

APPENDIX F

BUSHFIRE ASSESSMENT REPORT



Bushfire Assessment Report Proposed Industrial Subdivision

**Lot 4 DP255064
No. 2 Reddall Street
Yass, NSW 2582**

Prepared for

Warwick Farm Investments Pty Ltd

1 October 2024

Version V1.0



Project Details

Project Name	J322 – Proposed Industrial Subdivision 2 Reddall Street, Yass
Client Details	Warwick Farm Investments Pty Ltd c/-DPS Yass Office: 7 Adele Street, Yass NSW 2582 Postal: PO Box 5, Yass NSW 2582
Project Address	No. 2 Reddall Street, Yass NSW 2582
Lot & DP	Lot 4/-/DP255064
Local Government Area	Yass Valley Council
Lan Use Zoning (PSC LEP)	E3 – Productivity Support (Yass Valley LEP 2013)
Bushfire Prone Land	YES - Category 3 (Grassland) bushfire prone vegetation
Proposed Development	PBP 'Other Development' – Industrial Subdivision
Approval Path	Council Development Application (DA)
Building Classification	Not applicable. Industrial Subdivision for future NCC Class 5-8

Document Control

Version	Primary Author(s)	Description	Date Completed
V1.0	Daniel Smith Dan Pedersen BPAD16293	Draft	1 October 2024

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1. Introduction

Warwick Farm Investments Pty Ltd c/- DPS has engaged Cool Burn Pty Ltd (Cool Burn) to prepare a Bushfire Assessment Report in support of the Development Application (DA) to be submitted to Yass Valley Council for the proposed 9-lot industrial subdivision of Lot 4 DP255064, No. 2 Reddall Street, Yass NSW 2582 (Appendix 1 – Figure 1).

The proposed subdivision involves dividing the existing Lot (10.925Ha - zoned E3 Productivity Support) into 9 industrial allotments, along with the construction of roads and related infrastructure (refer to Appendix 1-Site Plan). The client have advised that all existing structures on the site will be demolished under a separate Complying Development Certificate (CDC), and the removal of mature trees along the western boundary will be addressed through a separate Development Application (DA).

The site, located within the Yass Valley Local Government Area (LGA), is classified as bushfire prone (refer to Appendix 1 - Figure 2), with Category 3 vegetation present on-site and within 140m to the north, east, and west. The consent authority, Yass Valley Council, requires a Bushfire Assessment Report as part of the development approval process.

This industrial subdivision is categorized as 'other development' under the NSW Rural Fire Service Document *Planning for Bushfire Protection 2019* (PBP) and is assessed by Council under Section 4.14 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which incorporates PBP considerations.

The Bushfire Assessment Report has been prepared in compliance with the reporting standards outlined in Appendix 2 of PBP. This assessment considers the bushfire-prone characteristics of the site, surrounding vegetation, and overall bushfire risk. It assesses the proposed use of the land in relation to the aims and objectives of PBP, ensuring that appropriate bushfire protection measures are identified and implemented to mitigate the risks to future occupants, structures, and emergency services.

Cool Burn is a recognised and suitably qualified bushfire consultancy (BPAD Level 3), experienced in the preparation of bush assessments for this type of development.

2. Legislative Context

The application for an industrial subdivision is categorised as 'other development' under PBP 2019 and is to be assessed in accordance with the aims and objective of PBP 2019.

A bushfire safety authority (BFSA) is not required under cl.45 (h) *Rural Fires Regulation 2013*:

Cl45: Development excluded from requirements for bush fire safety authority

(h) subdivision of land used or proposed to be used for industrial purposes on which the erection of a dwelling related to the industrial use of the land (such as a manager's residence) is permitted.

This Bushfire Assessment Report relates only to industrial subdivision. No new buildings proposed under this DA. Any future industrial/commercial (NCC Class 5-8) buildings on the newly created lots will require a separate Bushfire Assessment.

3. Planning for Bushfire Protection 2019

All development on Bushfire Prone Land (BFPL) must satisfy the aim and objectives of PBP. The aim of PBP is *'to provide for the protection of human life and minimise impacts on site from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment'*.

The objectives are to:

- *Afford buildings and their occupants protection from exposure to a bush fire;*
- *Provide for a defensible space to be located around buildings;*
- *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;*
- *Ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- *Provide for ongoing management and maintenance of BPMs; and*
- *Ensure that utility services are adequate to meet the needs of firefighters.*

For industrial subdivision development, the PBP aim, and objectives are achieved by providing a combination of suitable Bushfire Protection Measures (BPMs) which include measures including the provision of a defensible space (APZ), ensuring adequate access and egress, and supplying appropriate utility services with sufficient water provisions for emergency services. The recommended BPMs for the industrial subdivision proposal are provided in Section 5 of this report.

4. Bushfire Risk Assessment

4.1. Bushfire Prone Land

Bushfire Prone Land (BFPL) is an area of land that can support a bush fire or is likely to be subject to bush fire attack, as designated on a bush fire prone land map prepared in accordance with NSW RFS requirements and certified by the Commissioner of the NSW RFS.

The Yass Valley Council BFPL map (refer to Appendix 1 – Figure 2) identifies the subdivision site as 'bushfire prone land'. Vegetation on the site and within 140m to the north, east and west is mapped as Vegetation Category 3 (grassland).

4.2. Fire Danger Index (FDI)

The Fire Danger Index (FDI) is defined by PBP as the chance of a fire starting, its rate of spread, its intensity, and the difficulty potential for its suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long- and short-term drought effects. The subdivisions site is located in the Southern Ranges fire weather district and has a FDI of 100 and a Grassland Fire Danger Index (GFDI) of 130 as per PBP.

4.3. Vegetation Assessment

In accordance with Appendix 1 of PBP a classification of bushfire prone vegetation on and around the proposed subdivision site, extending out to 140 metres in all directions, has been conducted (see mapping Appendix 1 - Figure 3). Table 1 below provides a summary of assessed vegetation hazards.

4.4. Effective Slopes Influencing Bushfire Behavior

The bushfire behavior assessment methodology evaluates the effective slope of the land on and surrounding the site, extending out to 100 metres from the subdivision boundaries. The effective slope is defined as "the land beneath the vegetation which most significantly affects fire behavior, having regard to the vegetation present." The effective slope of the surrounding vegetation hazards is illustrated in Figure 3 and detailed in Table 1 below.

Aspect	Vegetation Type	Effective Slope	Description
North:	Grassland	0° up-slope/flat	Land zoned SP2 Waste Mgt Facility
South:	Managed Land	0° up-slope/flat	Managed commercial/industrial
East:	Grassland	0° up-slope/flat	Zoned R5 Large Lot Residential
West:	Grassland	0-5° down-slope	Land zoned SP2 Waste Mgt Facility

Table 2. Bushfire prone vegetation within 140m of the development site.

5. Recommended Bushfire Protection Measures

The aim of PBP is "to protect human life and minimize on-site impacts from bushfire threats, while considering development potential, site characteristics, and environmental protection."

For industrial subdivision development, the PBP aim, and objectives are achieved by providing defensible space (APZ), ensuring adequate access and egress, and supplying appropriate utility services with sufficient water provisions for emergency services. The following Bushfire Protection Measures (BPMs) have been developed for the proposed industrial subdivision.

5.1.BPM – Asset Protection Zones (APZ)

An Asset Protection Zone (APZ) is a fuel-reduced buffer that provides protection between a development and bushfire hazards by:

- Creating a buffer between bushfire hazards and assets.
- Reducing bushfire fuel, allowing for fire suppression activities.
- Providing space for backburning or hazard reduction efforts.
- Allowing emergency service access and a safer area for firefighters and occupants to defend the property.

This bushfire assessment recommends that:

- All newly created lots be managed as an APZ until they are developed for industrial or commercial purposes through an approved Development Application (DA).

Each new lot within the proposed subdivision is deemed to have the capacity to establish site-specific APZs and defensible spaces when developed, ensuring that appropriate Bushfire Protection Measures (BPMs) are applied to each lot during future development.

With the implementation of the recommended APZ measures, the proposed industrial subdivision will meet the aims and objectives of PBP by maintaining defensible spaces and ensuring continued management and safety across the development site.

5.2.BPM – APZ Management/Landscaping

This bushfire assessment recommends that from the commencement of the subdivision and in perpetuity (or until future development of each new lot occurs), that:

- All 9 lots within the subdivision be managed to the prescribed standards for an Inner Protection Area (IPA).

The IPA standards are outlined in Appendix 4 of PBP and the NSW Rural Fire Service's Standards for Asset Protection Zones document and summarised below:

- Trees
 - tree canopy cover should be less than 15% at maturity;
 - trees at maturity should not touch or overhang the building;
 - lower limbs should be removed up to a height of 2m above the ground;
 - tree canopies should be separated by 2 to 5m; and
 - preference should be given to smooth barked and evergreen trees.
- Shrubs
 - create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
 - shrubs should not be located under trees;
 - shrubs should not form more than 10% ground cover; and
 - clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
- Grass
 - grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
 - leaves and vegetation debris should be removed.

The recommended APZ management measures meet the objectives of PBP by minimising on-site impacts from bushfire threats and ensuring ongoing management maintenance i.e. to IPA standards and wholly within the development site and until future industrial development takes place.

5.3.BPM - Construction

This assessment does not provide any construction-related recommendations, as no buildings are proposed as part of this industrial subdivision development. Any future applications for building construction within the newly created industrial lots will require a separate Development Application (DA) and a separate development specific Bushfire Assessment Report.

5.4.BPM - Access

The industrial subdivision will be serviced by new road access in accordance with the Yass Valley Development Control Plan. The proposed road layout has been designed to allow for heavy vehicle access and maneuverability (for the proposed industrial use of lots) and is deemed consistent with the performance requirements for roads as detailed in PBP C5.3.2 (Table 5.3b).

To ensure that new roads provides operational access and egress for bushfire related emergency services, it is recommended that new road design comply with the following PBP requirements:

- Roads are two-wheel drive, all weather roads;
- A minimum 5.5m carriageway width (parking is to be provided outside of the carriageway);
- All roads are through roads. Dead end roads are not recommended, but if unavoidable, are not greater than 200m long, incorporate a minimum 12m outer radius turning circle, and are clearly sign posted as a dead end;
- Curved carriageways should be constructed using the minimum swept path as outlined in Appendix 3 of PBP:

Minimum curve radius for turning vehicles.

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

- The capacity of the road is to be sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes);
- All kerbs constructed around access roads should be no higher than 250mm and free of vertical obstructions at least 300mm back from the kerb face to allow clearance for front and rear body overhang;
- Hydrant services should be located outside the carriageway and parking bays to permit traffic flow and access;

- Hydrant services shall be located on the side of the road away from the bush fire threat where possible.
- Hydrants are to be provided in accordance with AS 2419.1:2021 – *Fire hydrant installations System, design, installation, and commissioning*;
- Traffic management devices (locked gates) are constructed to not prohibit access by emergency services vehicles;
- An unobstructed clearance height of 4 metres should be maintained above all access ways including clearance from building construction, archways, gateways and overhanging structures (e.g. ducts, pipes, sprinklers, walkways, signs and beams). This also applies to vegetation overhanging roads.
- Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress and the minimum distance between inner and outer curves is 6m;
- The crossfall is not more than 10 degrees;
- Maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient.

With the full implementation of the above recommended road design measures, the proposed industrial subdivision development can meet the PBP objective of ensuring operational access and egress for both emergency services and future occupants.

5.5.BPM - Water Supplies

The site is located within a reticulated water supply area. To ensure an adequate water supply for firefighting purposes, a reticulated water supply and fire hydrant system must be provided for the development.

This bushfire assessment recommends that a reticulated water supply to the industrial subdivision be provided in accordance with PBP C7.4 (Table 7.4a) as follows:

- Fire hydrant spacing, design, flow rates, pressures, and sizing must comply with the relevant clauses of AS 2419.1:2021;
- Hydrants must not be located within any road carriageway;
- Hydrant services shall be located on the side of the road away from the bush fire threat where possible; and
- All above-ground water service pipes must be metal, including those leading to taps.

With the implementation of these measures the industrial subdivision development can achieve the PBP objective of ensuring that an adequate and accessible water supply is provided for firefighting purposes.

5.6.BPM - Electricity Services

This assessment recommends that electricity services be provided in accordance with the following PBP specifications:

- Where practical, all electrical transmission lines are to be installed underground to reduce the risk of fire ignition.
- Where above-ground lines are unavoidable, they should be positioned and maintained to minimize the risks as follows:
 - Lines are installed with short pole spacing of 30m, unless crossing gullies, gorges, or riparian areas; and
 - No part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines.

These measures are intended to prevent potential ignition sources and ensure the safe operation of electricity services in a bushfire-prone environment. With the implementation of

these measures the industrial subdivision can achieve the PBP objective of ensuring that utility services meet the needs of firefighters.

5.7.BPM - Gas Services

The industrial subdivision development must ensure that the location and design of gas services will not lead to ignition of surrounding bushland or the fabric of future buildings. To achieve this, the assessment recommends that electricity services be provided in accordance with the following PBP specifications:

- Reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - The storage and handling of LP Gas, the requirements of relevant authorities, and metal piping is used;
- All fixed gas cylinders are kept clear of all flammable materials to 10m and shielded on the hazard side;
- Connections to and from gas cylinders are metal;
- Polymer-sheathed flexible gas supply lines are not used; and
- Above-ground gas service pipes are metal, including and up to any outlets.

With the implementation of these measures the industrial subdivision development can achieve the PBP objective of ensuring that utility services meet the needs of firefighters.

5.8.BPM – Emergency Management

Emergency management planning is required prior to construction and will be relevant during construction and operations stages. A bushfire related emergency affecting people on the site could arise during construction and operations due to:

- A Total Fire Ban;
- A bushfire near to or approaching the site;
- A bushfire originating within the site or travelling through the site.

It is recommended that bushfire awareness and response be included in any site Emergency or Fire Management Plan for this proposed development. The Plan should include:

- Property Incident Plan (PIP)

- 24-hour emergency contact details including alternative telephone contact;
- Site infrastructure plan;
- Firefighting water supply plan;
- Site access and internal road plan;
- Preparation and continued maintenance of defensible spaces;
- Detail the location of hazards (Physical, Chemical and Electrical) that will impact on firefighting operations;
- Storage of hazardous materials away from the hazard wherever possible;
- Procedures to manage identified hazards during firefighting operations; and
- Such additional matters as required by the NSW RFS or Fire and Rescue NSW.

6. Recommendations and Conclusion

This Bushfire Assessment Report has assessed the proposed 9-lot industrial subdivision of Lot 4 DP255064, No. 2 Reddall Street, Yass, in accordance with the requirements of *Planning for Bush Fire Protection* 2019 (PBP) and the *Environmental Planning and Assessment Act* 1979 (EP&A Act). The assessment has identified bushfire risks associated with the site (grassland hazards), provided a combination of appropriate bushfire protection measures (BPMs), and confirmed the development's ability to achieve compliance with the aims and objectives of PBP.

The recommendations BPMs for the development (Section 5) include management of all new lots to Inner Protection Area (IPA) standards, ensuring new road design provides safe operational access and egress for emergency services, and by providing adequate water supply for firefighting purposes via hydrants, and ensuring the appropriate installation of electricity and gas services to limit the risk of fire ignition.

No buildings are proposed as part of this industrial subdivision proposal. Any future development on the newly created industrial allotments will require a separate Development Application (DA) and specific bushfire assessment to meet further PBP standards.

It is considered that the proposed industrial subdivision development adequately considers bushfire risk and conforms to the aims and objectives of PBP, providing a suitable outcome commensurate with the assessed bushfire risk.

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7. Assessment Against the Aims and Objectives of PBP

The bushfire assessment identifies the extent to which the proposed industrial subdivision development conforms with or deviates from the aims and specific objectives set out in PBP. Table 1 details the compliance with PBP aims and objectives.

Table 1 Compliance with Aim & Objectives of PBP

Aim	Meets Aim	Comment
<i>to provide for the protection of human life and minimise impacts on site from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</i>	Yes	The industrial subdivision development has considered bushfire risk and applied relevant BPMs (Section 5 of this report) to mitigate bushfire impact, commensurate with the identified risk and industrial nature of the development.
General Objectives	Meets Objective	Comment
<i>afford buildings and their occupants protection from exposure to a bush fire;</i>	Yes	The subdivision is afforded acceptable bushfire protection at the subdivision stage through APZ management, commensurate to the identified risk.
<i>provide for a defensible space to be located around buildings;</i>	Yes	The development will provide for a defensible space (APZ) to lots at the subdivision stage. Each lot is designed to accommodate the implementation of a site-specific APZ for the characteristics of the future industrial buildings.
<i>provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</i>	Yes	All lots to be managed to APZ (IPA) standards until future development of each lot occurs.
<i>ensure that appropriate operational access and egress for emergency service personnel and occupants is available;</i>	Yes	New road access to comply with Section 5.4 of this report as required by PBP therefore, providing operational access and egress for emergency service personnel and occupants
<i>provide for ongoing management and maintenance of BPMs; and</i>	Yes	Bushfire management and maintenance (APZ) responsibility contained within the site

ensure that utility services are adequate to meet the needs of firefighters.	Yes	Water, gas and electricity services will be provided to acceptable PBP standards
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References

Keith, David (2004) – Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT. The Department of Environment and Climate Change

NSW Rural Fire Service (2015) Guide for Bushfire Prone Land Mapping

NSW Rural Fire Service (2019). Planning for Bushfire Protection: A Guide for Councils, Planners, Fire Authorities, Developers and Homeowners. Australian Government Publishing Service, Canberra

NSW Government (1979) Environmental Planning and Assessment Act 1979. NSW Government Printer

Rural Fires Regulation 2013 under the Rural Fires Act 1997

Appendix 1 Development Site Mapping

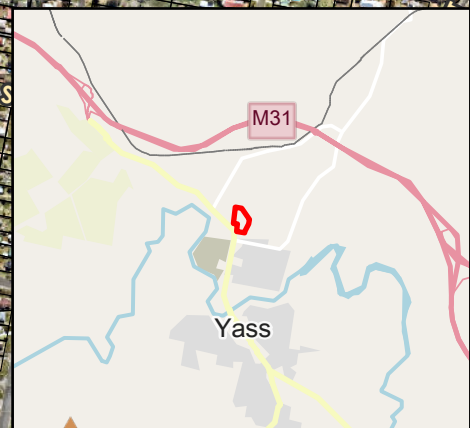


Figure 1: Locality Map

Legend

- Subject Land
- Cadastre

Date: 30/09/2024
 0 100 200
 Meters
 Imagery: © Nearmap

Coordinate System: GDA2020 MGA Zone 55



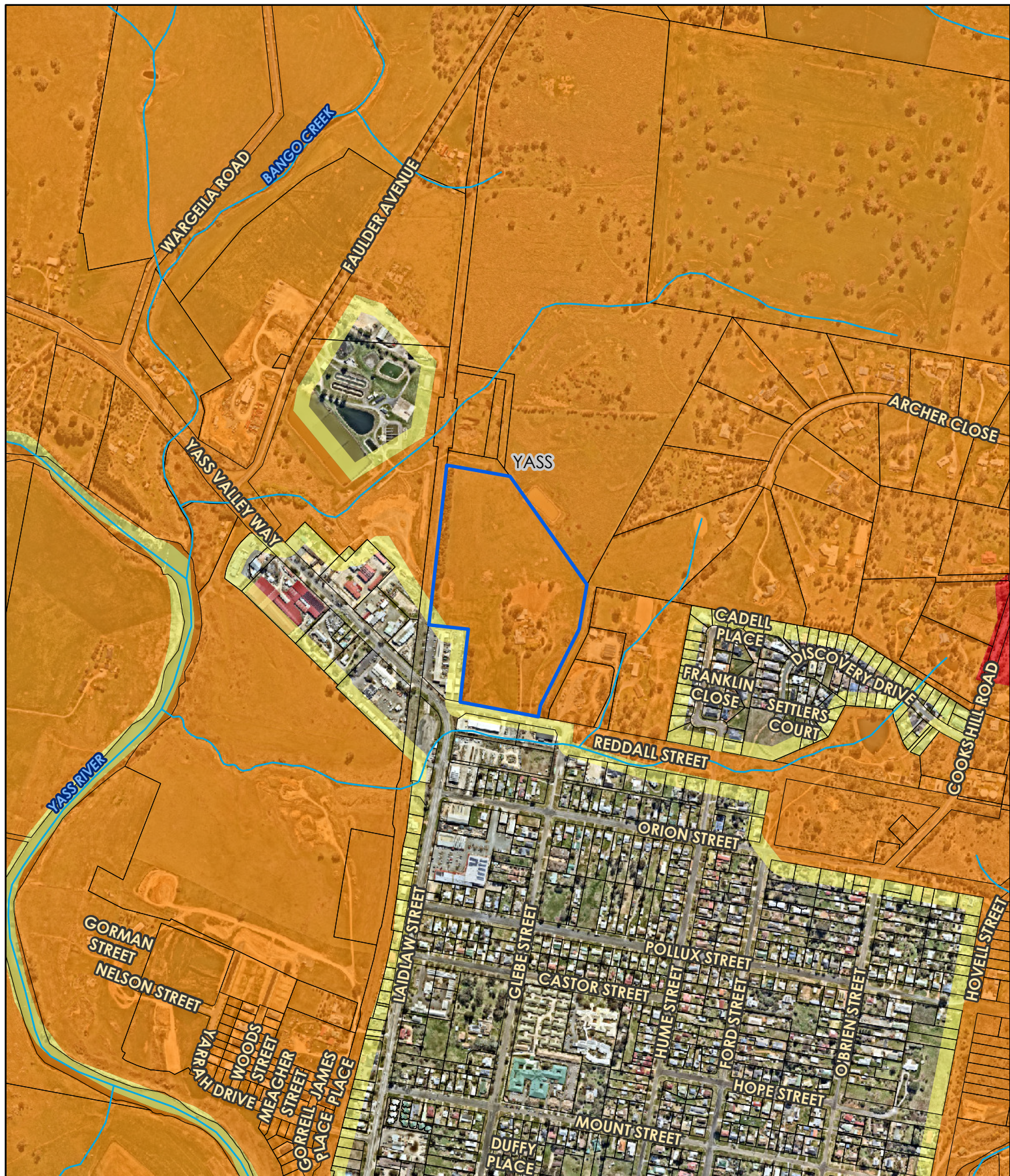


Figure 2: Bushfire Prone Land Map

Date: 30/09/2024

0 100 200
Meters

Imagery: © Nearmap

Legend

- Watercourse
- Subject Land
- Cadastre

Bushfire Prone Land

- Vegetation Category 1
- Vegetation Category 3
- Vegetation Buffer

Coordinate System: GDA2020 MGA Zone 55



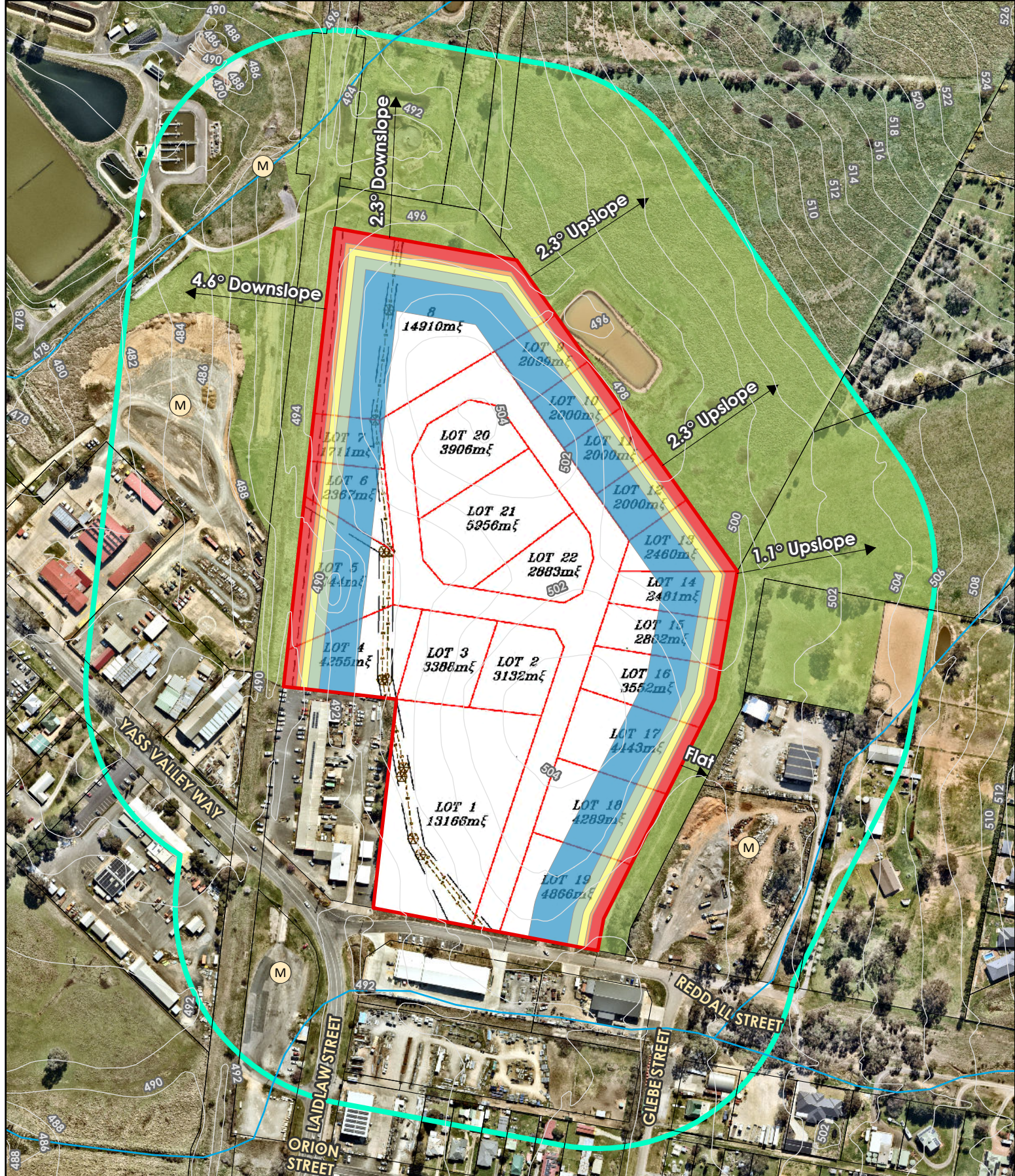


Figure 3: Bushfire Assessment Map

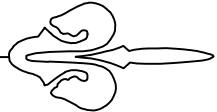
Date: 1/10/2024

0 50 100
Meters

Imagery: © Nearmap

Coordinate System: GDA2020 MGA Zone 55





PLAN OF LOT 4 DP 255064
10 REDDALL STREET
YASS, N.S.W.
SHOWING PROPOSED LAYOUT

CLIENT: ANDREW TURNBULL

A3 SHEET	1 OF 1
DATE OF SURVEY	FEB 2025
JOB REFERENCE	4900
COMPUTER REFERENCE	4900_PPS4.dwg
LEVEL DATUM	
ORIGIN OF LEVELS	
CONTOUR INTERVAL	



NOTE:
THIS LAYOUT PLAN ONLY AND AS SUCH IS NOT REGISTERED BY THE TITLES OFFICE OF NSW LAND REGISTRY SERVICES. SUBSEQUENT REGISTERED OR OTHER SURVEYS IN THIS AREA MAY AFFECT THE BOUNDARY DEFINITION AS SHOWN ON THE PLAN. ANY DIFFERENCES SO CAUSED TO THE BOUNDARY DEFINITION SHOWN ON THIS PLAN ARE BEYOND THE CONTROL OF DIVERSE PROJECT SOLUTIONS WHO CAN ACCEPT NO RESPONSIBILITY FOR SUCH DIFFERENCES. UNDERGROUND SERVICES ARE NOT SHOWN ON THIS PLAN. AS UNDERGROUND STRUCTURES AND CABLES MAY EXIST THEY MUST BE LOCATED BEFORE CONSTRUCTION – PLEASE DIAL 1100 BEFORE YOU DIG. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.

LEGEND:

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