
BUSH FIRE ASSESSMENT REPORT

PROPOSED REZONING

Lot 261 DP 1262316 & Lot 11 DP 807867

Rankin Drive, Bangalow

Prepared for: Max Campbell

Date: 27 June 2023

Ref: 23/070

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EXECUTIVE SUMMARY

Bushfire Certifiers have been engaged to prepare a bushfire assessment report for the proposed rezoning of existing vacant land at Lot 261 DP 1262316 and Lot 11 DP 807867 Rankin Drive, Bangalow located adjacent to the village of Bangalow in accordance with Planning for Bushfire Protection 2019 (PBP 2019). The study will be used to establish that the site is suitable for residential rezoning, and has been prepared for referral and consultation with the NSW Rural Fire Service as a means of demonstrating compliance with the *Environment Planning and Assessment Act 1979* Section 9.1, Ministerial Direction 4.4, and Planning for Bush Fire Protection 2019.

The Study has determined the proposed rezoning is appropriate in the bush fire hazard context. Bush fire mitigation and management measures for the future development can be adequately addressed, with the proposal having the ability to comply with PBP 2019. The indicative allotment layout with proposed minimum lot sizes is considered appropriate from a bushfire perspective to accommodate the required Asset Protection Zones (APZs) within the future subdivision. The proposal includes the potential for approximately 18 residential allotments and 14 future small strata lots.

A number of bushfire planning controls have been recommended to reduce the risk from bushfire attack to an appropriate level having regard to the proposed development and the nature of the locality. The bushfire assessment assumes the Fire Danger Rating (FDI) of 80 for the subject property in accordance with PBP 2019 and AS 3959-2018 for future non-special fire protection development with exception to some variations in Table 6.8b PBP2019 e.g. B&Bs. The proposed rezoning is capable of meeting the bushfire prevention measures of PBP 2019 and Ministerial Direction 4.4, with recommendations including-

- Setbacks from bushfire hazard vegetation (Asset Protection Zones).
- Fuel management within APZs.
- Access and egress from the proposed allotments via an appropriate well designed road system to support evacuation and fire fighting demands.
- Underground electricity and gas services.
- Compliant water supplies.

Further bushfire assessment will be required at the time of development application for subdivision to accurately determine required APZs, road upgrade requirements, and landscaping provisions to achieve compliance with standards for subdivisions in NSW given there may be opportunities to provide performance solutions to arrive at varied acceptable outcomes. The site is in a locality serviced by existing reticulated town water. A summary of the strategic bushfire study is provided in the table below.

Summary Strategic Bush Fire Study (Table 4.2.1 PBP 2019).

ISSUE	DETAIL	ASSESSMENT CONSIDERATIONS	COMMENT
Bush fire landscape assessment	Considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.	The bush fire hazard in the surrounding area, including vegetation, topography and weather.	Rezoning suitable.
		The potential fire behaviour that might be generated based on the above.	Rezoning suitable.
		History of bush fire in the area.	Rezoning suitable.
		Potential fire runs into the site and the intensity of such fire runs.	Rezoning suitable.
		The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.	Rezoning suitable.
Land use assessment	The land use assessment will identify the most appropriate locations within the masterplan area or site layout for the proposed land uses.	The risk profile of different areas of the development layout based on the above landscape study.	Rezoning suitable.
		The proposed land use zones and permitted uses.	Rezoning suitable.
		The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development located in lower risk areas of the site).	Rezoning suitable.
		The impact of the siting of these uses on APZ provision.	Rezoning suitable.
Access and egress	A study of the existing and proposed road networks both within and external to the masterplan area or site layout.	The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile.	Traffic engineer or statement of environmental effects to demonstrate compliance.
		The location of key access routes and direction of travel.	As above.
		The potential for development to be isolated in the event of a bush fire.	Rezoning suitable.
Emergency services	An assessment of the future impact of new development on emergency services.	Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades.	NSW Rural Fire Service and NSW Fire and Rescue to comment with Integrated development referral.
		Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.	Rezoning suitable based on water supply to complying with PBP2019. See below "Infrastructure"
Infra-structure	An assessment of the issues associated with infrastructure and utilities.	The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants.	Capability statement from accredited practitioner (fire safety) for structural fire (AS 2419.1 and NSW FR policies) and bushfire

			(PBP2019)
		Lifesafety issues associated with fire and proximity to high voltage power lines, natural gas lines etc.	Rezoning suitable
Adjoining land	The impact of new development on adjoining landowners and their ability to undertake bush fire management.	Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.	Proposal will result in a reduction of the current bushfire hazard to adjoining properties.

1.0 INTRODUCTION

1.1 Purpose

This Strategic Bush Fire Report has been prepared to address bushfire risk and mitigation measures in relation to the proposed rezoning of two allotments, for residential purposes, adjoining the village of Bangalow located on the NSW North Coast. The report makes comment on areas relating to Planning for Bushfire Protection 2019 and further comment where there may be a need for other suitably qualified professionals or organisations to assess and comment. The proposal has been assessed against the requirements of Planning for Bushfire Protection Guidelines (NSW RFS 2019).

The purpose of the strategic bush fire study is to avoid high risk areas, ensure that zoning is appropriate to allow for adequate emergency access, egress, and water supplies, and to ensure that future compliance with this PBP is achievable. The Study provides an assessment as to whether new development is appropriate in the bush fire hazard context, and the implications of future development for bush fire mitigation and management.

1.2 Location

The site incorporates Lot 261 DP 1262316 and Lot 11 DP 807867 Rankin Drive, Bangalow. Rankin Drive is located to the south of the site together with undeveloped land. Hinterland Way borders the northern boundary as detailed in Figure 1. The western boundary adjoins residential development, with a currently non-operational rail corridor adjoining the eastern boundary.

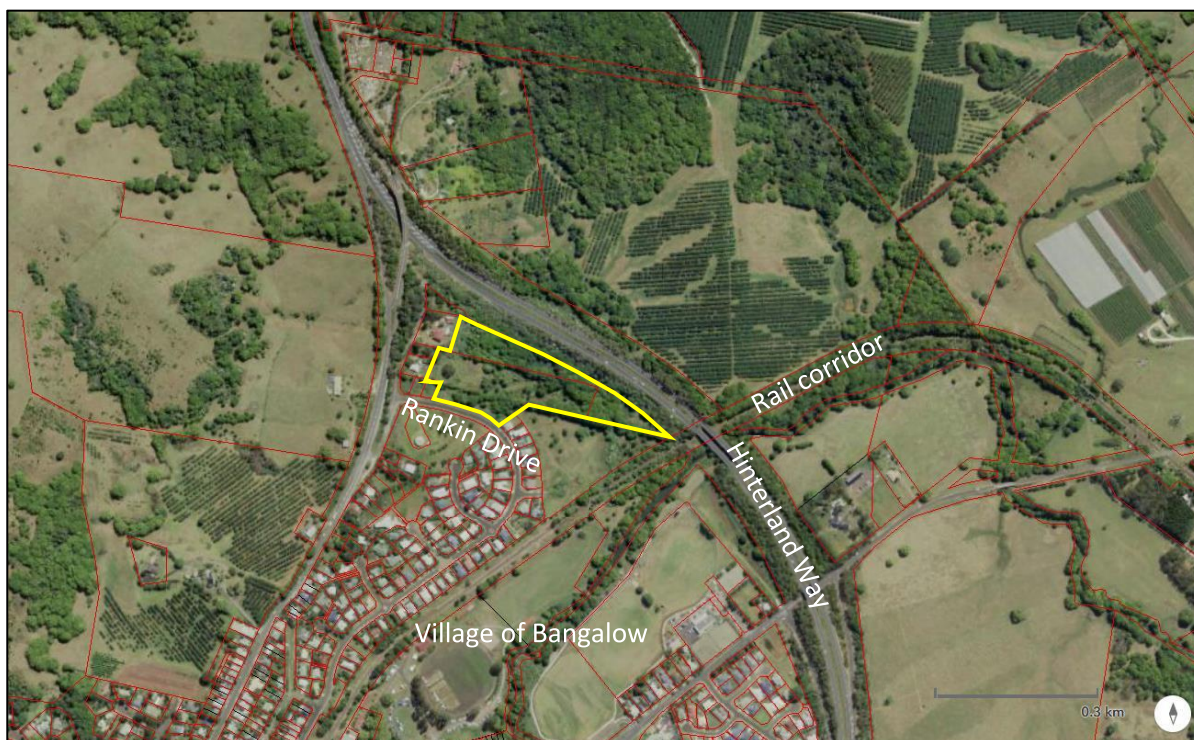


Figure 1 - Location of the subject site.

1.3 Legislation

1.3.1 Environmental Planning and Assessment Act

Appropriate consideration of bush fire hazards for the proposed rezoning is required by the *Environmental Planning and Assessment Act 1979* Section 9.1(2), and Direction 4.4 Planning for Bushfire Protection. Clause 4.4.1 of PBP 2019 requires consideration of Direction 4.4 in the Strategic Bush Fire Study at the initial planning stage in accordance with Clause 4.2 of PBP. Consultation with the RFS will require consideration of a bush fire assessment to demonstrate compliance with the Direction and PBP.

The broad principles which apply to the strategic analysis include-

- Ensuring land is suitable for development in the context of bush fire risk;
- Ensuring new development on bushfire prone land will comply with PBP;
- Minimising reliance on performance-based solutions;
- Providing adequate infrastructure associated with emergency evacuation and firefighting operations; and facilitating appropriate ongoing land management practices.

The applicant has advised the wish to provide this study with the development application for complete assessment via an integrated referral.

1.3.2 Rural Fires Act

Future residential subdivision will be assessed under Section 100B of the *Rural Fires Act 1997*, and a Bush Fire Safety Authority (BFSA) must be obtained from the NSW Rural Fire Service (RFS). In this regard a Bushfire Assessment Report will be required when an application for subdivision is proposed, indicating compliance with Planning for Bushfire Protection 2019.

This report has assessed the indicative subdivision layout in order to demonstrate a configuration of the rezoned land has the capability of complying with PBP 2019.

This report does not consider the following legislation. In this regard this report should be read in conjunction with the Statement of Environmental Effects submitted with the development application to ensure full compliance has been adequately demonstrated.

- SEPP (Biodiversity and Conservation) 2021
- SEPP (Resilience and Hazards) 2021
- Biodiversity Conservation Act 2016 (NSW)
- Local Land Services Act 2013 (NSW)
- Land Management (Native Vegetation) Code 2017 (NSW)
- National Parks and Wildlife Act 1974 (NSW)
- Environmental Protection and Biodiversity Conservation Act 1999 (Cwlth)

1.3.3 Planning for Bushfire Protection Guidelines 2019

The relevant bush fire protection measures outlined in chapters 5-8 of PBP 2019 have been considered to ensure future development can comply with PBP where appropriate. An indicative development layout has been provided to assess the suitability of the land for the proposed residential development and to demonstrate required APZs can be met on site. The indicative allotment layout with proposed minimum lot sizes is considered appropriate to accommodate the APZs within the future residential subdivision.

Special Fire Protection Purpose (SFPP) developments include developments where occupants may be more vulnerable to bushfire attack. These developments require considerably larger APZs than residential developments and include the types of uses listed below.

SFPP developments will need to be assessed against the requirements of Planning for Bushfire Protection 2019 and assessed with specific development applications.

- A school (RF Act 100B);
- A child care centre (RF Act 100B);
- A hospital (including a hospital for the mentally ill or mentally disordered) (RF Act 100B);
- A hotel, motel or other tourist accommodation (RF Act 100B);
- A building wholly or principally used as a home or other establishment for mentally incapacitated persons (RF Act 100B);
- Seniors housing within the meaning of State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (RF Act 100B);
- A group home within the meaning of State Environmental Planning Policy No 9 - Group Homes (RF Act 100B);
- A retirement village (RF Act 100B);
- Any other purpose prescribed by the regulations (RF Act 100B);
- Public assembly buildings greater than 500m², including place of public worship (PBP2019 cl.8.3.11);
- Manufactures Home Estates (RF Regs 2013 cl.46 and PBP 2019 cl. 6.3.2);
- A sheltered workshop, or other workplace, established solely for the purpose of employing persons with disabilities (RF Regs 2013 cl.46);
- A respite care centre, or similar centre, that accommodates persons with a physical or mental disability or provides respite for carers of such persons (RF Regs 2013 cl.46);
- Student or staff accommodation associated with a school, university or other educational establishment (RF Regs 2013 cl.46 and PBP 2019 cl. 6.3.2);
- A community bush fire refuge approved by the Commissioner (RF Regs 2013 cl.46).

For these developments the specific objectives of SFPP developments within PBP should be followed in addition to the requirements for residential developments. The specific objectives for SFPP developments as detailed in PBP 2019 are to:

- minimise levels of radiant heat, localised smoke and ember attack through increased APZ, building design and siting;
- provide an appropriate operational environment for emergency service personnel during firefighting and emergency management;
- ensure the capacity of existing infrastructure (such as roads and utilities) can accommodate the increase in demand during emergencies as a result of the development;
- and ensure emergency evacuation procedures and management which provides for the special characteristics and needs of occupants.

Commercial uses are classified in PBP 2019 as "Other Development". These developments need to satisfy the aims and objectives of PBP. Generally, the bushfire protection measures listed in PBP for residential development can be used as a guide and are discussed in the following sections. The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.

The objectives of PBP are to-

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

2.0 PROJECT DESCRIPTION

2.1 Existing site

The site adjoins the Bangalow Township as shown in Figure 1. The total land area subject to the rezoning is approximately 4 ha. The subject site supports some mature trees and has been largely cleared. Replanting is proposed along an unnamed creek as shown in the draft re-vegetation plan prepared by Consultant Ecologist Peter Parker.



The existing property being subject to the re-zoning application is predominantly cleared.

Public access to Rankin Drive is proposed via a new sealed internal road which will form a (possibly temporary) dead-end within the development site. The proposal incorporates an adequate turning area at the end of the new sealed road for a medium rigid vehicle to turn and exit in a forward direction. The development will be serviced by street hydrants and a recommendation made requiring compliance with Planning for Bushfire Protection 2019. The development site is described in Table 1.

Table 1 - Existing site description

Parameter	Description
Local Government area	Byron Shire Council.
Property Description	Rankin Drive, Bangalow NSW, 2479. Lot 11 DP 807867 & Lot 261 DP 1262316
Site area	Approximately 4 ha.
Water supply	Reticulated Rous Water supply.
Designated Bushfire Prone Land	Not designated mapped hazard within the site (see Figure 4). Hazard to the residential rezoned land is existing rainforest/remnant vegetation bounding the site perimeter and proposed revegetation along the unnamed creek. Unmapped grassland hazard to the south of the site.
Fire Station	Bangalow Fire Station – retained fire fighters. Fire and Rescue NSW, 56 Byron Street Bangalow. The fire station is located within 2km by road from the subject site.

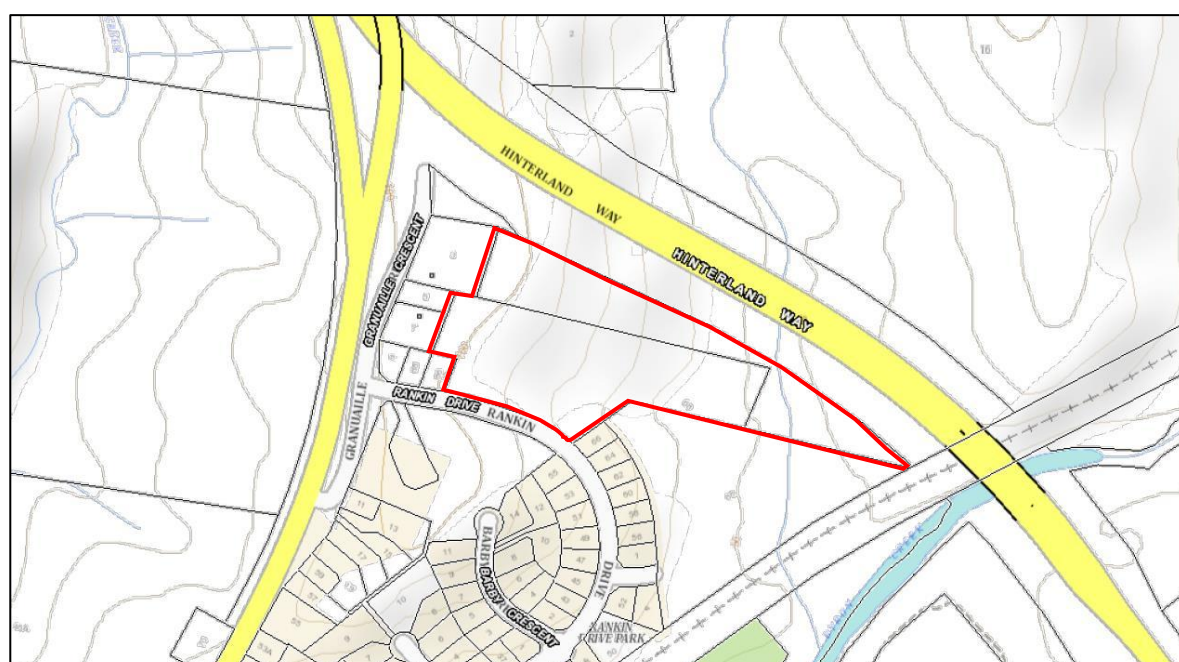


Figure 2 – Subject site topographic map

Source: NSW Gov Six Maps

2.2 Proposed rezoning

The Planning Proposal seeks to amend the Byron L.E.P. 2014 as it applies to this site, by rezoning the Rural Landscape RU2 Zone and the RU1 Primary Production Zones, to R2 Low Density Residential and R3 Medium Density Residential.

The existing R2 Low Density Residential Zone on Lot 261, D.P. 1262316 of 0.99 ha shall remain R2 Low Density Residential.

The lot size Map Sheet LSZ 003 CB of the Byron L.E.P. 2014 will be amended to provide a Minimum Lot size of 800m² (S) for the steeper area of the site, as this lot size already applies to part of the R2 Low Density Residential land on the site.

The R3 Medium Density Zone will have a minimum lot size of 1,000m² allowing for strata title of smaller dwellings that are proposed. An area of proposed Lot 4 will be included as an extension of the 600m² lot size adjacent to the entrance road to the subdivision.

(Ray Darney Draft Planning Proposal Report – April 2023)

This report is to be read in conjunction with the Planning Proposal Report prepared by Ray Darney.

Strategically a future road should connect via the adjacent vacant residential zoned land south of this site through to Corlis Crescent. This will allow a gentle and direct route back to Bangalow Town Centre.

The development application for future subdivision of the land will involve detailed land survey, further detailed bushfire assessment as the subdivision is 'integrated development', an ecological (fauna and flora) assessment, environmental assessments (acid soils, land contamination), design of allotment layout and engineered infrastructure services (roads, water supply, sewerage network, stormwater drainage, electricity, and telecommunications).

In the above regard, an indicative subdivision layout has been provided as shown Figure 4 and the preliminary bushfire assessment has been undertaken against this layout to establish one scenario where compliance with Planning for Bushfire Protection 2019 can be potentially achieved. Any changes to future legislation may change this assessment at the time of subdivision, notwithstanding, a new stand-alone bushfire report will be required at this stage.

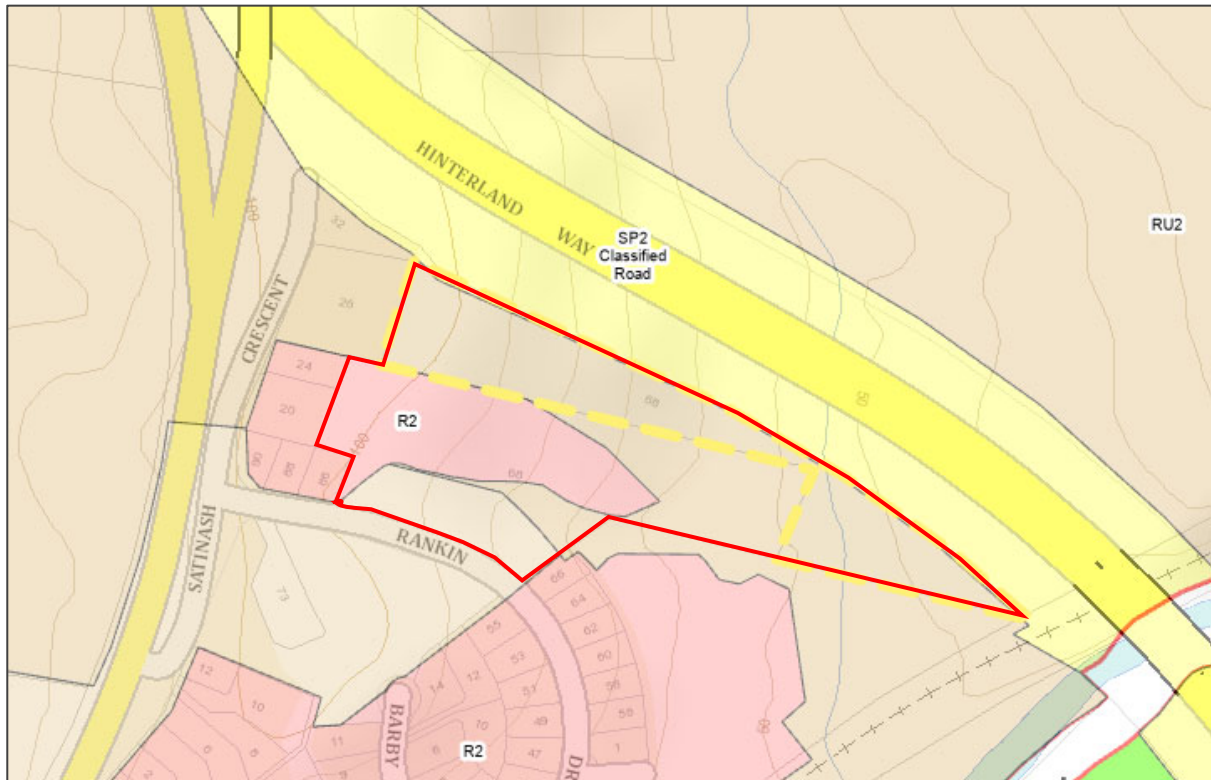


Figure 3 – Existing land zoning map

Source: NSW planning portal

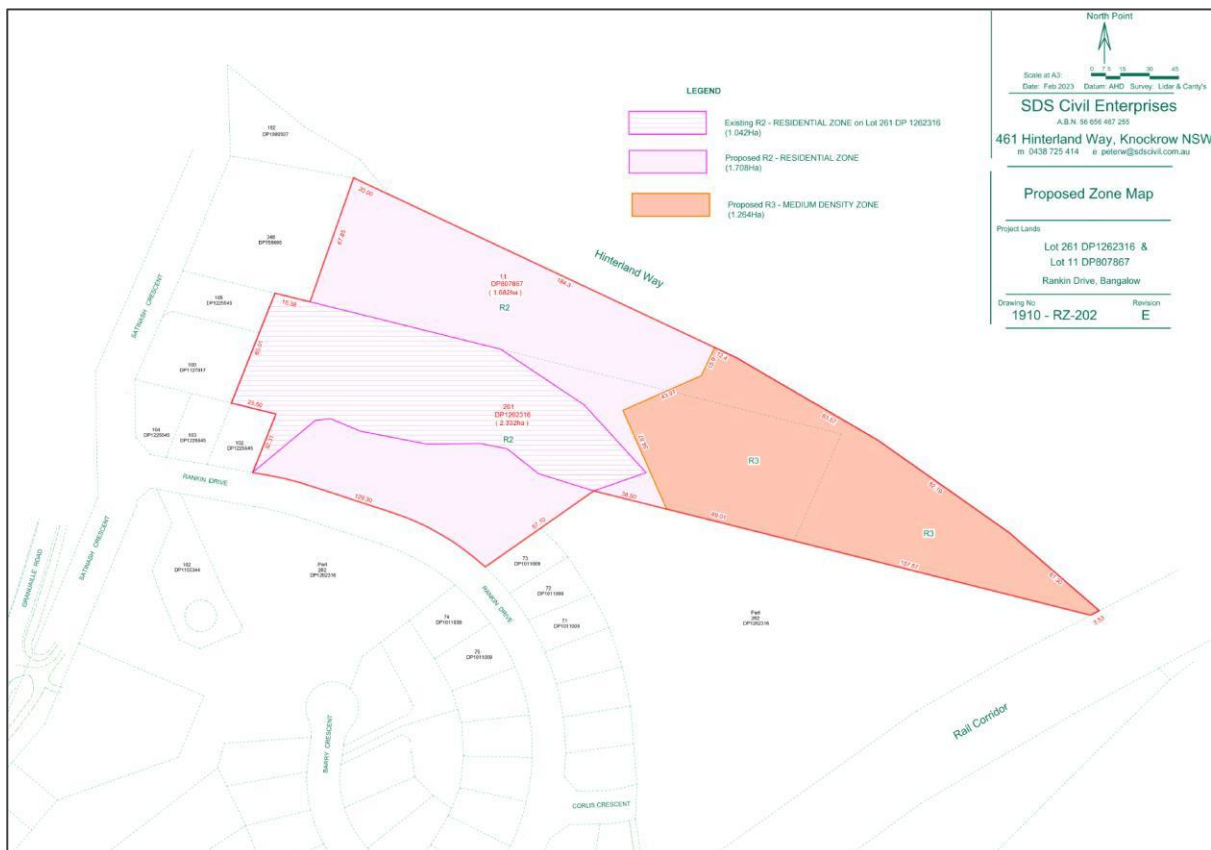


Figure 4 – Proposed rezoning plan.

3.0 STRATEGIC BUSH FIRE STUDY (TABLE 4.2.1 PBP 2019)

3.1 Bush fire landscape assessment

A bush fire landscape assessment considers the likelihood of a bush fire, its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.

3.1.1 The bush fire hazard in the surrounding area, including vegetation, topography and weather.

The site is located on a moderate to steeply sloping side-slope falling to an unnamed creek in the eastern precinct of the site. Vegetation along Hinterland Way, Granuaille Road, the adjacent rail corridor and Byron Creek will form the dominate bushfire hazard impacting the site together with grasslands to the south of the site on the adjoining undeveloped allotments.

The bushfire prone land mapping (Figure 5) does not map the small areas of remnant to the southeast of the property which may, with a future analysis for subdivision be determined a non-hazard or be subject to a fire growth performance solution significantly reducing the APZ to that described in Table 3. The APZs in Table 3 are considered conservative purely to demonstrate in the worse-case scenario demonstrating that the indicative subdivision layout is adequate for rezoning purposes.

Further, the vegetation to the north is disconnected by Hinterland Way with managed land to the west. The inspection noted a number of areas designated in the bushfire mapping as Category One vegetation would in fact be better classified as Category Two vegetation.

Within the site, revegetation proposed 10m either side of the unnamed creek will create a bushfire hazard and require consideration. It is noted the consultant ecologist has advised that 50% of this vegetative corridor can be used as an asset protection zone i.e. 5m. Further short fire run and fire growth modelling when an application for subdivision is submitted may be applied in consultation with the NSW RFS to further reduce this APZ setback.

The Camphor Laurel vegetation on site has generally been cleared with scattered trees remaining as indicated on the site plan. The dominant agricultural land-use to the north of Hinterland Way is macadamia plantation which is not mapped as a bushfire hazard and has a managed under-storey.



Figure 5 – Bushfire Prone Land Map

Source: BSC online mapping

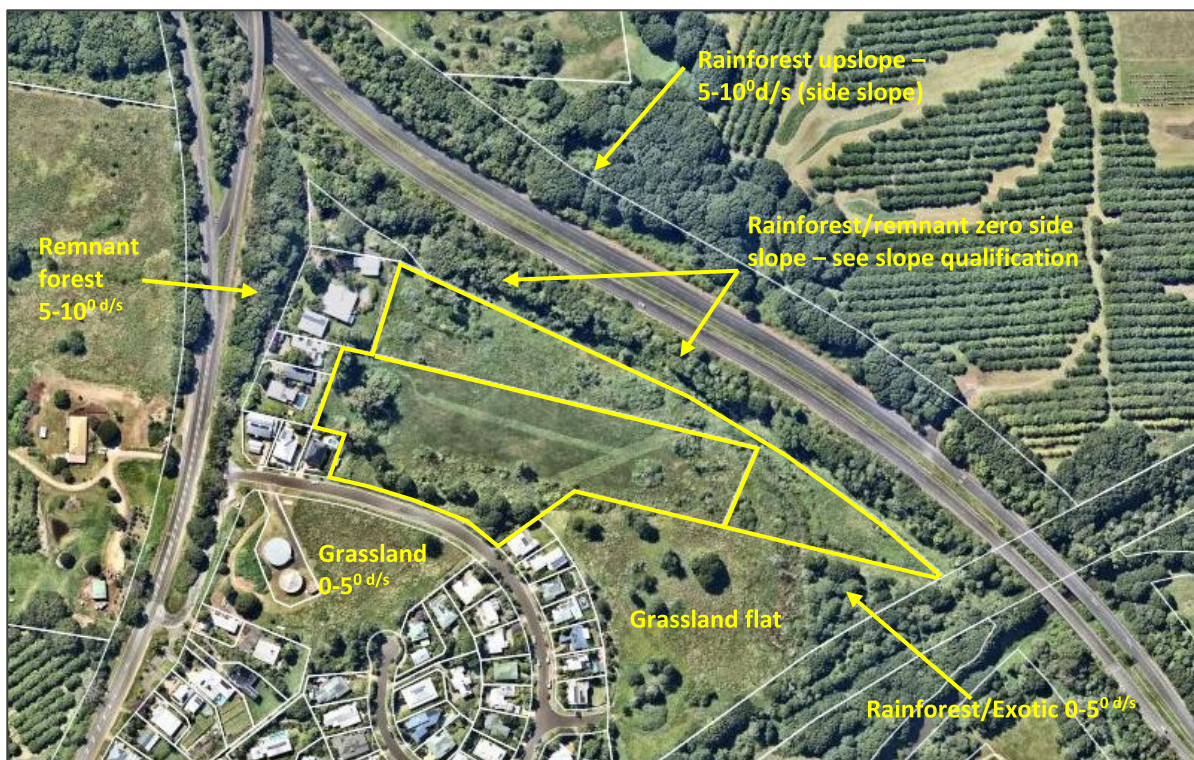


Figure 6 – Bushfire threat analysis

Source: Nearmap, image dated 17.03.2023

Table 2 – Summary Bushfire Threat Assessment of indicative subdivision layout.

ASPECT	SLOPE	VEGETATION CLASS	FDI	APZ required single and medium density 29kW/m ²	APZ required for special fire protection purpose (without variation).
North	Zero degrees see qualification **	Road reserve remnant – not mapped	80	9m APZ conservative although the remnant could be considered a non-hazard or performance solution could reduce to approx. 5m. Either way the potential APZ will not impact the rezoning.	38m – Nil proposed and an SFPP will be assessed with development application for a facility if proposed.
	5-10° downslope	Camphor laurel closed forest north of the highway	80	The Pacific Highway provides a 30m buffer which is sufficient.	To be confirmed if a specific application for SFPP is proposed in the future.
East to Southeast	0-5° downslope	Rainforest/Exotic – closed remnant.	80		
West	5-10° d/s	Forest remnant	80	>60m to hazard	Capable of compliance
Unnamed creek east and west	0° measured across remnant.	Unnamed creek future revegetation	80	9m APZ overall, of which the outer 5m managed revegetation area.	38m
South	Combination of flat to 0-5° downslope	Grassland	80	10-11m supported in road reserve and within the site.	Capable of compliance except B3-B14 without performance solution

3.1.2 The potential fire behaviour that might be generated based on the above.

The assessment assumes the bushfire attack scenario on a day a Fire Danger Rating (FDI) of 80 in accordance with PBP 2019. The bushfire prone land mapping is not completely accurate in that the mapping does not capture the grassland and rainforest/remnant hazards adjoining the site although the mapping appears to be recently completed and these areas have not been deemed to be a bushfire hazard.

The site inspection however identified the vegetation in this area as a combination of exotic camphor laurel and rainforest vegetation. In this regard given the application is for rezoning a conservative assessment has been undertaken on the basis this vegetation along the north and east perimeter of the site is taken as remnant vegetation.

The slope when measured across the remnant varied from up-slopes to some steeper downslopes however the vegetation abuts the Pacific Motorway and has varying widths of 10-20m.

The disconnection from the primary hazards further north is such that continuity of the fire run will be disrupted given the absence of surface and near surface fuels (highway). In this regard a qualification of zero degrees is made given the AS 3959-2018 assumes a 100% fire intensity which will not be supported given the very short fire runs and considering the fire growth.

3.1.3 Any history of bushfire in the area.

The area has a history of fires in the area although there was no evidence found of localised bushfire directly impacting the subject property. The fire history has been considered and does not raise any significant concerns having regard to the proposed rezoning.

3.1.4 Potential fire runs into the site and the intensity of such fire runs.

The potential fire runs are generally minimal given the location of Hinterland Way being a 30m hard surface area supporting negligible fuels. To the southeast the exotic vegetation adjacent to the railway land is isolated by Hinterland Way and residential development further to the east southeast, ensuring minimal fire runs.

The land to the south currently consisting of grassland will be potential residential land with existing road networks in place for the future connection to this land.

3.1.5 The difficulty in accessing and suppressing a fire, the continuity of bush fire hazards or the fragmentation of landscape fuels and the complexity of the associated terrain.

There will be street hydrants available to assist in firefighting and the existing and proposed public road network will provide good access for fire-fighting purposes. Hinterland Way acts like a perimeter road allow fire fighters access to the northern bushfire hazard north of Hinterland Way.

3.2 Land use assessment

The land use assessment will identify the most appropriate locations within the site layout for the proposed land uses.

3.2.1 The risk profile of different areas of the development layout based on the above landscape study.

The subject property is relatively small and is essentially impacted by the same level of risk throughout.

3.2.2 The proposed land use zones and permitted uses.

“The Planning Proposal seeks to amend the Byron L.E.P. 2014 as it applies to this site, by rezoning the Rural Landscape RU2 Zone and the RU1 Primary Production Zones, to R2 Low Density Residential and R3 Medium Density Residential.

The existing R2 Low Density Residential Zone on Lot 261, D.P. 1262316 of 0.99 ha shall remain R2 Low Density Residential.

The lot size Map Sheet LSZ 003 CB of the Byron L.E.P. 2014 will be amended to provide a Minimum Lot size of 800m² (S) for the steeper area of the site, as this lot size already applies to part of the R2 Low Density Residential land on the site.

The R3 Medium Density Residential Zone will have a minimum lot size of 1,000m² allowing for strata title of smaller dwellings that are proposed. An area of proposed Lot 4 will be included as an extension of the 600m² lot size adjacent to the entrance road to the subdivision”. (Ray Darney Planning Proposal Report June 2023)

It is the intent following rezoning to subdivide the site into 18 residential lots with an additional 1 ha area to be strata titled to provide 3 lots for affordable housing (medium density) in accordance with Byron Shire Council’s Policy for Affordable Housing.

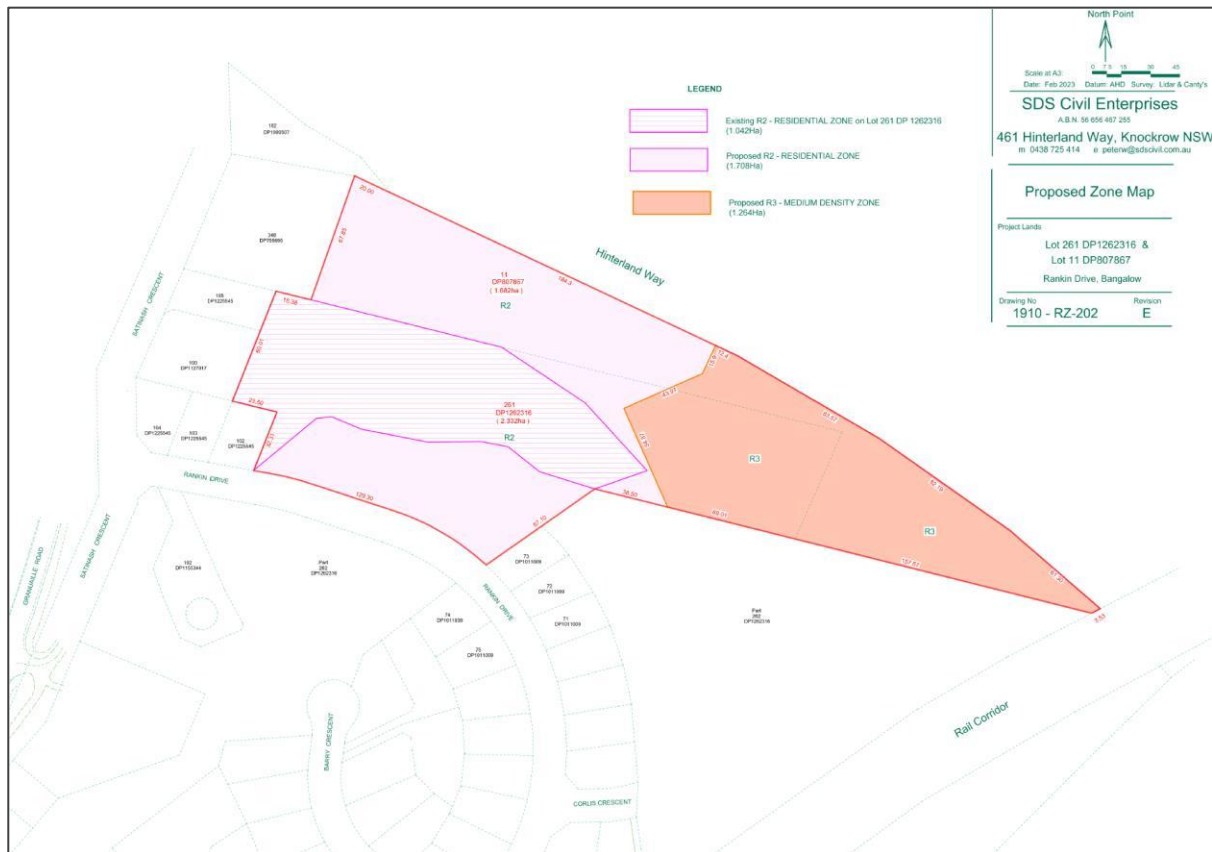


Figure 7 – Proposed rezoning plan.

The sites are considered suitable for single or multi dwelling housing, however some Special Fire Protection Purpose development such as seniors housing, group homes, childcare centres and some places of worship (depending on size) will need to be capable of achieving sufficient asset protection zone widths within the allotments as required by Table A.1.12.1 of PBP 2019 being 38m from the north and western boundaries.

As previously stated however a bushfire assessment at the time of development application for specific SFPP use may discount a number of vegetative areas adjacent to the perimeter of the site as not being a bushfire hazard or provide specific performance solution applications.

Table A1.12.1Minimum distances for APZs – SFPP developments ($\leq 10\text{kW/m}^2$, 1200K)

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	38	47	57	69	81
Forest (wet and dry sclerophyll) including Coastal Swamp Forest, Pine Plantations and Sub-Alpine Woodland	67	79	93	100	100
Grassy and Semi-Arid Woodland (including Mallee)	42	50	60	72	85
Forested Wetland (excluding Coastal Swamp Forest)	34	42	51	62	73
Tall Heath	50	56	61	67	72
Short Heath	33	37	41	45	49
Arid-Shrublands (acacia and chenopod)	24	27	30	34	37
Freshwater Wetlands	19	22	25	28	30
Grassland	36	40	45	50	55

Figure 8 – Table A 1.12.1 PBP2019 (Special Fire Protection Purpose developments).

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 9 – Table A1.12.3 PBP2019 residential development.

Single or multi dwelling (Class 1a – BCA) development must be capable of having the asset protection zone widths required by Table A1.12.3 PBP2019. In this regard the indicative subdivision plan provided in this report has demonstrate with the most conservative assessment the rezoning can support development in accordance with PBP 2019.

It is noted however there is considered merit to reduce the demonstrate asset protection zones significantly with a performance solution report at subdivision application stage for Class 1a residential uses and Special Fire Protection Purpose (SFPP) developments with a threshold of 29kW/m^2 . However, SFPP developments requiring 10kW/m^2 (Table A1.12.1 PBP2019) will be limited.

3.2.3 The most appropriate siting of different land uses based on risk profiles within the site (i.e. not locating development on ridge tops, SFPP development to be located in lower risk areas of the site. Not locating high risk development in hazardous areas of the site.

There are no areas of the site at significantly higher risk from bushfire due to topography or access arrangements. The required APZs will be an appropriate risk mitigation measure to address the proximity to the bushfire hazard for the proposed rezoning.

3.2.4 The impact of the siting of these uses on APZ provision.

The limited site area and proximity to the bushfire hazard may limit some uses due to the APZ requirements i.e. non-varied Special Fire Protection Purpose uses identified in Chapter 6 PBP2019. The proposed allotment layout provides for sufficient lot size for required APZ's for single dwellings on individual allotments.

A preliminary assessment of the indicative lot layout as shown in Figure 6 has been summarized in Table 2 of this report.

3.3 Access and Egress

A study of the existing and proposed road networks both within and external to the masterplan area or site layout.

3.3.1 The capacity for the proposed road network to deal with evacuating residents and responding emergency services, based on the existing and proposed community profile.

The indicative road network has been assessed to determine suitability to support evacuation demands as the rezoning may include residential or SFPP development on bush fire prone land. A new internal public access road is proposed.

The new road will need to be constructed to comply with PBP2019 with exception to the length permitted to be greater than 200m due to the low bushfire hazard risk and future subdivision to the southeast providing likely through connection to the existing public road network.

A temporary turning area for a medium rigid vehicle has been demonstrated on the plans until such time through connection is provided with an adjoining subdivision on Lot 262 DP 1262316. It is noted that indicative Lot 21 has been shown with a turning head to comply with Appendix 3 PBP2019 and will require fire hydrants or static supply within this site at subdivision stage.

The consent authority must also consider structural fire, apart from bushfire, and therefore capability statements should be received by an accredited practitioner (fire safety) to ensure future compliance can be achieved for both structural fire and bushfire events.

The plans indicate a battle axe block (lot 6) with an indicative building envelope located approximately 90m when measured from the furthest part of the building envelope to a potential fire hydrant location as shown on the plan prepared by SDS Civil Enterprises Drawing No. 1910 – RZ-300 Revision F. In this regard a performance solution will be required with the development application for subdivision for both structural fire and bushfire event to demonstrate compliant hydrant coverage and access requirements for this allotment.



Existing public road temporarily ended within Corlis Cresnet to connect to future subdivision of Lot 262 DP1262316.

The existing public road network in the vicinity of the site, based on the potential volumes of traffic, are generally considered capable to support the increased volumes of traffic in the event of a bush fire emergency although confirmation can be provided with a traffic report prepared by a competent person if required.

Further detailed traffic reporting from a person competent in this field will be required however from a high-level assessment relating to bushfire it appears the rezoning will not have an adverse impact on evacuation, and the existing and proposed public road network has sufficient width and travel options not to preclude the proposed rezoning.

3.3.2 The location of key access routes and direction of travel.

There are several access and egress routes available which include traveling north or south along Hinterland Way, east along Bangalow Road or West along Lismore Road. A traffic report prepared by SDS Civil Enterprises has been provided with the application with further detail.

3.3.3 The potential for the development to be isolated in the event of a bushfire.

The development is on the urban edge of Bangalow village and therefore is not considered to be isolated with egress available away from the existing bushfire hazard.

Existing sealed access road Rankin Drive is a through road. The proposed public road will require a turn-around area provided in accordance with Table 5.3b and Appendix 3 of PBP2019 allowing adequate fire brigade intervention whilst occupants may be evacuating. The plans have indicated compliance can be achieved.

3.4 Emergency Services

An assessment of the future impact of new developments on emergency services.

3.4.1 Consideration of the increase in demand for emergency services responding to a bush fire emergency including the need for new stations/brigades.

The proposed development is within 2km by road of NSW Fire and Rescue Bangalow Fire Station serviced by retained fire fighters. A Police Station is also located within Bangalow. The increase in population is not considered significant in the context of the overall existing village and it is considered the existing Fire Station and Police Station will not require any adjustment.

3.4.2 Impact on the ability of emergency services to carry out fire suppression in a bush fire emergency.

The proposal is considered to have negligible impact for emergency services to carry out fire suppression in a bush fire emergency. However, a traffic report has been prepared by SDS Civil Enterprises titled – Traffic Impact Statement for a Planning Proposal for Residential Development dated April 2023. Impacts relating to adequacy of existing public road networks and the proposed works are to be considered in the traffic report.

3.5 Infrastructure

An assessment of the issues associated with infrastructure and utilities.

3.5.1 The ability of the reticulated water system to deal with a major bush fire event in terms of pressures, flows, and spacing of hydrants.

The reticulated town water supply is provided by Rous Water. The existing supply services the township and the existing street hydrant system. Additional reticulated water supply and hydrant mains will be required to provide coverage of the development site.

The existing water supply network has not been tested; however the land is adjacent to an existing reticulated water supply system currently relied upon by NSW Fire and Rescue.

Design with pressure and flow testing should be undertaken at subdivision stage however a capability statement from an accredited practitioner (fire safety) should be received to ensure compliance is capable of being achieved.

3.5.2 Life safety issues associated with fire and proximity to high voltage power lines, natural gas lines etc.

Existing underground power transmission lines. All new power lines should be located underground in accordance with PBP2019.

The site is not known to be serviced by reticulated natural gas however if proposed at subdivision stage, compliance will need to be achieved.

3.6 Adjoining land

The impact of new development on adjoining landowners and their ability to undertake bush fire management.

3.6.1 Consideration of the implications of a change in land use on adjoining land including increased pressure on BPMs through the implementation of Bush Fire Management Plans.

It is considered by developing the land for residential purposes and applying compliant asset protection zones and landscaping requirement together with construction standards to the buildings, the development will decrease the fuel loads currently impacting adjacent development.

4.0 PLANNING FOR BUSHFIRE PROTECTION 2019

4.1 Asset Protection Zones

The bushfire prone mapping identifies the subject allotment as generally not being bushfire prone (see Figure 5), however the eastern tip of the site is slightly within the designated bushfire buffer.

Aerial mapping and inspection of the site reveals that the bushfire prone land map is not completely accurate in respect to the current bushfire hazard given there is some exotic and rainforest vegetation within the allotments to the southeast of the site. In this regard this area will likely be mapped as a hazard with future mapping and is considered as such with this assessment.

Inspection of the subject property was undertaken, and bushfire assessment conducted within and 140m beyond the boundary of the subject development area with a more detailed assessment in Section 3 of this report.

Asset Protection Zones are areas established and maintained to ensure that bushfire fuels are progressively reduced between the development and the bushfire hazard. The asset protection zone incorporates an Inner Protection Area (IPA) having reduced fuel loadings of approximately 3t/ha.

An indicative future lot layout is provided in the following Figure 10 with the responses provided in Table 3 of this report. The assessment establishes the indicative lot layout is capable of complying with the performance criteria of Planning for Bushfire Protection 2019. However, detailed plans will be required to complete a full assessment of the lot layout which will include a bushfire design brief in consultation with NSW Rural Fire Service prior to a subdivision report being finalised for a development application.

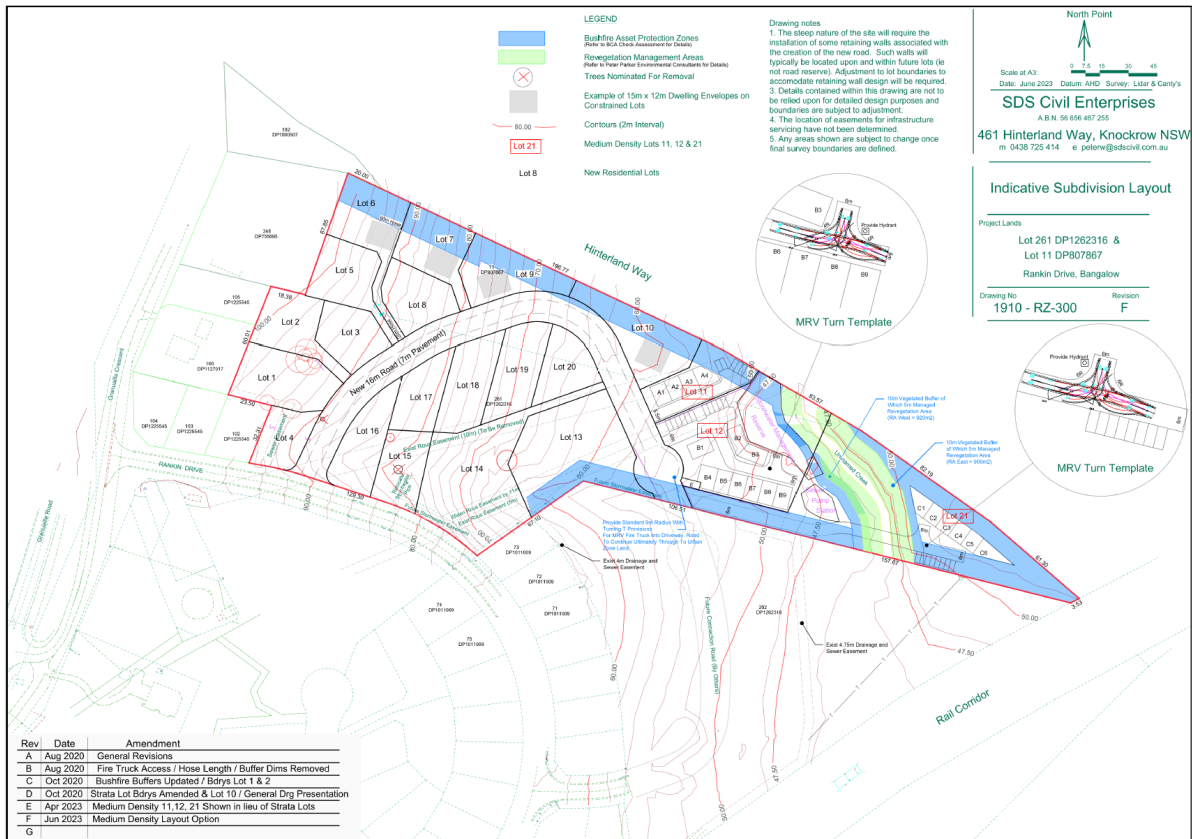


Figure 10 – Indicative future subdivision layout.

The assessment establishes that future residential development will require asset protection zones. The proposed future residential subdivision will be required to comply with the APZ criteria for infill developments as set out in Section 5.3.1 and Table 5.3a of PBP2019 which states:

- APZs are provided in accordance with Table A1.12.3 of PBP 2019 based on the FFDI.
- APZs are to be managed in accordance with the requirements of Appendix 4 (of PBP 2019).
- APZs are wholly within the boundaries of the development site.
- APZ are located on lands with a slope less than 18 degrees.

A future dwelling on the proposed lots is capable of being sited to receive $\leq 29\text{kW/m}^2$ and is to be assessed in accordance with s4.14 at Development Application stage. Table 3 provides a summary of Asset Protection Zone requirements with plans of an indicative lot layout provided in Appendix A providing a visual representation of required APZs within the rezoning site.

Table 3: Summary of Preliminary Asset Protection Zones required.

LOTS	Aspect	Vegetation	Distance to Vegetation	Slope	Comment – 29kW/m ² Table A1.12.3
1 -4	West West	Remnant Grassland	>60m 100,	10-15° d/s 15-20° d/s	Yes – required distance to hazard 20m. Achieved with managed residential land adjoining.
4-7	North	Remnant	15m	5-10° d/s	Yes – required distance to hazard achieved within the proposed lots. It is noted a future hazard may view the hazard to only be on the northern side of Hinterland Way.
8, 9, 10, 13, 14, 15	North	Remnant	9m	Flat upslope	Yes – required distance to hazard achieved within the proposed lots. It is noted a future hazard may view the hazard to only be on the northern side of Hinterland Way.
11, 12	South	Grassland	10m	Flat upslope	Yes – required distance to hazard achieved within the proposed lots. It is noted a future hazard may view the hazard as removed with a potential future subdivision on the adjacent allotment to the south.
17, 18	South	Grassland	10m	Flat upslope	Any required APZ will be supported within the existing road reserve of Rankin Drive.
B1-B8	South	Grassland	10m	Flat –upslope	Yes – required distance to hazard achieved within the proposed lots. It is noted a future hazard may view the hazard as removed with a potential future subdivision on the adjacent allotment to the south.
	East	Rainforest revegetation to creek – see ecologist report.	9m	Flat measured across the remnant.	Yes – potential future performance solutions have merit to reduce this setback.

B9-B14	North/NE	Remnant	9m	Upslope	Yes – required distance to hazard achieved within the proposed lots. It is noted a future hazard may view the hazard to only be on the northern side of Hinterland Way.
	South	Closed rainforest and exotic vegetation.	12m	0-5° d/s	Yes – potential future performance solutions have merit to reduce this setback.
	West	Rainforest revegetation to creek – see ecologist report.	9m	Flat measured across the remnant.	Yes – potential future performance solutions have merit to reduce this setback.

d/s = downslope

The plans show an indicative compliant building envelope can be supported on the future allotments in conjunction with the recommended asset protection zones based on the worst-case scenario and without performance solution reporting.

5.0 CONSTRUCTION STANDARDS AND OTHER PLANNING CONTROLS

The land available for the required asset protection zones can be applied to future dwellings demonstrating the 29kW/m² threshold is not exceeded as required by Table A1.12.3 PBP2019. The APZs shown will ensure that the future dwellings will not be within the forecast flame zone.

The future use of the rezoned land for residential purposes will require approval of an 'integrated' development application for subdivision under s.91 of the EP&A Act (requiring the issue of a s.100B Rural Fires Act bushfire safety authority) and development application/s for any dwellings under s.4.14 of the EP&A Act (requiring referral to the NSW Rural Fire Service). The indicative site plan may need to be amended at subdivision stage.

6.0 WATER AND UTILITY SERVICES

6.1 Water Supply

The development is to be connected to a reticulated water supply. A future water supply is to comply with Section 5.3.3 and Table 5.3c of Planning for Bushfire Protection 2019.

Design with pressure and flow testing should be undertaken at subdivision stage however a capability statement from an accredited practitioner (fire safety) should be received to ensure compliance is capable of being achieved.



Existing fire hydrants in Rankin Drive.

6.2 Electricity Supply

New electrical transmission lines if required are to comply with Section 5.3.3 and Table 5.3c of Planning for Bushfire Protection 2019 as follows:

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

6.3 Gas Services

The development applications for future dwellings will provide details of the storage of gas to comply with Section 7.4 and Table 7.4a of Planning for Bushfire Protection 2019.

7.0 ACCESS

The proposed public and property access roads will be required to comply with Table 5.3b and Planning for Bushfire Protection 2019 it being noted temporary turnaround areas have been demonstrated on the referenced plans for the public road system until such time as connection into the future subdivision of Lot 262 DP 1262316 occurs. In this regard the temporary turnaround is considered acceptable given the low bushfire impact on the proposed public road and the extensive managed land surrounding.

The property access road to the indicative C1-C6 lots and to a lesser degree indicative Lots B1-B9 have been provided with medium rigid turnarounds to complement hydrant locations in accordance with Table 5.3b PBP2019.

The capability of providing fire hydrants or, if required, a static supply be required at subdivision stage however a capability statement from an accredited practitioner (fire safety) should be received to ensure compliance is capable of being achieved with the rezoning.

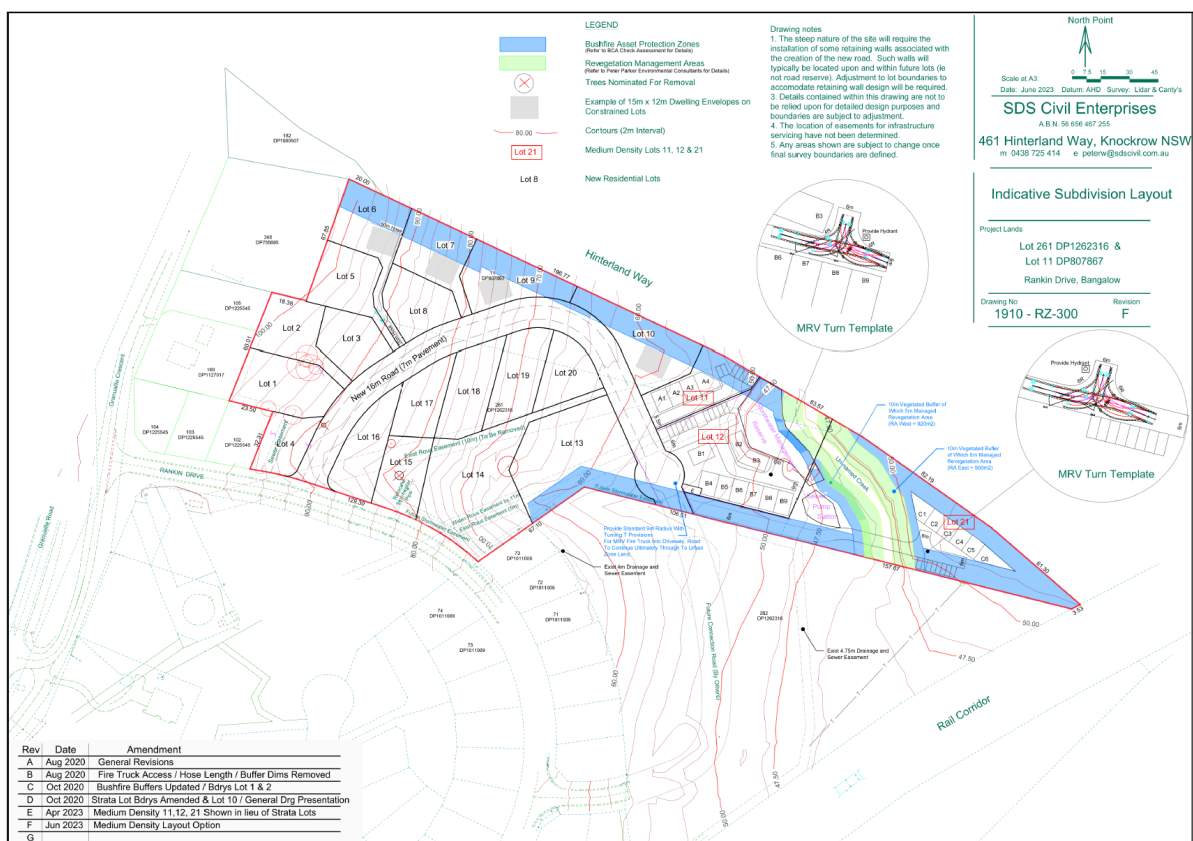


Figure 11 – Public road layout and indicative property access roads.

8.0 CONCLUSION

The Study has determined the proposed rezoning is appropriate in the bush fire hazard context. The indicative allotment layout with proposed minimum lot sizes is considered appropriate to accommodate the APZs within future subdivisions. Comment is made regarding the capability requirements for all bushfire protection measures required by the performance criteria of Planning for Bushfire Protection 2019.

This report has been prepared for referral and consultation with the NSW Rural Fire Service as a means of demonstrating compliance with the EP&A Act 1979 s 9.1 and Ministerial Direction 4.4, and PBP 2019 as applicable to the proposed rezoning.

Disclaimer

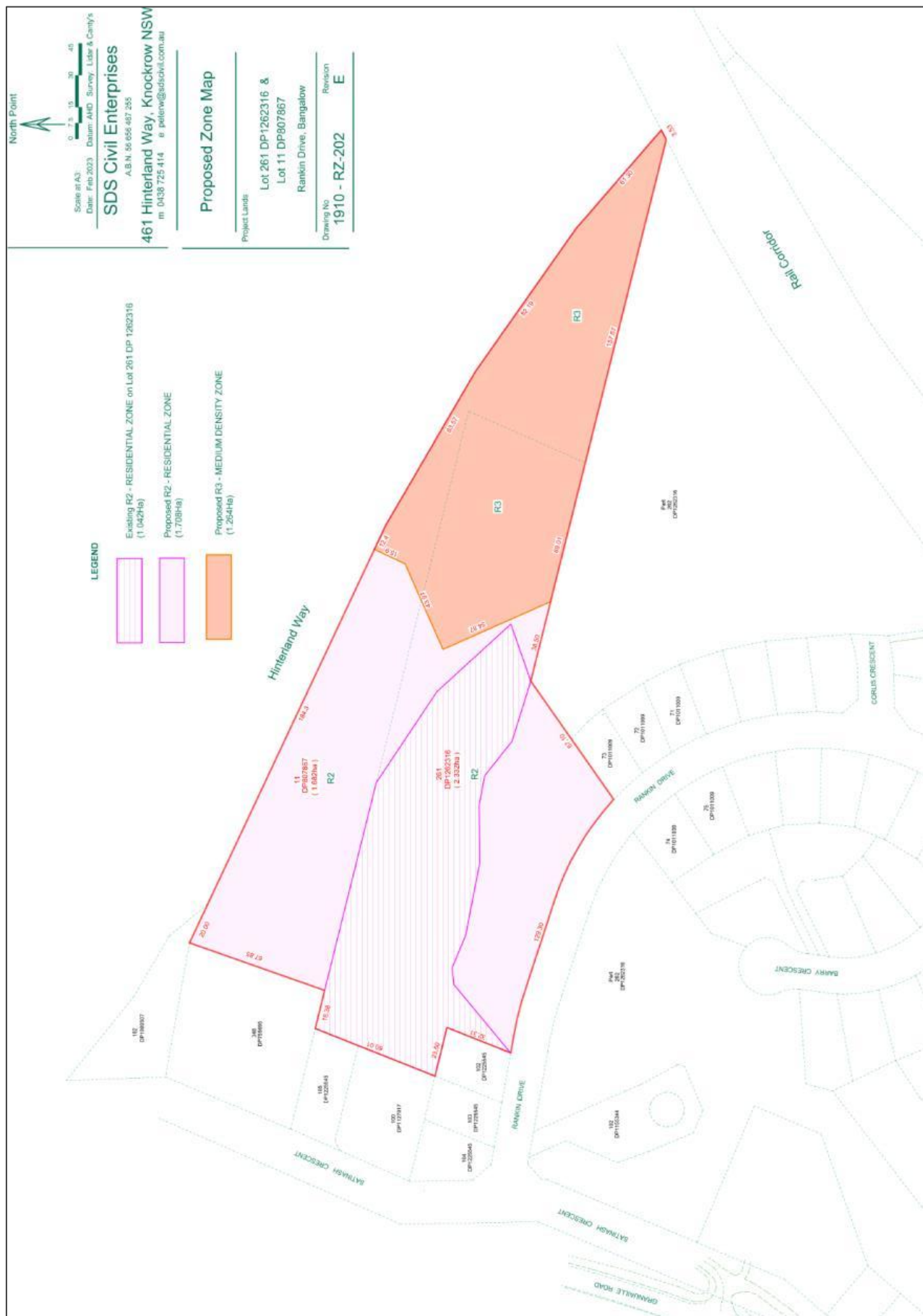
While every reasonable effort has been made to ensure that this document is correct at the time of printing, BCA Check Pty Ltd t/a Bushfire Certifiers and its agents and employees, disclaim any and all liability to any person in respect of anything or the consequences of anything done or omitted to be done in reliance or upon the whole or any part of this document for purposes other than for the purpose for which it was commissioned and in accordance with the contract between BCA Check Pty Ltd and the nominated client. Unauthorised use of this report in any form is prohibited.

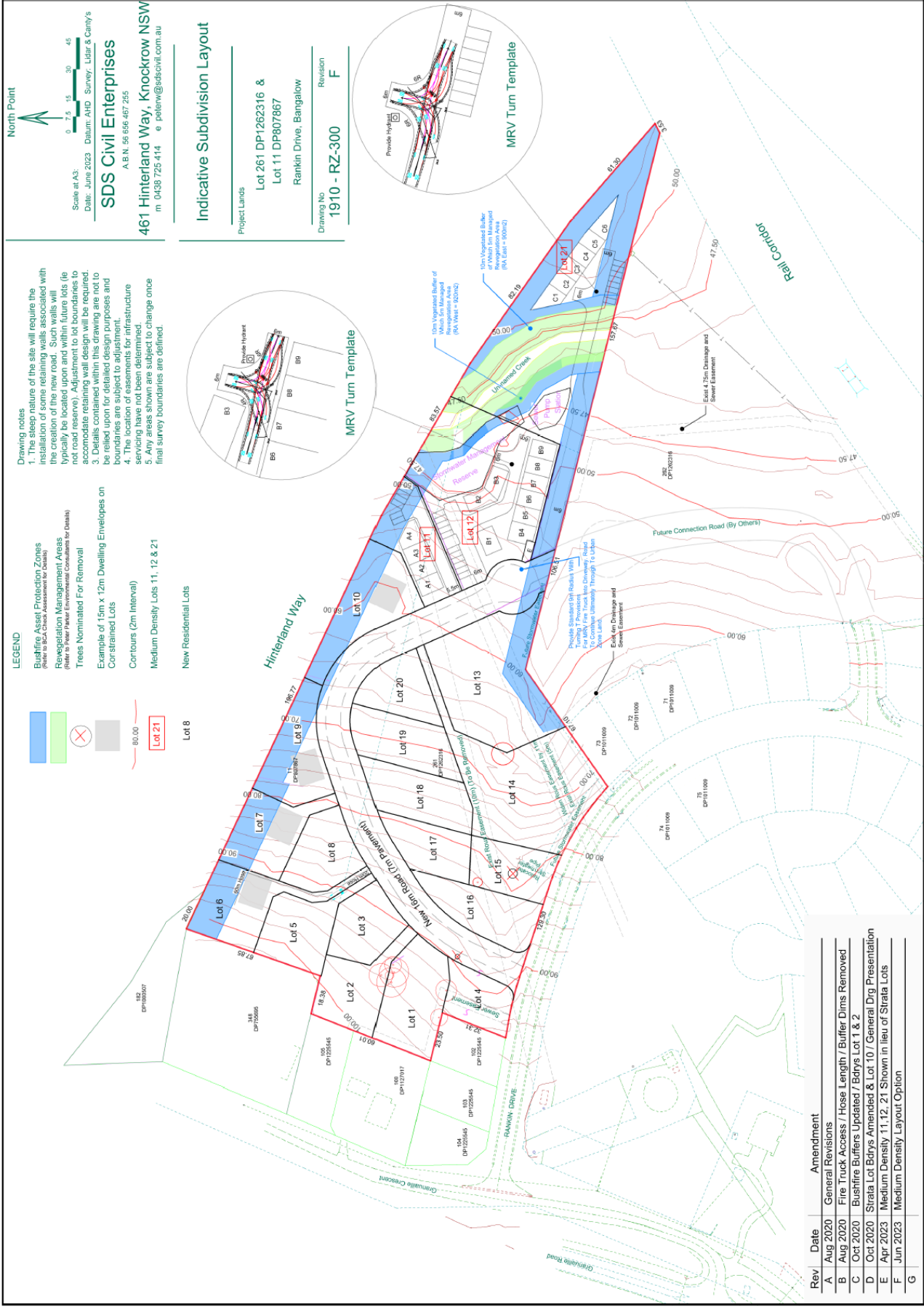
All dimensions indicated within this report are indicative only, and are subject to detailed survey. To the best of our knowledge this report does not contain any false, misleading or incorrect information.

The content of this report is not to be used for the purpose of future subdivision as a more detailed assessment will be required at that stage, which may include performance solution for NSW RFS consultation.

Appendix A

Indicative subdivision plan, APZ plan and proposed zoning plan





Drawing notes

- 1. The steep nature of the site will require the installation of some retaining walls associated with the creation of the new road. Such walls will typically be located upon and within future lots (ie not road reserve). Adjustment to lot boundaries to accommodate retaining wall design will be required.
- 3. Details contained within this drawing are not to be relied upon for detailed design purposes and boundaries are subject to adjustment.
- 5. Any areas shown are subject to change once final survey boundaries are defined.

LEGEND

- Bushfire Asset Protection Zones (Refer to Bushfire Management Plan for Details)
- Revegetation Management Areas (Refer to Bushfire Management Plan for Details)
- Trees Nominated For Removal
- Example of 15m x 12m Dwelling Envelopes on Constrained Lots
- Contours (2m Interval)
- Medium Density Lots 11, 12 & 21
- New Residential Lots

North Point

Scale at A3:
0 7.5 15 30 45
Date: June 2023 Datum: AHD Survey: Lidar & Canlys

SDS Civil Enterprises
A.B.N. 56 656 487 255
461 Hinterland Way, Knockrow NSW
m 0438 725 414 e peterw@sdscivil.com.au

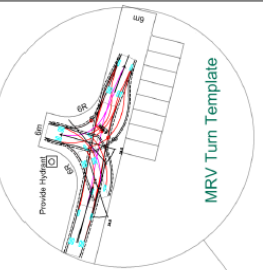
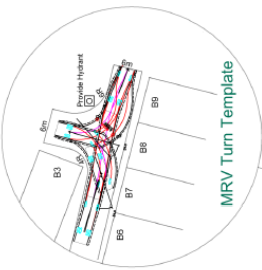
Indicative Subdivision Layout

Project Lands

Lot 261 DP1262316 &
Lot 11 DP807867
Rankin Drive, Bangalow

Drawing No
1910 - RZ-300

Revision
F



Rev	Date	Amendment
A	Aug 2020	General Revisions
B	Aug 2020	Fire Truck Access / Hose Length / Buffer Dims Removed
C	Oct 2020	Bushfire Buffers Updated / Bdrys Lot 1 & 2
D	Oct 2020	Strata Lot Bdrys Amended & Lot 10 / General Drg Presentation
E	Apr 2023	Medium Density 11, 12, 21 Shown in lieu of Strata Lots
F	Jun 2023	Medium Density Layout Option
G		