

**BUSHFIRE HAZARD  
ASSESSMENT  
  
PROPOSED REZONING**

**LOTS 800 & 801 DP 1270742,  
BURRAWONG DRIVE,  
SOUTH WEST ROCKS**

**CLIENTS:  
AUSPADDY DEVELOPMENTS  
PTY LTD**

**JANUARY 2022**

*This report has been prepared by David Pensini – Building Certification and Environmental Services with all reasonable skill, care and diligence for Auspaddy Developments Pty Ltd.*

*The information contained in this report has Auspaddy Developments Pty Ltd a review of the plans provided on behalf of Auspaddy Developments Pty Ltd and experience.*

*No inspection or assessment has been undertaken on other aspects of the proposed development outside the scope of this report.*

*This report does not imply, nor should it be implied, that the proposed development will comply fully with relevant legislation.*

*The report shall not be construed as relieving any other party of their responsibilities or obligations.*

*David Pensini – Building Certification and Environmental Services disclaims any responsibility Auspaddy Developments Pty Ltd and others in respect of any matters outside the scope of this report.*

*The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report, or part thereof is made known. Any such party relies on this report at their own risk.*



*For and on behalf of David Pensini – Building Certification and Environmental Services.*

*Prepared by: David Pensini*

*Signed:*



*Dated: 8<sup>th</sup> January 2022*

Version	Date	Information relating to report			
		Reason for issue			
1.0	5 <sup>th</sup> January 2022		Draft		
	8 <sup>th</sup> January 2022		Issued Client		
	28 <sup>th</sup> January 2022		Amendments to APZ compliance concept		
			Prepared by	Verified by	Approved by
		Name	David Pensini		David Pensini
		Signature			

## **Table of Contents**

<b>1.0 INTRODUCTION.....</b>	<b>6</b>
1.1 Objectives .....	6
1.2 Legislative Framework .....	7
1.2.1 Strategic Planning Considerations .....	7
1.2.2 Planning for Bushfire Protection Guideline 2001 and 2006.....	7
1.2.3 Planning for Bushfire Protection Guideline 2019.....	8
1.3 Location and Site Description .....	9
1.4 Site History.....	12
1.5 Development Proposal .....	16
<b>2.0 STRATEGIC BUSHFIRE STUDY .....</b>	<b>18</b>
2.1 Landscape Assessment .....	18
2.1.1 Assessment Methodology.....	18
2.1.2 Topography.....	18
2.1.3 Vegetation Assessment.....	20
2.1.4 Climate/Weather .....	25
2.2 Land Use Assessment .....	25
2.3 Access and Egress .....	26
2.4 Emergency Services .....	28
2.5 Infrastructure.....	28
2.6 Adjoining Land .....	29
<b>3.0 BUSHFIRE THREAT REDUCTION MEASURES .....</b>	<b>30</b>
3.1 NSW Rural Fire Services, <i>Planning for Bushfire Protection</i> , 2019.....	30
3.1.1 Defendable Space/Asset Protection Zone.....	30
3.1.2 Defendable Space/Asset Protection Zone Management .....	33
3.1.3 Operational Access and Egress .....	33
3.1.4 Services - Water, Gas and Electricity .....	34
3.1.5 Landscaping .....	35
3.2 Construction of Buildings in Bushfire Prone Areas.....	36
3.2.1 General .....	36
<b>4.0 SUMMARY OF FINDINGS .....</b>	<b>37</b>
<b>5.0 CONCLUSION .....</b>	<b>38</b>
<b>6.0 REFERENCES.....</b>	<b>39</b>

**APPENDIX 1 - Approved Residential Subdivision of Subject Site**

**APPENDIX 2 - Approved Building Envelope (Existing Lot 800)**

**APPENDIX 3 - Existing Zone Boundaries**

**APPENDIX 4 - Proposed Rezoning**

**APPENDIX 5 - APZ Compliance Concept**

**APPENDIX 6 - PBP Amendments to AS 3959 - 2018**

## 1.0 INTRODUCTION

The subject site is known as Lots 800 and 801 DP 1270742, Burrawong Drive, South West Rocks and encompasses the undeveloped stages of the approved Seascope Grove residential estate. The Seascope Grove Estate is subject to two separate Part 3A approvals being MP-05-0018 and MP -07-0129.

It is noted that the southern portion of the subject site is zoned for Environmental Management (E3) purposes with this land use zoning burdening the southern portions of the approved residential lots which are located along the far southern portion of the approved residential subdivision. It is now proposed to rezone the southern portion of the subject site so as to relocate the Environmental Management (E3) zone so that the approved residential lots zoned entirely Residential (R1) thereby removing the split land use zoning which currently burdens the approved residential lots along the southern perimeter of the approved residential subdivision.

This report is based on site assessments carried out on 9<sup>th</sup> December 2021.

The purpose of this report is therefore to identify the bushfire hazard management planning principles and requirements which will be applicable to the future development of the subject land for residential development purposes.

This report therefore forms part of an overall planning process which will determine the suitability of the subject land for residential development and identify the bushfire related development principles and planning controls which will be applicable to any future development of the land for residential purposes.

### NOTE

The report has been prepared with all reasonable skill, care and diligence.

The information contained in this report has been gathered from field survey, experience and has been completed in consideration of the following legislation.

- Rural Fires Act 1997.
- Environmental Planning and Assessment Act 1979.
- National Construction Code.
- Council Local Environment Plans and Development Control Plans where applicable.
- NSW Rural Fire Services, Planning for Bushfire Protection, 2019.
- AS 3959 - 2018 Construction of Buildings in Bushfire Prone Areas.

The report recognizes the fact that no property and lives can be guaranteed to survive a bushfire attack. The report examines ways the risk of bushfire attack can be reduced where the site falls within the scope of the legislation.

The report is confidential, and the writer accepts no responsibility of whatsoever nature, to third parties who use this report or part thereof is made known. Any such party relies on this report at their own risk.

This report has been based upon the vegetation characteristics observed at the time of site inspection. No responsibility is taken where the vegetation characteristics of the subject site or surrounding areas is changed or modified beyond that which is presented within this report.

## 1.1 Objectives

The objectives of this report are to:

- Ensure that the proposed rezoning of the land has measures sufficient to minimize the impact of bushfires; and
- Reduce the risk to property and the community from bushfire

## 1.2 Legislative Framework

On 1<sup>st</sup> August 2002 the Environmental Planning and Assessment Act 1979 and the Rural Fires Act 1997 were both amended to enhance bush fire protection through the development assessment process.

In broad terms, the planning considerations provide two main steps. These involve:

### (a) Strategic Planning through;

- the mapping of bush fire prone;
- determining suitable bush fire requirements during the preparation of a Local Environmental Plan and/or Development Control Plan; and
- the identification of the extent to which land is bushfire prone.

### (b) Development assessment through;

- obtaining a bush fire safety authority for residential or rural-residential subdivision and special fire protection purpose developments in bushfire prone areas from the Rural Fire Service (RFS);
- seeking advice from the RFS in relation to infill and other developments in bushfire prone areas that cannot comply with the requirements of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019; and
- the application of additional requirements of the National Construction Code (NCC) in relation to construction standards for Class 1, 2, 3, 4 and some Class 9 buildings in bushfire prone areas.

It is noted that this report focuses upon the strategic planning processes associated with the proposed rezoning of the land which is identified as the subject site.

### 1.2.1 Strategic Planning Considerations

When preparing a draft LEP or planning proposal, local councils are required to apply the Environmental Planning and Assessment Act, 1979 - Section 9.1(2).

Direction 4.4 *Planning for Bush Fire Protection* applies to planning proposals that affect, or are in close proximity to, land mapped as Bush Fire Prone Land (BFPL). Under these directions, draft LEPs should follow the below objectives:

- to protect life, property and the environment from bush fire, by discouraging the establishment of incompatible land uses in bush fire prone areas; and
- to encourage sound management of bush fire prone areas.

Under Direction 4.4, a relevant authority must consult with the Commissioner of the NSW Rural Fire Service during the preparation of a draft LEP and take into account any comments made. The draft LEP shall also have regard to NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019.

As part of the consultation process with the NSW RFS, a bush fire assessment is required to be submitted to demonstrate compliance with the Section 9.1(2) Directions and NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019. Where the proposal is of a strategic nature, this should take the form of a Strategic Bush Fire Study.

### 1.2.2 Planning for Bushfire Protection Guideline 2001 and 2006

Due to the age of the existing approvals for the residential subdivision of the subject site the existing development of the land would be subject to compliance with the bushfire threat management requirements at the time of approval being NSW Rural Fire Services, **Planning for Bushfire Protection**, 2001 and 2006 and as such the further development of the subject site would be subject to compliance with the development consent conditions which are relevant to the already approved residential subdivision development.

However as the proposed development contemplates residential development within the already approved residential lots it is considered appropriate that the proposed rezoning be assessed against the relevant requirements of NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 as compliance with the 2019 standard will ensure consistency with current bushfire threat management requirements and will ensure that the future residential development of the already approved residential lots is able to comply with current bushfire threat management standards.

### **1.2.3 Planning for Bushfire Protection Guideline 2019**

It is noted that NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 provides the current bushfire threat management standards which are applicable in NSW.

NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 provides the development standards for designing and building on BFPL in New South Wales (NSW) as follows;

- strategic land use planning to ensure that new development is not exposed to high bush fire risk;
- specific provisions for creating new residential and rural residential subdivision allotments;
- specific provisions for special fire protection purpose (SFPP) development taking account of occupant vulnerability;
- bush fire protection measures (BPMs) for new buildings;
- guidance in upgrading and maintaining existing development.

The general principles underlying NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 are that:

- BPMs are required to reduce the impact of a bush fire;
- protection measures are governed by the degree of threat posed to a development and the vulnerability of occupants;
- reducing the interface of a development to the hazard reduces the bush fire risk to the development;
- good practice in planning, building and management reduces the risk to developments and their occupants and increases their resilience.

#### **(i) Objectives for Residential Subdivision Developments**

The specific objectives for residential subdivision developments as provided for by NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019 are to;

- *minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);*
- *minimise vegetated corridors that permit the passage of bush fire towards buildings;*
- *provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;*
- *ensure that separation distances (APZs) between a bush fire hazard and future dwellings enable a radiant heat level not to exceed 29kW/m<sup>2</sup>;*
- *ensure the ongoing maintenance of APZs;*
- *provide adequate access from all properties to the wider road network for residents and emergency services;*
- *provide access to hazard vegetation to facilitate bush fire mitigation works and property protection; and*
- *ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.*

It is noted that the proposed rezoning is considered to be consistent with the above objectives and that the future residential development of the land can continue to be undertaken so as to be compliant with the relevant acceptable solutions/standards which are applicable to residential subdivision development.

This report will therefore detail the relevant compliance issues associated with NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 and AS 3959 - 2018 *Construction of Buildings in*



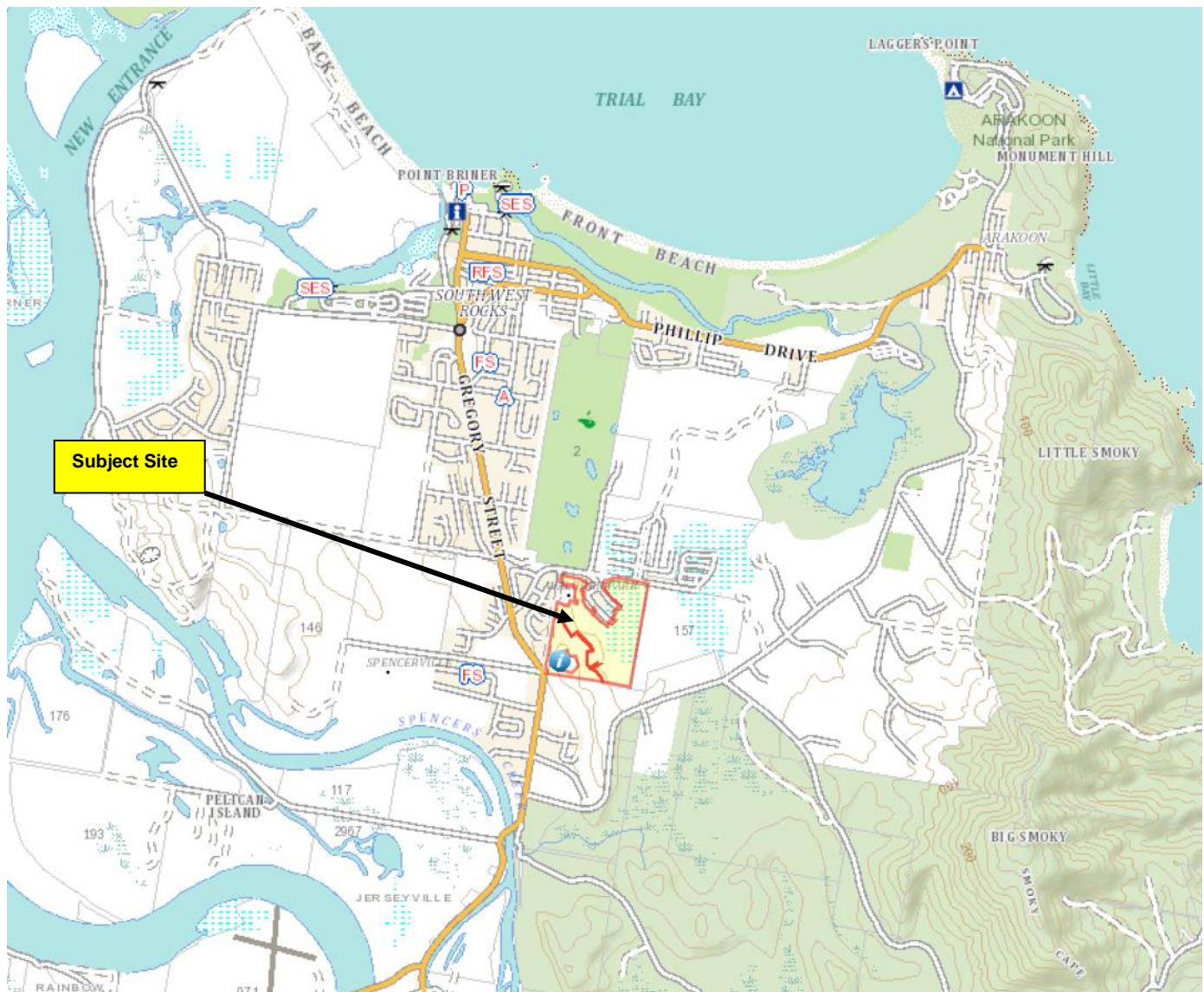
*Bushfire Prone Areas* which are relevant to the proposed rezoning of land and the future residential development of the subject area of land.

### 1.3 Location and Site Description

The land which is the subject of this report is known as Lots 800 and 801 DP 1270742, Burrawong Drive, South West Rocks and is situated within the Kempsey Shire local government area. It is noted that the subject lots form part of the already approved 'Seascape Grove Estate' the staged development of which is progressing.

Seascape Grove Estate is located on the south-eastern fringes of the urban footprint of the coastal town of South West Rocks; refer **Figure 1** below.

**Figure 1 - Site Location**



Being located within the southern urban fringe of South West Rocks, the land within this area has and will continue to experience significant urban expansion with residential development expanding from the north into residentially zoned land in the south.

The character of the locality is that of an urban fringe area with residential development expanding into open space areas of land which until recently had a rural and bushland character and use.

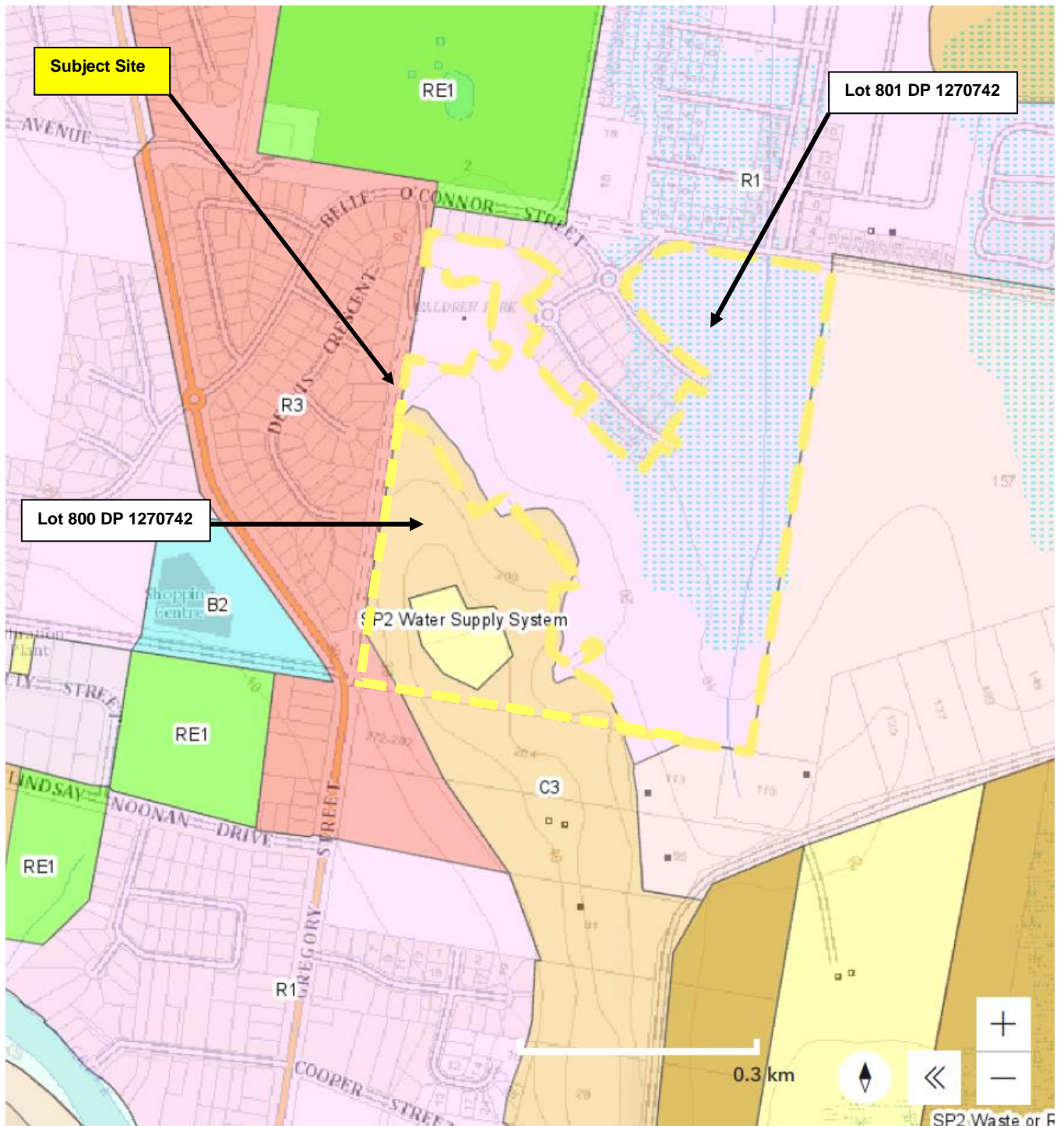
The subject site forms part of the approved Seascape Grove Estate the staged development is occurring from the north to the south, refer to **Appendix 1**.

It is noted that earlier stages of the estate occupy a southerly finger of land which existing Lot 801 encircles. To the north of the subject site are recently developed residential lots whilst open space areas associated with a large rural sized property adjoins the subject site to the east. To the west of the subject site is an electricity supply easement before a transition to developed residential lots. To the south of the subject site are open space areas associated with developed rural residential sized lots although infrastructure associated with a water supply reservoir is also present in the southern aspect with this land encircled by existing Lot 800.

The subject site is zoned part Residential (R1) and part Environmental Management (E3) in accordance with Kempsey Local Environment Plan (2013). It is noted that an island of land located centrally within Lot 800 is zoned for Special Purposes (SP2) with this land use zoning reflecting the presence of water supply infrastructure.

Land with a Residential (R1) land use zoning extends to the north whilst land to the south is zoned for Environmental Management (E3), Medium Density Residential (R3) and Residential (RE1) purposes. Adjoining land to the east of the subject site is zoned for Large Lot Residential (R5) land uses whilst to the west of the subject site the land is zoned for Medium Density Residential (R3) purposes, refer to **Figure 2**.

**Figure 2 – Land Use Zoning**



The subject site is located predominately on the northern side slopes of a small hill/ridgeline the crest of which is located in the far southern portion of the subject site. Being predominately located on the northern side slopes of the hill/ridgeline, the topography in the area is dominated by moderate south to north down slopes with the land becoming flatter with distance to the north. The presence of an intermittently flowing creek/drainage depression in the eastern portion of the subject site provides for moderate west to east downslopes towards the creek/gully bed before a transition to upslope conditions in the far eastern portion of the subject site which continue onto adjoining land to the east. Slopes on land to the south of the subject site transition to southerly downslopes. Westerly downslope conditions prevail in the western aspect to the subject site.

The subject site has been cleared of the majority of vegetation with grasslands and scattered and clusters of trees being retained. The southwestern portion of the subject site however contains an area of Wet Sclerophyll Forest. It is noted that vegetation removal has recently been undertaken in



the southern portion of the subject site as part of the construction of the next stages of the approved Seascape Grove Estate development.



Recent vegetation clearing in the southern portion of the subject site

Adjoining land to the north of the subject site consists of managed vegetation associated with developed residential lots whilst to the east of the subject site are areas of grasslands with scattered and clusters of trees. Vegetation on adjoining land to the south consists of Wet Sclerophyll Forest although areas of cleared and managed vegetation are present around the water supply reservoir which is present in this aspect and in conjunction with a number of residential dwellings which are located on adjoining and adjacent land to the south. Vegetation to the west of the subject site consists of grasses within the electricity supply easement and managed vegetation within the developed residential lots which extend to the west of the easement.

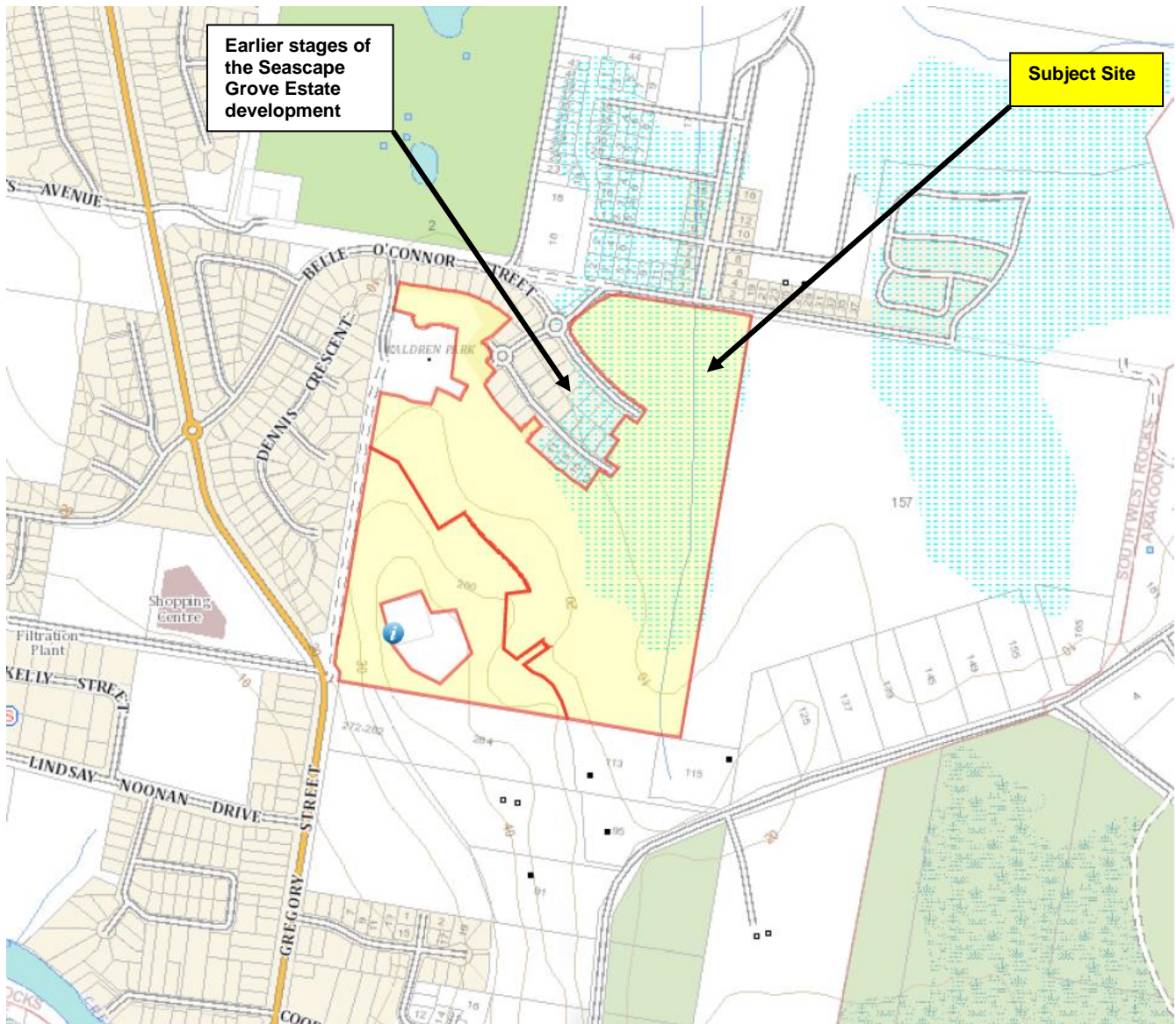
Access to the subject site is predominately available via Burrawong Drive which is present to the north of the subject site. Access is also available from a number of existing public roads which service the earlier stages of the Seascape Grove Estate with this road infrastructure present centrally to the subject site connecting with Burrawong Drive. Access to the subject site, in particular Lot 800 is also available via Gregory Street which adjoins the subject site to the south west.

The closest Fire Service is located approximately 1.4 km to the north of the subject site, (South West Rocks Fire Brigade), with the closest Fire Control Centre being at Kempsey which is approximately 35 kilometres southwest or 30 minutes by car from South West Rocks.

## 1.4 Site History

The subject site comprises two (2) irregularly shaped Torrens Title lots, (Lots 800 and 801 DP 1270742, Burrawong Drive, South West Rocks), and represent the balance of the approved development footprint of the approved Seascape Grove residential estate, refer to **Figure 3** below.

**Figure 3 – Subject Site**



The Seascope Grove Estate is subject to two separate Part 3A approvals being MP-05-0018 and MP-07-0129, refer to **Appendix 1**.

The land within this area has recently and will continue to experience significant urban expansion with residential development expanding into residentially zoned but undeveloped land from the north to the south. The character of the locality is therefore that of an urban fringe area with residential development expanding into undeveloped parcels of land.

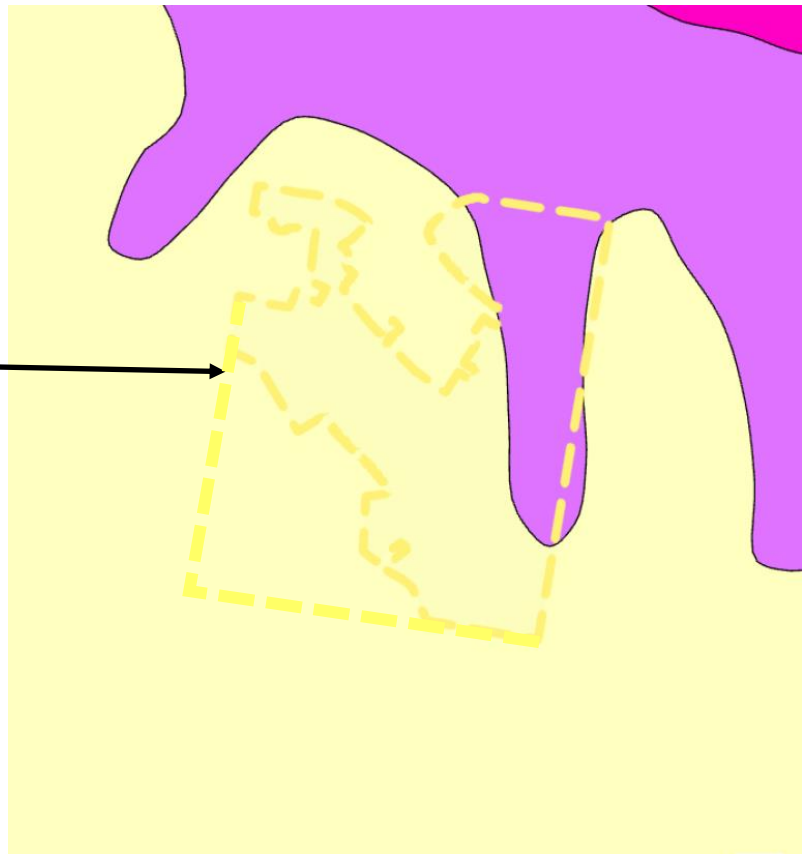
As can be seen in **Figure 3** above, earlier developed stages of the approved Seascope Grove residential estate are located centrally to the subject site with the subject site effectively encompassing the already developed stages of the estate. It is however noted that the construction of the stages of the approved subdivision which are in the southern portion of the subject site have recently commenced with construction approvals for this work being recently issued by Kempsey Shire Council.

It is also noted that separate development approval has been granted by Kempsey Shire Council for a building envelope within Lot 800 with this area of land being approved for the construction of a dwelling within existing Lot 800, refer to **Appendix 2**.

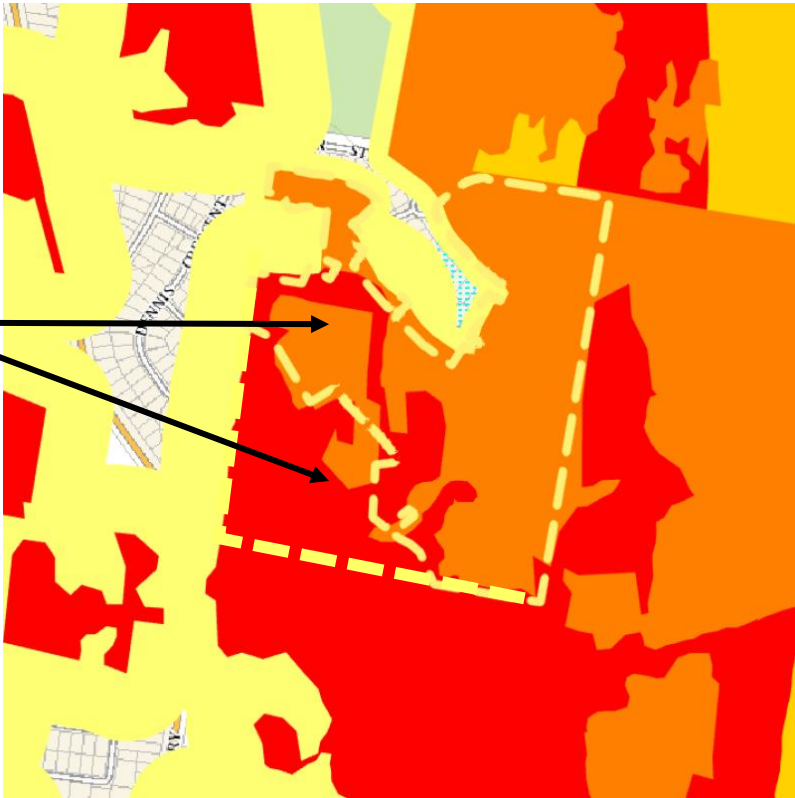
Fire does not appear to have recently impacted upon the vegetation within the subject site or on adjoining and adjacent land.

The environmental and heritage features of the subject site are summarized as follows;

**Table 1 – Environmental and Heritage Features**

ENVIRONMENTAL/HERITAGE FEATURE	COMMENT
Riparian Corridors	There are no riparian corridors on the subject site in the area of land which is the subject of this report.
SEPP (Coastal Management) 2018	The subject site is not identified as being subject to the SEPP.
SEPP (Koala Habitat Protection)	<p>The relevance of the provisions of the SEPP are outside the scope of this report.</p> <p>It is however noted that the subject site has been predominately cleared of most native vegetation and approval for its subdivision already granted by Kempsey Shire Council.</p>
Areas of geological interest	<p>Potential acid sulphate soils (Class 4 and 5) are indicated as being possibly present on the subject site, refer below.</p>  <p>Based upon the nature of the already approved development of the subject site and the various construction and land use management options available it is considered that land contamination issues, (including the disturbance of acid sulphate soils), will not be an impediment to the proposed rezoning of the subject site so as to allow for the continued residential occupation and use of the already approved residential lots.</p>
Environmental Protection Zones	The subject site is zoned part Residential (R1) and part Environmental Management (E3) in accordance with Kempsey Local Environment Plan (2013), refer to <b>Figure 3</b> above.



	It is noted that the purpose of the proposed rezoning is to remove the split zoning from the approved residential lots so that the lots are not burdened by an Environmental Management (E3) land use zoning.
Land slip	Given the moderate nature of the topography of the subject site and surrounding areas, land slip is not considered to be an issue for the subject site.
Bushfire Prone Land	<p>Bushfire Prone Land Risk Mapping provides that areas of Category 3 bushfire hazard vegetation are located over the majority of the subject site whilst small areas of Category 1 bushfire hazard vegetation are shown to be located in the southwestern, southern central and western portions of the subject site and on adjoining land to the northeast, south and east; refer below</p>  <p>It is considered that the above mapping does not accurately indicate the presence of hazard vegetation as vegetation within the western portion of the subject site and on land to the east of the subject site consists of scattered and clusters of trees which would be more consistent with Category 3 vegetation.</p> <p>It is also noted that recently commenced subdivision construction activities in the southern portion of the subject site has removed/modified the area of Category 1 hazard vegetation which is shown to be present in the southern central portion of the subject site.</p>
Flood prone land	The subject site is not identified as being flood prone.
National Park Estate or other Reserves	<p>The subject land does not form part of the National Park Estate or other Reserves.</p> <p>It is however noted that the Hat Head National Park is present at distance to the east of the subject site.</p>

Threatened species, populations, endangered ecological communities and critical habitat	<p>Given the level of disturbance of the subject site no threatened flora or fauna species are expected to be present on the subject site.</p> <p>However, the relevance of this issue is outside the scope of this report and is the subject of separate assessment.</p> <p>It is however noted that the subject site has been predominately cleared of most native vegetation and approval for its subdivision already granted by Kempsey Shire Council.</p>
Ecologically Endangered Communities (EEC's)	<p>Given the level of disturbance, the subject site is unlikely to contain/support Ecologically Endangered Communities.</p> <p>The relevance of this issue is outside the scope of this report and is the subject of separate assessment.</p> <p>It is however noted that the subject site has been predominately cleared of most native vegetation and approval for its subdivision already granted by Kempsey Shire Council.</p>
OEH Key Habitats and Corridors	<p>Given the level of disturbance, the subject site is unlikely to form part of OEH key habitats and corridors.</p> <p>The relevance of this issue is outside the scope of this report and is the subject of separate assessment.</p> <p>It is however noted that the subject site has been predominately cleared of most native vegetation and approval for its subdivision already granted by Kempsey Shire Council.</p>
Aboriginal Heritage	<p>Items of aboriginal heritage are unlikely to be present given the active vegetation modification and management which has occurred on the subject site and the level of site disturbance which has occurred.</p>

## 1.5 Development Proposal

As can be seen in **Figure 2** above, the southern portion of the subject site is zoned for Environmental Management (E3) purposes with this land use zoning burdening the southern portions of the already approved residential lots which are located along the far southern perimeter of the subject site, refer to **Appendix 3**.

It is now proposed to rezone the southern portion of the subject site so as to relocate the Environmental Management (E3) zone boundary so that the already approved residential lots are zoned entirely Residential (R1) thereby removing the split land use zoning which currently burdens the approved residential lots which are present along the southern perimeter of the approved residential subdivision, refer to **Appendix 4**.

All other aspects of the approved residential subdivision of the subject site will remain unchanged as a result of the proposed rezoning. In this regard the approved and proposed development concept for the subject site continues to provide for typically sized residential lots, together with the residual areas of the subject site which will be contained within Lot 800, which are serviced by a network of public roads which provide for vehicle movement to and from the north using a 'loop road' configuration.

This report will focus upon detailing the strategic bushfire issues and constraints for the subject site and the identification of the bushfire threat management requirements which will be applicable to the future residential development of the already approved residential lots in order to allow for an assessment of the subject site's suitability for rezoning.



## **1.6 Fauna and Flora Issues**

A fauna and flora evaluation has not been undertaken in conjunction with this bushfire hazard assessment and as such issues pertaining to fauna and flora are outside the scope of this report.

## 2.0 STRATEGIC BUSHFIRE STUDY

It is noted that NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019 provides that for strategic development proposals in bush fire prone areas a Strategic Bush Fire Study is to be prepared.

The level of information required within such a study is dependent upon the nature of the LEP amendment, scale of the proposal, the bush fire risk and its potential impact upon the wider infrastructure network. The Strategic Bush Fire Study provides the opportunity to assess whether new development is appropriate in the bush fire hazard context. It also provides the ability to assess the strategic implications of future development for bush fire mitigation and management.

In accordance with Table 4.2.1 of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019 the following Strategic Bushfire Study is provided in the context of the low impact scale which the proposed rezoning is considered to have.

### 2.1 Landscape Assessment

#### 2.1.1 Assessment Methodology

In order to determine 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 following methodology was taken.

##### **(i) Stage 1 - Desktop Survey.**

The identification and assessment of existing and historic information pertaining to the subject site in relation to;

- Weather
- Vegetation.
- Topographic features.

##### **(ii) Stage 2 - Field Survey.**

Detailed inspections of the subject site were undertaken by David Pensini - Building Certification and Environmental Services on 9<sup>th</sup> December 2021 in order to identify relevant bushfire hazard factors and characteristics such as;

- Topographic conditions.
- Vegetation characteristics.
- Weather
- Fire Danger

The assessment of slope and vegetation characteristics has been carried out in accordance with Appendix 1 of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019.

Each of the above factors need to be considered in determining the bushfire hazard for the subject site and proposed rezoning. These factors must be reviewed in determining the bushfire protection measures which are applicable to the subject site and the proposed rezoning of the subject site.

#### 2.1.2 Topography

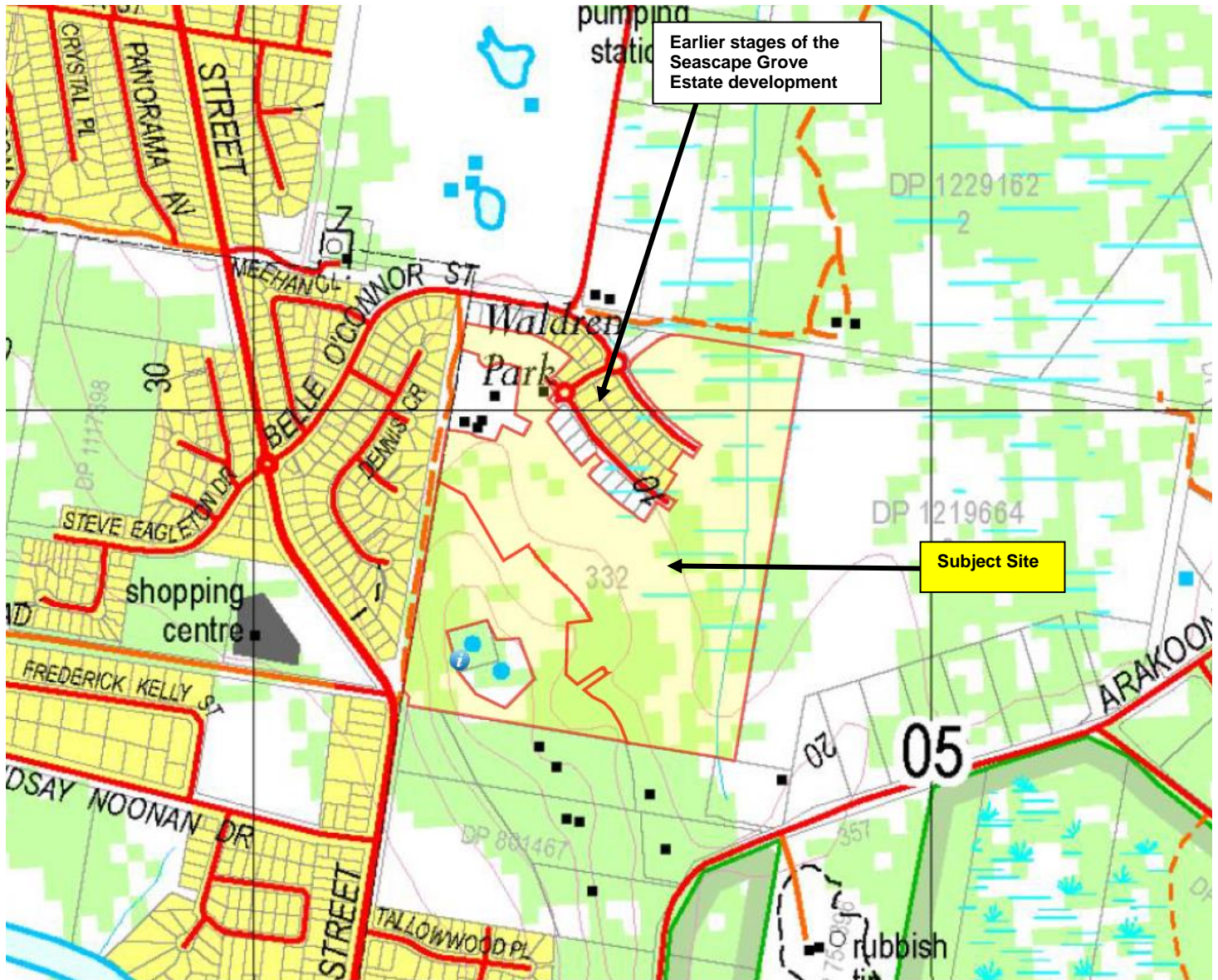
Topography is a major factor to consider when assessing the bushfire risk of any development which is subject to compliance with the requirements of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019. Therefore, the slope of the subject site and surrounding area, (to a distance of 100m), was measured using a Suunto PM-5/360 PC Clinometer.

The subject site is located predominately on the northern side slopes of a small hill/ridgeline the crest of which is located in the far southern portion of the subject site. Being predominately located on the northern side slopes of the hill/ridgeline, the topography in the area is dominated by

moderate south to north down slopes with the land becoming flatter with distance to the north. The presence of an intermittently flowing creek/drainage depression in the eastern portion of the subject site provides for moderate west to east downslopes towards the creek/gully bed before a transition to upslope conditions in the far eastern portion of the subject site which continue onto adjoining land to the east. Slopes on land to the south of the subject site transition to southerly downslopes. Westerly downslope conditions prevail in the western aspect to the subject site.

Slope conditions over the subject site and on adjoining and adjacent land can be seen in **Figure 4** below;

**Figure 4 – Topographic Conditions**



The following table indicates the slopes measured within the vegetation affecting the site of the proposed rezoning.

**Table 2 - Slope Assessment Results**

DIRECTION OF HAZARD	SLOPE degrees)	UPSLOPE/DOWN SLOPE
South/Southwest	7° - 8° (0°)	Upslope
East	2° - 4° (0°)	Upslope

Southeast	>15° (0°)	Upslope
-----------	-----------	---------

The above slopes were considered when assessing the required defensible spaces and indicative Bushfire Attack Levels, (BAL's), for any future residential development/s within the area nominated for rezoning.

### **2.1.3 Vegetation Assessment**

The vegetation on and surrounding the area of the subject site which is proposed to be rezoned was assessed over a distance of 140m from the proposed development.

The vegetation formations were classified using the system adopted as per Keith (2004) and in accordance with Appendix 1 of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019. The following information is provided in relation to the floristic characteristics of the subject site and adjoining and adjacent land in the area which is the subject of the rezoning proposal.

In adopting a conservative approach to bushfire hazard assessment, worst case vegetation characteristics have been identified.

#### **(i) Vegetation within Subject Site**

The subject site has been cleared of the majority of vegetation with grasslands and scattered and clusters of trees being retained. It is noted that vegetation removal has recently been undertaken in the southern portion of the subject site as part of the construction of the next stages of the approved Seascope Grove Estate development.



Grasslands over the northern and central portions of Lot 801





Recent vegetation clearing in the southern portion of the subject site



Grasslands with scattered trees in northern portion of Lot 800

The southwestern portion of the subject site however retains an area of Wet Sclerophyll Forest.





**Wet Sclerophyll Forest in the southern portion of Lot 800 – southwestern portion of the subject site**

**(ii) Vegetation on Adjoining and Adjacent Land to Subject Site**

Adjoining land to the north of the subject site consists of managed vegetation associated with developed residential lots whilst to the east of the subject site are grasslands with scattered and clusters of trees. In this regard the extent of canopy cover associated with areas of trees retained on adjoining land to the east is in some such that significant canopy continuity exists. Accordingly in adopting a conservative approach to bushfire hazard assessment a specification similar to Woodland has been adopted for the eastern aspect of the subject site based upon the presence of a grassy understorey, absence of shrub layer and the significantly modified canopy cover.



**Grasslands with scattered and clusters of trees on adjoining land to the east**



Vegetation on adjoining land to the south consists of Wet Sclerophyll Forest although areas of cleared and managed vegetation are present around the water supply reservoir which is present in this aspect and a number of residential dwellings which are located on adjoining land to the south.



Wet Sclerophyll  
Forest vegetation  
on adjoining land  
to the south of the  
subject site

Vegetation to the west of the subject site consists of managed grasslands within the electricity supply easement and managed vegetation within developed residential lots. Given the narrow width of the easement and the presence of formalized road infrastructure within the easement this area of land was assessed as being low threat.



Grasslands within  
electricity supply  
easement to the  
west of the  
subject site

An indication of the relationship of the vegetation of bushfire significance to the area of the proposed rezoning is presented in **Figure 5** below.



**Figure 5 - Vegetation Relationships to the Subject Land**



The following table summarizes the various vegetation structures which are of bushfire significance to the areas of land which are the subject of the proposed rezoning.

**Table 3 – Summary of Vegetation Characteristics**

ASPECT	VEGETATION DESCRIPTION	VEGETATION CLASSIFICATION – (Keith, 2004)
South	Wet Sclerophyll on subject site and on adjoining land	Wet Sclerophyll Forest
East	Scattered and clusters of trees on adjoining land to the east	Woodland specification



### **2.1.4 Climate/Weather**

The typical/average climate of the South West Rocks area is a humid subtropical climate characterised by warm humid summers and mild winters. The average daily maximum temperature is around 21.5°C, while the average daily minimum temperature is around 10°C - 11°C.

Long-term average annual rainfall is around 1,500mm whilst annual pan evaporation is estimated to be approximately 1,400mm.

Based on long-term, (1910–2011), observations, temperatures have been increasing in the North Coast Region since about 1970, with higher temperatures experienced in recent decades. This warming trend is expected to continue, with anticipated considerable rainfall variability across seasons and from year to year. These projected changes include increasing maximum and minimum temperatures, increasing number of hot days, decreasing number of cold nights together with winter rainfall and increasing autumn and spring rainfall. Average fire weather and severe fire weather days are projected to increase in summer and spring.

The bush fire season for the area generally runs from July to November, however, can extend into December or January with low rainfalls. Strong northwest to southwest winds often prevail within that time of year. Longer bush fire seasons occur when summer rainfall is lower than normal, with the bush fire season extending through summer to early autumn. Serious fires have occurred late in the season under dry summer conditions.

Prevailing weather conditions associated with the bush fire season are characterised by dry north-westerly winds, usually associated with high pressure systems and the passage of cold fronts. Extended periods of low rainfall, and the resultant fuel moisture deficiencies, combined with summer temperatures and hot dry westerly winds form the circumstances for high intensity fires to develop. Although summer rains generally bring an end to the fire season, short dry spells can create extensive wildfires in the area as late as April. Generally, these fires have proved to be less damaging than those occurring in spring/early summer. The climate projections indicate that there is a likelihood of more frequent and higher intensity bushfires occurring when low seasonal rainfall occurs.

Based upon the above it is considered that climatic conditions are at times conducive to supporting bushfire with the subject land being located adjacent to areas of vegetation which provide for fuel loads sufficient to support and promote bushfires. In this regard the most likely bushfire risk scenario would be a fire moving from the south and east within the areas of forest and grasslands which are contained within adjoining land to the south and east of the subject site under the influence of north-easterly or southerly wind conditions. This risk is however tempered by the upslope topography within the areas of hazard vegetation and the presence of approved residential development on adjoining land to the south and east of the subject site.

In accordance with NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019, NSW Rural Fire Service, **NSW Local Government Areas FDI**, May 2017 and Table 2.1 of AS 3959 - 2018, the fire weather for the site is based upon the 1:50 year fire weather scenario and has a Fire Danger Index (FDI) of 80.

## **2.2 Land Use Assessment**

Being located on the southern fringes of the urbanized area of South West Rocks, the land within this area has and will continue to experience significant urban expansion with a transitional land use setting and context prevailing.

It is noted that the land which is the subject of rezoning is bounded by historic and more recent residential subdivision development to the north and west. Additionally, land which is zoned for large lot residential development extends to the east and southeast whilst land with a medium density residential land use zoning extends to the southwest of the subject site.

The area of land which is proposed to be rezoned has a direct context and relationship with already approved residential areas with the small area of land which is proposed to be rezoned being a logical extension to the already approved residential development patterns within the area. In this regard the existing approved residential subdivision development of the subject site provides that

the approved residential lots along the southern perimeter of the subdivision have a split land use zoning with the southern portion of the residential lots currently being burdened by a Environmental Management (E3) land use zoning despite there being no specific environmental management features or characteristics which would warrant an environmental management land use zoning to be present within the residential lots.

The presence of large areas of historic and recently commenced residential development adjacent to the subject site reinforces the orderly and progressive development of land within the locality. It is also important to note that the proposed rezoning needs to be considered having regards to the fact that the subject site has already been approved for residential subdivision with the rezoning having no implications in terms of the residential development and use of the already approved residential lots which are the subject of this report other than the potential for greater flexibility in the location of a future dwelling and associated infrastructure within each of the residential lots which are currently subject to the split land use zoning.

It is however acknowledged that the subject site does and will continue to have an interface with areas of land containing bushfire hazard vegetation. In this regard the ongoing presence of forest vegetation in the southwestern portion of the subject site together with forest vegetation on adjoining and adjacent land to the south and Woodlands to the east needs to be taken into consideration in the identification of bushfire threat management responses which are relevant to the future residential development of the already approved residential lots which are the subject of this report.

Notwithstanding the above, the generally cleared nature of the land which is the subject of this report and the absence of major constraints in terms of landform, topography and ecological value to the future residential development of the already approved residential lots within the subject site suggests that the proposed rezoning of the land is consistent with sound town planning outcomes.

It is noted that the proposed rezoning will facilitate the development of the already approved lots within the subject site for residential dwelling development. In this regard it would be expected that the density of future development and the characteristics of occupants would be entirely consistent with that expected within urban residential areas.

The typical permitted land uses under a Residential (R1) land use zoning would be;

## **2 Permitted without consent**

*Environmental protection works; Home-based child care; Home occupations*

## **3 Permitted with consent**

*Attached dwellings; Boarding houses; Centre-based child care facilities; Community facilities; Dwelling houses; Group homes; Home industries; Hostels; Multi dwelling housing; Neighbourhood shops; Oyster aquaculture; Places of public worship; Pond-based aquaculture; Residential flat buildings; Respite day care centres; Roads; Semi-detached dwellings; Seniors housing; Shop top housing; Tank-based aquaculture; Any other development not specified in item 2 or 4*

Whilst the permitted land uses could support higher densities of development and involve occupants with characteristics which may reduce their abilities to respond in an emergency, the form of the existing approved subdivision of the subject site, refer to **Appendix 1**, would not support these forms of development. Notwithstanding this future development proposals which contemplate Special Fire Protection Purpose development would need to be assessed on their own merits in terms of responding to bushfire threat and management.

Based upon the above information there would appear to be no major land use planning constraints to the proposed rezoning of the subject site and the future residential development of the already approved lots.

## **2.3 Access and Egress**

Access and egress from the subject site and already approved residential lots will remain unchanged from that which has already been approved as part of the residential subdivision of the subject site.

The access and egress strategy for the approved subdivision utilizes existing public road infrastructure, Burrawong Drive, Rosedale Avenue and Belle O'Connor Street together with a network of new public roads, to provide access to and egress from the subject site and the already approved residential lots with the existing and yet to be constructed public road infrastructure providing for road frontages to the already approved residential lots.

Burrawong Drive, Rosedale Avenue and Belle O'Connor Street are existing bitumen sealed two way all weather public roads, and service the existing residential development in the area. Travel to the northwest of the subject site via Belle O'Connor Street provides for connection with Gregory Street which is the main connecting road within South West Rocks. Areas which would be protected from the impacts of bushfire are present to the north and west of the subject site.

It is understood that all new roads which will be constructed as part of the development of the already approved residential lots will be two-way and will be constructed to normal residential street standards.

It is further noted that the already approved subdivision design provides for a loop 'through road' configuration which provides for multiple alternative access and egress opportunities towards the north and encourages movement away from areas of bushfire hazard vegetation to areas which would be protected from the impacts of bushfire.

The already approved development concept for the subject site also provides for the presence of a number of fire trails which are located to the rear of the approved residential lots in the southwestern portion of the subject site and adjacent to the eastern boundary of the subject site. These fire trails connect with public road infrastructure and provide for perimeter access to areas of hazard vegetation to the south and east of the approved residential lots. It is noted that whilst the fire trails in the southwestern portion of the subject site have been constructed their connection to yet to be constructed public roads is pending the construction of Burrawong Drive. In this regard easements for access for emergency access in favour of Kempsey Shire Council which burden Lot 800 DP 1270742 have been created with the registration of DP 1270742.



**Fire trail in the central southern portion of the subject site**





Fire trail in the southwestern portion of the subject site

The proposed rezoning which is the subject of this report has no implications in terms of access to or egress from the already approved residential lots within the subject site. The same level of access and egress will remain in relation to the already approved residential lots regardless of the proposed rezoning.

## 2.4 Emergency Services

The proposed rezoning of the land will not increase the demand for emergency services beyond that which is currently provided for by way of the existing approved residential subdivision of the subject site. In this regard the proposed rezoning of land does not increase the interface between residential development and areas of bushfire hazard vegetation when considered in the context of the nature and extent of existing and approved, but yet to be constructed, residential subdivision development of the subject site.

The nature of urban expansion which is associated with the rezoning and subsequent development of land for residential purposes is such that increases in demand for emergency services is inevitable as emergency services are required for a range of population safety and health protection issues associated with population growth. For example, in an urban context, firefighting resources are required not only to respond to bushfire incidents but also in relation to responding to a range of building fire scenarios and causes.

It is noted that South West Rocks is already serviced by a NSW Fire and Rescue Brigade together with a Rural Fire Service Brigade, Ambulance Service, Police Service and State Emergency Service.

The proposed rezoning which is the subject of this report has no implications in terms of the demand on and availability of emergency services. The same level of demand for emergency services will remain in relation to the already approved residential lots to which the proposed rezoning relates.

## 2.5 Infrastructure

Given that the subject site has already been approved for development as separate Torrens Title residential lots, all lots will have access to the reticulated water supply, the extension of which will be required by Kempsey Shire Council to the already approved residential subdivision of the subject site. It is however noted that the determination of a guaranteed water supply is to be made by the water supply authority where mains water supply is available.

It is noted that there are no apparent water servicing issues which would preclude the proposed rezoning of land as the subject site has already been approved for residential subdivision the construction of which has recently commenced.

Electricity supply and communications infrastructure is available in the locality and will be accessible to the already approved residential lots within the subject site.

Reticulated gas services are not available in the locality and are therefore not available to the subject area of land.

It is noted that the rezoning and subdivision approval processes incorporate consideration of relevant servicing requirements and capabilities by relevant service providers/authorities with the relevant approval processes able to accommodate any issues which maybe relevant to any future development which is proposed.

The proposed rezoning which is the subject of this report has no implications in terms of the availability of utility services. The same level of demand for services will remain in relation to the already approved residential lots to which the proposed rezoning relates.

## **2.6 Adjoining Land**

It is noted that the rezoning of land will not change or alter the ability of adjoining and adjacent land to carry bushfire nor will the proposed rezoning of the subject site place increased pressure on adjoining landowners to introduce or implement Bushfire Management Plans as a result of the proposed rezoning.

It is noted that the proposed rezoning of the subject site and its subsequent development as residential lots will not change or alter the ability of adjoining land to carry a bushfire as vegetation characteristics will remain relatively unchanged from the existing assessed level of bushfire threat.

Importantly the rezoning and associated residential subdivision development of the subject site will provide for improved bushfire threat management outcomes for adjoining land to the south and east via the removal of a significant area of bushfire hazard vegetation and the removal/reduction of interfaces between residential lots and other infrastructure with areas of bushfire hazard vegetation.

The proposed rezoning and subsequent residential subdivision development of the subject site will impose no additional bushfire threat management obligations or responsibilities on adjoining land managers from that which currently exists and will actually reduce the pressures on adjoining landowners to introduce or implement Bushfire Management Plans.

### 3.0 BUSHFIRE THREAT REDUCTION MEASURES

Due to the age of the existing approvals for the residential subdivision of the subject site the existing residential subdivision development of the land is subject to compliance with the bushfire threat management requirements at the time of approval being NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2001 and 2006 and as such the further development of the subject site would be subject to compliance with the development consent conditions which are relevant to the already approved residential subdivision development.

However, as the proposed development contemplates residential development within the already approved residential lots such development would be subject to compliance with the bushfire threat management requirements of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019. Consistency of the future development of the already approved residential lots with the requirements of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019 is examined as follows albeit that the proposed rezoning does not alter the level of bushfire threat from that which has already been approved for each of the residential lots.

#### 3.1 NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019

The following issues and constraints have been identified through considering the requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019 as they apply to the proposed rezoning of the subject site and the associated residential subdivision development of the land.

It is noted that for the purposes of this report it has been assumed that future development concepts of the residential lots within the already approved residential subdivision of the subject site do not contain uses which are Special Fire Protection Purpose development in accordance with NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019.

##### **3.1.1 Defendable Space/Asset Protection Zone**

To ensure that the aims and objectives of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019 are achieved for the proposed rezoning and the residential subdivision of the subject site, an Asset Protection Zone (APZ) between the asset and the hazard is required to be provided.

An APZ provides for; minimal separation for safe firefighting, reduced radiant heat, reduced influence of convection driven winds, reduced ember viability and dispersal of smoke. The APZ consists of an Inner Protection Area (IPA) and Outer Protection Area (OPA). The IPA is an area closest to the buildings that incorporates defendable space and is used for managing heat intensities at the building surface. The OPA is positioned adjacent to the hazard and the purpose of the OPA is to reduce the potential length of flame by slowing the rate of spread, filtering embers and suppressing the crown fire.

NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019 provides that a defendable space is;

*An area adjoining an asset that is managed to reduce combustible elements and is free from constructed impediments. It is a safe working environment in which active firefighting can be undertaken to defend the structure, before and after the passage of a bush fire.*

The following assessment of APZ requirements which are relevant to the proposed rezoning and the already approved residential subdivision development of the subject site is provided as follows;



##### **(i) Residential Subdivision Development**

It is noted that the development of each of the already approved residential lots within the subject site will need to provide for APZ's in accordance with the residential subdivision requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019. APZ's in residential situations must be such that radiant heat levels of greater than 29kW/m<sup>2</sup> will not be experienced at a residential building on a proposed residential allotment.

The following table indicates the minimum 'Deemed to Satisfy' Asset Protection Zones required from the identified areas of bushfire hazard vegetation to future residential buildings within the already approved residential lots within the area of the subject site which is proposed to be rezoned.

The following table is based upon the vegetation type, slopes, and fire weather (FDI) which is applicable to this assessment

**Table 4 – APZ Requirements for Residential Subdivision Developments (29kW/m<sup>2</sup>)**

DIRECTION OF HAZARD	VEGETATION TYPE	SLOPE	IPA	OPA	APZ (PfPB 2019)	ALREADY APPROVED APZ's (PfPB 2001/2006)	COMPLIANCE (with Minimum APZ Requirements)
South/South west	Wet Sclerophyll Forest	7° - 8° (0°) Upslope	10m	10m	20m	20m*	
East	Woodland specification	2° - 4° (0°) Upslope	11m	-	11m	Minimum 25m**	

**Notes - \* APZ includes area of existing fire trails (12m – 14m wide) within right of access for emergency bushfire access in favour of Kempsey Shire Council burdening Lot 800 DP 1270742.**

**\*\* APZ includes area of approved fire trail and 25m wide APZ on adjoining eastern land to residential lots.**

It is noted that the APZ requirements for the already approved residential development remain unchanged from the level of bushfire threat which was assessed as being relevant to the future development of each of the residential lots at the time of approval. Consequently, the proposed rezoning has no implications in terms of compliance with the APZ's





Future residential development in the south-eastern area of the approved subdivision, (Lots 619 – 622), continues to be subject to compliance with the 29 kW/m<sup>2</sup> performance criteria of Table 5.3a of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019 which is consistent with the approach provided for in the bushfire hazard assessment report which forms part of the existing development approval for the residential subdivision.

Having regard to the above it is possible to locate future residential dwellings on the already approved residential lots and comply with the relevant APZ performance requirements of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019.

In this regard the proposed rezoning of land has no implications for the continued provision of the minimum required APZ's to future residential development within the already approved residential lots beyond that which has already been assessed as being relevant to the approved residential subdivision of the subject site. The proposed rezoning of the subject site assists in clarifying the need for the ongoing management of all areas of the approved residential lots to APZ standards so that future residential buildings within each of the approved lots comply with the relevant APZ performance criteria of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019.

The APZ performance criteria and acceptable solution provisions which are applicable to the future development of the already approved residential lots within the subject site are detailed in the following table:

**Table 5 – Residential Subdivision Development APZ Performance Requirements 2019**

<b>Intent of measures: to provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings does not exceed 29kW/m<sup>2</sup>.</b>		
<b>Performance Criteria</b>	<b>Acceptable Solutions</b>	<b>Compliance Comment</b>
<b>The intent may be achieved where:</b>		
<ul style="list-style-type: none"> <li>potential building footprints will not be exposed to radiant heat levels exceeding 29 kW/m<sup>2</sup> on each proposed lot</li> </ul>	<ul style="list-style-type: none"> <li>APZs are provided in accordance with Tables A1.12.2 and A1.12.4 based on the FDI</li> </ul>	 To be complied with in relation to the design of future development.
<ul style="list-style-type: none"> <li>APZs are managed and maintained to prevent the spread of a fire towards the building.</li> </ul>	<ul style="list-style-type: none"> <li>APZs are managed in accordance with the requirements of 'Appendix 4</li> </ul>	 To be complied with in relation to the design of future development
<ul style="list-style-type: none"> <li>the APZ is provided in perpetuity</li> </ul>	<ul style="list-style-type: none"> <li>the APZ is wholly within the boundaries of the development site.</li> </ul>	 To be complied with in relation to the design of future development  All APZ's can be provided in accordance with PfBP Guideline requirements.  APZ's to include existing easements for emergency bushfire access on Lot 800.
<ul style="list-style-type: none"> <li>APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised</li> </ul>	<ul style="list-style-type: none"> <li>APZ's is located on lands with a slope less than 18 degrees.</li> </ul>	 To be complied with in relation to the design of future development  All APZ's can be provided on lands with a slope less than 18 degrees.

Whilst the minimum required APZ's may not be achieved within the boundaries of the already approved residential lots, it is considered that suitable APZ's are available having regard to the existing managed infrastructure, (e.g., existing fire trails and existing easement for emergency bushfire access in favour of Kempsey Shire Council), on adjoining and adjacent land as part of meeting the minimum required APZ's for the future residential development of each of the already approved lots.

Having regard to the above it will be necessary to ensure that the future design of any residential development within each of the already approved residential lots provides for compliance with the APZ requirements of Appendix 1 of NSW Rural Fire Service, **Planning for Bushfire Protection**, 2019. In this regard provision of APZ's to the subject site remains consistent with the APZ's assessed as being applicable to the approval of the residential subdivision, refer to **Appendix 5**. Noting that the width of the existing bushfire access easement on Lot 800 is 12m – 14m wide adjoining the approved residential lots within Lot 801 the minimum required area required for APZ purposes within each of the approved lots in the southern/southwestern aspect will be 6m – 8m wide in order to provide for the minimum required 20m wide APZ.

It is also noted that the commencement of subdivision construction activities in the southern portion of the subject site and the associated removal/modification of vegetation has provided for additional flexibility for the location of a future dwelling in the northern central portion of Lot 800 DP 1270742, Burrawong Drive, South West Rocks. Whilst the location of a future residential dwelling within



Lot 800 is focused upon the nominated building envelope within the lot it is noted that the recent removal/modification of vegetation within the subject site provides for opportunities to provide for greater flexibility in relation to the location of a future dwelling and/or reduce the level of bushfire attack on a future dwelling.

**Notwithstanding the above, based upon the size and shape of the subject area of land which is to be rezoned for residential purposes, it is considered that the intent of the requirement for the provision of Asset Protection Zones as required by NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019 can be satisfied for the future development of the already approved residential allotments albeit that the location, nature and form of construction of future development on each of the approved residential lots must reflect the performance objectives of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019.**

The proposed rezoning which is the subject of this report has no implications in terms of the provision of APZ's to future residential development of the individual lots which are located within the already approved subdivision of the subject site.

### **3.1.2 Defendable Space/Asset Protection Zone Management**

Areas identified as forming part of future APZ's for any future residential development within each of the approved residential lots, the adjoining existing fire trails and associated easements or within the approved building envelope within Lot 800 DP 1270742, Burrawong Drive, South West Rocks must be managed so as to comply with the standards which are applicable to Asset Protection Zones as follows;

#### **(i) Inner Protection Area (IPA)**

*An IPA should provide a tree canopy cover of less than 15% and should be located greater than 2 metres from any part of the roofline of a building.*

*Garden beds of flammable shrubs are not to be located under trees and should be no closer than 10m from an exposed window or door.*

*Trees should have lower limbs removed up to a height of 2 metres above the ground*

#### **(ii) Outer Protection Area (OPA)**

*An OPA should provide a tree canopy cover of less than 30% and should have the understorey managed (mowed) to treat all shrubs and grasses on an annual basis in advance of the fire season (usually September).*

Notwithstanding the proposed rezoning of part of the subject site, based upon the size and shape of the already approved residential lots, the existing fire trails and associated existing easements within Lot 800 DP 1270742 and the building envelope within Lot 800 DP 1270742, Burrawong Drive, South West Rocks, compliance with the minimum APZ requirements is achievable for the future residential development of the already approved residential lots.

### **3.1.3 Operational Access and Egress**

As set out in Section 5.3.2 of NSW Rural Fire Services, *Planning for Bushfire Protection*, 2019, developments in bushfire prone areas must be provided with adequate and acceptable standards of access and egress.

Access and egress from the subject site and already approved residential lots will remain unchanged from that which has already been approved as part of the approved residential subdivision development of the subject site.

The access and egress strategy for the approved subdivision utilizes existing public road infrastructure, Burrawong Drive, Rosedale Avenue and Belle O'Connor Street together with a network of new public roads, to provide access to and egress from the subject site and the already approved residential lots with existing, and yet to be constructed public road infrastructure, providing for road frontages to the already approved residential lots.

Burrawong Drive, Rosedale Avenue and Belle O'Connor Street are existing bitumen sealed two way all weather public roads, and service the existing residential development in the area. Travel to the northwest of the subject site via Belle O'Connor Street provides for connection with Gregory Street which is the main connecting road within South West Rocks. Areas which would be protected from the impacts of bushfire are present to the north and west of the subject site.

It is understood that all new roads which will be constructed as part of the development of the already approved residential lots will be two-way and will be constructed to normal residential street standards. The extension of Burrawong Drive has been approved with a sealed carriageway width of 9m.

It is further noted that the already approved subdivision design provides for a loop 'through road' configuration which provides for multiple alternative access and egress opportunities towards the north and encourages movement away from areas of bushfire hazard vegetation to areas which would be protected from the impacts of bushfire.

The already approved development concept for the subject site also provides for the presence of a number of fire trails which are located to the rear of the approved residential lots in the southwestern portion of the subject site and adjacent to the eastern boundary of the subject site. These fire trails connect with public road infrastructure and provide for perimeter access to areas of hazard vegetation to the south and east of the approved residential lots. It is noted that the fire trails in the southwestern portion of the subject site have been constructed albeit that connection with yet to be constructed public roads is pending the extension of Burrawong Drive. Easements for access for emergency bushfire access in favour of Kempsey Shire Council, burdening Lot 800 DP 1270742 have been created with the registration of DP 1270742.

The proposed rezoning which is the subject of this report has no implications in terms of access to or egress from the already approved residential lots within the subject site. The same level of access and egress will remain in relation to the already approved residential lots to which the proposed rezoning relates.

Subject to compliance with the requirements of the Bushfire Safety Authority and development consent conditions which are relevant to access to and egress from the existing approved residential subdivision of the subject site, it is considered that the already approved access and egress arrangements will be acceptable for the area of land which is proposed to be rezoned given the nature, extent and construction of the existing public road infrastructure which is present in the locality and the future public road systems which will be constructed to service the already approved residential subdivision development of the subject site.

#### **3.1.4 Services - Water, Gas and Electricity**

As set out in Section 5.1.4 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019, developments in bushfire prone areas must maintain a water supply reserve dedicated to firefighting purposes.

Given that the subject site has already been approved for development as separate Torren Title residential lots, all lots will have access to the reticulated water supply, the extension of which will be required by Kempsey Shire Council to the already approved residential subdivision of the subject site. It is however noted that the determination of a guaranteed water supply is to be made by the water supply authority where mains water supply is available.

It is noted that there are no apparent water servicing issues which would preclude the proposed rezoning of land as the subject site has already been approved for residential subdivision the construction of which has recently commenced.

Electricity supply and communications infrastructure is available in the locality and will be accessible to the already approved residential lots within the subject site.

Reticulated gas services are not available in the locality and are therefore not available to the subject area of land.

It is noted that the rezoning and subdivision approval processes incorporate consideration of relevant servicing requirements and capabilities by relevant service providers/authorities with the

relevant approval processes able to accommodate any issues which maybe relevant to any future development which is proposed.

The proposed rezoning which is the subject of this report has no implications in terms of the availability of utility services. The same level of demand for services will remain in relation to the already approved residential lots to which the proposed rezoning relates.

Subject to compliance with the requirements of the Bushfire Safety Authority and development consent conditions which are relevant to the existing approved residential subdivision of the subject site in relation to the provision of services, it is considered that the already approved servicing arrangements will be acceptable for the area of land which is proposed to be rezoned given the nature, extent and construction of the existing utility infrastructure which is present in the locality and the future services which will be constructed as part of the approved residential subdivision development of the subject site.

### **3.1.5 Landscaping**

Landscaping is a major cause of fire spreading to buildings, and therefore any landscaping proposed in conjunction with the future development of the subject areas will need consideration when planning, to produce gardens that do not contribute to the spread of a bushfire.

When planning any future landscaping surrounding any future development on the subject areas, consideration should be given to the following:

- The choice of vegetation – consideration should be given to the flammability of the plant and the relation of their location to their flammability and ongoing maintenance to remove flammable fuels.
- Trees as windbreaks/firebreaks – Trees in the landscaping can be used as windbreaks and also firebreaks by trapping embers and flying debris.
- Vegetation management – Maintain a garden that does not contribute to the spread of bushfire.
- Maintenance of property – Maintenance of the property is an important factor in the prevention of losses from bushfire.

Appendix 4 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019 contain the standards that are applicable to the provision and maintenance of landscaping.

Any landscaping proposed to be undertaken in conjunction with any future development of the areas which are the subject of this report is to comply with the principles contained in Appendix 4 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019.

Compliance with Appendix 4 of NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019 will satisfy the intent of the bush fire protection measures that are applicable to the provision of landscaping as part of the future subdivision of the areas of the subject site which are proposed to be rezoned.

Notwithstanding the above, subject to compliance with the requirements of the Bushfire Safety Authority and development consent conditions which are relevant to the existing approved residential subdivision of the subject site in relation to the provision of landscaping, it is considered that the already approved landscaping arrangements will be acceptable for the area of land which is proposed to be rezoned given the nature and extent of the existing landscaping which is present in the locality and the future landscaping which will be provided as part of the approved residential subdivision development of the subject site.

## 3.2 Construction of Buildings in Bushfire Prone Areas

### 3.2.1 General

The 'Deemed-to-Satisfy' provisions for construction requirements of buildings in bushfire prone areas are detailed in AS 3959-2018 however in NSW the relevant Bushfire Attack Level and construction requirements must be determined in accordance with Appendix 1 of NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019, (in particular Table A1.12.6), rather than in accordance with Section 2 of AS 3959 - 2018. It is also noted that NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 imposes additional construction standards in addition to the requirements of AS 3959 – 2018, refer to **Appendix 6**.

However, given that the proposed rezoning proposal which is the subject of this report does not involve the construction of any buildings, the determination of Bushfire Attack Levels (BAL's) that would be applicable to future residential buildings on each of the already approved residential lots is not relevant at this time.

The proposed rezoning has no implications in terms of the nature and extent of bushfire attack which is relevant to the development of each of the approved residential lots within the subdivision of the subject site. The same level of bushfire attack will remain in relation to the already approved residential lots to which the proposed rezoning relates as the proposed rezoning does not change the nature and extent of areas of bushfire hazard vegetation or the spatial relationships between the areas of bushfire hazard vegetation and the already approved residential lots.

Notwithstanding the above, it is noted that compliance with the performance requirements of Table 5.3a of NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019 for the future development of the already approved residential lots will provide for opportunities for future dwellings to be constructed upon each of the already approved allotments in compliance with the requirements of AS 3959 – 2018, (as modified by NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019).

The information presented in Section 3.1.1 of this report indicates that where the minimum required APZ's are provided, future residential buildings erected within each approved residential lot and within the nominated building envelope on Lot 800, will be subjected to a worst-case Bushfire Attack Level of BAL 29. This is consistent with the performance criteria of NSW Rural Fire Services, **Planning for Bushfire Protection**, 2019.

The determination of the Bushfire Attack level (BAL) and corresponding construction standards for the development of each of the already approved residential lots within the residential subdivision of the subject site is subject to an individual bushfire hazard assessment conducted in conjunction with the development of each of the approved residential lots.



## 4.0 SUMMARY OF FINDINGS

The following recommendations are provided in response to the proposed rezoning and associated residential subdivision of the subject site as provided in **Appendix 3** of this report;

- (i) Asset Protection Zones are to be provided to future residential development within each of the approved residential lots in accordance with Section 3.1.1 of this report. (Noting that the approved APZ compliance concept for the approved residential lots incorporates, where relevant, the existing fire trails and associated easements for access for emergency bushfire access in favour of Kempsey Shire Council and burdening Lot 800 DP 1270742).
- (ii) The determination of the Bushfire Attack Level (BAL) and corresponding construction standards for the residential development of each of the already approved residential subdivision of the subject site should be the subject of an individual bushfire hazard assessment conducted in conjunction with the development on each of the already approved residential lots.

## 5.0 CONCLUSION

It is considered that the proposed rezoning of portion of the area of land known as Lots 800 and 801 DP 1270742, Burrawong Drive, South West Rocks is at risk of bushfire attack; however, it is in our opinion that with the implementation of the bushfire threat reduction measures and consideration of the recommendations in this report, the bushfire risk is manageable for the proposed rezoning albeit that the design of residential subdivision of the subject site has already been approved with construction commencing.

Notwithstanding the above, the proposed rezoning has no implications in terms of the nature and extent of bushfire threat management requirements which are relevant to the development of each of the already approved residential lots within the subdivision of the subject site. The same level of bushfire threat will remain in relation to the already approved residential lots to which the proposed rezoning relates as the proposed rezoning does not change the nature and extent of areas of bushfire hazard vegetation or the spatial relationships between the areas of bushfire hazard vegetation and the already approved residential lots.

Given that the already approved residential subdivision of the subject site is subject to compliance with earlier versions of NSW Rural Fire Services, **Planning for Bushfire Protection**, it is considered that acceptable standards of bushfire threat management will be achieved via the development of the subject site.

This report is however contingent upon the following assumptions and limitations.

### Assumptions

- (i) For a satisfactory level of bushfire safety to be achieved regular inspection and testing of proposed measures, building elements and methods of construction, specifically nominated in this report, is essential and is assumed in the conclusion of this assessment.
- (ii) There are no re-vegetation plans in respect to hazard vegetation and therefore the assumed fuel loading will not alter.
- (iii) It is assumed that the building works will comply with the DTS provisions of the NCC including the relevant requirements of Australian Standard 3959.
- (iv) Any future developments are constructed and maintained in accordance with the risk reduction strategy in this report.
- (v) The vegetation characteristics of the subject site and surrounding land remains unchanged from that observed at the time of inspection.
- (vi) The information contained in this report is based upon the information provided for review, refer to **Appendices 2 and 3** inclusive.

No responsibility is accepted for the accuracy of the information contained within the above plans.

### Limitations

- (i) The data, methodologies, calculations and conclusions documented within this report specifically relate to the building and must not be used for any other purpose.
- (ii) A reassessment will be required to verify consistency with this assessment if there is building alterations and/or additions, change in use, or changes to the risk reduction strategy contained in this report.

## 6.0 REFERENCES

- NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2019
- NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2006
- NSW Rural Fire Services, ***Planning for Bushfire Protection***, 2001
- AS 3959-2009, ***Construction of Buildings in Bushfire Prone Areas***
- AS 3959-2018, ***Construction of Buildings in Bushfire Prone Areas***
- Keith David 2004, Ocean ***Shores to Desert Dunes, The Native Vegetation of New South Wales and the ACT***, Department of Environment and Conservation
- NSW State Government, ***Rural Fires Act***, 1997
- Port Macquarie-Hastings Councils, ***Bushfire Prone Land Mapping***
- NSW Rural Fire Service, ***Guideline for Bushfire Prone Land Mapping***, 2002
- Australian Building Codes Board, ***National Construction Code***, 2019
- NSW Rural Fire Service – *Guideline for Bushfire Prone Land Mapping 2002*
- NSW Rural Fire Service, ***NSW Local Government Areas FDI***, May 2017

## Disclaimer

The findings referred to in this report are those which, in the opinion of the author, are required to meet the requirements of NSW Rural Fire Service, ***Planning for Bushfire Protection***, 2019. It should be noted that the Local Authority having jurisdiction for the area in which the property is located may, within their statutory powers, require different, additional or alternative works/requirements to be carried out other than those referred to in this report.

This report has been prepared partially on information provided by the client. Information provided by the client in respect of details of construction.

The author denies any legal liability for action taken as a consequence of the following:

- The Local Authority requiring alternative or additional requirements to those proposed or recommended in this report.
- Incorrect information, or mis-information, provided by the client with regard the proposed development which is in good faith included in the strategies proposed in this report and later found to be false.

### **Existing Approved Seascape Grove Estate Subdivision**

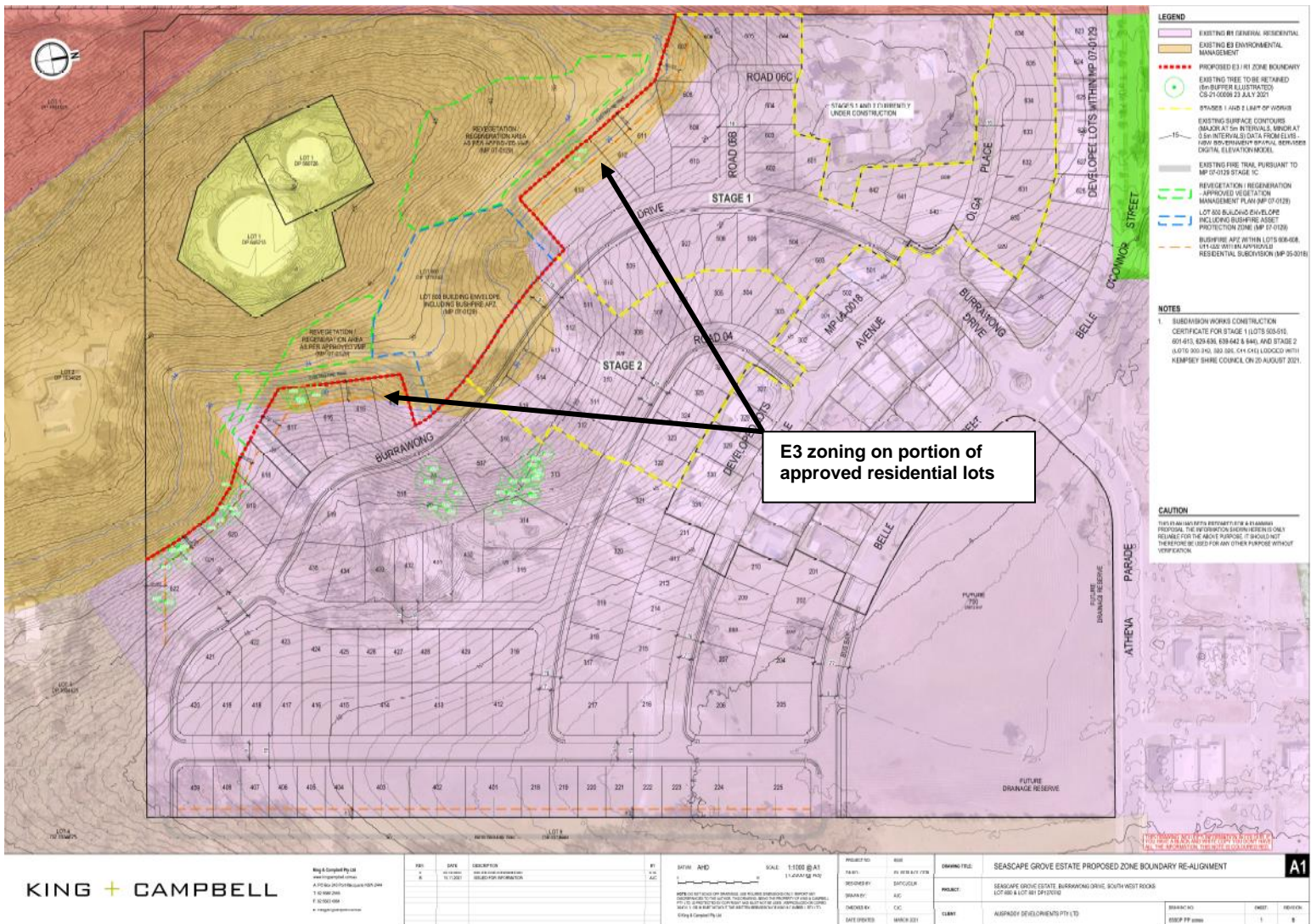




## **Approved Building Envelope – Lot 800**



## APPENDIX 3 Existing Zone Boundaries





**LEGEND**

- EXISTING TREE TO BE RETAINED (IN BUFFER ILLUSTRATED) CS-21-0008 23 JULY 2021
- EXISTING FIRE TRAIL, PURSUANT TO NP 07-029 STAGE 1C
- EXISTING ZONE BOUNDARY BY TOWN OF GENERAL RESIDENTIAL & E3 ENVIRONMENTAL MANAGEMENT ILLUSTRATED OVER APPROVED MAJOR PROJECT E3 ZONING
- VEGETATION / REGENERATION - APPROVED VEGETATION MANAGEMENT PLAN (NP 07-029)
- LOT BUILDING ENVELOPE INCLUDING SUBFIRE ASSET PROTECTION ZONE (NP 07-029)
- BUFFERING KEY (NORTH) LOT 124 DP 1097510 (NP 07-029) APPROVED RESIDENTIAL SUBDIVISION (NP 07-029)
- PROPOSED E3 ENVIRONMENTAL MANAGEMENT

**Extent of proposed E3 zoning**

**Existing E3 zone boundary line**

**SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT**

**Look up and live**

**DIAL BEFORE YOU DIG**

**King + Campbell**

**Project Information:**

Rev	Date	Description	Drawn	AND	Project Number	Drawing Title
1	27/03/08	Rev 1	PJM		14777	EXHIBIT 5: PROPOSED LOTS - AREAS & DIMENSIONS STAGE 1C
2	27/03/08	Rev 2	PJM			Project
3	27/03/08	Rev 3	PJM			Client

**Client:** WALDE PARK PTY LTD

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:** 27/03/08

**Author:** King + Campbell Pty Ltd

**Project:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

**Location:** SEASCAPE GROVE ESTATE - EXHIBIT 5 & PROPOSED ZONE BOUNDARY REALIGNMENT

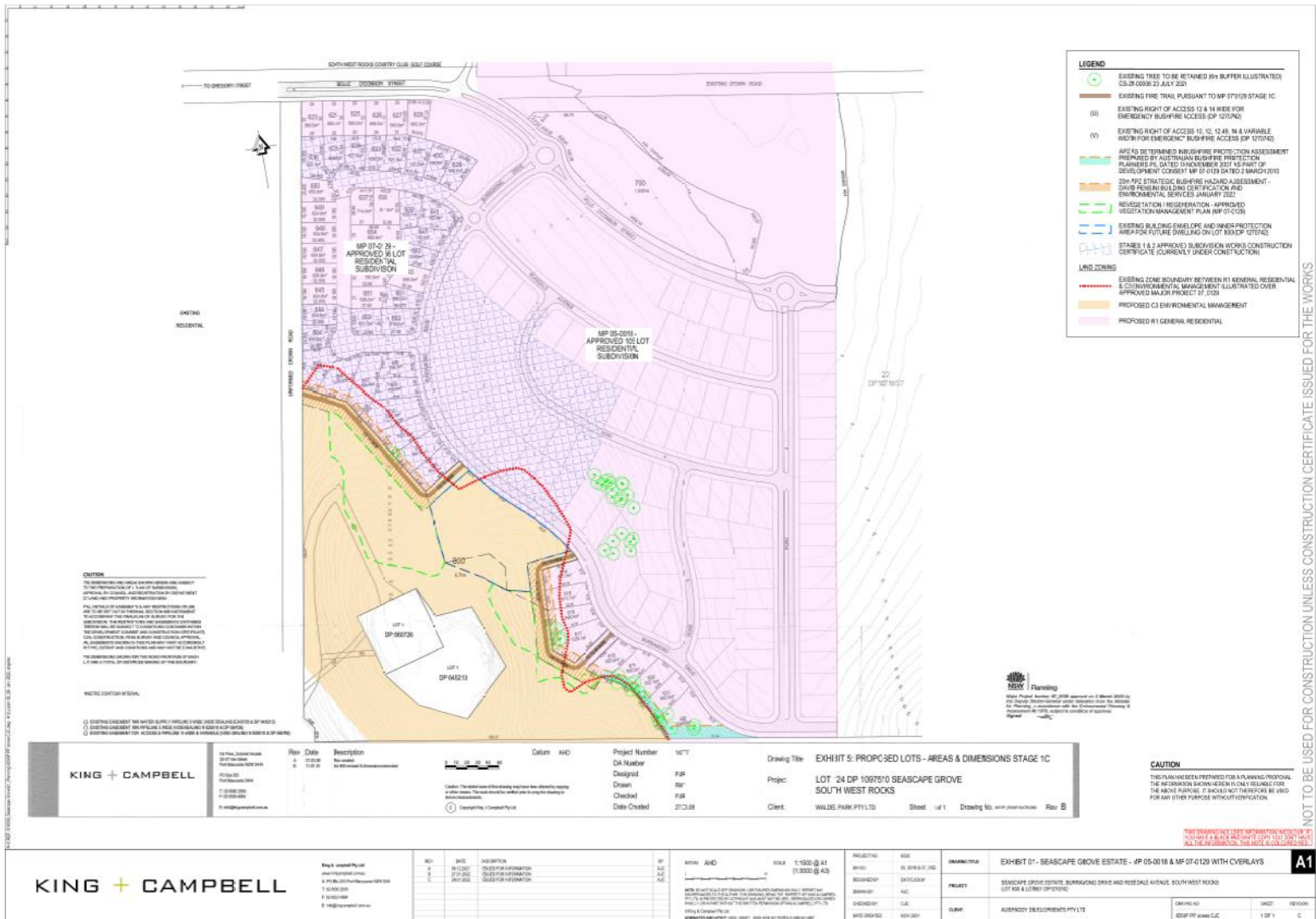
**Scale:** 1:1000 @ A1 (1:500 @ A2)

**Sheet:** 1 of 1

**Drawing No.:** KCP-2008-0000000

**Date:**

## APPENDIX 5 APZ Compliance Concept





## **APPENDIX 6**

### **PBP 2019 Amendments to AS 3959 - 2018**

#### **7.5.2 NSW State Variations under G5.2(a)(i) and 3.10.5.0(c)(i) of the NCC**

Certain provisions of AS 3959 are varied in NSW based on the findings of the Victorian Bush Fires Royal Commission and bush fire industry research.

The following variations to AS 3959 apply in NSW for the purposes of NSW G5.2(a)(i) of Volume One and NSW 3.10.5.0(c)(i) of Volume Two of the NCC;

- clause 3.10 of AS 3959 is deleted and any sarking used for BAL-12.5, BAL-19, BAL-29 or BAL-40 shall:
  - be non-combustible; or
  - comply with AS/NZS 4200.1, be installed on the outside of the frame and have a flammability index of not more than 5 as determined by AS 1530.2; and
- clause 5.2 and 6.2 of AS 3959 is replaced by clause 7.2 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- clause 5.7 and 6.7 of AS 3959 is replaced by clause 7.7 of AS 3959, except that any wall enclosing the subfloor space need only comply with the wall requirements for the respective BAL; and
- fascias and bargeboards, in BAL-40, shall comply with:
  - clause 8.4.1(b) of AS 3959; or
  - clause 8.6.6 of AS 3959.

#### **7.5.3 Construction in the flame zone**

The flame zone is the area that has significant potential for sustained flame contact during a bush fire. The flame zone is determined by the calculated distance at which the radiant heat of the design fire exceeds 40kW/m<sup>2</sup>.

The NCC references AS 3959 and the NASH Standard. The NSW variation to the NCC excludes both AS 3959 and the NASH Standard as a Deemed to Satisfy solution for buildings that are required to be constructed to BAL-FZ as defined in AS 3959.

Although Chapter 9 of AS 3959 and the NASH Standard has not been adopted, they should still be used as a basis for a performance based solution demonstrating compliance with the performance requirements of the NCC and PBP for construction in the flame zone.

All flame zone developments should be sited and designed to minimise the risk of bush fire attack. Buildings should be designed and sited in accordance with appropriate siting and design principles to ensure the safest protection from bush fire impacts.