

BUSH FIRE ASSESSMENT REPORT

**-Mrs Shearman-
Proposed Land Rezoning
259 Averys Lane
Buchanan**



PREPARED BY:



**OCTOBER 2020
Amended Dec 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 Assessment Report	15.07.20	1	Complete Planning
Bush Fire Assessment Report	24.07.20	2	Complete Planning
Bush Fire Assessment Report	28.10.20	3	Complete Planning
Bush Fire Assessment Report	9.8.21	4	Complete Planning
Bush Fire Assessment Report	6.12.21	5	Complete Planning

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 *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 Assessment Report the proposed development conforms to the **relevant specifications and requirements** being the document entitled *Planning for Bush Fire Protection* 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*.



6th December, 2021

Signature

Date



1.0 INTRODUCTION

PEAK LAND MANAGEMENT has been engaged by Complete Planning Solutions on behalf of Mr & Mrs Shearman to prepare a Bush Fire Assessment Report for a proposed rezoning of land & potential residential 1 into 14 lot subdivision over land located at Lot 10 DP 1085485/ 259 Averys Lane, Buchanan. (referred to hereafter as “subject site”).

Figures 1-5 show the subject site location, topographic map, and proposed development site plans, 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 Area as mapped by Council (Figure 4).

This subdivision development falls under Section 100B of the *Rural Fires Act 1997* (and its regulations) for the subdivision which requires integrated development approval/ Bush Fire Safety Authority from the Rural Fire Service. PBP 2019 states that a residential subdivision falls under Section 100B of the Rural Fires Act. It 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. 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 and Rural Fire Service regarding the approval of the proposed subdivision.

Note:- this report has been amended in consultation with Complete Planning to reflect total potential lot yield, as required by NSW DPIE.

Complete Planning state:

““Potential Yield

The information required relies on the potential yield for the proposed planning controls.

A draft subdivision plan has been created to demonstrate the potential yield of the rezoned area. The proposed rezoned land area is approximately 13,800m². The road reserve area of approximately 5,647m². Resulting in a developable land area of approximately 8,153m².

Cessnock City Council’s minimum lot size for R2 Low Density Residential Zone is 405m². With a developable land area of 8,153m², 18 lots could be accommodated. However, given the environmental constraints such as bush fire and Council’s DCP requirements the conclusions of the draft subdivision being a potential yield of 14 lots is considered to be more practical. Biodiversity considerations will further reduce the potential yield. The updated biodiversity assessment report details the current situation in relation to biodiversity land.

The proposed lot sizes will allow for a variety of housing stock, including single dwellings, secondary dwellings and dual occupancy developments.

The draft subdivision plan utilises the upgrade and extension of Averys Lane which is to be constructed as Stage 1 of Buchanan Ridge Estate located to the west of the subject site. The Developer, Hunter Lands, of Buchanan Ridge (adjacent urban release area) have advised that construction of Averys Lane is expected within 12 months. A perimeter road will be constructed, to assist with providing an asset protection zone (APZ) for bush fire purposes.

Adjacent Urban Release Area

According to Hunter Land the first stage of Buchanan Ridge is expected to start construction in the near future with delivery of the first stage in 9 to 12 months. Once stage 1 is completed services such as sewer, water and electricity will be made available to any proposed development upon Lot 10.

Water delivery to the adjacent urban release area, Buchanan Ridge, has been identified by Hunter Water as effectively an extension of the Averys Village Residential Development. Hunter Water have acknowledged that there is sufficient bulk capacity within the water supply system to supply Buchanan Ridge. Hunter Water have also provided advice that there is sufficient capacity in the Kurri Waste Water Treatment Works to accommodate Buchanan Ridge.

Buchanan Ridge is a 173 Lot subdivision. The maximum lot yield for Lot 10 is 14 lots. It is understood that Hunter Water would have the capacity to service the water and sewer requirements of any future development of Lot 10.

The extension of Averys Lane will be constructed within stage 1 of Buchanan Ridge and then would be available for use by any proposed subdivision of Lot 10.

Provision for the retention of vegetation has not been taken into consideration with the above calculations.

Lot 1, 3, 5, 7, 9, 11 and 13 will be accessed via Averys Lane which is to be upgraded with the Buchanan Ridge development to occur to the west of the subject site. After speaking to the developer the first stage of Buchanan Ridge is to occur within the next 12 months.

The Proponents have advised that they are only interested in a one (1) into two (2) lot subdivision at this stage and that no additional dwellings will be constructed. However, it is acknowledged that the proposed R2 area has the potential to create 14 residential lots depending on layout and requirements of any future subdivision with a minimum lot size of 450m², perimeter road & Asset Protection Zone as shown in this report. Any bushfire implication of future subdivision (other than the one (1) into two (2) lot proposed) would be addressed at that time when the size and scope of any future development are accessed”.

Figure 1: Aerial photo showing subject site (imagery from Lands Department). North to top of all images.




Figure 2: Aerial photo showing subject site, and R2 developable area.



Legend

-  Subject site
-  Creek
-  Rezoning developable land
-  Lot

0 20 40 60 80 m

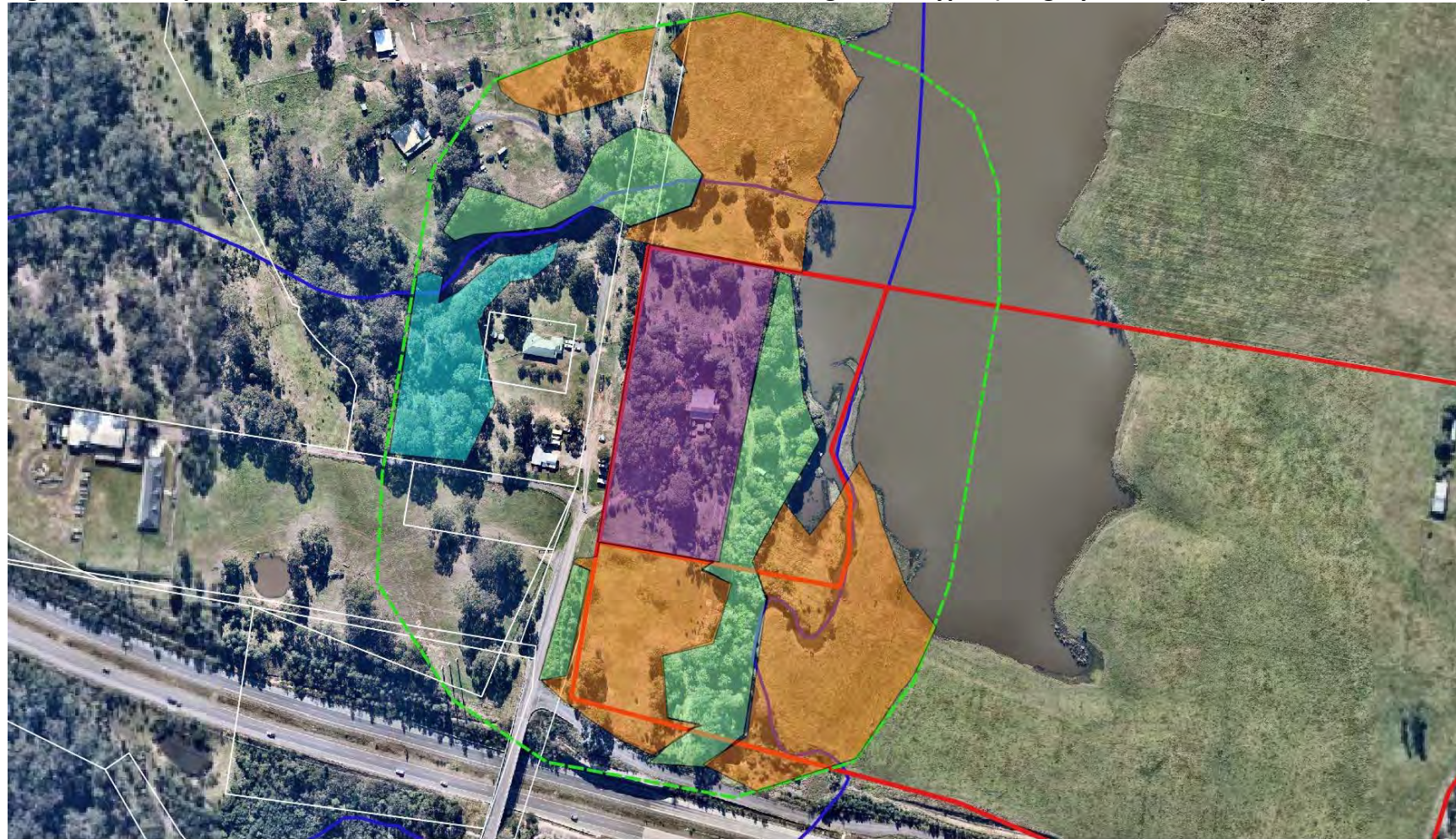


Imagery from nearmap, 15th June, 2020
Projection: GDA 94/MGA zone 56



Note: Cadastre & GPS (+/-3m) may be subject to innaccuracy

Figure 3: Aerial photo showing subject site, Asset Protection Zone and vegetation types (imagery from Lands Department).



Legend

- | | |
|---------------------------|---|
| Subject site | Forest < 1 Ha / < 50m wide equiv Rainforest |
| BTA-140m | BTA- Grassland |
| Rezoning developable land | BTA- Forest |
| Creek | Lot |

0 25 50 75 100 m

Note: Cadastre & GPS (+/-3m) may be subject to innaccuracy



Imagery from nearmap, 15th June, 2020
Projection: GDA 94/MGA zone 56



Figure 4: Topographic map of site and surrounds (imagery from Lands Department).

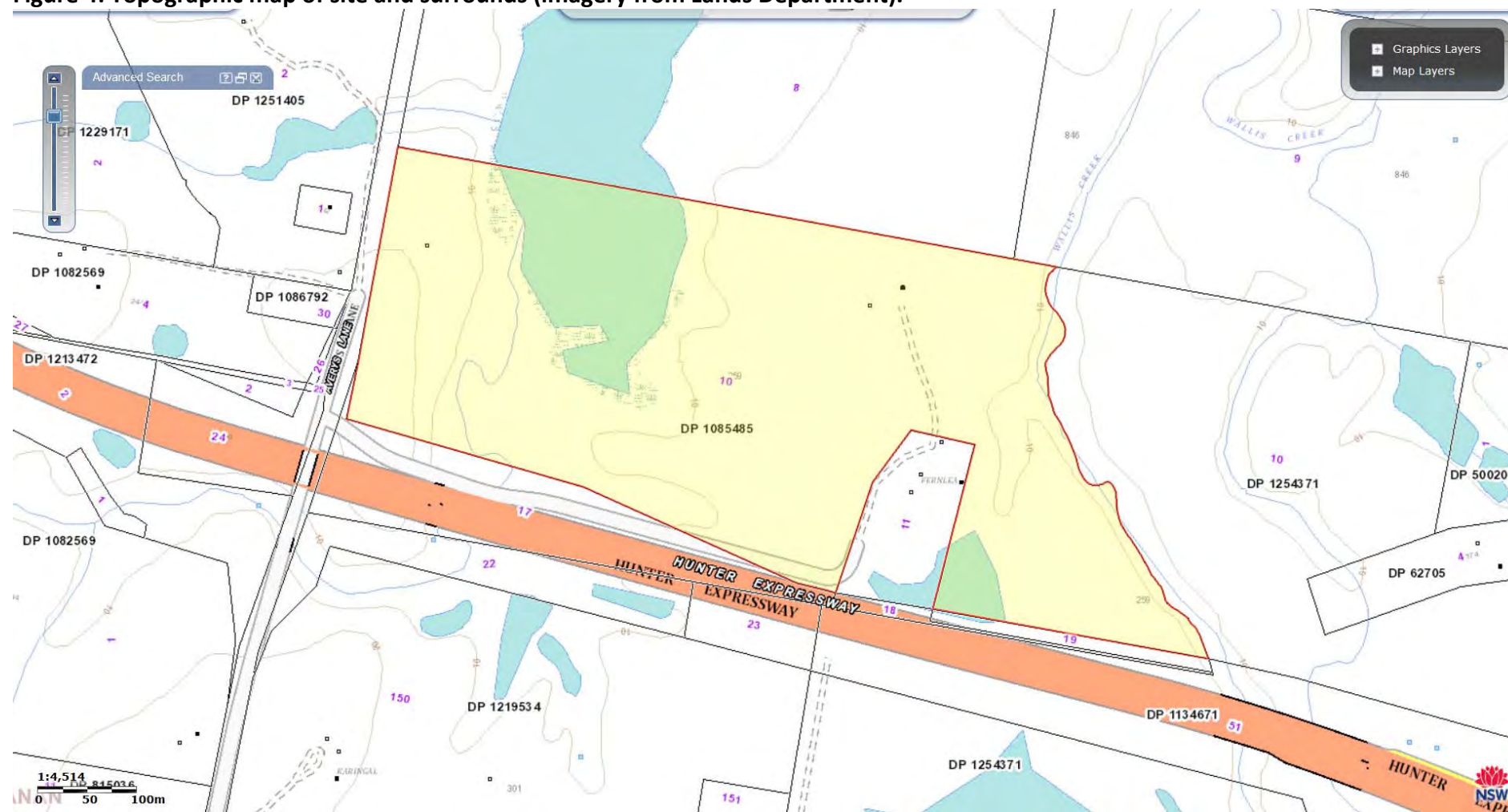


Figure 5: Bush Fire Prone Land Map (from ePlanning, 2020)



Figure 6: Site plan (from Complete Planning Solutions, vC dated 25.09.20)

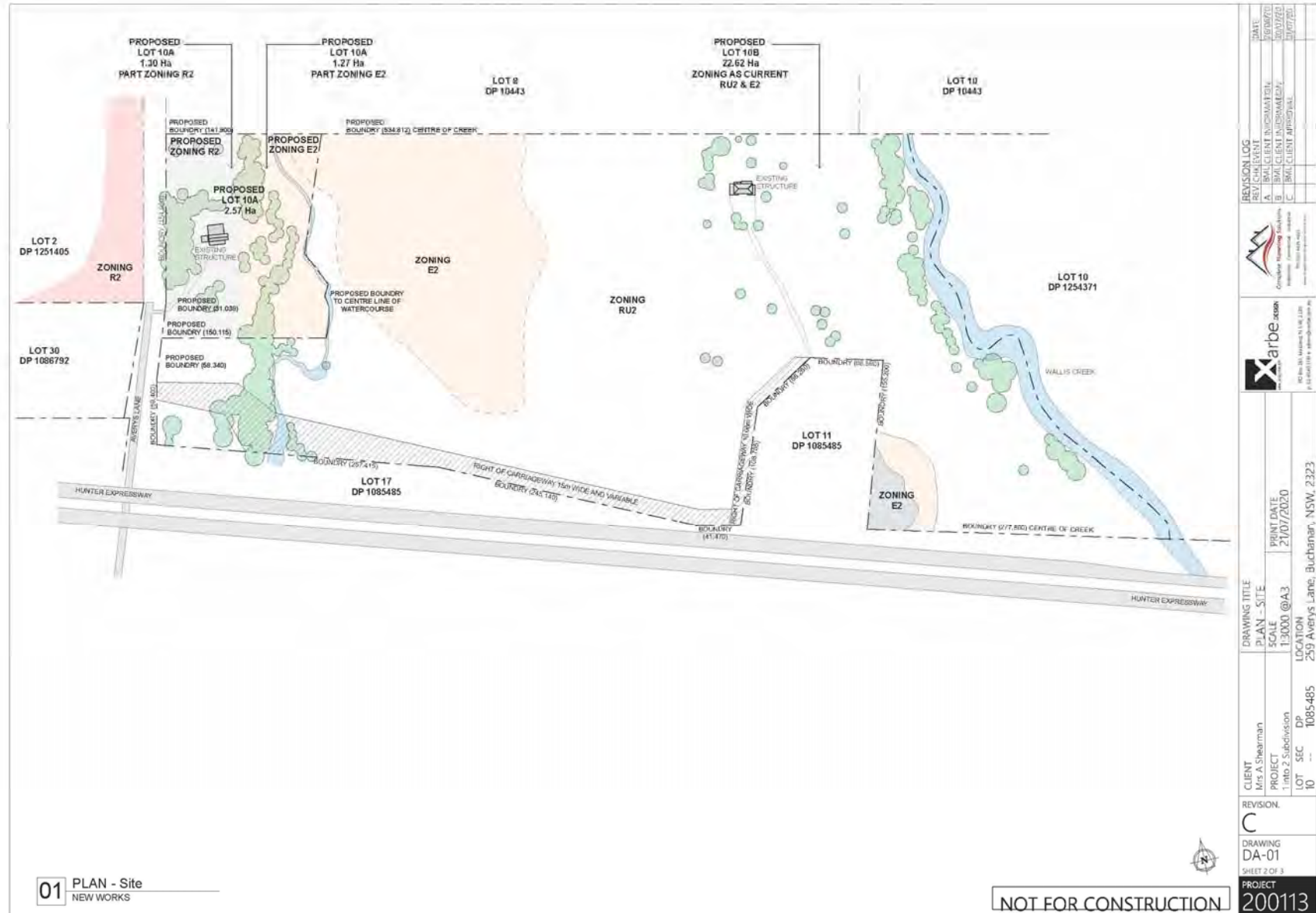


Figure 7: Site plan (from Complete Planning Solutions, dated vC dated 25.09.20)

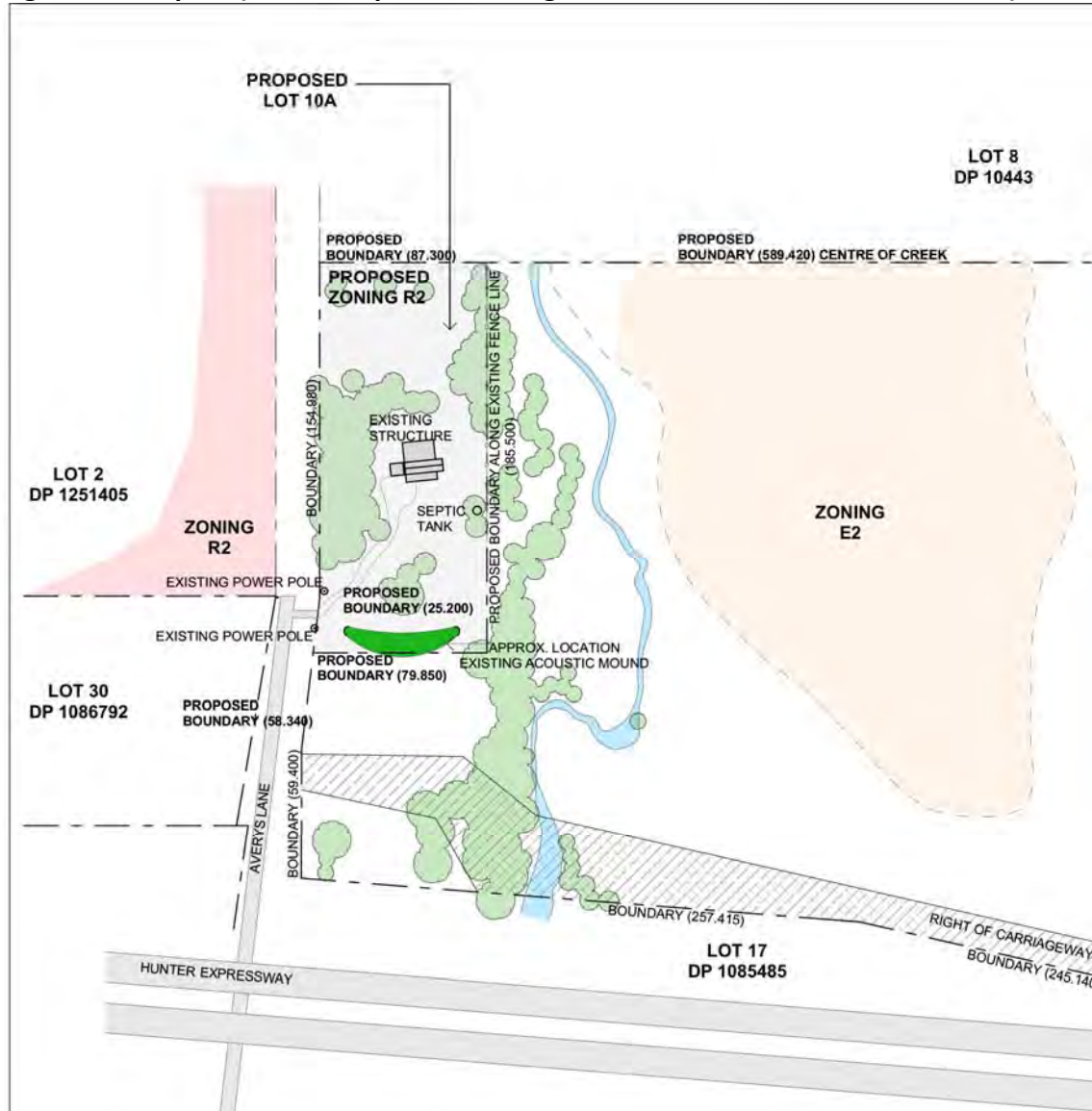
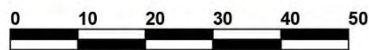


Figure 8: Potential Subdivision plan (from Complete Planning Solutions, undated)



(Nom.) Development Land total 8,153 Sqm

(Nom.) Road Reserve total 5,647 Sqm

TOTAL 13,800 Sqm

Figure 9: Potential Subdivision with Asset Protection Zone shown (plan from Complete Planning Solutions, undated)



Figure 10: Potential rezoning developable land with Asset Protection Zone shown

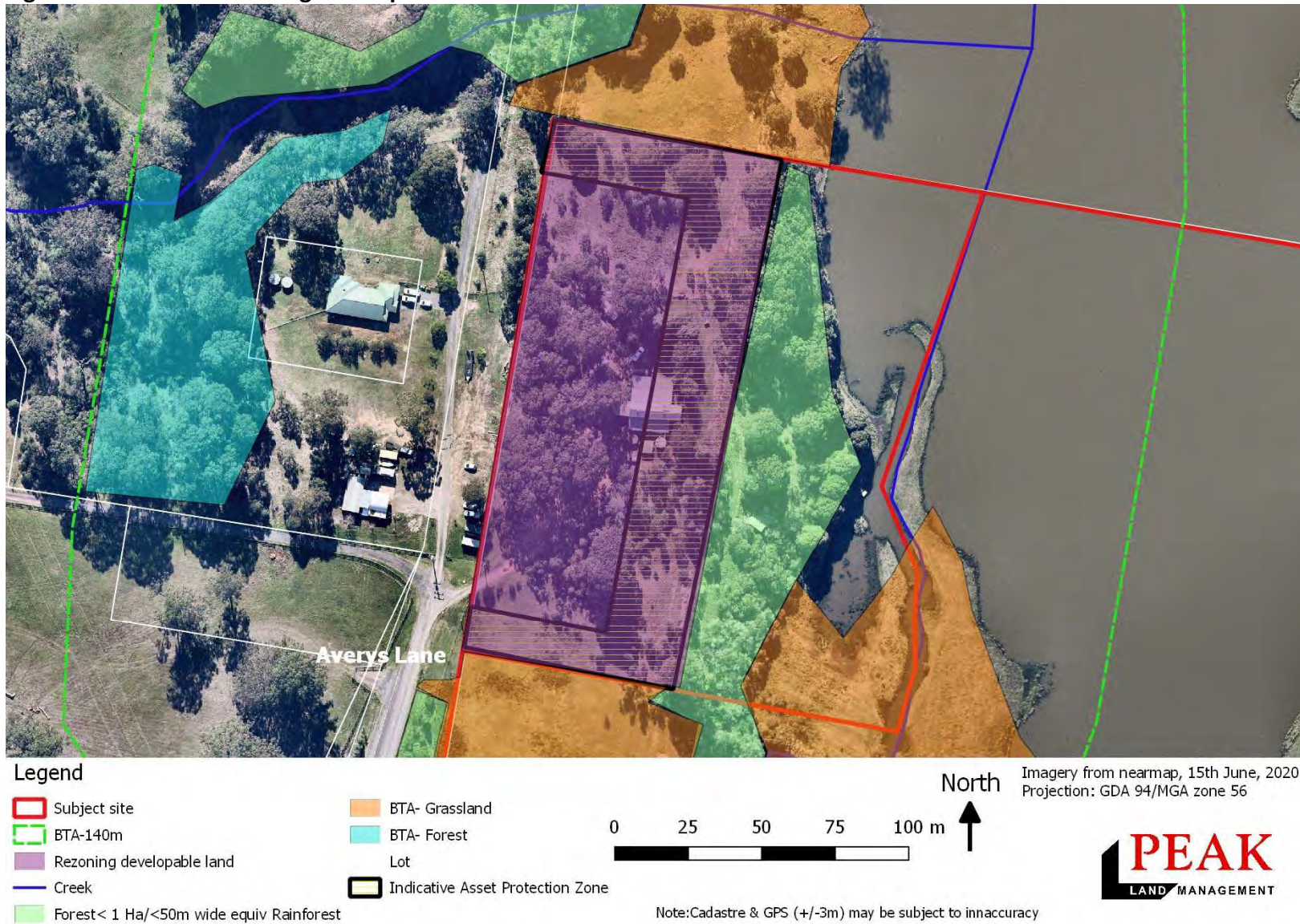
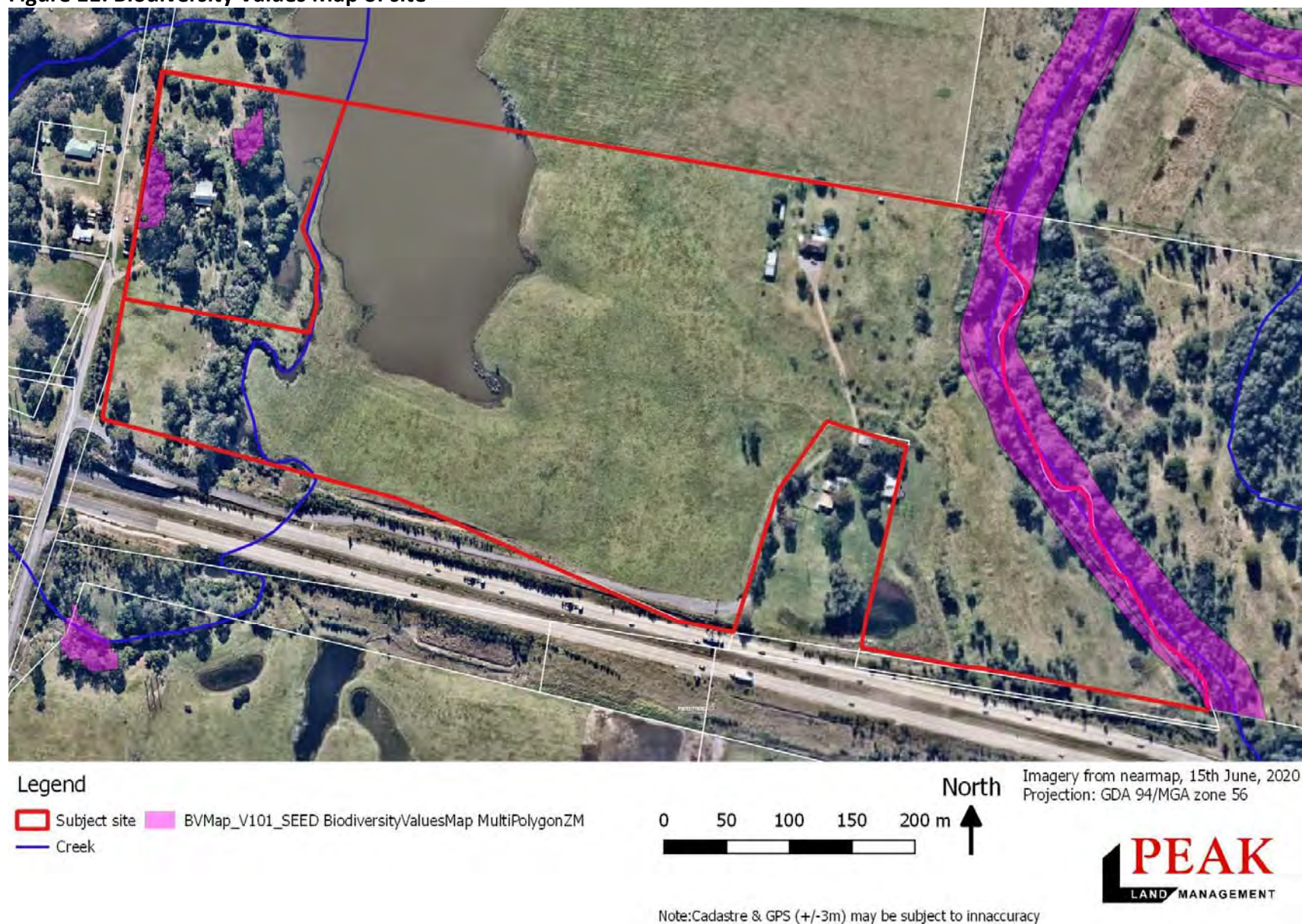


Figure 11: Biodiversity Values Map of site



2.0 SITE DESCRIPTION AND SURROUNDING LANDUSE

The Applicant seeks to develop the allotment into a 1 into 2 lot rural subdivision, however for the purposes of this rezoning application after feedback from NSW Planning a maximum of 14 lots are shown, with a perimeter road and APZs over rear of lots in accordance with this report/NSW Rural Fire Service PBP, 2019 requirements. This represents the developable area of the lot, as steep land to the east precludes development over that area.

Plans are shown in Figure 7. There is an existing dwelling over proposed Lot 10A which would be demolished under this scenario (even though in reality it won't as proponents have stated they wish to remain in this location/dwelling). Another dwelling over the western side of the site (proposed lot 10B) is also to be retained.

The subject site is located in a rural area, accessed from a sealed public no through road.

The subject site is surrounded by part managed land, roads, a creek, a large dam/water course and dwellings further off site.

Managed land surrounds the existing dwelling to the north and south, and west (see below), with some remnants of native vegetation present to the east, which are predominantly underscrubbed and grazed/slashed.

3.0 VEGETATION & ENVIRONMENTAL FEATURES

The predominant vegetation type within 140m is Forest equivalent to Rainforest (<50m wide/ <1 ha), and Grassland assessed as per PBP 2019 (Figure 1 & 2, Appendix 1 - photos).

Note: - for the proposed rezoning the entire Biodiversity Values area is taken as being cleared, so that no vegetation occurs over the site, and the subdivision proposal/this report is based upon that premise.

Remnants <1Ha are located to the east of the site, being fragmented, grazed and isolated from other vegetation.

Trees are to 25m in height with a weedy lantana understorey over the eastern remnant, and over some patches to the south. It is Hunter Lowland Redgum Forest Endangered Ecological Community, and also mapped on the Biodiversity Vales map (Fig 6), so no clearing allowed over this area allowed without a full BDAR being required for the DA.

Part cleared Forest occurs to the wet off site.

4.0 SLOPE

Slope assessment has been carried out around the subject site under hazardous vegetation out to 100 metres as specified under the Guidelines Assessment Procedure. The angles have been measured in the field by an inclinometer.

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 ABORIGINAL FEATURES

An Aboriginal archeological survey/or AHIMS search has not been undertaken to the authors knowledge.

6.0 BUSH FIRE ASSESSMENT

The legislation as it relates to this site calls for the provision of adequate access, design staging and citing of the development and provision of appropriate water supply for bush fire fighting purposes.

6.1 Setbacks including asset protection zones

A representative Asset Protection Zone is provided where shown in Figure 8. The Asset Protection Zone can be provided over the subject rezoning site.

An example of how it should be managed is shown in Figure 7.

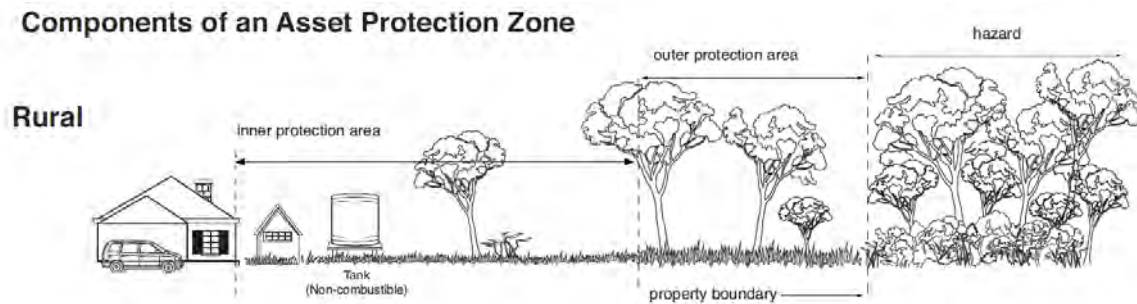
Table 1: Bush Fire –Subdivision Assessment –FDI 100

DIRECTION TO BUSH FIRE HAZARD	EFFECTIVE SLOPE	PREDOMINANT VEGETATION TYPE WITHIN 140m as per PBP 2019	Distance to hazard (from proposed development)	Required minimum Asset Protection Zone (Table A1.12.2 PBP,2019)
East	15-20° downslope	Forest equiv rainforest <50m wide/<1Ha	30m	30m (to be provided over site)
South	0-5° downslope	Grassland (grazed paddocks)	12m	12m (to be provided over site)
West	0-5° downslope	Forest	98m	29m
North	0-5° downslope	Grassland (grazed paddocks)	12m	12m (to be provided over site)

Note: BAL refers to the maximum bush fire attack level expressed in kW/m² radiant heat flux exposure for the given slope, distance to hazard, and type of hazard (ie vegetation type and fuel load).

PBP 2019 defines an Asset Protection Zone within Appendix 4. A representation diagram is shown in Figure 9.

Figure 7: Asset Protection Zone standard (from PBP, 2006)



6.2 Water supplies and utilities

The subject site is serviced by static water tank supplies, and above ground electricity transmission wires. There is a large dam/water course present to the east of the site with pump to upper tanks present as well as a creek line. The existing dwelling over Lot 10A has:

- Two static water tanks present, one concrete, one plastic, total 44 000 litres;
- Water pump & pipe from watercourse to east to top up water tanks (at least 10MGL).

The existing dwelling over proposed Lot 10B has:

- Two underground concrete static water tanks present, total at least 50 000 litres;
- Swimming pool- 40 000litres.

All lots/proposed dwellings would need additional static dedicated water tanks with Storz fittings (min 5000l) to comply with PBP, 2019.

6.3 Access

The proposed subdivision will be accessed from Averys Lane, a sealed two way no through public road. An 8m wide sealed public two way through perimeter road is proposed, in compliance with PBP, 2019.

Note: a subdivision has been approved to the west of this site over Averys Lane, and The existing dwelling over proposed Lot 10A has an internal property access road/driveway being 4m wide and <70m in length. It conforms to PBP, 2019. A turning circle is provided around the western side of the dwelling (see photos).

The existing dwelling over proposed Lot 10B has an internal property access road/driveway being 4m wide, unsealed, and around 200m in length. It has a right of way through Lot 11. It joins a sealed public road adjoining the Hunter Freeway and Averys Lane, which is two way, 6m wide, sealed and good condition road.

6.4.1 Construction standards

The existing dwellings shall be upgraded to provide ember screening in accordance with PBP, 2019. Both are older dwellings with no existing ember screening.

All proposed dwellings would comply with PBP, 2019 construction requirements, in this case BAL 29 or lower.

6.5 Other fire protection measures

Recommendations are made below to address further non-compulsory bush fire protection measures.

7.0 BUSH FIRE RECOMMENDATIONS

The development complies with PBP, 2019:

- ❑ Serviced by tank water supplies- complies with PBP.
- ❑ Serviced by above ground electricity power- complies with PBP.
- ❑ Serviced by public road, and proposed perimeter road - complies with PBP.
- ❑ Asset Protection Zone - An Asset Protection Zone is provided over the subject site and complies with PBP.
- ❑ Landscaping- to comply with PBP.

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:
 - Existing dwellings shall be upgraded to provide ember screening in accordance with PBP, 2019.
 - New proposed dwellings assessed at time of subdivision DA submission. All would comply with BAL 29 or lower as per PBP, 2019.
- ❑ **Asset Protection Zone:** - An Asset Protection Zone should be provided/maintained over proposed Lots. The APZ should be managed as an Inner Protection Area Asset Protection Zone (as defined in PBP 2019, Appendix 4).

An Asset Protection Zone is provided over the proposed subdivision as shown in Figure 8 in compliance with PBP, 2019.

PBP 2019 states the APZ *“should consist of mown grass, concrete, pavers, pebbles, small clumps of vegetation, isolated trees, etc. Lawns and garden should be maintained so that they do not become overgrown, vegetation does not grow over or touch the dwelling, and canopy of trees do not touch or become continuous with the surrounding bushland (at least 2-5 metres between tree canopies).*

- ❑ **Access:** - The intent of measures for internal roads is to provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area. To achieve this, the following conditions shall apply:
 - A perimeter road is provided in compliance with '*Planning for Bush Fire Protection 2019*'.
 - The existing roads generally comply with property access road requirements.
- ❑ **Landscaping:** - All new fencing if within 6m of any proposed dwelling shall be non-combustible.

There is sufficient land to allow APZs and roads to occur over the site as per PBP, 2019 requirements.

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 stated BAL, 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.

8.0 REFERENCES

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

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Websites

www.rfs.nsw.gov.au
Lands Department- SIX Maps
Cessnock City Council
nearmap

APPENDIX 1: PHOTOS OF SITE AND SURROUNDS

Property access driveway looking south. Hunter Lowland Redgum Forest Endangered Ecological Community to right of frame mapped on BV map area.



Existing dwelling proposed Lot 10A looking east – note turning circle/loop road



Looking north over proposed lot 10A.



Looking east from proposed lot 10A.



Looking north along proposed subdivision E2 boundary (to right of frame over existing watercourse).



Looking south along proposed subdivision boundary (to left of frame) over existing watercourse. This Forest (<50m wide) vegetation to stay within E2 zone.



Pump to water tanks adjoining existing proposed 10A dwelling



Lantana understorey over much of the BV mapped Hunter Lowland Redgum Forest Endangered Ecological Community to east



Looking east over proposed subdivision boundary to south of existing dwelling over proposed Lot 10A.



Looking east over proposed subdivision boundary.



Water tanks over existing dwelling- proposed Lot 10A



Access road to proposed Lot 10B existing dwelling



Access road to proposed Lot 10B existing dwelling



Averys Lane

