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BUSHFIRE HAZARD ASSESSMENT

PROPOSED SUBDIVISION – BOUNDARY ADJUSTMENT VARIOUS LOTS AT MARY AVE + FARRELLS LANE, CASTLEREAGH

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DISCLAIMER

This report is provided to accompany a Development Application to be lodged on the subject land and is to be used for that purpose solely and for the client exclusively. No liability is extended for any other use or to any other party. Whilst the report is derived in part from our knowledge and expertise, it is based on the conditions prevailing at the time of the Report and upon the information provided by the client.

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1.0 INTRODUCTION

This report represents a Bushfire Attack Assessment to accompany a Development Application for proposed subdivision on the subject site.

The report and assessment has been undertaken in a manner consistent with that identified in the relevant sections of ***Planning for Bushfire protection 2006***, and has been compiled through research, discussions with Council officers and on-site inspections.

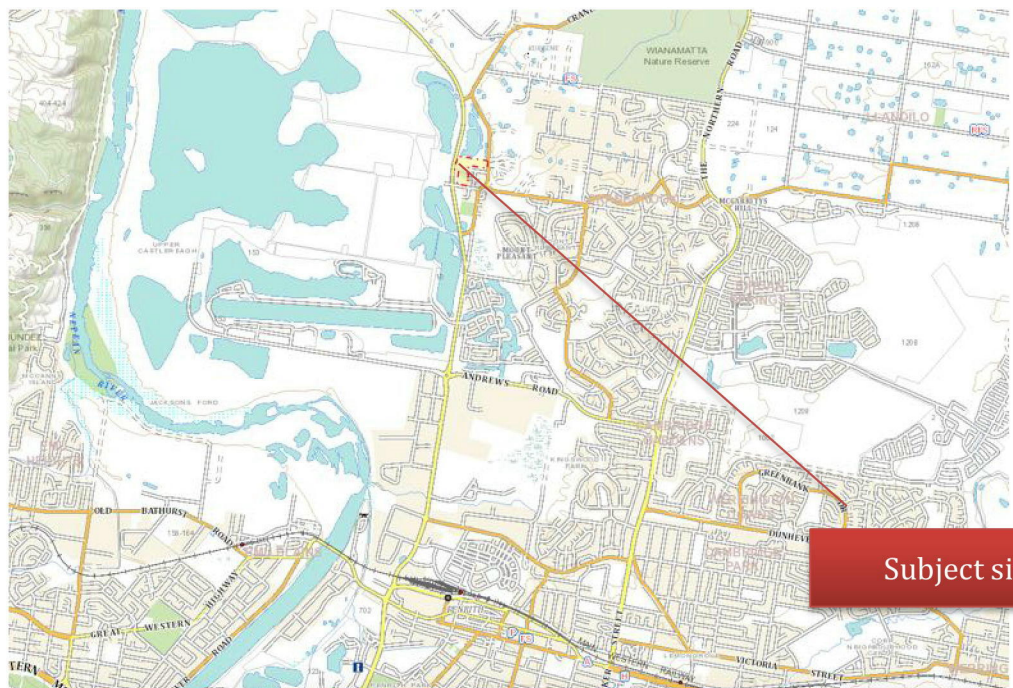
2.0 SUBJECT SITE

The subject site is a large, irregular shaped parcel of land located on the western side of the Cranebrook Village, with a frontage to numerous Roads including Cranebrook Rd, Mary Ave, Farrells Lane and Castlereagh Rd. A plan showing the locality of the site is provided at Figure 1.

The site is comprised of several land parcels with the following real property description:

Lot: 2	DP: 1180164
Lot: C	DP: 375804
Lot: 60	DP: 255596
Lot: 61	DP: 255596
Lot: 18	DP: 253816

FIGURE 1: LOCATION OF SITE



Subject site

3.0 PROPOSED DEVELOPMENT

The applicant seeks Council consent for the subdivision of the subject site to simply realign internal boundaries to reflect historic usage patterns and to rationalise lot boundaries with underlying zoning under the respective Environmental Planning Instruments.

No additional allotments will be created by the development.

The dimension of each proposed lot is represented in Table 1.

Existing vehicle access to the proposed lots shall be maintained for each respective land parcel.

A detailed subdivision plan accompanies the Development Application however a representation of that plan is provided at Figure 2.

TABLE 1: PROPOSED LOT DIMENSIONS

Proposed Lot	Area	Lot Width	Lot Depth	Vehicular Access
Lot 1	991m ²	24.14m	36.5m	Mary Ave (battle axe)
Lot 2	775m ²	21.14m	36.7m	Mary Ave
Lot 3	1.021ha	79.35m	127.51m	Farrells Lane
Lot 4	787m ²	21.29m	37.38m	Mary Ave
Lot 5	3.565ha	79.97m	309.25m	Cranebrook Rd

FIGURE 2: PROPOSED SUBDIVISION PLAN



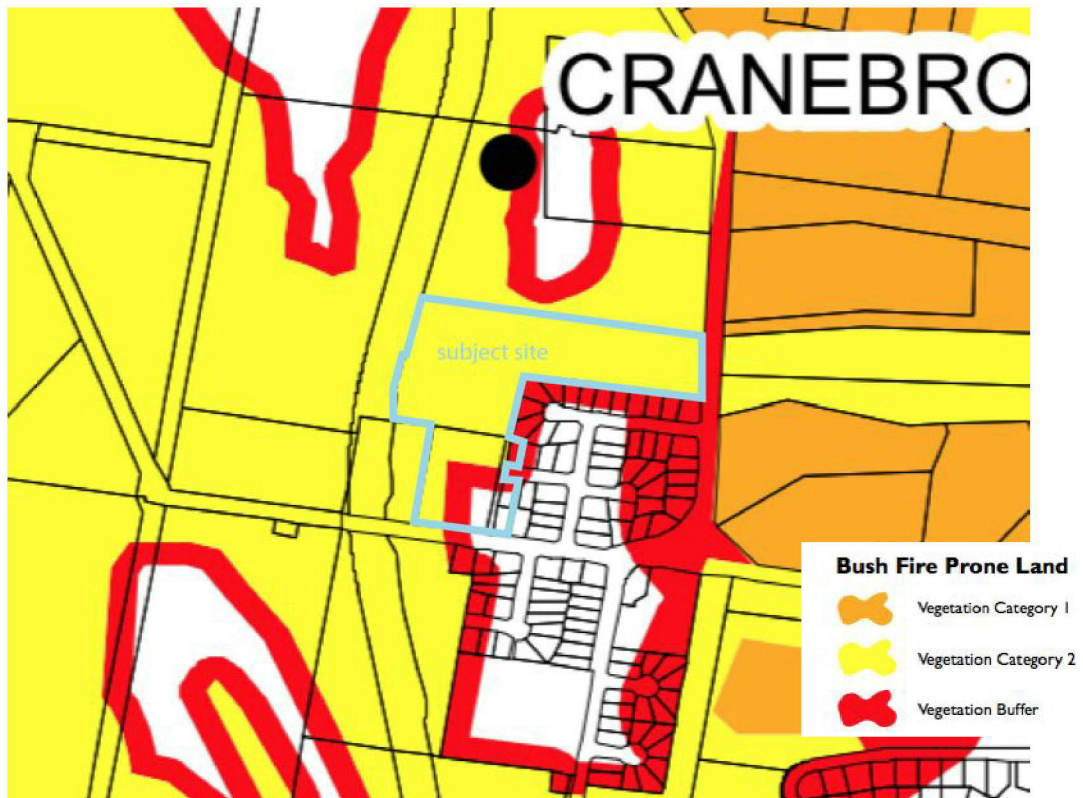
4.0 SITE ASSESSMENT

4.1 THE COUNCIL BUSHFIRE MAP

The presence of grass fuels on the site and adjacent lands creates a bushfire hazard for the site, particularly as its western and northern sections.

Accordingly, the subject site is identified as being bushfire prone on the relevant bushfire hazard map held at Councils office. An extract of that map is provided at Figure 3.

FIG 3 COUNCIL BUSHFIRE MAP



4.2 VEGETATION

4.2.1 VEGETATION TYPES

Whilst the site itself has been highly modified by development over several decades, it is located within a suburban and semi-rural area that provides large grassland areas.

This vegetation is dominated by large perennial tussock grasses and lacks the presence of woody plants.

Further, northern sections of the site have experienced significant plantings as part of the rehabilitation strategies implemented as part of the Penrith Lakes Scheme. This vegetation is represented as a mix of tall eucalypts and casuarinas.

Photos of this vegetation are provided at Figure 4-6.

FIG 4: VEGETATION VIEWED EAST FROM CASTLEREAGH RD



FIG 5: VEGETATION VIEWED NORTH FROM FARRELLS LANE



FIG 6: VEGETATION VIEWED WEST FROM MARY AVE



4.2.2 VEGETATION DISTANCES

Planning for Bushfire Protection 2006 requires that an assessment be made of the different vegetation communities within 140m of the subject site. Figure 9 overlays a 140m radius over an aerial photo of the subject site and its immediate environs.

This figure reveals that lands to the north, west and south of the site are represented as managed lands that form part of suburban, semi-rural lands and a parkland facility,

However, land to the far west of the site provides a larger bushland unit and represents the primary bushfire hazard.

With hot summer winds from the north and west likely to be the precursor to bushfire conditions, it is from these directions that the path of future bushfire attack is most likely to emerge.

4.2.3 VEGETATION CLASSIFICATION

Pursuant to *Planning for Bushfire Protection 2006*, the various vegetation structures associated with lands adjoining the site is classified as follows:

- Open Forest - assessed fuel load of 20/25 tonnes per ha
- Grasslands – assessed fuel load of 6 tonnes per ha

For the purposes of this assessment the grassland vegetation type is identified as the predominant vegetation class.

4.3 SLOPE

The site is located on the eastern edge of the Penrith Lakes Scheme, which itself form the eastern edge of the Nepean River floodplain. As such the site is represented as a floodplain topography, which is a relatively flat and unrelieved area.

Slope and topography mapping is provided at Figure 7-8 and demonstrates the limited relief in the 140m radius of the site.

Detailed analysis of the site slopes is provided at the Table to Figure 9 but generally the lands slope up from the west to east at an effective slope of 4% which translates to an upslope of 2.3°.

4.4 FIRE WEATHER AREA

The site is located within the Penrith LGA and therefore is determined as having a Fire Danger Index of 100.

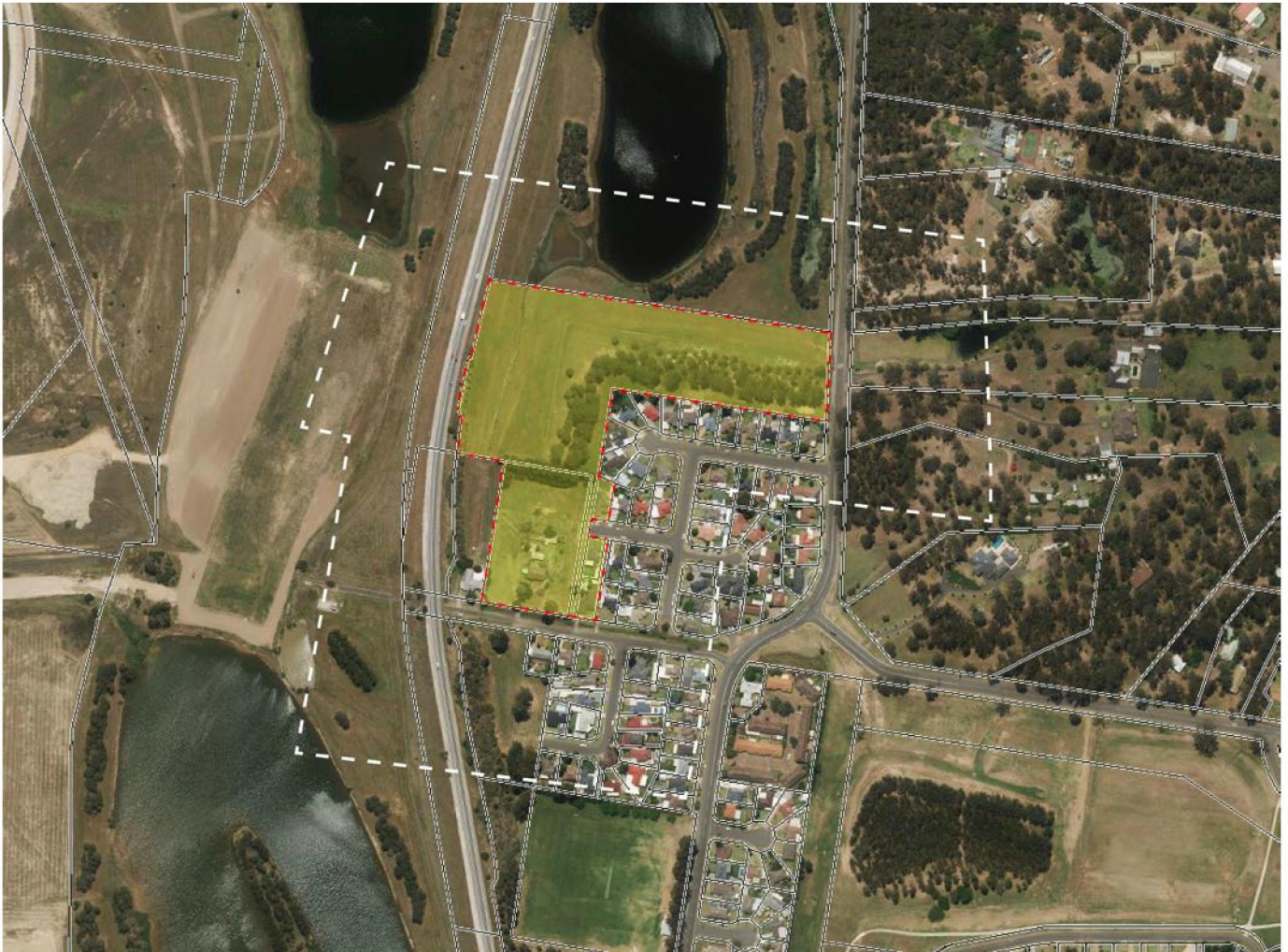
4.5 REQUIRED ASSET PROTECTION ZONE


When this vegetation classification is considered in conjunction with the identified slope and FDI rating then Table A2.4 to *Planning for Bushfire Protection* identifies a very limited need to provide an Asset Protection Zone (APZ). This is demonstrated at the table to Figure 13.

FIGURE 6-7: SLOPE ANALYSIS



FIGURE 8: AERIAL PHOTO OF SITE & SURROUNDS



Aspect	Vegetation		Effective Slope		APZ required	BAL
	Type	Distance (m)	Angle	Slope		
North	Managed land	0-140		Flat	-	LOW
West	Managed land	0-140		Flat	-	LOW
South	Managed land	90-140		Flat	-	LOW
East	Managed land	0-15	2.3 ⁰	Upslope	-	LOW
East	Open Forest	15-140	7.4 ⁰	Upslope	20m	12.5
		Subject Site				

4.6 RELEVANT CATEGORY OF BUSHFIRE ATTACK LEVEL (BAL)

Table 2.4.2 of *Construction of Building in Bushfire Prone Area AS 3959-2009*, provides for a determination of the relevant category of Bushfire Attack Level (BAL).

Analysis of the subject site against the criteria in that table reveals that future dwellings on proposed lot 5, maybe require to achieve a **BAL – 12.5** categorisation.

However, it is likely that a future dwelling could also provide a substantial setback to Cranebrook Rd and as such could provide a distance of over 100m from the bushfire hazard to the east. In this circumstances the dwellings would have a BAL - LOW categorisation.

All other lots would have a BAL- LOW categorisation.

5.0 PERFORMANCE BASED CONTROLS

The following assessment is undertaken against Performance Based Controls identified in chapter 4 of *Planning for Bushfire Protection 2006*.

5.1 ASSET PROTECTION ZONES (APZ)

- *radiant heat levels at any point on a proposed building will not exceed 29 kW/m²*
- *APZs are managed and maintained to prevent the spread of a fire towards the building.*
- *APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated*

The subject development proposal can readily provide the required 20 APZ for proposed lot 5 and all other lots are not required to provide any APZ as the adjoin managed lands that serve as a suitable APZ.

This APZ will:

- Limit the opportunity for a crown fire to impact upon any future dwelling

-
- Provide a suitably scaled defensible space to prevent the spread of the fire towards the building
 - Ensure any future dwelling will be able to achieve a BAL 29 rating under AS AS3959, 2009 – *Construction of Buildings in Bushfire Prone Areas.*

No tree removal is required on site to achieve this APZ.

5.2 ACCESS

- *firefighters are provided with safe all weather access to structures (thus allowing more efficient use of firefighting resources)*
- *public road widths and design that allow safe access for firefighters while residents are evacuating an area.*
- *the capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles.*
- *roads that are clearly sign- posted (with easily distinguishable names) and buildings/properties that are clearly numbered.*
- *there is clear access to reticulated water supply*
- *parking does not obstruct the minimum paved width*

The development does not provide any new public roads but instead will rely upon vehicular access from various street including Castlereagh Rd, Cranebrook Rd, Farrells Lane, and Mary Ave.

These roads are wide fully formed, sealed local roads that ensures suitable and appropriate vehicular access is provided for vehicles to the proposed lots in the manner as stipulated in the design criteria. This includes the availability of access for fully loaded fire fighting vehicles and other fire fighting appliances.

5.3 ACCESS (2) – PROPERTY ACCESS

- *access to properties is provided in recognition of the risk to fire fighters and/ or evacuating occupants.*
- *the capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles.*
- *all weather access is provided.*
- *road widths and design enable safe access for vehicles*

All lots will enjoy direct vehicular access to the respective street frontages.

There are no bridges, slope, curve or other slope access constraints in the vicinity of the site and the roads have a wide verge that allows for easy passing of heavy vehicles and any road side parking.

These road also provides for emergency egress in the event of a bushfire.

All existing and possible future dwellings will be located within 200m of their respective road frontages and therefore the alternative access requirement is not applicable.

5.4 ACCESS (3) – FIRE TRAILS

Not relevant as no fire trails are proposed or required as part of the development.

5.5 AVAILABILITY OF SERVICES

Reticulated water supplies

- *water supplies are easily accessible and located at regular intervals*

The site and proposed lots enjoys access to reticulated water supply by *Sydney Water*.

Table 4.2 of *Planning for Bushfire Protection 2006* should be used for determining dedicated static water supply requirements.

This table requires the provision of a 5,000 litre water supply for the three smaller lots (i.e. proposed lots 1,2 and 4) and a 20,000 litre water supply on the two larger lots (i.e. proposed lot 3 and 5).

This can be readily provided for each lot.

Non-reticulated water supply areas

- *for rural-residential and rural developments (or settlements) in bush fire prone areas, a water supply reserve dedicated to firefighting purposes is installed and maintained. The supply of water can be an amalgam of minimum quantities for each lot in*

the subdivision (community titled subdivisions), or held individually on each lot.

Not relevant.

Electricity Services

- ***location of electricity services limits the possibility of ignition of surrounding bushland or the fabric of buildings***
- ***regular inspection of lines is undertaken to ensure they are not fouled by branches.***

Gas services

- ***location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings***

Electrical and other energy utility services can be provided from the roadway in accordance with the requirements of *Planning for Bushfire Protection 2006* as part of the service delivery of any future development.

6.0 CONCLUSION

The proposed development represents a simple lot reconfiguration and boundary adjustment and does not generate any new or additional dwellings.

The site is located within an established suburban environment that has been extensively modified as part of recent urban development.

The subject site is identified as being bushfire prone on the relevant map held at Penrith City Council offices.

The development will generate new dwelling opportunities and all future dwellings will be able to provide the required Asset Protection Zone. Good vehicle access is already readily available and all services are able to be provided in a suitable manner.

As such it is considered that the proposed development is considered to be consistent with *Planning for Bushfire Protection 2006*.