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Bushfire Hazard Assessment Report

Property

286-310 Gregory Street
South West Rocks

Proposal

Multi Dwelling Housing Estate

Client

South West Rocks Living Pty Ltd

Date	24 February 2025
Reference	BAR 10044.2/24
Prepared by	Matthew Sharrock
	BPAD-Level 2 Certified Practitioner
Application No	SSD-82352708

FPA AUSTRALIA
Bushfire Planning and Design Accredited

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1 Property & Proposal Details

Client	*South West Rocks Living Pty Ltd*		
Lot	3	***DP***	801467
Address	286-310 Gregory Street, South West Rocks		
Proposal	Multi Dwelling Housing Estate		
Land Zone	R1 - General Residential R3 - Medium Density Residential		
Council Area	Kempsey		
Fire Danger Index	80		

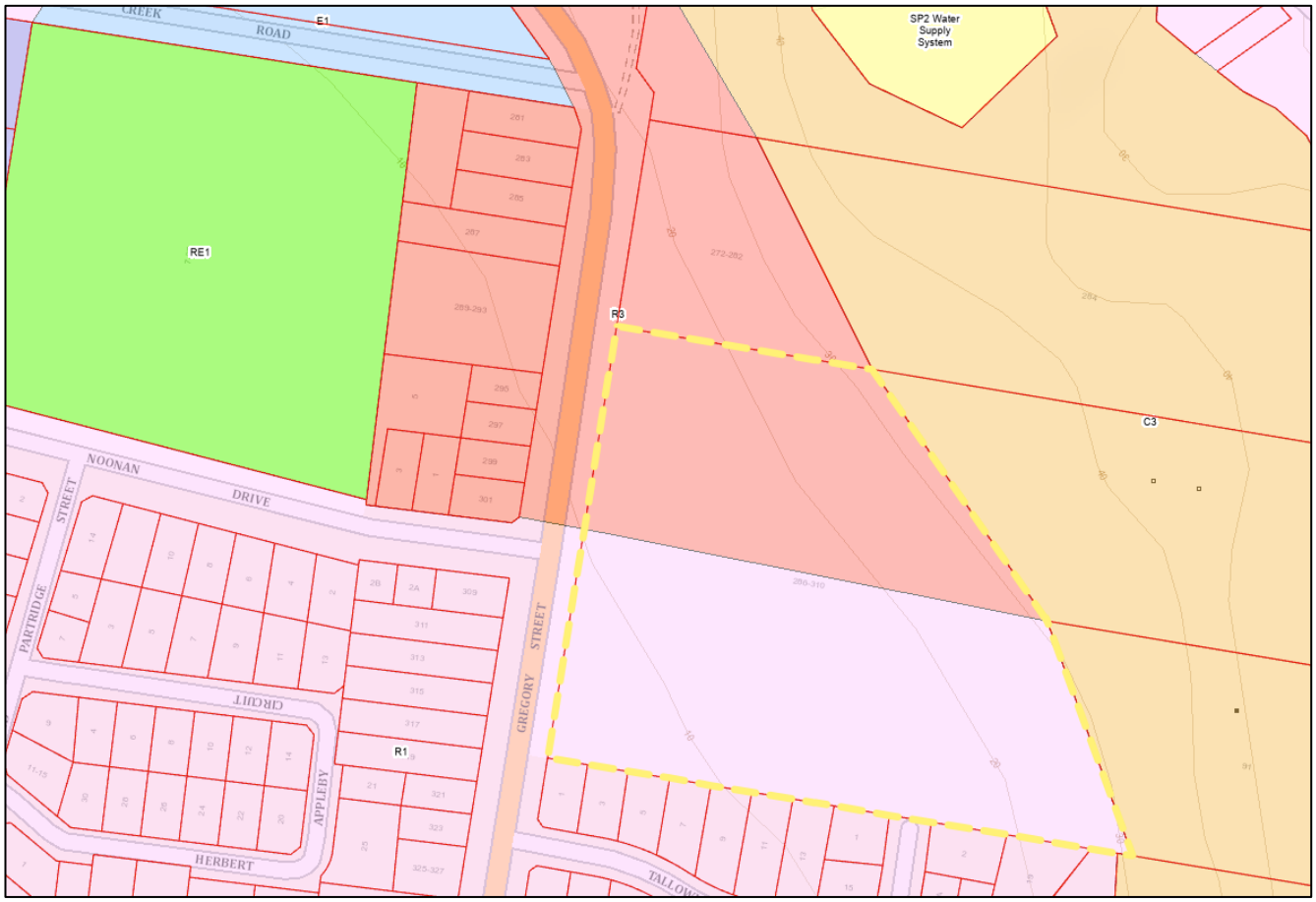

Figure 1 Land Zone Map

2 Introduction

This bushfire hazard assessment report has been prepared on behalf of *South West Rocks Living Pty Ltd* in respect of a proposed Multi Dwelling Housing Estate over No. 286-310 Gregory Street, South West Rocks. The proposal seeks development consent for the construction and operation of a Land Lease Community Estate for over 50's comprising 101 dwelling sites, community facilities for residents and associated infrastructure and amenities.

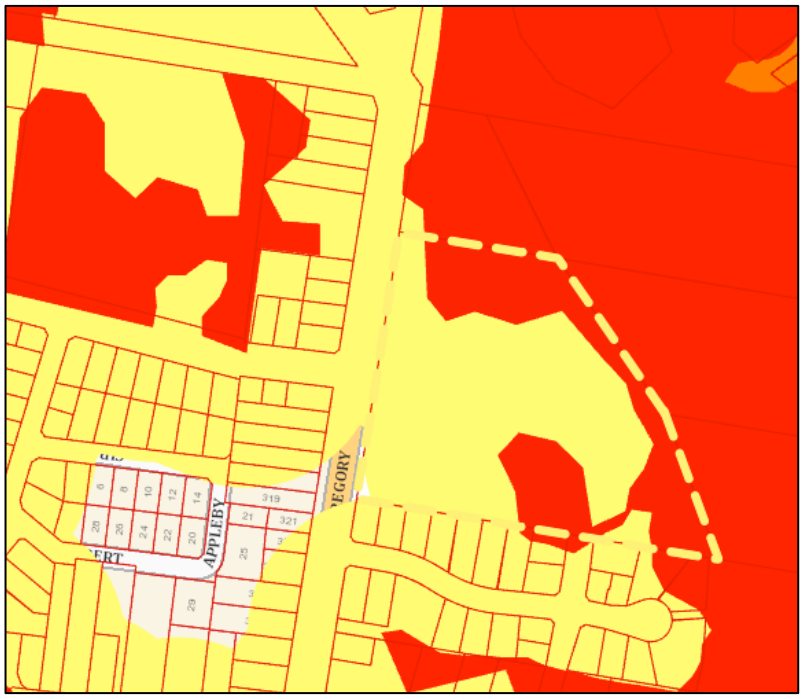

Figure 2 Bushfire Prone Land Map

NSW Government Planning Portal (Bushfire Mapping) identifies the property as being bushfire prone. This land has been recognized as land that can support or is subject to bushfire attack. The red shaded areas indicate Category One bushfire vegetation and the yellow shaded areas bushfire prone land (Figure 2). The vegetation across the subject property, mapped in red, has been removed with the hazard now existing beyond the north and east boundaries of the property.

The bushfire vegetation adjacent the property is categorised Forest. The topography of the land across the assessment area was found to be moderate sloping. These factors are important when determining the asset protection zone requirement and bushfire construction requirements applicable to the proposed development. Other bushfire protection and design measures outlined in the report include, access requirements and utility services covering; water, electricity and gas, and bushfire emergency management & evacuation planning.

The bushfire protection measures in *Planning for Bushfire* Protection 2019 and the recommendations made herein, aim to *protect human life and minimise the impacts to property from the threat of bushfire*. These recommendations will also ensure the objectives of PBP can be satisfied:

- *Afford buildings and their occupants protection from exposure to a bush fire;*
- *Provide for a defendable space to be located around buildings;*
- *Provide appropriate separation between a hazard and buildings which, in combination with other measures, minimises material ignition;*

- *Ensure that appropriate operational access and egress for emergency service personnel and residents is available;*
- *Provide for ongoing management and maintenance of bush fire protection measures; and*
- *Ensure that utility services are adequate to meet the needs of firefighters.*

The proposed multi dwelling housing estate is made up of numerous dwellings and not individual lots. Kempsey Local Environmental Plan defines multi dwelling housings as:

> *Multi dwelling housing means 3 or more dwellings (whether attached or detached) on one lot of land, each with access at ground level, but does not include a residential flat building. Note—Multi dwelling housing is a type of residential accommodation*

Consequenlty, as the proposal is not a subdivision it will not be treated as Integrated Development under Section 4.46 of *Environmental Planning & Assessment Act (1979)*. Nor is a multi dwelling housing estate defined as a special fire protection purpose development under Section 100B of the Rural Fires Act or Clause 47 of the Rural Fires Regulation 2022.

Consequently, as the Integrated Development provisions do not apply to the proposed multi dwelling housing estate the proposal will be assessed via Section 4.14 of the *Environmental Planning & Assessment Act (EP & A Act) 1979*.

Although the proposed multi dwelling housing estate will be assessed via Section 4.14 of the *EP & A Act* the development does has numerous individual dwellings that resemble that of a manufactured home estate. Manufactured home estates are defined as a special fire protection purpose development under Clause 47 of the Rural Fires Regulation 2022.

In view that the proposed multi dwelling housing development resembles a manufactured home estate the proposal will be assessed in accordance with the requirements of Clause 45 of the *Rural Fires Regulation 2022* and *Planning for Bushfire Protection 2019*. This approach will ensure a satisfactory bushfire protection outcome for the multi dwelling housing estate is achieved.

Furthermore, the proposed development has been identified as a *State Significant Development*. Under the requirements identified in the SEAR's document reference number 20:

> *Provide a bushfire assessment that details proposed bushfire protection measures and demonstrate compliance with Planning for Bushfire Protection 2019*.

3 Bushfire Hazard Assessment

3.1 Vegetation

Rural Fires Regulation (Clause 45) requires a classification of vegetation on and surrounding the property, to a distance of 140m. This classification was undertaken in accordance with the system for vegetation classification in Planning for Bushfire Protection (Appendix One).

The site assessment undertaken on 14 October 2024 indicated a vegetated Public Reserve is located on the western side of Gregory Street approximately 102 meters from the property. The Reserve is being maintained by Council and consists of isolated trees and a mowed grassy under-storey. Due to the management regime of the Reserve the low threat vegetation exclusions (SectionA1.1.10) can apply.

The vegetation that constitutes the hazard extends beyond the northern and eastern boundaries of the property. The dominant over-storey tree species identified included *Eucalyptus pilularus* (Blackbutt) and to a lesser extent *Corymbia gummifera* (Red Bloodwood) and *Eucalyptus signata* (Scribbly Gum, Costermans 2007). These tree species are indicative to Coastal Dune Dry Sclerophyll Forest (Kieth 2004).

NSW Government Vegetation Mapping classifies the vegetation community as Northern Hinterland Wet Sclerophyll Forest. This classification will not affect the assessment as Dry Sclerophyll Forest and Wet Sclerophyll Forest are both vegetation formations under the classification of ***Forest***.

Figure 3 Hazard Assessment

Figure 4 Forest vegetation adjacent northern boundary of property

Figure 4 Forest vegetation adjacent eastern area of the property

3.2 Effective Slope

Rural Fires Regulation (Clause 45) requires an assessment of the slope of the land on and surrounding the property to a distance of 100m from the boundaries of the property. Planning for Bushfire Protection (Appendix One) also requires the gradient within the hazard, which most significantly influences fire behaviour to be determined.

The topography of the land across the assessment area was found to be moderate upsloping with the gradient of the land determined with the benefit of Sixmaps.

Consequently, in accordance with Appendix A1.4 the effective slope of the land beneath the hazard which most significantly influences fire behaviour is ***Upslope***.

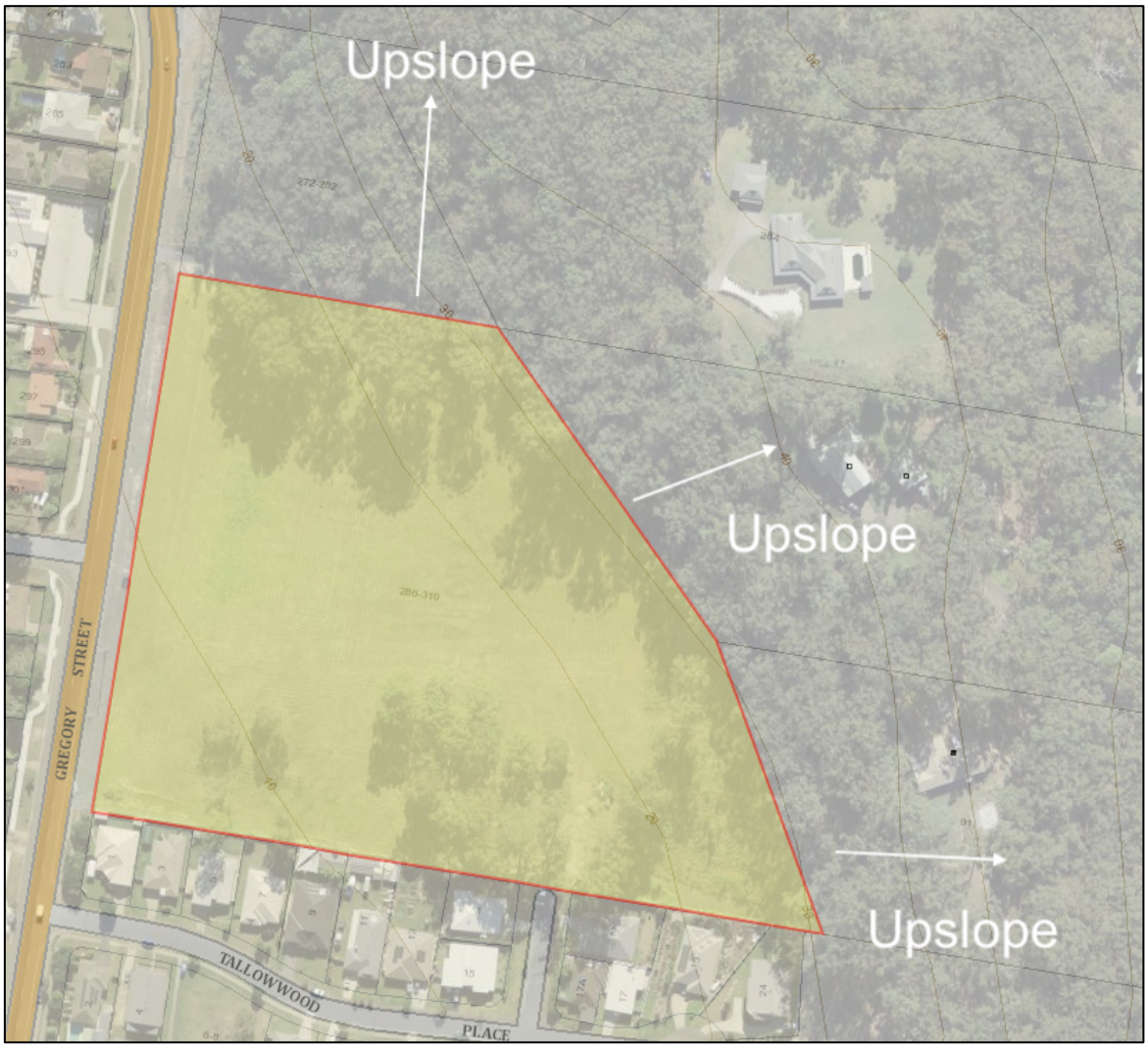

Figure 5 Effective Slope (NSW Gov 2025)

4 Asset Protection Zone

An asset protection zone (APZ) is a buffer zone of minimal fuel loads located between a building and a bushfire hazard. The minimal fuel loads within the APZ will ensure any vegetation does not provide a path for the transfer of fire to buildings either from ground level or through the tree canopy. This will ensure the impact of direct flame contact, radiant heat and ember attack on the development are minimised. The APZ also provides a buffer zone between the development site and the bushfire hazard, allowing firefighters and homeowners to safely defend the property.

Asset protection zone requirements were assessed in accordance with the methodology detailed in Appendix One of PBP. When the findings outlined in Table 1 were applied to Table A1.12.3 (PBP), it was found that the proposed multi dwelling housing estate complies with the minimum distance requirement for an APZ.

The proposed development also includes a community building which is defined as an assembly building. Buildings used for *public assembly* with a floor space area of greater than 500m2 are required to consider bushfire and will be treated technically as a special fire protection purpose (SFPP) development (Section 8.3.11). As the proposed community building has a floor area of approximately 300m2 it is not required to be assessed as a SFPP development but as infill residential development. When the findings outlined in Table 1 were applied to Table A1.12.3 (PBP), it was found that the proposed community building complies with the minimum distance requirement for an APZ.

Direction	*Slope*	*Vegetation*	*Distance to Vegetation*	*Minimum Required APZ*	*Complies*
North	Upslope	Forest	>20m	20m	Yes
Northeast	Upslope	Forest	>20m	20m	Yes
East	Upslope	Forest	>20m	20m	Yes

Table 1 Assessment Findings

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
Potential building footprints will not be exposed to radiant heat levels exceeding 29 kW/m2 on each proposed lot and on any part of the building	APZ's are provided in accordance with tables A1.12.3 based on the FDI	Yes	APZ's for individual dwellings and the community building comply with Table A1.12.3
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated	The APZ is not located on lands with slope exceeding 18 degree.	Yes	The gradient of the land across the property is slight to moderate sloping.
APZ's are managed and maintained to prevent the spread of a fire towards the building APZ is provided in perpetuity	APZ's are managed in accordance with the requirements with Appendix 4; APZ are wholly within the boundaries of the development site; and Other structures located within the APZ need to be located further than 6m from the refuge building	Yes Yes -	See Recommendation Refuge building not required
Landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions	Landscaping is in accordance with Appendix 4; and Fencing is constructed in accordance with section 7.6.	Yes Yes	See Recommendation See Recommendation

Table 2 APZ & Landscaping Requirements

5 Bushfire Construction Considerations

5.1 Bushfire Attack Level Construction Standard

Bushfire attack level (BAL) construction standards are principally concerned with *improving* the ability of a building to better withstand bushfire attack from the effects of wind, smoke, embers, radiant heat and flame contact. The construction standard will provide a level of protection to the building's occupants (until the fire front passes) as well as to the building itself.

When the findings outlined in Table 1 were applied to Table A1.12.6 (PBP), BAL construction standards of BAL 29 or lower will apply to each proposed building.

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
Proposed buildings can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact	BAL is determined in accordance with TablesA1.12.6; and Construction provided in accordance with the NCC and as modified by section 7.5	Yes	BAL's determined in accordance with Table A1.12.6

Table 3 Construction Standards

Vegetation	Slope	BAL 29	BAL 19	BAL 12.5	No Requirement
Forest	Upslope	20m to <29m	29m to <40m	40m to <100m	>100m

Table 4 BAL Ratings

6 Environmental & Aboriginal Considerations

Clause 45 subclauses (e) and (f) require 'the details of a threatened species or threatened ecological community under *Biodiversity Conservation Act 2016* the that the applicant knows to exist on the property', and 'details and location of an Aboriginal object or place, within the meaning of the *National Parks and Wildlife Act 1974* that the applicant knows to be situated on the property'.

The Statutory Ecological Impact Statement prepared by Darkheat Eco-Consultancy concluded that *'the proposal is not considered likely to result in impacts of sufficient order of magnitude to place a local viable population at risk of extinction*'.

The Aboriginal Heritage Due Diligence Report prepared by Heritage Now Pty Ltd concluded that '*no Aboriginal objects or potential archaeological deposits were identified within the Project Area'*.

7 Access

Access roads must enable safe access and egress for residents attempting to leave an area while emergency service personnel are arriving to undertake firefighting operations. The purpose of the road system is to:

- *Provide firefighters with access to structures, allowing more efficient use of firefighting resources;*
- *Provide evacuation routes for firefighters and the public; and*
- *Provide access to areas of bushfire hazard for firefighting and hazard mitigation purposes*.

Access to the proposed Multi Dwelling Housing Estate is from Gregory Street. Clause 45 (2g(iii)of the Reg's requires the capacity of nearby public roads to handle increased volumes of traffic when a bush fire emergency occurs to be addressed. This is crucial for effective evacuation, emergency services access, and overall public safety. The Traffic Impact Study concluded that the proposal will not impact the existing urban road network as no additional lots or vehicles movements are proposed.

Overall, the road network design satisfies the majority of the acceptable solution requirements of Table 6.8b. One design component does not satisfy an acceptable solution requirement. This requirement relates to the perimeter road having a minimum 8-meter carriageway width kerb to kerb. The proposed perimeter road along the northeastern and eastern boundaries of the property is 6 meters wide. In support of a variation to the acceptable solution requirements the following points are made:

- Traffic Impact Assessment prepared by *InRoad Group* stated and concluded:
    - The internal road network will accommodate access and manoeuvring by up to a 12.5m long Heavy Rigid Vehicle, i.e. a large furniture removal vehicle, or a large emergency services vehicle. The internal road network is adequate for vehicle circulation and manoeuvring (Australian Standard 2890.2 Off Street Commercial Vehicle Facilities.
    - It is considered that the proposal is satisfactory from a traffic operations perspective, and it is recommended that the application be approved from a traffic engineering perspective.
- The perimeter road provides access to the bushfire hazard for firefighting and hazard mitigation purposes.
- A 6 meter perimeter road will facilitate safe access and egress for firefighting vehicles while residents are evacuating.
- Secondary (emergency) access is proposed onto Racemosa Circuit, to the south. This access will have a locked gate or removable bollard to prevent its use by vehicular traffic other than emergency vehicles. This access roadway is 4m wide, within an 8.5m wide road reserve.
- A Bush Fire Emergency Management and Evacuation Plan will advise residents to utilise the internal road network and secondary access rather than the perimeter road during a bushfire emergency.

Consequently, it has been demonstrated that the proposed road design satisfies the performance criteria as:

- *Firefighting vehicles are provided with safe, all-weather access to structures; and*
- *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*.

The proposed road design can comply with the requirements of Table 6.8b (Access) of PBP, outlined on the following pages.

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
Variations			
Access Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation	SFPP access roads are two-wheel drive, all-weather roads;	Yes	
	Access is provided to all structures;	Yes	Road network design provides access to all structures
	Traffic management devices are constructed to not prohibit access by emergency services vehicles;	Can Comply	See Recommendation
	Access roads must provide suitable turning areas in accordance with Appendix 3; and	Yes	Traffic Impact Assessment
	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.	Not Applicable (N/A)	One-way roads not proposed

Table 5 General Access Road Requirements

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
The capacity of access roads is adequate for firefighting vehicles	The capacity of road surfaces and any bridges/ causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges and causeways are to clearly indicate load rating	Yes	See Recommendation
There is appropriate access to water supply	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression; and	Yes	See Recommendation
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005; and	Yes	See Recommendation
	There is suitable access for a Category 1 fire appliances to within 4m of the static water supply where no reticulated supply is available.	Not Applicable	Reticulated water available

Table 5 General Access Road Requirements

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
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	Roads are two-way sealed roads	Yes	
	Minimum 8m carriageway width kerb to kerb;	No	Complies with performance solution
	Parking is provided outside of the carriageway width;	Yes	
	Hydrants are located clear of parking areas;	Yes	See Recommendation
	There are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	Yes	Perimeter road is a through road and links internal road system at intervals less than 500m
	Curves of roads have a minimum inner radius of 6m;	Yes	Traffic Impact Assessment
	Maximum grade is 15 degrees and an average grade of not more than 10 degrees;	Yes	Gradient is less than 10 degrees
	The road crossfall does not exceed 3 degrees; and	Yes	See Recommendation
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	N/A	No trees
Non-Perimeter Roads Non-perimeter roads are designed to allow safe access and egress for fire fighting vehicles while residents are evacuating	Minimum 5.5m carriageway width kerb to kerb; parking is provided outside of the carriageway width;	Yes	
	Parking is provided outside of the carriageway width;	N/A	No parking proposed

Table 6 Perimeter and Non-Perimeter Road Requirements

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
Non-Perimeter Roads Non-perimeter roads are designed to allow safe access and egress for fire fighting vehicles while residents are evacuating	Hydrants are located clear of parking areas;	Yes	See Recommendation
	There are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	Yes	
	Curves of roads have a minimum inner radius of 6m;	Yes	Traffic Impact Assessment
	Maximum grade is 15 degrees and an average grade of not more than 10 degrees;	Yes	Gradient is less than 10 degrees
	The road crossfall does not exceed 3 degrees; and	Yes	See Recommendation
	A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.	Yes	No trees

8 Services

It is important that the location of electricity and gas services limit the possibility of ignition of the surrounding bushland or the fabric of the building.

The proposed underground electricity transmission line to the development will comply with Table 6.8c (PBP). Bottled gas must be installed and maintained in accordance with AS1596 and the requirements of the relevant authority. If gas cylinders are installed adjacent buildings, the release valves must be directed away from the building and at least 2 meters away from any combustible material.

Water supply and services are critical for both firefighting operations and in the protection of buildings, during and after the passage of a bushfire. Water infrastructure must comply with the requirements of Table 6.8c (PBP), as outlined in Table below.

Performance Criteria	*Acceptable solutions*	*Compliance*	*Comments*
Variations			
An adequate water supply for firefighting purposes is installed and maintained.	Reticulated water supply is to be provided to the development	Yes	Reticulated water available
Water supplies are located at regular intervals. The water supply is accessible and reliable for firefighting operations	Fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005; and Hydrants are not located within any road carriageway; and Reticulated water supply to SFPPs uses a ring main system for areas with perimeter roads.	Can comply Can comply Can comply	See Recommendation See Recommendation See Recommendation
Flows and pressure are appropriate	fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005	Can comply	Reticulated water available
The integrity of the water supply is maintained	All above-ground water service pipes external to the building are metal, including and up to any taps	Can comply	See Recommendation

Table 7 Water Requirements

9 Bushfire Emergency Management & Evacuation Planning

Suitable emergency and evacuation arrangements must be in place for occupants of Special Fire Purpose Protection Developments to ensure safe movement and assist in the evacuation of occupants.

The Bush Fire Emergency Management and Evacuation Plan must identify Neighbourhood Safer Places and procedures for occupants to follow in the event of a bushfire. The Plan must prepared be in accordance with the Rural Fire Service Guidelines for the *Preparation of Emergency/Evacuation Plan*.

10 Recommendations

The proposed Multi Dwelling Housing Estate was assessed in accordance with the requirements of *Rural Fires Regulation (Reg's) 2022 and Planning for Bushfire Protection (PBP) 2019*. It was determined that the proposal conforms to the requirements of both Clause 45 of the Reg's and PBP. Specific recommendations detailing how the proposal can comply with PBP is detailed below.

Asset Protection Zone

1. Each site must be maintained in perpetuity as an inner protection area in accordance with the requirements detailed in Attachment Two and Appendix Four of PBP.
2. All undeveloped areas of open space across the Subdivision shall be maintained as an inner protection area.

Bushfire Attack Level (BAL) Construction Standard

1. BAL construction requirements for each building must comply with Table A1.12.6, AS3959-2018, and Section 7.5 of PBP.

Access

1. Road crossfall does not exceed 3 degrees
2. Traffic management devices are constructed to not prohibit access by emergency services vehicles
3. Roll top kerbing should be used to the hazard side of the road.
4. The capacity of road surfaces must be sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes).
5. Hydrants must be located outside of road carriageways.

Water

1. Fire hydrant spacing, design and sizing comply with AS 2419.1 – 2021.
2. Hydrants are not located within any road carriageway.
3. All above ground water pipes external to the building are metal, including and up to any taps.

Gas

1. Bottled gas is installed and maintained in accordance with AS1596 and the requirements of relevant authorities. Connections to and from gas cylinders are metal.
2. If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2 metres away from any combustible material, so that they do not act as a catalyst to combustion.

Bushfire Emergency Management & Evacuation Planning

1. A Bushfire Emergency Management and Evacuation Plan must be in accordance with the Rural Fire Service Guidelines for the *Preparation of Emergency/Evacuation Plan*.

11 Conclusion

In conclusion, it was demonstrated that the proposed Multi Dwelling Housing Estate satisfies the performance criteria and acceptable solution requirements of *Planning for Bushfire Protection 2019* and the requirements of the *Rural Fires Regulation 2022*. This ensures the specific objectives for special fire protection purpose developments have been addressed as:

- *Asset protection zones and building design and siting will help minimise the effects and levels of radiant heat, localised smoke and ember attack;*
- *An appropriate operational environment for emergency service personnel during firefighting and emergency management will be provided;*
- *Existing infrastructure (such as roads and utilities) can accommodate the increase in demand during emergencies as a result of the development; and*
- *Emergency evacuation procedures and management provides for the special characteristics and needs of occupants, will be provided.*

The proposed Multi Dwelling Housing Estate complies with the standards necessary to protect persons and property from danger that may arise from a bushfire. The Consent Authority can rely on this Report to ensure the bushfire risk management aspects of the development have been addressed in accordance with *Rural Fires Regulation 2022* and *Planning for Bushfire Protection 2019*. If the proposal was integrated development the Commissioner would be in a position to issue a Bushfire Safety Authority.

Matthew Sharrock

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12 References

NSW Rural Fire Service (2019) *Planning for Bushfire Protection, A guide for Councils, Planners, Fire Authorities and Developers,* NSW Rural Fire Service

NSW Government 2025, 24 February 2025, https://www.planningportal.nsw.gov.au

Keith. D 2004, *Ocean Shores to Desert Dunes, The Native Vegetation of NSW and the ACT,* DIPNR and NSW NPWS

NSW Government 2024, 24 February 2025, legislation.nsw.gov.au

NSW Government 2025, 24 February 2025, https://maps.six.nsw.gov.au

Australian Standard 3959-2018 *Construction of Building in Bushfire Prone Areas,* Standards Australia, Sydney NSW

Note & Disclaimer

Any recommendation, opinion or interpretation in this Report is made in good faith based on the legislative requirements of the New South Wales (NSW) Planning System for bushfire prone land.

The bushfire protection and design measures recommended in this report, aim to help protect human life and minimise the impacts on property from bushfire. However, these measures cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the unpredictable behaviour and nature of fire and the difficulties associated with extreme weather and fire weather conditions.

Bushfire Building Solutions takes no responsibility for the implementation and ongoing maintenance of the bushfire protection measures outlined in the Report.

Due to the above rationale the author is not liable to any person for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.


MASTERPLAN LEGEND
SITE BOUNDARY
DWELLING SITE BOUNDARY
DWELLING SITES WITH 11m FRONTAGES (65)
DWELLING SITES WITH 12m FRONTAGES (36)
APZ
DCP BOUNDARY SETBACKS
DCP BUFFER SETBACK AREAS
OFFSET FROM HV ABOVE GROUND CABLES
STORMWATER DRAIN
SCREENED WASTE AND RECYCLING BIN ENCLOSURES
EXISTING TREE TO BE REMOVED
PROPOSED TREES
COMMUNITY BUILDING
SOFT LANDSCAPE AREA
CONCRETE PATH
ROAD PAVEMENT
SUMMARY TABLE
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VISITOR PARKING SPACES 26
DISABLED PARKING SPACES 2
WASTE BINS (660L) 10
RECYCLING BINS (660L) 10
FOGO BINS (240L) 20
KEY DESIGN ELLEMENTS
1. GATED VEHICLE ENTRY FROM GREGORY STREET
2. PEDESTRIAN CROSSING POINT WITH REFUGE ISLAND ON GREGORY STREET
3. COMMUNITY BUILDING
4. OUTDOOR POOL
5. ELEVATED PARK WITH DISTRICT VIEWS AND LARGE CANOPY TREES
6. CENTRAL PARK WITH LARGER CANOPY TREES AND SHELTERED PICNIC SETTINGS
7. PARK WITH PICKLEBALL COURT, PICNIC SHELTER, DOG EXERCISE AREA AND ADDITIONAL PEDESTRAIN ACCESS TO GREGORY STREET. 360m3 DETENTION BASIN UNDER COURT AND WATER QUALITY TREATMENT BASINS (ATLAN).
8. SCREEN PLANTING AND PEDESTRIAN ACCESS FROM DWELLING SITES VIA STAIRS AND PATHS ONTO GREGORY STREET
9. MAINTENANCE SHED/COMMUNITY WORKSHOP
10. PEDESTRIAN CONNECTION AND EMERGENCY VEHICLE EGRESS WITH LOCKED GATE ONTO RACEMOSA CIRCUIT
11. MID-BLOCK PEDESTRIAN PATH CONNECTION
12. PEDESTRIAN ACCESS PATH AND LARGER TREE AVENUE ON ENTRY ROAD FROM GREGORY STREET.
5m ENTRY ROAD
5m EXIT ROAD
ROAD 01
ROAD 02
ROAD 03
ROAD 04
ROAD 05
GREGORY STREET
RACEMOSA CIRCUIT
DRAFT DA SUBMISSION
KING + CAMPBELL
MASTERPLAN
A1
BROKELANDS SOUTH WEST ROCKS
LOT 3 DP 807487, 286-310 GREGORY STREET SOUTH WEST ROCKS NSW
SOUTH WEST ROCKS LIVING PTY LTD
7247_DA1.1

Attachment Two APZ/Landscaping Requirements

Inner Protection Area (IPA)

- Trees and shrubs may be planted in the IPA provided:
    - Shrubs are planted in small clumps and short narrow rows
    - Shrubs are planted in clumps rather than in continuous rows
    - Trees should have lower limbs removed up to a height of 2 metres above the ground
    - No part of the tree overhangs within 2m of the dwelling
    - Vegetation is well spread out and does not form a continuous canopy
    - Trees are smooth barked and do not retain dead materials or deposit excessive quantities of ground fuel
    - That vegetation does not provide a continuous path to the building
    - Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation so that plants will not ignite the asset by direct flame contact or radiant heat emission

- Strategic landscaping to the above requirements can help mitigate the impacts of radiant heat. Rainforest plant species must be utilised for this purpose
- Ensure vegetation, particularly clumping plants, do not accumulated significant amounts dead plant material. Treat plants annually to reduce fuel loads
- The use of local native plants that have fire retardant qualities is to be encouraged on the site. This includes plants that have low volatile oil content, high moisture content and high levels of salt
- Most Proteaceae species (e.g. *Banksia, Grevillea, Persoonia*) have qualities that are consistent with the recommended characteristics for bushfire prone locations
- Avoid plants with high levels of volatile oils in leaves. Eucalypts, Callistemon and Melaleucas burst into flames on heating and increase fire intensity. In Eucalypts, the amount of volatile oil on foliage can be over 4% whereas Callistemon and Melaleucas up to 1%. Generally, the figure is less than 1% for Acacias, Grevilleas and Hakeas
- Avoid planting “pencil pine” type trees next to buildings, as these are highly flammable
- Use of non-combustible ground surfaces such as pebbles, gravel and paved areas etc must be used directly adjacent the building
- Lawn areas shall be cut low and clear of leaf litter. Short green grass will slow the fire and reduce fire intensity
- All fences should be made of either hardwood or non-combustible material. However, in circumstances where the fence is within 6m of a building or in areas of BAL-29 or greater, they should be made of non-combustible material only.
- Areas under fences, fence posts, gates and trees shall be raked and kept clear of fire fuel.
- Detached structures, including garden sheds shall be kept free of leaves and other debris and must be sealed to prevent entry of burning embers