

APPENDIX J

Bushfire Hazard Assessment

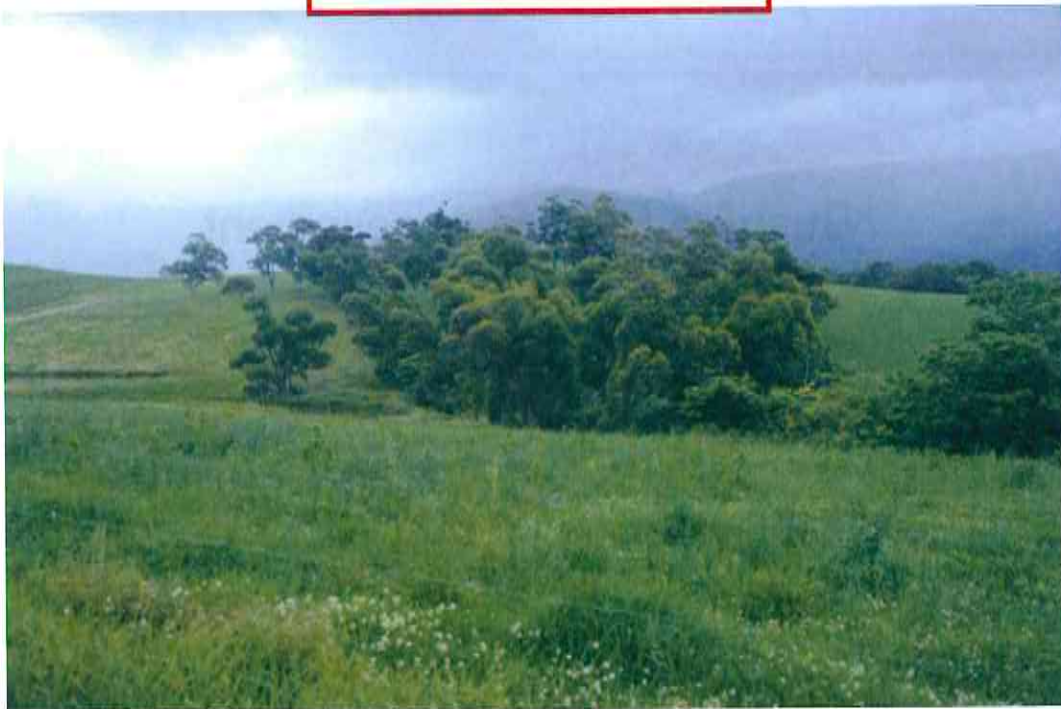
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***Bushfire Hazard Assessment
Lot 100 and 101 DP
Drualla Road and Downes
Place, Jamberoo***



November 2015

CERTIFICATION

Fire Hazard Assessment: Bushfire Hazard Assessment Lots 100 and 101 DP 1157883 Drualla Road and Downes Place, Jamberoo

Prepared by :-

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**Qualifications : B. Sc. Ecology & Molecular Biology, Bushfire
Consultant**

**I hereby certify that I have prepared the contents of this
assessment and to the best of my knowledge, it is true in all
material particulars and does not, by its presentation or omission
of information, materially mislead**

Signature.....



Name...Joy Hafey.....

Date 30th November 2015.....

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Summary

Joy Hafey was engaged by Beth Downes to undertake a Bushfire Hazard Assessment. The assessment forms a part of a planning proposal seeking Kiama Municipal Council support to make an amendment to KLEP 2011 to rezone the subject site from RU2 Rural Landscape to R2 Low Density Residential, enabling the land to be subdivided and developed for residential purposes into a 16 lot subdivision. It has been prepared in accordance with the Rural Fires Act and takes into consideration, the provisions for Planning for Bushfire Protection 2006 and the Addendum to Appendix 3 of that document 2010. The following provides a summary of those requirements:

Subject Land	Bushfire Hazard Assessment Lots 100 and 101 DP 1157883 Drualla Road and Downes Place, Jamberoo
Local Govt. Area	Kiama Municipal Council
Proposal	Land rezoning from RU2 to R2 and subsequent subdivision into a 16 lot subdivision and infrastructure
Adjoining Development	Land zoned R2 (Low Density Residential) occurs to the east, Land zoned RU2 (Rural Landscape
Zoning	Property consists of land zoned RU2 (Rural Landscape) (KLEP, 2011).
Bushfire Prone Land	Category 1 vegetation on the unformed Drualla Rd and grassland to the north, south and west
Vegetation Classification	Category 1 (Forest) to the north west but as a feature of small size it has the same set backs as rainforest. Grassland to the north, west and south.
Effective Slope	Upslope 0-5° to the south, 0-5°downslope to north and west
Asset Protection Zones	10m
Road Access	Tarred two way road
Water Supply	Reticulated water service.
Electricity & Gas	Above ground on Drualla Road, then will be underground to the proposed subdivision
BAL	BAL 12.5
Level of Construction	BAL 12.5 AS 3959 applies
Special Considerations	No aboriginal or archaeological artifacts known. No endangered or threatened species or populations present

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A. Introduction

This Bushfire Hazard Assessment has been undertaken in support of a development application. The site is located within a Bushfire Prone Area. The assessment has been prepared in accordance with the Rural Fires Act and takes into consideration, the provisions for Planning for Bushfire Protection 2006 and the more recent addendum to Appendix 3.

The aim of this report is to address the following

- To review the Kiama Municipal Council Bushfire Prone Land Map
- To assess the bushfire threat to the property.
- To review the capabilities of the site to provide safe residential development
- To recommend mitigating measures to reduce the threat of bushfire attack.

1. The Proposal

This bushfire hazard assessment has been prepared to accompany a Planning Proposal to Kiama Municipal Council by Beth Downes for an amendment to KLEP 2011 to rezone the subject site - Lot 101 and a small north eastern corner of Lot 100 in DP 1157883 Drualla Road and Downes Place, Jamberoo (see Figure 1). This rezoning would be from RU2 Rural Landscape to R2 Low Density Residential, to enable the land to be subdivided and developed for residential purposes. After rezoning, the subject site is to be subdivided into 16 allotments, ranging in size from 800m² to 1290m² (see Figure 2). Dwellings to be constructed upon this subdivision

2.0 Site Description

The site covers an area of approximately 1.6ha and is predominantly cleared (Figures 1) with scattered trees surrounding the dwelling and one native tree located on the north western boundary. Existing development includes a residence and outbuildings with landscaped gardens and a swimming pool. An access track to the homestead of Roo View crosses the site. The subject site is currently zoned RU2 under Kiama Local Environment Plan 2011, see Figure 3. Vegetation on the unformed western section of Drualla Road is mapped as "biodiversity land" and is zoned E3,

Environmental Management. One tree on the subject site links into the canopy of this remnant vegetation.

Land use on the subject site is grazing of domestic stock.

2.1 Location

The subject site is situated approximately 1 km north west of the Jamberoo Post Office in the Kiama Municipal Council L G A. It is bounded by Drualla Road to the north and Downes Place to the east with rural land to the north, west and south.

2.2 Landform

The subject site forms part of a ridgeline on the foothills of the escarpment. The site slopes from the ridge, to the west and east. Maximum elevation is 45m Above Sea Level on the ridge with minimum elevation approximate 25m in the western gully, see Figure 4. The site is drained to an upper tributary of the Minnimurra River.

2.3. Geology & Soils

The soil landscape grouping is identified on the Kiama Soil Landscape Sheet 9028 as the Foutaindale Soil Landscape. Soils are moderate to deep podzolic soils found on the low rolling hills with long sideslopes on Budgong Sandstone in the Jamberoo valley. (DECCW, 2010)

2.4 Climate

The climate of the area is temperate, with warm summers at Kiama Station 068242 (mean max. Jan 24.9 C) and mild winters (mean minimum July 17.9°C) (Bureau of Meteorology). The mean annual rainfall for the area (years 1992-2015) is 1401.3 mm per annum at Jamberoo Station 06835 (BOM, 2015).

2.5. Biodiversity –

The vegetation on the subject site is modified grassland community consisting of exotic grasses, surrounded by residential land to the east and rural land to the north, west and south. The ungrazed grassland to the west is dense to 0.75m in height.

The unformed section of Drualla Road contains vegetation characteristic of Warm Temperate Layered Forest which occurs as remnant patches within the local area.

The canopy species consists of *Eucalyptus botryoides* (Southern Mahogany), *Eucalyptus botryoides* X *eucalyptus salignus* and the exotic species

Erythrina erythrina x sykesii (Coral Tree). There is a dense understorey of the invasive weed species *Lantana camara* (Lantana). Native species eg *Clerodendrom tomentosum* (Hairy Clerodendrum) and *Morinda jasminoides* (Morinda) also occurs.

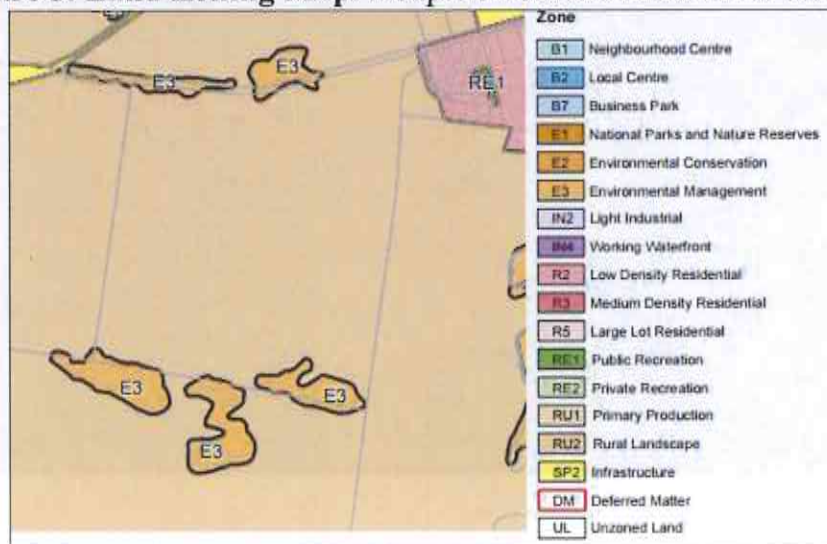
▼ **Figure 1 Proposed Development Site:** The proposed rezoning area is outlined in black. The red circle indicates vegetation within a 140m radius from the subject site. The subject site is comprised of the north eastern section of Lot 101 and the entire Lot 101 in DP 1157883 (Reference DEC Sixmaps)



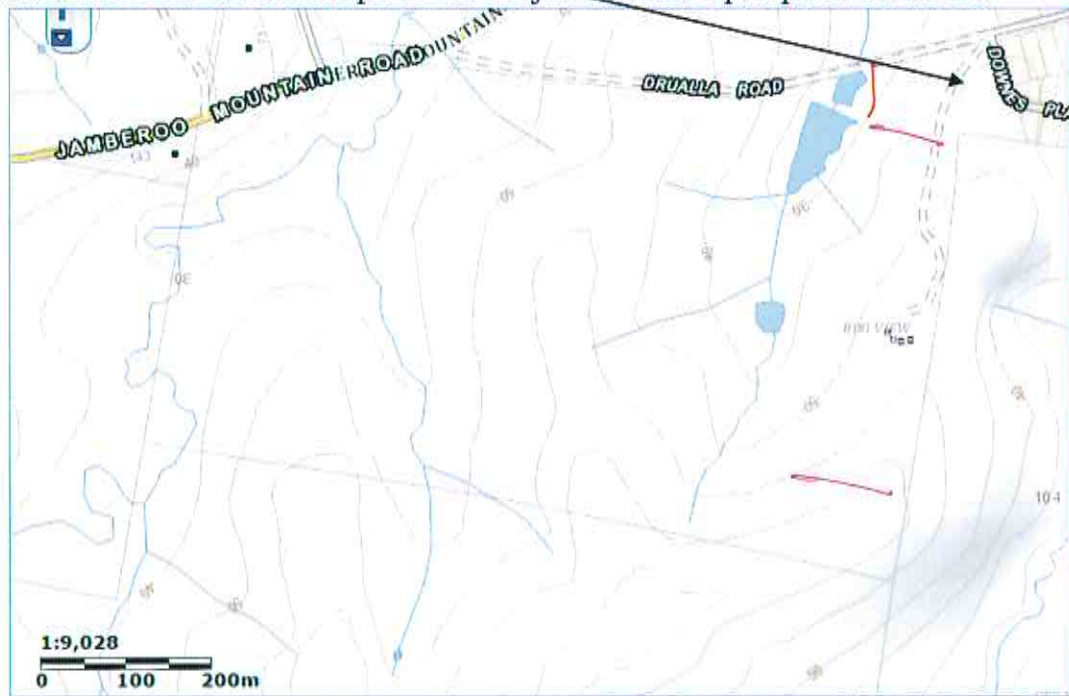
▼ **Figure 2 The Proposed Subdivision Layout:** the proposed 16 Lot subdivision is ringed by a loop road. The red line indicates the extent of the 30m buffer zone to category 3 vegetation. Buildings constructed to the north, west and south would be subject to AS3959 BAL 12.5 with an APZ of 10m



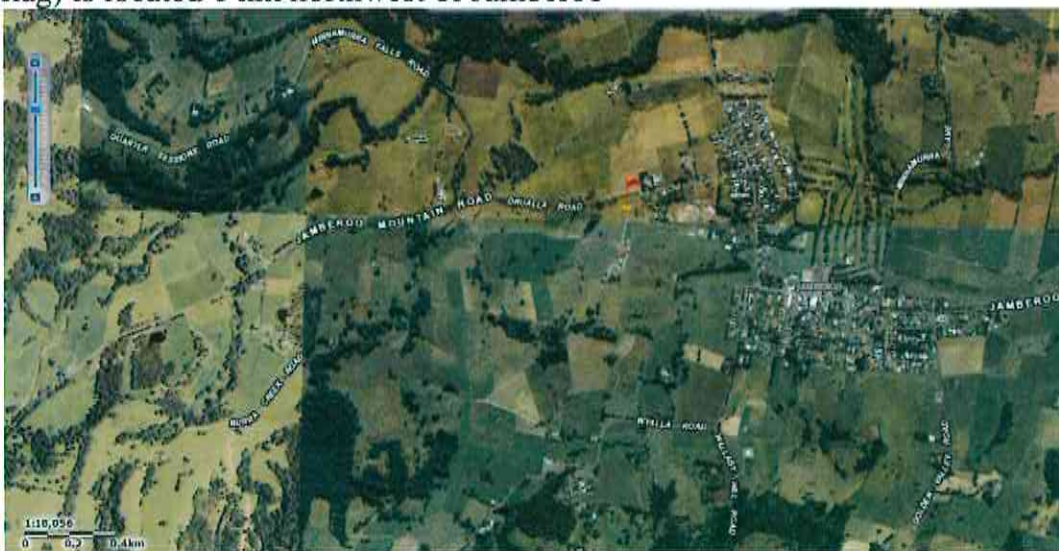
▼ **Figure 3. Land Zoning Map.** Adapted from the Kiama LEP 2011.



▼ **Figure 4 Topographic Features of the Subject Site:** The site is part of a ridgeline and has the Drualla Road at its northern margin. Grassland to the north and west is downslope of the subject site and upslope to the south.



▼ **Figure 5 Aerial View Location and Vegetation:** The subject site (red flag) is located 1 km northwest of Jamberoo



B. Bushfire Threat Assessment

The Aim of the Bushfire Hazard Assessment is to provide an adequate assessment of the bushfire risk posed by the new development so that it is not sited in high hazard areas.

The bushfire hazard assessment is based on:

- A field survey to ascertain vegetative conditions and other abiotic features which influence fire events and behaviour eg., slope and aspect.
- Interpretation of aerial photographs and bushfire prone maps of the area.
- Review of the NSW Rural Fire Service and Planning NSW literature, Planning for Bushfire Prevention. (RFS 2006).

Categories of Bushfire Attack Levels (BAL) have been defined and they are as set out in table 1. Building Construction Australian Standard 3959 apply to the new categories.

Table 1 Bushfire Attack Levels

Bushfire Attack Level (BAL)	Description of predicted bushfire attack and level of exposure	Building construction AS3959
BAL Low	Minimum attack from radiant heat and flame due to distance from the fire hazard vegetation. Some attack from burning debris possible.	Insufficient threat to warrant special construction standards
BAL 12.5	Burning debris attack significant with low levels of radiant heat, not greater than 12.5 KW/m ² . Radiant heat is unlikely to threaten unscreened glass.	Specific construction required for ember protection and accumulation of burning debris. Level 1 AS3959 required
BAL 19	Attack by burning debris is significant with increased radiant heat levels (not greater than 19 KW/m ²) threaten building elements	Specific construction requirements for protection against ember and radiant heat necessary. Level 2 AS 3959 warranted.
BAL 29	Attack by burning debris is significant with increased radiant heat levels (not greater than 29 KW/m ²) threaten building integrity	Specific construction requirements for protection against embers and higher radiant heat are warranted. Some flame contact is possible.
BAL 40	Increased attack by burning debris with	Buildings must be designed

	significant radiant heat levels and potential for flame contact. The extreme radiant heat and potential flame contact could threaten building integrity.	and constructed in a manner that can withstand the extreme heat and potential flame contact.
BAL FZ	Radiant heat levels with exceed 40 KW/m ² . Radiant heat levels and flame contact are likely to significantly threaten building integrity and result in significant risk to residents who are likely to be inadequately protected.	Flame zone is outside the scope of the Building Code of Australia and the NSW RFS may recommend protection measures

Reference NSW Rural Fire Service 2010

Review of Bushfire Prone Land Map:

The Kiama Municipality Bushfire Prone Land Map (below) indicates that the location of the subject site falls outside the bushfire prone land, however a “significant threat can exist for developments in grassland areas.

Construction requirements are not specified in relation to grassland areas and these areas, may not be mapped as bushfire prone. Grassfires can threaten the sub-floor spaces of a building and can generate significant embers. The RFS supports protection of sub floor or the integration of a 1.8m high protection fencing (non combustible) in conjunction with screened windows and a basic APZ of 10m for these situations (RFS PBP20060).

Vegetation Assessment

Figure 1 (Aerial View) above, indicates the vegetation cover over the subject site. The vegetation category was assessed over a distance of 140m from the centre of the subdivision. The following vegetation conditions were noted.

- To the west, is grassland vegetation with a small linear section of forest on the footprint of Drualla Road.
- To the north is grassland vegetation with a small linear section of forest on the footprint of Drualla Road.
- To the south is grassland vegetation

Note: Forest vegetation would likely constitute <1ha, therefore would be subject to the same set backs as a rainforest vegetation.

Vegetation conditions and slope are summarized in Table 2.

▼ **Figure 6. Bushfire Prone Land Map.** It should be noted, the subject site land is not mapped as bushfire prone land.



▼ **Table 2 Vegetation Category and Slope Impacting on Proposed Dwellings**

Dwellings	North	South	East	West
	Grassland forest vegetation (Rainforest) Downslope 0-5°	Grassland Upslope 0-5°	Managed Land Downslope 0-5°	Grassland-forest vegetation (Rainforest) Downslope 0-5°

Fire Danger Index of 100 is required to be used as the site falls within the Greater Sydney Region.

Slope Assessment and Aspect

The site has a north westerly facing aspect. The effective slope between the fire hazard and the proposed development is measured over a distance of 100m. The effective slope is 0-5° downslope to the west and north, and 0-5° upslope to the south.

Category of fire attack

The category of fire attack varies as a feature of the proximity of the proposed dwelling to vegetation presenting a fire hazard. Dwellings built within the 30m buffer zone ie dwellings built to the north, south and west of the red line in Figure 2, are likely to be subject to a BAL 12.5. The remainder of the proposed dwellings would be subject to a BAL Low BAL's are summarized in Table 3

Table 3 Category of Fire Attack, Bushfire Attack Level (BAL) of dwellings within buffer zone.

Dwellings	North	South	East	West
Dwellings	BAL 12.5	BAL 12.5	BAL Low	BAL 12.5

C Bushfire Assessment Protection

Asset Protection Zone (APZ)

If a bushfire hazard exists on or adjacent to the proposed development site, an Asset Protection Zone (APZ) must be established on the hazard side of the proposed development. The APZ will then act as a buffer zone between the proposed development and the hazard. The APZ consists of an Inner Protection Zone (IPZ) and an Outer Protection Zone (OPZ).

- The OPZ is located adjacent to the fire hazard and it is an area where fuel loads must be reduced. The outer protection zone may contain a few trees as long as they are free standing and do not form a continuous canopy.
- The IPZ is located next to the property to be protected and is an area that should be kept free of vegetation and other combustible vegetation that is likely to catch alight from flames, heat or a spark. The inner protection zone may contain a few shrubs and trees as long as they do not form a continuous canopy, overhang the building or are located far enough away from the building so as not to ignite the building by way of direct flame contact or radiant heat emission.

The Asset Protection zone is calculated using the following equation, APZ =

IPZ + OPZ

Note: The recommended APZ for grassland as recommended in PBP 2006 is 10m. Within the subdivision plan there is provision for a 12.5m wide roadway separating the grassland from the subdivision.

Future landscaping within the subdivision area, should aim to achieve

- A vegetative cover that has a low fuel load and is relatively inflammable.
- Maximum tree cover must not be allowed to cover more than 15% and should be located greater than 2m from any part of the roofline of a residence.
- Max shrub cover must not be allowed to cover more than 20%
- Avoid planting trees or shrubs that will touch the walls, overhang the building or be planted closer to the building than their full height. Any trees that do touch or **overhang must be pruned**.
- Incorporation of non flammable structures eg., paths, within the area adjacent to the building.
- The regular removal of leaves and litter.
- The maintenance of grassed areas at less than 10cm.
- Avoidance of woodchips or other flammable material within this zone that form a flammable path to the building.

Specific building constructions

Specific building constructions, under the Building Code of Australia (BCA) and Australian Standards (AS) 3959 are required if a building is subjected to a certain level of radiant heat flux. AS 3959 building construction requirements are summarized in Table 1. Dwellings within the 30m buffer zone to Category 3 vegetation would be subject to the following AS 3959 construction . Table 4 provides a summary of construction standards on the subject site and APZ's.

Table 4 Construction AS 3959 and APZ's on Dwellings in the buffer zone.

Dwelling	North	South	East	West
Proposed dwellings	BAL 12.5 APZ 10m	BAL 12.5 APZ 10m	BAL 12.5 APZ n/a	BAL 12.5 APZ 10m

Note:

“A building with any façade identified as requiring a construction level must build all facades to at least BAL 12.5 “ (2010 Addendum to Appendix 3 Rural Fire Service Planning for Bushfire Protection 2006)

D Water Supply

The proposed development must have access to an adequate supply of water with which to protect property and lives.

The proposed residences, would be provided with a reticulated town water supply. Hydrant construction must comply with AS 2419.1-2005

E. Electricity and Gas

Electricity is to be provided below ground and a LPG system is to be installed to AS 1596 compliance standards.

F. Public and Property Access Roads

The subject site is accessed from the east by Downes Place a two way sealed carriageway. The subdivision will be enclosed by a 12.5 perimeter roadway which will be built to compliance standards.

G.Special Considerations. There are no known aboriginal relics or sites on the subject site. There are no threatened species, or endangered ecological community occurring on the subject site.

H. Photographs

Photographs below provide views of the vegetation and features on the site.

▼**Plate 1 View to the West:** Grassland and a small linear stand of forest occurs to the west.



▼ Plate 2 View to the East: Managed land occurs to the east.



▼ Plate 3 View to the North: Grassland occurs to the north.



▼ **Plate 4 View to the South:** Grassland occurs to the south.



I. Deemed to Satisfy Provisions Compliance Check (PBP 2006)

Intent of Measures	Performance Criteria- Intent may be achieved where:	Acceptable Solutions	Compliance Issues
Asset Protection Zones			
to provide sufficient space and maintain reduced fuel loads, so as to ensure radiant heat levels at buildings are below critical limits and to prevent direct flame contact with a building	*Radiant heat levels at any point on a proposed building will not exceed 29KW/m ²	*an APZ is provided in accordance with the relevant tables / figures in Appendix 2 of this document *the APZ is wholly within the boundaries of the development site. Exceptional circumstances may apply (see section 3.3)	10m APZ on the hazard side of the vegetation is able to be met with the provision of a 12.5m perimeter roadway.
	*APZ are managed and maintained to	*in accordance with the requirements of Standards for Asset Protection Zones (RFS	An APZ .of 12.5m is to be maintained next to the proposed

	prevent the spread of a fire towards the building	2005) Note: A Monitoring and Fuel Management Program may be required as a condition of development consent.	dwellings
	*APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is negated	*the APZ is located on lands with a slope less than 18°	Managed land between the hazard and the development is located on land with a slope < 18°.

Intent of Measures	Performance Criteria- Intent may be achieved where:	Acceptable Solutions	Compliance Issues
Public Roads			
To provide safe operational structures and water supply for emergency service, while residents are seeking to evacuate from an area.	*Firefighters are provided with safe all weather access to structures (thus allowing more efficient use of firefighting resources.	*Public roads are two-wheel drive, all weather roads.	Public road access will be built to compliance
	*Public road widths and design that allow safe access for firefighters while residents are evacuating the area.	*Urban perimeter roads are two-way, ie at least two traffic lane widths (carriageway 8m minimum kerb to kerb). Allowing traffic to pass in opposite directions. Non perimeter roads comply with Table 4.1- Road widths for Category 1 Tanker (Medium Rigid Vehicle). *The perimeter road is linked to the internal road system at an interval of no greater than 500m in urban areas. *Traffic management devices are constructed to facilitate access by emergency service	Public road access will be built to compliance.

		vehicles. *Public roads have a cross fall not exceeding 3° *All roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends are not more than 200m in length, incorporate a minimum 12 m outer radius turning circle, and are clearly sign posted as dead end and direct traffic away from the hazard. *Curves of roads (other than perimeter roads) are a minimum inner radius of six m and minimum in number, to allow for rapid access and egress. * The maximum grades for sealed roads do not exceed 15° and an average grade of not more than 10° or other gradient specified by road design standards, whichever is the lesser gradient. *There is a minimum vertical clearance to a height of 4m above the road at all times.	
	*The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles.	*The capacity of road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles (approximately 15tonnes for areas with reticulated water, 28tonnes or 9tonnes per axle for all other areas). Bridges clearly indicate loading.	There are no bridges within the road reserves or property.
	*Roads that are clearly signposted (with easily distinguishable names) and buildings/properties that are clearly	* Public roads greater than 6.5m wide to locate fire hydrants outside the parking reserves to ensure accessibility to reticulated water for fire suppression. *Public roads between 6.5m and 8m wide are No Parking on one side with the services (hydrant)	Reticulated water with hydrants are available. Fire hydrant spacing, sizing and pressures comply with AS 2419.1-2005.

	numbered.	located on this side to ensure accessibility to reticulated water for fire suppression.	
	*There is clear access to reticulated water supply.	*Public roads up to 6.5m wide provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression. *One way only public access roads are no less than 3.5m wide and provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.	The site is serviced by reticulated water.
	*Parking does not obstruct the minimum paved width	*Parking bays are a minimum of 2.6m wide from kerb edge to road pavement. No services or hydrants are located within the parking bays.	No parking bays are provided or required in this development proposal.

Intent of Measures	Performance Criteria- Intent may be achieved where:	Acceptable Solutions	Compliance Issues
Property Access			
To provide safe access to/from the public road system for firefighters providing property protection during a bushfire and for occupants facing evacuation.	* Access to properties is provided in recognition of the risk to firefighters and/or evacuating occupants	* At least one alternative property access road is provided for individual dwellings (or groups of dwellings) that are located more than 200m from a public through road.	The proposed buildings are located within 200m of a public through road. There is no requirement for secondary egress.
	*The capacity for road surfaces and bridges is sufficient to carry fully loaded firefighting vehicles. *All weather	* Bridges clearly indicate load rating and pavements and bridges are capable of carrying a load of 15 tonnes. *Roads do not traverse a wetland or other land potentially subject to periodic inundation (other than a flood or storm surge).	There are no bridges and the road access is all weather It does not traverse a wetland or other unsuitable land.

	access is provided		
	*Road widths and design enable safe access for vehicles.	* A minimum carriageway width of 4 m for rural residential areas, rural landholdings or urban areas with a distance of greater than 70m from the nearest hydrant point to the most external part of a proposed building or footprint. * In forest, woodland and heath situation, rural property access roads have passing bays every 200m that are 20m long by 2m wide, making a minimum trafficable width of 6m of the passing bay. * A minimum vertical clearance of 4m to any overhanging obstructions, including tree branches. * Internal roads for rural properties provide a loop road around any dwelling or incorporate a turning circle with a minimum 12m outer radius. * Curves have a minimum inner radius of 6m and are minimal in number to allow for rapid access and egress. * The minimum distance between inner and outer curves is 6m. * The crossfall is not more than 10° * The minimum grades for sealed roads do not exceed 15° and no more than 10° in unsealed roads. * Access to a development compromising more than 3 dwellings have formalised access by dedication of a road and not by a right of way.	Passing bays are not required Public road access will be built to compliance.

Intent of Measures	Performance	Acceptable Solutions	Compliance Issues
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	Criteria- Intent may be achieved where:		
Services- Water, electricity, gas			
To provide adequate services of water for the protection of buildings during and after the passage of fire and to locate gas and electricity so as not to contribute to the risk of fire to a building	<i>Reticulated water supplies-</i> Water supplies are easily accessible and located at regular intervals	Reticulated water supply to urban subdivisions uses a main system for areas with perimeter roads. *Fire hydrant spacing, sizing and pressures comply with AS 2419.1-2005. Where this cannot be met, the RFS will require a test report of the water pressures anticipated by the relevant water supply authority. In such cases, the location, number and sizing of hydrants shall be determined using fire engineering principles. *Hydrants are not located within any road carriageway. *All above ground water and gas service pipes external to the building are metal, including and up to any taps. The provision of parking on public roads is met.	The site has supports a reticulated water supply. External taps and gas services are to be metal external to the building.
	Electricity Services Location of the electricity service limits the ignition of surrounding bushland or the fabric of the buildings *Regular inspection of lines is undertaken to ensure they are not fouled by branches.	* Where practicable, electricity transmission lines are underground. *Where overhead electrical transmission lines are proposed -lines are installed with short pole spacing (30m) unless crossing gullies, gorges or riparian areas. -no part of a tree is closer to a power line than the distance set out in accordance with the specifications in "Vegetation Safety Clearance" issued by Energy Australia (NS179, April 2002)	Below ground electricity will be provided.
	Gas Services * Location of	* Reticulated or bottled gas is installed and maintained in	Reticulated gas is not available

	gas services will not lead to ignition of surrounding bushland or the fabric of buildings	accordance with AS 1596 and the requirements of relative authorities. Metal piping is to be used. * All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side of the installation. * If gas cylinders need to be kept close to the building, the release valves are directed away from the building and at least 2m away from any combustible material, so that they do not act as a catalyst to combustion. Connections to and from gas cylinders are metal. * Polymer sheathed flexible gas supply lines to gas meters adjacent to buildings are not used.	however there is sufficient separation space from bottle gas services to the bushfire hazard. Bottle gas services are to comply with AS 1596.
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Recommendations and Conclusion:

It is considered that any protection measured employed will only be effective if the property is managed in an appropriate way eg., regular maintenance and inspection prior to commencement of the fire season.

It is considered that to maximize safety the following AS 3959 building construction on the proposed dwellings with the following APZs are required on all dwellings within the 30m buffer zone to vegetation presenting a fire hazard.

South	AS 3959 BAL 12.5	10m APZ
North	AS 3959 BAL 12.5	10m APZ
East	AS 3959 BAL 12.5	APZ n/a
West	AS 3959 BAL 12.5	10m APZ

It is recommended that landscaping, follow guidelines as set out above and in the NSW RFS PBP 2006, to reduce the risk of fire attack.

The provision of a 1.8m high non combustible fence around the perimeter of the subdivision, to minimize ember attack (PBP2006), may be replaced by a Lilly Pilly hedge (or other mesic species) on the outer edge of the perimeter roadway.

While the above measures will not guarantee that a building will not burn, they will increase the probability that it will survive a fire attack and that the safety to residents and fire fighters will experience a lower level of risk.

The proposed development accords with legislative guidelines as outlined in PBP2006 and the addendum to Appendix 3.

Appendix 1 References

Australian Standards 3959. 2009 Construction of Buildings in Bushfire Prone Areas, Standards Australia, Sydney.

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Kiama Municipal Council Bushfire Prone Land Map 2015, Kiama

Kiama Local Environment Plan 2011, Kiama Municipal Council, Kiama

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NSW Rural Fire Service 2010 Addendum to Appendix 3 PBP 2006