

# **BUSH FIRE ASSESSMENT REPORT**

**-Beckworth Sanctuary Homes -  
Residential Subdivision  
Lot 2 DP 1191856 / 85 Gamble Street  
Quirindi**



**PREPARED BY:**



**DECEMBER 2021**

## PEAK LAND MANAGEMENT

Land management consulting services:

-Bush Fire-

-Ecological-

-Environmental-

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Cover Photo: View of subject site.

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### Document History

Document Id.	Prep. Date	Version	Submitted to
Bush fire Report	29.11.13	1	Mark Leek, ACM Landmark
Bush fire Report	9.12.21	2	Mark Leek, ACM Landmark

## AUTHOR DETAILS

Ted Smith is the director of PEAK LAND MANAGEMENT. He is a qualified Land Management Consultant with a Bachelor of Science Honours Degree in Physical Geography. He has over 25 years experience commercially consulting with PEAK LAND MANAGEMENT PTY LTD and working within state government.

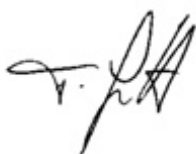
Ted has completed a Graduate Diploma in Design for Bush Fire Prone Areas from the University of Western Sydney and is a member of the Fire Protection Association of Australia (FPA of Australia), being a BPAD Accredited Bush Fire Practitioner Level 3.

## CERTIFICATION

Ted Smith of PEAK LAND MANAGEMENT has carried out a Bush Fire Assessment including a site inspection on the subject property. A detailed Bush Fire Assessment Report is attached which includes the submission requirements set out in *Appendix 2 & 4 of Planning for Bush Fire Protection 2019* together with recommendations as to how the relevant specifications and requirements are to be achieved.

I hereby certify, in accordance with Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*:

1. That I am a person recognised by the *NSW Rural Fire Service* as a qualified consultant in Bush Fire Risk Assessment; and
2. That subject to the recommendations contained in the attached Bush fire Risk Assessment Report the proposed development is considered to be complying with the specifications and requirements of *Planning for Bush Fire Protection, 2019* prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other document as prescribed by Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*. This report addresses the intent of PBP, 2019, with an alternate solution provided.



9<sup>th</sup> December, 2021

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Signature

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Date



## 1.0 INTRODUCTION

PEAK LAND MANAGEMENT PTY LTD has been engaged by ACM Landmark on behalf of Beckworth Sanctuary Homes to prepare a Bush Fire Assessment Report for a proposed residential subdivision of Lot 2 DP 1191856/85 Gamble Street, Quirindi (referred to hereafter as “subject site”).

Figures 1 & 2 show the subject site location and proposed development site plan, and Appendix 1 shows photos of the subject site.

Under the *Environmental Planning and Assessment Act, 1979* (and its regulations), and the *Rural Fires Act 1997* (and its regulations), councils are required to assess and control new developments in Bush fire prone areas. This land has been assessed as being part of a Bush Fire Prone Land Area as mapped by Council. It should be noted that Section 4.14 of the *Environmental Planning and Assessment Act 1979* requires Councils to be satisfied that developments in Bush fire Prone Areas comply with *Planning for Bush Fire Protection 2019* (PBP) guidelines, and relevant standards including the BCA which calls up AS 3959-2018 before granting development consent.

This development is classed as a subdivision under PBP 2019 and falls under Section 100B of the *Rural Fires Act 1997* (and its regulations) and will require integrated development approval/ Bushfire Safety Authority from the Rural Fire Service. PBP 2019 states that a residential subdivision should have required Asset Protection Zones, adequate access, water, and services as stated under the Act.

This report has been prepared in accordance with “*Planning for Bush Fire Protection (PBP) 2019*” guidelines, and makes reference to AS 3959. Clause 46 of the *Rural Fires Regulation 2002* sets out these requirements, which are addressed in this report. A Bush Fire Assessment Report is required showing the current situation and recommending how the risk may be ameliorated, so consideration may be shown by Council & NSW Rural Fire Service to allow development approval.



Figure 1: Subject site (imagery from Lands Department)



Figure 2: Proposed subdivision plan (from ACM Landmark, dated 8.11.21)

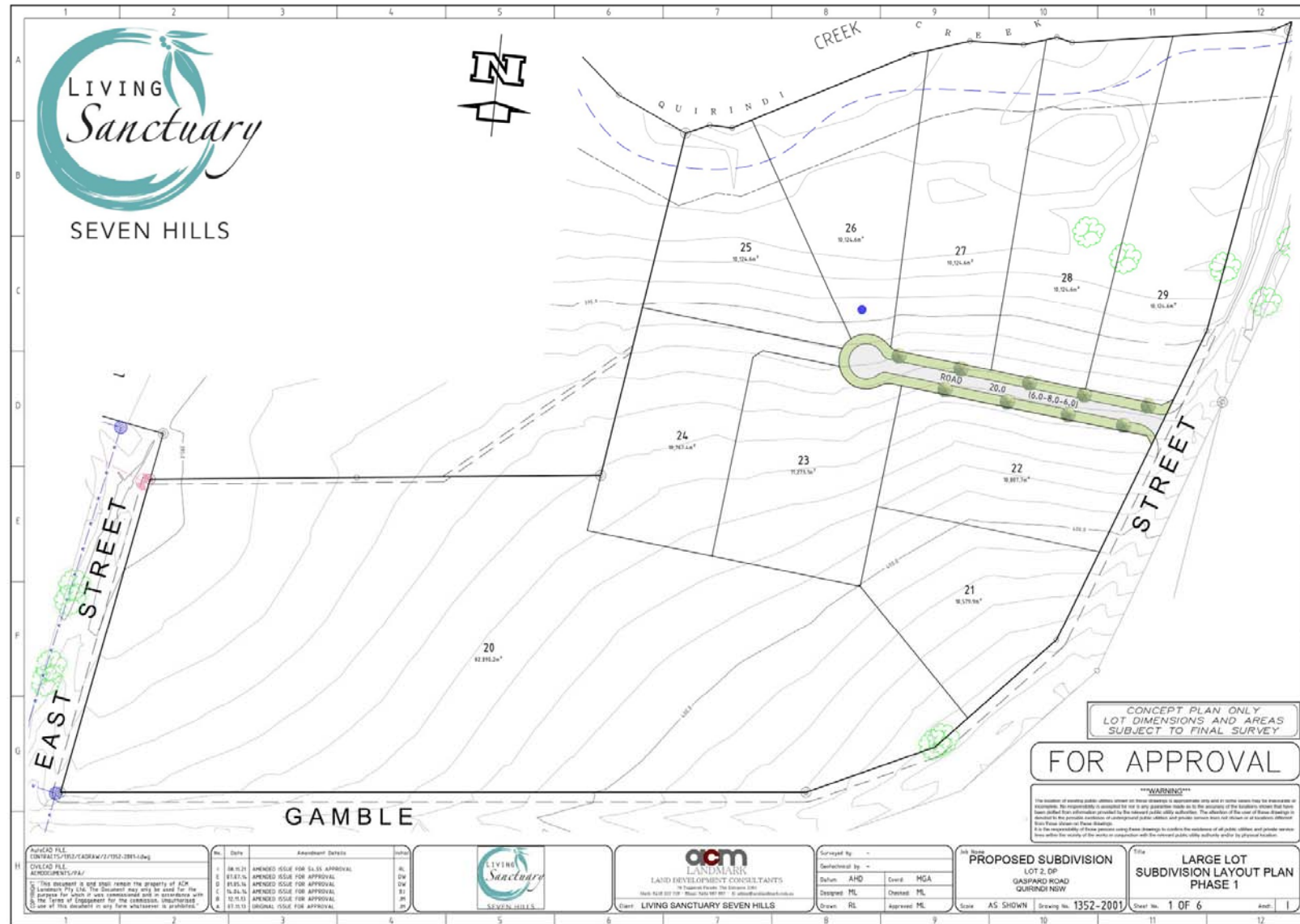




Figure 3: Bush fire Prone Land Map (from ePlanning Spatial Viewer, 2021)

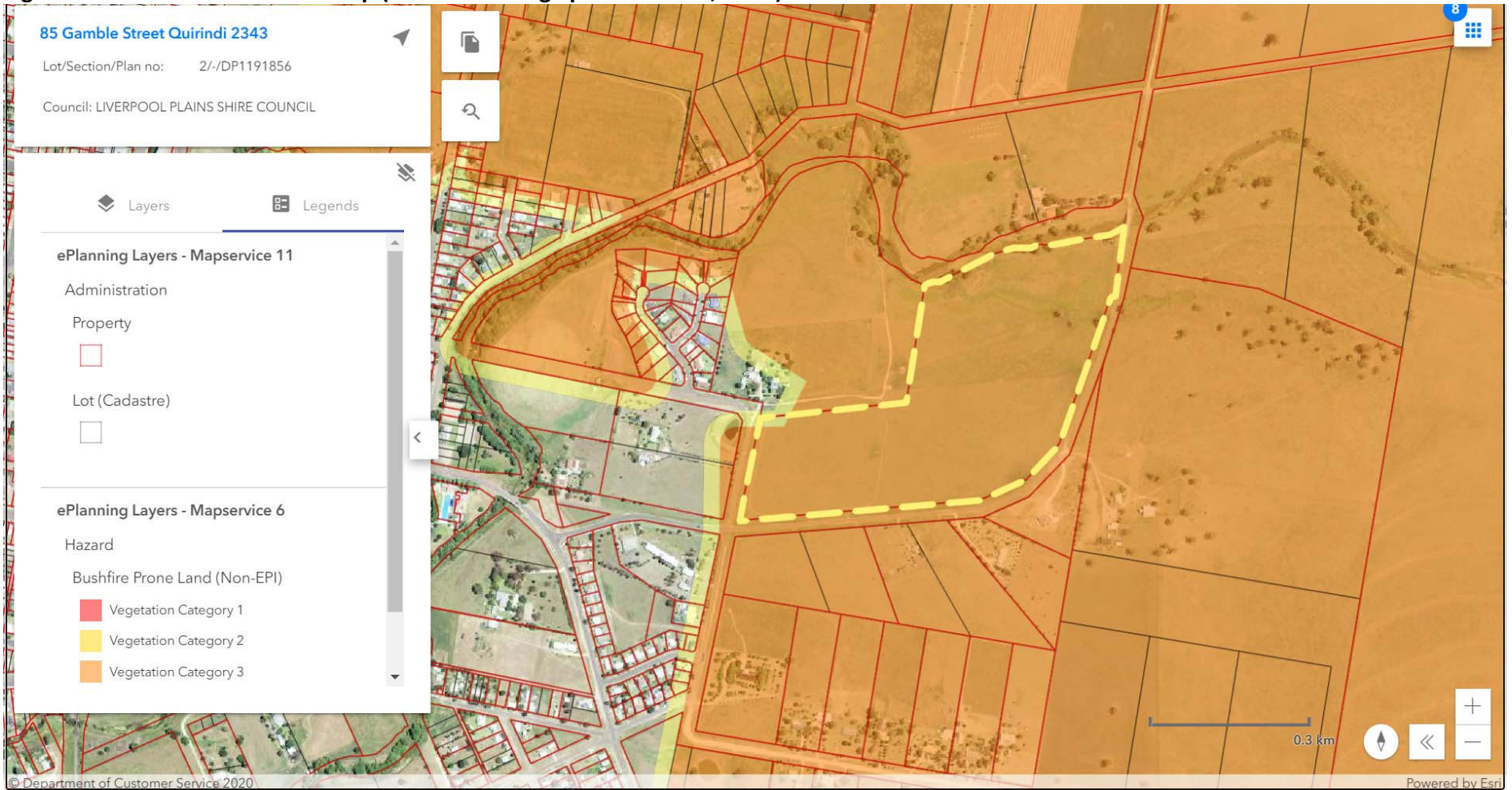
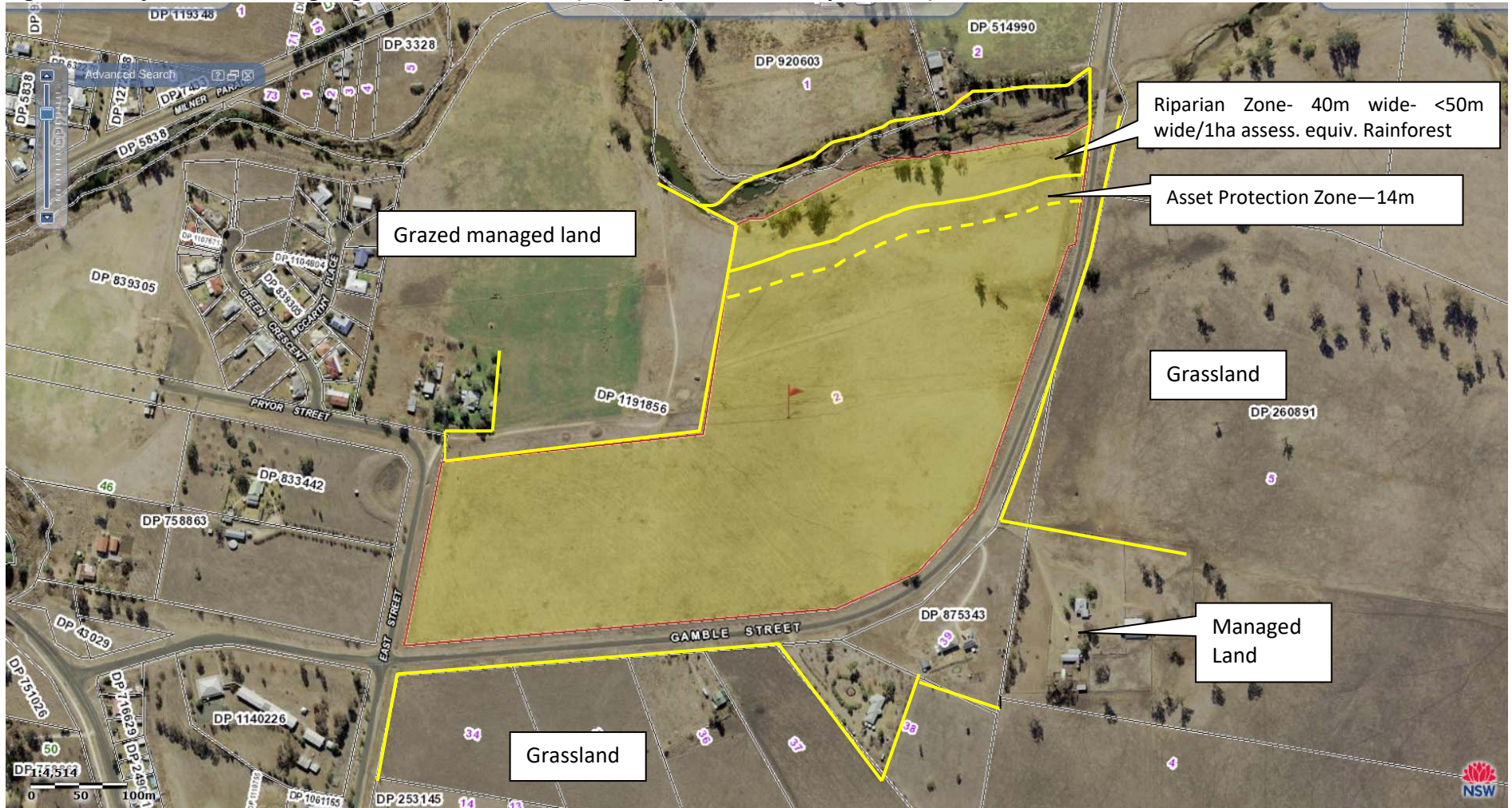




Figure 4: Subject site showing vegetation assessment (imagery from Lands Department)



## 2.0 SITE DESCRIPTION AND SURROUNDING LANDUSE

The subject site is a rural lot, 19.11 hectares in extent, located close to Quirindi. The property is currently cleared, and grazed with cattle. Surrounding properties are also grazed. This subject site backs onto Quirindi Creek which has been mainly cleared and grazed. Residential development occurs to the west of the site, and rural lifestyle/rural properties to the north, east and south.

Proposed dwellings over the rural lifestyle larger lots over the northern part of the site will be setback from Quirindi Creek, located closer to the proposed road, on raised flood free building envelopes. A riparian zone regeneration/planting zone 40m wide measured from the bank of Quirindi Creek will occur. This has been taken into consideration within this assessment. The extent of this riparian zone is shown on Figure 2 and 4 (approx).

## 3.0 VEGETATION

**The predominant vegetation types within 140m of the subject site are Grassland (both managed and unmanaged) and the proposed 40m wide riparian Zone assessed as equivalent to Rainforest as <50m wide as per PBP 2019 (Figures 1 & 2, Appendix 1 - photos).**

Grazed grassland occurs over the subject property, and surrounding properties. Where the land is cleared and grazed so that grass is <100mm in height it is not considered a hazard. The Bush fire Prone Land Map does not reflect this land management use.

Where Grassland is not managed/or grazed continuously and therefore grass growth >100mm in height it is considered a hazard in accordance with NSW Rural Fire Service policy/PBP, 2019. This occurs predominantly to the east and south of Gamble St.

The proposed riparian zone is assessed as a hazard, being eventually considered Forest <50m wide, after it has been replanted/allowed to regenerate, assessed as equivalent to Rainforest.

## 4.0 SLOPE

Slope assessment has been carried out under flammable vegetation within 100 metres of the dwelling as specified under the Guidelines Assessment Procedure. The angles have been measured in the field by an inclinometer, and measure the slope under the vegetation. See Table 1.

PBP, 2019 states: - *“The effective slope is considered to be the slope under the vegetation which will most significantly influence the bush fire behaviour for each aspect. This is usually the steepest slope. In situations where this is not the case, the proposed approach must be fully justified. Vegetation located closest to an asset may not necessarily be located on the effective slope”*.

## 5.0 ENVIRONMENTAL FEATURES

The subject site has been cleared, and has mainly introduced agricultural pasture species and weeds over it, except for some remnant old growth hollow bearing habitat paddock trees which have high ecological value and are understood to not be affected by the proposal and will be retained. An Ecological Assessment Report has been completed by PEAK LAND MANAGEMENT 2013 stating this.

## 6.0 ABORIGINAL FEATURES

An Aboriginal Archaeology Report has not been undertaken over this site to the author's knowledge; however this site has been disturbed, being a cleared grazed rural lot.

## 7.0 BUSH FIRE ASSESSMENT

The legislation as it relates to this site calls for asset protection zones (APZ) to be established around the proposed development, provision of adequate access, design staging and citing of the development and provision of appropriate water supply for bush fire fighting purposes.

### 7.1 Setbacks including asset protection zones

Table 1 shows the bush fire risk assessment for the subject site. An Asset Protection Zone has been provided which complies with PBP 2019 (Table A1.12.2) subdivision requirements.

**Table 1: Bush fire Threat Site Assessment –FDI 100**

DIRECTION TO BUSH FIRE HAZARD	Effective slope	PREDOMINANT VEGETATION TYPE WITHIN 140m as per PBP, 2019	Distance to hazard	Required minimum asset protection zone (from Table A1.12.1 PBP, 2019)	BAL (from AS PBP, 2019) -dependant on dwelling location
East	Flat to upslope	Grassland	Variable but greater than 20m provided by Gamble Street	10m	BAL LOW if >50m from Grassland, BAL 12.5 if 21-50m from hazard
North	0-5° downslope	Forest <50m wide, <1Ha, assess. equiv. Rainforest	>14m	14m-provided by APZ	BAL 12.5 (if >29m from hazard), BAL LOW if >100m from Riparian Zone Forest equiv Rainforest,
South	Upslope	Grassland	>10m	10m	BAL LOW if >50m from Grassland, BAL 12.5 if 21-50m from hazard



Note: BAL refers to the maximum bush fire attack level expressed in kW/m<sup>2</sup> radiant heat flux exposure for the given slope, distance to hazard, and type of hazard (ie vegetation type and fuel load).

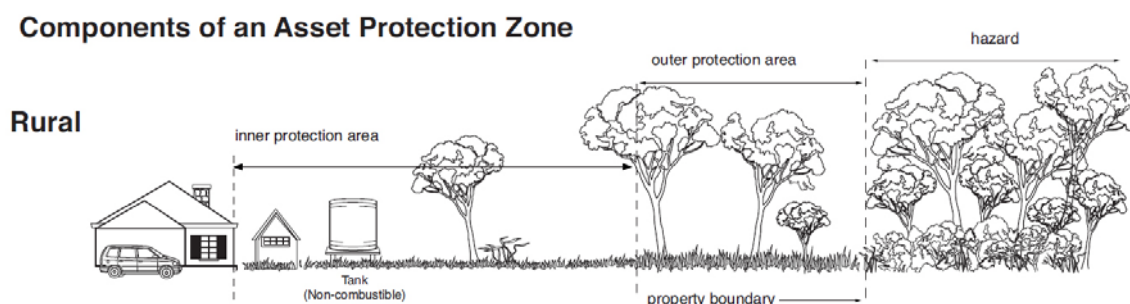
Any dwelling located further than 50m from a Grassland hazard, or 100m from the Riparian Zone revegetated area will be BAL LOW (no bush fire standards applicable). Dwellings located closer will be BAL 12.5 or higher (determined by Table A1.12.5 PBP, 2019), noting no dwelling is allowed to be BAL 40 or BAL FZ as a subdivision. Building envelopes have not been shown due to the large lots. An Asset Protection Zone 14m wide (as per Table A1.12.2, PBP, 2019) is shown adjacent to the riparian zone.

An Asset Protection Zone is shown over the land to the north only (Figure 4). Gamble St/Wallabadah Road provides an adequate Asset Protection Zone in all other directions.

Figures 4 show graphically the required 14m wide minimum Asset Protection Zone over the subject site. No dwellings are to be constructed or approved within the Asset Protection Zone. The Asset Protection Zone should be delineated on all plans, and a covenant or similar legal encumbrance placed over the land clearly showing its location and restriction upon title of land, and ongoing Asset Protection Zone management requirements in perpetuity.

Note- in this case if a dwelling(s) are located well away from the hazard, then the Asset Protection Zone is located adjoining the new dwelling, and the nominated Asset Protection Zone does not then need maintaining. Separate bush fire reports are recommended for each new dwelling once subdivision approved, lots sold, and new landowners /new dwelling site locations/plans are known.

**Figure 5: Asset Protection Zone example (from PBP, 2006)**



## **7.2 Water supplies**

The subject site will be serviced by reticulated town water supplies, being connected to the existing mains pressure water supply. All proposed lots will be serviced by town water, with fire hydrants to be provided as per Australian Standard (AS2419.1, 2005) being:

- providing blue cats eyes markers;
- signage;
- Fire hydrants are to be clearly marked and provided for the purposes of fire protection;
- Fire hydrant spacing, sizing and pressure should comply with standard.

The subject site will be serviced by underground electricity transmission wires.

## **7.3 Access**

All roads are public roads, and will comply with Section 5.3b (Residential subdivisions- Public Roads) outlined within PBP 2019.

A perimeter road has been provided along the western bushland /E2 Zone /Asset Protection Zone interface in accordance with the principles of PBP, 2019.

## **7.4 Construction standards**

The proposed dwellings would be constructed to their relevant BAL's as stipulated by AS 3959-2018, except as modified by Section 7.5 of PBP, 2019.

All dwellings will be subject to their own BAL assessment when a Development Application is prepared for a dwelling over each lot. Land is to be managed round each to an Asset Protection Zones standard, to ensure all dwellings are BAL 29 or lower, in accordance with PBP, 2019.

## **7.5 Other fire protection measures**

The site is located in a low threat area, with appropriate Asset Protection Zone in place and setback/perimeter roads. No other measures are considered necessary. The subject site is serviced by overhead electricity on timber poles, with electricity to be supplied underground over the proposed subdivision.

## 8.0 BUSH FIRE RECOMMENDATIONS

In order to gain development approval for the subdivision the following supporting information should be considered:

- ❑ Serviced by reticulated water supplies- complies with PBP, 2019.
- ❑ Serviced by underground electricity power- complies with PBP, 2019.
- ❑ Serviced by public roads- complies with PBP, 2019.
- ❑ Asset Protection Zone - An Asset Protection Zone is provided over the subject site and surrounding curtilage - complies with PBP, 2019.
- ❑ All dwellings to be built in conformance with AS 3959 & PBP 2019 - complies with PBP, 2019.
- ❑ Landscaping- to comply with PBP 2019 –see rec’s below.
- ❑ Adequate access/egress from sealed public road in a rural/residential area close to Quirindi township with fire brigades nearby.

**The following recommendations are made:**

- ❑ **Design and Construction:** - The intent of measures is that buildings are designed and constructed to withstand the potential impacts of bush fire attack. To achieve this, the following conditions are recommended:
  - All new dwellings shown on the mapped bush fire prone land map (Fig 3) shall comply with PBP, 2019 and Australian Standard AS3959-2018 '*Construction of buildings in bush fire-prone areas*', or the NASH Standard - Steel Framed Construction in Bushfire Areas (incorporating amendment A - 2015). New construction must also comply with the construction requirements in Section 7.5 of *Planning for Bush Fire Protection 2019*.
- ❑ **Asset Protection Zone:** - The intent of measures is 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. To achieve this, the following conditions should apply:
  - From the start of building works, and in perpetuity to ensure ongoing protection from the impact of bush fires, the Asset Protection Zone must be managed for a distance of 14m, in accordance with the requirements of Appendix 4 of *Planning for Bush Fire Protection 2019*, located as shown in Figures 5-9.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bush fires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season, by the respective lot land owner.

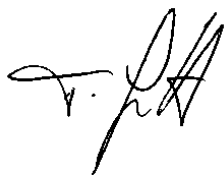
No dwellings should be constructed or approved within Asset Protection Zones. The Asset Protection Zone should be delineated on all plans, and a covenant or similar legal encumbrance placed over the land clearly showing its location and restriction upon title of land. It should be clear to the owner of each respective lot where an Asset Protection Zone is present that they as the land owner are responsible for maintaining the Asset Protection Zone over that land.



- ❑ **Public access roads** – The intent of measures is to provide safe operational access to structures and water supply for emergency services, while residents are seeking to evacuate from an area. To achieve this, the following conditions should apply:
  - ❑ Public roads conform to Table 5.3b, PBP 2019 Public Roads, being at least 8m wide kerb to kerb carriageway width for perimeter roads, sealed all weather roads, and other road conditions as outlined in PBP 2019.
  
- ❑ **Water and Utilities:** - The intent of measures is 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. To achieve this, the following conditions should apply:
  - Water, electricity and gas shall comply with Table 5.3c of ‘Planning for Bush Fire Protection 2019’.
  - Fire hydrants are to be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005, including blue cats eyes markers and signage.
  
- ❑ **Landscaping:** landscaping is designed and managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions. To achieve this, the following conditions should apply:
  - ❑ All new fencing if within 6m of the proposed dwellings shall be non-combustible.

The bush fire risk is considered to be adequately managed through the recommendations made above, and in conjunction with any recommendations/approval conditions from the NSW Rural Fire Service & Council.

Report prepared by:



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PEAK LAND MANAGEMENT PTY LTD

**DISCLAIMER:** Whilst every effort is made to present clear and factual information based on fieldwork and current legislation no guarantee is made that the development or its occupants are safe from bush fire, or development will be approved, or to recommendations, as this is in the hands of the approving statutory authorities/certifier. No warranty or guarantee, whether expressed or implied, is made with respect to the observations, information, findings and inclusions expressed within this report. No liability is accepted for losses, expenses or damages occurring as a result of information presented in this document.

## 9.0 REFERENCES

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Robinson, L. 2003 (3<sup>rd</sup> ed). *Field guide to the Plants of Sydney*. Kangaroo Press.

Standards Australia AS 3959-2018. *Construction of buildings in Bush Fire prone area*.

### Websites

[www.rfs.nsw.gov.au](http://www.rfs.nsw.gov.au)

Google Earth

Lands Department

Liverpool Plains Shire Council

## APPENDIX 1: PHOTOS OF SITE AND SURROUNDS

Looking south over subject site showing managed grazed grassland not considered a hazard.



Cattle grazing over subject site





Looking east over subject site showing managed grazed grassland not considered a hazard



Looking west over subject site (from Gamble Rd)





Riparian zone to be revegetated adjoining Quirindi Creek





Grassland to eastern side of Gamble Rd



Gamble Rd. Subject site to left of frame, Grassland & Managed Land to north in background





Managed land to south-east of site not considered a hazard



Grassland to south of site considered a hazard





Grazed managed land to northwest of site



Managed residential/rural residential lands to west of site (this land is grazed/slashed usually being part of a backyard)

