.

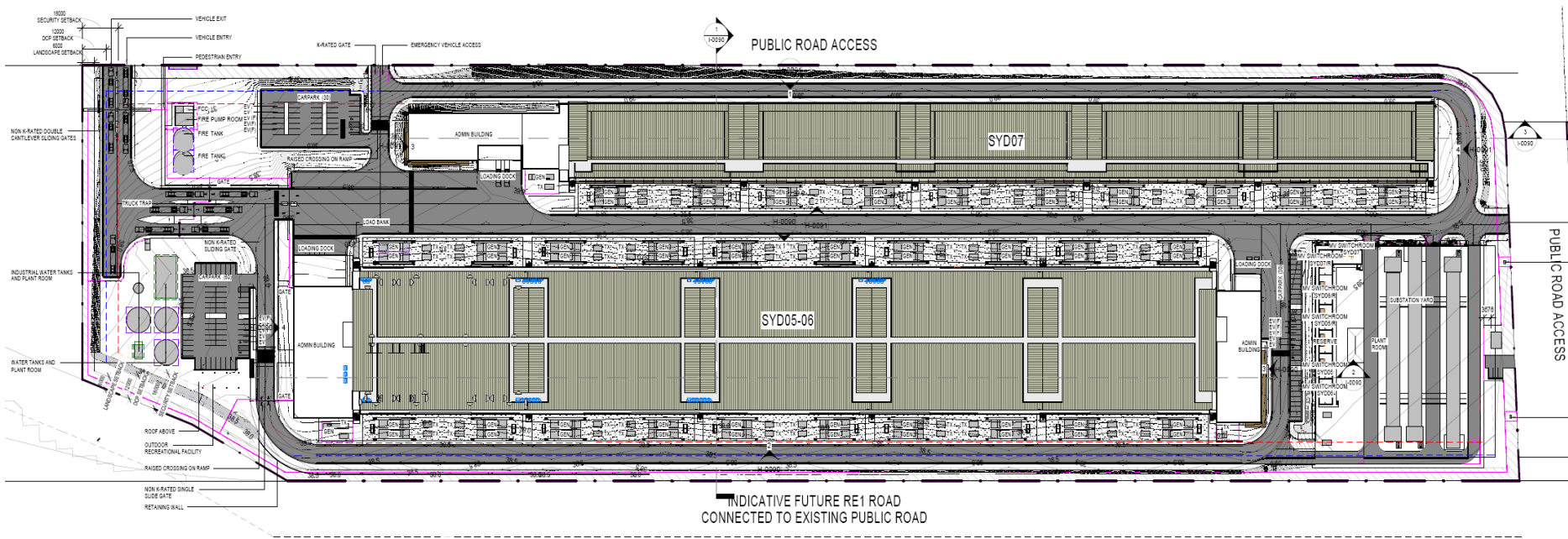
Access to the SYD05-06-07 complex is off Mamre Road via the internal road network.

*[Refer to Figure 1 – Plan of proposed Data Centre Complex on page 9].*





Figure 1 – Plan of the proposed Data Centre Complex.



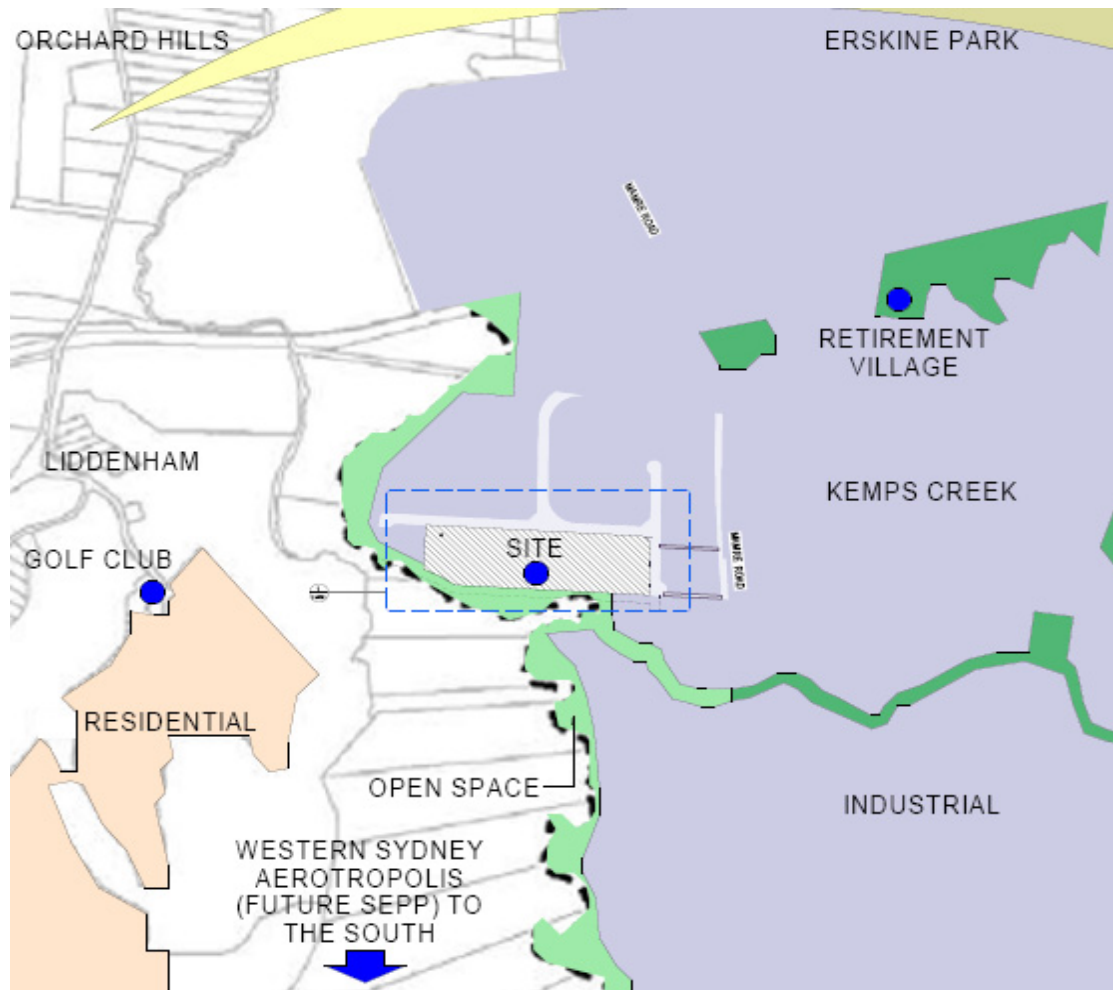
## SECTION 2

### DESCRIPTION OF DEVELOPMENT SITE

#### 2.1 Location & Description.

The Data Centre is to be constructed on No. 706 - 769 Mamre Road, Kemps Creek and is located in the Local Government Area [LGA] of Penrith City Council.

**Figure 2 – Location of the Development Site.**



#### 2.2 Existing Land Use.

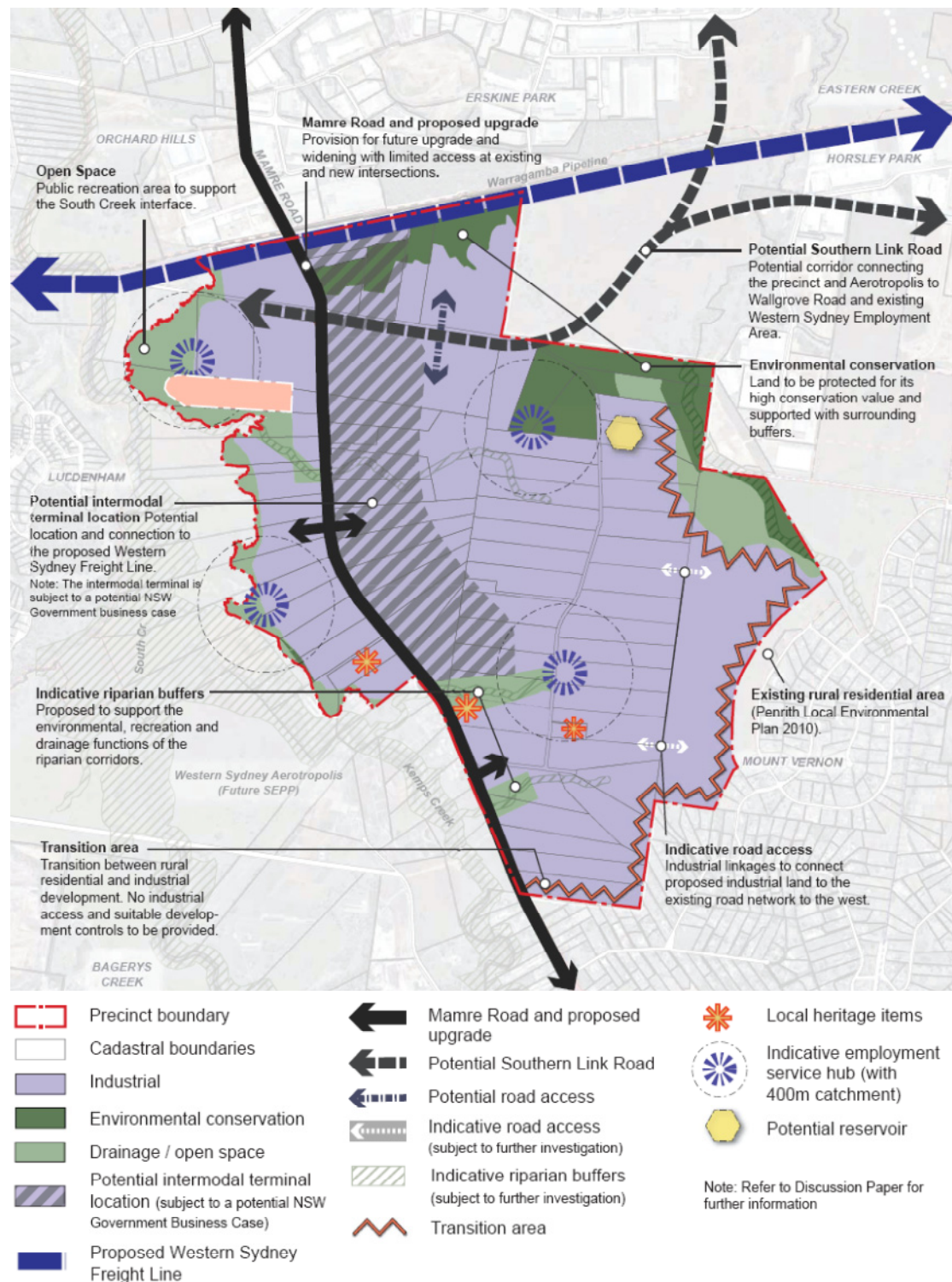
The SYD05-06-07 development site contains an existing rural residential dwelling and associated buildings within the eastern portion of the site. These structures will be demolished.

#### 2.3 Adjoining Land Use.

The land to the north of the site contains vacant farming land zoned IN1 Industrial. The land to the south of the site contains vacant farming land with the eastern portion zoned IN1 Industrial and the western portion zoned RE1 Local Open Space.

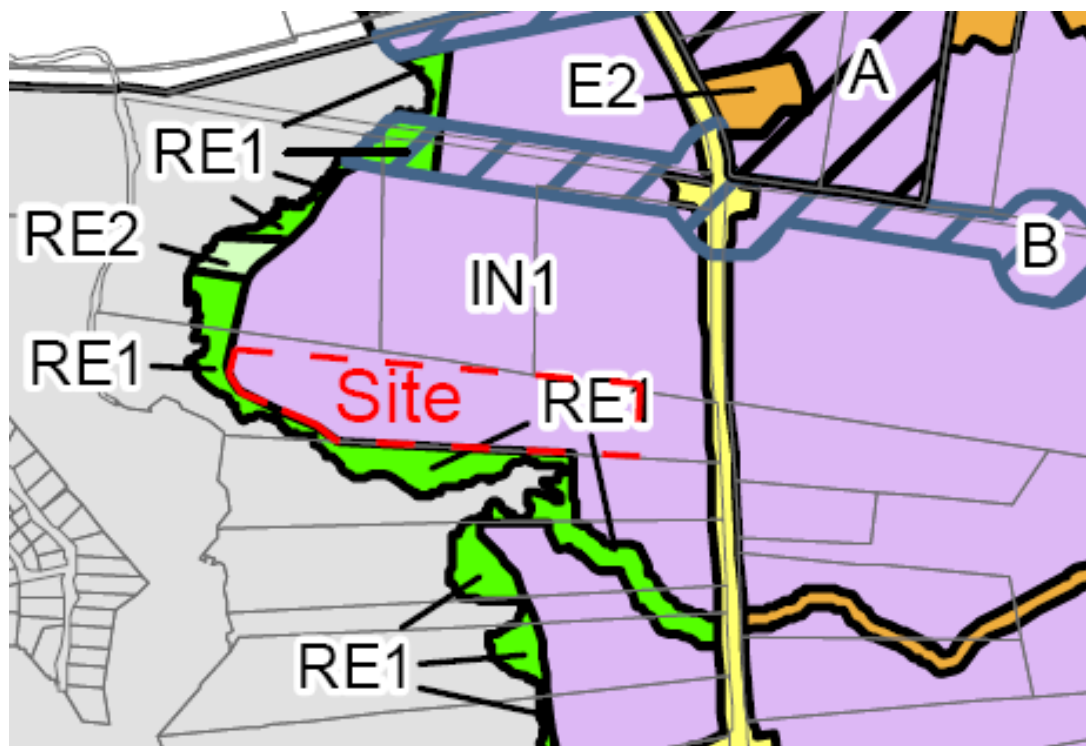
The site is shown as pink outlined in white on Figure 4 and forms part of the wider proposed SEPP WSEA.

**Figure 3 – Location of Development Site within the within the Mamre Road Structure Plan.**





**Figure 4 – Landuse Zoning Plan within the Mamre Road Structure Plan.**



**Figure 5 – Plan of Local Open Space within the Mamre Road Structure Plan.**

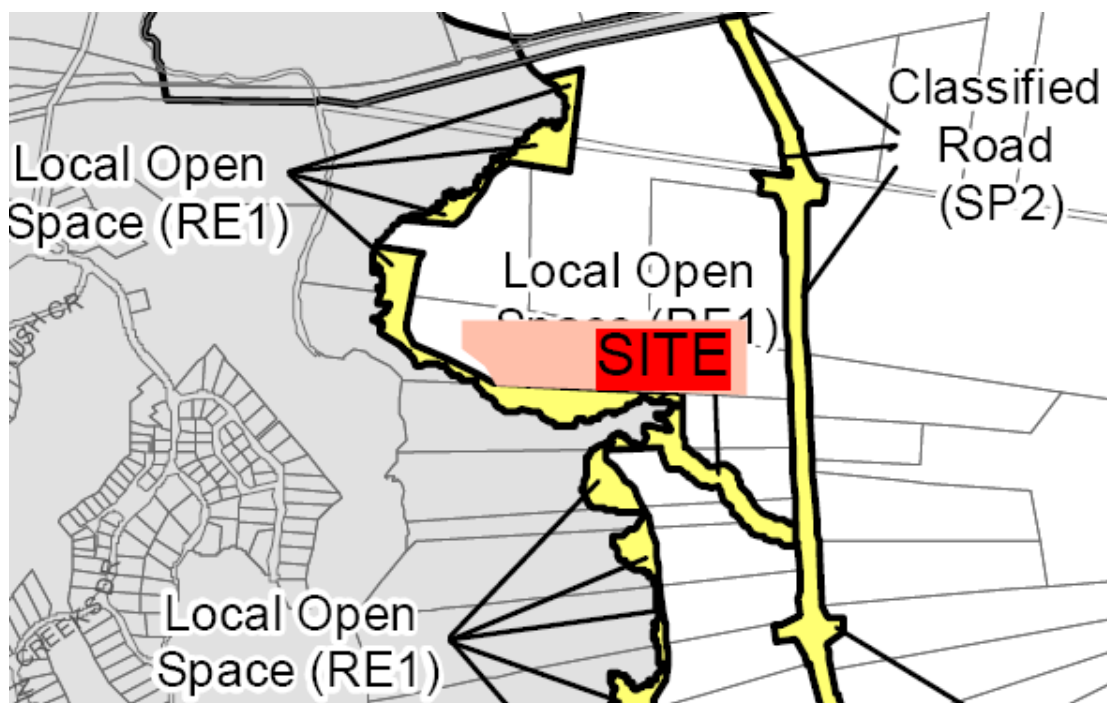
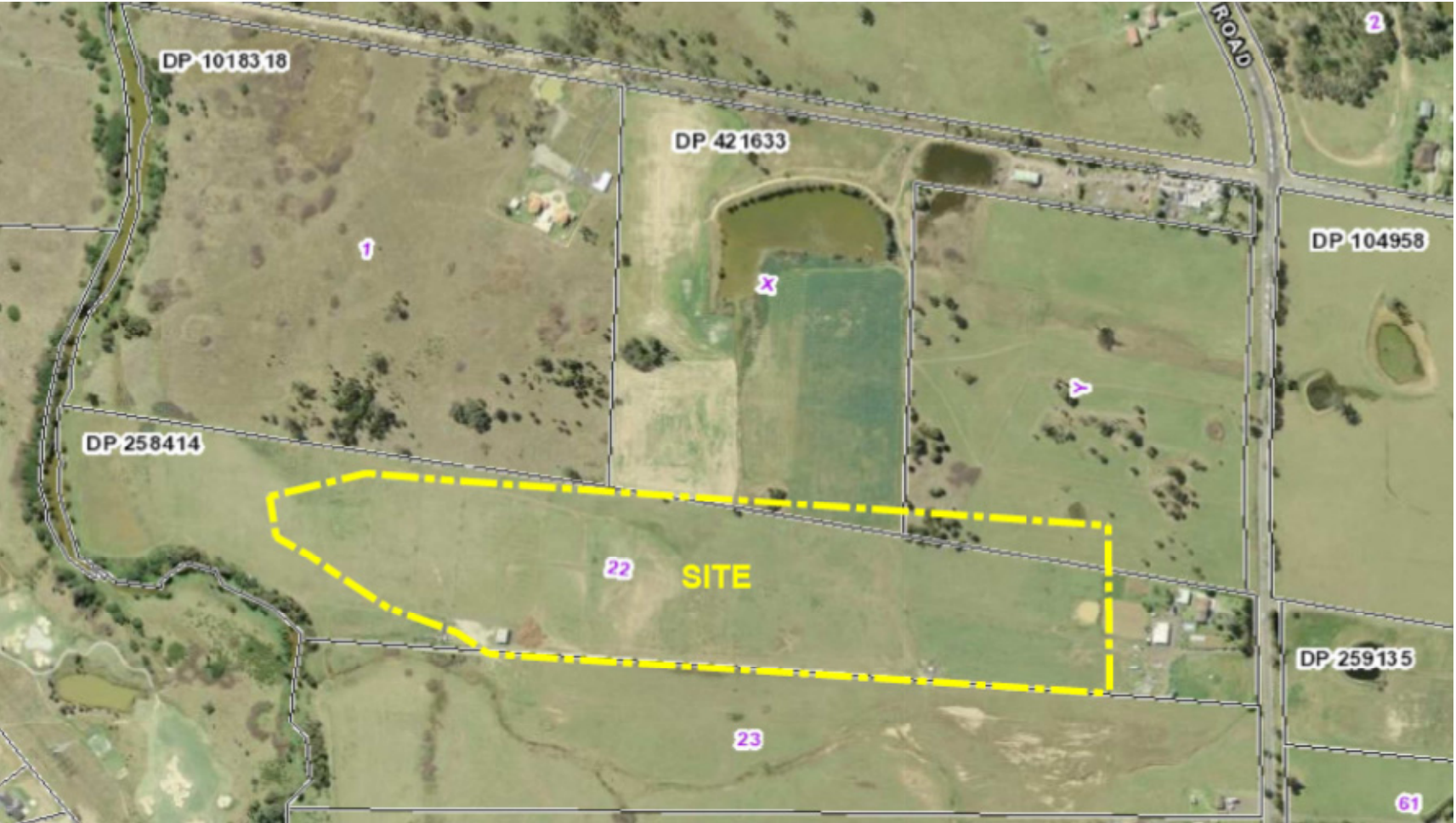






Figure 6 – Aerial Photograph of Development Site and surrounding lands.



Source: SixMaps



**2.4    Photograph of the Data Centre Site and adjoining land.**



*Photograph taken from Mamre Road looking to the southwest across the development site.*



## 2.5 Topography.

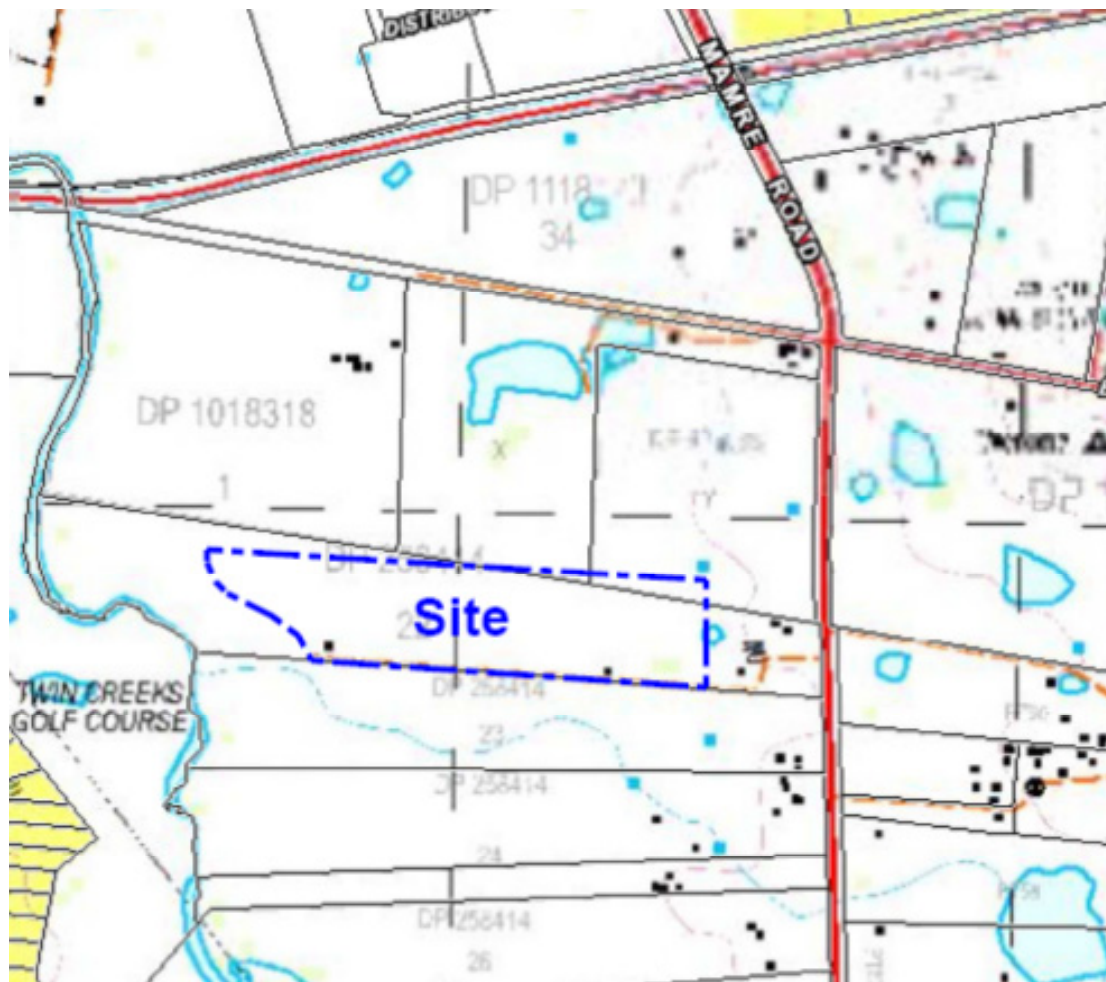
Appendix 2 of *Planning for Bushfire Protection 2019* states that slopes should be assessed, over a distance of at least 100m from a development site and that the gradient of the land should be determined which will most significantly influence the fire behaviour on the site.

The topography of the land within the SYD05-06-07 development site gradually falls to the west towards South Creek.

The land to the south of the SYD05-06-07 development site falls to the west towards South Creek at 1 – 2 degrees.

The land to the north of the development site also falls to the west at 1 – 2 degrees.

**Figure 7 – Topographic Map.**



## **2.6 Vegetation Communities on the land within the Development Site.**

Vegetation is classified using Figure A1.2 of *Planning for Bushfire Protection 2019*, which classifies vegetation types into the following groups:

- (a) *Rainforest;*
- (b) *Wet Sclerophyll Forest;*
- (c) *Dry Sclerophyll Forest;*
- (d) *Woodland;*
- (e) *Tall Heath;*
- (f) *Short Heath;* and
- (g) *Grassland.*

The vegetation within the development site and on the adjoining land to the north is Grassland.

## **2.7 Bushfire Vegetation Communities adjoining the land within the Development Site.**

The vegetation on the rural land to the south currently consists of Grassland.

The Mamre Road Structure Plan (Figure 3 on Page 11) identifies the landuse zoning to the south of the western portion of the development site as RE1 – Public Recreation whilst the Land Acquisition Map (Figure 5 on Page 12) identifies this zoning as Local Open Space.

The Mamre Road Structure Plan identifies that the RE1 land to the south forms a critical part of the tributary to South Creeks which flows across the adjoining property to the south. For the purposes of determining the bushfire protection measures to the Data Centre the RE1 zoned land will be assumed to contained rehabilitated River Flat Eucalypt Forest.

The eastern portion of the southern boundary of the development site as adjoined by IN1 Industrial zoned land which until developed contains grassland vegetation.

The western portion of the development site also contains RE1 zoned land which will be assumed to contain rehabilitated River Flat Eucalypt Forest.

## **2.8 Significant Environmental Features on the land within the Development Site.**

The development site does not contain any significant environmental features such as SEPP 14 – Coastal Wetlands; SEPP 26 Littoral Rainforests; SEPP 44 – Koala Habitat; areas of geological interest; steep lands [ $>18$  degrees]; land slip areas; National Parks Estate or riparian corridors.



**2.9 Known Threatened Species, Populations, Endangered Ecological Communities or Critical Habitat on the land within the Development Site.**

There are no known threatened species, populations, endangered ecological communities or critical habitat within the development site.

**2.10 Details of Aboriginal/European Heritage within the Development Site.**

There are no known Aboriginal sites, relics or European heritage within the development site.

## SECTION 3

### FIRE MANAGEMENT RESPONSIBILITIES

Fire management within the development site is the responsibility of:

#### 3.1 Penrith Council.

The Penrith Council has responsibility, under Section 66 of the *Rural Fires Act*, to issue a notice in writing requiring an owner / occupier of any land within the Penrith Local Government Area [LGA] to carry out bushfire hazard reduction works on that land. Section 100E of the *Rural Fires Act* requires Council to issue bushfire hazard reduction certificates for hazard reduction to be undertaken on private lands.

#### 3.2 New South Wales Rural Fire Service.

The NSW Rural Fire Service (RFS) has the responsibility for undertaking fire suppression activities, hazard management activities and other functions relative to emergency management, within its areas of operation. *Section 73* of the *Rural Fires Act (1997)* enables the Commissioner to carry out bush fire hazard reduction works on any land as required by a bush fire risk management plan if the work has not been carried out satisfactorily. Incurred costs can be recovered as a debt owed to the Crown.

#### 3.3 Fire & Rescue New South Wales.

Fire & Rescue NSW has the responsibility for undertaking fire suppression activities, and other functions relative to emergency management, within its area of operation and through Mutual Aid Agreements, provide assistance to the NSW Rural Fire Service, particularly for structural fire operations within the NSW Rural Fire Brigade Districts. Hazmat management within New South Wales is the responsibility of Fire 7 Rescue NSW.

#### 3.4 Public Authorities & owners/occupiers of land.

*The Rural Fires Act, 1997* provides several legislative opportunities to require Public Authorities, land owners and occupiers to manage hazardous fuels. These are listed below:

- **Section 63(1)** states that it is the duty of a public authority to take any practicable steps to prevent the occurrence of bushfires on, and to minimise the danger of the spread of a bushfire on or from:

(a) any land vested in or under its control or management, or

(b) any highway, road, street, land or thoroughfare, the maintenance of which is charged on the authority.

- **Section 63(2)** states that *'it is the duty of the owner or occupier of land to take the notified steps (if any) and any other practicable steps to prevent the occurrence of fires on, and to minimise the danger of the spread of fires on or from that land'*.
- **Section 65A** states that the *'Commissioner may nominate a member of the Service as a hazard management officer'*.
- **Section 65(2)** states that *'an authorised person may, with the permission of the fire fighting authority or other authority responsible for unoccupied Crown land or managed land or a person nominated by the authority to give such permission, enter the land and carry out bushfire hazard reduction work with the assistance of such other persons as the authorised person considers to be necessary for the purpose'*.
- **Section 65(3)** states that *'the authority responsible for unoccupied Crown land or managed land is to be taken to have given the permission under this section to the extent necessary to give effect to a bushfire risk management plan'*.
- **Section 65(4)** states that *'if permission under this section is given subject to conditions, the conditions must be complied with'*.
- **Section 66(1)** states that *'a hazard management officer may, by notice in writing, require the owner or occupier [not being a public authority] of any land to carry out bushfire hazard reduction work specified in the notice on the land'*.
- **Section 66(2)** states that *'a hazard management officer must serve a notice under this section if required to do so by a bushfire risk management plan applicable to the land that is in force'*.
- **Section 66(3)** states that *'a hazard management officer must issue a bushfire hazard reduction certificate in respect of any bushfire hazard reduction work required by a notice issued in accordance within section (2)'*.
- **Section 66(6)** states that *'the requirements and conditions so specified must include any requirements in a bushfire risk management plan that is applicable to the land and is in force and may include a requirement or condition that the burning of fire breaks or of combustible material:*
  - (a) must in fire district constituted under the Fire Brigades Act 1989 be carried out by or under the supervision of the fire brigade or an officer in charge of the fire brigade;*

*(b) must outside a fire district, be carried out by or under the supervision of the rural fire brigade specified in the notice or an appropriate officer of the rural fire brigade or any hazard management officer.*

- **Section 66(7)** states that *‘a notice requiring the establishment of a firebreak cannot require an occupier or owner to kill or remove any trees that are reasonably necessary for shade, shelter, windbreak or fodder purposes or the protection of threatened species, populations, ecological communities or critical habitats within the meaning of the ‘Threatened Species Conservation Act 1995’.*
- **Section 66(8)** states that *‘an occupier or owner to whom a bushfire hazard reduction notice is given must, despite the fact that a fire permit has not been granted under Division 5, comply with the requirements specified in the notice’.*
- **Section 70(2)** states that *‘if within the time specified in the relevant notice the owner or occupier to whom it is given fails to comply with any requirement of the notice, the Commissioner may, without prejudice to liability of the owner or occupier, enter on the land and carry out the bushfire hazard reduction work the owner or occupier was required to do under the notice’.*
- **Section 70(3)** states that *‘any costs incurred by the Commissioner in carrying out such work may be recovered from the owner or occupier of the land as a debt due to the Crown in a court of competent jurisdiction’.*
- **Section 87** allows the removal of hazards in the bush fire danger period by the provision of a permit system. The permits are valid for 21 days, excluding TOBAN [Total Fire Ban] days.

Section 10 permits are not required to adhere to *Part V* provisions of the EPA Act 1979 in the assessment of impact, except for public authorities. An owner/occupier of private land must obtain from the NSW Rural Fire Service, a bushfire hazard reduction certificate before undertaking hazard reduction works on that land (Section 100E of the *Rural Fires Act 1997*).

### **3.5 Management of the Defendable Spaces [Asset Protection Zones] to the Development.**

The management of the Asset Protection Zone/Defendable Space within the development site shall remain the responsibility of the owner of the land.



## SECTION 4

### BUSHFIRE HAZARD ASSESSMENT

#### 4.1 Certified Bushfire Prone Land Map.

Section 146 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 – Extract from the Penrith Bushfire Prone Land Map.**



#### **LEGEND**

- Bush Fire Prone Land - Vegetation Category 1
- Bush Fire Prone Land - Vegetation Category 2
- Bush Fire Prone Land - Vegetation Buffer 100m & 30m

The Penrith BFPLM map shows that the SYD05-06-07 site and surrounding rural land as containing Category 2 [Yellow colour] Bushfire Prone Vegetation.

The Map accurately records the extent of the bushfire prone vegetation currently within the development site and on the adjoining land.

The RE1 zoned land will rehabilitate to contain River Flat Eucalypt Forest which will become Category 1 Bushfire Prone Vegetation.

## SECTION 5

### BUSHFIRE PROTECTION ASSESSMENT

#### 5.1 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 Data Centre 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.

*Planning for Bushfire Protection 2019* 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 provide 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 5.2 of this report examines the development proposal in relation to the provision of a suitable "defendable space" between the bushfire hazard and the Data Centre building.

The bushfire construction standards to the building is examined in Section 5.3 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 5.4 – 5.9 of this report.

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

Defendable Spaces/Asset Protection Zones [APZs] have been assessed for the Data Centre 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 to the south being grassland within the IN1 zoned land and River Flat Eucalypt Forest within the tributary to South Creek. River Flat Eucalypt Forest will also rehabilitate within the RE1 zoned land to the west of the Data Centre.

The vegetation on the land to the north is Grassland until this land is developed for industrial purposes.

The land to the south of the Data Centre falls to the west and southwest into the tributary to South Creek. The effective slope is 0–5 degrees downslope.

The land to the west of the Data Centre is 0–5 degrees downslope toward South Creek.

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 portion of the Data Centre located adjacent to the RE1 zoned land to the south (with forest vegetation) the minimum width of the Defendable Space to prevent flame contact on the building is 22 metres.

A 22 metre wide Defendable Space will also be required to the western aspect of the Data Centre to prevent flame contains on the building from the rehabilitated River Flat Eucalypt Forest.

Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that to prevent flame contact on the portion of the Data Centre located adjacent to the RE1 zoned land to the south (with grassland vegetation) the minimum width of the Defendable Space to prevent flame contact on the building is 9.0 metres.

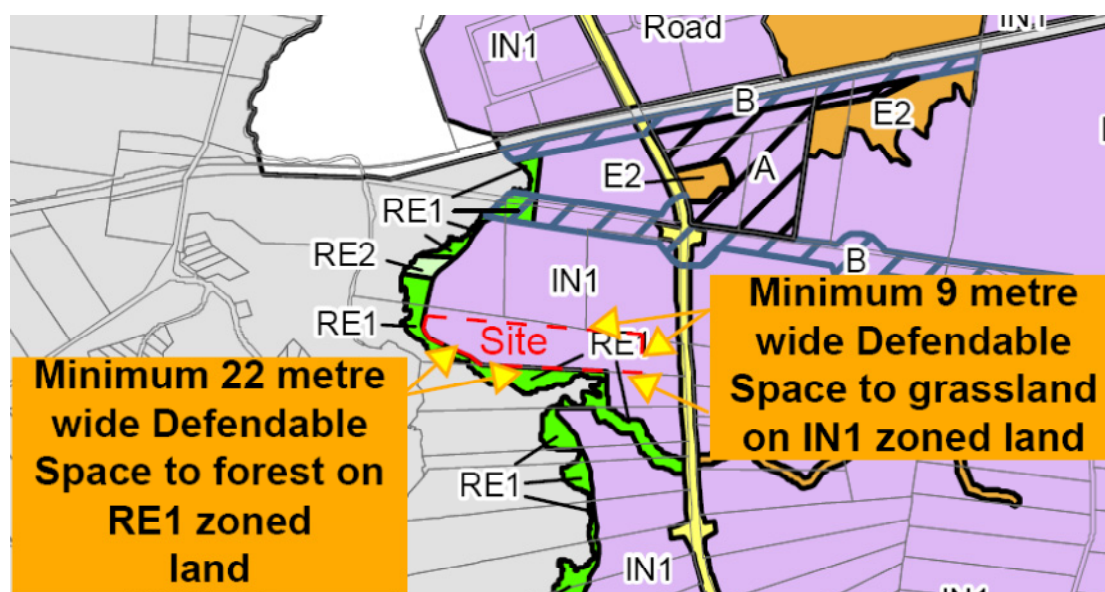
The land to the north of the Data Centre site falls to the west and is level to the north. The vegetation is grassland (prior to the development of the land for industrial purposes.

Table A1.12.5 of *Planning for Bushfire Protection 2019* identifies that to prevent flame contact on the northern aspect of the Data Centre an 8 metre wide Defendable Space is required to prevent flame contact on the building.

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



**Figure 9 – Fire Protection (Defendable Space) Plan**



### 5.3 Construction Measures to the Data Centre Building.

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 north of the development site.

**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 Data Centre	Unmanaged River Flat Forest	Forest	0-5 degrees downslope	Minimum 27 metres	BAL 40 to southern elevation
South of Data Centre	Unmanaged Grassland	Grassland	0-5 degrees downslope	Minimum 27 metres	BAL 12.5 to southern elevation
North & East of Data Centre	Unmanaged Grassland	Grassland	Level	N.A.	Nil required – vegetation will be removed
West & Southwest of Data Centre	Unmanaged River Flat Forest	Forest	0-5 degrees downslope	Minimum 27 metres	BAL 40 to western elevation

The BAL 40 construction standards to the southern and western elevations that are adjacent to the River Flat Eucalypt Forest apply between 22 - 29 metres from the southern and western boundary. BAL 29 applies between 29 – 40 metres and BAL 19 applies between 40 – 50 metres from the southern and western boundaries of the site.

BAL 12.5 applies between 50 – 100 metres from the southern and western boundaries.

The actual setback between the southern boundary and the building exceeds 27 metres, satisfying the BAL 40 construction standards to the southern elevation adjacent to the River Flat Eucalypt Forest on the RE1 zoned land.

The minimum 27 metre setback to the grassland vegetation adjacent to the southern boundary means that the bushfire construction standard required to this section of the building is BAL 12.5.

The width of the defensible space to the River Flat Eucalypt Forest southwest of the Data Centre site is 27 metres. This width means that the bushfire construction standard to the western elevation to the building is BAL 40.

The grassland vegetation on the land to the north of the Data Centre site is likely to be removed prior to the completion of the Data Centre building and therefore no bushfire construction standards will be required to the northern elevation of the building.

The following additional measures also apply:

- Access doors [PA and Vehicle] to the building 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 shall 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.

#### **5.4 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 Data Centre will be provided from Mamre Road via the new industrial estate road network.

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 will provide 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 is to be provided along the southern side of the Data Centre. In addition to the access provided within the Data Centre site the Mamre Road Structure Plan indicates the provision of a new perimeter access road to the RE1 Zone land.

When completed, this new road will add to the provision of fire-fighting access along the southern side of the Data Centre building.

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

The fire-fighting water supply to the proposed building 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*.

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

The Data Centre is unlikely to be subject to a fire event that will create the need for the evacuation of the Centre.

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 Data Centre complex.

However, the management of evacuation of the staff/visitors will need to be addressed in the preparation of a site specific Evacuation Plan for the facility.

The Evacuation Plan shall address the protocols for the timely relocation of staff/visitors in the event that an emergency occurs, both within the site or within the local area.

The Evacuation Plan shall comply with AS 3745:2010 *“Planning for Emergencies in Facilities”*.

A copy of the Evacuation Plan shall be provided to the Local Emergency Management Committee/Police, Fire & Rescue NSW and NSW Rural Fire Service.

### **5.7 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 within the site 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 6

### BUSHFIRE MANAGEMENT STRATEGIES

Strategies to address the aim and objectives of *Planning for Bushfire Protection 2019* are as follows:

#### **Strategy 1 – Defendable Space:**

The Defendable Space shall be maintained as an Inner Protection Area (IPA) - Asset Protection Zone.

#### **Strategy 2 – Landscape Management:**

The design and maintenance of the landscaped gardens within the site shall comply with the prescriptions of an Inner Protection Area [IPA] pursuant to the specifications of Appendix 4 of *Planning for Bushfire Protection 2019* and the NSW Rural Fire Services document '*Specifications for Asset Protection Zones*'.

The management of the landscaped gardens [defendable space] shall be maintained under the terms of a positive covenant, pursuant to Section 88B of the *Conveyancing Act of 1909*, on the title of the land.

#### **Strategy 3 – Bushfire Construction Standards:**

It is recommended that any part of the Data Centre Building located within 100 metres of the bushfire hazard, being the vegetation within the RE1 zoned land, shall be constructed to comply with Section 3 and Section 5 [BAL 12.5] of A.S 3959 – 2018 - '*Construction of Buildings in Bushfire Prone Areas*'.

That part of the building located adjacent to the RE1 on the land to the south of the development site shall be constructed to comply with Section 3 and Section 8 – BAL 40 in accordance with A.S. 3959 – 2018 – '*Construction of Buildings in Bushfire Prone Areas*'.

That part of the building located adjacent to the RE1 on the land to the west and southwest of the development site shall be constructed to comply with Section 3 and Section 8 – BAL 40 in accordance with A.S. 3959 – 2018 – '*Construction of Buildings in Bushfire Prone Areas*'.

Whilst the type of construction recommended addresses the potential radiant heat levels from a future bushfire in the vegetation on the adjoining RE1 zoned land, the following additional construction standards shall be implemented to safeguard the buildings against possible burning ember attack:

- Any external vents, ventilation louvres or grilles within the south-eastern elevation shall have stainless steel mesh [or perforated metal] 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;
- Access doors [PA/Fire Exit] 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;
- Roof ventilators shall be fitted with stainless steel flymesh [2mm aperture] 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.

#### **Strategy 4 – Evacuation Plan:**

The management of evacuation of the staff/visitors will be addressed in the preparation of a site specific Evacuation Plan for the facility.

The Evacuation Plan shall address the protocols for the timely relocation of staff/visitors in the event that an emergency occurs, both within the site or within the local area.

A copy of the Evacuation Plan shall be provided to the Local Emergency Management Committee/Police, Fire & Rescue NSW and NSW Rural Fire Service.

The Evacuation Plan shall comply with AS 3745:2010 *“Planning for Emergencies in Facilities”*.

## SECTION 7

### CONCLUSION

A State Significant Development Application [SSDA] is being lodged for the construction of the proposed Data Centre on No. 706 – 769 Mamre Road, Kemps Creek.

The SEARS [Secretary's Environmental Assessments Requirements] under SSD05-06-07 and contain a requirement that the EIS for the works must include an assessment against the requirements of *Planning for Bushfire Protection 2019*.

An examination of the Penrith Bushfire Prone Land Map has determined that Category 2 Bushfire Prone Vegetation is recorded to exist within the development site and on the rural land to the south, east and north of the Data Centre site.

The Mamre Road Structure Plan identifies areas of RE1 – Local Open Space zoned land to the south of the western portion and also to the west of the Data Centre site.

The vegetation on the proposed RE1 zoned land will rehabilitate to River Flat Eucalypt Forest, increasing the bushfire hazard to the Data Centre building.

This assessment has reviewed the level of threat to the proposed Data Centre complex and made recommendations on the provision and maintenance of a “defendable space” to the south and western aspects of the building and the provision of bushfire construction measures to that part of the building which is located within 100 metres of the bushfire hazard so as to increase the protection of these building against the potential impact of radiant heat/ember attack on the exterior of the building and the impact from burning embers.

Specific bushfire construction standards have been recommended to that part of the building exposed to a bushfire in the River Flat Eucalypt Forest in the RE1 zoned land to the south and west of the development site.

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 defendable 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;



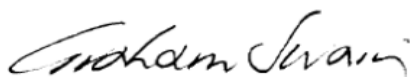
- Management of the fire protection measures, including the defensible spaces; and
- Emergency management [evacuation] planning.

Table 2 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 2. 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 building 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 within the industrial estate comply with the specifications of Appendix 3 of <i>Planning for Bushfire Protection 2019</i> and provide satisfactory emergency access for fire-fighting appliances.
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 defensible spaces	The owner of the Data Centre is 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 the lot.
Emergency Management	The owner of the Data Centre 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 [defensible 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 4878**

## 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 2019*;
- Building Code of Australia;
- Australian Standard A.S. 3959-2018 “*Construction of Buildings in Bushfire Prone Areas*”;
- *Penrith Bushfire Prone Land Map*.