

# Southern Bushfire Solutions

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## Bushfire Assessment Report

### Residential Subdivision

Lots 1823,1824,1825/DP754611

123 Dairyman's Ln

Young NSW.

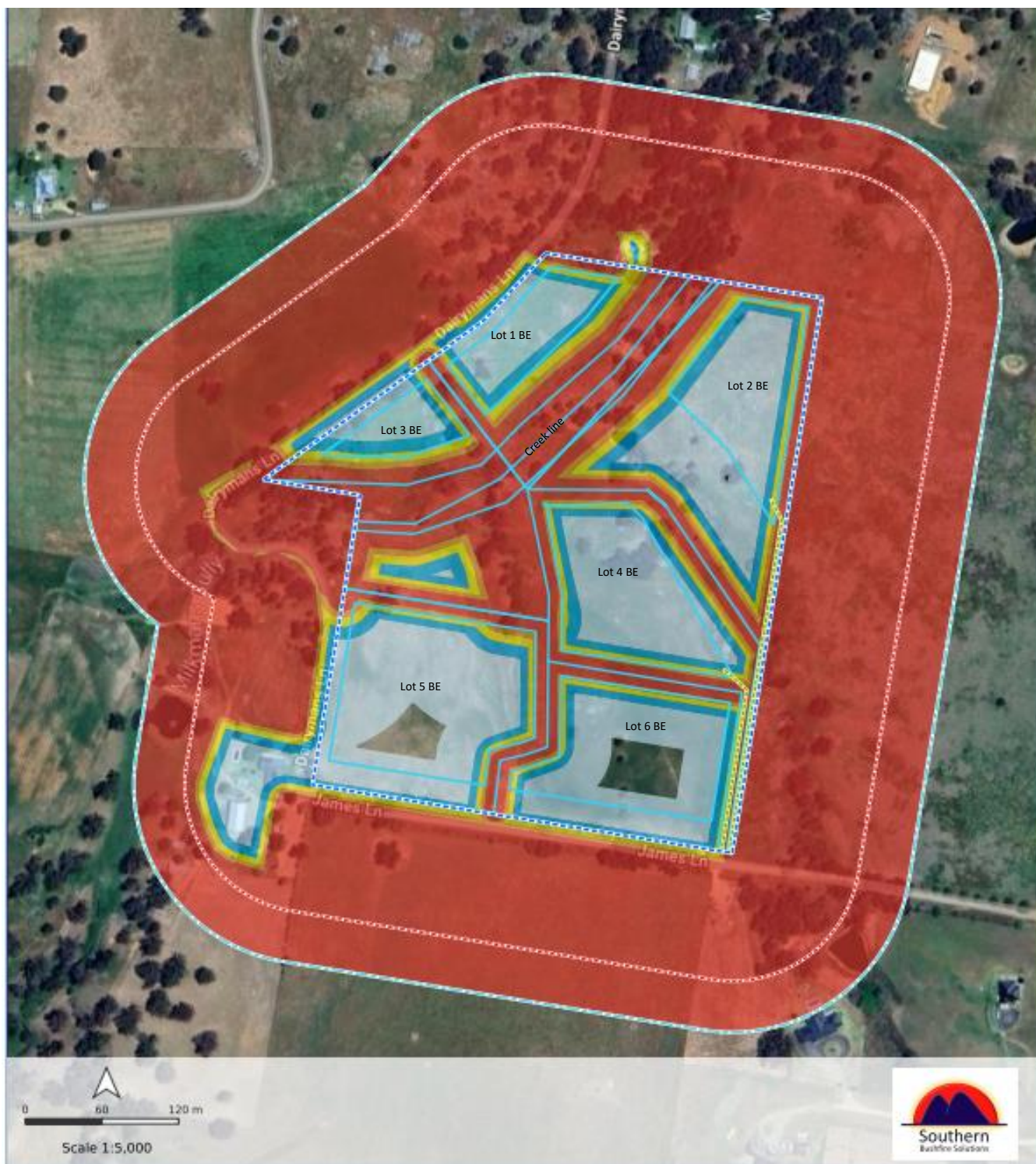
## Executive Summary

The proposal involves a six-lot subdivision within an area not identified as "Bushfire Prone Land" for development purposes. However, a bushfire assessment has been requested as a due diligence measure to address potential bushfire risks. The assessment has been conducted in accordance with the guidelines of *NSW Planning for Bushfire Protection* (2019).

The development design is largely compliant with acceptable solutions but does not include a continuous perimeter road. A performance-based solution has been proposed, with comparison to acceptable solutions and supported by a qualitative assessment of the access arrangements. Existing public roads provide perimeter access for Lots 1, 3, 5, and 6, leaving only Lots 2 and 3 without perimeter road access. This approach is comparable to the acceptable solution for subdivisions of three or fewer lots, where perimeter roads are not required. The need for perimeter roads is further reduced in this rural-residential setting due to the lack of a defined bushfire-prone interface and the provision of individual Asset Protection Zones (APZs) for each dwelling.

Building envelopes have been positioned to ensure all building sites are exposed to radiant heat levels of less than 29 kW/m<sup>2</sup>, with adequate boundary setbacks to manage grassland hazards within the lots. Static water supplies will be addressed during the development application (DA) for construction, and power supply will be provided underground.

All other aspects of the proposal are compliant with the acceptable solutions outlined in *NSW Planning for Bushfire Protection* (2019). The development aligns with the intent and performance requirements of bushfire protection measures and can achieve a Bushfire Safety Authority from the NSW Rural Fire Service under Section 100B of the *Rural Fires Act*.



Julian Ferguson	Legend
123 Dairymans Lane	<div> <div> <div>Subject Land</div> <div>Assessment Area</div> <div>100m</div> <div>140m</div> </div> <div> <div>Proposed Development</div> <div>Access Track</div> </div> <div> <div>Bushfire Attack Levels</div> <div>BAL 12.5</div> <div>BAL 19</div> <div>BAL 29</div> <div>BAL 40</div> <div>BAL 12.5</div> </div> </div>
Subdivision BAL plan	

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## Summary of PBP (2019) Compliance

<i>Performance Criteria</i>		<i>Compliance</i>	<i>Comment</i>
<b>Asset Protection Zones</b>	Potential building footprints must not be exposed to radiant heat levels exceeding 29kW/m <sup>2</sup> on each proposed lot	Meets acceptable solutions	Building envelopes are located to ensure Asset Protection Zones are provided within the boundary of each lot and ensure future buildings are exposed to a maximum of 29kW/m <sup>2</sup> . A S88B condition is to be established to ensure the lots are not revegetated and rural boundary setbacks ensure sufficient space within the lots to manage the remaining grassland within the development area.
	APZs are managed and maintained to prevent the spread of fire towards the building.		
	APZ is provided in perpetuity		
	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.		
<b>Landscaping</b>	Landscaping is designed and managed to minimise flame contact and radiant heat to buildings and the potential for wind driven embers to cause ignitions.	Meets acceptable solutions	All lots are to be conditioned with S88B or similar for the lots not to be revegetated and vegetation to be managed so it does not become a bushfire hazard. Landscaping will be addressed at DA for construction of future dwellings.
<b>Access – General</b>	Firefighters are provided with safe all-weather access to structures	Performance based solution proposed	The public road arrangement complies with all aspects other than the requirement for a perimeter road. A performance solution is proposed using a qualitative assessment to demonstrate that safe access can be provided.
	The capacity of access roads is adequate for firefighting vehicles		
	There is appropriate access to water supply		
<b>Access – Perimeter roads</b>	Access roads are designed to allow safe egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface	Performance based solution proposed	The proposed development is a rural residential subdivision where individual Asset Protection Zones (APZs) will be established within each lot, and no new public roads are required as part of the design. Perimeter access for lots 1, 3, 5, and 6 is provided via Dairyman's Lane and James Lane. However, lots 2 and 4 do not have perimeter access. Comparison is made to the Acceptable solutions of Planning for Bushfire Protection (PBP) 2019, subdivisions of two lots do not require perimeter access. A qualitative assessment of the access arrangement has been conducted to ensure that the proposal meets the performance requirements of bushfire safety, particularly in facilitating effective access for emergency response and maintaining safe evacuation for residents. This balances the practical constraints of the site with compliance to planning and bushfire protection standards, ensuring the subdivision achieves a safe and functional design.
<b>Access – Non Perimeter roads</b>	Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	Meets acceptable solution	There are no new public roads provided in this proposal.

<b>Property Access</b>	Firefighting vehicles can access the dwelling and exit the property safely	Meets acceptable solutions	The property access roads are to comply with table 5.3b of NSW Planning for Bushfire Protection. Detailed design will be completed at DA for construction when location of the building and water supply are confirmed.
<b>Water Supplies</b>	Adequate water supply is provided for firefighting purposes Water supply is located at regular intervals Water supply is accessible and reliable for firefighting operations Flows and pressures are appropriate The integrity of the supply is maintained	Meets acceptable solutions	There is no reticulated water supply in the area. A static water supply will be required at DA for construction on the new lots.
<b>Electricity services</b>	Location of electricity services limits the possibility of ignition of the surrounding bushland or the fabric of buildings	Meets acceptable solutions	Power transmission lines are underground wherever practical.
<b>Gas Services</b>	Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	Meets acceptable solutions	No reticulated gas supply is involved in this proposal. Bottled gas supply may be addressed at DA for construction if required.

## Summary of Actions Required

The following recommendations are made for Asset Protection Zones APZ:

1. A S88B instrument is recommended to condition all lots within the development to be maintained in a minimal fuel state and not revegetated to become a bushfire hazard.

The following recommendations are made for access:

1. The property access roads are to comply with table 5.3b of NSW Planning for Bushfire Protection

Assessing Officer:



**Neil Willis** grad dip. Bushfire Protection

FPA Australia BPAD Level 3- NSW BPAD31129

**DATE OF ISSUE: 29 January 2025**



**SBS ASSESSMENT REFERENCE: 2025039**

## Limitations and Disclaimer


This bushfire assessment report is primarily concerned with assessing the capacity of the proposed development to meet the legislated requirements for development consent. Where necessary, bushfire protection measures will be recommended.

The measures prescribed cannot guarantee that the development will survive a bushfire event on every occasion. This is primarily due to the degree of vegetation management, the unpredictable behavior of fire, extreme weather conditions and the actions of occupants and firefighters. In extreme conditions buildings may be considered un-defendable. Early evacuation is recommended as the safest course of action for life safety. A comprehensive bushfire survival plan is recommended for all occupants on bushfire prone lands.

Southern Bushfire Solutions has prepared this report with all reasonable diligence on behalf of the proponent. The information contained in this report has been gathered from field investigations of the site, plans provided and consultation with the client.

No assessment has been made on other aspects of the proposal outside the scope of this report.

## Amendment Schedule

Version	Date	Reason for issue		Draft
1	Tuesday 3 December 2024	Initial production		1
Prepared by	Neil Willis (BPAD31129)	Signature		

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## 1. Introduction

### 1.1 Background and brief

The Environmental Planning and Assessment Act (1979) requires the Commissioner of the NSW Rural Fire Service (RFS) in conjunction with local councils, to identify and map bushfire prone land (BFPL) as a trigger for development to meet a range of planning and construction requirements for bushfire protection. BFPL maps are to be maintained and made publicly available by local councils.

Subdivision of bushfire prone land that could be used for residential or rural residential purposes requires the issue of a Bushfire Safety Authority (BFSA) from NSW RFS under Section 100B of the Rural Fires Act (1997). To obtain a BFSA, the development is required to comply with standards regarding setbacks, water supply and other matters considered necessary for the protection of life, property and the environment from the effects of bushfire.

Clause 45 of the Rural Fires Regulation (2022) sets out the information requirements for the issue of Bushfire Safety Authority and requires assessment against the specifications and performance criteria of NSW Planning for Bushfire Protection (PBP) 2019. This report is an assessment of the proposal against the specific objectives and performance criteria for rural-residential subdivision set out in PBP 2019.

### 1.2 Aims and Objectives of this Bushfire Assessment

The aim of this assessment is to determine the ability of the proposal to achieve an appropriate level of bushfire protection to satisfy the objectives and performance requirements for residential and rural residential subdivision as per section 5 of PBP (2019). The specific objectives for rural residential subdivision of PBP (2019) are:

- Minimise the perimeters of the subdivision exposed to the bushfire hazard
- Minimise vegetated corridors that permit the passage of bushfire towards the buildings
- Provide for the siting of future dwellings away from ridgetops, steep slopes within saddles and narrow ridge crests.
- Ensure that APZ's between the bushfire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanisms
- Ensure the ongoing maintenance of APZ's
- Provide access from all properties to the wider road network for residents and emergency services
- Provide access to hazard vegetation to facilitate bushfire mitigation work and suppression
- Ensure the provision of an adequate supply of water and other services to facilitate firefighting.

Recommendations are made where appropriate for compliance and to ensure adequate bushfire protection measures for the development.

### 1.3 Bushfire Assessment Methodology

This bushfire assessment follows the methodology summarized in the following table:

Methodology	Task	Considerations
Desktop analysis to ascertain scope and requirements of the development.	Collate and review available mapping resources, relevant policy documents and development plans.	<ul style="list-style-type: none"> <li>NSW SIX Mapping, Google maps.</li> <li>Development plans provided by client.</li> <li>NSW Planning for Bushfire Protection (2019)</li> <li>AS3959-Construction of Buildings in Bushfire Prone Areas (2009)</li> </ul>
Site inspection and consultation with the proponent	View the site and bushfire hazard; classify dominant vegetation and measure slope and distances. Detailed discussion with the proponent to establish objectives and limitations of the proposal.	The site inspection enables verification of mapping data and classification of the surrounding vegetation, slope, Asset Protection Zones and environmental constraints. Photographing of relevant features for presentation.
Detailed assessment	Perform assessment of the development proposal against performance requirements of PBP and AS3959.	Assess the ability of the proposal to meet the intent and performance criteria of the relevant sections of PBP and make recommendations to address identified shortfalls.
Report	Preparation of Bushfire Assessment Report.	Produce necessary documentation to demonstrate the proposals ability to achieve the aims and objectives of PBP to accompany the development application.

### 1.4 Identification of Stakeholders

Company	Position	Name	Contact
	Proponent	Julian Fergusson	<b>PH:</b> 0439 211 537 <b>E:</b> julian.c.ferguson@gmail.com
<b>Hilltops Council</b>	Approval Authority		<b>PH:</b> 1300 445 586 <b>E:</b> mail@hilltops.nsw.gov.au
<b>NSW Rural Fire Service</b>	Approval Authority		<b>PH:</b> 02 8741 5555 <b>E:</b> records@rfs.nsw.gov.au
<b>Southern Bushfire Solutions</b>	BPAD Consultant	Neil Willis	<b>PH:</b> 0402 604000 <b>E:</b> info@southernbushfiresolutions.com.au

## 2. Scope of the Proposal

### 2.1 Site Location and Description.

The proposed development is situated at Lots 1823, 1824, and 1825 in DP754611, located at 123 Dairymans Lane, Young, approximately 4 kilometers from the Young town center. The site lies within the Hilltops Shire Council Local Government Area (LGA), a region characterized by its agricultural and rural-residential landscape.

The development site is relatively unconstrained, with no significant environmental or planning obstacles identified. Surrounding land use primarily consists of general agricultural activities, including grazing and cropping, which are typical of the region. Additionally, the site benefits from its proximity to established rural residential developments that encircle the town of Young, highlighting its suitability for residential subdivision.

The property has excellent access to existing road infrastructure, providing convenient connectivity to both the nearby town center and the surrounding area. This ensures the site is well-positioned to support future residential development while maintaining compatibility with the surrounding rural-residential and agricultural land uses.

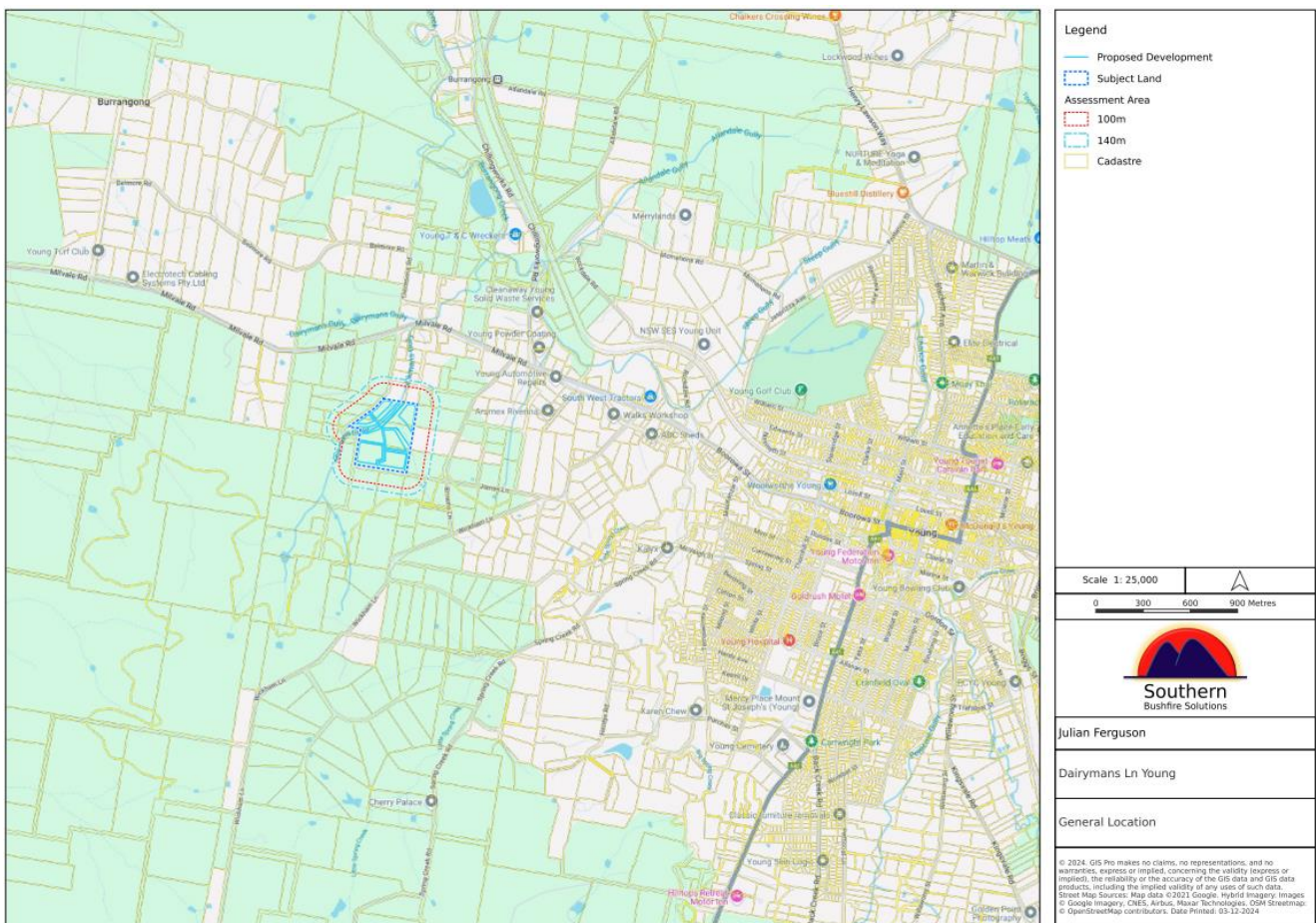


Figure 1: General Location of Proposed Development

The current bushfire-prone land mapping indicates that the proposed development site is not formally designated as "Bushfire Prone Land." However, the site's location and surrounding environment may align with characteristics consistent with Vegetation Category 3 as defined in the NSW Rural Fire Service Bushfire Prone Land Guidelines (2015).

Vegetation Category 3 includes areas such as grasslands, freshwater wetlands, semi-arid woodlands, alpine complexes, and arid shrublands. These vegetation types, while not always directly classified as high bushfire risk, can still contribute to bushfire behavior under certain conditions and warrant further consideration.

As a precautionary measure and to ensure compliance with bushfire safety standards, a bushfire risk assessment has been requested. This assessment aims to identify and address any potential risks to the proposed development, ensuring that it adheres to the principles and requirements outlined in NSW Planning for Bushfire Protection (2019) and maintains the safety of future occupants and assets



Figure 2: Bushfire Prone Land Map

## 2.2 Characteristics and Description of the Proposal

The proposal seeks to subdivide the existing three lots into six new lots, with an average lot size exceeding 2 hectares. The smallest lot measures 1.195 hectares, while the largest spans 3.087 hectares. As a rural residential subdivision, it is not practical or necessary to remove all vegetation classified as a bushfire hazard from the development site. Woodland vegetation within the riparian zone of the creek will be preserved, along with grassland vegetation within individual lots.

The development area is bordered by similar rural residential lots, with Dairyman's Lane located to the west and James Lane to the north.

Given the rural-residential nature of the subdivision and the relatively large lot sizes, each lot will incorporate its own Asset Protection Zone (APZ) within its boundaries. Building envelopes will be positioned with appropriate setbacks to ensure compliance with bushfire safety standards. Sufficient space is provided within each residential lot to establish APZs that meet the necessary bushfire protection requirements, ensuring safety while maintaining the site's natural character.

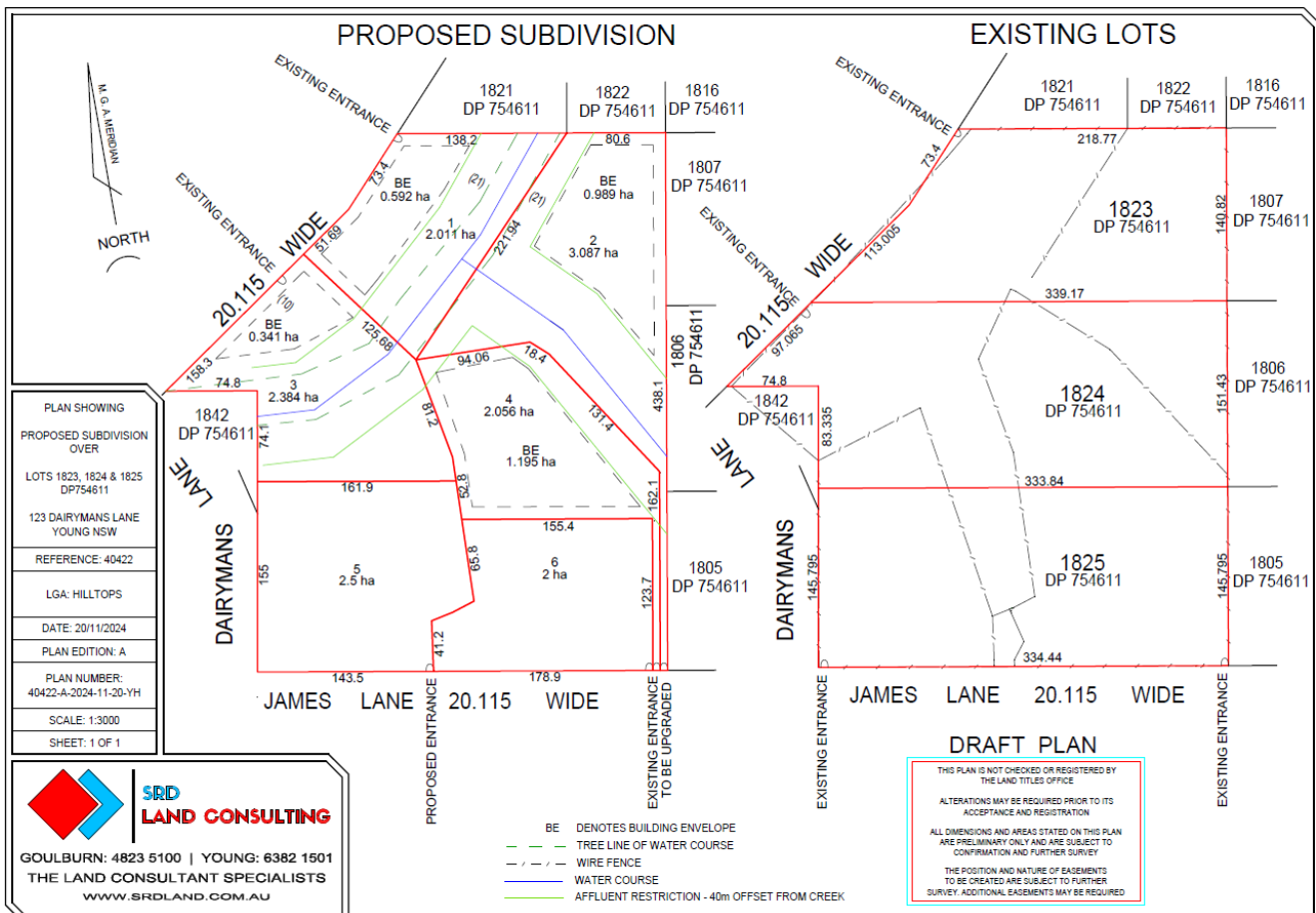


Figure 3: Plans of the proposed subdivision

### 3. Bushfire Hazard Assessment

#### 3.1 Context

The site is situated in a rural area dominated by *Category 3* vegetation, which includes grasslands and other low-fuel load vegetation types. The vegetation within the site and surrounding areas is actively managed for primary production purposes, primarily involving cropping and grazing activities. This intensive land management reduces the overall bushfire risk across much of the site.

The riparian zone along the creek, however, contains woodland vegetation with elevated biodiversity value. This area is to be preserved to maintain its ecological significance. To protect the creek and its surrounding environment, a 40-meter buffer zone is required for effluent disposal, ensuring minimal environmental impact and compliance with regulatory standards.

The treeline along the creek has been surveyed to accurately classify and assess the woodland vegetation in this area. This data ensures that the retained vegetation is appropriately managed and that its impact on bushfire risk is thoroughly considered within the broader development context.

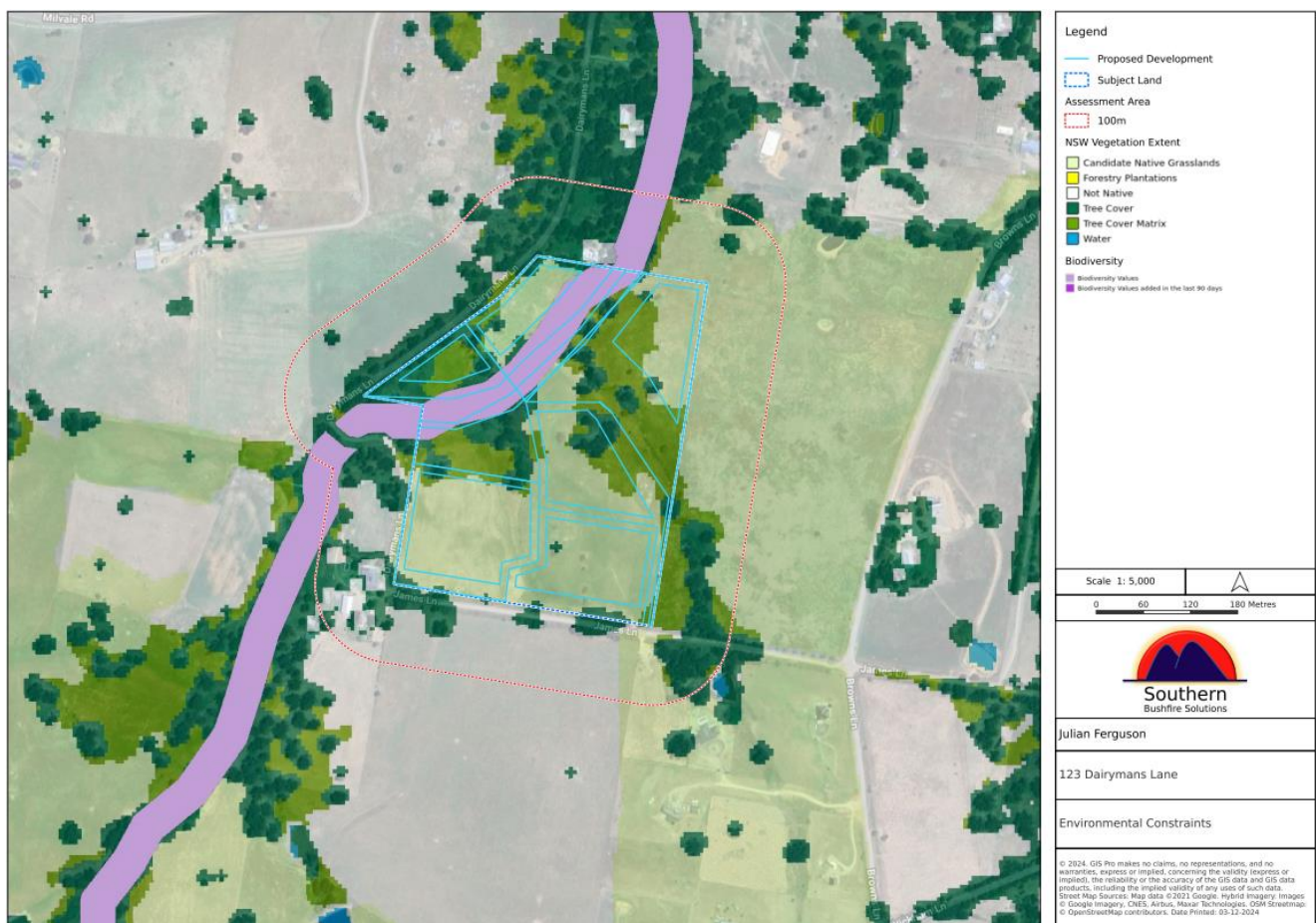


Figure 4: Environmental constraints for assessment context

### 3.2 Vegetation Classification

PBP (2019) requires identification of the vegetation surrounding the proposed development to a distance of 140 metres.

Vegetation formations were assessed and classified in accordance with Ocean Shores to Desert Dunes (Keith, 2004) and table A1 of PBP (2019). There is limited heavy vegetation within the site assessment area, with some eucalypts growing along the riparian zone of the creek and some isolated paddock trees in the surrounding area for erosion control and shade. The individual paddock trees do not form continuous canopy and are consistent with APZ requirements. Vegetation in the riparian zone of the creek is not able to be managed as an APZ and has been classified.

The hazard vegetation type for the bushfire assessment found in the subject area consists of Grassy Woodlands and derived Grasslands.

Woodlands are defined as: *“Dominated by an open to sparse layer of Eucalypts with the crowns rarely touching. Typically, 15-35m high (may be shorter at sub-alpine altitudes). Diverse ground cover of grasses and herbs. Shrubs are sparsely distributed. Usually found on flat to undulating ground”* (NSW Rural Fire Service, 2019)

Grassy and semi-arid woodlands assume a surface and elevated fuel load of 10.5t/ha and overall fuel load (including bark and canopy) of 20.2t/ha for fire modelling in table A1.12.8 of PBP.

Grassland is defined as: *“Dominated by perennial grasses and the presence of broad-leaved herbs on flat topography. Lack of woody plants”* (NSW Rural Fire Service, 2019).

Grassland vegetation assumes an overall fuel load of 6t/ha for fire modelling in table A1.12.8 of PBP.

The managed land around the existing residences has been excluded as low threat vegetation.

Grassland within the development site is able to be managed with boundary setbacks and will be addressed in the APZ considerations.

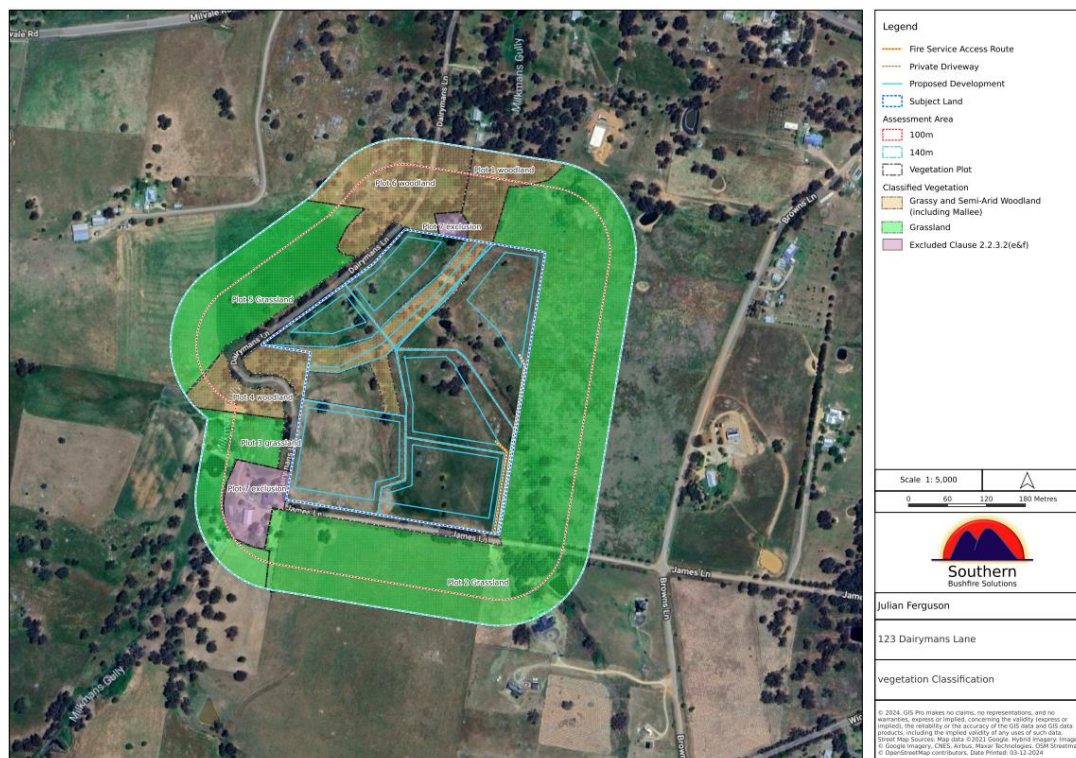


Figure 5: PBP Vegetation classifications within 140m

### 3.3 Slope Influencing Bushfire Behaviour

The “effective slope” for the bushfire assessment is the slope under the vegetation that directly influences bushfire behavior. PBP (2019) requires the effective slope to be determined under the dominant vegetation type for a distance of 100m.

The development is sited in undulating terrain along the creek line with flat grassy paddocks at the southern end of the site. Building envelopes are positioned on the flat areas with setbacks from the heavy vegetation in the creek.

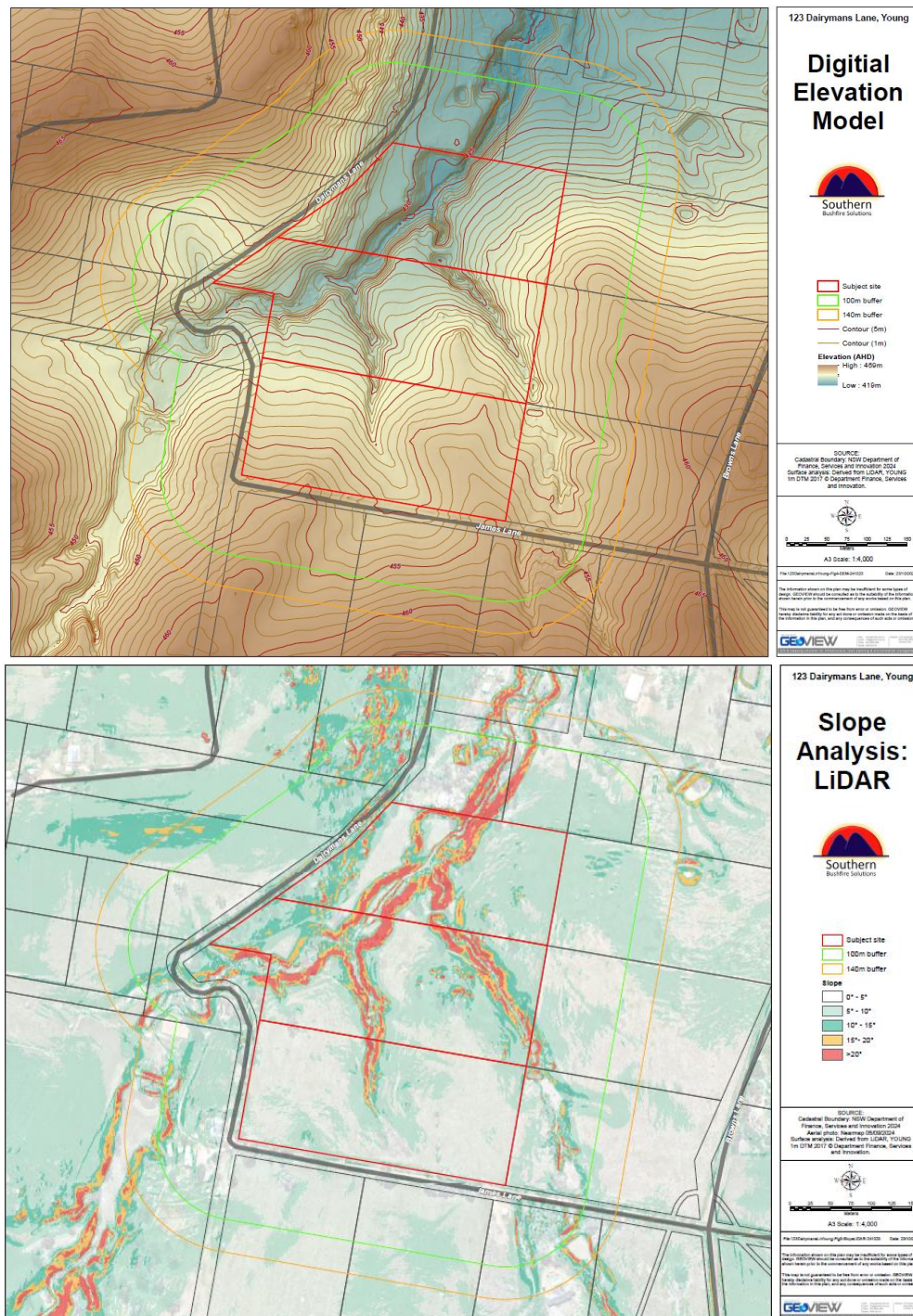


Figure 6: digital elevation and LiDAR slope analysis

### 3.4 Local Fire and Weather Conditions

The fire season for the Southern Slopes Fire District is typically from October through to March, with hot summer temperatures above 30 degrees and low relative humidity. The wind can be strong and gusty, typically coming from the North to North-West and the potential for rapid changes.

At landscape level, bushfires typically come from the North to West due to the dominant wind direction. However, localised influences can dramatically alter the fire behavior and result in bushfire travelling in any direction.

These weather patterns coupled with the potential for dry lightning storms and incidental ignitions from surrounding properties are a significant factor in the overall fire risk for the area.

For bushfire assessment purposes, Hilltops Shire Council LGA is in the Southern Slopes Fire Area and has a Fire Danger Index (FDI) of 80 assumed as a 1:50 year event according to NSW RFS.

### 3.5 Assessment Summary

Assessment transects have been taken around the perimeter of the development for determination of slope and vegetation inputs for fire modelling. Transect details are as follows:

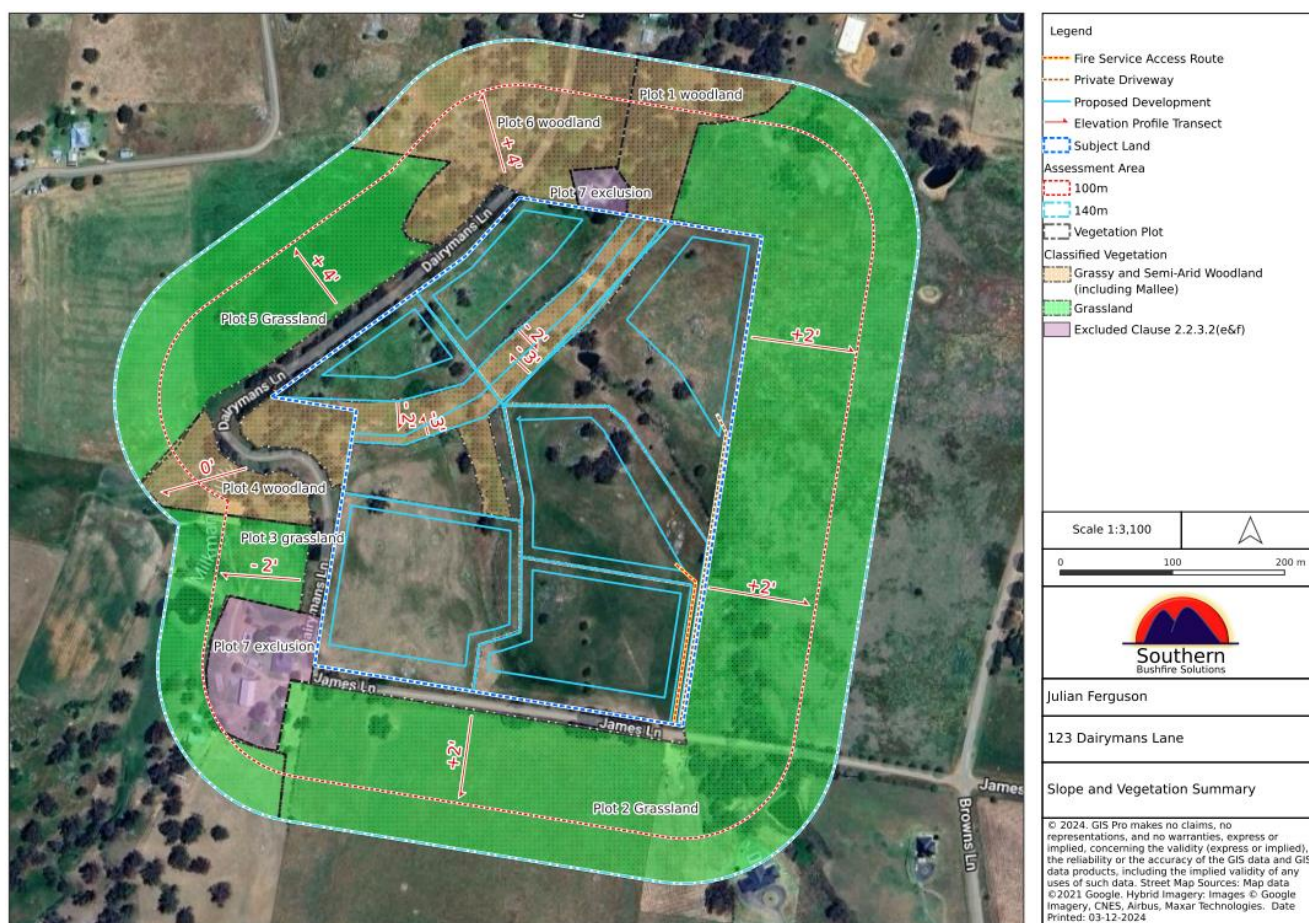
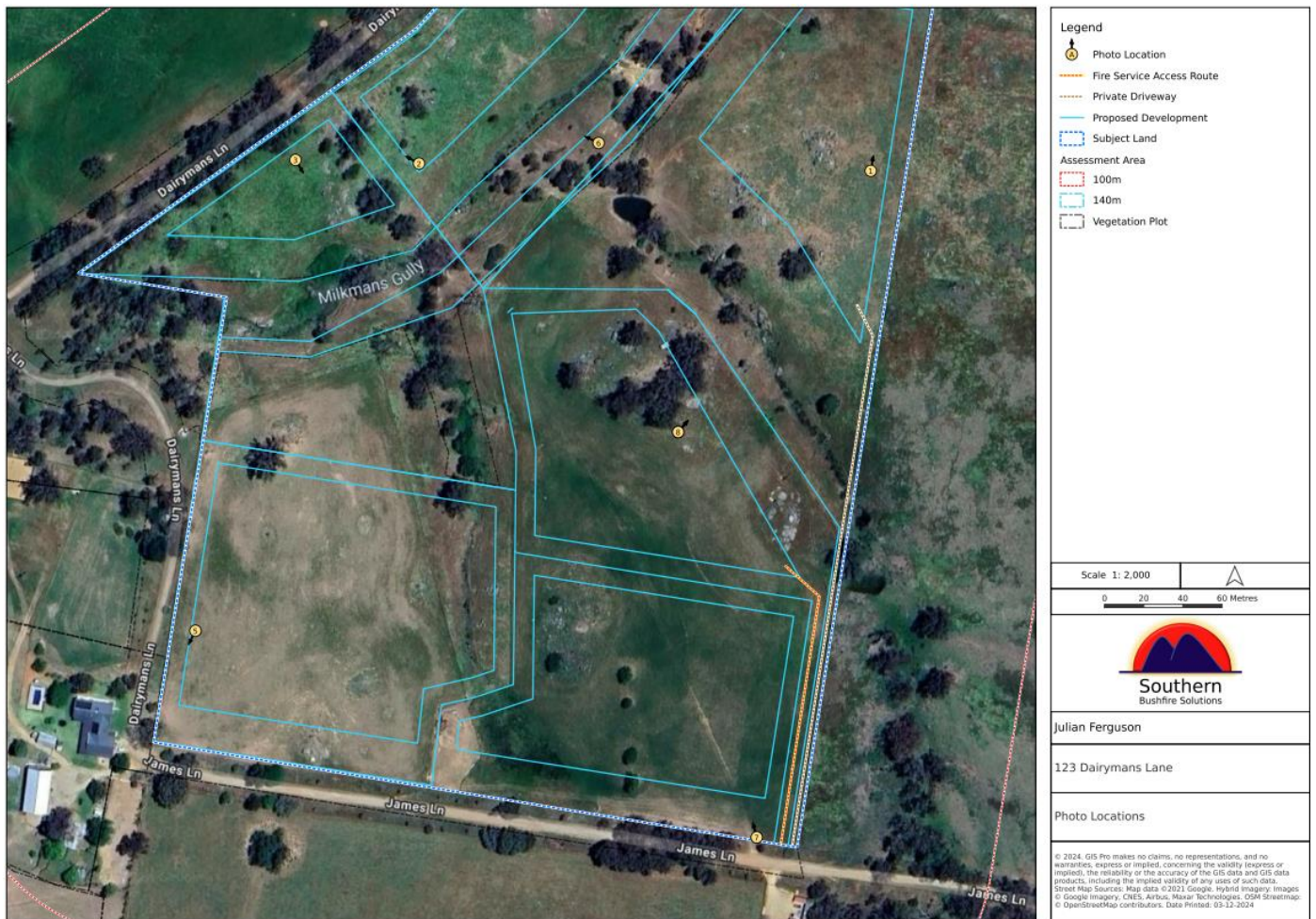


Figure 7: Slope and vegetation transects for assessments

Hazard parameter table for fire modelling

Plot	Vegetation Classification	Effective Slope Category
1	Grassy and Semi-Arid Woodland (including Mallee)	Downslope 5 to 10°
2	Grassland	Flat / Upslope
3	Grassland	Downslope 0 to 5°
4	Grassy and Semi-Arid Woodland (including Mallee)	Flat / Upslope
5	Grassland	Flat / Upslope
6	Grassy and Semi-Arid Woodland (including Mallee)	Flat / Upslope
7	Low threat exclusion within curtilage of existing residence	Downslope 0 to 5°
Vegetation within site	Grassland	Flat / Upslope

### 3.6 Hazard Assessment Photos



**Figure 8: Photo Locations**



**Photo Location No. 1**  
Vegetation Classification – Grassland in BE of lot 2



[Photo Location No. 2](#)

Vegetation Classification – Grassland in BE of lot 1



[Photo Location No. 3](#)

Vegetation Classification – Woodland near BE of lot 3



Photo Location No. 4

Vegetation Classification – Grassland in BE of Lot 2



Photo Location No. 5

Vegetation Classification - Low threat exclusion in curtilage of existing house



Photo Location No. 6

Vegetation Classification – Woodland in the creek line



Photo Location No. 7

Vegetation Classification – Grassland vegetation in BE of lot 6

#### 4. Environmental Features and Considerations

The proposal entails the subdivision of a parent lot that has been extensively managed for primary production, with most heavy vegetation historically cleared to support agricultural activities. Each lot within the proposed subdivision will include individual Asset Protection Zones (APZs), strategically located to avoid steep slopes and riparian zones along the creek. No vegetation management activities are planned within the existing treeline of the creek, ensuring the ecological integrity of this area is preserved.

Other areas within the site will be maintained to their current standard, with no plans for additional revegetation or changes to existing land use. These measures aim to balance bushfire risk management with environmental conservation.

Detailed environmental considerations, including any required compliance with relevant legislation or policies, may be addressed in a formal environmental assessment conducted by appropriately qualified professionals. This process will ensure that all aspects of the proposal align with environmental, planning, and bushfire protection requirements

## 5. Development Assessment

The following sections are a detailed assessment of the proposal against the standards required for bushfire protection measures for residential and rural residential subdivisions:

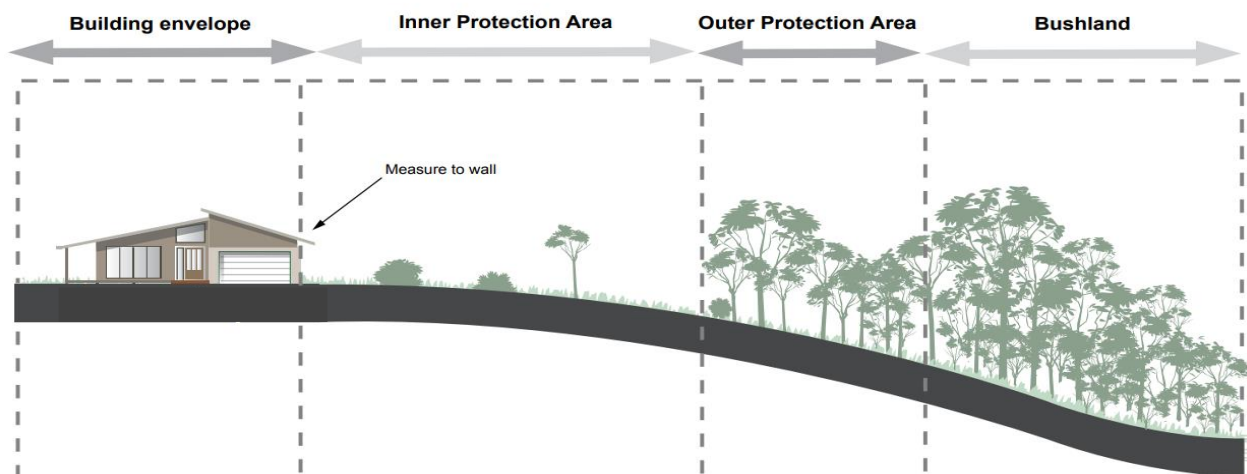
### 5.1 Asset Protection Zones (APZ)

The APZ is a fuel reduced area surrounding a building or structure. The intent of the APZ detailed in PBP (2019) is:

*“To provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at buildings are below critical limits, and prevent direct flame contact” (NSW Rural Fire Service, 2019)*

An APZ in forest vegetation can be divided into an “Inner Protection Area” and “Outer Protection Area”. They can be defined as follows:

- Inner Protection Area: closest to buildings incorporating the defensible space and for managing heat intensities at the building surface;
- Outer Protection Area: for reducing the potential length of flames by slowing the rate of spread, filtering embers and suppressing the crown fire.



Components of a typical APZ  
(NSW Rural Fire Service, 2019)

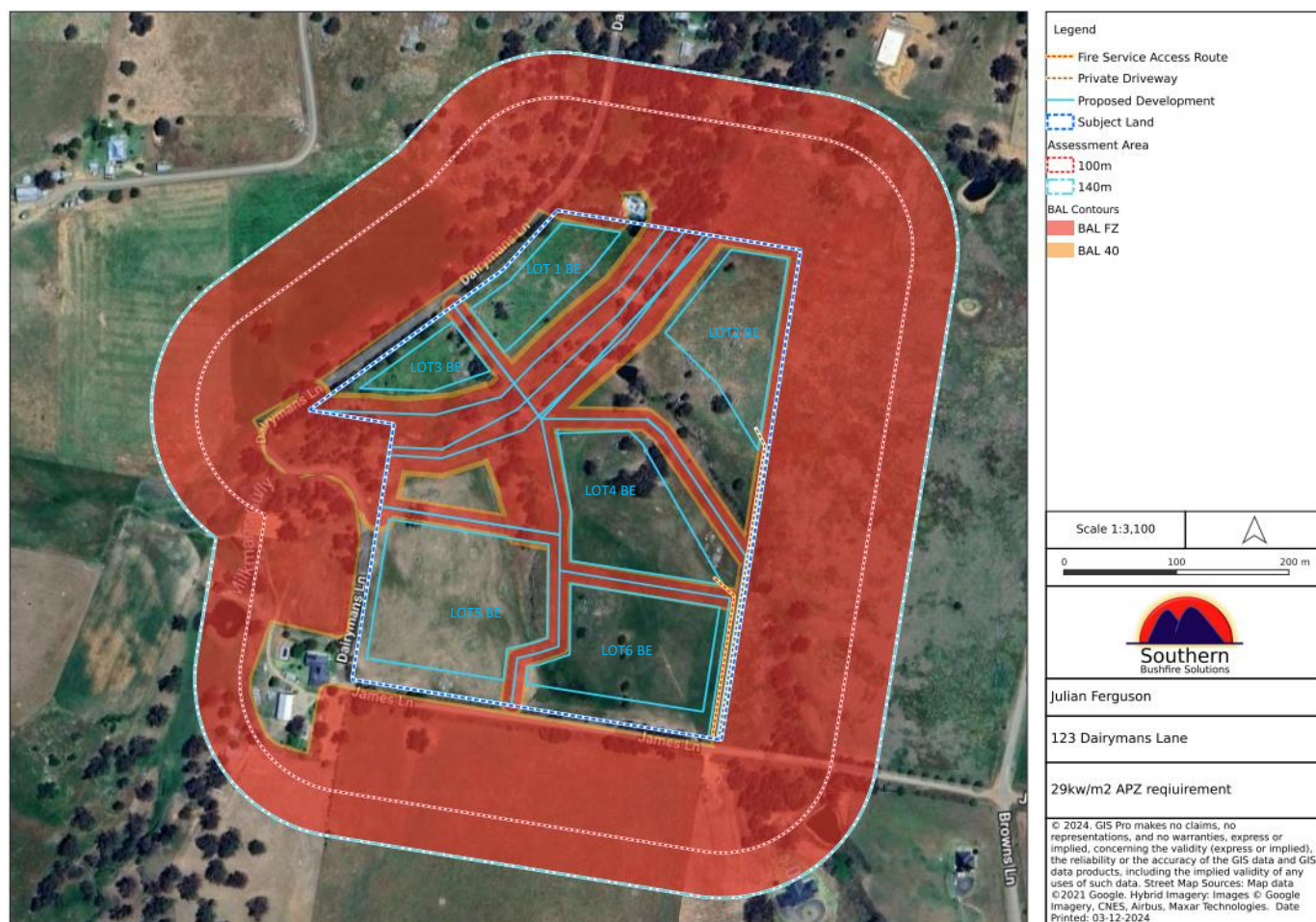
	PERFORMANCE CRITERIA TO BE ACHIEVED:	ASSESSMENT AGAINST ACCEPTABLE SOLUTIONS:	COMPLIANCE
ASSET PROTECTION ZONE	APZs are provided commensurate with the construction of the building.	An APZ is provided in accordance with Table A1.12.2 or A1.12.3 in Appendix 1.	TO BE PROVIDED
	A defensible space is provided.		
	APZs are managed and maintained to prevent the spread of fire towards the building.	APZ's are managed in accordance with the requirements of Appendix 4 of PBP	TO BE PROVIDED
	APZ is provided in perpetuity.	APZ's are wholly within the boundaries of the development site	YES
	APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	APZ's are located on lands with a slope <18°	YES

## ASSESSMENT SUMMARY

Asset Protection Zone and BAL contours have been calculated based on the slope and vegetation inputs noted in the hazard assessment as follows:

APZ and Radiant Heat calculations

PLOT ID	Vegetation Type	Effective slope category	Minimum APZ 29kW/m <sup>2</sup> (Table A1.12.3)	BAL Distances (Table A1.12.6)				
				BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5
1	Grassy and Semi-Arid Woodland (including Mallee)	Downslope 5 to 10°	17m	<12m	12-<17m	17-<24m	24-<34m	34-100m
2	Grassland	Flat / Upslope	10m	<7m	7-<10m	10-<14m	14-<20m	20-50m
3	Grassland	Downslope 0 to 5°	11m	<8m	8-<11m	11-<16m	16-<23m	23-50m
4	Grassy and Semi-Arid Woodland (including Mallee)	Flat / Upslope	11m	<8m	8-<11m	10-<16m	16-<22m	22-100m
5	Grassland	Flat / Upslope	10m	<7m	7-<10m	10-<14m	14-<20m	20-50m
6	Grassy and Semi-Arid Woodland (including Mallee)	Flat / Upslope	11m	<8m	8-<11m	10-<16m	16-<22m	22-100m



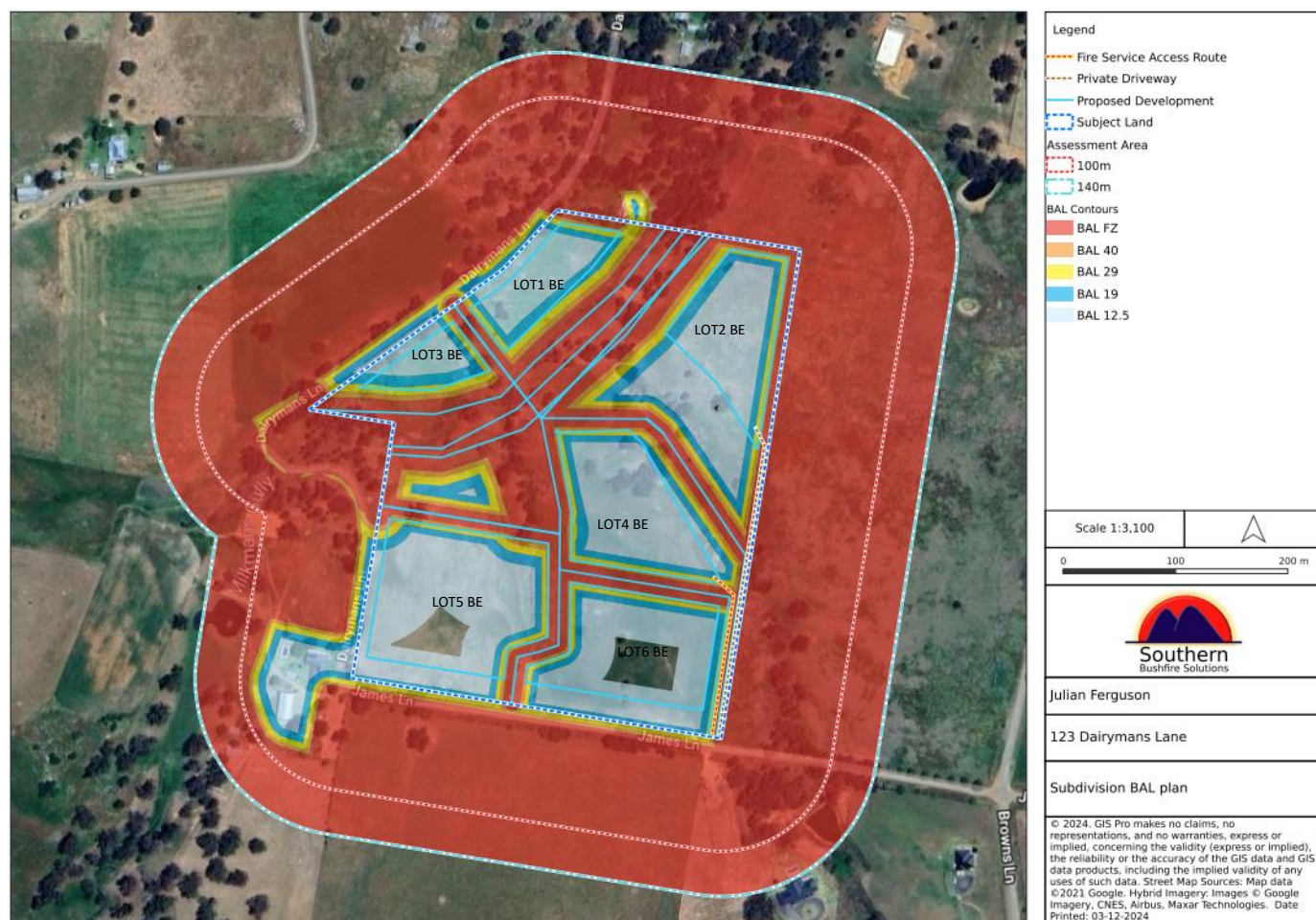


Figure 20: Subdivision BAL Plan

All building envelopes are exposed to  $<29\text{kW/m}^2$  radiant heat and meet the minimum APZ requirements. The lots are zoned RU4 – Rural Landscape, Hilltops Shire DCP specifies minimum boundary setbacks of 20m (public roads and front boundaries) and 10m from side and rear boundaries, leaving sufficient space to provide an APZ for the grassland hazard within the development site.

### Actions Required

The following recommendations are made to ensure an APZ that exceeds the minimum distance for residential development in table A1.12.2 and achieves  $29\text{kW/m}^2$  for the new buildings:

1. A S88B instrument is recommended to condition all lots within the development to not to revegetated to become a fire hazard.

Landscaping	PERFORMANCE CRITERIA TO BE ACHIEVED:	ASSESSMENT AGAINST ACCEPTABLE SOLUTIONS	COMPLIANCE
	Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and potential for wind driven embers to cause ignitions	Landscaping is in accordance with Appendix 4	TO BE PROVIDED
		Fencing is constructed in accordance with section 7.6	TO BE PROVIDED
ASSESSMENT SUMMARY			
Landscaping of the lots is not part of this proposal. It is expected that landscaping works will be addressed at construction of any new building and will be required to be in accordance with section 7.6 of PBP (2019). The current vegetative state of the lots is to be maintained as per the APZ recommendations.			

## 5.2 Access Requirements

The intent of measures for Access detailed in PBP (2019) is:

*“To provide safe operational access to structures and water supply for emergency services while residents are seeking to evacuate from an area” (NSW Rural Fire Service, 2019)*

The purpose of the public road system is to provide firefighters with access to properties, provide a safe retreat for firefighters and firefighting appliances, and provide a clear control line from which to conduct hazard reduction or back burning operations. Roads should provide sufficient width for firefighters to work with equipment around the vehicle without impeding residents that are seeking to evacuate the area.

	PERFORMANCE CRITERIA TO BE ACHIEVED:	ACCEPTABLE SOLUTIONS	COMPLIANCE
Access - General	Firefighters are provided with safe all-weather access to structures	Property access roads are two-wheel drive, all-weather roads.	TO BE PROVIDED
		Perimeter roads are provided for residential subdivisions of three or more allotments	YES
		Subdivisions of three or more allotments have more than one way in and out of the development.	YES
		Traffic management devices are constructed to not prohibit access by emergency vehicles	N/A
		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	YES
		All roads are through roads	YES
		Dead end roads are not recommended, but if unavoidable are not more than 200m in length, incorporate a minimum 12m outer radius turning circle	N/A
		where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road	N/A
		where access/egress can only be achieved through forest, woodland and heath vegetation, secondary access shall be provided to an alternate point on the existing public road system	N/A
		one way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these areas to ensure accessibility to reticulated water for fire suppression.	N/A
	The capacity of access roads is adequate for firefighting vehicles	the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.	YES
Perimeter Roads	There is appropriate access to water supply	hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; and	N/A
		hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - <i>Fire hydrant installations System design, installation and commissioning</i>	N/A
		there is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	TO BE PROVIDED
	Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface	are two-way sealed roads.	NO
		minimum 8m carriageway width kerb to kerb	NO
		parking is provided outside of the carriageway width	N/A
		hydrants are located clear of parking areas	N/A
		are through roads, and these are linked to the internal road system at an interval of no greater than 500m	N/A
		curves of roads have a minimum inner radius of 6m	N/A
		the maximum grade road is 15 degrees and average grade of not more than 10 degrees	N/A
		the road crossfall does not exceed 3 degrees	N/A
		a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	YES

Non-Perimeter roads	Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating	minimum 5.5m carriageway width kerb to kerb	YES
		parking is provided outside of the carriageway width	N/A
		hydrants are located clear of parking areas	N/A
		roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m	N/A
		curves of roads have a minimum inner radius of 6m	YES
		the road crossfall does not exceed 3 degrees	YES
		a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided	YES
Property Access	Firefighting vehicles can access the dwelling and exit the property safely	<i>There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most distant external part of the proposed dwelling and the nearest part of the public access road (where the road speed limit is not greater than 70kph) that supports the operational use of emergency firefighting vehicles. In circumstances where this cannot occur, the following requirements apply:</i>	YES
		minimum 4m carriageway width	TO BE PROVIDED
		in forest, woodland and heath situations, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m at the passing bay	TO BE PROVIDED
		a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches	TO BE PROVIDED
		provide a suitable turning area in accordance with Appendix 3	TO BE PROVIDED
		curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress	TO BE PROVIDED
		the minimum distance between inner and outer curves is 6m	TO BE PROVIDED
		the crossfall is not more than 10 degrees; maximum grades for sealed roads do not exceed 15 degrees and not more than 10 degrees for unsealed roads	TO BE PROVIDED
		and a development comprising more than three dwellings has access by dedication of a road and not by right of way	TO BE PROVIDED
	Note: Some short constrictions in the access may be accepted where they are not less than 3.5m wide, extend for no more than 30m and where the obstruction cannot be reasonably avoided or removed. The gradients applicable to public roads also apply to community style development property access roads in addition to the above.		

#### ASSESSMENT SUMMARY

The proposal is to create 6 new rural-residential lots with access provided to the existing public road network, no new public roads are involved in the proposal. Technically the proposal is not declared as “bushfire prone land” for development purpose, however bushfire risk is taken into consideration as due diligence and the proposal is being assessed against the bushfire planning requirements.

Complete perimeter access is not provided and roads are not sealed. Consideration of a performance-based solution is required. A qualitative analysis approach is undertaken to ensure that access is appropriate for APZ and land management at the interface, safe emergency access and egress is maintained, and a safe operational environment is provided for operational fire crews.

Dairymans Lane and James Lane provide perimeter access to lots 1,3,5 and 6 lots. Only lots 2 and 4 lack perimeter access and comparison is made to acceptable solutions where development of 3 lots or less do not require perimeter road. These lots bound similar rural residential lots with grassland vegetation and property access roads providing perimeter access along the eastern aspect of the development. Asset Protection zones are managed within each lot, negating the need for access for APZ maintenance and limiting the value of the perimeter road as a component of the APZ.

The following features are considered to provide safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency services personnel during firefighting and emergency management at the interface in the balance of protection measures for the proposal:

1. Dairymans Lane and James Lane are existing roads that provide two-way access and egress from the area and provide a safe operational environment in grassland. Fire crews undertaking property protection will be anchored to the APZ around the dwellings.
2. Rural residential development lacks a defined interface with hazard vegetation retained within the development. APZ's are provided around individual dwellings limiting the value of a "perimeter road" as a component of the APZ.
3. The property access roads are required to comply with table 5.3b ensuring operational fire crews can access the dwellings safely. Detailed design will be provided at DA for construction when the location of the building and static water supply is confirmed.
4. Dairyman Lane and James Lane are not bitumen sealed roads, but are dirt "all weather surface" with capacity to carry a fully laden fire appliance and are outside the scope of the proposal.

### Actions Required

The following recommendations are made for access to be improved as part of the performance solution:

1. Property access roads are to comply with table 5.3b of NSW Planning for Bushfire Protection.



Figure 21: Access Arrangement



Figure 22: Standard of James Ln and existing public road

### 5.3 Services – Water, Electricity and Gas

The intent of measures for services detailed in PBP (2019) is:

*“To provide adequate services of water for the protection of buildings during and after the passage of a bushfire, and to locate gas and electricity so as not to contribute to the risk of fire to the buildings” (NSW Rural Fire Service, 2019)*

An adequate supply of water is essential for firefighting. A reticulated supply is to be provided where possible, and a static water supply to be made available for non-reticulated development.

Water Supply	PERFORMANCE CRITERIA TO BE ACHIEVED:	ASSESSMENT AGAINST ACCEPTABLE SOLUTIONS	COMPLIANCE
	Adequate water supply is provided for firefighting purposes	reticulated water is to be provided to the development where available.	N/A
		a static water and hydrant supply is provided for non-reticulated developments or where reticulated water supply cannot be guaranteed.	TO BE PROVIDED
		static water supplies shall comply with Table 5.3d.	TO BE PROVIDED
	Water supply is located at regular intervals  Water supply is accessible and reliable for firefighting operations	fire hydrant, spacing, design and sizing complies with the relevant clauses of Australian Standard AS 2419.1:2005.	N/A
		hydrants are not located within any road carriageway.	N/A
		reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.	N/A
	Flows and pressures are appropriate	fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.	N/A
	The integrity of the supply is maintained	all above-ground water service pipes are metal, including and up to any taps.	TO BE PROVIDED
		above-ground water storage tanks shall be of concrete or metal.	TO BE PROVIDED
ASSESSMENT SUMMARY:			
Compliance with acceptable solutions of PBP (2019). There is no reticulated water supply in the area. A static water supply will be required to be provided for each lot at DA for construction under section 4.14 of the Environmental Planning and Assessment Act.			

Electricity Services	PERFORMANCE CRITERIA TO BE ACHIEVED:	ASSESSMENT AGAINST ACCEPTABLE SOLUTIONS	COMPLIANCE
	Location of electricity services limits the possibility of ignition of the surrounding bushland or the fabric of buildings	Where practicable, electricity services are to be underground	YES
		Where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"><li>Lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas</li><li>No part of a tree is closer to the power line than the distance set out in ASSC3 <i>Guideline for managing Vegetation Near Powerlines</i></li></ul>	YES
ASSESSMENT SUMMARY:			
Compliance with the acceptable solutions of PBP (2019) Power transmission is to be is underground for the proposal where possible			

Gas Supply	PERFORMANCE CRITERIA TO BE ACHIEVED:	ASSESSMENT AGAINST ACCEPTABLE SOLUIONS	COMPLIANCE
	Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings	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.	N/A
		all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side and metal piping is used.	N/A
		connections to and from gas cylinders are metal.	N/A
		polymer-sheathed flexible gas supply lines are not used.	N/A
		above-ground gas service pipes are metal, including and up to any outlets.	N/A
ASSESSMENT SUMMARY			
Compliance with the acceptable solutions of PBP (2019) There is no reticulated gas supply in the area or fixed gas cylinders involved in this proposal. If a bottled gas supply is installed it will be adressed at DA for construction.			

## 6. Conclusion

The proposal involves the 6 lot subdivision in an area that is not identified as “bushfire Prone Land” for development purposes. A bushfire assessment is requested as due diligence to address bushfire risk and assessment undertaken consistent with NSW Planning for Bushfire Protection (2019)

The design of the development is largely compliant with acceptable solutions, however does not provide a complete perimeter road. A performance-based solution is proposed with a qualitative assessment based on the access arrangement. The existing public roads provide perimeter access for lots 1,3,5 and 6 with only lots 2 and 3 lacking perimeter road. Comparison is made to the acceptable solution for development of 3 lots or less do not require perimeter road. The value of perimeter roads is reduced due to the lack of defined interface in rural-residential setting and provision of individual APZ at each dwelling.

Building envelopes are located to ensure building entitlements are exposed to <29kW/m<sup>2</sup>, with boundary setbacks appropriate to manage grassland hazard within the lots. Static water supplies will be addressed at DA for construction and power is underground.

All remaining aspects can comply with acceptable solutions of NSW Planning for Bushfire Protection (2019).

The development as a whole meets the intent of measures and performance requirements of NSW Planning for Bushfire Protection.

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