



Bushfire Assessment Report

Proposed Subdivision Rural Residential

**4417 Bylong Valley Way
Upper Growee**

**Prepared for
Stewart Adlington C/- De Witt Consulting**

28 February 2023

Version V1.0



Project Details

Project Name:	J182 – Proposed Rural Subdivision, Upper Growee
Client Details:	Stewart Adlington c/- De Witt Consulting 7 Canberra Street, Charlestown NSW 2290
Project Address	4417 Bylong Valley Way Upper Growee NSW 2849 Lot 4 DP1055368
Local Government Area	Mid-Western Regional – (FDI 80)
Zoning (LEP)	Mid-Western Regional Local Environmental Plan 2012 R5 – Large Lot Residential
Bushfire Prone Land	Cat 1 (forest), Cat 2 (grassland) and buffer
Proposed Development	Subdivision, 1 Lot into 5 new Lots
Approval Path	Council Development Application (DA)
Building Classification	Residential Development – Class 1-4 Structures

Document Control

Version	Primary Author(s)	Description	Date Completed
V1.0	Dan Pedersen	draft	28 February 2023

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1. INTRODUCTION

De Witt Consulting on behalf of landowner (Stewart Adlington) have commissioned Cool Burn Pty Ltd (Cool Burn) to prepare a Bushfire Assessment Report to support the Development Application (DA) for the proposed subdivision and new Residential Dwellings at 4417 Bylong Valley Way, legally identified as Lot 4 DP1055368, Upper Growee in the Mid-western Regional Council Area (Appendix 1 Figure 1).

The proposal will subdivide the existing Lot 1 and create 5 separate Lots (Appendix 1 Site Plan):

- Lot 1 – 15.88ha
- Lot 2 – 12.02ha
- Lot 3 – 12.00ha
- Lot 4 – 12.01ha
- Lot 5 – 12.49ha

This Bushfire Assessment Report relates to the proposed site plans provided in Appendix 1 Site Plans.

To satisfy bushfire risk and protection requirements, Cool Burn have reviewed and applied the following guidelines and standards:

- Chapter 5 - Planning for Bushfire Protection 2019 (PBP 2019)

This assessment has been prepared by a suitably qualified bushfire practitioner, Dan Pedersen (BPAD Level 3 BPAD 16293).

1.1.Location

The property is located in Upper Growee. The area has been mapped as having bushfire prone vegetation being Category 1 (forest), Category 2 (grassland) and Buffers within and surrounding the Lot.

Access will be via Bylong Valley Way, Jimmy Jimmy Road and un-named road south.

The site is identified in the Mid-Western Regional LEP (2013) as land zoning category:

- R5 – Large Lot Residential (minimum Lot size 12 hectares)

2. LEGISLATIVE FRAMEWORK

The proposed residential subdivision development is categorised as Integrated Development, under s.4.46 of the EPA Act. Integrated development requires development consent from Council and General Terms of Approval from the NSW RFS. Any development applications for such a purpose must obtain a Bush Fire Safety Authority (BFSA) from the Commissioner of the NSW RFS in accordance with Section 100B of the RF Act.

A BFSA authorises development to the extent that it complies with PBP 2019 including standards regarding setbacks, provision of water supply and other measures in combination considered by the Commissioner necessary to protect persons, property or the environment from danger that may arise from a bushfire.

As a proposed residential development, the application needs to be able to justify that the proposal can achieve radiant heat levels of not greater than 29kW/m² (or Bushfire Attack Level BAL 29) to all proposed dwellings and have adequate access and water supply provisions.

2.1. General Objectives of Planning for Bushfire Protection

All development on BFPL must satisfy the aim and objectives of PBP 2019. The aim of PBP 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, site characteristics and protection of the environment. The objectives are to:

- I. *afford buildings and their occupants protection from exposure to a bush fire;*
- 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 measures, prevent the likely fire spread to buildings;*
- IV. *ensure that appropriate operational access and egress for emergency service personnel and occupants is available;*
- V. *provide for ongoing management and maintenance of BPMs; and*
- VI. *ensure that utility services are adequate to meet the needs of firefighters.*

2.2. Specific Objectives for Rural Residential Subdivision

The specific objectives for residential subdivisions (PBP 2019) with a dwelling entitlement are as follows:

- *minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);*
- *minimise vegetated corridors that permit the passage of bush fire towards buildings;*
- *provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;*
- *ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;*
- *ensure the ongoing maintenance of APZs;*
- *provide adequate access from all properties to the wider road network for residents and emergency services;*
- *provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and*
- *ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.*

3. BUSHFIRE RISK ASSESSMENT

3.1. Bushfire Prone Land

Bushfire prone land maps provide a trigger for the development assessment provisions and consideration of sites that are bushfire prone. Bushfire prone land (BFPL) is land that has been identified by council and certified by the Commissioner of the RFS, which can support a bushfire or is subject to bushfire attack.

The site is identified as 'bushfire prone land' as mapped by Council for the purposes of Section 10.3 of the EPA Act and the legislative requirements for building on bushfire prone lands are applicable. Appendix 1 Figure 2, shows that the site is affected by:

- Category 1 and Category 3 bushfire prone land.

3.2. Fire Weather

The fire weather is dictated by PBP 2019 and assumes a credible worst-case scenario and an absence of any other mitigating factors relating to aspect or prevailing winds.

The site in the Mid-Western Region has a Fire Danger Index (FDI) of 80 as per PBP 2019 and AS3959:2018.

3.3. Vegetation Assessment

The bushfire behavior assessment methodology assesses the vegetation classification on and surrounding the area proposed for residential dwellings (out to 140 metres) in accordance with the system for classification of vegetation contained in PBP 2019. Predominant Vegetation is classified by structure or formation using the system adopted by Keith (2004) and by the general description using PBP 2019.

The existing Lot 4 has forest, grassy woodland, grassland vegetation and managed areas. The predominant vegetation type (forest) is classified as Western Slopes Dry Sclerophyll Forest.

Forest has been conservatively assessed as the worst case vegetation type for each proposed Lot.

Greenhills Swamp Creek runs through the middle of the site from north to south and is expected to retain vegetation.

3.4.Slopes Influencing Bushfire Behavior

The bushfire behavior assessment methodology assesses the slope of the land on and surrounding the property, out to 100 metres from the boundaries of the proposed development (dwelling) footprint.

The following slopes have been assessed for future building envelopes on each Lot:

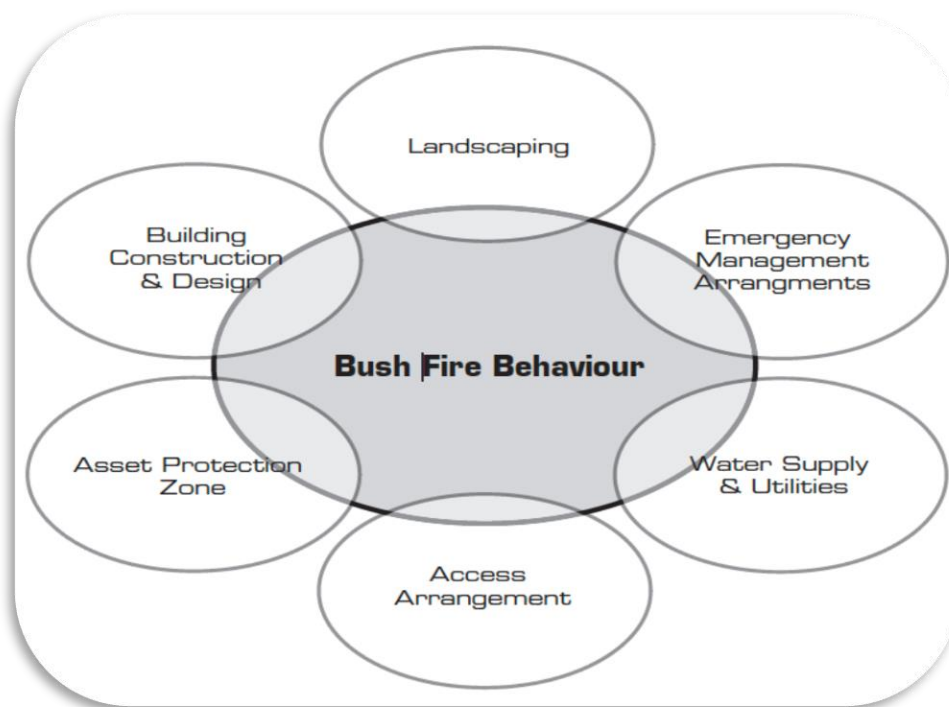
- A downslope hazard from any proposed building site to the creek would be 0-5 degrees
- External hazards (west, north and east) are considered as upslope hazards
- The topography slopes down to the south with potential slopes 5-10 degrees associated with the dam.

Proposed Lots 1-5 have potential to be affected by downslope hazards between 0-5 degrees, and 5-10 degrees to the south of proposed Lot 5 within the creek line vegetation and dam.

4. RECOMMENDED BUSHFIRE PROTECTION MEASURES (BPM'S)

The BPMs for Residential development include provisions relating to APZs, access, water supply, electricity and gas services, construction standards, landscaping, and emergency evacuation (Plate 1).

Plate 1 Bushfire Protection Measures



4.1. BPM - Asset Protection Zones

Asset Protection Zones (APZ) have been considered commensurate with bushfire risk and environmental impacts. The APZ is a fuel-reduced, physical separation between structures and bushfire hazards.

It is recommended that the following APZ are applied surrounding the proposed dwellings:

- **25m APZ** – standardized minimum APZ to the proposed dwellings on all proposed Lots (1-5)
- **31m APZ** – standardized minimum APZ to the southern aspect (only proposed dwelling Lot 5)

4.2.BPM - Landscaping

The proposed APZ areas would be managed to the prescribed APZ standards for Inner Protection Zones (as detailed in Appendix 4 PBP 2019).

4.3.BPM - Construction

The Bushfire Attack Level (BAL) is a means of measuring the ability of a building to withstand attack from bushfire. The BAL is defined in *Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas* (AS 3959-2018).

The proposed building envelope on each Lot with the provision of minimum recommended APZ would ensure no dwelling would be exposed to radiant heat levels exceeding 29kW/m², and **BAL29 or less** will apply to future construction.

4.4.BPM - Access

Public Road: Access is provided from Bylong Valley Way, Jimmy Jimmy Road and an unnamed road (south). The existing public road system will have the capacity to carry fully loaded firefighting vehicles and is considered adequate for simultaneous evacuation and fire suppression.

Property Access: Property access will be:

- Proposed Lots 1- 4 – proposed access:
 - Less than 200m from nearest public through road (Bylong Valley Way or Jimmy Jimmy Road).
 - Minimum 4m wide carriageway.
 - Provide suitable turning area at the dwelling in accordance with PBP Appendix 3.
 - Access will not exceed 15 degree grade or 10 degree crossfall.
- Proposed Lot 5 – proposed property access is more than 200m from nearest public through road and therefore, requires further recommendations. A right of way emergency access road passing through proposed Lot 1 to Jimmy Jimmy Road is recommended to be constructed to the following:
 - Minimum vertical clearance of 4m to any overhanging obstructions, including tree branches.
 - Minimum 4m wide carriageway.
 - Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress.
 - The minimum distance between inner and outer curves is 6m.

- Identify suitable passing bay on access road additional 3m wide and 20m long (multiple capable passing opportunities exist on the current property access layout).
- Suitable turning area must be provided at the dwelling and buildings in accordance with (Appendix 3 PBP 2019).
- Access will not exceed 15 degree grade or 10 degree crossfall.

The proposed access design (including alternate emergency access for Lot 5) for this proposed development will comply with the property access provisions in PBP Table 5.3b once requirements are met and will provide firefighting vehicles with safe, all-weather access to structures.

4.5. BPM - Water and Services

The development site will have a static water supply to provide an adequate water supply for firefighting purposes being:

- Proposed Lots – provide a static water supply (steel or concrete tank) which can be dedicated for bushfire protection, and will be minimum 20,000L within the APZ area, with suitable fire services connection (65mm Storz valve).
- The static water supply water will be provided suitable vehicle access (i.e. within 4m of the access road and/or turning area) and allow for fire fighting vehicle accessibility.
- All above ground water services and pipes will be metal.

The proposed development will provide an adequate water supply for firefighting purposes and can comply with the water supply provisions in PBP Table 5.3d.

Overhead electrical transmission lines would be 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.

Any bottled gas would be 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.

Electricity and gas supplies will limit to possibility of ignition of surrounding bushland or fabric of the proposed buildings and can comply with the water supply provisions in PBP Table 5.3d.

5. SUMMARY AND CONCLUSION

The proposed rural residential subdivision would create new dwelling envelopes within proposed Lots 1-5. The surrounding forest and grasslands retain a significant bushfire hazard and risk. The following recommendations demonstrate acceptable solutions for performance consistent with the NSW RFS PBP 2019:

- APZ:
 - 25m APZ – standardized minimum APZ to the proposed dwellings on all proposed Lots (1-5)
 - 31m APZ – standardized minimum APZ to the southern aspect (only proposed dwelling Lot 5)
- Landscaping:
 - APZ management to specifically IPA standards (Appendix 4 PBP).
- Construction
 - New dwellings on proposed Lot 1-5 can be constructed in accordance with **BAL-29** of AS 3959.
- Access
 - Proposed Lots 1-4 – proposed access:
 - Less than 200m from nearest public through road (Bylong Valley Road).
 - Minimum 4m wide carriageway.
 - Provide suitable turning area at the dwelling in accordance with PBP Appendix 3.
 - Proposed Lot 5 – proposed access: The right of way recommendation in chapter 4.4 will provide adequate access for the proposed dwelling on Lot 5.
- Water supply for firefighting purposes.
 - Proposed Lots 1-5 – proposed water supply to be minimum 20,000L, steel or concrete tank.

It is considered that the proposed development adequately considers bushfire risk and will conform to the specifications and performance criteria of PBP 2019 once the criteria is met. Providing a suitable outcome commensurate with the bushfire risk.

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6. ASSESSMENT AGAINST THE AIMS AND OBJECTIVES OF PBP

The bushfire assessment identifies the extent to which the proposed rural residential subdivision development conforms with or deviates from the aims and specific objectives set out in PBP 2019. 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 property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</i>	Yes	The location of the proposed development has considered bushfire risk and applied relevant bushfire protection measures to mitigate bushfire impact, commensurate with the risk
General Objectives	Meets Objective	Comment
<i>afford buildings and their occupants protection from exposure to a bush fire;</i>	Yes	The proposed development is afforded acceptable APZ protection and defensible space, commensurate to the risk
<i>provide for a defensible space to be located around buildings;</i>	Yes	Design will provide for an acceptable APZ
<i>provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</i>	Yes	Setbacks to achieve BAL-29 (or less) and construction commensurate with assessed risk
<i>ensure that appropriate operational access and egress for emergency service personnel and occupants is available;</i>	Yes	Access will be provided to acceptable PBP2019 standards
<i>provide for ongoing management and maintenance of BPMs; and</i>	Yes	Bushfire management and maintenance responsibility contained within the site
<i>ensure that utility services are adequate to meet the needs of firefighters.</i>	Yes	Water and services will be provided to acceptable PBP2019 standards
Specific Objectives	Meets Objective	Comment
<i>minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);</i>	Yes	Simple design
<i>minimise vegetated corridors that permit the passage of bush fire towards buildings;</i>	Yes	No additional vegetation corridors. Ongoing rural management assumed as low threat vegetation

<i>provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;</i>	Yes	Dwellings avoid ridgetops and steep slopes, saddles, or crests
<i>ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;</i>	Yes	APZ to utilise the olive plantation (a low threat vegetation structure) and designed to BAL29 or less
<i>ensure the ongoing maintenance of APZs;</i>	Yes	Bushfire management and maintenance responsibility contained within the site
<i>provide adequate access from all properties to the wider road network for residents and emergency services;</i>	Yes	Access will be provided to acceptable PBP2019 standards
<i>provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression; and</i>	Yes	Access will be provided to acceptable PBP2019 standards (rural property access maintained)
<i>ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.</i>	Yes	Water and services will be provided to acceptable PBP2019 standards

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

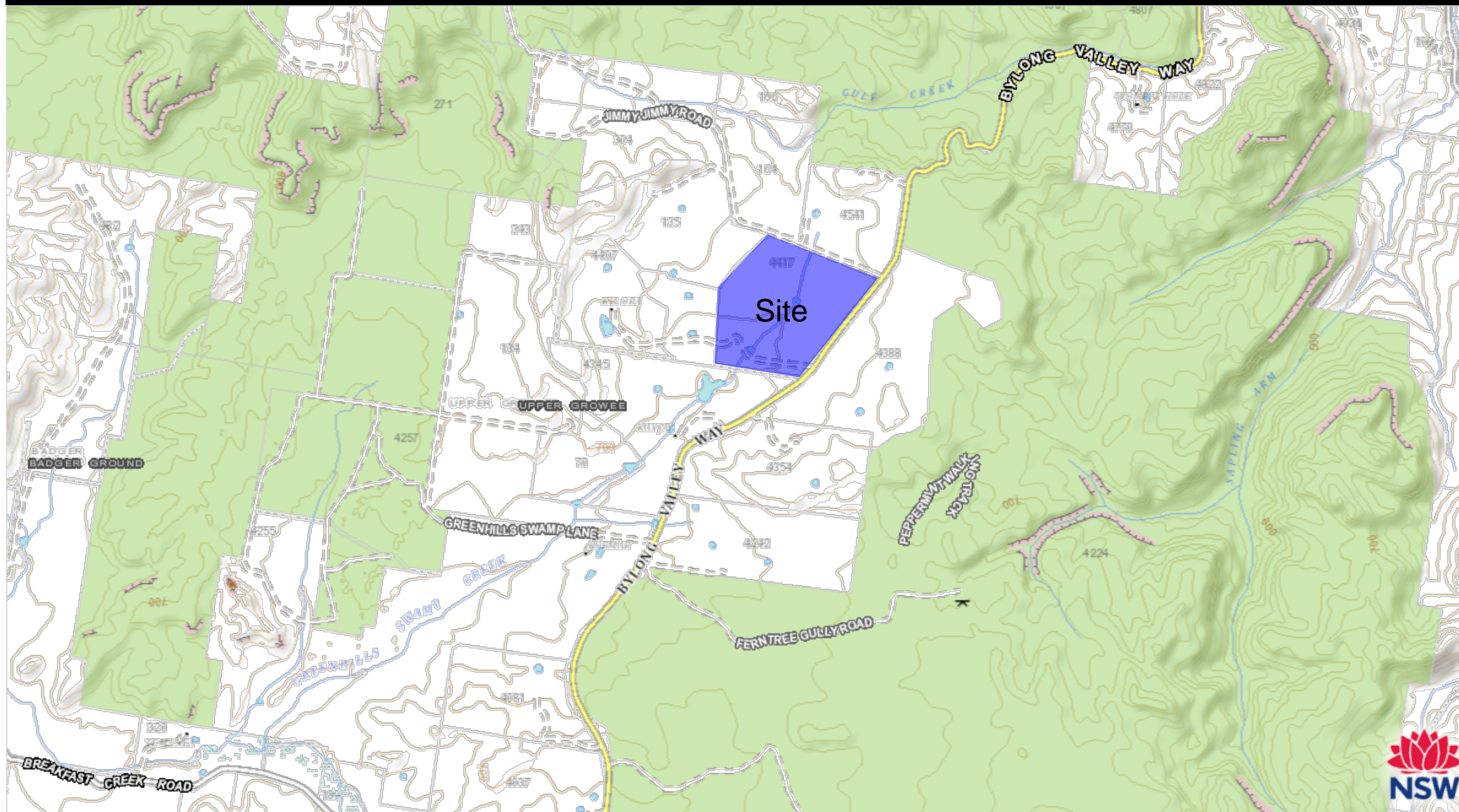
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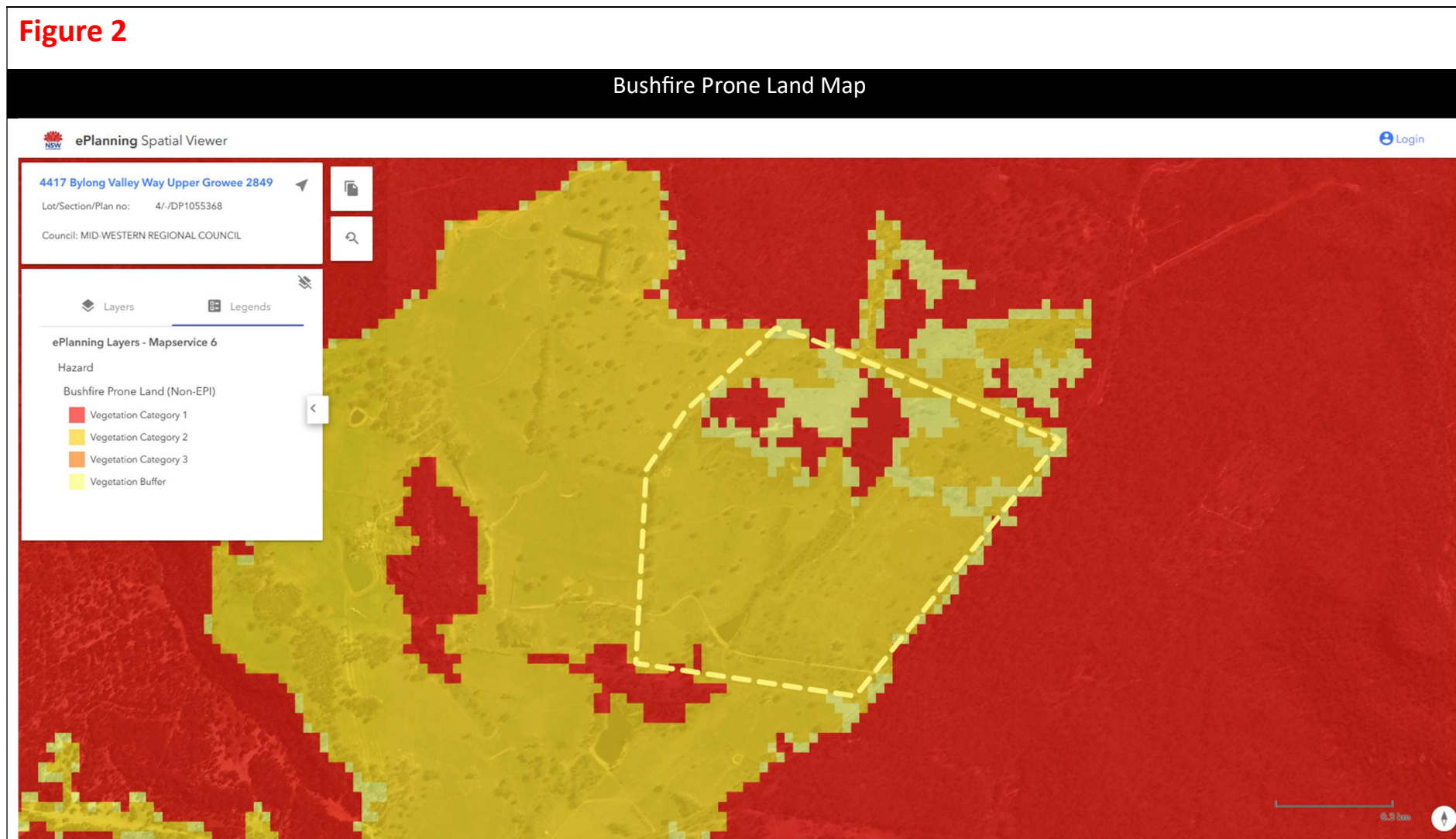
Appendix 1 Site Plan and Proposed Development Site Mapping

Figure 1 Locality



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Figure 2





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TITLE
CONCEPT SUBDIVISION PLAN
LOT 4 D.P.1055368

H		
G		
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C		
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A	09.12.22	FIRST ISSUE
Rev	Date	Amendment

JOB ADDRESS: 4417 BYLONG VALLEY WAY, UPPER GROWEE		REVISION	JOB REF:
CLIENT: STEWART ADLINGTON		A	12524
SCALE: A1 1:2500 A3 1:5000	ORIGIN OF LEVELS	DRAWN BT	SHEET No
SURVEY DATE:	SURVEYOR	1/1
PLAN DATE: 24.01.23		CHECKED JG	
DATUM:		APPROVED JG	
CAD REF:		DRAWING REF: 12524-PROPOSED SUBDIVISION-24.01.23	