

2024

Bushfire Assessment Report

104 Pine Hill Road, Narrandera, New South Wales, 2700

Lot 222, DP 751719

Prepared for Mark and Jacki Babbs

CAF

**BUILDING &
TOWN PLANNING
CONSULTING**

		<p>Project</p> <p>Subdivision of One (1) Lot into Six (6) Lots for Residential Purposes</p> <p>104 Pine Hill Road, Narrandera, NSW 2700</p> <p>Lot 222, DP 751719</p>													
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1 INTRODUCTION

1.1 OVERVIEW

The Bushfire Assessment Report (BAR) (EP&A Act S.4.14) has been prepared on behalf of Mark and Jacki Babbs (the clients) to form part of a Development Application (DA) seeking Council's consideration for the subdivision of one (1) lot into six (6) lots for residential purposes on the land known as 104 Pine Hill Road, Narrandera, NSW (the site).

An aerial image of the subject site and its surrounds is exhibited in [Figure 1](#) below.



Figure 1 Aerial Image of the development site and surrounds (Source: Six Maps)

The assessment aims to provide a bushfire risk assessment which considers the bushfire hazard and associated potential bushfire threat relevant to the proposed development on a landscape scale. The assessment outlines the minimum mitigative measures which would be required in accordance with the Bushfire Assessment Report (BAR), provisions of the New South Wales Rural Fire Service (RFS) publication *Planning for Bushfire Protection 2019* (PBP 2019) and the *Rural Fires Regulation 2013* (RF Reg).

1.2 AIMS AND OBJECTIVES

This BAR aims to assess the bushfire threat and recommends a series of bushfire protection measures that aim to minimise the risk of adverse impact of bush fires on life, property, and the environment, and endeavours to:

- Afford buildings and their occupants protection from exposure to a bush fire;
- Provide for a defensible space to be located around buildings;

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

The BAR has been created to demonstrate the suitability of the proposed subdivision, with the following provisions being considered, as relevant:

- access and egress within the developable land and along the adjoining public road system which is required to include safety provisions for attending emergency service vehicles and evacuating residents, including road widths and management of vegetation along road verges.;
- subdivision design including perimeter roads separating developable lots from hazardous bushland areas, as required;
- access for maintenance of APZ and other fuel management activities; and
- firefighting water supply and associated firefighting equipment (i.e., pump and hose) for each dwelling in addition to any reticulated water supplies

The subject development is for a subdivision of one (1) lot into six (6) lots on RU5 Village zoned land, which is bush fire prone land, and which could lawfully be used for residential purposes. One of the proposed lots that will be created will house an existing dwelling house, the other proposed lots will all have the ability to house a future dwelling / and or other forms of residential development under the relevant provisions of Councils Local Environmental Plan.

Under Rural Fires Act s.100B, a Bushfire Fire Safety Authority (BFSA) from the NSW Rural Fire Service is required for residential subdivision or SFPP developments. As such, an Integrated Development approval is required under of the EP&A Act s.4.46.

The development application is integrated development under the provisions of Section 4.46 of the Environmental Planning and Assessment Act 1979 for the purposes of 100B of the Rural Fires Act 1997.

The specific development types which are considered as SFPP development are listed within the Rural Fires Act. The Rural Fire Regulation also details specific development types which are either excluded from the requirement for a BFSA or are considered as additional SFPP developments for which a BFSA is required.

The application proposes a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes.

Section 100B 'Bush fire safety authorities' provides:

100B Bush fire safety authorities

- (1) *The Commissioner may issue a bush fire safety authority for—*
 - (a) *a subdivision of bush fire prone land that could lawfully be used for residential or rural residential purposes, or*
 - (b) *development of bush fire prone land for a special fire protection purpose.*

- (2) *A bush fire safety authority authorises development for a purpose referred to in subsection to the extent that it complies with standards regarding setbacks, provision of water supply and other matters considered by the Commissioner to be necessary to protect persons, property or the environment from danger that may arise from a bush fire.*
- (3) *A person must obtain such a bush fire safety authority before developing bush fire prone land for a purpose referred to in subsection (1).*
- (4) *Application for a bush fire safety authority is to be made to the Commissioner in accordance with the regulations.*
- (5) *Development to which subsection (1) applies—*
 - (a) *does not include the carrying out of internal alterations to any building, and*
 - (a1) *does not include the carrying out of any development excluded from the operation of this section by the regulations, and*
 - (b) *is not complying development for the purposes of the Environmental Planning and Assessment Act 1979, despite any environmental planning instrument.*

The specific objectives, performance criteria and acceptable solutions for subdivision developments as defined by the RF Act and RF Reg are given in Section 5 of the Planning for Bushfire Protection Document.

2 DESCRIPTION

2.1 SITE DESCRIPTION

Table 1 Site Description

ADDRESS	104 Pine Hill Road, Narrandera, NSW 2700
LOT/SECTION/PLAN No	Lot 222, DP 751719
COUNCIL	Narrandera Shire Council
LOCAL ENVIRONMENTAL PLANS	Narrandera Local Environmental Plan 2013
LAND ZONING	RU5 Village
LAND AREA	5.06 ha
BUSHFIRE PRONE LAND	Yes – Category 1, 2 and Buffer
FDI	80

2.2 BUSHFIRE PRONE LAND

Bushfire activity is prevalent in landscapes that carry fuel, and the two predominant bushfire types are grassland and forest fires. Factors such as topographic characteristics and quantity of fuel loads influence the fires rate of spread and flame height (ultimate level of radiant heat flux).

Refer to [Figure 2](#) below, identifying bushfire prone land mapping for the site.

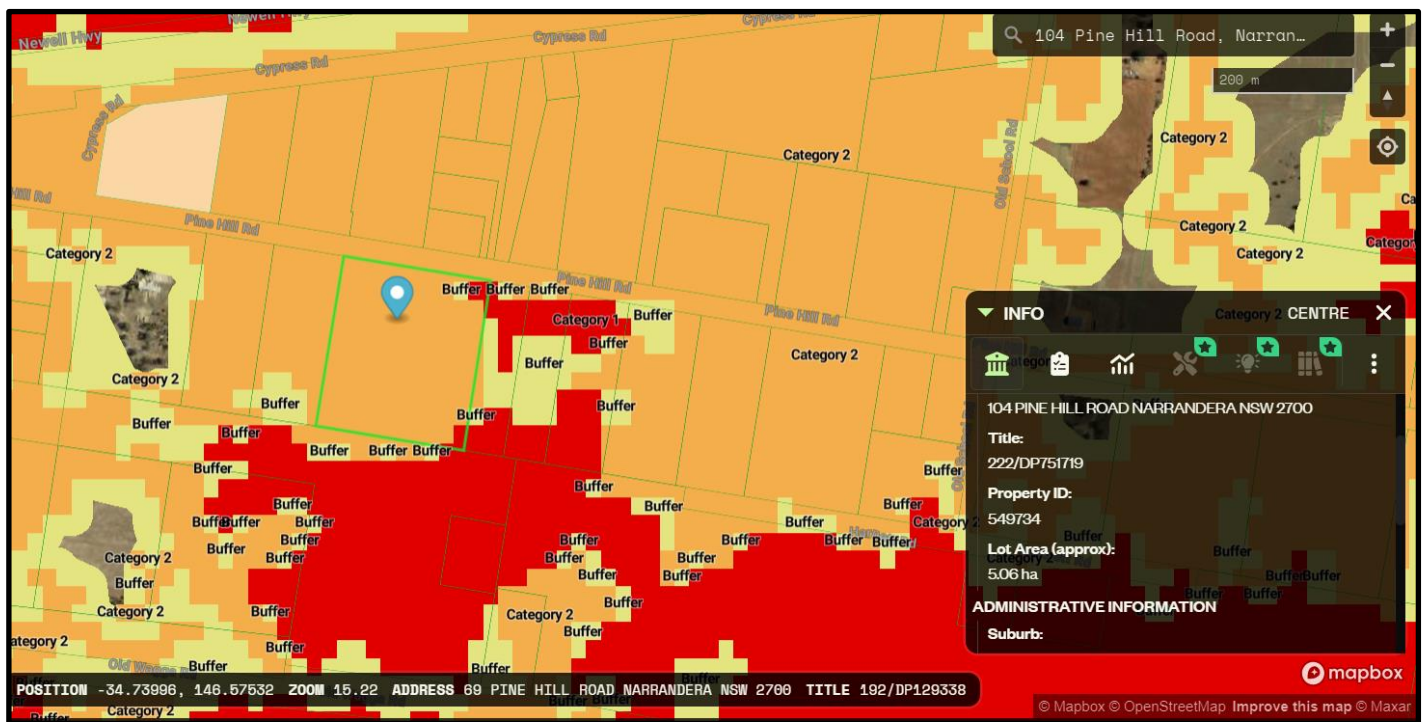


Figure 2 NSW Bush Fire Prone Land Map (Source: e Planning Spatial Viewer)

2.3 PROPOSED DEVELOPMENT

This application seeks approval for the subdivision of one (1) lot into six (6) lots for residential purposes.

Proposed Subdivision:

The subdivision proposed under this application will create 6 allotments that incorporate the following areas:

- Proposed Lot 1: 8092 m²
- Proposed Lot 2: 8092 m²
- Proposed Lot 3: 8092 m²
- Proposed Lot 4: 8092 m²
- Proposed Lot 5: 8092 m²
- Proposed Lot 6: 8092 m²

All lots are generally rectangular in shape, with proposed lots 1, 2 and 3 having direct frontage and access off Pine Hill Road. Proposed lots 4, 5 and 6 being serviced by 6-metre-wide battle axe handles off Pine Hill Road.

As identified above, all proposed lots will be accessed off Pine Hill Road, which is a council managed sealed all weather local roadway. Any upgrades required by Council to the existing accesses that services the dwelling house will be undertaken by the land owner to Councils satisfaction.

Proposed lot 2 contains an existing approved dwelling house and associated rural outbuildings.

The site/allotments are and will be serviced by on site sewerage management, reticulated water, electricity and telecommunications.

No trees or other vegetation is required to be removed as a result of this proposal.

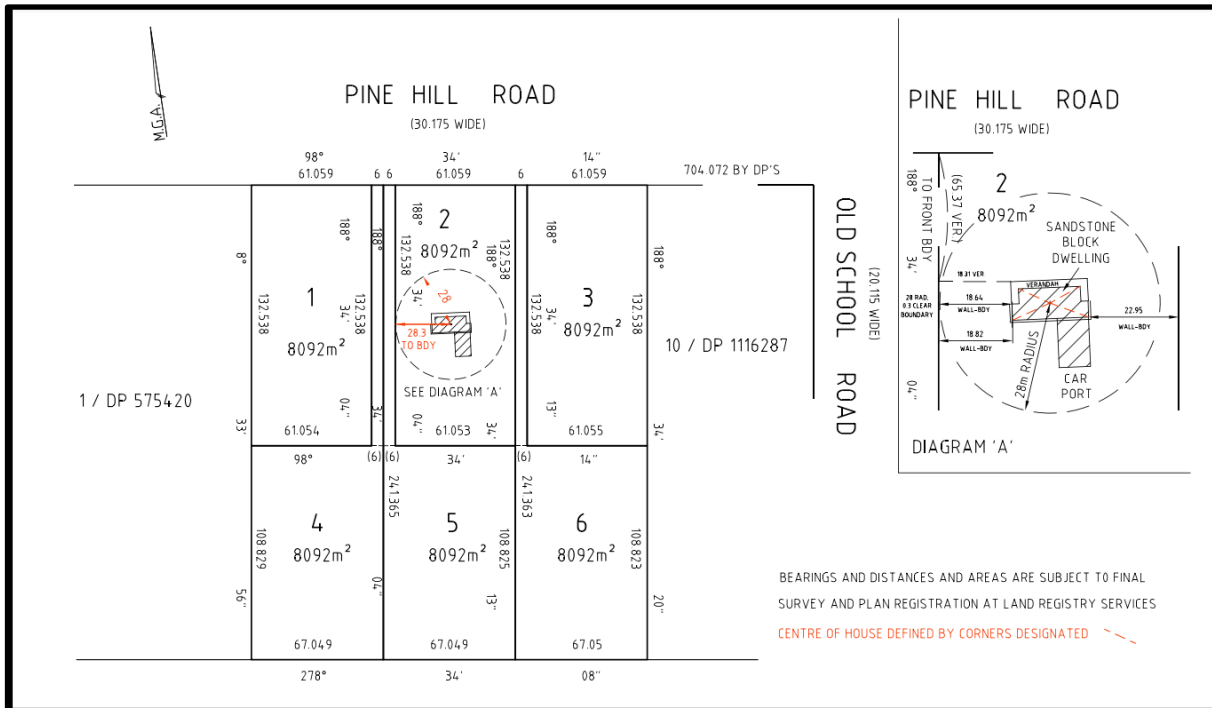


Figure 3 Proposed Plan of Subdivision (Source: Michael Slinger and Associates Consulting Surveyors)

2.4 VEGETATION ASSESSMENT

In accordance with Appendix 1 of the PBP 2019, an assessment of the vegetation over a distance of 140 metres in all directions from the site was undertaken. Vegetation (Grassy and Semi-Arid Woodland) that may be considered a bushfire hazard was found to be located on the subject allotment.

The existing dwelling and proposed allotments are affected by the grassland and scattered patches of woodland.

Grassy and Semi-Arid Woodland are the predominant vegetation type that would be considered to pose a bushfire threat, on the allotment and within 100 metres of the existing dwelling.

For the purpose of this BAR, the identified vegetation / threat is classed as Grassy and Semi-Arid Woodland as per David Keith's Ocean Shore to Desert Dunes.

This report will demonstrate compliance with Section 5 and Section 7 (for the existing dwelling house) of the PBP 2019 in relation to the subdivision proposal.



Figure 4 Image Vegetation within 100 metres and around existing Dwelling (Source: Mecone Mosaic)

2.5 SLOPE ASSESSMENT

The effective slope for the bushfire assessment is the slope under the classified vegetation as it has a direct influence on the bushfires behaviour in terms of the rate of fire spread and the ultimate level of radiant heat flux vegetation. PBP 2019 requires the effective slope to be determined under the dominant vegetation type for a distance of 100 metres.

The site slopes gently from north to south.

The slope assessment for the subject site relative to the proposed subdivision and existing dwelling is considered to be all downslope vegetation (considered >0 to 5 degrees downslope vegetation).

3 DETAILED BUSHFIRE ASSESSMENT

3.1 ASSET PROTECTION ZONE (APZ)

An APZ is a buffer zone between a bush fire hazard and buildings. The APZ is managed to minimise fuel loads and reduce potential radiant heat levels, flame, localised smoke and ember attack. The appropriate APZ distance is based on vegetation type, slope and the nature of the development.

The APZ can include roads or properties managed to be consistent with APZ standards set out in Appendix 4 and the NSW RFS document Standards for Asset Protection Zones. A fuel-reduced, physical separation between buildings and bush fire hazards is a key element in the suite of bush fire measures and has a major influence on the type of construction necessary to mitigate bush fire attack.

The site is affected by the Bushfire Prone Land Risk Categories:

- Category 1, 2 and Buffer Zone

Asset protection zones for the newly created allotments / subdivision can readily achieve the following DTS provisions of Table 5.3a:

PERFORMANCE CRITERIA	THE RELEVANT ACCEPTABLE SOLUTIONS	COMMENTS
The intent may be achieved where:		
Asset Protection Zones		
potential building footprints must not be exposed to radiant heat levels exceeding 29 kW/m ² on each proposed lot.	APZs are provided in accordance with Tables A1.12.2 and A1.12.3 based on the FFDI.	<p>The development is for a subdivision of land and one existing dwelling will be located on one of the allotments that is created.</p> <p>The existing dwelling house and proposed future dwellings on proposed allotment can comply with the APZs listed in Table A1.12.3. The table requires a minimum APZ of 13 metres between the threat and existing asset – this can easily be achieved.</p> <p>Both the performance criteria and relevant acceptable solutions can be met for the dwelling house and for any future residential development on the allotments created under this application.</p>
APZs are managed and maintained to prevent the spread of a fire towards the building.	APZs are managed in accordance with the requirements of Appendix 4.	<p>The development is for a subdivision of land and one existing dwelling will be located on one of the allotments that is created.</p> <p>The proposed lot that will accommodate the existing dwelling house will provide for an APZ of 28 metres – this will be treated and managed as an inner asset protection zone and will require that the existing dwelling is upgraded to BAL 12.5 construction requirements. The APZ will be managed in accordance with Appendix 4.</p> <p>Any future residential development on the additional lots proposed under this application will ensure that APZs are managed in accordance with Appendix 4.</p> <p>Both the performance criteria and relevant acceptable solutions are</p>

		and will be met for the existing dwelling house.
APZs are provided in perpetuity.	APZs are wholly within the boundaries of the development site.	The APZ around the existing dwelling house will be provided in perpetuity and is contained within the boundaries of the allotment. Any APZs for the additional allotments created under this development will be managed in perpetuity and contained within the allotment boundaries. Both the performance criteria and relevant acceptable solutions can be met.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	APZs are located on lands with a slope less than 18 degrees.	The site does not incorporate a slope of more than 18 degrees. The performance criteria and relevant acceptable solution can be met.
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.	<ul style="list-style-type: none"> landscaping is in accordance with Appendix 4; and fencing is constructed in accordance with section 7.6. 	Landscaping is and will be managed in accordance with Appendix 4. No fencing is proposed at this stage and if fencing is proposed it would be rural fencing and non-combustible – i.e., steel posts and wire. Both the performance criteria and relevant acceptable solutions can be met.

The existing dwelling will be required to provide an asset protection zone of between 28 and 100 metres, in accordance with Table A1.12.6 to achieve a BAL Construction Rating of 12.5. This APZ can be achieved and will be maintained in perpetuity in accordance with Appendix 4 of the PBP 2019.

Future residential development on allotments proposed under this application will be assessed at individual development application stage to identify required APZ's and BAL construction ratings for such future development.

Table A1.12.3Minimum distances for APZs – residential development, FFDI 80 areas ($\leq 29\text{kW/m}^2$, 1090K)

KEITH VEGETATION FORMATION	EFFECTIVE SLOPE				
	Up slopes and flat	>0°-5°	>5°-10°	>10°-15°	>15°-20°
	Distance (m) from the asset to the predominant vegetation formation				
Rainforest	9	12	15	20	25
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	20	25	31	39	48
Grassy and Semi-Arid Woodland (including Mallee)	11	13	17	21	27
Forested Wetland (excluding Coastal Swamp Forest)	8	10	13	17	22
Tall Heath	16	18	20	22	25
Short Heath	9	10	12	13	15
Arid-Shrublands (acacia and chenopod)	6	7	8	9	10
Freshwater Wetlands	5	6	6	7	8
Grassland	10	11	12	14	16

Figure 5 Minimum distances for APZs – residential development, FFDI 80 areas ($< 29\text{kW/m}^2$, 1090K) (Source: Table A1.12.3 of PBP 2019)**Table A1.12.6**

Determination of BAL, FFDI 80 – residential development

KEITH VEGETATION FORMATION	BUSH FIRE ATTACK LEVEL (BAL)					
	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5	
	Distance (m) asset to predominant vegetation class					
ALL UPSLOPE AND FLAT LAND	Rainforest	< 7	7 -< 9	9 -< 14	14 -< 20	20 -< 100
	Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	< 15	15 -< 20	20 -< 29	29 -< 40	40 -< 100
	Grassy and Semi-Arid Woodland (including Mallee)	< 8	8 -< 11	11 -< 16	16 -< 22	22 -< 100
	Forested Wetland (excluding Coastal Swamp Forest)	< 6	6 -< 8	8 -< 12	12 -< 18	18 -< 100
	Tall Heath	< 12	12 -< 16	16 -< 23	23 -< 32	32 -< 100
	Short Heath	< 7	7 -< 9	9 -< 14	14 -< 20	20 -< 100
	Arid-Shrublands (acacia and chenopod)	< 5	5 -< 6	6 -< 9	9 -< 14	14 -< 100
	Freshwater Wetlands	< 4	4 -< 5	5 -< 7	7 -< 11	11 -< 100
	Grassland	< 7	7 -< 10	10 -< 14	14 -< 20	20 -< 50
	> 0 > 5 DEGREES - DOWNSLOPE	Rainforest	< 9	9 -< 12	12 -< 17	17 -< 25
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland		< 19	19 -< 25	25 -< 35	35 -< 47	47 -< 100
Grassy and Semi-Arid Woodland (including Mallee)		< 10	10 -< 13	13 -< 19	19 -< 28	28 -< 100
Forested Wetland (excluding Coastal Swamp Forest)		< 8	8 -< 10	10 -< 15	15 -< 22	22 -< 100
Tall Heath		< 13	13 -< 18	18 -< 26	26 -< 36	36 -< 100
Short Heath		< 8	8 -< 10	10 -< 15	15 -< 22	22 -< 100
Arid-Shrublands (acacia and chenopod)		< 5	5 -< 7	7 -< 11	11 -< 16	16 -< 100
Freshwater Wetlands		< 4	4 -< 6	6 -< 8	8 -< 12	12 -< 100
Grassland		< 8	8 -< 11	11 -< 16	16 -< 23	23 -< 50

Figure 6 Required APZ for Existing Dwelling (Source: Table A1.12.6 of PBP 2019)

3.2 ACCESS

The proposed subdivision will be afforded access via Pine Hill Road, which is a Council managed, sealed all weather, local roadway.

As previously identified:

- All lots are generally rectangular in shape, with proposed lots 1, 2 and 3 having direct frontage and access off Pine Hill Road. Proposed lots 4, 5 and 6 being serviced by 6-metre-wide battle axe handles off Pine Hill Road.

- All proposed lots will be accessed off Pine Hill Road, which is a council managed sealed all weather local roadway. Any upgrades required by Council to the existing accesses that services the dwelling house will be undertaken by the land owner to Councils satisfaction.

In relation to the proposed subdivision, access is provided for the newly created allotments and can readily achieve the following DTS provisions of Table 5.3b, as applicable:

- property access roads are two-wheel drive, all-weather roads (Council roads);
- 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;
- 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;
- there is suitable access for a Category 1 fire appliance to within 4m of a static water supply where no reticulated supply is available (the dwelling is also serviced by a reticulated water supply);
- the road cross fall does not exceed 3 degrees; and
- a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided;
- at least one alternative property access road is provided for the existing dwelling.

The proposed subdivision complies with the applicable acceptable solutions identified in Table 5.3b as identified below.

PERFORMANCE CRITERIA	THE RELEVANT ACCEPTABLE SOLUTIONS	COMMENTS
The intent may be achieved where:		
ACCESS (GENERAL REQUIREMENTS)		
firefighting vehicles are provided with safe, all-weather access to structures.	<ul style="list-style-type: none"> • property access roads are two-wheel drive, all-weather roads; • perimeter roads are provided for residential subdivisions of three or more allotments; • subdivisions of three or more allotments have more than one access in and out of the development; • traffic management devices are constructed to not prohibit access by emergency services vehicles; • 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; • all roads are through roads; 	<p>Pine Hill Road will provide for legal access into the proposed allotments.</p> <p>No permitter road is required as the subdivision provides for access off Pine Hill Road into all allotments.</p> <p>Pine Hill Road is a sealed two-wheel access, all weather local Council managed road.</p> <p>There are no traffic management devices proposed or required.</p> <p>The maximum grade of Pine Hill Road does not exceed 15 degrees.</p> <p>Pine Hill Road is a through road and no additional roads are proposed.</p> <p>The proposed subdivision meets the performance criteria and relevant acceptable solutions.</p>

	<ul style="list-style-type: none"> • dead end roads are not recommended, but if unavoidable, are not more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end; where kerb and guttering is provided on perimeter roads, roll top kerbing should be used to the hazard side of the road; • 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; and • 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. 	
<p>the capacity of access roads is adequate for firefighting vehicles.</p>	<p>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.</p>	<p>Pine Hill Road will provide for legal access into the proposed allotments.</p> <p>Pine Hill Road has the capacity to cater for firefighting vehicles.</p> <p>The performance criteria and relevant acceptable solutions are met.</p>
<p>there is appropriate access to water supply.</p>	<p>water supplies are located at regular intervals; and the water supply is accessible and reliable for firefighting operations</p>	<p>The site of the existing dwelling house and proposed lots are and will be serviced by a reticulated water supply.</p> <p>There is/will be suitable access for a Category 1 fire appliance to within 4m of the static water supply, which is/will be a 20,000-litre rainwater tank. It is recommended that all lots be required to provide a 20,000 litre rainwater tank with 65 mm Stortz fitting and dedicated to bushfire fighting purposes.</p>

		Both the performance criteria and relevant acceptable solutions can be met if future residential development is proposed.
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.	<ul style="list-style-type: none"> are two-way sealed roads; minimum 8m carriageway width kerb to kerb; parking is provided outside of the carriageway width; hydrants are located clear of parking areas; are through roads, and these are linked to the internal road system at an interval of no greater than 500 m; curves of roads have a minimum inner radius of 6m; the maximum grade road is 15 degrees and average grade of not more than 10 degrees; the road crossfall does not exceed 3 degrees; and a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 	<ul style="list-style-type: none"> Pine Hill Road is a two-way sealed road with a carriageway in excess of 8 metres. Parking is provided outside of the carriageway width; Pine Hill Road is a through road, there is no internal roads proposed or required; The trees on the Pine Hill Road, Road Reserve will be removed to facilitate access to proposed lots and thus no issues will be created in regards to vertical clearance for emergency services accessing future allotments. <p>Both the performance criteria and relevant acceptable solutions are met.</p>
NON-PERIMETER ROADS		
access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating.	<ul style="list-style-type: none"> minimum 5.5m carriageway width kerb to kerb; parking is provided outside of the carriageway width; hydrants are located clear of parking areas; roads are through roads, and these are linked to the internal road system at an interval of no greater than 500m; curves of roads have a minimum inner radius of 6m; the road crossfall does not exceed 3 degrees; and a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided. 	There are no, non perimeter roads.
PROPERTY ACCESS		
firefighting vehicles can access the dwelling and exit the property safely	There are no specific access requirements in an urban area where an unobstructed path (no greater than 70m) is provided between the most	The development is for a subdivision and no new roads are proposed or required – the development is serviced by Pine Hill

	<p>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.</p> <p>In circumstances where this cannot occur, the following requirements apply:</p> <ul style="list-style-type: none"> • minimum 4m carriageway width; 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; • a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches; provide a suitable turning area in accordance with Appendix 3; • 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; • 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; and • a development comprising more than three dwellings has access by dedication of a road and not by right of way. <p>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.</p>	<p>Road, an existing sealed Council maintained local road.</p> <p>The existing dwelling house can easily be accessed by firefighting appliance, which can also exit the dwelling house and other lots proposed under this application in a safe manner.</p> <p>Both the performance criteria and relevant acceptable solutions can be met.</p>
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In relation to the existing dwelling house, Table 7.4a of the NSW RFS Planning for Bushfire Protection Guideline outlines acceptable solutions relating to access. Access to the existing dwelling house complies with all applicable acceptable solutions identified in Table 7.4a.

3.3 SERVICES – WATER, ELECTRICITY AND GAS

3.3.1 WATER

The subdivision complies with the following DTS provisions of Table 5.3c, and where it currently does not will be able to comply with the relevant provisions:

Water:

- The lot that will house the existing dwelling house is serviced by a mains supply provided by Council). **However, it is recommended that a 20,000-litre rainwater tank with 65 mm Stortz fitting will be provided and dedicated to firefighting purposes.**
- All lots created under this application will be serviced by a mains supply provided by Council). However, it is recommended that a 20,000-litre rainwater tank with 65 mm Stortz fitting be required to be provided and dedicated to firefighting purposes for any future residential development.
- all above-ground water service pipes are required to be metal, including and up to any taps; and
- above-ground water storage tanks shall be of concrete or metal

In accordance with Table 5.3d, a 20,000-litre rainwater tank that is dedicated to Fire Fighting purposes this shall be located within proximity to the existing dwelling house and shall be fitted with a 65mm Stortz fitting. It is also recommended that any future dwelling houses on the allotments created under this development, be subject to this requirement.

The development can comply with the acceptable solutions identified in table 7.4 a relating to water for the existing dwelling house, which requires as applicable:

- a connection for firefighting purposes is located within the IPA or non-hazard side and away from the structure;
- 65mm Storz outlet with a ball valve is fitted to the outlet; ball valve and pipes are adequate for water flow and are metal;
- supply pipes from tank to ball valve have the same bore size to ensure flow volume; underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank; a hardened ground surface for truck access is supplied within 4m;
- above-ground tanks are manufactured from concrete or metal;
- raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F of AS 3959);
- unobstructed access can be provided at all times;
- underground tanks are clearly marked; tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters;
- all exposed water pipes external to the building are metal, including any fittings;
- where pumps are provided, they are a minimum 5hp or 3kW petrol or diesel-powered pump, and are shielded against bush fire attack;
- any hose and reel for firefighting connected to the pump shall be 19mm internal diameter; and fire hose reels are constructed in accordance with AS/NZS 1221:1997 and installed in

accordance with the relevant clauses of AS 2441:2005.

3.3.2 ELECTRICITY

Electricity services are existing and available to the site (existing dwelling house) and are located overhead.

The future lots will be serviced by underground electricity supply.

Electricity:

- overhead, electrical transmission lines are existing and:
 - lines are installed with short pole spacing of 30m, unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in ISSC3 Guideline for Managing Vegetation Near Power Lines.

The development complies with the acceptable solutions identified in tables 5.3c and 7.4 a, relating to electricity.

3.3.3 GAS SERVICES

Reticulated gas is not connected to the site. Should bottled gas be utilised, it would be installed and maintained in accordance with AS/NZS 1596:2014 and the requirements of relevant authorities and metal piping would be used.

Any fixed gas cylinders would be kept clear of all flammable material to a distance of 10 metres and shielded on the hazard side. All connections to and from the gas cylinders would be metal.

The development complies with the acceptable solutions identified in tables 5.3c and 7.4 a relating to gas services.

3.4 CONSTRUCTION STANDARDS: BUSHFIRE ATTACK LEVEL

The BAL for the existing dwelling house has been determined in accordance with Appendix 1 and Table A1.12.6 with the assessed vegetation, slope, and distance to the vegetation ensues in a BAL-Low rating.

BAL	12.5
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The existing dwelling must comply with the construction requirements identified in Australian Standard 3959 for BAL 12.5.

A summary of BAL 12.5 – AS3959 Construction requirements are listed in the table below:

BAL 12.5 – AS3959 Construction Requirements	
Building Component	Construction Requirement
SUBFLOOR SUPPORTS	No special construction requirements
FLOORS	No special construction requirements
EXTERNAL WALLS	External walls – Parts less than 400m above ground or decks etc to be of non-combustible material, 6mm fibre cement clad or bushfire resistant/naturally fire-resistant timber

EXTERNAL WINDOWS	Protected by bushfire shutter, completely screened with steel, bronze or aluminium mesh or 5mm toughened glass or glass blocks within 400mm of ground, deck etc. Openable portion metal screened with frame of metal or metal reinforced PVC-U or bushfire resisting timber
EXTERNAL DOORS	Protected by bushfire shutter, or screened with steel bronze or aluminium mesh or glazed with 5mm toughened glass, non-combustible or 35mm solid timber for 400mm above threshold, metal or bushfire resisting timber framed for 400mm above ground, decking, etc tight fitting with weather strips at base
ROOFS	Non-combustible covering. Roof/wall junction sealed. Openings fitted with non-combustible ember guards. Roof to be fully sarked
VERANDAHS DECKS ETC	Enclosed sub-floor space – no special required for materials except within 400mm of ground. No special requirements for supports or framing. Decking to be non-combustible or bushfire resistant within 300mm horizontally and 400mm vertically from a glazed element

3.5 LANDSCAPING

Landscaping is existing and is considered to be established and shall be maintained in accordance with Appendix 4 of the PBP in relation to the existing dwelling.

Landscaping for the existing dwelling and within the required APZ, is managed and is to be managed as follows:

Trees -

- Trees tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above the ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs -

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees; shrubs should not form more than 10% ground cover; and

- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass -

- Grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

4 CONCLUSION

This Bushfire Assessment Report has been prepared to support a development application for the subdivision of one (1) lot into six (6) lots for residential purposes on the land known as 104 Pine Hill Road, Narrandera.

The vegetation formation, effective slope, FFDI and APZ have been determined in accordance with the Site Assessment Methodology outlined in Appendix 1 of the PBP.

It has been demonstrated that the subdivision proposal can comply with all relevant DTS Provisions of Tables 5.3a - d and 7.4a of the PBP 2019.

Subject to recommendations, the assessment concludes that the proposed residential development can generally achieve the required specifications of the NSW Planning for Bushfire Protection (2019) through the use of acceptable solutions which ensures that each bush fire protection measure (BPMs) are met.