

## Schedule 1

### Section 2.3 of the Planning for Bush Fire Protection 2006

Principle	ABAC Report	Proponent submission	Source reference
Provision of a perimeter road with two way access which delineates the extent of the intended development	The planning proposal involves provision of a perimeter road. Notwithstanding this, concerns arise that the perimeter road, and the persons seeking to evacuate the site in the event of a bushfire, would be susceptible to extremely high radiant heat levels during a bushfire in vegetation around the subject land.	<p>A PBP compliant perimeter road exists.</p> <p>The Bushfire Plan provides that early evacuation provides a suitable mitigation of any risk and no exposure to radiant heat.</p> <p>Further, firefighters have two roads on either side of the ridge which are unlikely to be impacted by fire at the same time.</p>	Bushfire Assessment (TBE, April 2017, Section 3.5)
Provision, at the urban bushland interface, for the establishment of adequate asset protection zones for future housing	The documentation reviewed indicates that APZs could be provided to achieve minimum numerical requirements.	Proposal provides compliant APZ plus reliable fuel management beyond the APZ by aboriginal fire crew.	Bushfire Assessment (TBE, April 2017, Section 3.1) and Fuel Management Plan (TBE, April 2017)
Specifying minimum residential lot depths to accommodate asset protection zones for lots on perimeter roads	The technical assessment conducted by TBE indicated that the revised concept layout would enable for the accommodation of APZs on lots adjoining perimeter roads.	As above	As above
Minimising the perimeter of the area of land, interfacing the hazard, which may be developed	Not achieved. The planning proposal will increase the perimeter of residential land interfacing the hazard.	<p>This is sufficiently minimised by the benefits to the existing community, telco tower and major electrical sub-station.</p> <p>There is clearly a net improvement in bushfire safety for the locality and this evidence appears not to have been considered.</p>	Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
Introduction of controls on the placement of combustible materials in asset protection zones.	Future development would involve the maintenance of APZs in accordance with RFS standards.	TBE have provided a comprehensive Bushfire Fuel management report which details the requirement and confirms that the APZ can be effectively managed on an ongoing base and provided full details on works schedule and costing. The ongoing management of the dwelling control would be under Community title which allows for the introduction of necessary controls, provided fund and management on all APZ / fire controls	Fuel Management Plan (TBE, April 2017)

#### Section 4.1.2 of the Planning for Bush Fire Protection 2006

Principle	ABAC Report	Proponent Submission	Source reference
Minimise perimeters of the subdivision exposed to the bush fire hazard. Hourglass shapes, which maximise perimeters and create bottlenecks, should be avoided	Not achieved. The planning proposal will increase the perimeter of residential land interfacing the hazard.	This is significantly offset by the benefits to the existing community, telco tower and major electrical sub-station. There is clearly a net improvement in bushfire safety for the locality and this evidence appears not to have been considered.	Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
Minimise bushland corridor that permit the passage of bush fire	Limited, if any, bushland corridors proposed but significant tracts of bushland with bushfire hazard potential will adjoin the site	All bushland is separated from development by a perimeter road and PBP compliant APZ. Fuel management also proposed beyond APZ.	Bushfire Assessment (TBE, April 2017, Section 3.1) and Fuel Management Plan (TBE, April 2017)
Provide for the siting of future dwellings away from ridge-tops and steep slopes – particularly up-slopes, within saddles and narrow ridge crests	The entire proposed residential precinct would be located upslope from bushland with bushfire hazard potential. Consideration of providing larger APZs is appropriate but it is unclear whether they would be adequate for degree of inherent risk posed by bushfire prone vegetation adjoining the site.	There have been no building losses in NSW constructed under PBP 2006 and AS3959. The reason is that this is a high standard and is enforced strongly.	CSIRO Justin Leonard 2018 Pers. Comm. with ELA
Ensure that separation distances (APZ) between a bush fire hazard and future swellings enable conformity with the deemed-to satisfy requirements of the CBA. In a staged development, the APZ may be absorbed by future stages.	This is not a matter that can be conclusively determined at planning proposal stage but the issue of whether APZs will be adequate for degree of inherent risk posed by bushfire prone vegetation adjoining the site is relevant.	The Bushfire Attack Level (BAL) can be predicted with great accuracy and has been. There is no doubt as to whether the buildings can be constructed to this accepted standard.  APZ can be provided to achieve the BAL required.	Bushfire Assessment (TBE, April 2017 and Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
Provide and locate, where the scale of development permits, open space and public recreation areas as accessible public refuge areas or buffers (APZs)	In relation to the issue of a neighbourhood safer place (BSP), Section 3.10 of the TBE assessment discusses a "possible safer place" for the residential precinct the subject of the planning proposal. It is considered that a NSP must be incorporated within the proposed residential development and would be an essential ingredient in any package of bushfire protection measures if the planning proposal was to be adopted.	If a NSP is provided there is no need to evacuate except for early evacuation well before the fire arrives. This means there is no situation where residents will be required to be exposed to fire along the egress routes. RFS warning txt messages make this decision making very clear and says when it is too late to evacuate; in this instance residents would have the safe option of going to the nearby neighbourhood safer place which involves no exposure to the oncoming bushfire.	Bushfire Assessment (TBE, April 2017 and Bushfire Review by Eco Logical Australia (ELA, Aug 2017)

	Area to bushland side of perimeter road to be maintained as an Outer Protection Area but concerns remain that persons seeking to evacuate the site in the event of a bushfire would be susceptible to extremely high radiant heat levels during a bushfire in vegetation around the subject land.		
Ensure the ongoing maintenance of asset protection zones	Issues have been identified in relation to practical maintenance of land within APZs where slope less than 18 degrees	TBE have provided a comprehensive Bushfire Fuel management report which details that the APZ can be effectively managed on an ongoing basis and provided full details and costing	Bushfire Assessment (TBE, April 2017) and Fuel Management Plan (TBE, April 2017)
Provide clear and ready access from all properties to the public road system for residents and emergency services	The planning proposal involves provision of a perimeter road which has potential to be cut at two pinch points which remain in the revised concept layout. Also, in relation to "clear" access to roads for evacuating residents, concerns remain that persons seeking to evacuate via the perimeter road may be susceptible to extremely high radiant heat levels during a bushfire in vegetation around the subject land.	A pinch point in bushfire evacuation terms is a singular place, two pinch points mean that there is no pinch point at all, that is if one is cut the other is available.	Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
Ensure the provision of and adequate supply of water and other services to facilitate effective firefighting	No information available at the date of this review.	Warren Smith and Partners provide a detail assessment within the Planning proposal with a full assessment of infrastructure services provided, both Ralston Ave and Wyatt Ave are adequately serviced with portable water, also the proposed development would provide for connection and reticulation of water services within the development area.	

#### Direction 4.4 Planning for Bushfire Protection

Principle	ABAC Report	Proponent submission	Source document
A planning proposal must:  Have regard to Planning for Bushfire Protection 2006	The documentation reviewed has had regard to Planning for Bushfire Protection. Annexures 1 and 2 have identified aspects of the planning proposal that are inconsistent with the planning principles for rezoning to residential land in Section 2.3 and/or specific objectives for subdivisions in Section 4.1.2 of Planning for Bush Fire Protection 2006.	The reviewer has not considered the ELA report and this addresses the "inconsistent issues"	Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
Introduce controls that avoid	It cannot be concluded that the rezoning for residential	There are residual risks associated with every development on bush fire prone land. PBP compliance ensures this risk is at an	Bushfire Review by Eco Logical Australia (ELA, Aug

<p>placing inappropriate developments in hazardous areas</p>	<p>development proposed via the planning proposal would be appropriate in the context of the site and surrounding bushfire prone lands. This review has concluded that there are clear potential risks associated with the planning proposal.</p>	<p>appropriate level. Suggesting there is another means to assess residual risk is incorrect and is subjective view that has not been qualified in any meaningful manner. The residual risk of concern needs to be described and quantified (or at least qualified). It is inappropriate to apply a risk assessment that is not appropriately defined and justified.</p>	<p>2017)</p>
<p>A planning proposal must, where development is proposed, comply with the following provisions as appropriate provide an Asset Protection Zone (APZ) incorporating at a minimum:</p> <p>(i) an Inner Protection Area bounded by a perimeter road or reserve which circumscribes the hazard side of the land intended for development and has a building line consistent with the incorporation of an APZ, within the property, and</p> <p>(ii) an Outer Protection Area managed for hazard reduction and located on the bushland side of the perimeter road;</p>	<p>The general layout of the revised concept technically meets this requirement. The issue of whether APZs will be adequate for degree of inherent risk posed by bushfire prone vegetation adjoining the site is relevant.</p>	<ul style="list-style-type: none"> <li>The APZs are compliant</li> <li>There are three two-way access roads</li> <li>Reticulated water supply used with fire hydrant spacing, sizing and pressure complying with AS2419.1-2005</li> <li>The development has a perimeter road which is further bounded by APZs resulting in no direct interface with hazard</li> </ul> <p>Controls on the placement of combustible material can be a condition of consent at the DA stage.</p> <p>If the proposal meets PBP then it meets NSW (and possibly world) best practice bushfire protection design. Implying there is another risk beyond that addressed by PBP implies that document has set the wrong standard. There is no evidence provided to substantiate this nor is the bushfire post-PBP 2006 building loss history in NSW supporting of such claims.</p>	<p>Bushfire Review by Eco Logical Australia (ELA, Aug 2017)</p>
<p>contain provisions for two-way access roads which links to perimeter roads and/or to fire trail networks,</p>	<p>The general layout of the revised concept technically meets this requirement. A two-way road system is critical, but issue remains that there is the possibility for some of the road system required for egress during a bushfire situation to be cut off. Noted that no APZ identified for areas of road network to the east of Precinct 3 and north of Precinct 8 (the two remaining pinch points). No details as to fire trains. A site inspection has highlighted the significant topographical constraints which, in most cases, would preclude the design and establishment of an effective fire trail system to serve the area subject to the planning proposal.</p>	<p>There is always a potential for roads on bushfire prone land to be cut by fire; this is why an alternate egress is provided. PBP sets the standard for residual risk by requiring two egress roads, and not any number beyond this. It is inappropriate to assume access roads to developments on bushfire prone lands wont be impacted by fire periodically, but developments are designed with this in mind.</p> <p>A dual pinch point concept is not a valid risk as discussed previously.</p> <p>Fire trails are feasible.</p>	<p>Bushfire Review by Eco Logical Australia (ELA, Aug 2017)</p>
<p>contain provisions for adequate</p>	<p>No information available at the date of this review.</p>	<p>Warren smith and Partners provide a detail assessment within the Planning proposal with a full assessment of infrastructure services</p>	

water supply for firefighting purposes,		was provided, both Ralston ave and Wyatt ave are adequately serviced with portable water, also the proposed development would provide for connection and reticulate of water services within the development area.	
minimise the perimeter of the area of land interfacing the hazard which may be developed,	Not achieved. The planning proposal will increase the perimeter of residential land interfacing the hazard.	This is significantly offset by the benefits to the existing community, telco tower and major electrical sub-station. See Eco Logical Australia (ELA) report. There is clearly a net improvement in bushfire safety for the locality and this evidence appears not to have been considered.	Bushfire Review by Eco Logical Australia (ELA, Aug 2017)
introduces controls on the placement of combustible materials in the Inner Protection Area.	Future development would involve the maintenance of APZs in accordance with RFS standards.	TBE have provided a comprehensive Bushfire Fuel management report which details the requirement and confirms that the APZ can be effectively managed on an ongoing base and provided full details on works schedule and costing. The ongoing management of the dwelling control would be under Community title which allows for the introduction of necessary controls, provided fund and management on all APZ / fire controls .	Fuel Management Plan (TBE, April 2017)