

KELLEY COVEY
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Consulting Engineers



**Bushfire Assessment Report for the
Subdivision of Lots 56, 57, 58 DP 1120933
542 Upper Moore Creek Road, Moore Creek**

November 2024

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1. Introduction

This Bushfire Assessment Report has been prepared by Kelley Covey Group Pty Ltd (KCG) on behalf of [REDACTED] to accompany a development application for Lots 56, 57, 58 DP 1120933, located at 542 Upper Moore Creek Road, Moore Creek.

Development consent is sought for the subdivision of for Lots 56, 57, 58 DP 1120933 into 103 lots, each approximately 2000m² in size. The proposed development includes the construction of roads and essential services such as water, sewerage, and stormwater drainage infrastructure.

2. Purpose of Report

The purpose of this Bushfire Assessment Report is to provide an independent bushfire hazard determination of the subject site and surrounding area and to determine if the proposed subdivision and subsequent future rural-residential dwelling construction applications will comply with the requirements of Planning for Bush Fire Protection 2019.

3. Scope of this Report

The scope of this report is limited to providing a bushfire hazard assessment for future development within the subject site. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject site.

Where Council considers a bushfire risk is associated with surrounding private lands or lands owned by an authority, Council could seek to issue notice under Section 66 of the Rural Fires Act on any or all surrounding properties for the purposes of reducing and maintaining safe levels of vegetation and thus reducing the possibility of bushfire impact to existing assets within the subject site and any adjoining properties.

4. Referenced Documents and Persons

Comments provided are based on the requirements of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), the Rural Fires Act 1997, the Rural Fires Regulation 2013, the RFS document known as 'Planning for Bush Fire Protection 2019' for the purposes of bushfire hazard determination and Australian Standard 3959 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

A KCG representative has made an inspection of the site and the surrounding area.

5. Site Zone

Under the provisions of the Tamworth Regional Local Environment Plan 2010 (TRLEP 2010), the site is zoned as R2 – Low Density Residential as per Figure 2 below;

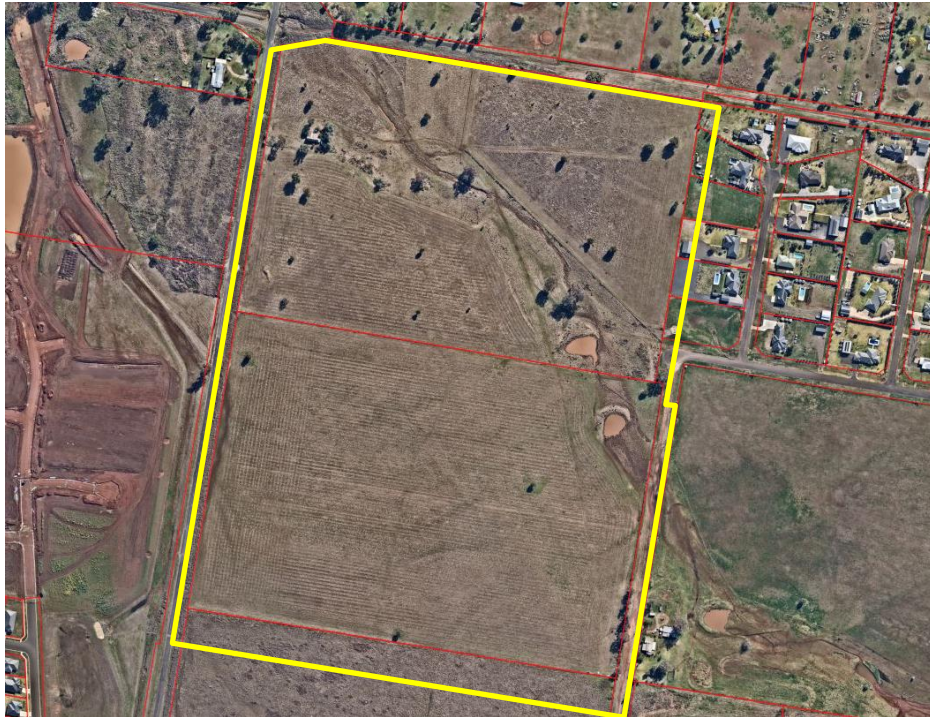


Figure 1. Aerial Photo of Site (Source: NearMaps, retrieved 08 October 2024)

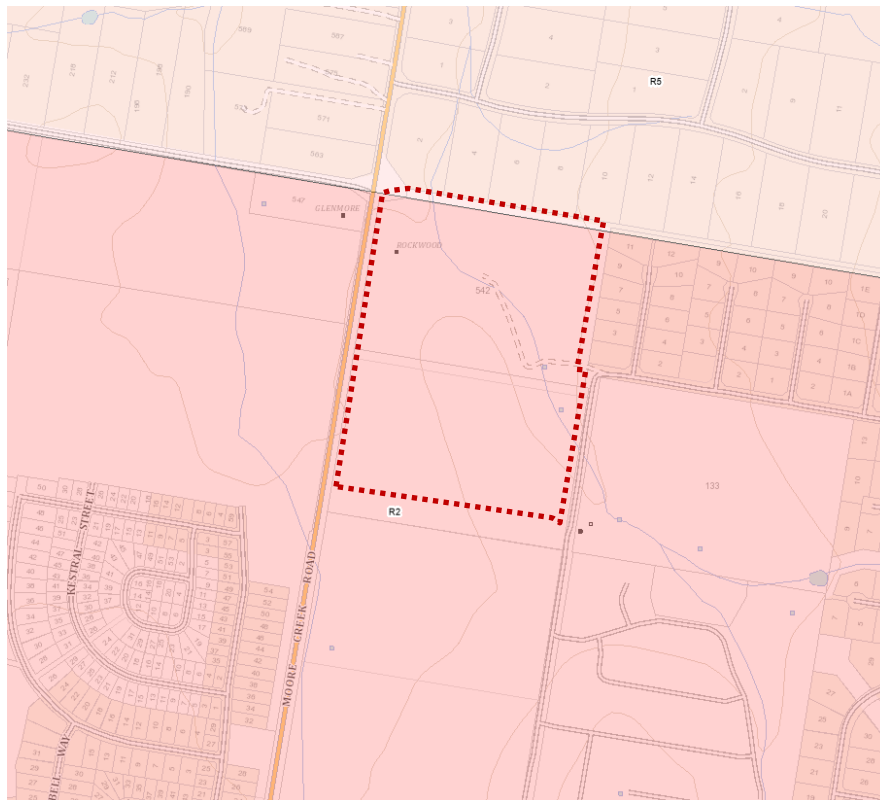


Figure 2. Site Zoning (Source: NSW ePlanning Spatial Viewer, retrieved 08 October 2024)

6. Site Description and Proposed Development

The property is located in Moore Creek, 8.0 km north of the Tamworth CBD, NSW, with access via Upper Moore Creek Road. It comprises three lots (Lot 56, 57, 58 DP 1120933) with a total area of 33.56 hectares. The lots feature grasslands, shrubs, and trees on terrain ranging from moderate to steep slopes. An existing, vacant dwelling is located in the northern section of the lot. This building is scheduled for demolition as part of the proposed subdivision's construction process. The vicinity of the site consists of low-density residential zones and vegetated parcels.

A natural watercourse, characterised as a gully with moderately-defined embankments and an ephemeral stream flow, runs through the northern portion of the site, discharging at the north-western corner of the lot. Two farm-type dams are situated on-stream within the natural watercourse. An existing sewer gravity main traverses the site in approximate alignment with the watercourse. Overhead low-voltage electrical transmission infrastructure also traverses the site.

The site is accessed on the western side via Upper Moore Creek Road, a two-lane, two-way bitumen-sealed road with a width of 7.0 metres, located within a 25.0-metre-wide road reserve. This road extends along the entire western boundary of the lot and will serve as the primary access for the proposed subdivision. A secondary access point is provided via Bowdens Lane, another two-lane, two-way road with a width of 8.80 metres, within a 25.0-metre-wide road reserve. Bowdens Lane provides access to the adjacent residential area and will connect the proposed subdivision to the local traffic network on its eastern side.

The site is currently used for low-intensity stock grazing, and previous use of the site has also been agricultural practices. The property has been extensively cleared and is currently unoccupied other than intermittent cattle grazing.

The site has a moderate to steep topography; a ridge line extends along the south-east/north-west direction with a high-point centrally located with an elevation of RL456. From the ridge line the land slopes in each direction, descending to the natural watercourse north-east of the ridge line and along a similar axis, as well as to the south, east and west. The watercourse drains to the lowest point in the north-west corner of RL436.30. The existing dwelling is located at an elevation of approximately RL438.50.

The proposed development seeks approval for the subdivision of three existing lots (Lot 56, 57, 58 DP 1120933) into 103 individual lots, each with a minimum area of 2000 m². The project includes the construction of internal roads within a 20-metre-wide road reserve, providing two access points: one from Upper Moore Creek Road and another connecting to Bowdens Lane. The subdivision will be fully serviced with essential infrastructure, including underground electricity and communications, connection to the Council's reticulated water system, and integration with the Council's sewage drainage network, which runs along the gully alignment within the development.

Stormwater management will be addressed through overland table drains, discharging into two proposed detention basins to ensure post-development runoff does not exceed pre-development flows. The subdivision also includes the construction of a box culvert over the existing gully to provide road access from Upper Moore Creek Road to the north-eastern lots. The riparian zone along the gully will remain undisturbed as part of the project scope.

The development is proposed to be completed in two stages;

- Stage 1 will include all lots and associated infrastructure located north of the proposed intersection with Upper Moore Creek Road, and will importantly include the main connection

to existing water and sewer utilities, construction of stormwater detention structures and internal road connectivity with both proposed external road intersection/connection points;

- Stage 2 will include all lots and associated infrastructure south of the proposed intersection with Upper Moore Creek Road.



Figure 3. Existing lot - Western views of site (11/09/2024 Site Visit).



Figure 4. Existing lot - Eastern views of site (11/09/2024 Site Visit).

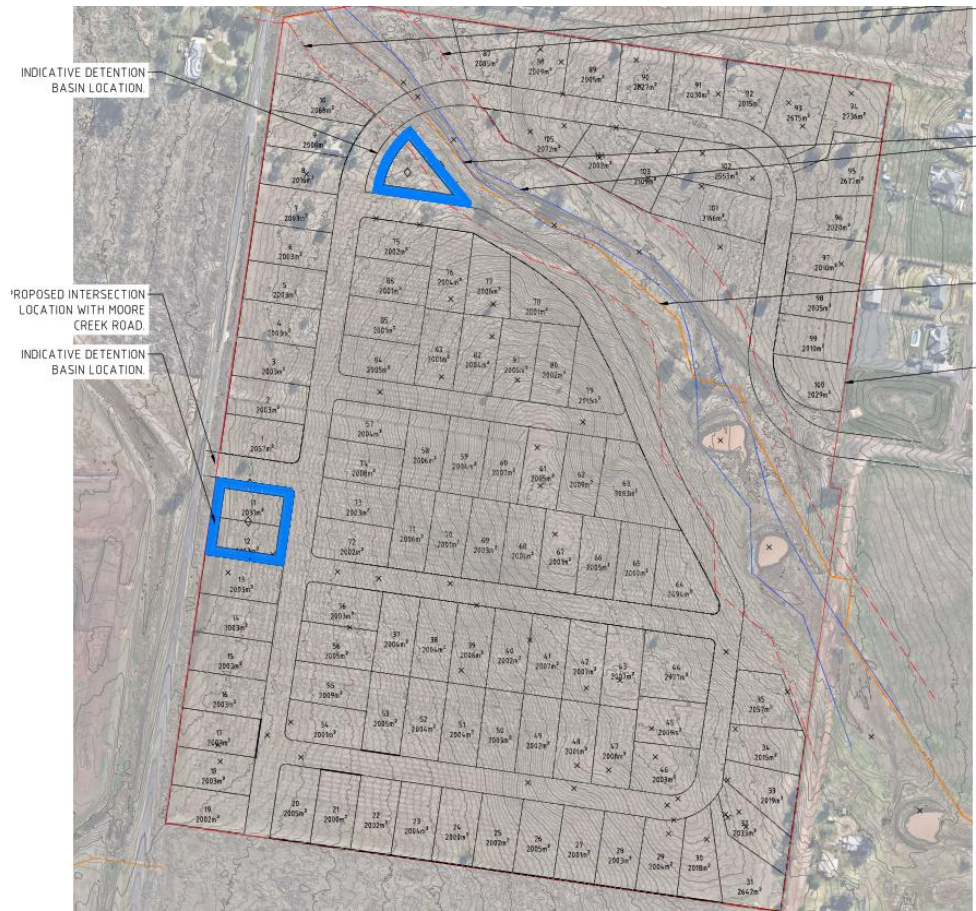


Figure 5. Proposed Subdivision Plan.

7. Bushfire Hazard Assessment

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and or the Rural Fire Service. All property development within affected areas is subject to the conditions detailed in the document '*Planning for Bush Fire Protection 2019*' (PBP). Set back distances for the purpose of creating Asset Protection Zones (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 'Construction of buildings in bushfire prone areas' 2009.

Planning for Bush Fire Protection 2019, (PBP) was formally adopted on the 1st March 2007, updated in 2019 and legislated on 1 March 2020, and provides measures for the protection of property and life (including firefighters and emergency service personnel) from bushfire impact.

The main principle of the document is to ensure that developers of new properties or subdivisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development inside determined Category 1 or 2 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 bushfire area.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

The development application relates to the subdivision of three existing lots into 103 allotments for residential purposes. Whilst the land is not located within a Category 1 or 2 Bushfire Prone area, the northern boundary of the site is impacted by a 30m wide Category 2 Vegetation Buffer as per the Tamworth Regional Council Bush Fire Prone Land Map, and therefore in accordance with PBP the future subdivision is classified as integrated development and will be assessed under section 100B of the Rural Fires Act 1997. A Bushfire Safety Authority will be required from the Commissioner of the NSW Rural Fire Service.

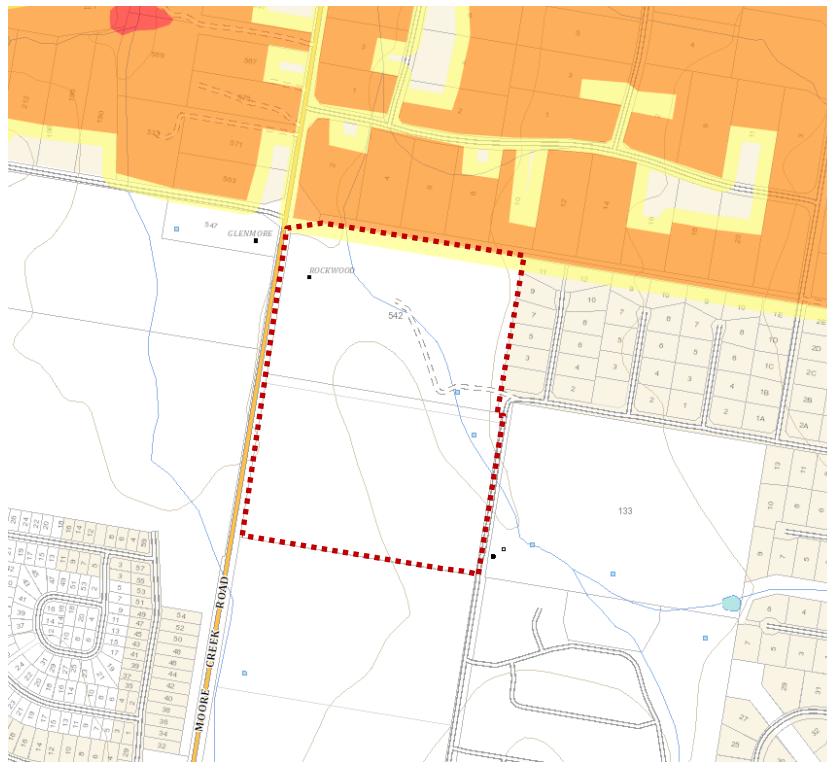


Figure 6. Bushfire Prone Land Map (Source: NSW ePlanning Spatial Viewer, retrieved 08 October 2024)

Planning of the proposed development is to be in accordance with Section 5 of PBP, and a Site Assessment assessment of Bushfire Protection Measures, including Asset Protection Zones (APZ) is required as per the methodology described in Appendix A1 of PBP.

a. Location

The property is located in Moore Creek, approximately 8 km north of Tamworth's CBD, NSW, and is accessible via Upper Moore Creek Road. It comprises three lots (Lot 56, 57, 58 DP 1120933) with a combined area of 33.56 hectares, featuring grasslands, shrubs, and trees on land with moderate to steep slopes.

Access to the site is available from the west via Upper Moore Creek Road, a bitumen-sealed, two-way road that is 7.0 metres wide within a 25.0-metre-wide road reserve. This road runs along the entire western boundary of the property and will serve as the main entry for the proposed subdivision. An additional access point is provided by Bowdens Lane, an 8.80-metre-wide, two-way road within a 25.0-metre-wide road reserve, connecting the subdivision to the eastern side and providing access to the nearby residential area.

The northern portion of the property currently has a vacant dwelling, which is slated for demolition during the subdivision's construction. The land was previously cleared for grazing and cropping but is now unoccupied and unused, except for the existing dwelling.

b. Vegetation (A1.2)

The vegetation on site primarily consists of grasses and scattered trees. The land was historically cleared for grazing and cropping, though it is now unoccupied and unused. These previous agricultural activities have significantly disturbed the site's vegetation. Based on Figure 1.2 of PBP, the vegetation present on the site can be classified as "Grasslands" under the *Classification of Vegetation Formations Chart*. This classification is due to the dominance of perennial grasses and the absence of substantial woody plants on the site.

c. Grassland Assessment (A1.3)

For the purposes of this Clause, a full site assessment methodology in accordance with A1.4-A1.7 will be completed.

d. Slope and Topography (A1.4)

The site features a moderately to steeply sloped topography, with the land generally sloping in two primary directions: from its central zone, the terrain descends toward Upper Moore Creek Road in the east and towards the existing gully in the west. The highest point on the property is located in the central section, at an elevation of RL456.00, while the lowest point, at RL436.30, is situated in the north-eastern corner. The existing dwelling, positioned on the northern part of the site, sits at an elevation of approximately RL438.50.

In the vicinity of the bushfire hazard, the slope is considered **flat**.



Figure 7. Site Eastern View (Source: Google Street View, retrieved 24 October 2024)

e. Effective Slope (A1.5)

The effective slope of the ground under the hazard, identified as the vacant land immediately north of the site, is also considered **flat**.

f. Appropriate Fire Weather Areas (A1.6)

The FFDI for Fire Weather District Northern Slopes, of which Tamworth Regional Council is included, is FFDI 80 as per the *RFS Publication NSW Local Government Areas FDI, May 2017*.

g. Asset Protection Zones (A1.7)

Asset Protection Zones (APZ's) for residential development are determined using the procedures in Section 5 and Appendix 1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 29 kW/m² at a building footprint. The following site assessment criteria were used in the determination of APZ's;

- A1.2 – Vegetation Formations; **Grassland;**
- A1.4 – Slope; **Flat (considered 0 degrees);**
- A1.5 – Effective Slope; **Flat;**
- A1.6 – Appropriate Fire (weather) Areas; **FFDI 80;**

Using Table A1.12.3, the required APZ's are determined to be;

10 metres from the hazard north of lot 58 DP 1120933, approximately correlating with the existing lot northern boundary.

Within the APZ access drives, swimming pools, outdoor play areas, and non-habitable structures such as detached garages and work sheds are permitted.

Grounds within the subject site will be required to be continued to be maintained in accordance with the requirements for an APZ as described in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

h. Low Threat Vegetation (A1.10)

Section A1.10 of PBP lists several different circumstances where modified landscapes, which would generally be considered as bush fire hazards, may be excluded as per AS 3959, and are not required to be considered for the purposes of PBP. These include the following;

- *Vegetation regarded as low threat due to factors such as flammability, moisture content or fuel load, including grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses such as playing areas and fairways, maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens and other non-curing crops, cultivated gardens, arboretums, commercial nurseries, nature strips and windbreaks.*

Note: 1. *Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bush fire attack (recognizable as short cropped grass for example, to a nominal height of 100 mm).*

2. *A windbreak is considered a single row of planted trees located on a boundary and used as a screen or to reduce the effect of wind on the leeward side of the trees.*

- *Existing areas of managed gardens and lawns within curtilage of buildings.*
- *Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.*

A visual analysis of the bushfire prone lane to the north of the site, which is classified as a Category 3 vegetation area (*defined as land that is covered with grass and is considered to be a medium hazard*), reveals that the area is heavily modified and consists of rural-residential dwellings with manicured lawns with select tree plantings, as well as hardstand areas including driveways, tennis

courts and equestrian areas. Further, the rural-residential lots area separated from the site by a 20m wide road reserve, with an informal gravel pathway and low grasses. The image below demonstrates the local vegetation environment north of the site;



Therefore, the road reserve and adjacent rural-residential developments, classified as the Bush Fire Hazard area, meet the definitions described in Section A1.10, and can be considered to be *low-threat vegetation*. Accordingly, the 30m wide buffer that impacts the northern boundary of the site can be discounted, and the site does not need to be considered for the purposes of PBP.

8. Bushfire Protection Measures

Despite the conclusions above regarding low-threat vegetation, as a matter of good practise the site should be designed to comply with the performance criteria and acceptable solutions listed in Tables 5.3b and 5.3c of Section 5 of PBP.

It is noted that the site layout prepared for the development application, including internal road network and nominated carriageway widths and surfacing, as well as water supply provisions, generally comply with the requirements of Tables 5.3b and 5.3c.

9. Site and Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed subdivision and potential future dwelling construction at Lot 56, 57, 58 DP 1120933, Upper Moore Creek Road has been assessed against the requirements of Planning for Bush Fire Protection 2019 noting the following:

- Proposed Lots 86-93 are impacted by Bush Fire Prone Land. The hazard is located upstream of the existing dwelling and ancillary structures, and a sufficiently large Asset Protection Zone (APZ) can be applied to the lot to ensure the on-going protection of structures and persons in the event of a bush fire.
- The existing residential developments adjoining the northern boundary of the site, which are classified as Vegetation Category 3 in the Bushfire Prone Land Map under the TRLEP 2010, can be regarded as "*Low threat vegetation*" under section A1.10 of Appendix 1 in the NSW Rural Fire Service's Planning for Bush Fire Protection 2019. This classification is based on the fact that these areas consist of managed gardens and lawns.
- The low threat vegetation designation should negate the requirement for APZ's along the northern boundary. Notwithstanding, if APZ's are required by the authority, a 10m wide APZ located along the northern boundary of the site has been determined appropriate and compliant with the provisions of PBP.
- The general site layout including roads and utilities (water), generally comply with the performance requirements and acceptable solutions criteria described in Section 5 of PBP.

10. Dwelling Construction and BAL Determination

The objectives of Planning for Bush Fire Protection – 2019 are for the protection of life including fire fighters. Provided these objectives can be met the construction of buildings is feasible and both the Rural Fire Service and Tamworth Regional Council should be in a position to consider such applications.

No new dwellings are proposed as part of this current application. An independent assessment will be required under s4.14 of the Environmental Planning and Assessment Act 1997 at the time of any future application for the construction of dwellings within the future allotments.

Notwithstanding, based on the analysis undertaken in the preparation of this report we are of the opinion that each new lot created by the subdivision would be classified as BAL-LOW.

11. Conclusion

The site is deemed bushfire prone under Tamworth Regional Council's Bushfire Prone Land Map, any future development would need to meet the requirements of Planning for Bush Fire Protection 2019 and of the construction requirements of Australian Standard *AS3959 Construction of Buildings in Bushfire-Prone Areas, 2009* as applicable. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area, the vegetation and topography and other site features and their possible impact on the subject site.

The subject site comprises of a large parcel of land located at Lots 56, 57, 58 DP 1120933 Upper Moore Creek Road and is within Tamworth Regional Council's local government area.

The development application relates to the subdivision of Lots 56, 57, 58 DP 1120933 into 103 lots for potential future residential purposes. An existing dwelling is located within lot 58 DP 1120933, and it is scheduled for demolition as part of the subdivision works.

The vegetation identified as being a potential bushfire hazard is located on a 30-metre-wide fringe adjoining the northern boundary of the site, upslope of the proposed roads and potentially future dwellings.

A required Asset Protection Zone (APZ) for the subdivision was determined from Appendix 1 of Planning for Bush Fire Protection 2019. The Zone extends 10m from the existing northern boundary

towards the south. The proposed lots are large enough that any future building footprints can meet the minimum required Asset Protection Zone as detailed in Appendix 1 of PBP. However, existing residential development along the northern boundary of the site, which falls within the hazard zone classified as Vegetation Category 3 as per the Bushfire Prone Land Map from the TRLEP 2010, can be considered as areas of "*Low threat vegetation*" according to Section A1.10 of Appendix 1 of the NSW Rural Fire Service's *Planning for Bush Fire Protection 2019*, and as such the requirement to assess the site under PBP is not considered necessary.

The design of the site, including lot and road layouts, and the provision of future services (water, gas and electricity) generally meets the requirements of Chapter 5 of PBP 2019.

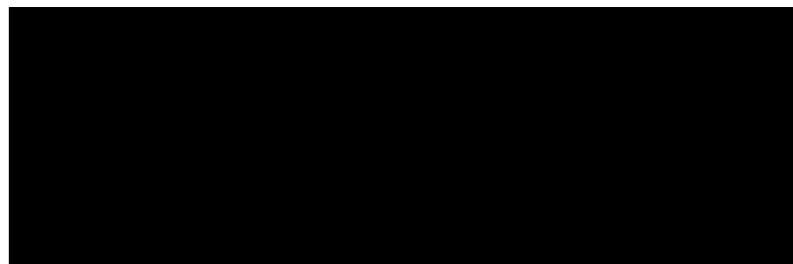
In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that the site has the capacity to comply with the relevant specifications and requirements of Planning for Bush Fire Protection 2019 without the need for any additional controls being imposed..

Should you have any enquiries regarding this project please contact our office.

Prepared By

Signature:

Name:



BEng(Civil), AdDipMgt

Date:

11 November 2024