



## **Bushfire Threat Assessment**

### **Freeway North Business Park**

Prepared for

**Hunter Land Pty Ltd**

Final V2 / July 2019

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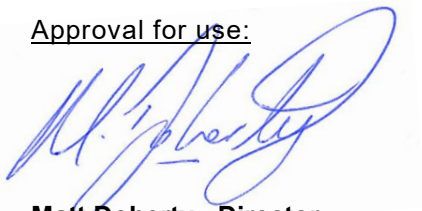
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Approval for use:



**Matt Doherty - Director**

5 July 2019

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## EXECUTIVE SUMMARY

MJD Environmental has been engaged by Hunter Land, to prepare a Bushfire Threat Assessment (BTA) to accompany a Development Application (DA) seeking an industrial subdivision over Lot 124 DP 1180585, 27 Canavan Drive, Beresfield within the Freeway North Business Park, hereafter referred to as the 'site'.

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Planning for Bush Fire Protection (PBP), 2006 that has been released and adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2007* & the *Rural Fires Amendment Regulation 2007*.

This assessment has been made based on the bushfire hazards in and around the site at the time of inspection and production (April 2019).

This development type and buildings contained therein do not strictly trigger the criteria outlined with PBP (2006) for residential and/or Special Fire Protection Purpose (SFPP). In these instances, section 1.3(b) of PBP states that the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aims and objectives outlined in section 1.1 of PBP (2006) can be met. The broad objectives are listed below:

- (i) afford occupants of any building adequate protection from exposure to a bushfire;
- (ii) provide for a defensible space to be located around buildings;
- (iii) provide appropriate separation between a hazard and buildings which, in combination with other measure, prevent direct flame contact and material ignition;
- (iv) ensure that safe operational assess and egress for emergency service personnel and residents is available;
- (v) provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ; and
- (vi) ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).

An appraisal against these objectives is provided in this BTA. Importantly, this appraisal only relates to industrial/ commercial development types that do not trigger the residential and/or SFPP provisions of PBP (2006). Wherever these development types are sought in the Industrial development area (eg child care), the required APZ (PBP 2006) and BAL (AS 3959-2018) must be assessed and provided. Notably development on each lot will be subject to further assessment with respect to building design and the risk of ignition in the event of fire. Building design will be required to incorporate appropriate building type and firefighting standards as set out in the Building Code of Australia.

Assessment against these objectives has determined the proposal is able to comply with the relevant provisions of PBP (2006).

***Finally, the implementation of the measures and recommendations forwarded within this report would contribute to the amelioration of the potential impact of any bushfire upon the development site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.***

## CONTENTS

1	Introduction .....	1
1.1	Aims & Objectives .....	1
1.2	Site Particulars.....	2
1.3	Description of Proposal .....	2
2	Bushfire Hazard Analysis .....	5
2.1	Vegetation Assessment.....	5
3	Bushfire Protection Measures .....	8
3.2	Access .....	8
3.3	Services – Water, Electricity, Gas .....	8
3.4	Landscaping & Fuel Management.....	10
3.5	Emergency Management .....	10
3.6	Appraisal for non SFPP or residential development areas on site .....	10
4	Conclusion & Recommendations .....	13
5	Bibliography .....	14

## LIST OF FIGURES

Figure 1	Site Location.....	3
Figure 2	Bushfire Prone Land Map .....	4
Figure 3	Vegetation Classification .....	7

## LIST OF TABLES

<b>Table 1</b>	Vegetation Classification.....	5
<b>Table 2</b>	Acceptable solutions for services (PBP 2006).....	9
<b>Table 3</b>	Appraisal against Aims & Objectives for non SFPP or residential development areas on site .....	11

## APPENDICES

APPENDIX A	Plan of Proposal
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## GLOSSARY OF TERMS AND ABBREVIATIONS

Term/ Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419 -2005	Australian Standard – Fire Hydrant Installations
AS3959-2009	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BCA	Building Code of Australia
BC Act	NSW Biodiversity Act 2016
BMP	Bush Fire Management Plan
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BPL	Bush Fire Prone Land
BPLM	Bush Fire Prone Land Map
BPM	Bush Fire Protection Measures
BTA	Bushfire Threat Assessment
DoE	Commonwealth Department of the Environment
DPI Water	NSW Department of Primary Industries – Water
EPA Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FDI	Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
OPA	Outer Protection Area
OEH	NSW Office of Environment and Heritage
PBP or PBP (2006)	Planning for Bushfire Protection 2006
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation
RFS	NSW Rural Fire Service
TSC Act	NSW Threatened Species Conservation Act 1995 (as repealed)

# 1 Introduction

MJD Environmental has been engaged by Hunter Land, to prepare a Bushfire Threat Assessment (BTA) to accompany a Development Application (DA) seeking an industrial subdivision over Lot 124 DP 1180585, 27 Canavan Drive, Beresfield within the Freeway North Business Park, hereafter referred to as the 'site' (**Figure 1**).

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Planning for Bush Fire Protection (PBP), 2006 that has been released and adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2007* & the *Rural Fires Amendment Regulation 2007*.

This assessment has been made based on the bushfire hazards in and around the site at the time of inspection and production (April 2019).

## 1.1 Aims & Objectives

The proposal does not strictly trigger the criteria outlined with PBP (2006) for residential and/or SFPP. In these instances, section 1.3(b) of PBP states that the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aims and objectives outlined in section 1.1 of PBP (2006) can be met. The broad objectives are listed below:

- (i) afford occupants of any building adequate protection from exposure to a bushfire;
- (ii) provide for a defendable space to be located around buildings;
- (iii) provide appropriate separation between a hazard and buildings which, in combination with other measure, prevent direct flame contact and material ignition;
- (iv) ensure that safe operational assess and egress for emergency service personnel and residents is available;
- (v) provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ; and
- (vi) ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).

An appraisal against these objectives is provided in **Chapter 3**. Importantly, this appraisal only relates to industrial/ commercial development types that do not trigger the residential and/or SFPP provisions of PBP (2006). Wherever these development types are sought in the Industrial development area (eg child care), the required APZ (PBP 2006) and BAL (AS 3959-2018) must be assessed and provided.

## 1.2 Site Particulars

<b>Locality</b>	The site is located at 27 Canavan Drive, Beresfield
<b>Land Title</b>	Lot 124 DP 1180585
<b>LGA</b>	Newcastle City Council
<b>Area</b>	14.95ha (approx.)
<b>Zoning</b>	The site is currently zoned IN2 – Light Industrial (NSW Planning & Environment 2019)
<b>Boundaries</b>	The site is located on the western edge of the Freeway North Business Park industrial area. Industrial lots are situated to the east and south, while a large contiguous forested area lies to the north-west and west. Undeveloped industrial zoned land is situated north of Canavan Drive.
<b>Current Land Use</b>	The land is currently cleared.
<b>Topography</b>	The site generally slopes from the mid south-eastern site area in a north-west direction.
<b>Climate / Fire History</b>	The site lies within a geographical area with a Fire Danger Index (FDI) rating of 100. Extreme bushfire weather is therefore associated with long periods of drought, high temperatures, low humidity and gusty often north-westerly winds. The site is classified as being affected by Category 1 and Category 3 Vegetation and Vegetation Buffers from Category 1 and Category 3 Vegetation on the Bushfire Prone Land Map (DPE 2019), Refer to <b>Figure 2</b> . Notably the BFPL Map is not accurate for the area immediately south of the site where industrial development has occurred.
<b>Environment</b>	The entire site has been cleared.
<b>Cultural Significance</b>	A search of the AHIMS register has been completed on the 18 April 2019 and confirmed that there are no recorded Aboriginal sites or places on or near the site.

## 1.3 Description of Proposal

The proposal involves the construction of an industrial subdivision over the site consisting of 29 lots of varying size, one drainage reserve and roads to extend into the site from Canavan Drive. Services will be augmented through the subdivision.

Refer to **Appendix A**.





FREEWAY NORTH BUSINESS PARK, BEREFIELD

**FIGURE 1: SITE LOCATION**

**Legend**

- Site
- Cadastral Boundaries

0 100 200 400  
Meters  
1:8,000

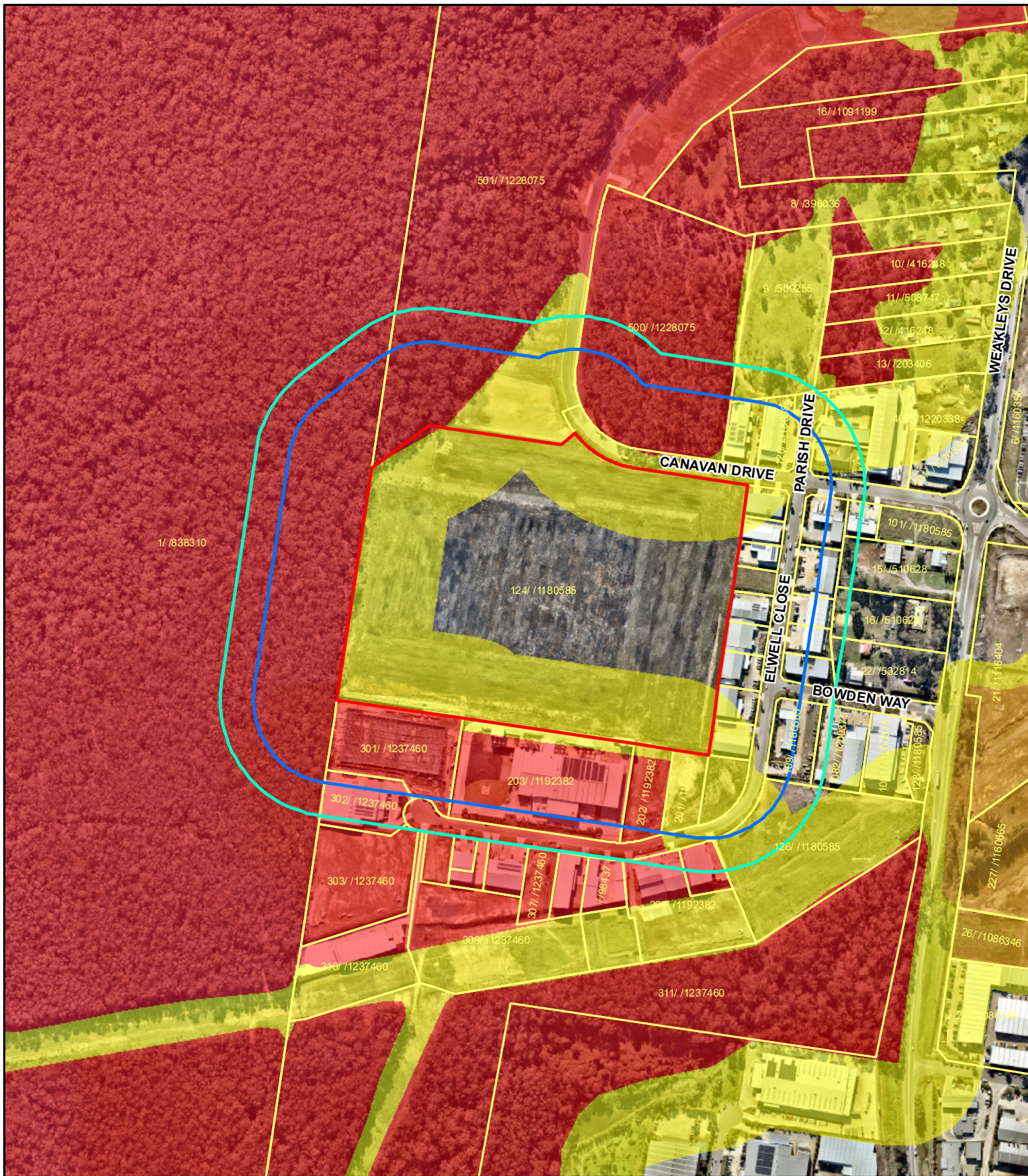


Aerial: NearMap (2019) | Data: MJD Environmental, LPI (2019), NSW RFS (2018) | Datum/Projection: GDA 1994 MGA Zone 56 | Date: 21/06/2019 | Version 1 | GIS\19025 - Freeway North Business Park\5. GIS | This plan should not be relied upon for critical design dimensions.



**Figure 2 Bushfire Prone Land Map**





FREEWAY NORTH BUSINESS PARK, BEREFIELD

**FIGURE 2: BUSHFIRE PRONE LAND**

**Legend**

- Site
- Cadastral Boundaries
- Slope Classification Buffer (100m)
- Vegetation Classification Buffer (140m)

**Bushfire Prone Vegetation**

- Category 1
- Category 3
- BFPV 100m Buffer



Aerial: NearMap (2019) | Data: MJD Environmental, LPI (2019), NSW RFS (2018) | Datum/Projection: GDA 1994 MGA Zone 56 | Date: 21/06/2019 | Version 1 | GIS\19025 - Freeway North Business Park\5. GIS | This plan should not be relied upon for critical design dimensions.



## 2 Bushfire Hazard Analysis

### 2.1 Vegetation Assessment

#### **Methodology**

The vegetation in and around the site, to a distance of 140m, has been assessed in accordance with PBP 2006. This assessment has been made via a combination:

- aerial photo interpretation;
- reference to regional community vegetation mapping and/or vegetation delineation based on ecological assessment on site; and
- on site vegetation classification.

These vegetation communities have been classified for bushfire purposes into structure and formation using the system adopted by Keith (2004) and using Table A2.1 of PBP (2006) with due regard to Addendum Appendix 3 (PBP 2006).

#### **Vegetation Classification**

Vegetation classification has been presented in **Table 1** below and **Figure 3**.

**Table 1 Vegetation Classification**

Direction	Description	Vegetation Classification
North	<ul style="list-style-type: none"> <li>▪ Canavan Drive</li> <li>▪ Cleared land/ vacant and developed lots</li> <li>▪ Forest</li> </ul>	No hazard/Forest
East	<ul style="list-style-type: none"> <li>▪ IN2 Light Industrial zone lands comprising roads and structures</li> </ul>	No hazard
North-west	<ul style="list-style-type: none"> <li>▪ RU2 Rural Landscape zone lands and E2 Environmental Conservation zone lands containing native vegetation</li> </ul>	Forest
South	<ul style="list-style-type: none"> <li>▪ IN2 Light Industrial zone lands comprising roads and structures</li> </ul>	No Hazard
West	<ul style="list-style-type: none"> <li>▪ RU2 Rural Landscape zone lands containing native vegetation</li> </ul>	Forest

## Site Photos



**Photo 1** – View South toward Lot 124 DP 1180585 subdivision



**Photo 2** – View North toward Lot 124 DP 1180585 subdivision



**Photo 3** – View North along eastern boundary of Lot 500 DP 1228075 (temporary APZ)

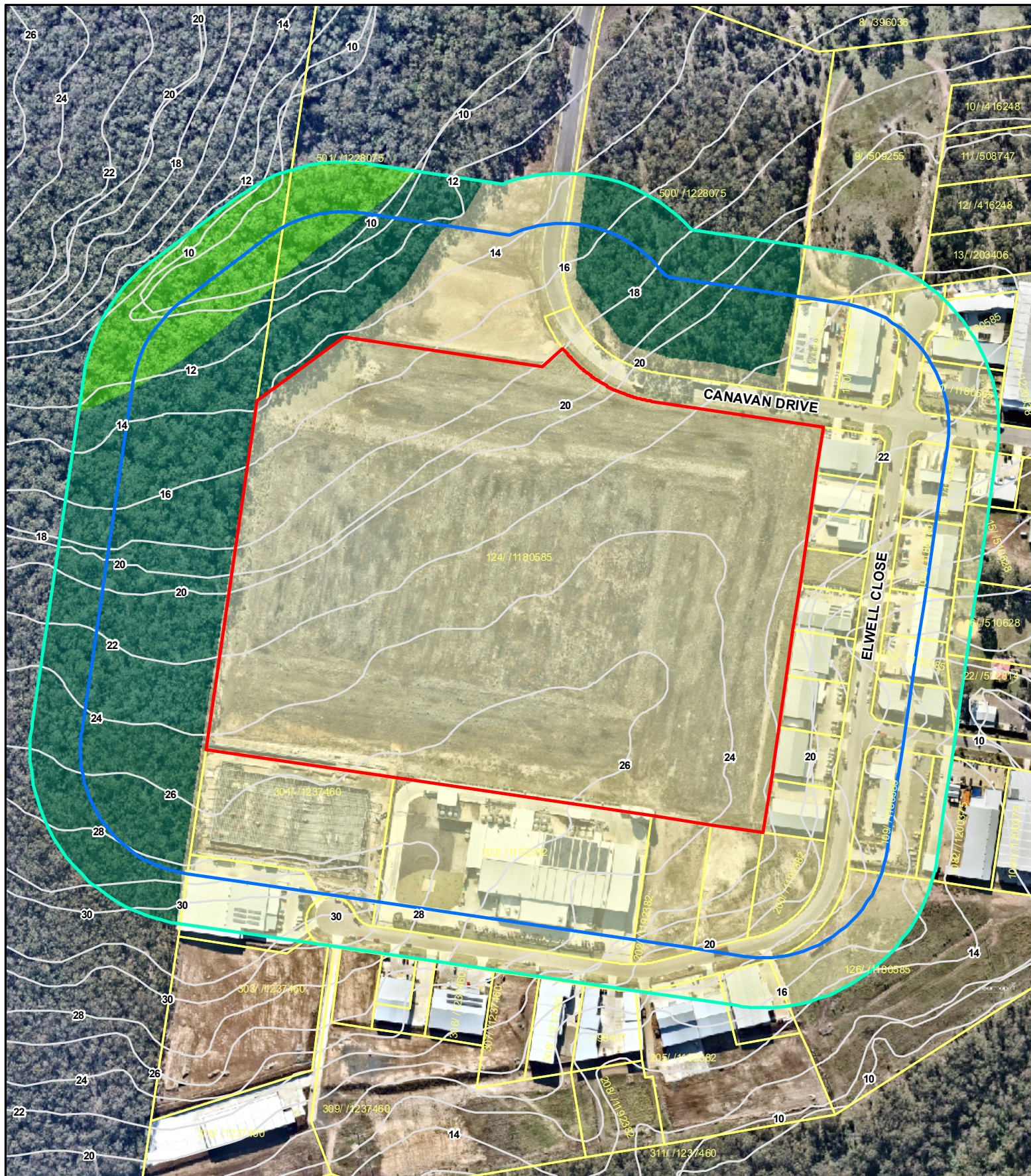


**Plate 4:** View East along northern boundary of Lot 500 DP 1228075 (future temporary APZ)



**Photo 5** – Typical landscaping of industrial subdivision (Elwell Close)





**FREEWAY NORTH BUSINESS PARK, BERESFIELD**  
**FIGURE 3: VEGETATION CLASSIFICATION**

**Legend**

- Contours (2m)
- Site
- Cadastral Boundaries
- Slope Classification Buffer (100m)
- Vegetation Classification Buffer (140m)

**Vegetation Formation & Class (Keith 2004)**

- Dry Sclerophyll Forests (Shrub-grass sub formation), Hunter-Macleay Dry Sclerophyll Forests
- Wet Sclerophyll Forests (Shrubby sub-formation), North Coast Wet Sclerophyll Forests
- Managed Land

0 50 100 200  
 Meters  
 1:4,000



Aerial: NearMap (2019) | Data: MJD Environmental, LPI (2019), Parsons Brinkerhoff (2013) | Datum/Projection: GDA 1994 MGA Zone 56 | Date: 21/06/2019 | Version 1 | GIS/19025 - Freeway North Business Park15. GIS | This plan should not be relied upon for critical design dimensions.



### 3 Bushfire Protection Measures

This development type and buildings contained therein do not strictly trigger the criteria outlined with PBP (2006) for residential and/or Special Fire Protection Purpose (SFPP). In these instances, section 1.3(b) of PBP states that the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aims and objectives outlined in section 1.1 of PBP (2006) can be met. The broad objectives are listed below:

- (i) afford occupants of any building adequate protection from exposure to a bushfire;
- (ii) provide for a defensible space to be located around buildings;
- (iii) provide appropriate separation between a hazard and buildings which, in combination with other measure, prevent direct flame contact and material ignition;
- (iv) ensure that safe operational assess and egress for emergency service personnel and residents is available;
- (v) provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ; and
- (vi) ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).

An appraisal against these objectives is provided in this chapter. Importantly, this appraisal only relates to industrial/ commercial development types that do not trigger the residential and/or SFPP provisions of PBP (2006). Wherever these development types are sought in the Industrial development area (eg child care), the required APZ (PBP 2006) and BAL (AS 3959-2009) must be assessed and provided.

#### 3.2 Access

In the event of a serious bushfire threat to the proposed development, it will be essential to ensure that adequate ingress/ egress and the provision of defensible space are afforded in the subdivision design. All lots within the industrial subdivision layout will have public road frontage. The proposed road layout is for the construction of public roads of a 12m wide pavement (kerb to kerb) and cul-de-sac design with 29m radius suitable for heavy B-Double Trucks that will use the industrial subdivision. Refer to **Appendix A** for Plan of Subdivision.

#### 3.3 Services – Water, Electricity, Gas

The site is to be developed in accordance with the PBP (2006) acceptable solutions for services listed in **Table 2**.

The proposal is able to satisfy these requirements given:

- Reticulated is proposed to be connected to and augmented within the site. This includes hydrants as part of the public road network.
- Non-reticulated water supply is likely to be available based on roof capture from future buildings within the lots created by the industrial subdivision (subject to individual Development Applications).
- The site will be connected to power that shall be extended and augmented within the site.
- Any future gas connection will be installed in accordance with the provisions of PBP (2006).

**Table 2 Acceptable solutions for services (PBP 2006)**

Performance Criteria	Acceptable Solutions												
The intent may be achieved where:													
<p><b>Reticulated water supplies</b></p> <ul style="list-style-type: none"> <li>water supplies are easily accessible and located at regular intervals</li> </ul> <p>To note, if reticulated water supplies are considered inadequate or shall not be connected as part of the proposal, the PBP (2006) performance criteria for 'non-reticulated' water supply shall apply as detailed below.</p>	<ul style="list-style-type: none"> <li>reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.</li> <li>fire hydrant spacing, sizing and pressures comply with AS 2419.1 – 2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles.</li> <li>hydrants are not located within any road carriageway</li> <li>all above ground water and gas service pipes external to the building are metal, including and up to any taps.</li> <li>the provisions of parking on public roads are met.</li> </ul>												
<p><b>Non-reticulated water supply areas</b></p> <ul style="list-style-type: none"> <li>for rural-residential and rural developments (or settlements) in bush fire prone areas, a water supply reserve dedicated to firefighting purposes is installed and maintained. The supply of water can be an amalgam of minimum quantities for each lot in the subdivision (community titled subdivisions), or held individually on each lot.</li> </ul> <table border="1"> <thead> <tr> <th>Development type</th><th>Water requirement</th></tr> </thead> <tbody> <tr> <td>Residential Lots (&lt;1,000m<sup>2</sup>)</td><td>5,000 l/lot</td></tr> <tr> <td>Rural-residential Lots (1,000 – 10,000m<sup>2</sup>)</td><td>10,000 l/lot</td></tr> <tr> <td>Large Rural/Lifestyle Lots (&gt;10,000 m<sup>2</sup>)</td><td>20,000 l/lot</td></tr> <tr> <td>Dual Occupancy</td><td>2,500 l/unit</td></tr> <tr> <td>Townhouse/Unit Style (eg Flats)</td><td>5,000 l/unit up to 20,000 l maximum.</td></tr> </tbody> </table> <p>Table 4.2 PBP 2006</p>	Development type	Water requirement	Residential Lots (<1,000m <sup>2</sup> )	5,000 l/lot	Rural-residential Lots (1,000 – 10,000m <sup>2</sup> )	10,000 l/lot	Large Rural/Lifestyle Lots (>10,000 m <sup>2</sup> )	20,000 l/lot	Dual Occupancy	2,500 l/unit	Townhouse/Unit Style (eg Flats)	5,000 l/unit up to 20,000 l maximum.	<ul style="list-style-type: none"> <li>the minimum dedicated water supply required for firefighting purposes for each occupied building excluding drenching systems, is provided in accordance with Table 4.2 (refer to insert on left).</li> <li>a suitable connection for firefighting purposes is made available and located within the IPA and away from the structure. A 65mm Storz outlet with a Gate or Ball valve is provided.</li> <li>Gate or Ball valve and pipes are adequate for water flow and are metal rather than plastic.</li> <li>underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank. A hardened ground surface for truck access is supplied within 4 metres of the access hole.</li> <li>above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of fire fighters.</li> <li>all above ground water pipes external to the building are metal including and up to any taps. Pumps are shielded.</li> </ul>
Development type	Water requirement												
Residential Lots (<1,000m <sup>2</sup> )	5,000 l/lot												
Rural-residential Lots (1,000 – 10,000m <sup>2</sup> )	10,000 l/lot												
Large Rural/Lifestyle Lots (>10,000 m <sup>2</sup> )	20,000 l/lot												
Dual Occupancy	2,500 l/unit												
Townhouse/Unit Style (eg Flats)	5,000 l/unit up to 20,000 l maximum.												
<p><b>Electricity Services</b></p> <ul style="list-style-type: none"> <li>location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings</li> <li>regular inspection of lines is undertaken to ensure they are not fouled by branches.</li> </ul>	<ul style="list-style-type: none"> <li>where practicable, electrical transmission lines are underground.</li> <li>where overhead electrical transmission lines are proposed: <ul style="list-style-type: none"> <li>lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and</li> <li>no part of a tree is closer to a power line than the distance set out in accordance with the specifications in 'Vegetation Safety Clearances' issued by Energy Australia (NS179, April 2002).</li> </ul> </li> </ul>												

Performance Criteria	Acceptable Solutions
<b>Gas services</b> <ul style="list-style-type: none"> <li>location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings</li> </ul>	<ul style="list-style-type: none"> <li>reticulated or bottled gas is installed and maintained in accordance with AS 1596 and the requirements of relevant authorities. Metal piping is to be used.</li> <li>all fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side of the installation.</li> <li>if gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal.</li> <li>polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.</li> </ul>

### 3.4 Landscaping & Fuel Management

All future landscaping on the site should be designed and managed to minimise impact of bushfire based on the principles set out in PBP (2006) being:

- Prevent flame contact / direct ignition on the building;
- Provide a defendable space for property protection;
- Reduce fire spread;
- Deflect and filter embers;
- Provide shelter from radiant heat; and
- Reduce wind speed.

In this manner, consideration should be given to species selection, planting location, flammability and size at maturity to ensure discontinuous canopy/ structure both vertically and horizontally to ensure the above principles are met.

Ongoing fuel management across the site as part of the maintenance regime should give due consideration to the RFS Standards for Asset Protection Zones (2005) which provides guidance on maintenance activities to assist in achieving the landscape principles.

### 3.5 Emergency Management

Any fire within the site would be attended in the first instance by the Thornton Rural Fire Brigade or Fire and Rescue NSW Tarro Fire Station branch of the NSW Fire Brigade.

To assist emergency response from the NSW RFS and/or NSW Fire and Rescue, site access is to comply with the provisions set out in PBP (2006) and all tanks including connection points be readily accessible and clearly marked. If pumps are to be made available, they must be regularly maintained and in good working order.

### 3.6 Appraisal for non SFPP or residential development areas on site

This development type and buildings contained therein do not strictly trigger the criteria outlined with PBP (2006) for residential and/or Special Fire Protection Purpose (SFPP).

In these instances, section 1.3(b) of PBP states that the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aims and objectives outlined in section 1.1 of PBP (2006) can be met. The broad objectives are listed below and a comment on how they are achieved has been provided in **Table 3** below.



**Table 3 Appraisal against Aims & Objectives for non SFPP or residential development areas on site**

Objective (PBP 2006)	Comment
(i) afford occupants of any building adequate protection from exposure to a bushfire;	<ul style="list-style-type: none"> <li>Each lot with a common boundary to a bushfire hazard will need to ensure appropriate building materials and firefighting equipment in accordance with the BCA are provided. Consideration should be given to access and circulation around the building subject to building design.</li> <li>In all cases future occupants will exit and travel away from the bushfire hazard.</li> <li>In addition to the provision of a combination of bushfire mitigation measures including defendable space, vegetation management on industrial lots, access and circulation, water for firefighting purposes via provision of hydrants in the public road network, the nature of the industrial subdivision and future industrial buildings including materials used on external facades and roofing are considered to provide increased bushfire resilience outlined in AS3959-2018. Specifically, the structures are generally constructed based on a template of slab on ground with non-combustible wall materials and non-combustible roof structures (including concrete tilt slab design, metal frame super structure, metal cladding and roofing).</li> <li>Development delivery will be completed in a single stage. The site will be managed as a temporary APZ to an IPA standard until all lots have been sold.</li> </ul> <p>This objective is satisfied.</p>
(ii) provide for a defendable space to be located around buildings;	<ul style="list-style-type: none"> <li>Defendable space in the form of managed areas, hardstand (eg roads, concrete) and managed batters will be established on all industrial lots.</li> <li>Each lot with a common boundary to a bushfire hazard will need to ensure appropriate building materials and firefighting equipment in accordance with the BCA are provided. Consideration should be given to access and circulation around the building subject to building design.</li> <li>Development delivery will be completed in a single stage. The site will be managed as a temporary APZ to an IPA standard until all lots have been sold.</li> </ul> <p>This objective is satisfied.</p>
(iii) provide appropriate separation between a hazard and buildings which, in combination with other measure, prevent direct flame contact and material ignition;	<ul style="list-style-type: none"> <li>Refer to responses for item (i) and (ii)</li> </ul> <p>This objective is satisfied.</p>

Objective (PBP 2006)	Comment
(iv) ensure that safe operational assess and egress for emergency service personnel and residents is available;	<ul style="list-style-type: none"> <li>▪ Refer to Section 3.2. The proposal shall provide and maintain appropriate ingress/ egress to site for emergency vehicle access. All roads and intersections have been designed to cater for large trucks and logistics operations and will be dedicated as public roads.</li> <li>▪ All lots have direct road frontage to a public road.</li> <li>▪ Minimum road widths for the subdivision are 12 m with sealed surfaces(kerb to kerb) ensuring adequate access for all sized vehicles. Cul-de-sac turning radius is 29m for B-Double trucks.</li> <li>▪ The road layout ensures lots facing the hazard provide a direct egress away from the hazard to the public road situated to the east. Road widths are greater than the minimum standards set out in PBP to cater for heavy vehicles using the industrial subdivision. In an emergency this will assist facilitating egress of occupants and ingress of emergency services.</li> <li>▪ Development delivery will be completed in a single stage. The site will be managed as a temporary APZ to an IPA standard until all lots have been sold.</li> </ul> <p>This objective is satisfied.</p>
(v) provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ; and	<ul style="list-style-type: none"> <li>▪ Refer to responses for item (i) and (ii)</li> <li>▪ The site will be maintained for the life of operation.</li> </ul> <p>This objective is satisfied.</p>
(vi) ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).	<ul style="list-style-type: none"> <li>▪ Refer to Section 3.3. The proposal will provide reticulated water and hydrants in the public road network. Non-reticulated water supply is likely to be available based on roof capture from future buildings within the lots created by the industrial subdivision (subject to individual Development Applications)</li> <li>▪ Rainwater tanks, firefighting tanks and private fire fighting hydrants are standard requirements under the BCA for industrial development.</li> <li>▪ Power and Gas connections will be in accordance with PBP (2006).</li> </ul> <p>This objective is satisfied.</p>

## 4 Conclusion & Recommendations

MJD Environmental has been engaged by Hunter Land, to prepare a Bushfire Threat Assessment (BTA) to accompany a Development Application (DA) seeking an industrial subdivision over Lot 124 DP 1180585, 27 Canavan Drive, Beresfield within the Freeway North Business Park.

The assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the Planning for Bush Fire Protection (PBP), 2006 that has been released and adopted through the *Environmental Planning & Assessment Amendment* (Planning for Bush Fire Protection) *Regulation 2007* & the *Rural Fires Amendment Regulation 2007*.

This assessment has been made based on the bushfire hazards in and around the site at the time of inspection and production (April 2019).

This development type and buildings contained therein do not strictly trigger the criteria outlined with PBP (2006) for residential and/or Special Fire Protection Purpose (SFPP). In these instances, section 1.3(b) of PBP states that the provisions under the BCA for fire safety will be accepted for bushfire purposes where the aims and objectives outlined in section 1.1 of PBP (2006) can be met. The broad objectives are listed below:

- (i) afford occupants of any building adequate protection from exposure to a bushfire;
- (ii) provide for a defendable space to be located around buildings;
- (iii) provide appropriate separation between a hazard and buildings which, in combination with other measure, prevent direct flame contact and material ignition;
- (iv) ensure that safe operational assess and egress for emergency service personnel and residents is available;
- (v) provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ; and
- (vi) ensure that utility services are adequate to meet the needs of fire fighters (and others assisting in bush fire fighting).

An appraisal against these objectives is provided in this BTA. Importantly, this appraisal only relates to industrial/ commercial development types that do not trigger the residential and/or SFPP provisions of PBP (2006). Wherever these development types are sought in the Industrial development area (eg child care), the required APZ (PBP 2006) and BAL (AS 3959-2018) must be assessed and provided. Notably development on each lot will be subject to further assessment with respect to building design and the risk of ignition in the event of fire. Building design will be required to incorporate appropriate building type and firefighting standards as set out in the Building Code of Australia.

Assessment against these objectives has determined the proposal is able to comply with the relevant provisions of PBP (2006).

***Finally, the implementation of the measures and recommendations forwarded within this report would contribute to the amelioration of the potential impact of any bushfire upon the development site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.***

## 5 Bibliography

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## APPENDIX A      Plan of Proposal

LOT SCHEDULE

NO	TITLE LOT	TITLE DP
1	101	1180585
2	102	1180585
3	103	1180585
4	104	1180585
5	105	1180585
6	106	1180585
7	107	1180585
8	109	1180585
9	110	1180585
10	111	1180585
11	112	1180585
12	113	1180585
13	114	1180585
14	115	1180585
15	116	1180585
16	117	1180585
17	118	1180585
18	119	1180585
19	120	1180585
20	121	1180585
21	122	1180585
22	126	1180585
23	1082	1200375
24	1083	1200375
25	200	1192382
26	201	1192382
27	202	1192382
28	203	1192382
29	204	1192382
30	205	1192382
31	206	1192382
32	301	1237460
33	302	1237460
34	303	1237460
35	304	1237460
36	306	1237460
37	307	1237460
38	308	1237460
39	309	1237460
40	310	1237460
41	1	1242587
42	2	1242587
43	400	1220338
44	401	1220338
45	500	1252496
46	501	1252496
47	502	1252496
48	503	1252496
49	504	1252496
50	506	1252496
51	507	1252496
52	508	1252496
53	509	1252496
54	510	1252496
55	511	1252496
56	512	1252496
57	STAGE 6 UNREGISTERED	
58		
59		
60		
61		
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1	Original Issue	11.06.19
No	Amendment	Date



UNIT 7A 26 BALOOK DRIVE, BERESFIELD NSW 2322



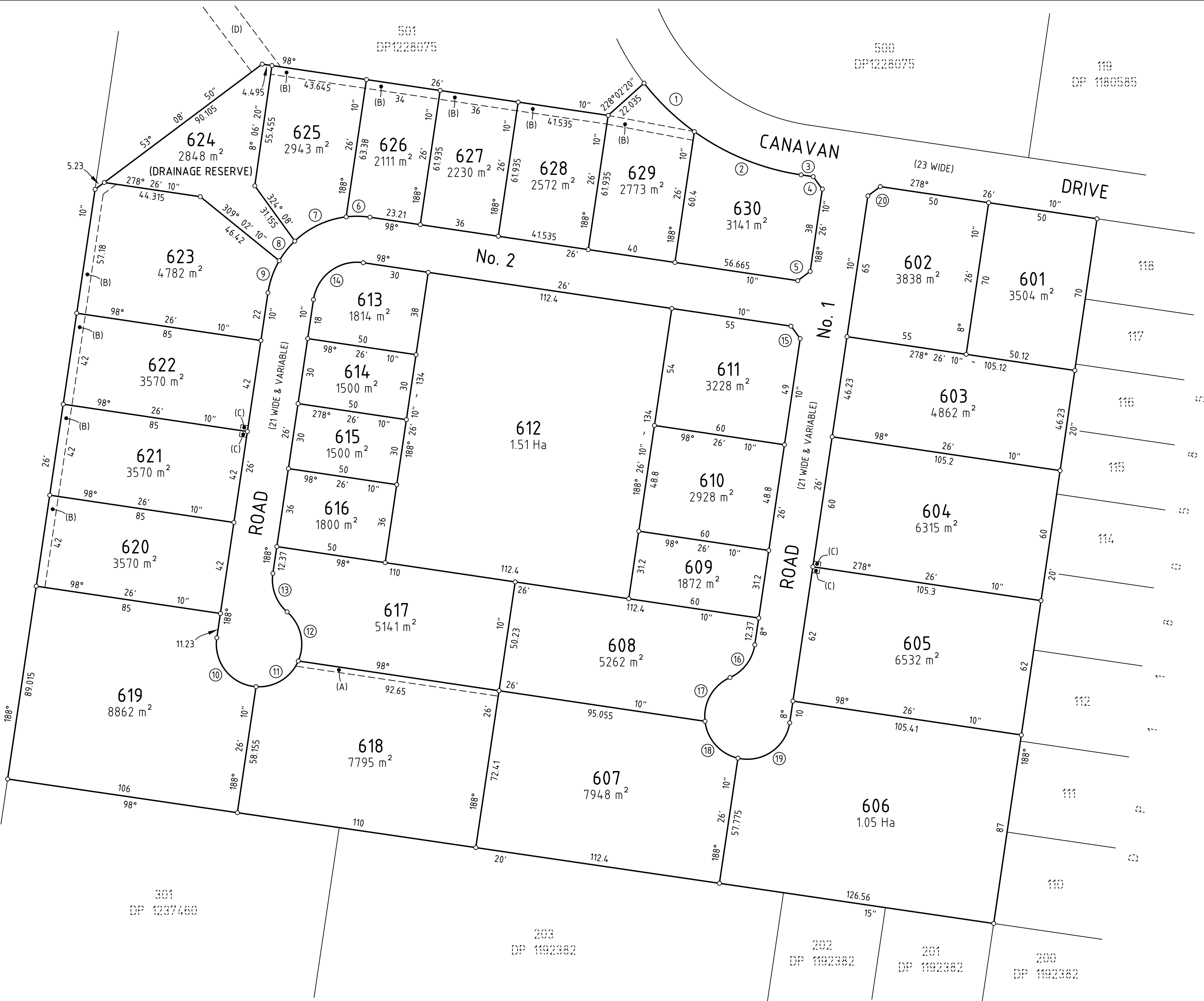
Ph: 02 4964 4886

www.delfs.com.au

Title: SUBDIVISION PLAN  
LOT 124 DP1180585  
Address: 27 CANAVAN DRIVE  
BERESFIELD  
Client: HUNTERLAND

Cad Ref: 17010 - Sub Plan  
Datum: --  
Origin: --  
Scale: 1:5000 A3  
Drawn: JD  
Surveyor: TC

Plan No  
17010  
Drawing No  
1  
Revision  
1



PRELIMINARY ONLY

THIS PLAN IS PRELIMINARY ONLY AND IS SUBJECT TO COUNCIL APPROVAL, FINAL DESIGN, CONSTRUCTION, FINAL SURVEY AND REGISTRATION AT THE LAND AND PROPERTY INFORMATION, SYDNEY.

- (A) - EASEMENT TO DRAIN WATER 2.5 WIDE
- (B) - EASEMENT TO DRAIN WATER 4 WIDE
- (C) - EASEMENT FOR ELECTRICITY & OTHER PURPOSES 3.3 WIDE
- (D) - EASEMENT TO DRAIN WATER VARIABLE WIDTH (DP1180585)

SHORT LINE & ARC TABLE				
Number	Chord Bearing	Chord Distance	Arc Length	Radius
1	133° 56'	31.88	31.985	111.5
2	112° 04' 35"	52.585	53.085	111.5
3	278° 26' 10"	5.56	-	-
4	143° 26' 10"	7.07	-	-
5	53° 26' 10"	7.07	-	-
6	270° 48' 20"	10.89	10.92	41
7	244° 45' 10"	25.915	26.365	41
8	38° 19'	11.43	11.47	41
9	19° 22' 10"	15.555	15.65	41
10	141° 13' 50"	28.62	32.13	19.5
11	58° 39' 30"	22.575	24.075	19.5
12	347° 09' 15"	23	24.6	19.5
13	339° 43' 35"	18.735	19.545	19.5
14	53° 26' 10"	28.285	31.415	20
15	143° 26' 10"	7.07	-	-
16	217° 08' 50"	18.735	19.545	19.5
17	209° 43' 05"	23	24.6	19.5
18	138° 12' 50"	22.575	24.075	19.5
19	55° 38' 30"	28.62	32.13	19.5
20	233° 26' 10"	7.07	-	-

SURVEYOR Name: THOMAS F CAMPBELL Date: Reference: 17010-DP2(DRAFT)_R9_190220	PLAN OF SUBDIVISION OF LOT 124 DP1180585	LGA: NEWCASTLE Locality: BERESFIELD Reduction Ratio 1:1250 Lengths are in metres.	REGISTERED	DP
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