FIRE HAZARD ASSESSMENT

PLANNED THREE - LOT SUBDIVISION OF LOT 3,

GOOLABRI PARK, GOOLABRI ROAD, SUTTON

Report prepared

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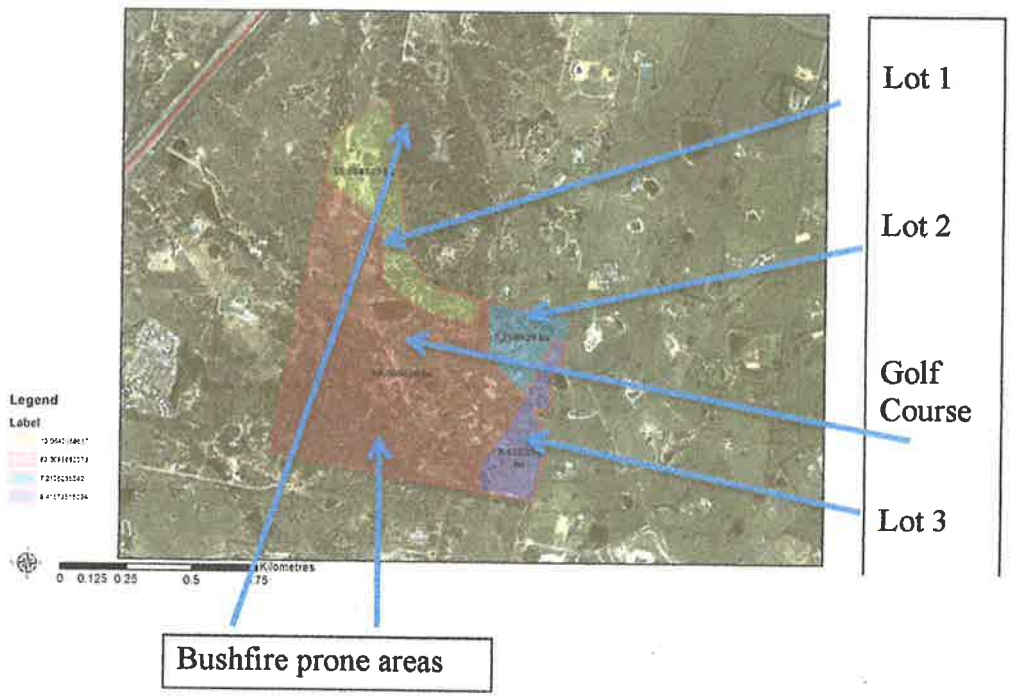
Introduction.

The NSW Rural Fires Act requires the proponent of a subdivision development to undertake a bushfire risk assessment (BFRA) where the subdivision is in a bushfire prone area. The assessment procedure is outlined in the NSW Rural Fire Service publications *Planning for Bushfire Protection – A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners and Guidelines for Subdivision Applications.*

At the request of Mr David Rouse, Land Planning Solutions, on behalf of the owner, Mr Gordon Luton, an inspection and fire hazard assessment was undertaken on the 1st April 2014 of a proposed three-lot subdivision on this property at Goolabri Park, Goolabri Road, Sutton (Lot 3 DP1074706 Parish of Goorooyarroo).

The property has an area of approximately 94.5ha with the planned subdivision being Lot 1 of 15.56 ha, and Lot 2 of 7.20 ha. and Lot 3 of 8.41 ha. The remainder of the property (63.30 ha.) has been developed as a tourist resort and golf course. An existing dwelling exists on the proposed Lot 1 (fig.1).



The potential fire behaviour (rate of spread and intensity of a wildfire) for the two new proposed building precincts on Lots 2 & 3 and the immediate area around both precincts, was calculated (appendix 1), for all aspects but particularly for the north to northwest aspects facing the prevailing fire weather. The slopes around each precinct were determined by the use of a Suunto clinometer and compass and the predicted fire behaviour by the use of a digital version of the McArthur Fire Meters.

Vegetation communities of the property

The general vegetation reflects the terrain, with the property having approximately 50 percent of its' area on a westerly aspect and 50 percent on an easterly / northeasterly aspect.

The general vegetation of the area is one of an open dry sclerophyll woodland (fig 2). of Yellow Box *E. melliodora,* Red Gum *E.blakelyi,* Brittle Gum E. *mannifera,* Scribbly Gum *E.rossii,* Broad-leaved Peppermint *E. dives* Red Stringybark *E. macrorhyncha,* with occurrences of Apple Box *E. bridgesiana.* The sub-dominant tree layer is represented by Silver Wattle *Acacia dealbata,* Black Wattle *Acacia mearnsii,* with several individual occurrences of Ballart *Exocarpus cupressiformis* and Black She-Oak *Allocasuraina littoralis.*

a

b

Figure 2a & b. Box – Gum woodland on the low slope westerly aspect of Lot 1.

Remnant Yellow box – Blakely's Red Gum – Brittle Gum woodland still exists on the lower slopes to flat areas of the westerly aspects of the property particularly in Lot 1, with Brittle Gum - Broad Leaved Peppermint – Red Stringybark - Apple Box woodland on the upper slopes of Lot 1.

Remnant Brittle Gum - Peppermint - Red Stringybark woodland extends over the low south / north ridgeline down onto the upper and mid slopes of Lot 2 and Lot 3. On the lower slopes of Lot 3 Apple Box - Blakely's Red Gum - Yellow Box occur as remnants of a once grassy Box woodland. This Yellow Box Grassy Woodland is a listed Endangered Ecological Community (EEC) under the Commonwealth Environment Protection and Biodiversity Conservation Act (EPBC Act) and the NSW

Threatened Species Conservation Act (TSC Act) but the remnant woodland trees on the property, in its current degraded state and low population numbers, does not meet the criteria for recognition as a Grassy Box woodland community and hence does not require consideration under the State and Commonwealth Acts.

Figure 3. Remnant small stand of Box – Gum woodland on Lot 2

The majority of the area of this woodland is highly degraded by over-grazing by domestic stock and currently by a very large population of Eastern Grey Kangaroos. Some regeneration is evident but few juvenile Yellow Box and Red Gum trees exist. The sub-dominant Wattles are regenerating in patches.

Figure 4. Highly degraded grasslands as a result of years of domestic stock grazing exhibiting areas of salt scald

Property and development

Project Manager	Mr David Rouse
Property Address	Goolabri Park, Goolabri Road, Sutton
Cadastre	Lot 3 DP1074706

Parish	Goorooyarroo.
County	Murray
Local Government	Palerang Council
Area of property	94.5ha
Area of proposed Lots	Lot 1 - 15.56 ha, Lot 2 - 7.20 ha, Lot 3 - 8.41 ha. remainder of the property (63.30 ha.) has been developed as a resort and golf course
Map Sheet	Canberra 1:100000 (sheet 8727)
RFS Brigades	Sutton, Wamboin
Aspects	Lot 1 west - northwest Lots 2 & 3 east- northeast
Elevation	Approx 700 m
Topography	undulating
Slope position	low to mid slope
Slope	4 to 6^{0}
Vegetation	cleared or degraded grassy woodland (managed grassland / woodland)
Fuels	Fine fuels loads ($1 - 3t.ha^{-1}$)
Aerial fuels	nil
Fire risk class	low
Distance to native (trees) from building precincts	Lot 2 > 60 metres to west, >50m to north, >100 to south Lot 3 > 50m to west, >100m south and north
Distance to main access road	Lot 2 60m -100m Lot 3 200m
Bushfire Attack Level (BAL)	12.5
Building construction	Level 1

Bushfire threat assessment

The property is bounded on the western side by other rural residential properties along the Federal Highway or accessed from Bidges Road, these properties providing a high degree of protection of the Goolabri Park property from any major fire ignitions to the west of the property. The Federal highway contributes to the mitigation of any high intensity fire that may ignite around Gooroo Hill and potentially spread towards Goolabri Park.

The majority of the property (63.3ha) has been developed as a golf course and hence has a large area of intensively managed grasslands (fairways) with ready access to water supplies suitable for fire suppression purposes. The golf course area is to the west and south west of the proposed two new building precincts such that it is a major barrier to the spread of a wildfire that may enter upon the property from the west.

The two new lots (Lots 2 & 3) exist on low slope, easterly facing aspects (east northeast), with only sparse native trees existing on the Lots. The proposed building precincts are distant from any significant trees and are located in degraded open managed grasslands, these lots currently being used for recreational activities (archery etc) of the Goolabri resort.

The two building precincts are as such, in open grassland vegetation that presents little threat in terms of fire ignition, fire intensity or high rates of spread of any fire ignition. The fire threat is therefore considered to be low and this is reflected in the fact that fire has not burnt over the property for many decades.

Any fire igniting to the west of the property would only threaten the Goolabri Park property after it burnt through other rural residential properties and across the golf course of the Goolabri resort (fig. 5).

Figure 5. Irrigated fairways of the golf course that would mitigate the occurrence and spread of a wildfire igniting to the west of the property.

The current fuel levels (mainly grass and small accumulations of fine litter) on the property are low (fig. 6) and the fuel levels on the two proposed new Lots (Lots 2 &

3) have been kept low for many years by domestic stock grazing and currently, by the heavy grazing pressure being imposed by a very large kangaroo population.

Figure 6. Representative property fuel levels of the property (view across Lot 2 building precinct)

A low fuel APZ is not required around the two new proposed building precincts as the native grasses can be readily mown but an APZ could be further developed and maintained if required in future years, following development on the building precincts.

Access to building precincts on lots 2 and 3

The proposed access route to the two building precincts is from a sealed main access (Cartwright Road) of the wider Goolabri rural residential subdivision, on the eastern boundary of the property. The distance from the building precincts to the main road will be approximately 60 metres (Lot 2) and approximately 250 metres (Lot 3). The access tracks to both building precincts will be through open grassland and the tracks to both Lots can be readily constructed such that the gradients are low and totally appropriate in terms of potential use by all categories of RFS fire suppression vehicles. The access tracks will basically have straight alignments and can be constructed to provide easy passing bays for vehicles during a fire event. Alternative egress from the Lots would be by way of the existing resort area and the sealed Goolabri Road.

Access over all of the property is possible with slip-on units, while heavy tankers can readily access the existing resort buildings and the existing residence on Lot 1) by way of sealed roads.

Water supplies

An easily accessed supply of water for fire suppression purposes is available from the very large storage dam that supplies the irrigation system of the resort golf course, hence additional water storages on the two new building precincts specifically for fire suppression purposes would not be necessary but remains desirable. Irrespective of

this, any building on the two new building precincts should have all roof runoff directed to tanks of 15000 to 20000 litres as emergency backup and use by the individual owners in developing fire mitigation gardens. This reserve could / should also be connected to a sprinkler system on the roof of any buildings and to a reticulated garden watering system that can be engaged during a fire event. A stand alone motorised (diesel) pump should be installed to pressurise the reticulated water system during a fire, particularly if electric power is lost.

Water supply taps should be located around the building precincts with hoses of a suitable length to reach at least 40 metres from the building precinct.

The tanks holding the emergency 15000 to 20000 litre water reserve (or part thereof), should be fitted with 38mm and 65 mm Storz fittings to provide ready coupling and water delivery to any RFS vehicle (slip-on or tanker unit).

Asset Protection Zones

The development of asset protection zones around the two proposed building precincts (Lots 2 & 3) is not necessary as the building precincts will be in degraded very low fuel level, managed grassland areas with low easterly slopes, that are downslope from the low ridgeline to the west of the building precincts. Maintenance of the low grassland fuels by slashing / mowing will meet the demands of an APZ. This can be enhanced by the Lot owners establishing lawns and appropriate landscaping around each building on the precincts, viz hard-faced surfaces with all ornamental plantings being kept to less than 1.5 metres height and at least 3 metres from any building.

The eventual owners of the two new Lots should be encourage to do property boundary slashing and / or development of a mineral earth fire / fuel break around the boundaries. This may require the cooperation and agreement of the adjoining property holder but would not impact in any way the aesthetics of the landscape for both landholders.

The Rural Fire Service has a booklet "*Guidelines for Asset Protection Zones*" which should be provided to the new resident,s or they be encouraged to obtain one from the Queanbeyan RFS Control Centre. The RFS can assist with advice on any aspect of asset protection and fire management on rural residential blocks.

Fire management planning

As the Goolabri / Bidges Road area has had small area rural residential development for many years, it can be assumed that a fire plan for the area exists but irrespective, all landholders should have their own fire plan. Each individual fire plan should be developed in collaboration and cooperation with neighbours and this would be essential for the future owners of Lots 2 and 3 and the existing Goolabri resort.

Summary

The threat of high intensity and / or high rate of spread bushfires impacting upon any buildings on the building precincts of Lots 2 and 3 of this subdivision is considered to be low in all but the most extreme to catastrophic fire weather conditions when the entire area may/ could be under threat of impact from high intensity fires. Such fire weather could be a more frequent event in the future under predicted climate change scenarios and as such the low threat level assigned to this subdivision should be accepted as the baseline for fire mitigation and protection measures implemented by the future owners of Lots 2 and 3. The BAL has been determined to be 12.5

Adequate and appropriate fire mitigation areas exist around each building precinct at present and can be readily and easily maintained in the future such that ready suppression of any fire event (except under extreme to catastrophic conditions) should be readily achieved before any significant threat to life and property develops.

Based on the above information it is considered that this development can comply with clause 44 of the Rural Fires Act, all aspects of building in fire prone areas, and planning for bushfire protection.

References

Australian Standards Association (2009) Construction of buildings in fire prone areas. (AS 3959-2009)

NSW Rural Fire Service (2006) *Planning for Bushfire Protection*. A kit for applicants to meet the requirements for bushfire planning and protection in development applications.

NSW Rural Fire Service (2012) BAL Risk Assessment Application Kit. New Dwellings and alterations to existing buildings.

NSW Rural Fire Service (2012) Building Code of Australia (BCA) 2010

NSW Rural Fire Service (2012) Water supply for fire fighting purposes

Appendices

1. **Fire behaviour predictions**

The fire weather, fuels and topographic features used to calculate predicted maximum fire behaviour is:

Slope	5 degrees (downslope)
Aspect	Easterly
Vegetation	Managed grasslands of previous open dry sclerophyll woodland
Fuel loads	3-4.ha^{-1}
Curing	90%
Temperature	35°C
Humidity	15%
Wind speed	40kmph
Days since rain	20+
Amount rain	6mm
Drought index	150
Fire danger index (FDI)	100

Rate of Spread	2.9 kmph (flat)
Fire intensity	5834 kW/m (medium)

2. General photographs across Lots 2 and 3

View across the proposed building precincts of Lot 3 and Lot 2