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### **BUSHFIRE ASSESSMENT FOR PLANNING PROPOSAL**

**Lot 11 DP1141269  
9 Gaudrons Road, Sapphire Beach, NSW**



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Land & Fire Assessments Pty Ltd  
For: Chris & Chris Bowen  
Report No: LFA20041  
Date: 19 February 2021**

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### Revision List

Revision No.	Revision Date	Report Title	Report Author	Field Survey By	Status
00	15.01.21	Bushfire Assessment For Planning Proposal, Lot 11 DP1141269, 9 Gaudrons Road, Sapphire Beach, NSW	Main Author: Paola Rickard (LFA - Senior Environmental Planner & BPAD – Level 3 Accredited Practitioner –no. BPAD 21855)	Paola Rickard undertaken on the 04.11.20	Draft
01	19.02.21				Final

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## Summary Compliance Table

Site Details	Lot 11 DP1141269, 9 Gaudrons Road, Sapphire Beach, NSW 2450; Coffs Harbour City Council LGA
Proposal	Rezone the subject land from Zone RU2 Rural Landscape to Zone R5 Large Lot Residential. Change to Minimum Lot Size from 40 ha to 6,000 m <sup>2</sup>
Bushfire Prone Land Map	Vegetation Category 1, Category 3 & Buffer - see Fig. 1
Planning context	s. 4.46 of the <i>Environmental Planning and Assessment Act 1979</i> and s. 100B of the <i>Rural Fires Act 1997</i> ; section 9.1(2) of the <i>Environmental Planning and Assessment Act 1979 - Directions (specifically Direction 4.4 Planning for Bushfire Protection)</i>
Bushfire planning guideline and relevant chapter	Planning for Bushfire Protection 2019 (PBP) Chapter 5 - Residential and Rural Subdivision; s. 4.4.1 Consideration of bush fire issues; Appendix 1
Application complies with 'Deemed - to Satisfy' (DtS) provisions	Yes, all DtS provisions can be met by a future residential subdivision
Consultation with RFS Commissioner	Required under s.9.1(2) Directions of the <i>Environmental Planning and Assessment Act 1979</i> ; specifically, Direction 4.4 Planning for Bushfire Protection
Compliance statement	This Assessment has duly considered the bushfire issues identified in s 4.4.1 of PBP 2019. Accordingly, it has found that the proposed Planning Proposal to amend LEP 2013 to allow large lot residential development on Lot 11 DP1141269 can comply with the s.9.1(2) Directions (specifically Direction 4.4 Planning for Bushfire Protection), and with the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures in accordance with PBP 2019.
Full Name of Accredited Practitioner	Paola Rickard - Land & Fire Assessments Pty Ltd
Qualification	BPAD – Level 3 Accredited Practitioner - Accreditation no. BPAD-21855, valid to 2/08/2021
Date	19 February 2021
Signature	

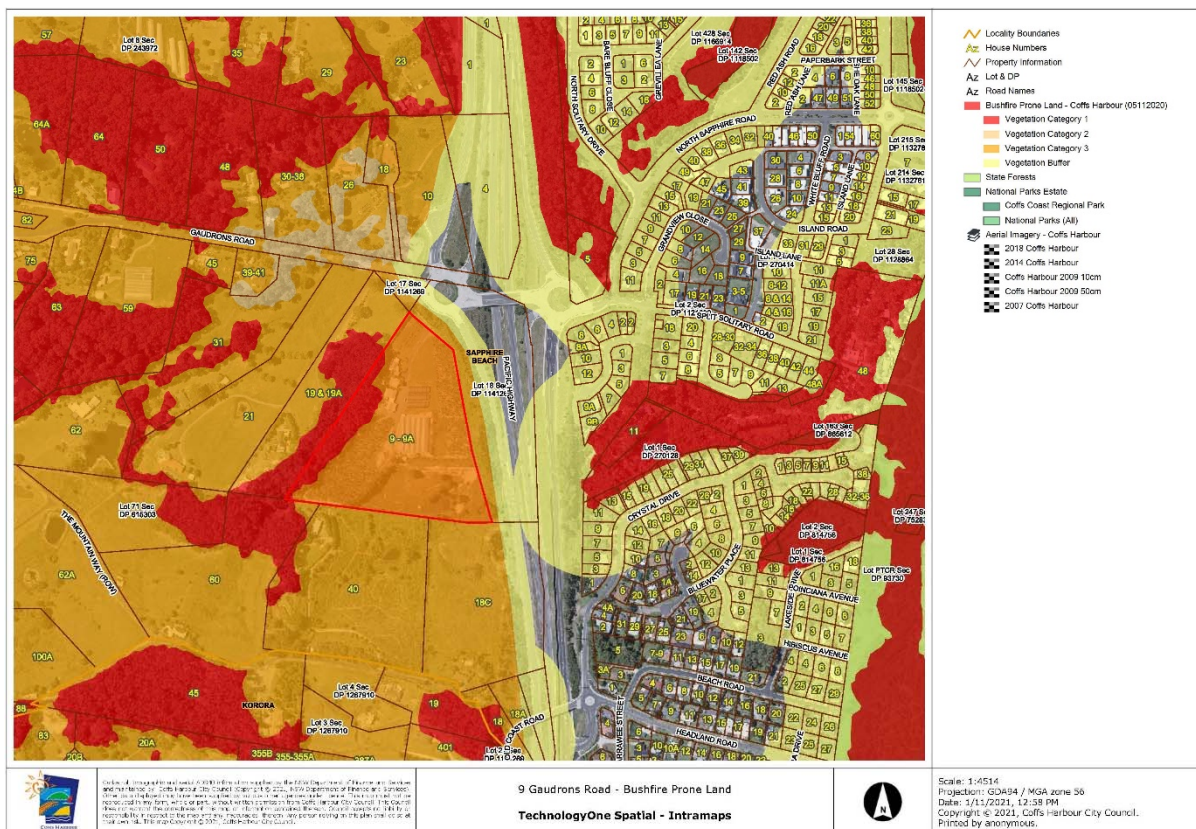




# 1. Introduction

## 1.1 Background & Planning Context

This Bushfire Assessment report has been prepared by Land & Fire Assessments Pty Ltd (LFA) in accordance with the relevant provisions of Planning for Bushfire Protection (PBP) 2019 in its entirety and future residential development can comply with all relevant Acceptable Solutions in this version of PBP. This assessment has been prepared to support the **Planning Proposal for Lot 11 DP1141269, 9 Gaudrons Road, Sapphire Beach, NSW**. The Site is shown on Figs. 1, 2 & 3. Sapphire Beach is located in the Coffs Harbour City Council (CHCC) Local Government Area (LGA) approximately 10 km north of Coffs Harbour.



**Figure 1.** The Site (red boundary) & Bushfire prone land as applicable to the 9 Gaudrons Rd (Lot 11 DP1141269) Site. Source: CHCC Intramaps

This Planning Proposal applies to Lot 11 DP1141269 (the Site), which is zoned RU2 Rural Landscape under the Coffs Harbour Local Environmental Plan (LEP) 2013 (refer to Fig. 4). The purpose of this Planning Proposal is to amend LEP 2013 to allow large lot residential development. The proposal area is wholly affected by the Bush Fire Prone Land mapping, as shown on Fig. 1. Accordingly, the proposal triggers the need to address the bushfire planning provisions.

Section 4.4.1 of PBP 2019 requires consideration of bushfire issues when preparing a draft LEP or planning proposal. The emphasis is on early consultation and inclusion of a bushfire assessment that demonstrate compliance with the s.9.1(2) Directions (specifically Direction 4.4 Planning for Bushfire Protection) and PBP.

The Minister for Planning, under section 9.1(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) issues directions that relevant planning authorities (such as local councils) must follow when preparing planning proposals for new Local Environmental Plans (LEP) and amending LEPS.

Direction 4.4 Planning for Bushfire Protection identifies matters for consideration for rezoning that will affect, or are in proximity to land mapped as bush fire prone.

The key principle is to ensure that future development is capable of complying with PBP. To achieve this, it is necessary to undertake a constraint assessment of the Site to identify potential bush fire risks to the individual site and proposed forms of development. The assessment requirements are detailed in s. 4.4.1 of PBP 2019. These measures, summarised below, will be evaluated for compliance in this assessment:

1. Assessment of the suitability of the land for the proposed development given the bush fire risk and existing land uses
2. The proposal must demonstrate that the required APZs can be met on the development site and that the road network can support evacuation demands numbers in the event of an emergency.
3. It is important that new development does not increase the level of bush fire risk to the existing community. A traffic report prepared by a suitably qualified traffic consultant may be required in circumstances where issues relating to access/egress are identified.
4. In addition to the review of any layout designs, consideration must also be given to the LEP provisions relating to minimum lot sizes to ensure appropriate APZs can be accommodated within future subdivisions.

Under s. 4.46 of the *Environmental Planning and Assessment Act 1979* and s. 100B of the *Rural Fires Act 1997* a Bushfire Safety Authority (BFSA) will be required from the Commissioner of the NSW Rural Fire Service (RFS) for the future subdivision of the land. Clause 44 of the *Rural Fires Regulation 2013* specifies the points to be considered in preparing an application for a Bush Fire Safety Authority (BFSA). In addition, PBP 2019 states that it must be demonstrated that the proposal satisfies the broad aim and objective of PBP, the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures (BPMs).

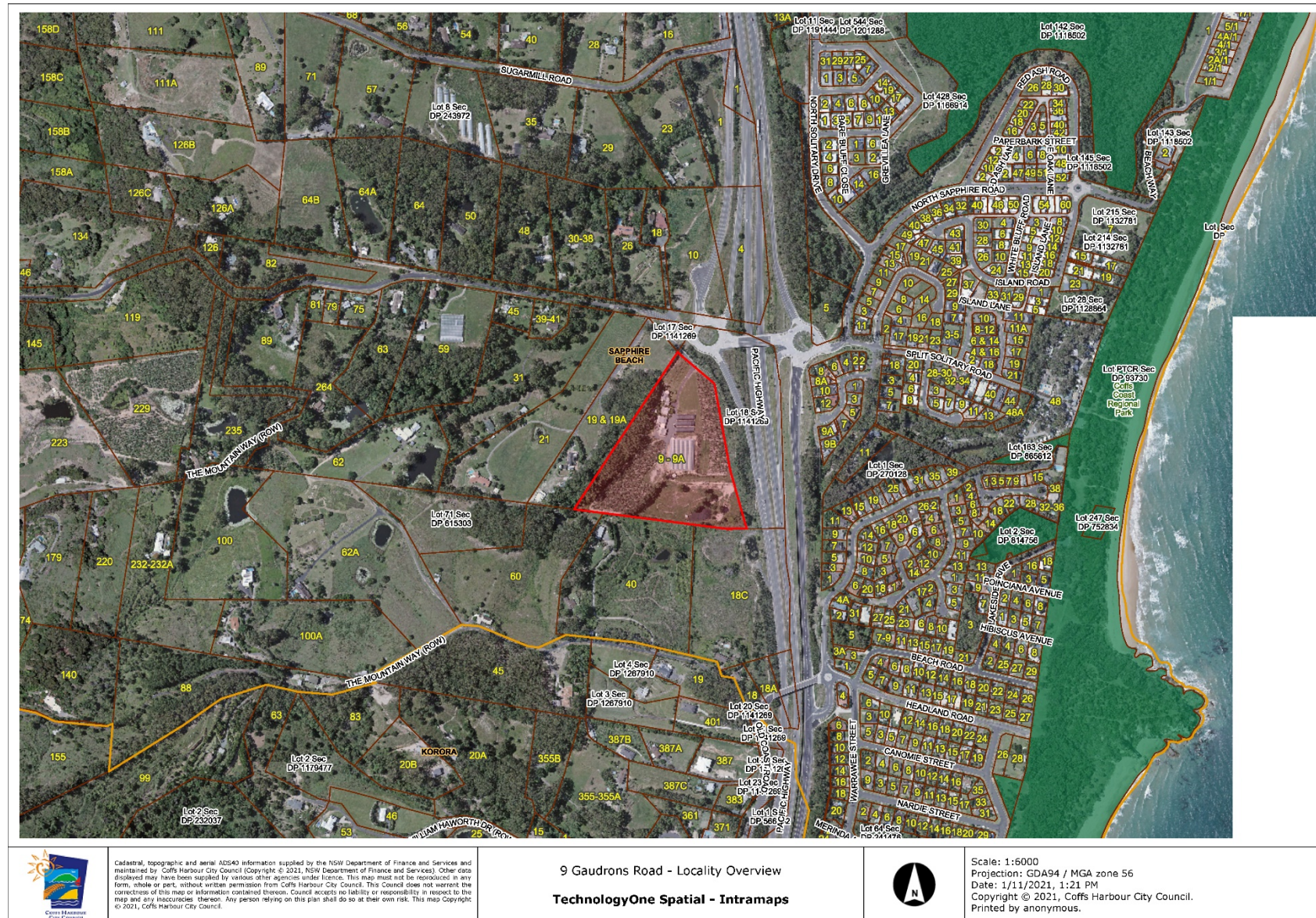
Chapter 5 of PBP sets out the specific objectives, and the specifications and requirements for Bushfire Protection Measures for Residential and Rural Subdivision Development. These measures, summarised below, will be assessed for compliance in this assessment:

- Asset Protection Zones/Bushfire Attack Level;
- Access;
- Services; and
- Landscaping and Maintenance

Furthermore, address of Direction 4.4 Planning for Bushfire Protection is undertaken in s.3 of this report.







**Figure 2.** The Site (red boundary) within the locality context. Source: CHCC Intramaps



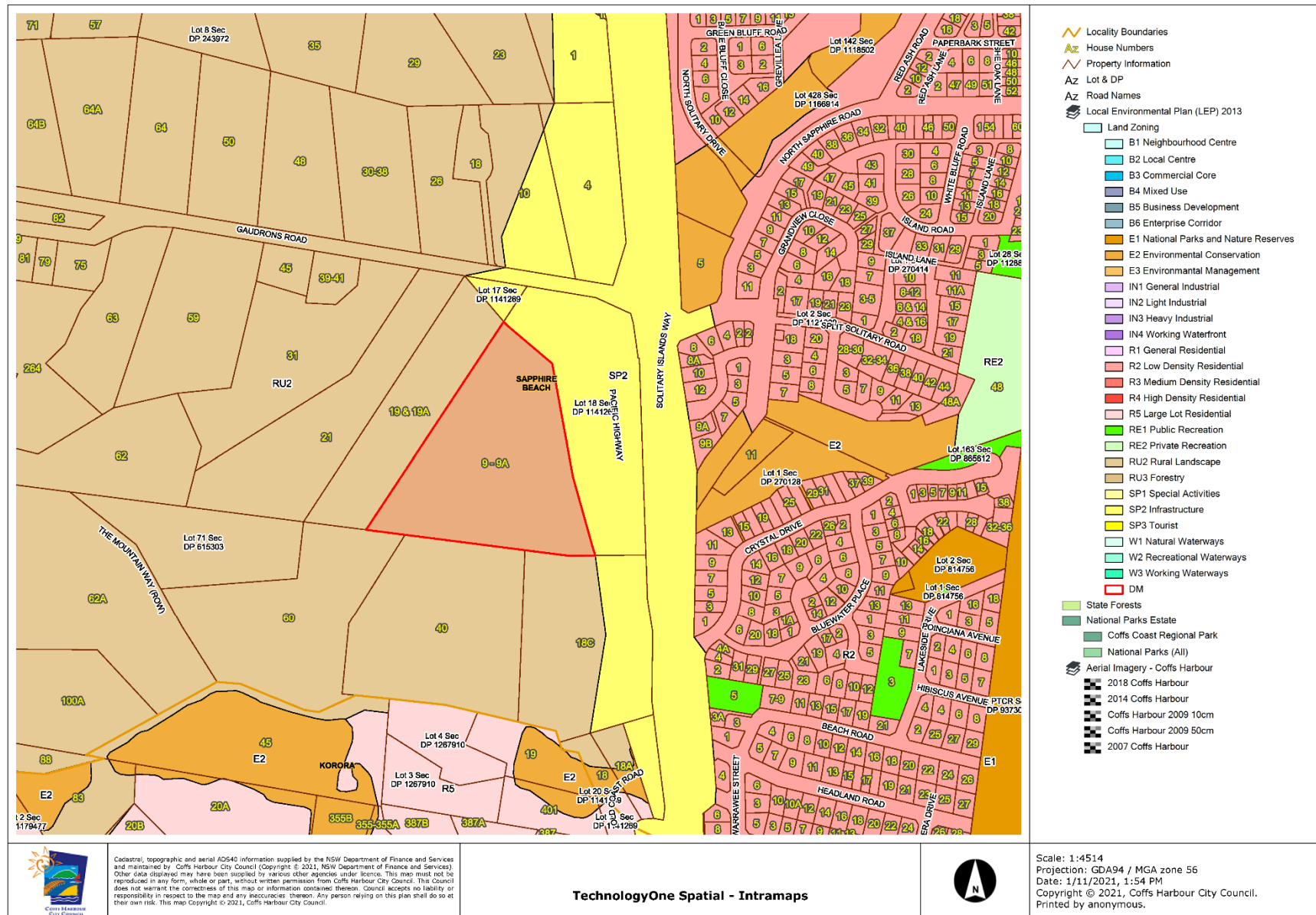




**Figure 3.** 9 Gaudrons Road (Lot 11 DP1141269) - Site assessment area, Vegetation, Slope analysis (arrows point up the slope) using 1-2m contours intervals (slopes also verified using Nikon Laser Rangefinder) - site assessment 04/11/20. Source: CHCC Intramaps







## 1.2 The Subject Site

The Subject Site (i.e. Lot 11 DP1141269), which is 5.268 Ha in size, is directly accessed from Gaudrons Road. The land in context with the locality is shown on Fig. 2. It entails a developed property utilised for horticulture (banana plantation and hydroponics figs). The Site is bounded by Gaudrons Road to the north, the Pacific Motorway to the east, rural lifestyle lots to the west and south. Two residential dwellings are found on Site as well as large greenhouses, sheds, water tanks and sealed driveway access. A dam is found on the south eastern corner of the Site.

The Site is in close proximity (just east of the Motorway) to the established residential areas of Sapphire Beach, as shown on Figs. 2-4. Whilst rural land is found to the north, south and west, the Site is identified in the 'Korora' potential Large Lot Residential (Zone R5) Candidate Areas in the Coffs Harbour LGA. The Site does not contain Biodiversity Values land and it is not located near any sensitive ecosystems.

The Site, which consists of a central ridge with downslopes to the east, west and south, is predominantly cleared with scattered trees and windbreaks on the southern portion (Plates 1-10). A row of Bangalow Palms is found along the southern boundary. A narrow stand of predominantly Wet Sclerophyll Forest (i.e. Forest vegetation formation) is found along the western boundary of the Site, as shown on Fig. 3. The southern eastern portion of the Site is dominated by Grassland with scattered trees, whilst the south western portion is under banana cultivation. The eastern and northeaster portion of the Site consists of Grassland and lawns.



**Plates 1 & 2.** Looking south west towards the two existing residential dwellings. Note the Forest vegetation in the background, which is found along the western boundary



**Plate 3.** Looking north along the existing sealed access

**Plate 4.** Looking south east at the extensive lawn area and the greenhouses in the background



**Plate 5.** Looking north east across Site towards the Pacific Motorway and beyond is the Sapphire Beach residential area

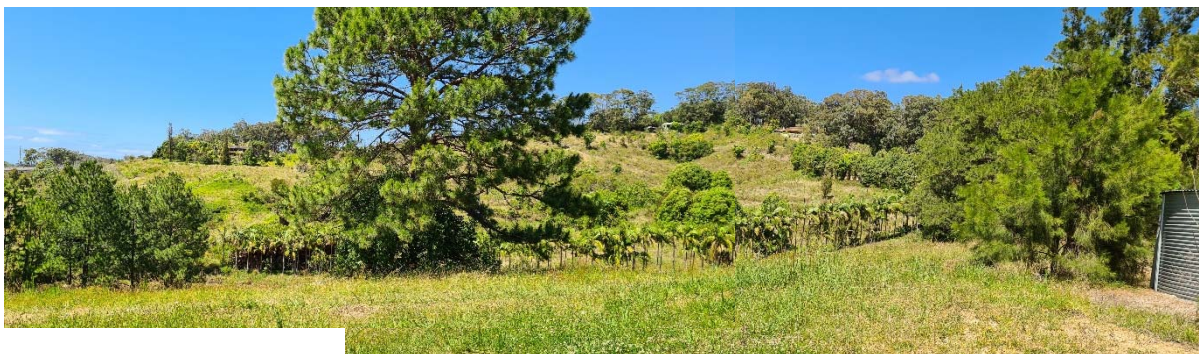




**Plate 6.** Looking south west at the horticultural farm infrastructure

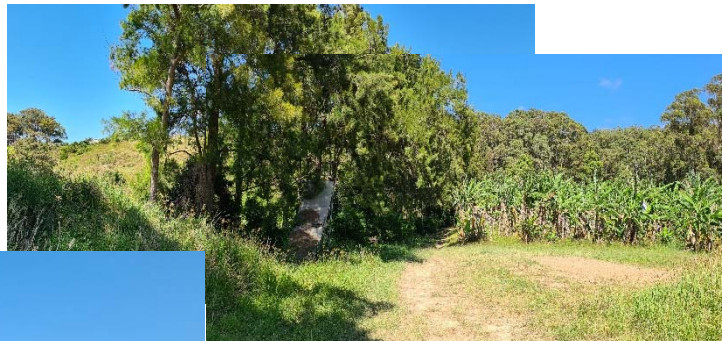


**Plate 7.** Looking south east across the Site- one of the greenhouses to the right



**Plate 8.** Looking south- south west from the top of the ridge towards southern boundary (marked by row of Bangalow Palms) and neighbouring land. Note the extensive Grassland on an upslope

**Plate 9.** The banana orchard found to the SW of the Site bounded by windbreak



**Plate 10.** Looking north along western portion of Site with greenhouse to the right and banana orchard to the left

### 1.3 Proposed Development

The purpose of this Planning Proposal is to amend LEP 2013 to allow large lot residential development on Lot 11 DP1141269. The Planning Proposal will:

- rezone the subject land from Zone RU2 Rural Landscape to Zone R5 Large Lot Residential,
- Change to the Minimum Lot Size (MLS) for the new R5 zoned land from the current 40 hectares. A new MLS of 6,000 m<sup>2</sup>, is sought for this precinct.

The proposed subdivision concept layout is shown as Fig. 5.

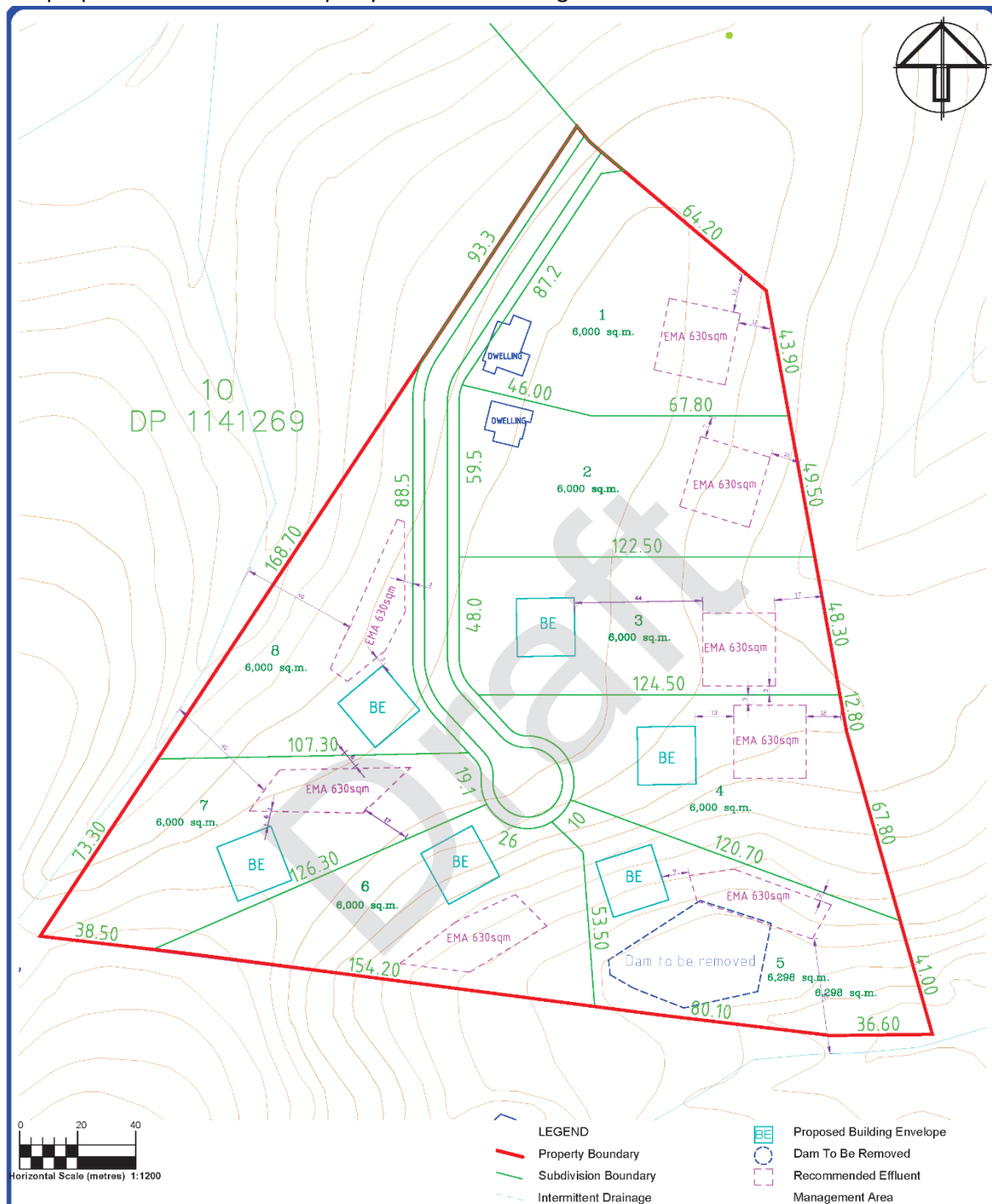


Figure 5. Proposed subdivision concept layout. Source: Earth Water Consulting (2020)





## 1.4 Site & Surrounding Vegetation, Topography and Slope

As noted in s. 1.2 and shown on Figs. 2 & 3, the Planning Proposal area is predominantly cleared with scattered trees and windbreaks on the southern portion (Plates 1-10). A row of Bangalow Palms is found along the southern boundary (Plate 8). A narrow stand of predominantly Wet Sclerophyll Forest (i.e. Forest vegetation formation) is found along the western boundary of the Site, as shown on Figs. 3 & 6. The southern eastern portion of the Site is dominated by Grassland with scattered trees, whilst the south western portion is under banana cultivation. The eastern and northeaster portion of the Site consists of Grassland and lawns.

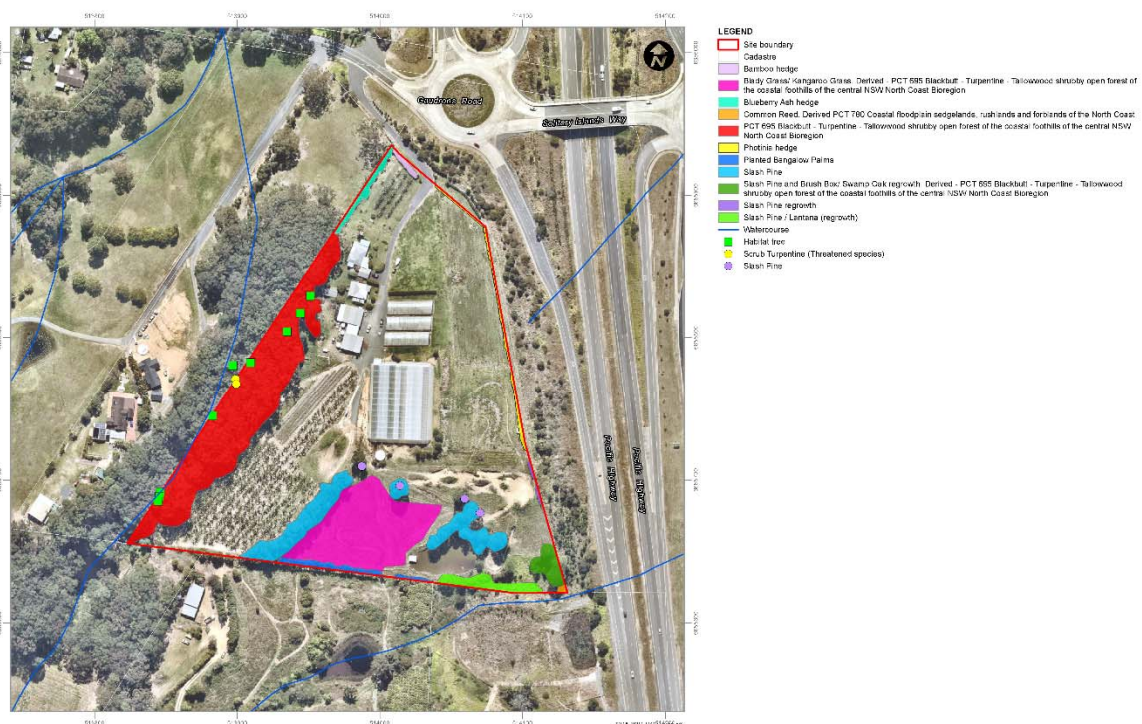


**Plate 11.** Forest vegetation found along and beyond western boundary



**Plate 12.** Forest vegetation extending upslope to the south west

The surrounding vegetation includes the Wet Sclerophyll Forest to the west along a narrow gully further extending upslope to the south west (Plates 11 & 12). Otherwise, the predominant vegetation to the south is Grassland on upslope, as shown on Fig. 3 & Plate 8. To the north is the extensive newly constructed roundabout and overpass over the Pacific Motorway and predominantly Grassland beyond it. To the east is the Pacific Motorway with associated road reserve and Solitary Islands Way (see Figs. 2 & 3). The Site consists of a central ridge-oriented north to south with a maximum elevation of 32m AHD. The ridge downslopes to the east, west and south as shown on Fig. 3, reaching 10m AHD elevation to the south east.



**Figure 6.** Vegetation mapping for the Site. Source: GeoLINK 2020 - Biodiversity Constraints Mapping



Accordingly, the potential bushfire hazard vegetation within the assessment area includes the Wet Sclerophyll Forest (i.e. Forest vegetation formation) along the western boundary and to the south west & Grassland to the south, south east. The classified Forest vegetation matches the findings of the preliminary ecological assessment undertaken by GeoLINK, as reproduced in Fig. 6.

Thus, the classified vegetation and the applicable slope, as shown on Fig. 3, are as detailed on Table 1.

**Table 1.** Classified vegetation and slope applicable to the vegetation surrounding the Site

Aspect	Vegetation	Slope	Comments
North & north east	Managed Land	N/A	Newly constructed roundabout and overpass over the Pacific Motorway and predominantly Grassland beyond it (more than 100m away)
East	Managed Land & Road Reserve	downslope 16°	Pacific Motorway with associated road reserve and Solitary Islands Way. The Road Reserve is managed by Transport NSW and is at most 37m in width
West	Forest	Downslope 5-10° & 10-15°	This vegetation is narrow and occurs along a gully. It is hemmed in by Grassland & lawns
South West	Forest	Upslope	The forest gully vegetation continues, still on a narrow band, upslope from the Site
South	Grassland	Upslope	Neighbouring rural land

In term of biodiversity, the Site is not mapped or is in proximity to Biodiversity Values land and it is not located near any sensitive ecosystems. The preliminary biodiversity mapping by GeoLINK indicate that only one threatened plant species, namely the Scrub Turpentine (*Rhodamnia rubescens*) was recorded along the western boundary, as shown on Fig. 6. A number of habitat trees, again along the western boundary, were also recorded. GeoLINK identify a number of Plant Community Types (PCT) as occurring at the site namely, PCT 695 Blackbutt - Turpentine - Tallowwood shrubby open forest of the coastal foothills of the central North Coast & derived PCTs as shown on Fig. 6. None of these PCT are identified as Threatened Ecological Communities (TECs). In any case, it is not proposed to impact on the Forest vegetation occurring along the western boundary.



An Aboriginal Cultural Heritage Assessment (ACHA) has been undertaken by Everick Heritage Pty Ltd (2020). The ACHA findings regarding the Site indicate that considerable soil disturbance has occurred historically due to banana farm operations, cut and fill earthworks, construction of amenities and landscaping. Nevertheless, one (1) Aboriginal stone tool was identified during survey of the site. It was found along the western boundary of the banana plantation as shown on Fig. 7. The object is a unifacial greywacke chopper, transversely broken with one (1) visible negative flake scar, identified as Gaudrons Road IF01. The ACHA concluded that there is a potential for further artefacts finds along the ridge crest, therefore further investigations are recommended. These will be undertaken at the subdivision DA stage.

**Figure 7.** Location of stone tool. Source: Everick Heritage (2020)

## 1.5. Risk Assessment and Consultant Qualifications

The proposed development Site is surrounded by predominantly rural & residential development and public roads. However, Forest vegetation is found on a narrow band to west and south west of the Site, whilst Grassland is found to the south. Therefore, the potential bushfire hazard is considered to be a low bushfire risk.

This report has been prepared by Paola Rickard.

The Fire Protection Association Australia (FPA) has in place the Bushfire Planning and Design Accreditation Scheme (BPAD), which is recognised by the NSW Rural Fires Services (RFS). Paola Rickard is a **BPAD - Level 3 Accredited Practitioner** (Accreditation no. BPAD 21855) and is listed on the FPA Australia web site register.

BPAD- Level 3 Accredited Practitioner can perform the following:

- *BPAD- Level 3 Accredited Practitioner meet specific requirements in relation to identifying bushfire prone land, assessing potential bushfire impact, and submitting designs and plans, both deemed to satisfy and alternate solution, to meet the performance requirements of the Building Code of Australia and the specific state or territory legislation, for subdivisions, new buildings or modification to existing buildings aiming to minimise the risk to future developments, their occupants and responding emergency services from a bushfire event.*

Paola holds a **Graduate Diploma in Design for Bush Fire Prone Areas with Distinction** from the University of Western Sydney and is a **bronze corporate member of the Fire Protection Association Australia (FPA Australia)**. She is a participating **member of the FPA Technical Advisory Committee (TAC) /20 Bushfire Safety**. The TAC provides a nationally focussed forum for discussion between practitioners, fire services and regulators on the design and construction of property in areas prone to bushfires.

From 2015 to 2019, Paola was appointed as a **BPAD member to the NSW Bushfire Working Group (NSWBWG)** set up by FPA Australia. The NSWBWG provide a forum to discuss the application, interpretation and periodic review of NSW Government-based bushfire related regulatory requirements governing land use planning and building construction in areas subject to bushfire impact.

Paola also holds a **Bachelor Degree in Applied Science, a Certificate in Bushland Regeneration**, and is a member of the **Australian Association Bush Regenerators**. She has over 18 years of experience in flora surveys and vegetation management issues, and **has been undertaking bushfire assessments since 2003**.

Paola has attended the “NSW Consulting Planners Bushfire Training Course” in Sydney in 2003 and has attended the “Planning for Bushfire Protection Short Course” held by the University of Technologies (UTS) Sydney in 2007. She has obtained certification for the short course. In November 2010, Paola attended the “One-day Planning for Bushfire Prone Areas Update Course” conducted by the Centre for Local Government UTS, Sydney. Additionally, Paola has a ‘Basic Bush Fire Awareness’ certificate and has experience in fire control and planning while living on a rural land sharing community.



## 2. Bushfire Protection Measures for Residential Subdivision

### 2.1 Introduction

Bushfire Protection Measures for Residential and Rural Subdivision are detailed in Chapter 5 of PBP 2019. The specific objectives for 'residential and rural residential subdivision development' are:

- *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 APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bushfire attack mechanism;*
- *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 fire suppression; and*
- *Ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.*

Additionally, PBP identifies the performance criteria and acceptable solutions for the various proposed Bushfire Protection Measures (BPMs). The relevant BPMs criteria and acceptable solutions with regard to residential and rural residential subdivision development are outlined in Sections 2.2 to 2.4 of this report.

### 2.2 Asset Protection Zones/Bushfire Attack Level

Asset Protection Zones (APZs) are buffer areas between development and a fire hazard, which aim to protect human life and property. The APZ comprises an Inner Protection Area (IPA) and an Outer Protection Area (OPA). These areas are to be managed to reduce the bushfire hazard. Appendix A provides guidance concerning the general requirements for APZs and appropriate landscaping and property maintenance.

**Intent of measures:** to provide sufficient space and maintain reduced fuel loads to ensure radiant heat levels at the buildings are below critical limits and prevent direct flame contact.

At the subdivision level it is required to demonstrate that proposed dwellings can be accommodated so that potential building footprint is not exposed to radiant heat levels exceeding 29kW/m<sup>2</sup> for each proposed lot.

Accordingly, the Classified vegetation is Forest on upslope, and downslope 5-10° & 10-15° ranges; and Grassland on upslope as shown on Fig. 3. According to Table A1.12.3 of Planning for Bushfire Protection 2019 (PBP) for residential subdivisions the minimum APZ distances are calculated to achieve no more than 29kW/m<sup>2</sup> [i.e. Bushfire Attack Level (BAL)-29].

**In this case the setbacks (APZs) requirements are:**

- **Forest vegetation to the south west on upslope = 20m** (10m IPA + 10m OPA)
- **Forest vegetation to the west on 5-10° downslope = 31m** (16m IPA + 15m OPA)
- **Forest vegetation to the west on 10-15° downslope = 39m** (24m IPA + 15m OPA)
- **Grassland to the south on upslope = 10m** (10m IPA)



Fig. 7 shows the respective APZ setbacks (not to scale) applicable to Site from the retained vegetation boundary or the property boundary.

The land east of the Site, which is a road reserve, is jammed between the Site and the Pacific Motorway. It is landscaped and managed by Traffic NSW. No APZ is proposed on this side.

As shown on the proposed concept layout shown on Fig. 5, the dwelling envelopes on proposed lots 7, 8 & 9 are set back more than 40m from the south west and western boundary. Notably, the prescribed OPA allows for some vegetation retention along the western boundary. The remainder of the proposed dwelling envelopes lots are also concentrated on the central ridge and more than 10m from the southern boundary. Accordingly, it would be possible to accommodate the prescribed APZs depicted on Fig. 7.

Concerning the existing dwellings, s. 5.1.3 of PBP notes that existing dwellings located on the land would benefit from improved bushfire protection measures. The existing dwellings are sound and appropriately landscaped and can comply with the APZ setbacks for subdivisions. Access to both dwellings is sealed and with ample turning bays. Static water supply may need to be provided (discussed in s. 2.4). In any case, any upgrades where required would be conditionals on receiving approval for the subdivisions and would not be required to be implemented until the Construction Certificate stage.

In summary, the proposed development is capable of complying with the APZ requirements set out in Appendix 4 of PBP 2019. Guidance concerning the general requirements for APZs and appropriate landscaping and property maintenance is provided in Appendix A of this report.

Consideration of specific construction standards applicable to the proposal are not required at the planning proposal stage. As noted, the key requirement is to ensure that future dwellings can be accommodated so that a potential building footprint is not exposed to radiant heat levels exceeding 29kW/m<sup>2</sup>. This proposal can easily achieve such requirement.



**Figure 7.** Vegetation retention area (yellow dashed line) and Asset Protection Zone (APZ – yellow to red dashed lines) - APZs (not to scale) range from 39m wide (Forest on 10-15 degrees downslope) to 10m wide (Grassland on upslope). The APZ is measured from the tree base of the retained vegetation edge or in case of the Grassland to the south from the boundary. Notably OPA 10m to 15m wide apply along western boundary.





## 2.3 Access

The provision of PBP 2019 specify the following criteria concerning access provisions, namely:

- Performance Criteria: to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area

The proposed rezoning will need to demonstrate that the future residential subdivision layouts can comply with the PBP access requirements.

Investigation of traffic matters associated with the proposal has been undertaken by Weavers Consulting Group (2020). The full investigation report is reproduced in Appendix B.

According to Weavers Consulting Group (2020) the following was found:

- Gaudrons Road - *At the intersection the existing traffic lanes are 3.1 m wide as defined with a centreline and E1 edge lines. Shoulder width exceeds the 1.0 m requirement of Council's specification. As it can be assumed that 100% traffic assignment from the proposed intersection will be to and from the roundabout, then there is no requirement for upgrading of Gaudrons Road.*
- Internal Road – Council requirements is that the internal road reserve width needs to be 20 m and this can be provided.
- Conclusion - *This investigation has proven that the existing point of access to Gaudrons Road for Lot 11 will be suitable for a future road connection to be provided to the proposed road within Lot 11 for an 8 lot subdivision. The expected traffic generation from the subdivision will be very minor and further capacity analysis of the nearby roundabout on the western side of Pacific Highway should not be necessary. The above details are considered to be sufficient to prove "in principle" that satisfactory access can be provided to Gaudrons Road at the current access location subject to detailed design and provision for turning movements.*

As noted, the proposed rezoning will need to demonstrate that the future residential subdivision layouts can comply with the PBP access requirements. The road network will be designed to ensure service vehicles can undertake all necessary turning movements within the Site; thus, meeting PBP requirements. Notably, given the lay of the land it is not possible to provide a perimeter road and more than one access in and out of the development. However, it is noted that Site is already surrounded to the north and east by extensive public roads network. Nevertheless, as shown on the Fig. 5 conceptual layout, the proposed dead end public road will provide separation to the western hazard at least in part. Furthermore, the dead-end public road will be less than 200m in length and includes a compliant turning head (i.e. minimum 12 metres outer radius turning circle).

In summary, the Site is immediately adjacent to the M1 and in proximity of the newly constructed interchange, accordingly the rezoning of this Site would not increase the level of bush fire risk to the existing community. This is because firefighting access to this Site would be deemed to be designed to provide safe access for evacuation and firefighting operations.

## 2.4 Water, Gas and Electricity Supply

**Intent of measures:** to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building.

The Site is not serviced by reticulated water. Accordingly, provision of water supply for a proposed future subdivision will need to comply with the acceptable solution detailed on Table 2 applicable to non-reticulated developments. In terms of electrical transmission lines, existing supply is overhead,

and if reticulated or bottled gas is provided it will comply with the relevant requirements stated in Table 2.

**Table 2.** Performance criteria and Acceptable Solutions for water, gas and electricity supply (as per Table 5.3c PBP 2019)

Performance Criteria	Acceptable Solutions
<ul style="list-style-type: none"> <li>Adequate water supply is provided for firefighting purposes</li> <li>water supplies are located at regular intervals</li> <li>the water supply is accessible and reliable for firefighting operations</li> <li>flows and pressure are appropriate</li> <li>the integrity of the water supply is maintained</li> </ul>	<ul style="list-style-type: none"> <li>reticulated water is to be provided to the development where available.</li> <li>A static water and hydrant supply is provided for non- reticulated development or where reticulated water supply cannot be guaranteed; and</li> <li>Static water supply shall comply with table 5.3d. <i>Note: for this proposal it will entails provision of 10,000 L SWS per lot including the existing dwellings</i></li> <li>fire hydrant spacing, design and sizing comply with the relevant clauses of Australian Standard AS 2419.1:2005;</li> <li>hydrants are not located within any road carriageway;</li> <li>reticulated water supply to urban subdivisions uses a ring main system for areas with perimeter roads.</li> <li>fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005</li> <li>all above-ground water service pipes are metal, including and up to any taps.</li> </ul>
<b>Electricity Services</b>  Location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings.	<ul style="list-style-type: none"> <li>Where practicable, electrical transmission lines are underground.</li> <li>Where overhead electrical transmission lines are proposed:               <ul style="list-style-type: none"> <li>lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas;</li> <li>no part of a tree is closer to a power line than the distance set out in accordance with the specifications in <i>ISSC3 Guideline for Managing Vegetation Near Power Lines</i>.</li> </ul> </li> </ul>
<b>Gas Services</b>  Location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	<ul style="list-style-type: none"> <li>Reticulated or bottled is installed and maintained in accordance with AS/NZS 1596:2014 <i>-the storage and handling of LP Gas</i>, the requirements of relevant authorities, and metal piping is used;</li> <li>All fixed gas cylinders are kept clear of all flammable materials to a distance of 10 metres and shielded on the hazard side;</li> <li>connections to and from gas cylinders are metal;</li> <li>polymer-sheathed flexible gas supply lines are not used; and</li> <li>above-ground gas service pipes are metal, including and up to any outlets.</li> </ul>



### 3. Address of Direction 4.4 Planning for Bushfire Protection

The RFS practice note '2/12 - Planning Instruments and Policies' requires that the following be addressed to support a Planning Proposal.

*Part 1 – Objectives or Intended Outcomes relating to bush fire prone land that is:*

*Protect life, property and the environment from bush fire hazards, by discouraging the establishment of incompatible land uses in bush fire prone areas, and encourage sound management of bush fire prone areas.*

Response: The Site is in close proximity to the established residential area of Sapphire Beach. The Site is identified in the 'Korora' potential Large Lot Residential (Zone R5) Candidate Areas in the Coffs Harbour LGA. The proposed rezoning is a compatible landuse on this land as the Site occurs in proximity to residential development, and it is serviced by capable road infrastructure and electricity services. The proposed development Site is surrounded by predominantly rural & residential development and public roads. The retained Forest vegetation is limited in extent and the potential bushfire risk can effectively be mitigated by the provisions of suitable APZ and appropriate building construction standards.

*Part 2 – Explanation of the Provisions - The identified objectives can be achieved by ensuring that new controls imposed on development will:*

- *not increase the risk to life from bush fire,*  
Response: The proposal will not increase the risk to life from bushfire as adequate controls can be implemented in the future subdivision design to minimise such risk.
- *not introduce controls that place inappropriate developments in areas exposed to unacceptable bush fire hazard,*  
Response: As noted previously, the proposal is in close proximity to the established residential area of Sapphire Beach. It is surrounded by predominantly rural & residential development and public roads. The potential bushfire hazard is limited in extent and the Site is serviced by capable road infrastructure. Accordingly, the development will not be exposed to unacceptable bush fire hazard.
- *ensure that appropriate bush fire protection measures can be afforded to property at risk of bushfire,*  
Response: Appropriate bushfire protection measures can be accommodated at the proposal Site as demonstrated in s. 2.
- *minimise negative impacts on the surrounding environment,*  
Response: The preliminary biodiversity mapping by GeoLINK indicate that only one threatened plant species, namely the Scrub Turpentine and a number of habitat trees were recorded along the western boundary, as shown on Fig. 6. GeoLINK identified a number of Plant Community Types (PCT) as occurring at the Site. None of these PCT are identified as Threatened Ecological Communities (TECs). In any case, it is not proposed to impact on the Forest vegetation occurring along the western boundary. An Aboriginal Cultural Heritage Assessment (ACHA) has been undertaken by Everick Heritage Pty Ltd (2020). The ACHA findings indicate that considerable soil disturbance has occurred historically at the Site due to banana farm operations, cut and fill earthworks, construction of amenities and landscaping. Nevertheless, one Aboriginal stone tool was identified during survey of the site. The artefact occurs along the western boundary and further investigations are to be undertaken in accordance with the



Aboriginal cultural heritage consultation and assessment methodology by Everick Heritage in conjunction with the Registered Aboriginal Parties (RAPs). The methodology aims to:

1. To formulate a better understanding of the archaeology of the Project Area such that the areas of high and low archaeological significance are more clearly defined; and
2. To ensure that areas that will be impacted by development are further assessed for potential sub-surface Aboriginal objects with potential conservation values.

In summary, the conceptual layout ensures the Forest vegetation occurring to west of the Site as well as the artefact are retained.

- *ensure that provision is made for adequate evacuation/shelter options for the community,*  
Response: The Site occurs in proximity to residential development, and it is serviced by capable road infrastructure. The proposed development Site is surrounded by extensive roads (including the Pacific Motorway) and rural and residential development. The retained Forest vegetation is limited in extent and the potential bushfire risk can effectively be mitigated by the provisions of suitable APZ, appropriate roads and building construction standards. Accordingly, the rezoning does not increase the potential bushfire risk and existing measures are already in place at the locality level.
- *and ensure that development is capable of complying with Planning for Bush Fire Protection 2006 (PBP).*  
Response: The development is capable of complying with the relevant Residential and Rural Residential provisions detailed in Chapter 5 of PBP 2019 as demonstrated in s. 2. Notably, PBP 2019 is the currently legislated document, and it provides updated and more robust provisions than those detailed in PBP 2006.

*Part 3 – Justification - The level of justification should be proportionate to the impact that the planning proposal will have.*

Response: The proposed rezoning will not have an undue impact on the locality in terms of bushfire risk. This assessment has found that the proposal can comply with the Direction 4.4 Planning for Bushfire Protection and is capable of complying with PBP.





## 4. Conclusion & Recommendations

This Bushfire Assessment report has been prepared by LFA in accordance with the relevant provisions of PBP 2019 to support the Planning Proposal for Lot 11 DP1141269, 9 Gaudrons Road, Sapphire Beach, NSW. The Site is zoned RU2 Rural Landscape under the Coffs Harbour LEP 2013. The purpose of this Planning Proposal is to amend LEP 2013 to rezone the subject land from Zone RU2 Rural Landscape to Zone R5 Large Lot Residential. The proposal area is wholly affected by the Bush Fire Prone Land mapping.

Specifically, this assessment reviewed suitability of the Site for landuse intensification. Direction 4.4 Planning for Bushfire Protection identifies matters for consideration for landuse intensification proposals that will affect, or are in proximity to land mapped as bush fire prone.

A key principle should be to ensure that future development is capable of complying with PBP. To achieve this, it is necessary to undertake a constraint assessment of the Site in respect to bushfire to identify potential bush fire risks to the proposed forms of development (i.e. amend LEP 2013 to allow large lot residential development on Lot 11 DP1141269).

Thus, this bushfire assessment found that the proposal:

- will not increase the risk to life from bush fire;
- will not introduce controls that place inappropriate developments in areas exposed to unacceptable bush fire hazard;
- can provide for appropriate bush fire protection measures to properties at risk of bushfire;
- does not have adverse impacts on the surrounding environment;
- does not place additional burden to current evacuation/shelter options for the community; and
- the proposed development is capable of complying with Planning for Bush Fire Protection.

This bushfire assessment has been undertaken in accordance with the relevant provisions of PBP 2019 in its entirety and the future residential development can comply with all relevant Acceptable Solutions in this version of PBP.

The assessment found that the applicable bushfire protection measures and acceptable solutions as they would apply to future residential subdivision can be met and the following is noted:

- According to Table A1.12.3 of PBP 2019 for residential subdivisions the minimum APZ distances are calculated to achieve a radiant heat of no more than 29kW/m<sup>2</sup> (i.e. BAL- 29). In this case the setbacks (APZs) requirements to achieve BAL - 29 range from 39m to 10m. The proposed conceptual layout (see Fig. 5) demonstrate that it would be possible to accommodate the prescribed APZs depicted on Fig. 7 and that there is plenty of room available to achieve BAL – 29.
- Investigation of traffic matters associated with the proposal has been undertaken by Weavers Consulting Group (2020). The full investigation report is reproduced in Appendix B. This investigation has found that the existing point of access to Gaudrons Road for the Site will be suitable for a future road connection to be provided to the proposed road within Lot 11 for an 8-lot subdivision. According to Weavers Consulting Group, ‘the expected traffic generation from the subdivision will be very minor and further capacity analysis of the nearby roundabout on the western side of Pacific Highway should not be necessary.’ The road network within the Site will be designed to ensure service vehicles can undertake all necessary turning movements within the Site; thus, meeting PBP requirements. Notably, given the lay of the land it is not possible to provide a perimeter road and more than one access in and out of the development. However, it is noted that Site is already surrounded to the north and east by extensive public roads network. Still,



as shown on the Fig. 5 conceptual layout, the proposed dead end public road will provide separation to the western hazard at least in part. Furthermore, the dead-end public road will be less than 200m in length and includes compliant turning circle. In summary, the Site is immediately adjacent to the M1 and in proximity of the newly constructed interchange, accordingly the rezoning of this Site would not increase the level of bush fire risk to the existing community. This is because firefighting access to this Site would be deemed to be designed to provide safe access for evacuation and firefighting operations.

- The Site is not serviced by reticulated water. Accordingly, provision of water supply for a proposed future subdivision will need to comply with the acceptable solution detailed on Table 2 applicable to non-reticulated developments.
- In terms of electrical transmission lines, existing supply is overhead, and if reticulated or bottled gas is provided it will comply with the relevant requirements stated in Table 2.

In conclusion, this Assessment has duly considered the bushfire issues identified in s. 4.4.1 of PBP 2019. Accordingly, it has found that the proposed Planning Proposal to amend LEP 2013 to allow large lot residential development on Lot 11 DP1141269 can comply with s.9.1(2) Directions (specifically Direction 4.4 Planning for Bushfire Protection), and with the specific objectives for the development type and the performance criteria for the various proposed Bushfire Protection Measures in accordance with PBP 2019.



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## Appendices

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## Appendix A - APZs Requirements and Landscaping

### A.1 General Requirement for Asset Protection Zones

Asset Protection Zones (APZs) are buffer areas between development and a fire hazard, which aim to protect human life and property. The APZ comprises an Inner Protection Area (IPA) and an Outer Protection Area (OPA). These areas are to be managed to reduce the bushfire hazard. The general requirements for APZs are described in Tables 1A and 2A.

**Table 1A. Inner Protection Area (IPA) General Requirements**

Specifications and Management	
<b>Location</b>	The IPA extends from the edge of the OPA to the development.
<b>Purpose</b>	Ensures that the presence of fuel, which could become involved in fire, is minimised.
<b>Depth</b>	Varies from 10 to 100 metres.
<b>Fuel Loading</b>	Minimum fine fuel at ground level, which could be set alight by bushfire.
<b>Vegetation Requirements</b>	Do not touch or overhang the building; Are well spread out and do not form a continuous canopy; Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period; and Are located far enough away from the house so that they will not ignite the house by direct flame contact or radiated heat emissions.
<b>Uses Within the Area</b>	Tennis courts, swimming pools and gardens are permitted. Woodpiles, wooden sheds, combustible material storage areas, large quantities of garden mulch, stacked flammable building materials are not permitted.
<b>Maintenance</b>	This Area should be regularly mowed and all fuel removed e.g. fallen branches, leaf build-up.

**Table 2A. Outer Protection Area (OPA) General Requirements**

Specifications and Management	
<b>Location</b>	Located adjacent to the hazard. Originally the OPA would have formed part of the bushfire hazard but becomes an area where the fuel loadings are reduced.
<b>Purpose</b>	Reduction of fuel in this area substantially decreases the intensity of an approaching fire and restricts the pathway of crown fuels; reducing the level of direct flame, radiant heat and ember attack on the IPA.
<b>Depth</b>	Varies from 0 to 25 metres.
<b>Fuel Loading</b>	Fine fuel loads should be kept to a level where the fire intensity expected will not impact on adjacent developments. In the absence of any policy to the contrary, 8 tonnes per hectare of fuel is commonly used. In grasslands, fuel height should be maintained below 10 centimetres.
<b>Vegetation Requirements</b>	Any trees and shrubs should be maintained in such a manner that the vegetation is not continuous.
<b>Maintenance</b>	This Area should be regularly mowed and all excess fuels should be removed e.g. fallen branches, leaf build-up.

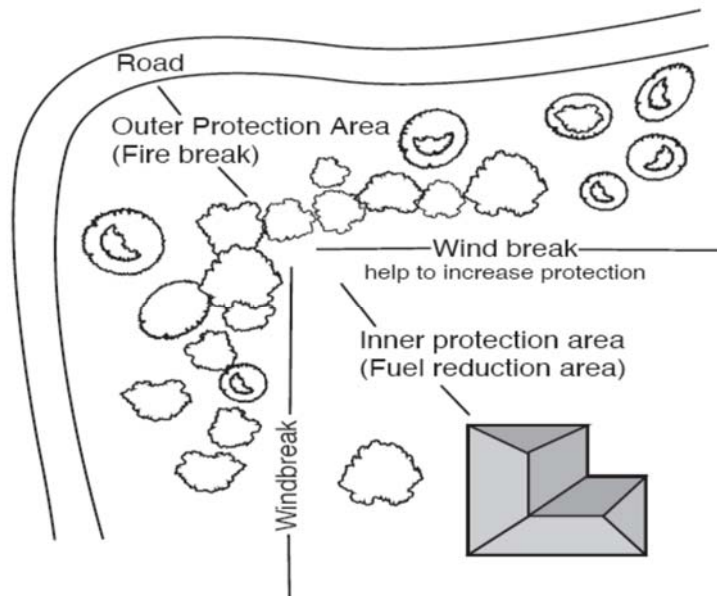
The RFS has also developed “Standards for Asset Protection Zones” which should be consulted for APZ specifications. Standards for Asset Protection Zones can be downloaded from [https://www.rfs.nsw.gov.au/\\_\\_data/assets/pdf\\_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf](https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0010/13321/Standards-for-Asset-Protection-Zones.pdf)



## A.2 Landscaping and Property Maintenance

### A.2.1 Landscaping Features & Principles

Bushland vegetation provides the fuel which feeds wildfires; however, by providing adequate



separation distance between the bush and buildings will effectively prevent the spread of bushfire. Still vegetation is not always the foe when it comes to bushfires and it is possible to use managed vegetation as a tool to reduce fire risk. According to many practitioners and researchers (Ramsay & Rudolph 2006; CFA 2004; RFS 2006; Queensland Government 2000; RFS undated), a well-designed garden can reduce bushfire hazard near buildings. In summary, homes and garden can blend with the natural environment and be landscaped to minimise the impact of fire at the same time.

**Figure 1A.** Example of landscaped design

aimed at minimising the impact of fire. Source RFS (undated)

According to the RFS (undated), this can be achieved by providing an effective Asset Protection Zone (APZ), which incorporates features such as fire-resistant plants, radiant heat barriers and windbreaks in the landscape layout as shown on Fig. 1A. The key features required when using landscaping as tool to reduce bushfire risk are summarised as follows (Ramsay & Rudolph 2006; RFS undated; RFS 2006):

- Plants with low flammability are selected (eg. broad leaves with high moisture and mineral content, smooth-trunk species with high branches, etc.)
- Vegetation does not provide a continuous path to the house
- Vegetation is located far enough away from the asset so that plants will not ignite the asset by direct flame contact or radiant heat emission
- Planted (or cleared) vegetation is into clumps rather than continuous rows
- Planted or retained species possesses attributes which makes them a good barrier against bushfire and wind attack
- Low branches are pruned two metres from the ground to prevent a ground fire from spreading into trees
- Lawn is planted and maintained around the future dwellings as this will slow the fire and reduce fire intensity. Alternatively, non-flammable pathways directly around the dwelling are provided
- Shrubs and other plants do not directly abut the dwelling. Where this does occur, gardens should contain low-flammability plants and non-flammable ground cover such as pebbles and crush tile
- Brush type fencing and planting “pencil pine” type trees next to buildings are avoided, as these are highly flammable.

Therefore, the features noted above and the principles listed in the following section should be applied to the landscaping and property maintenance for future dwellings.





### **A.2.2 Vegetation Management**

Vegetation management is the responsibility of individual landowners and should, as per PBP, include:

- *Maintaining a low cut lawn;*
- *Keeping areas around the garden free of fuel;*
- *Utilising non-combustible fencing materials;*
- *Breaking up tree and shrub canopies by defining garden beds;*
- *Using non-flammable mulch;*
- *Ensuring tree branches do not overhang roofs;*
- *Ensuring tree canopies are not continuous; and*
- *Installing windbreaks in the direction from which fires are likely to approach.*

### **A.2.3 Property Maintenance**

Property maintenance should, as per PBP, include:

- *Removal of material such as litter from the roof and gutters;*
- *Ensure painted surfaces are in good condition with decaying timbers being given particular attention to prevent the lodging of embers within gaps;*
- *Check pumps and water supplies are available and in working order;*
- *Driveways are in good condition with trees not being too close and forming an obstacle during smoky conditions;*
- *Check tiles and roof lines for broken tiles or dislodged roofing materials;*
- *Screens on windows and doors are in good condition without breaks or holes in flyscreen material and frames are well fitting into sills and window frames;*
- *Drenching or spray systems are regularly tested before the commencement of the fire season;*
- *Hoses and hose reels are not perished and fittings are tight and in good order;*
- *Doors are fitted with draught seals and well maintained;*
- *Mats are of non-combustible material or in areas of low potential exposure; Woodpiles, garden sheds and other combustible materials are located downslope and well away from the house; and*
- *Trees and other vegetation in the vicinity of power lines and tower lines should be managed and trimmed in accordance with the specifications in “Vegetation Safety Clearances” issued by Energy Australia (NS179 April 2002).*



## Appendix B – Traffic Impact Investigation

