

BUSH FIRE ASSESSMENT REPORT

**Orbit Planning
280 Scrumlo Road
Hebden**



PREPARED BY:



JUNE 2023



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

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Bush Fire Assessment Report	14.6.23	1	Orbit 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. An alternate or performance-based solution is presented, and therefore this report is not 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.



7th June, 2023

Signature

Date



1.0 INTRODUCTION

PEAK LAND MANAGEMENT has been engaged by Orbit Planning on behalf of the proponent to prepare a Bush Fire Assessment Report (BAR) for a proposed 1 into 2 lot rural subdivision, with related building envelope over land located at Lot 38 DP 6842 / 280 Scrumlo Road Hebden (termed “subject or development site”).

Figures 1-6 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 7).

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 to allow development approval for the proposed dwelling, and Rural Fire Service approval for the proposed subdivision.

An alternate or performance-based solution is presented in this case as the development does not comply with secondary access road requirements for proposed Lot 381, and proposes to increase the Asset Protection Zone to a BAL 12.5 Asset Protection Zone, and raise construction level of dwelling to BAL 29, in lieu of a secondary access road. The dwelling & access road is also located in a grazed cleared landscape with low fire threat.

1.1 SCOPE OF WORKS

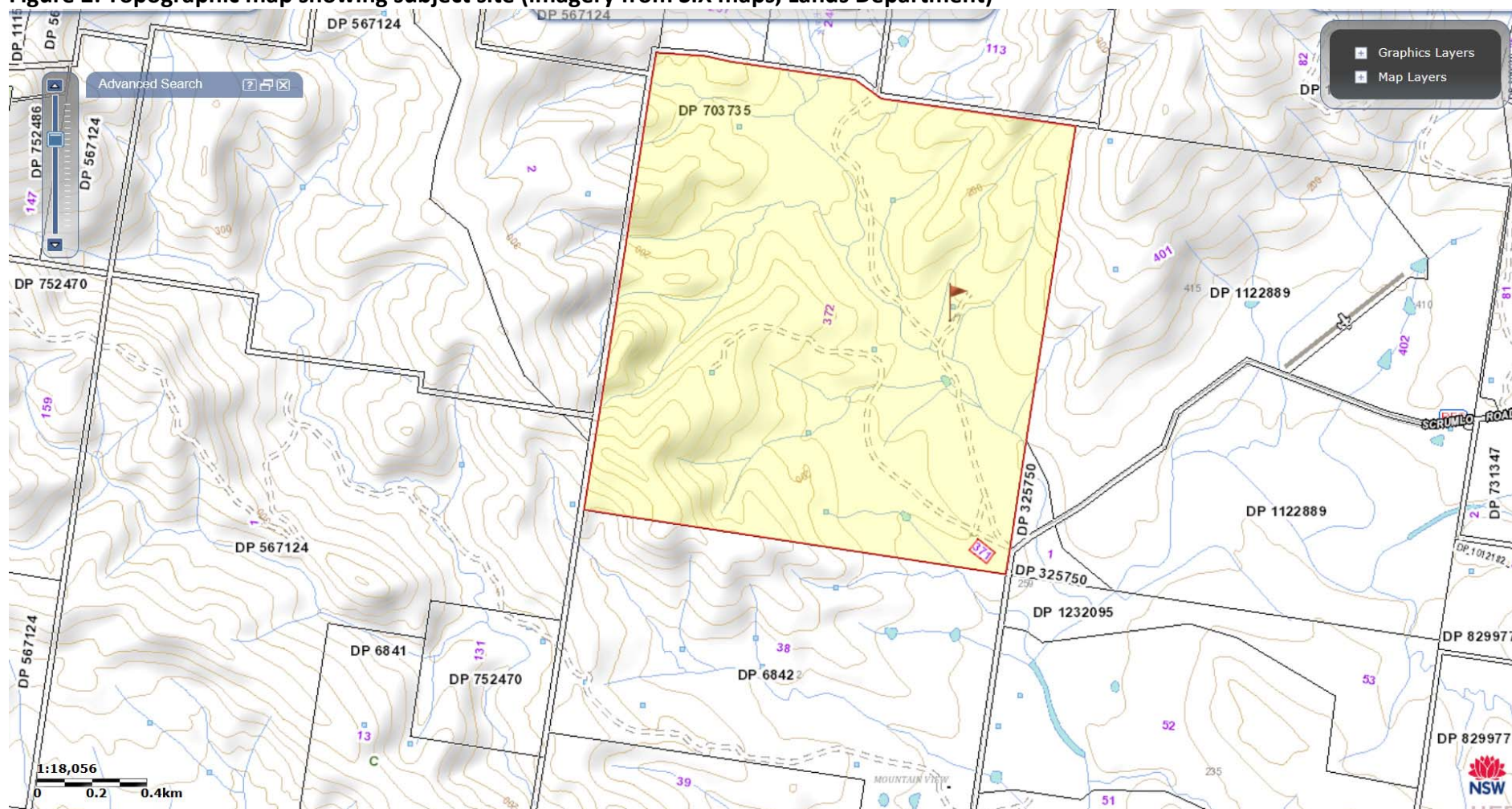
The proposal is for:

- 1 into 2 lot subdivision.
- Associated building envelope, Asset Protection Zone, effluent area and access roads.

Figure 1: Aerial photo showing subject lot (imagery from SIX maps, Lands Department)

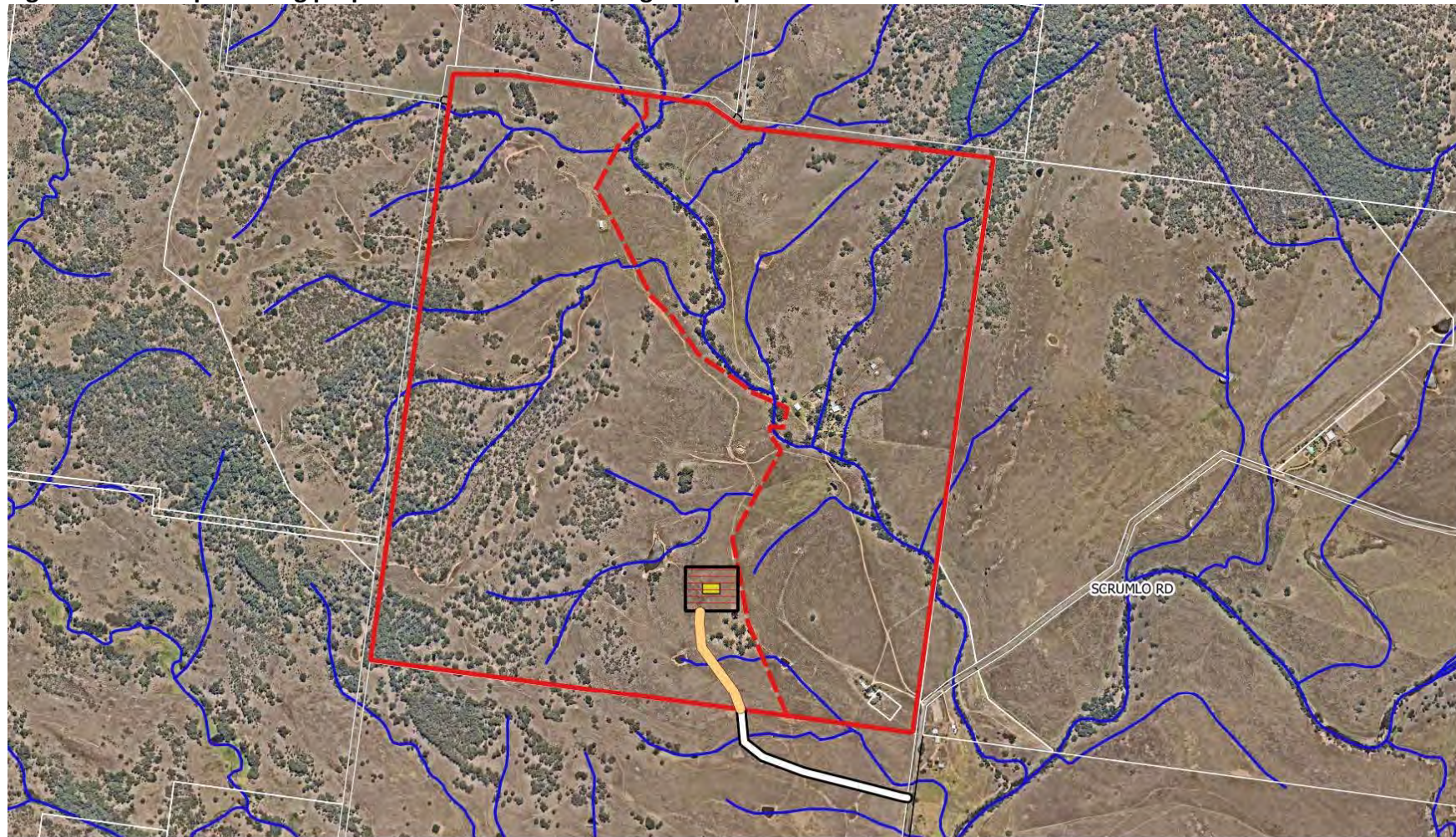


Figure 2: Topographic map showing subject site (imagery from SIX maps, Lands Department)



[illegible]

Figure 4: Site Map showing proposed subdivision, building envelope and access roads



Legend

- Subject site
- Proposed subdivision
- Dwelling BE - 50m x30m
- Asset Protection Zone
- Internal property access road
- Stream
- Access road - ROW

0 250 500 750 1000 m



Imagery from nearmap, 12th Feb, 2023
Projection: GDA 94/MGA zone 56



Note: Cadastre & GPS may be subject to inaccuracy

Figure 5: Vegetation & slope assessment

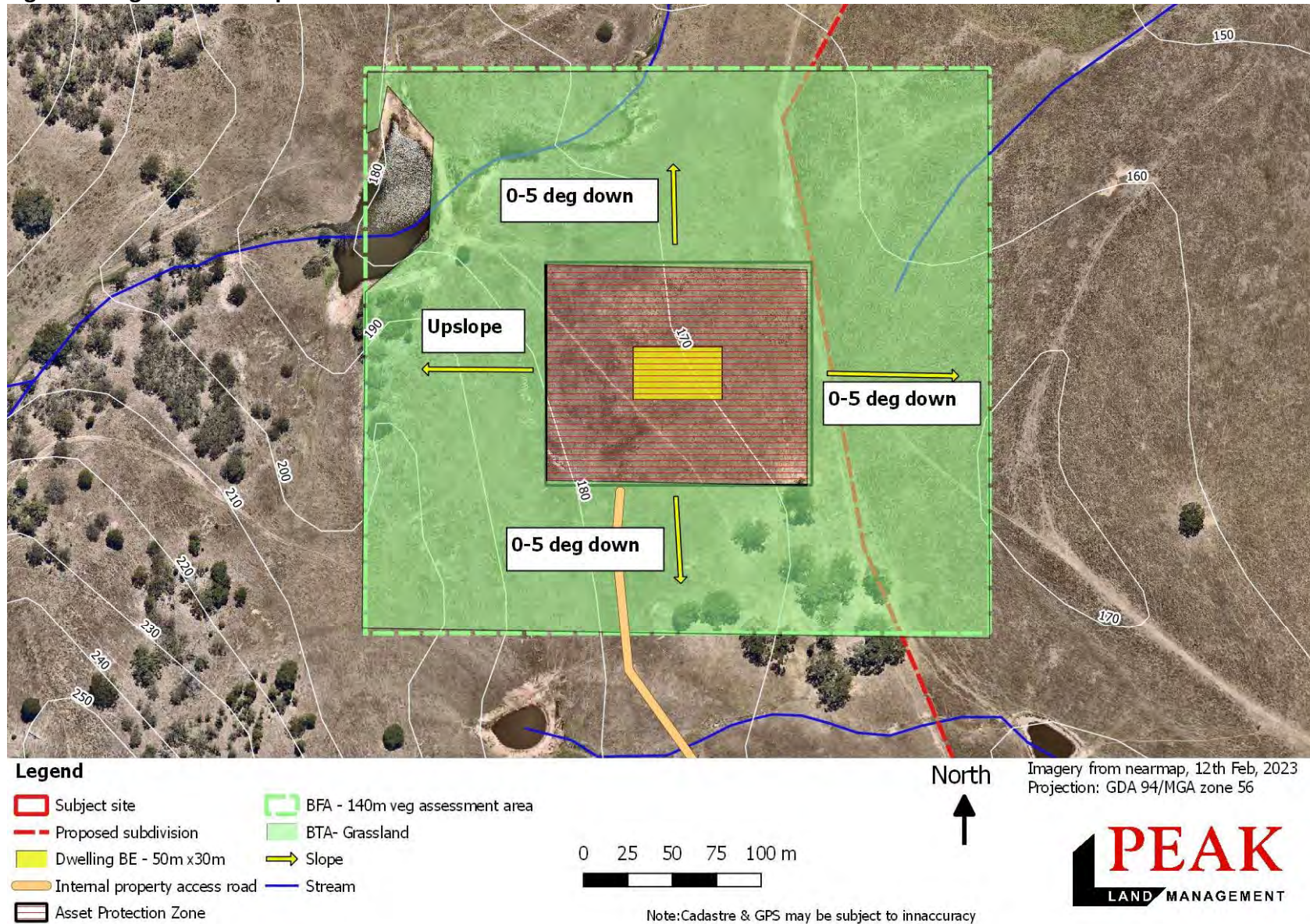


Figure 6: APZ assessment



Legend

- | | |
|---|---|
| Subject site | Asset Protection Zone |
| Proposed subdivision | → APZ width |
| Dwelling BE - 50m x 30m | — Stream |
| Internal property access road | |

0 25 50 75 100 m

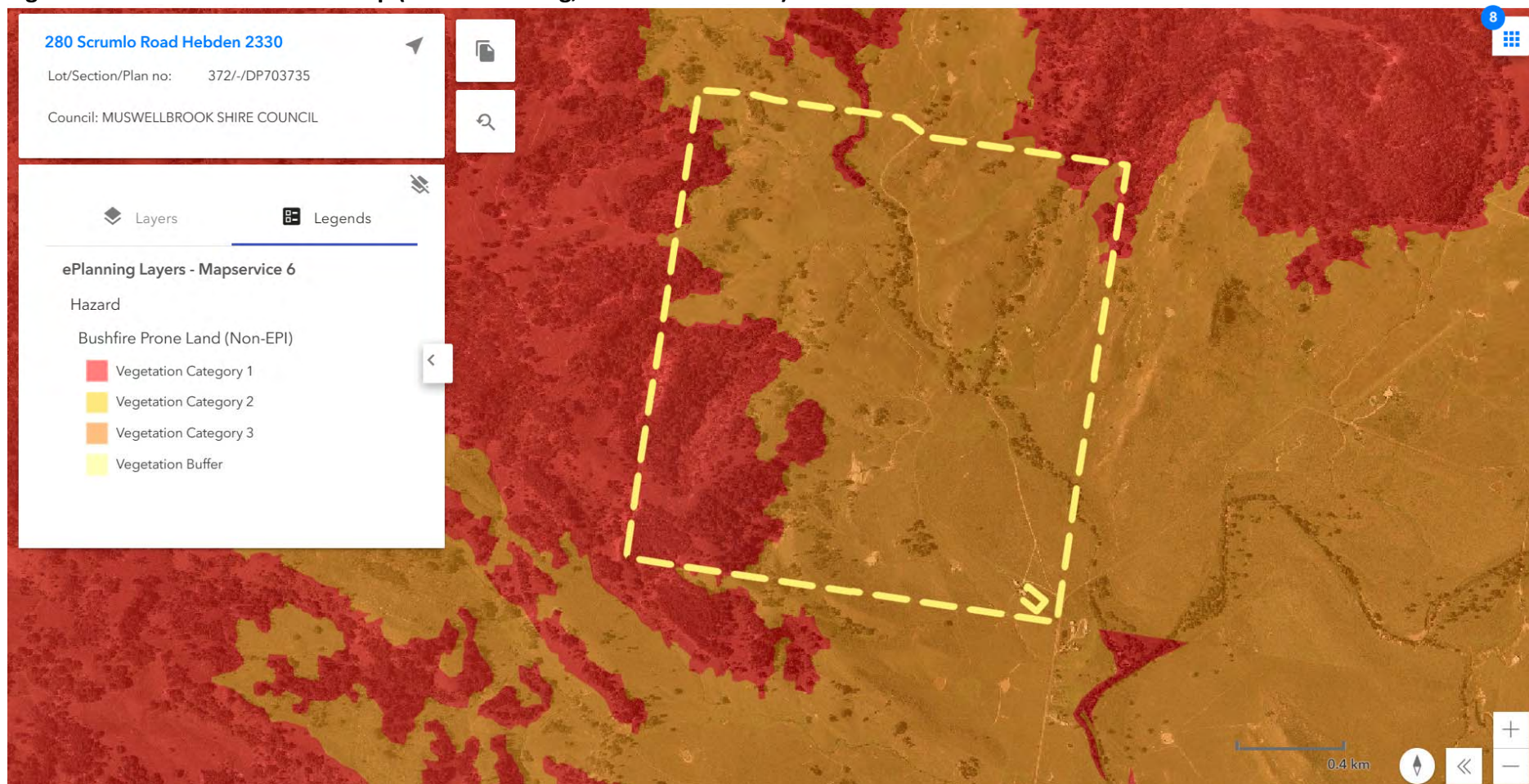
Note: Cadastre & GPS may be subject to inaccuracy

North
↑

Imagery from nearmap, 12th Feb, 2023
Projection: GDA 94/MGA zone 56

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LAND MANAGEMENT

Figure 7: Bush Fire Prone Land Map (from ePlanning, NSW Government)



2.0 SITE DESCRIPTION AND SURROUNDING LANDUSE

The subject site and surrounding vegetation and landuse/topography are shown in Figures 1-6. The subject site is a rural lot, being mainly cleared, paddocks, with entire property grazed by cattle and horses.

An existing dwelling occurs over proposed Lot 382. A building envelope (BE) being 50m x 30m has been shown over the proposed lot. It has been selected to avoid native vegetation removal, being located in a cleared grazed paddock, in a safer bush fire area, and is in an easily accessible location.

3.0 VEGETATION

The predominant vegetation type within 140m of the nominated BE is Grassland assessed as per PBP, 2019 (Figure 3, Appendix 1 - photos).

Grassland comprises all areas within 140m of the nominated building envelope. It is grazed over the property, however has been assessed as Grassland as >100mm height in conformance with Rural Fire Service policy & bush fire prone land mapping guidelines, even though in many areas it is <100mm height.

Scattered trees to the south have no mid or shrub understorey, being completely grazed, no connection to unmanaged forested land, and are assessed as Grassland. They can all be retained, and are over 50m from the proposed BE.

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. Table 1 shows the results.

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 environmental features, with no clearing proposed. All building envelopes, access roads, and most boundary fence lines are located over exotic pasture grasses/weeds. There is some limited native groundcover affected over the proposed BE. Trees to the south of the nominated BE are larger scattered remnant trees, hollow bearing habitat trees, and all access roads and building envelopes/APZs are shown to avoid impact over them.

An Ecological Assessment Report has been prepared by PEAK LAND MANAGEMENT, 2023. It found there was no significant impact upon any threatened species, endangered populations or Endangered Ecological Communities by the proposal.

6.0 ABORIGINAL FEATURES

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

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

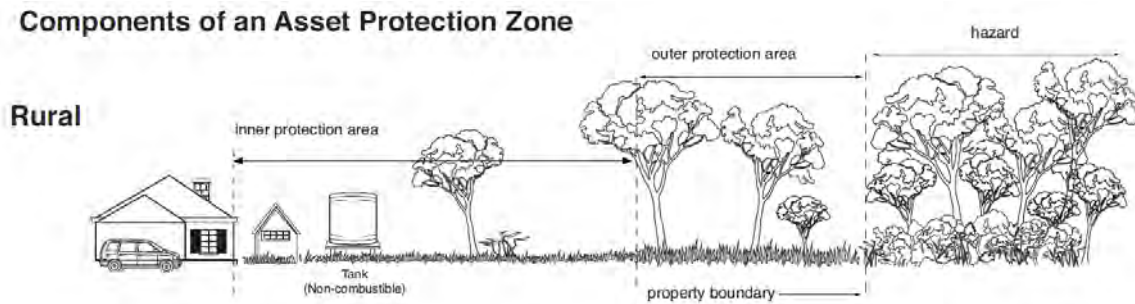
Table 1 shows the bush fire risk assessment for the subject site. A dwelling/building envelope (BE- 30x50m) and Asset Protection Zone has been provided which complies with PBP 2019 (Table A1.12.2) subdivision requirements (Fig's 4-6).

Table 1: Bush Fire Site Assessment –FDI 100 (Proposed Lot 381 BE)

Direction to bush fire hazard	Effective slope	Predominant vegetation type within 140m as per PBP 2019	Distance to hazard (from proposed dwelling envelope)	Required minimum asset protection zone (from Table A1.12.2 PBP, 2019)	BAL rating (from Table A1.12.5 PBP, 2019)
West	0-10 ⁰ upslope	Grassland	50m	10m	BAL LOW*
South	0-5 ⁰ downslope	Grassland	50m	12m	BAL LOW*
East	0-5 ⁰ downslope	Grassland	50m	12m	BAL LOW*
North	0-5 ⁰ downslope	Grassland	50m	12m	BAL LOW*

*Note this dwelling to be BAL 29 construction, with 50m wide BAL 12.5 Asset Protection Zone, as no secondary access road. This is an alternate/ performance based solution subject to NSW Rural Fire Service approval.

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).

Figure 8: Asset Protection Zone standard (from PBP, 2019)

7.2 WATER SUPPLIES AND UTILITIES

The proposed dwelling over proposed lot will be serviced by static water tank (s) with at least 20 000 litre storage of water, in non combustible static water supply tank(s).

Four dams within close proximity (200m) to the building envelope are present. They are around 1mgl, and smaller three dams around 1/4mgl capacity. These dams are available for dedicated fire fighting water supply. The dwelling can also have a separate 20 000 litre dedicated fire fighting water supply tank if required.

7.3 ACCESS

The proposed development is accessed from Scrumlo Road, a sealed through road.

The nominated BE is accessed by a ROW access road from Scrumlo Road, over Lot 38 DP 6842. The internal property access road will be unsealed and will conform to PBP, 2019 access road standards. All roads are located over slopes <10 degrees, with grazed grassland surrounds, and many areas to pass safely in all weather conditions, as well as turn areas around the proposed dwelling. All roads will be unsealed, and passing bays every 200m provided. Where roads cross creek lines culverts will be constructed.

A secondary access road can not be provided due to no legal access available over surrounding properties. An alternate or performance-based solution is presented in this case (as per former consultation & agreement from NSW Rural Fire Service in similar situations). It is proposed to increase the Asset Protection Zone to a BAL 12.5 Asset Protection Zone, and raise construction level of dwelling to BAL 29, in lieu of no secondary access road, to Lot 381 BE, as located around 1km from Scrumlo Road.

There is emergency secondary access also to the north, and then east and south-east to Scrumlo Rd along existing unsealed property access roads and other tracks, out through proposed Lot 382. These internal farm roads are not a ROW however over adjoining Lot 382.

7.4 CONSTRUCTION STANDARDS

The proposed dwelling would be constructed to BAL 29 as per alternate solution.

The Asset Protection Zone over the nominated building envelope have been designed to ensure the dwelling is BAL 29 or lower, in accordance with PBP 2019 (Table A1.12.5).

7.5 OTHER FIRE PROTECTION MEASURES

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

8.0 BUSH FIRE RECOMMENDATIONS

The development complies with the performance criteria set out in PBP, 2019 with an alternate solution regarding no secondary alternate access road presented. All dwelling construction to comply with AS 3959/NASH Standard:

- ❑ Serviced by unreticulated tank water supplies & dam, tank or dam proposed as dedicated water source- complies with PBP, 2019/Rural Fire Service policy.
- ❑ Serviced by solar/overhead electricity power- complies with PBP, 2019.
- ❑ Serviced by a property access road, but not a secondary access road – non compliant with Table 5.3b, PBP, 2019. Alternate solution presented requiring NSW Rural Fire Service approval.
- ❑ Asset Protection Zone – will comply with, PBP, 2019.
- ❑ Dwelling to be located in conformance with PBP, 2019, and all construction in accordance with AS 3959/NASH Standard.
- ❑ Landscaping- to comply with PBP 2019 & recommendations below.

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:
 - The proposed dwelling over Lot 381 shall comply with Sections 3 and 7 (BAL 29) as per Australian Standard AS3959-2018 'Construction of buildings in Bush Fire-prone areas', or the NASH Standard NASH Standard for Steel Framed Construction in Bushfire Areas 2014 (NS300), in accordance with the National Construction Code (NCC), except as modified by Section 7.5 of PBP, 2019.
 - The existing dwelling shall be upgraded to provide corrosion resistant steel ember screening max 2mm aperture size over all opening windows, and any gaps >2mm in size screened/blocked over the external walls/roof/subfloor/eaves, etc to prevent possible ember intrusion into the dwelling.
- ❑ **Access:** - The intent of measures for access 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:

- ❑ Internal property access road shall comply with Table 5.3b & Appendix 3 Property Access Roads of 'Planning for Bush Fire Protection 2019'.
- ❑ An adequate turning area/turning head at the dwelling be provided for fire tankers.

- ❑ **Asset Protection Zone:** - At the commencement of building works and in perpetuity the nominated Asset Protection Zone being as shown in Table 1 and graphically in Figures 6 should be managed to an Inner & Outer Protection Area Asset Protection Zone as outlined within Appendix 4 of Planning for Bushfire 2019.

In summary PBP states *“Asset Protection Zone 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).*

- ❑ **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, 5.3d & 7.4a (where relevant) of 'Planning for Bush Fire Protection 2019'.
 - The existing dams are considered an adequate dedicated water source (if permanent water). If a dedicated water tank is provided, it shall comply with:
 - Minimum of minimum 20 000 litre capacity of permanent water storage.
 - A 65mm Storz outlet with a Gate or Ball valve to be provided to tank.
 - Above ground tanks are manufactured of concrete or metal and raised tanks have their stands protected. Plastic tanks are not used. Tanks on the hazard side of a building are provided with adequate shielding for the protection of fire fighters.
 - All above ground water pipes external to the building are metal including and up to any taps. Pumps are shielded.
 - Gate or ball valve and pipes are adequate for water flow and are metal rather than plastic.
 - All tanks to be sign posted/marked “SWS” - static water Storage.

- ❑ **Landscaping** - Landscaping to the site is to comply with the principles of Appendix 5 of 'Planning for Bush Fire Protection 2019'. This includes all new fencing if within 6m of the dwelling shall be non-combustible, and landscaping is managed to minimise flame contact with dwelling, reduce radiant heat levels, minimise embers and reduce the effect of smoke on residents and firefighters.

The following information is provided for the proponent in order to improve bush fire safety if desired. It is not compulsory under PBP, 2019:

- ❑ Roof gutters and valleys should be gutterless, or installed with gutter guard having a flammability index not greater than 5 (AS 1530.2). It should be installed with a mesh of bronze/steel not having an aperture size greater than 5mm, and fixed to the outer edge of the gutter, and below roof sheeting to a distance of 250mm.
- ❑ A petrol or diesel or solar powered (with battery storage backup so can be used at any time and for a sufficiently long time as necessary) powered fire fighting pump and 30m+ hose reel with steel nozzle is purchased and stored in an ember proofed housing (or garage/shed/cabin that has been ember proofed). This mobile pump can be used for pumping water from water tanks or dams for ember attack fighting and house wetting by the proponent in the advent of a fire.
- ❑ At least one exterior tap should have a 30m toughened hose with steel nozzle provided for each tap.
- ❑ Prepare a bushfire survival plan – see NSW Rural Fire Service website.

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

Report prepared by:



Ted Smith BSc (Hons), Grad Dip, BPAD-A Certified Bush Fire Practitioner -17671
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.

9.0 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

ePlanning

Muswellbrook Shire Council

APPENDIX 1: PHOTOS OF SITE AND SURROUNDS

Subject site property access road from Scrumlo Road to proposed lot 382.



Subject site proposed property ROW access road from Scrumlo Road to proposed lot 381 across Lot 38.



Proposed BE over Lot 381 looking north



Proposed Lot 381 BE – looking east



Proposed Lot 381 BE – looking south



Proposed Lot 381 BE – looking west



Proposed Lot 381 BE – looking north



Dams (one of four) located near proposed BE



Proposed ROW access road to Lot 381



Proposed Lot 382 existing property access road and concrete weir across creek to existing dwelling



Existing dwelling and sheds over proposed Lot 382



Proposed Lot 381 farm access road – looking south along proposed subdivision fence line



Scrumlo Rd

