

Mr Hall and Ms Bates
C/O Michael Brown Planning Strategies Pty Ltd
PO Box 295
Camden NSW 2570

Ref No: 15WOL_1510

15 May 2015

Dear Michael,

RE: Preliminary bushfire assessment – Constraints and Opportunities Analysis (Rezoning of 510 Beach Road, Berry)

Introduction

Eco Logical Australia (ELA) was commissioned to undertake a bushfire constraints and opportunities analysis of the northern portion of 510 Beach Road, Berry NSW (known as Lot 4 in Deposited Plan (DP) 834 245). This northern portion of the lot (herein, the 'site boundary' as shown on **Figure 1**) comprises an area of approximately 54.3 ha. Within the 'site boundary' an area delineated as the 'impact area' on **Figure 1** is proposed to be rezoned from RU1 (Primary Production) to R5 (Large lot residential) under the Shoalhaven Local Environmental Plan 2014 (SLEP 2014).

Methods

Identified constraints and opportunities are based upon supplied field inspection results and analysis of aerial photographs, topographical maps and GIS data. Assessment was undertaken in accordance with the NSW Rural Fire Service document *Planning for Bushfire Protection 2006* (PBP) and *AS 3959-2009 Construction of buildings in bushfire prone areas*. Consideration is also given to the NSW *Environmental Planning and Assessment Act* (EP&A Act) Section 117 Direction 4.4 and the SLEP 2014.

Results

Bushfire threat assessment

Bushfire prone vegetation occurs both internally and externally to the site boundary. The larger threat, by area, is the Coomonderry Swamp to the south west of the site boundary. This vegetation is classified as 'forested wetland' under PBP however, AS3959 classifies this vegetation as 'forest'. In the final assessment, this area could be excluded if it is greater than 100 m – 140 m to the development.

Vegetation within the site boundary, and identified as being retained, is classified as forest under both PBP and AS 3959. Where areas of forest vegetation are smaller than 1 hectare or < 50 m in width, they can be considered as 'low hazard'.

The revegetation option currently being explored in a proposed buffer area to Coomonderry Swamp (approximately 100-150 m wide), between the Coomonderry Swamp and the 'impact site' boundary shown in **Figure 1**, will influence the vegetation classification and potential bushfire behaviour impacting the site. This will vary based not only on the dimensions of the revegetation area but also the floristic structure and species used. Bushfire prone vegetation assessment considers vegetation within 100 – 140 m of the site and this southern buffer area will influence the required APZs for this site. This issue is discussed further below in **Sections 1.2** and **3**.

Asset Protection Zone (APZ)

Table 1 **Table 1** details the results of the preliminary bushfire assessment and includes APZ requirements for PBP (2006), expected APZ under proposed PBP 2015 (BAL-29 APZ) and potential APZs based on revegetation options within the buffer to Coomonderry Swamp. The BAL-29 APZ requirements are shown in Error! Reference source not found. and discussed further in **Section 3**.

Table 1: APZ Summary

Direction	Slope Category	Vegetation Category	PBP APZ	BAL-29 APZ
Northwest	Upslope	Low Hazard (Rainforest)	10 m	11 m
	Downslope >0-5 degrees		10 m	14 m
Southeast	Downslope >5-10 degrees	Forest	35 m	39 m
	Upslope		20 m	25 m
Southwest (cleared buffer)	Downslope >0-5 degrees	Grassland	10 m	10 m
Southwest (revegetated buffer)	Downslope >0-5 degrees	Short Heath (open scrub) / Shrubland	10 m	10 m
		Tall Heath (scrub) / Scrub	15 m	15 m
		Woodland	15 m	21 m
		Forest	25 m	32 m

It is possible with bushfire models to potentially obtain smaller APZs than shown in **Table 1** along the south west boundary and retained vegetation within the site, however, it is generally not wise to rely on these unless the detailed work has been undertaken and agreed to by RFS.

The two isolated remnant patches located along the impact boundary area have not been identified as requiring individual APZs as they are most likely to be within the revegetation area or within an APZ. If this changes, their APZ requirements would be 14 m from the vegetation edge extending outward. Furthermore, the approach to the two north west remnant patches in close proximity to the house has been conservative and the APZ may be removed during the subdivision assessment phase in consultation with RFS.

The constraint of APZ size will influence potential lot yield and overall subdivision design.

Dwelling construction standards

With minimum APZs that comply with BAL-29, being the expected requirement for PBP 2015, no dwelling will achieve a rating higher than BAL-29. BALs will be required for all dwellings within 100 m of the hazard.

Access

A perimeter road is a requirement for any residential / rural residential subdivision to allow for residential evacuation, emergency vehicle access and separation of bushfire prone vegetation. The separation requirement and thus a perimeter road would be located to the south west and south east.

An alternative to a perimeter road is a fire trail which still provides for emergency vehicle access and a control line for fire attack strategies. Fire trails are only considered in exceptional circumstances and require consideration not only in their design but ongoing maintenance and responsibility for this.

PBP also provides for internal road criteria for subdivisions which is not seen as a constraint to this development but should include multiple access points to Beach Road.

For a proposal of this nature, a secondary alternate access route is generally required. As Beach Road is the most direct access away from the bushfire hazard and provides a number of egress options, a logical argument can be put forward that an alternate access is not required.

The access constraint for a perimeter road or fire trail is a constraint on the subdivision design however, there are solutions to address this.

Other bushfire prevention measures

No constraints were identified with regards to meeting water supply or utility requirements.

Environmental issues

Environmental issues are currently being assessed as part of this rezoning process and independent to this bushfire advice however, information determined in this analysis with regards to required APZs and vegetation separation will be utilised as part of any environmental considerations.

Discussion

Two constraints were identified which included APZ dimensions and access requirements, in particular the requirement of a perimeter road.

It is evident in **Table 1** of the potential impacts of proposed revegetation of the Coomonderry Swamp buffer on APZ widths and BAL determination; this should be a consideration for both the rezoning design and revegetation planning. There is also a link between increasing the bushfire hazard in the vegetation area and increasing the likelihood of a perimeter road along this interface.

There are two access scenarios that could apply to this site based on the constraint of revegetation within the buffer area as previously identified. If the buffer area is retained as grazed grassland, a strong argument can be put forward that a perimeter road is not required and a fire trail would meet PBP performance criteria. This is based on the nature of the interface, the swamp vegetation and surrounding open land. However, this will require negotiation and detailed justification to both Council and RFS.

If this area is revegetated, and thus consists of bushfire prone vegetation, then there is the increased potential for RFS and Council to request a perimeter road. It is recommended negotiation with Council and RFS on this matter is undertaken prior to the finalisation of any rezoning plans.

Another opportunity to consider in the rezoning design, as the bushfire hazard vegetation is located along the entire south west boundary and a large woodland patch along the south east boundary, is to incorporate perimeter access and APZs along these two areas.

Conclusion

To move forward with the proposed rezoning, it is recommended that this advice be incorporated into the rezoning application and rezoning design to minimise any future issues within the approval process.

Whilst PBP and legislation have strict requirements for bushfire protection measures on bushfire prone lands, there is a wide range of design options within these constraints. Typically these options are required to be further explored with bushfire expertise forming an essential part of development design.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Bruce Horkings', written in a cursive style.

Bruce Horkings
Bushfire Consultant

