Southern Bushfire Solutions

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Bushfire Assessment Report

Residential Subdivision

Lot 2 DP879607
170 Pine Hill Rd
Narrandera, NSW.

Executive Summary

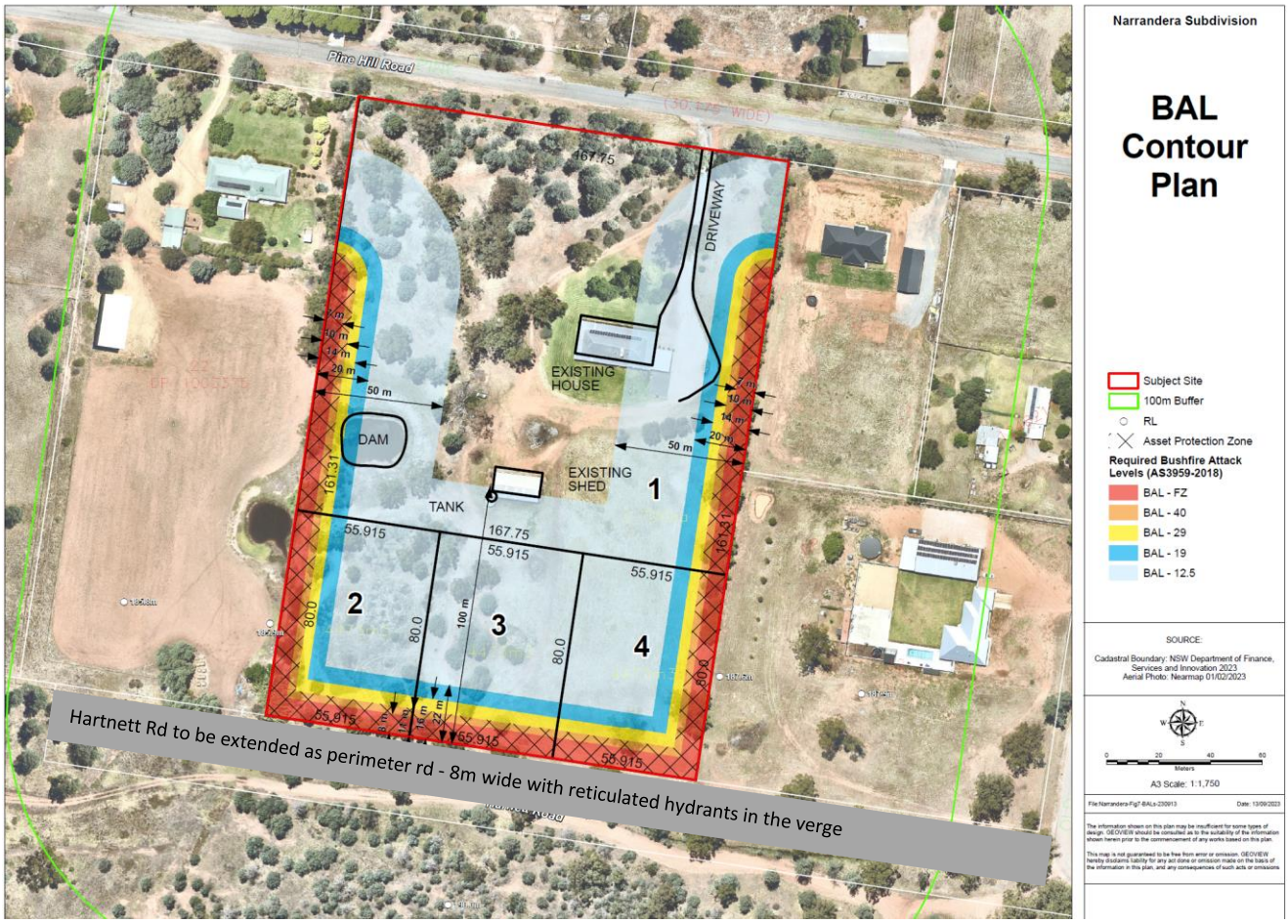
The proposal is for subdivision of a 4.047Ha lot in a RU5- Village zoned area that is mapped as category 2 vegetation on the bushfire prone land map. Adjacent lots with dwellings and associated Asset Protection Zones meet the low threat vegetation exclusions of A1 of PBP. The bushfire hazard consists of Woodland vegetation in the public recreation reserve on the southern aspect of the development site. The existing residence is assumed to comply with the minimum requirements of PBP at the time of construction.

The new lots are provided with an APZ that exceeds the requirements of table A1.12.3 of PBP (2019) for future buildings and is to be maintained in accordance with the Vegetation Management Plan.

Hartnett Road is to be extended as a perimeter road to provide access for the new lots with all weather surface (unsealed). Through access is to be provided to Old Wagga Rd to non-perimeter road standard. Property access for the new lots is less than 80m and detail will be addressed at DA for construction when specific building location is known.

Recommendations are made to ensure public access roads and services will comply with acceptable solutions of PBP.

This assessment finds that the proposal can achieve the required specifications of NSW Planning for Bushfire Protection (2019) through use of the acceptable solutions and achieve Bushfire Safety Authority from NSW Rural Fire Service for development consent under S100B of the Rural Fires Act.



Summary of PBP (2019) Compliance

	Performance Criteria	Compliance	Comment
Asset Protection Zones	• Potential building footprints must not be exposed to radiant heat levels exceeding 29kw/m^2 on each proposed lot • 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.	Meets acceptable solutions	There is sufficient space within the development site to provide an APZ that exceeds the requirements of A1.12.3 of PBP (2019) for future construction. There are no steep slopes or riparian zones located within the proposal.
Landscaping	• 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	Landscaping of the existing residence is considered to comply with NSW RFS standards for Asset Protection Zones. A bushfire Management Plan is provided for all land within the development site to ensure vegetation does not become a fire hazard.
Access – General Requirements	• Firefighters are provided with safe all-weather access to structures • The capacity of access roads is adequate for firefighting vehicles • There is appropriate access to water supply	Meets acceptable solutions	Hartnett Rd is to be extended as a perimeter road as part of this proposal. Recommendations are made for the existing trail to be upgraded to provide “through access” to Old Wagga Rd to ensure no dead end. Reticulated Hydrants are to be marked as per local water authority requirements.
Access – Perimeter roads	• 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	Meets acceptable solutions	Hartnett Rd will not be sealed but is to be considered a perimeter road with 8m wide all weather surface. APZ’s will be provided within each lot at DA for construction.

Access – Non Perimeter roads	• Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating	Meets acceptable solutions	The through access to Old Wagga Rd is to be upgraded to be 5.5m carriageway, 2wd all weather surface. No steep slopes or wet areas are identified in the path of travel.
Property Access	• Firefighting vehicles can access the dwelling and exit the property safely	Meets acceptable solutions	The existing property access is around 70m in length and assumed to comply. New property access are less than 80m and detail is to be addressed at DA for construction when the specific building location is confirmed.
Water Supplies	• 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	A reticulated water supply is to be provided to the development. Hydraulic design is not available at this time, recommendations are made for Feed Hydrants to be installed to local water authority requirements and AS2419.
Electricity services	• Location of electricity services limits the possibility of ignition of the surrounding bushland or the fabric of buildings	Meets acceptable solutions	Detailed design of new power transmission is not available at this time. Recommendations are made that new power transmission lines are underground where practicable.
Gas Services	• 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 will be addressed at DA for construction if required.

Assessing Officer:

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FPA Australia BPAD Level 2- NSW BPAD31129

DATE OF ISSUE: **18 September 2023**

SBS ASSESSMENT REFERENCE: 2024009

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 12 September 2023	Initial production	1.1
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 44 of the Rural Fires Regulation (2002) 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) 2006. 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.	• NSW SIX Mapping, Google maps. • Development plans provided by client. • NSW Planning for Bushfire Protection (2019) • AS3959-Construction of Buildings in Bushfire Prone Areas (2009)
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	Michael Smith	**PH:** 0428 290671 **E:** mjandcasmith1@bigpond.com
PHL Surveyors	Consulting Surveyors	Stephen McMahon	**PH: (**02) 69643192 **E:** stephenm@phlsurveyors.com.au
Narrandera Shire Council	Approval Authority		**PH:** (02) 69595510 **E:** council@narrandera.nsw.gov.au
NSW Rural Fire Service	Approval Authority		**PH:** 02 8741 5555 **E:** records@rfs.nsw.gov.au
Southern Bushfire Solutions	BPAD Consultant	Neil Willis	**PH:** 0402 604000 **E:** info@southernbushfiresolutions.com.au

2. Scope of the Proposal

2.1 Site Location and Description.

The site is located at lot 2 DP879607, 170 Pine Hill Rd Narrandera. The subject property is approximately 4.047Ha zoned R5- Village. The property is located in a large lot residential area with residential development on 3 aspects. The land to the south is zoned RE1 - public recreation.

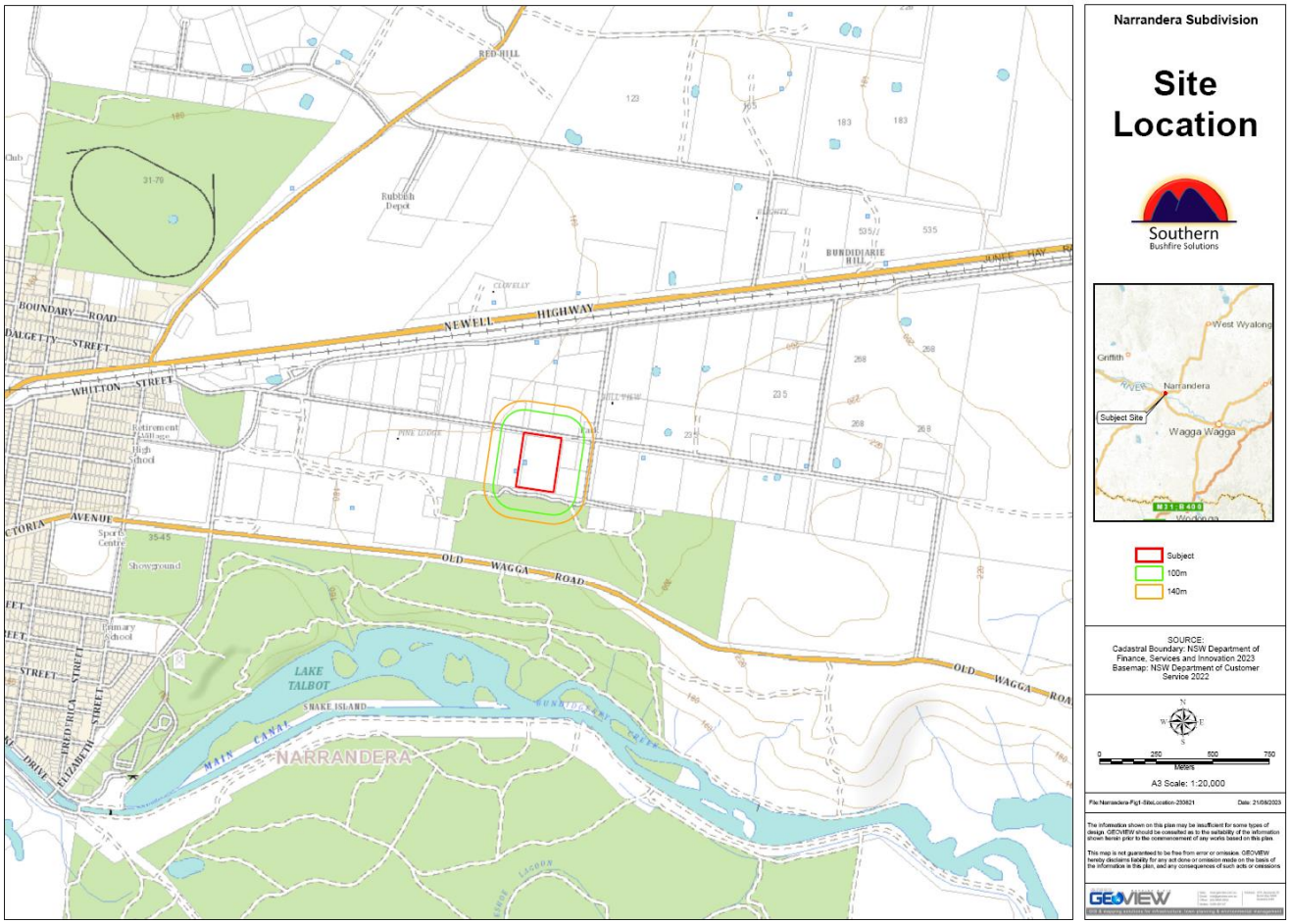

Figure 1: Location of proposed development

Bushfire prone land mapping shows the location exposed to vegetation category 2 surrounding the property, represented as orange on the bush fire prone land map. This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. (NSW Rural Fire Service, 2015)

An area of vegetation category 1 falls within the 140m assessment area to the south. This is represented as red on the bush fire prone land map and has the highest combustibility and likelihood of forming fully developed fires including heavy ember production. Vegetation Category 1 consists of areas of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations. (NSW Rural Fire Service, 2015).

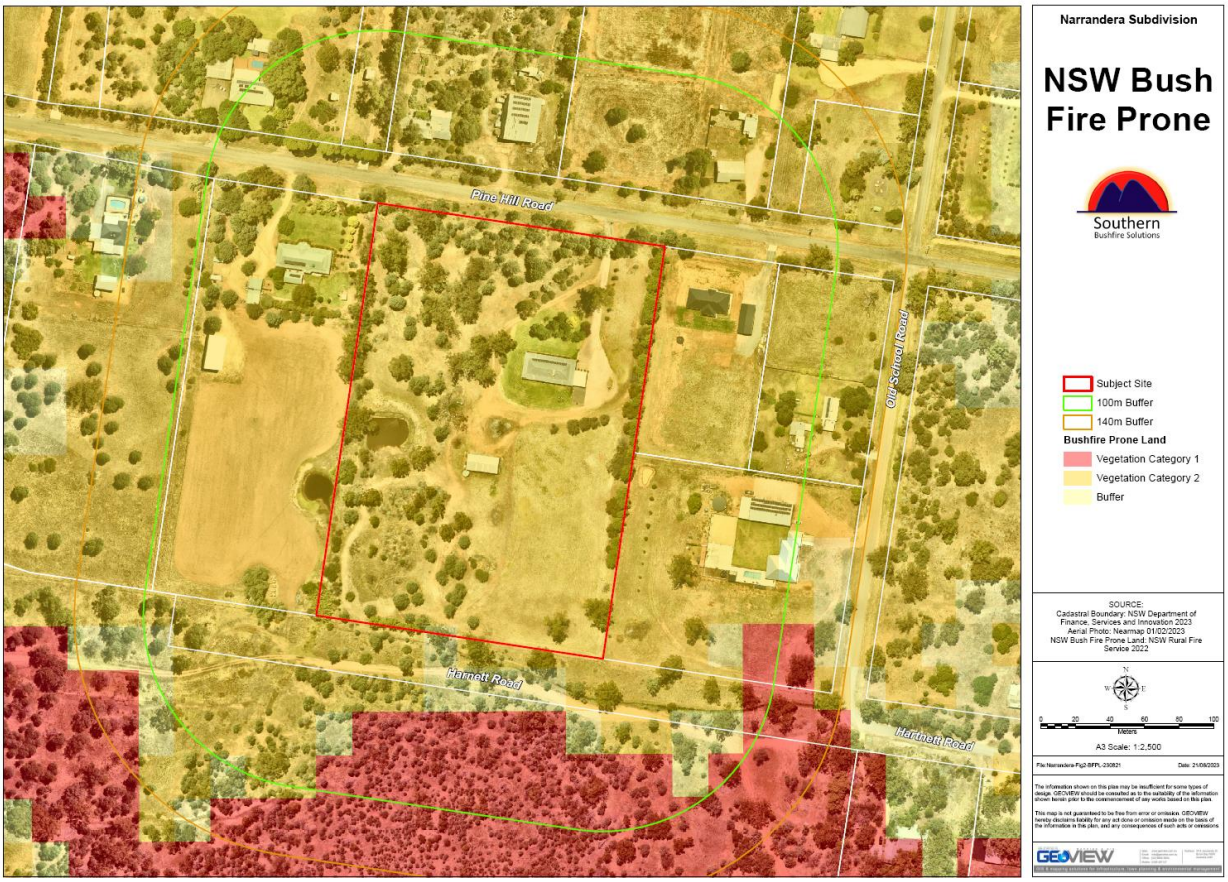

Figure 2: Bushfire Prone Land Map

2.2 Characteristics and Description of the Proposal

The proposal is to subdivide the existing 4.047 Ha property into four new lots with the existing residence retained on lot 1 with direct access to Pine Hill Rd. Hartnett Rd is to be extended as a public road to the boundary of the new lots and lots 2, 3 and 4 will be provided with direct access to Hartnett Rd.

The plan below details the proposed layout for the subdivision:

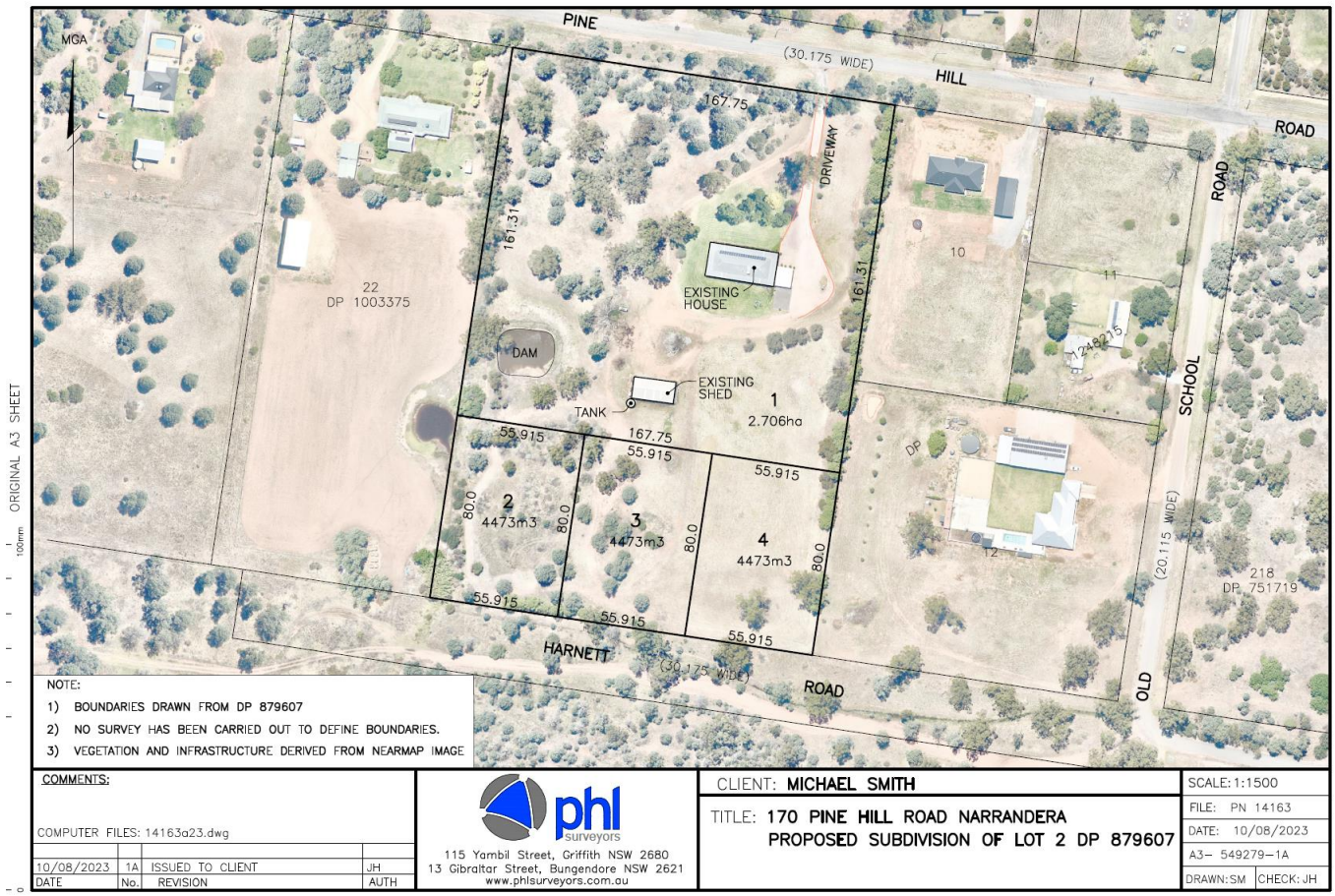

Figure 3: Subdivision Layout

3. Bushfire Hazard Assessment

3.1 Context

The site is located in a rural residential area zoned R5 Village. Adjacent lots to the north and east and west have been developed with construction of residential buildings and associated Asset Protection Zones reducing the bushfire hazard however the grassland hazard cannot be excluded on the adjacent lots. All land within the development site is to be managed to prevent spread of bushfire under a bushfire management plan. These areas have been excluded from hazard vegetation assessment under the "Low Threat Vegetation – Exclusions" of A1.10 of PBP.

The primary bushfire hazard is the reserve to the south of the proposed development. Bushfire prone land mapping for the area classifies this as Category 2 vegetation across the site with an area of Category 1 to the south within 100m of the site.

3.2 Vegetation Classification

PBP (2019) requires identification of the vegetation types surrounding the proposed development to a distance of 140 meters of the development site. NSW state vegetation type mapping considers the primary hazard vegetation to the south of the site as "Floodplain Transition Woodlands" and "Riverine Sandhill Woodlands" This is consistent with "Woodland" vegetation when classified for fuel load in A1 of PBP(2019)

> *"Woodlands"*
> *"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)

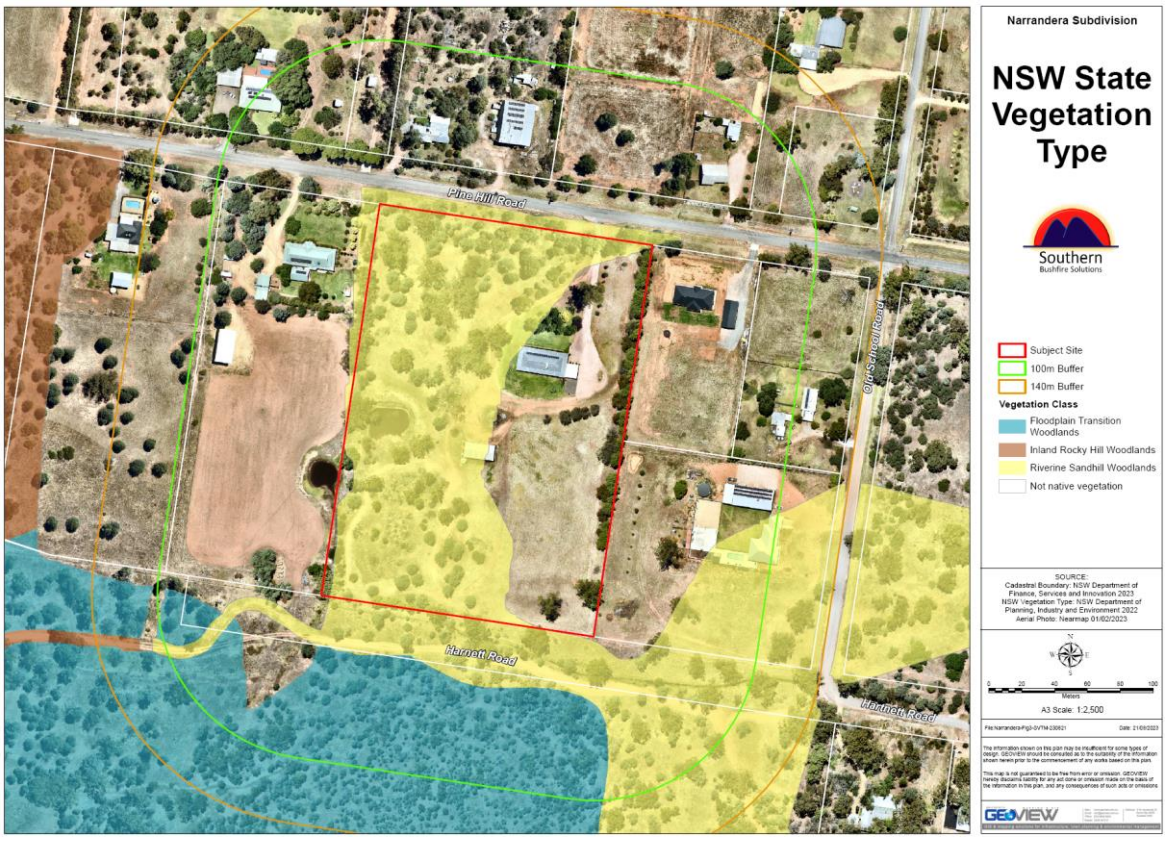

Figure 4: NSW State Vegetation Types

3.3 Slope Classification

Effective slope is the slope of the land beneath the vegetation which most significantly affects fire behaviour. A variety of slopes may be found under the vegetation and taken into consideration to determine the appropriate slope for fire modelling. It is essential to recognise that the design fire conditions are for the headfire impacting the site and effective slope may be considered up to 45° either side of perpendicular.

The following figures provide a digital elevation model and LiDAR analysis of the land within 140m of the site that have been used in consideration of the effective slope for fire behaviour modelling.

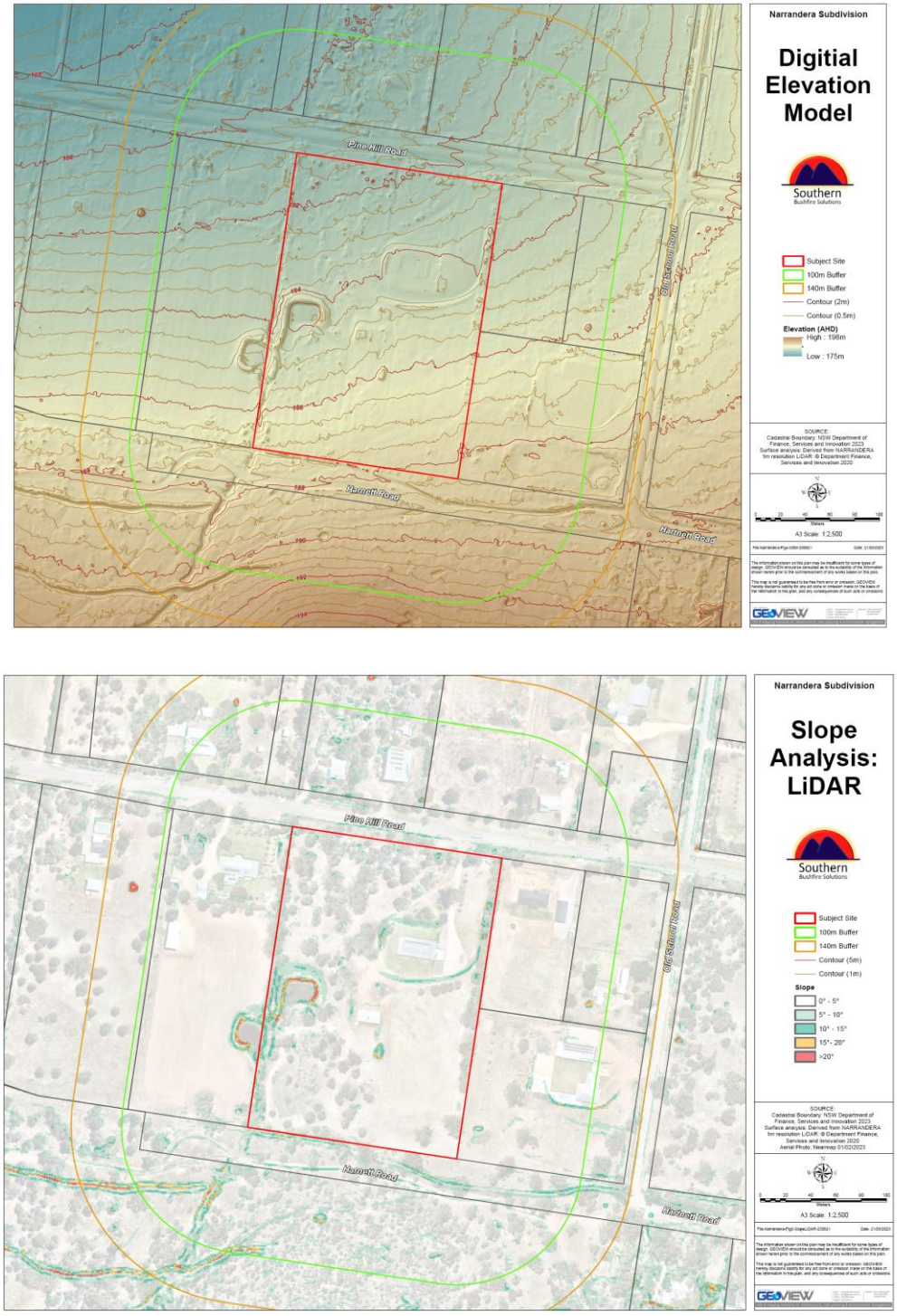

Figure 5: Digital elevation model and LiDAR slope analysis

In consideration of the online data available and confirmation by site inspection reveals three primary runs of fire impacting the site. A transect taken on each of these fire runs to determine vegetation and slope classification for assessment.

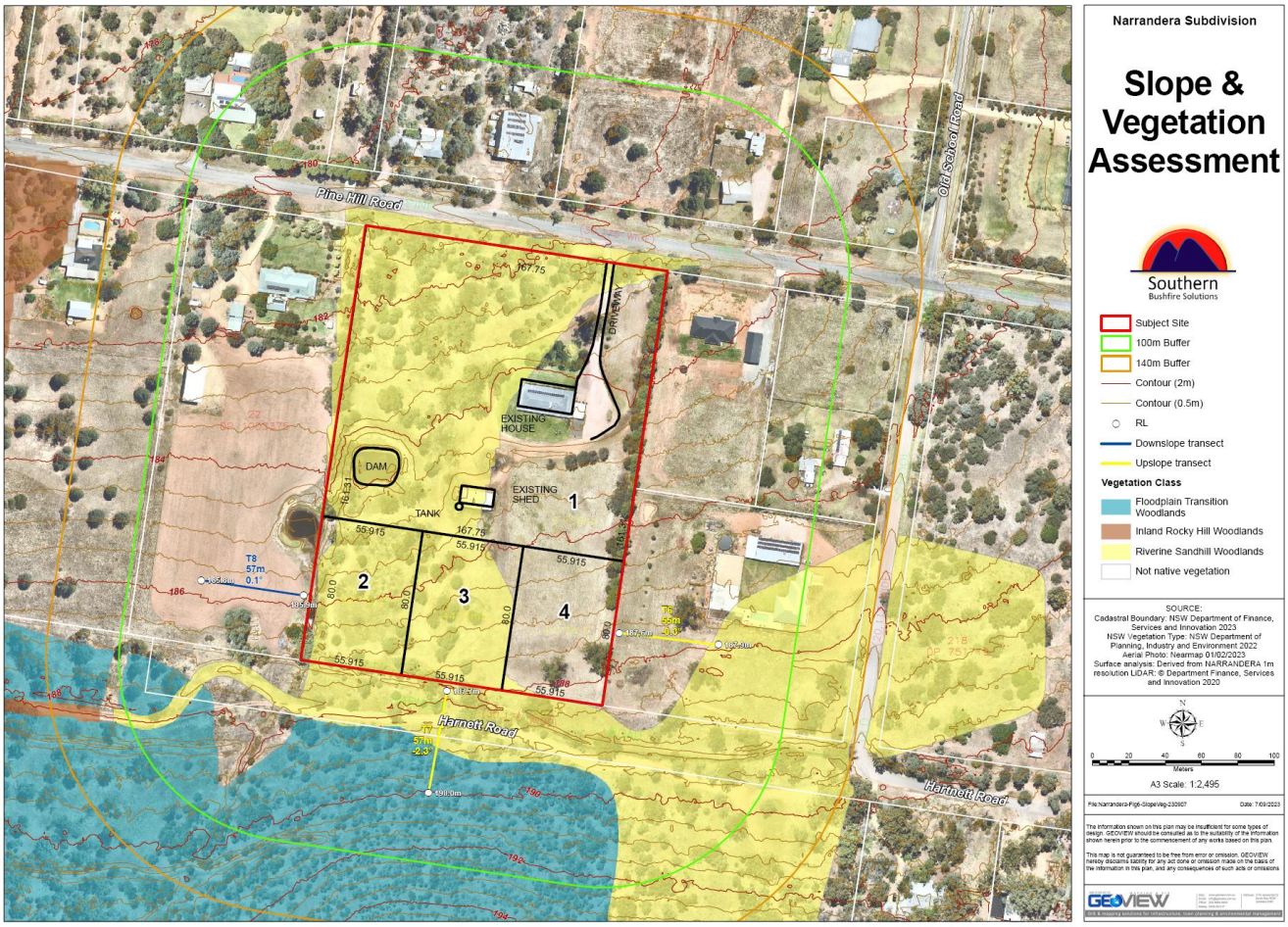

Figure 5: Bushfire Hazard Identification

Figure 6: Excluded area in the APZ around the existing residence on the site

Figure 7: Excluded area to the east in the curtilage of existing residences

Figure 8: View looking north from the development site with the existing residence and shed on the parent lot.

Figure 9: View looking south of the new lots with hazard vegetation at the far boundary

Figure 10: Transect 6- grassland in the open paddock area to the east of the site

Figure 11: Transect 8- Grassland vegetation in the grazed paddock on the adjacent lot to the west

Figure 11: Transect 7 – Woodland vegetation to the south of Hartnett Rd

Figure 11: Woodland vegetation to the south of the Hartnett Rd and Old School Rd Intersection

3.4 Local Fire and Weather Conditions

The fire season for the Northern Riverina district is typically from November 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, bushfire's typically come from the North to North-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, Narrandera Shire LGA is in the Northern Riverina Fire Area and has a Fire Danger Index (FDI) of 80 assumed as a 1:50 year event according to NSW RFS.

4. Environmental Features and Considerations

Each new lot is capable of providing an APZ within the boundary of the development with Hartnett Rd providing separation from the primary hazard. No impact will occur outside the development footprint. There are no riparian zones and no steep slopes above 18 degrees were identified in the development site.

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 defendable 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.

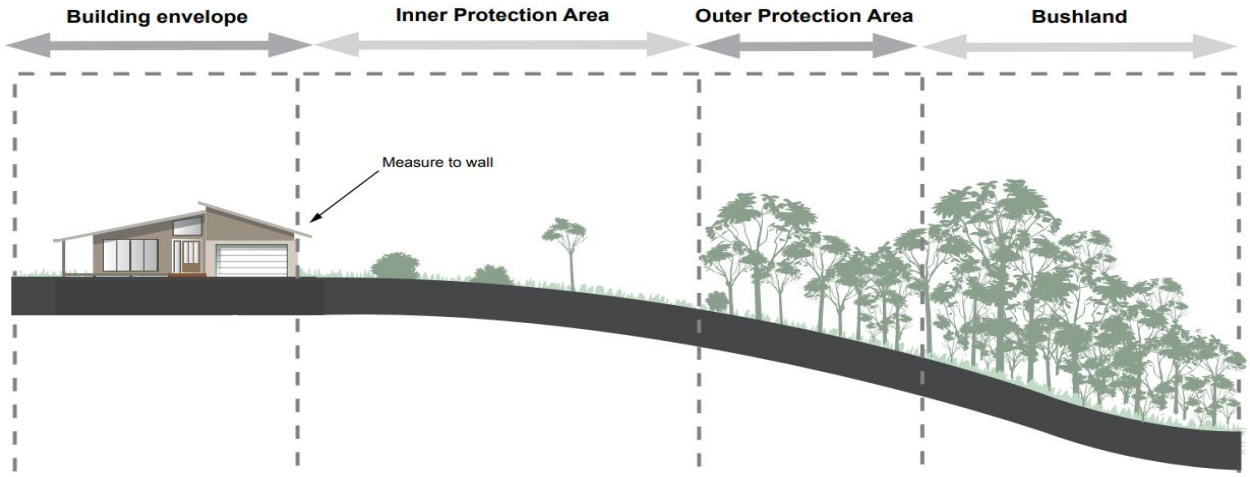

Figure 9: Components of a typical APZ
(NSW Rural Fire Service, 2019)

Asset Protection Zone	
	PERFORMANCE CRITERIA TO BE ACHIEVED:
	Section 5.3.1 of PBP states that the intent of measures may be achieved where: ● Potential building footprints must not be exposed to radiant heat levels exceeding 29kw/m^2 on each proposed lot ● 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.
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Compliance with the Acceptable solutions of table 5.3a of PBP (2019)

All land within the parent lot is currently managed to Asset Protection Zone standards and will continue to be managed under a Vegetation Management Plan. There is space available within each lot to meet or exceed the minimum setbacks required to achieve 29kW/m^2 or less as demonstrated below.

Hartnett Rd will be extended as a public road within in the road reserve to the south and will provide additional separation from the bushfire hazard, but as the detail form management of the remaining area of the road reserve is not available a conservative approach has been taken and the vegetation is not excluded in the road reserve.

Radiant Heat and APZ calculations

Area FDI 80 - Northern Riverina Fire Area (Narranderra Shire Council)								
Transect Identification	Vegetation classification	Effective slope category	Minimum APZ Distance A1.12.1	BAL Thresholds (kW/m^2)				
				FZ	40	29	19	12.5
T6	Grassland	Flat	10m	0-7	7-10	10-14	14-20	20-50
T7	Woodland	flat	11m	0-8	8-11	11-16	16-22	22-100.
T8	Grassland	flat	10m	0-7	7-10	10-14	14-20	20-50

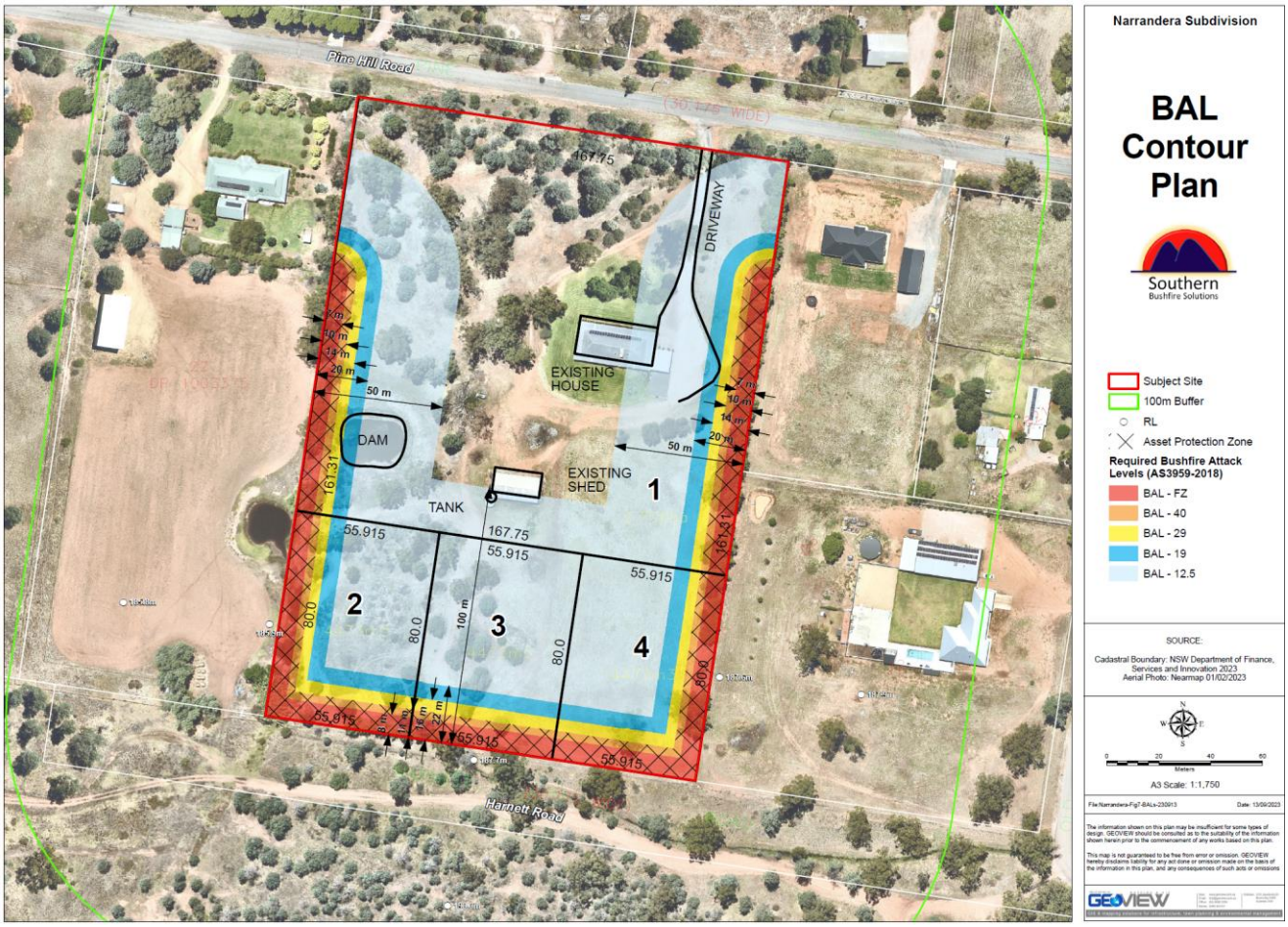

Figure 12: Radiant heat thresholds across the development site demonstrating building sites exceed the minimum setbacks of PBP.

Landscaping	
	PERFORMANCE CRITERIA TO BE ACHIEVED:
	Section 5.3.1 of PBP states that the intent of measures may be achieved where: • Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and potential for wind driven embers to cause ignitions
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Landscaping of the existing residence is considered to comply with the NSW Standards for Asset Protection Zones. Landscaping and fencing for the new lots is not part of this proposal. It is expected that landscaping works will be addressed at DA for 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 vegetation maintenance plan to ensure the land does not become a bushfire hazard.

Vegetation Management Plan

The vegetative state in the cleared portions of the lots is to be maintained so as not to become a fire hazard to adjacent lots. The following guidelines are to be consistent with Outer Asset Protection Zones in A4 of PBP

- Tree canopy is not to exceed 30% and should be separated by 2-5m
- Shrubs should not form continuous canopy and should form no more than 20% of ground cover
- Grass should be kept to less than 100mm and leaves and debris regularly removed.

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.

Access - General	***PERFORMANCE CRITERIA TO BE ACHIEVED:***
	Section Table 5.3b of PBP states that the intent may be achieved where: • Firefighters are provided with safe all-weather access to structures • The capacity of access roads is adequate for firefighting vehicles • There is appropriate access to water supply
Perimeter Roads	• 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
Non-Perimeter roads	• Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating
Property	• Firefighting vehicles can access the dwelling and exit the property safely
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Compliance with the acceptable solutions of PBP (2019).

Access for the existing dwelling is around 70m to Pine Hills Rd with turning provisions at the residence and assumed to comply with requirements as per conditions of consent when constructed.

The design of the subdivision is such that Hartnett Rd is to be extended approximatley 380m as public road and will be maintained by Narrandera Shire Council. Asset Protection Zones are provided within the lots and Hartnett Rd will provide seperation from primary hazard and may be considered a perimeter road as per PBP although it will not be a sealed road as per acceptable solutions. Reccomndations are made for Hartnett Rd to be 8m wide with 2wd all weather surface.

Subdivisions of 3 lots require two access points and dead ends greater than 200m are to be avoided. The existing fire trail from Hartnett Rd through to Old Wagga Rd traverses land zoned public recreation and reccomendations are made for this to be upgraded to non- perimeter rod standard to ensure 5.5m wide 2wd all-weather through access is available and Hartnett Rd does not become a dead end.

The three new lots have direct access to Hartnett Rd and property access less than 200m and do not require an alternative. Detail of property access will be adressed at DA for construction shen the specific location of the residence can be confirmed.
There are no wet areas or and crossfall/grades are minimal in the flat terrain.

The following reccomendations are made to ensure access provisions comply with the acceptable solutions of Planning for Bushfire protection:

1. Hartnett Rd is to become a perimeter road with 8m wide carriageway that is a 2wd all weather surface.
2. The remainder of Hartnett Road is to be upgraded to ensure 2wd all weather through access is available to Old Wagga Road with 5.5m carriageway as a non perimeter Rd
3. All road surfaces, causeways and bridges are to be of sufficient capacity to carry a fully loaded fire fighting appliance up to 23 Tonnes.

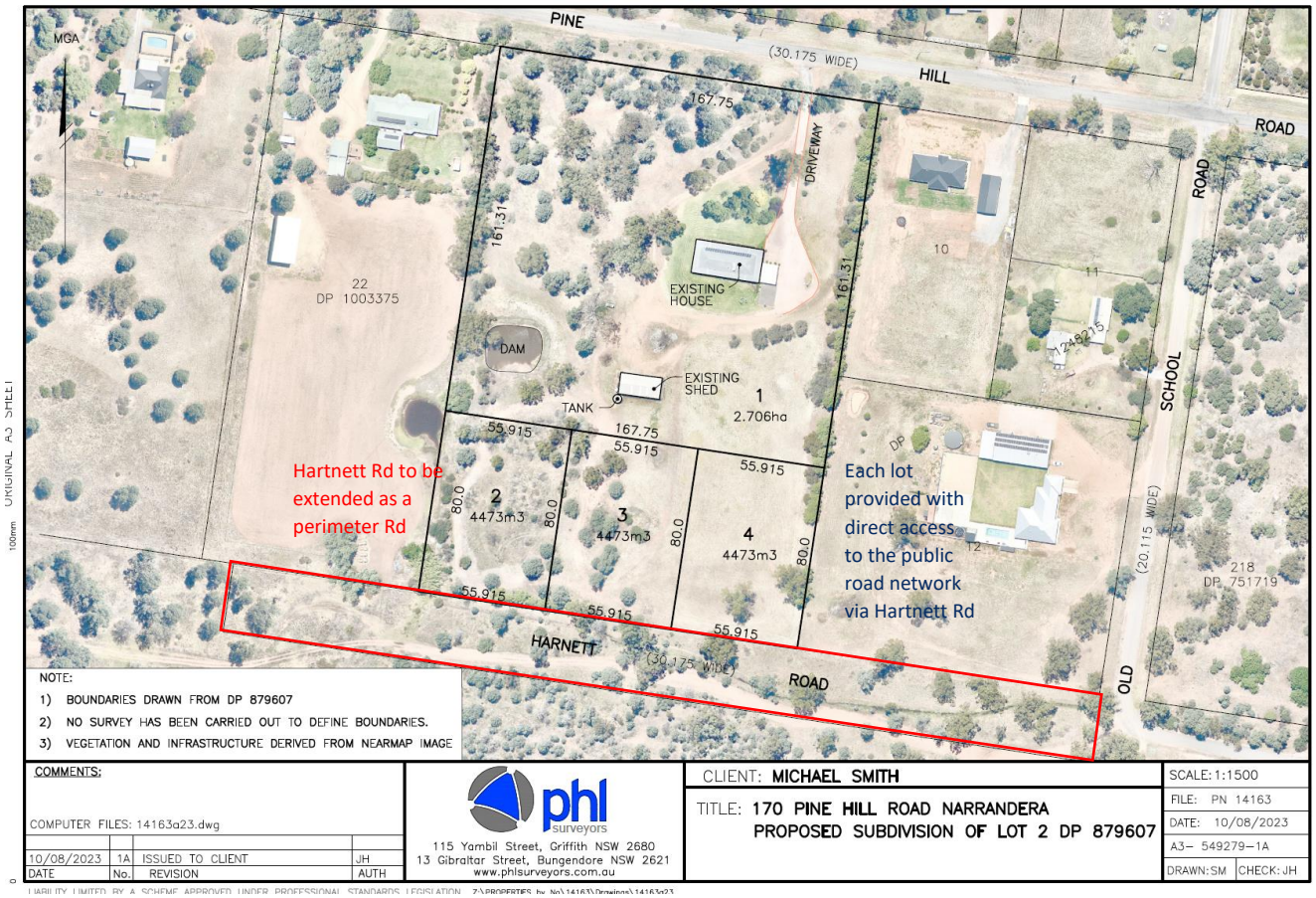

Figure 13: Layout of the new subdivision demonstrating access provision via extension of Hartnett Rd to provide access to the new lots.

Figure 14: 2wd All weather through access to be provided for Hartnett Rd to Old Wagga Rd

Figure 15: Hartnett Rd-Old School Rd Intersection

Figure 16: Current state of Hartnett Rd to be upgraded to public access road standards – 5.5m wide carriageway, 2wd all weather surface.

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:***
	Table 5.3c of PBP states that the intent may be achieved where: ● 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
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Compliance with Acceptable solutions of PBP (2019.

The existing dwelling is provided with reticulated water and is assumed to have a compliant water supply as per conditions of consent when constructed. The reticulated system is to be extended to the new lots, however detail of hydraulic design is not available at this time.

The following recommendations are made for water supply to comply:

1. Feed Hydrants are to be provided on Hartnett Rd consistent with the local water authority requirements and AS2419 for feed hydrant design.

Figure 17: Reticulated Feed Hydrant located in Old School Rd near the proposed entry point of the new development.

Electricity Supply	PERFORMANCE CRITERIA TO BE ACHIEVED:
	Table 5.3c of PBP states that the intent may be achieved where: ● Location of electricity services limits the possibility of ignition of the surrounding bushland or the fabric of buildings
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Compliance with the acceptable solutions of PBP (2019) Detail of power transmission to the new lots is not available at this time. The following recommendations are made for power supply to comply: 1. All new power transmission lines are to be underground where possible.
Gas Supply	PERFORMANCE CRITERIA TO BE ACHIEVED:
	Section 5.3.3 of PBP states that the intent may be achieved where: ● Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.
	METHOD OF MEETING THE PERFORMANCE CRITERIA:
	Compliance with the acceptable solutions of PBP (2019) There is no reticulated gas supply in the area. If a bottled gas supply is installed it will be adressed at DA for construction.

6. Conclusion

The proposal is for subdivision of a 4.047Ha lot in a RU5- Village zoned area that is mapped as category 2 vegetation on the bushfire prone land map. Adjacent lots with dwellings and associated Asset Protection Zones meet the low threat vegetation exclusions of A1 of PBP. The bushfire hazard consists of Woodland vegetation in the public recreation reserve on the southern aspect of the development site.

The existing residence is assumed to comply with the minimum requirements of PBP at the time of construction. The new lots are provided with an APZ that exceeds the requirements of table A1.12.3 of PBP (2019) for future buildings and is to be maintained in accordance with the Vegetation Management Plan.

Hartnett Road is to be extended as a public access road to provide access for the new lots. Property access is less than 80m and detail will be addressed at DA for construction when specific building location is known.

Recommendations are made to ensure public access and services will comply with acceptable solutions of PBP.

7. Recommendations

The following recommendations are made to ensure that the proposal complies with the requirements of Planning for Bushfire Protection (2019) through the use of the acceptable solutions.

7.1. With Regard to Asset Protection Zones and Landscaping

The following reccomendations are made for Asset Protection Zones to comply with the acceptable solutions of Planning for Bushfire protection:

1. The vegetative state within the development is to be maintained so as not to become a fire hazard to adjacent lots. The following guidelines are to be consistent with Outer Asset Protection Zones in A4 of Planning for Bushfire Protection:
    a. Tree canopy is not to exceed 30% and should be separated by 2-5m
    b. Shrubs should not form continuous canopy and should form no more than 20% of ground cover
    c. Grass should be kept to less than 100mm and leaves and debris regularly removed.

7.2. With Regard to Access

The following reccomendations are made to ensure access provisions comply with the acceptable solutions of Planning for Bushfire protection:

1. Hartnett Rd is to become a perimeter road with 8m wide carriageway that is a 2wd all weather surface.
2. The remainder of Hartnett Road is to be upgraded to ensure 2wd all weather through access is available to Old Wagga Road with 5.5m carriageway as a non perimeter Rd
3. All road surfaces, causeways and bridges are to be of sufficient capacity to carry a fully loaded fire fighting appliance up to 23 Tonnes.

7.2. With Regard to Water Supply and Services

The following recommendations are made for water supply and services to comply with the acceptable solutions of Planning for Bushfire protection:

1. Feed Hydrants are to be provided on Hartnett Rd consistent with the local water authority requirements and AS2419 for feed hydrant design.
2. All new power transmission lines are to be underground where possible.

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