



BUSHFIRE THREAT ASSESSMENT

FOR
PROPOSED REZONING

AT

PART LOT 101 DP 1193184

James Street, Cessnock

Prepared by:

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Prepared for:	Vincent Street Holdings Pty Ltd
Reference No.	Cessnock – Hardie Holdings
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Disclaimer

Notwithstanding the precautions adopted within this report, it should always be remembered that bushfires burn under a wide range of conditions. An element of risk, no matter how small always remains, and although the standard is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any one building will withstand bushfire attack on every occasion.

Executive Summary

A Firebird ecoSultants Pty Ltd has been engaged by Vincent Street Holdings to undertake a bushfire assessment over Part Lot 101 DP 1193184, James Street, Cessnock within the Cessnock Local Government Area (referred to as the site). It is proposed to investigate rezoning of the land to accommodate future residential development. The current proposal is to rezone a 2.85 hectare portion of Lot 101 DP 1193184 to an R3 Medium Density Residential zone under the Cessnock Local Environmental Plan 2011. The rezoning will facilitate residential development.

The report has been undertaken in accordance with Planning for Bushfire Protection 2006 (PBP 2006), and AS3959-2009 Construction of Buildings in Bush Fire Prone Areas.

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to the proposal. Recommendations are provided with regard to fuel management, access, provision of emergency services, building protection and construction standards to facilitate an acceptable level of bushfire protection.

In summary, the following is recommended to enable the future rezoning of the land and the subsequent residential subdivision to meet the relevant legislative requirements:

- APZs are required to be implemented in accordance with Table 4-1, and Figure 4-1.
- Assessment in accordance with AS3959-2009 refer to Section 5 of this report has shown that any future dwelling within the future subdivision will be able to comply with AS3959-2009 and the CODES SEPP.
- The proposed access road is to meet the performance criteria of Public Road in accordance with Section 4.2.7. PBP 2006.
- Any proposed landscaping is to be undertaken in accordance with Appendix 5 of PBP 2006 and managed and maintained in perpetuity.
- Any proposed development be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005.

Provided the recommendations stated within this report are implemented in full then Firebird ecoSultants Pty Ltd is of the opinion that the proposed subdivision is able to meet the aims and objectives of PBP (RFS, 2006).

Yours faithfully

Firebird ecoSultants

A handwritten signature in black ink, appearing to read "Jones".

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Terms & Abbreviations

Abbreviation	Meaning
AHIMS	Aboriginal Heritage Information Management System
APZ	Asset Protection Zone
AS2419 -2005	Australian Standard – Fire Hydrant Installations
AS3959-2009	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BPL Map	Bush Fire Prone Land Map
BPMS	Bush Fire Protection Measures
Codes SEPP	<i>State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (the Codes SEPP).</i>
DA	Development Application
EEC	Endangered Ecological Community
<i>EP&A Act</i>	<i>NSW Environmental Planning and Assessment Act 1979</i>
FDI	Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
OPA	Outer Protection Area
PBP	Planning for Bushfire Protection 2006
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation



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I INTRODUCTION

Firebird ecoSultants Pty Ltd has been engaged by Vincent Street Holding to undertake a bushfire assessment over Part Lot 101 DP 1193184, James Street, Cessnock within the Cessnock Local Government Area (referred to as the site – see Figure 1-1). It is proposed to investigate rezoning of the land to accommodate future residential development. The current proposal is to rezone a 2.85 hectare portion of Lot 101 DP 1193184 to an R3 Medium Density Residential zone under the Cessnock Local Environmental Plan 2011. The rezoning will facilitate residential development.

This bushfire assessment is to support the preparation of a planning proposal to Cessnock City Council (CCC) and to ensure future development as a result of the rezoning will be able to comply with the relevant legislative requirements of section 91 of the Environment Planning and Assessment Act 1979 (EP&A Act) and 100B of the Rural Fire Act (RF Act).

This BTA provides information on measures that will enable the development to comply with 'Planning for Bushfire Protection' (NSW RFS, 2006) hereafter referred to as PBP (RFS, 2006), and the Australian Standard 3959-2009 'Construction of Buildings in Bushfire Prone Areas' (AS3959-2009).

This assessment aims to consider and assess the bushfire hazard and associated potential threats relevant to such a proposal, and to outline the minimum mitigative measures which would be required in accordance with the provisions of the *Environmental Planning and Assessment Amendment (Planning for Bushfire Protection) Regulation 2007* and the *Rural Fires Amendment Regulation 2007 (RF Amendment Regulation 2007)*.

I.1 Site Particulars

Locality:	Part Lot 101 DP 1193184, James Street, Cessnock.
LGA:	Cessnock City Council
Area:	2.85 hectares
Zoning:	RU2 Rural Landscape under the Cessnock Local Environmental Plan 2011
Current Land Use:	Vacant mainly cleared land, agricultural / grazing purposes
Climate / Fire History:	The site lies within a geographical area with a Fire Danger Index (FDI) rating of 100. Extreme bushfire weather is therefore associated with long periods of drought, high



temperatures, low humidity and gusty often north-westerly winds.

I.2 Legislative Requirements

This BTA has been prepared using current legislative requirements and associated guidelines for assessment of bushfire protection, these being:

- Section 100b of the RFS Act 1997;
- PBP (RFS, 2006); and
- AS3959-2009 Construction of Buildings in Bushfire Prone Areas.



Figure 1-1: Site Location



FIGURE 1-1: SITE LOCALITY MAP

CLIENT
Hardie Holdings Pty Ltd
Lot 101 James Street Cessnock
DATE
9 June 2014

Legend
Subject Site

0 100 200 300 400 500
SCALE 10 000 @ A3



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I.3 Description of the Proposal

The planning proposal is to rezone a 2.85 hectare portion of Lot 101 DP 1193184 from RU2 Rural Landscape to R3 Medium Density Residential under the Cessnock Local Environmental Plan 2011. The rezoning will facilitate residential development. .

The subject site is identified in the Lower Hunter Regional Strategy (LHRS) and Council's City Wide Settlement Strategy (CCWSS) (2010) as a new urban area. The subject site is identified in Cessnock City Council's City Wide Settlement Strategy (2010) as having potential for increased development opportunities. The site forms part of the Cessnock Civic Precinct described in the LHRS and CCWSS.

Appendix A shows the proposed development layout.

I.4 Objectives of Assessment

This assessment has been undertaken in accordance with Clause 46 of the RF Act. This BTA also addresses the six key Bush Fire Protection Measures (BFRMs) in a development assessment context being:

- The provision of clear separation of buildings and bush fire hazards, in the form of fuel-reduced APZ (and their components being Inner Protection Areas (IPAs) and Outer Protection Areas (OPAs);
- Construction standards and design (Bushfire Attack Levels);
- Appropriate access standards for residents, fire-fighters, emergency workers and those involved in evacuation;
- Adequate water supply and pressure, and utility services;
- Emergency management arrangements for fire protection and / or evacuation; and
- Suitable landscaping, to limit fire spreading to a building.



2 METHODOLOGY

2.1 Vegetation Assessment

Vegetation surveys and vegetation mapping carried out on the site has been undertaken as follows:

- Aerial Photograph Interpretation to map vegetation cover and extent.
- Site Inspection.

2.2 Slope Assessment

Slope assessment has been undertaken as follows:

- Aerial Photograph Interpretation in conjunction with analysis of electronic contour maps with a contour interval of 10m.
- Site Inspection.



3 SITE ASSESSMENT

The following assessment has been undertaken in accordance with the requirements of PBP (RFS, 2006).

3.1 Vegetation and Slope Assessment

In accordance with PBP (RFS 2006), an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the site and are presented and depicted in Table 3-1. .

In accordance with PBP (RFS 2006), an assessment of the slope affecting the bushfire behaviour was undertaken for a distance of 100m from the edge of the lot boundaries in the direction of the bushfire hazard.

The slopes leading away from the site have been evaluated to identify both the average slope and by identifying the maximum slope present. These values help determine the level of gradient which will most significantly influence the fire behaviour of the site. Refer to Table 3-1 for Slope Assessment.

Table 3-1: Vegetation and Slope Assessment

Direction	Vegetation Type	Slope vegetation occurs on	Distance from Site Boundary
North	N/A – Residential Development	N/A	Adjacent
East	To the east of the site vegetation associated with a drainage line occurs. As a precautionary approach this vegetation has been assessed as Open Forest, however, further development to the east pursuant to the industrial land zoning will result in removal of this vegetation entirely or cleared to the extent that it represents a Riparian area. Riparian areas are those areas of vegetation which are no greater than 20 metres in width and are found on either bank of a river, creek or stream identified on a bushfire prone	Flat	Adjacent



Direction	Vegetation Type	Slope vegetation occurs on	Distance from Site Boundary
	land map, and are treated/assessed the same as rainforests in accordance with PBP 2006.		
South	N/A – Cleared Land	N/A	Adjacent
West	N/A Residential Development	N/A	Adjacent

4 BUSHFIRE ATTACK ASSESSMENT

4.1 Bushfire Assessment

The site lies within CCC Local Government Area and therefore is assessed under a FDI rating of 100. Using the methodology outlined in Appendix 2 of PBP, and the results from the Site Assessment (section 3 of this report) the deemed to satisfy APZ requirements for a future residential subdivision as a result of the rezoning detailed in Table 4-1.

Table 4-1 Required APZ

Direction	Vegetation Type	Slope that will affect bushfire behaviour	Required Setback (APZ)
North	N/A – Residential Development occurs to the	N/A	N/A
East	To the east of the site vegetation associated with a drainage line occurs. As a precautionary approach this vegetation has been assessed as Open Forest, however, further development to the east pursuant to the industrial zoning of the land will result in removal of this vegetation entirely or cleared to the extent that it represents a Riparian area. Riparian areas are those areas of vegetation which are no greater than 20 metres in width and are found on either bank of a river, creek or stream identified on a bushfire prone land map, and are treated/ assessed the same as rainforests in accordance with PBP 2006.	Flat	Open Forest - An APZ of 20m is required from any future dwelling and Open Forest vegetation. Rainforest - An APZ of 10m is only required between any future dwelling and Rainforest vegetation
South	N/A – Cleared Land	N/A	N/A
West	N/A Residential Development	N/A	N/A



The size of the site is able to accommodate the above APZs if they are required.



5 DWELLING DESIGN & CONSTRUCTION

On 6 March 2009, Council of Standards approved the revised Australian Standard AS3959-2009 *Construction of buildings in bushfire prone areas* (AS3959-2009). This standard was published by Standards of Australia on 10 March 2009 and replaces the 1999 version of the document.

AS3959-2009 was formally adopted by the BCA as the national standard on 1 May 2010. The BCA 2010 references AS3959-2009 as the deemed-to-satisfy (DTS) solution for construction requirements in bush fire prone areas for NSW. In order to clarify the NSW development approval process, the RFS has prepared an addendum to *Planning for Bush Fire Protection* 2006 (PBP) which replaces the existing Appendix 3. The addendum aligns PBP Appendix 3 with the BCA DTS separation distance requirements for the Bushfire Attack Levels (BAL) of AS3959-2009. It also maintains ember protection consistent with current requirements.

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2009, and accordingly the designer / architect should be made aware of this recommendation. It may be necessary to have dwelling plans checked by the architect involved to ensure that the proposed dwellings meet the relevant Bushfire Attack Level (BAL) as detailed in AS3959-2009.

The determinations of the appropriate BAL are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the construction level is derived by assessing the:

- Relevant FDI = 100
- Flame temperature
- Slope
- Vegetation classification; and
- Building location.

The following BAL, based on heat flux exposure thresholds, are used in the standard:

(a) **BAL – LOW** The risk is considered to be **VERY LOW**

There is insufficient risk to warrant any specific construction requirements but there are still some risks.

(b) **BAL – 12.5** The risk is considered to be **LOW**

There is a risk of ember attack.



The construction elements are expected to be exposed to a heat flux not greater than 12.5 kJ/m^2 .

(c) **BAL – 19** The risk is considered to be **MODERATE**

There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat.

The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m^2 .

(d) **BAL-29** The risk is considered to be **HIGH**

There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat.

The construction elements are expected to be exposed to a heat flux no greater than 29 kW/m^2 .

(e) **BAL-40** The risk is considered to be **VERY HIGH**

There is much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux no greater than 40 kW/m^2 .

(f) **BAL-FZ** The risk is considered to be **EXTREME**

There is an extremely high risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front.

The construction elements are expected to be exposed to a heat flux greater than 40 kW/m^2 .

5.1 Determination of Bushfire Attack Levels

Using a FDI of 100, the information relating to vegetation, slope and according to Table 2.4.2 of AS3959-2009 and Addendum: Appendix 3 of PBP, Table 5-1 illustrates the required BALs for future dwellings that may occur within the site.

Table 5-1: Determination of BALs for Future Dwellings within the Site

Vegetation Type	Average Slope of Land under Vegetation Type	Separation Distance from Vegetation Type	Bushfire Attack Level (BAL)	Construction Section
Rainforest	Flat	8-11m	BAL-40	Sect 3 & 8 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		11-16m	BAL-29	Sect 3 & 7 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		16-23m	BAL-19	Sect 3 & 6 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		23-100m	BAL-12.5	Sect 3 & 5 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		>100	BAL-LOW	No Requirements
Forest	Flat	19-<25m	BAL – 40	Sect 3 & 8 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		25-<35m	BAL-29	Sect 3 & 7 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		35-<48m	BAL-19	Sect 3 & 6 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		48-<100m	BAL-12.5	Sect 3 & 5 of AS3959 and Sect A3.7 of PBP Addendum Appendix 3
		>100m	BAL-LOW	No Requirements

To Note: The construction requirements for the next lower BAL than that determined for the lot may be applied to an elevation of the building where the elevation is not exposed to the source of bushfire attack. An elevation is deemed to be not exposed to the source of bushfire attack if all straight lines between that elevation and the source of bushfire attack are obstructed by another part of the building.

It is also noted that the vegetation to the east if future development occurs to the east may become a Low Threat Vegetation in accordance with Section 2.3.2 of AS3959-2009 and no BALs may apply.

Given, the information in Table 5-1 above any future dwellings within the lots will be able to comply with AS3959-2009 as no dwellings will occur on land that has been assessed as BAL-FZ. In any case future dwellings will be subject to further assessment under Section 79BA of



the EP&A Act and may be eligible for complying development under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* (the Codes SEPP).

6 ACCESS

6.1 Public Roads

All lots will have direct access to the public road system. This ensuring that all residents evacuating the area can do in a safe manner in the opposite direction of any bushfire hazard and allow for emergency personnel to safely access the vegetation. Refer to Appendix A for proposed Zone Layout that shows the proposed road layout.

The subdivision has been assessed against the acceptable solution and performance based assessment for Access (1) - Public Roads of PBP and the roads compliance with PBP is detailed in Table 1 below:

Table 6-1: Compliance with Access (1) - Public Roads in accordance with PBP

Performance Criteria	Acceptable Solutions	Compliance
The intent may be achieved where:		
fire-fighters are provided with safe all weather access to structures (thus allowing more efficient use of fire fighting resources)	public roads are two-wheel drive, all weather roads	Complies- all public roads will be two wheel drive all weather roads.
public road widths and design that allow safe access for fire-fighters while residents are evacuating an area.	- urban perimeter roads are two-way, that is, at least two traffic lane widths (carriageway 8 metres 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 500 metres in urban areas. - traffic management devices are constructed to facilitate access by emergency services vehicles. - public roads have a cross fall not exceeding 3 degrees. - all roads are through roads. Dead end roads are not recommended, but if unavoidable, dead ends are not	The proposed road will comply with the acceptable solution. .

Performance Criteria	Acceptable Solutions	Compliance
	more than 200 metres in length, incorporate a minimum 12 metres outer radius turning circle, and are clearly sign posted as a dead end and direct traffic away from the hazard. - curves of roads (other than perimeter roads) are a minimum inner radius of six metres and minimal in number, to allow for rapid access and egress. - the minimum distance between inner and outer curves is six metres. - maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient. - there is a minimum vertical clearance to a height of four metres 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 15 tonnes for areas with reticulated water, 28 tonnes or 9 tonnes per axle for all other areas). Bridges clearly indicate load rating.	Will comply
roads that are clearly sign- posted (with easily distinguishable names) and buildings/properties that are clearly numbered.	- public roads greater than 6.5 metres wide to locate hydrants outside of parking reserves to ensure accessibility to reticulated water for fire suppression. - public roads between 6.5 metres and 8 metres wide are No Parking on one side with the services (hydrants) located on this side to ensure accessibility to reticulated water for fire suppression.	Will comply
there is clear access to reticulated water supply	- public roads up to 6.5 metres 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	Will comply

Performance Criteria	Acceptable Solutions	Compliance
	are no less than 3.5 metres wide and provide parking within parking bays and locate services outside of the parking bays to ensure accessibility to reticulated water for fire suppression.	
parking does not obstruct the minimum paved width	- parking bays are a minimum of 2.6 metres wide from kerb edge to road pavement. No services or hydrants are located within the parking bays. - public roads directly interfacing the bush fire hazard vegetation provide roll top kerbing to the hazard side of the road.	Will comply

6.2 Property Access

Property access roads should be designed in accordance with section 4.1.3; Access (2) – Property Access of PBP (RFS, 2006). This will be assessed under Section 79BA of EP&A Act for any future dwelling within the approved subdivision.



7 SERVICES

7.1 Water Supply & Pressure

The subject land will be serviced by reticulated water and will extend into the development area. The proposed internal fire hydrant spacing, sizing and pressures are to comply with AS 2419.1-2005 Fire Hydrant Installations – System design, installation and commissioning (2005).

7.2 Gas & Electricity Supply

Any gas services are to be installed and maintained in accordance with AS 1586. The relief valves of any gas cylinder located near the dwelling will be directed away from the buildings and away from combustible materials.

8 AIMS & OBJECTIVES OF PLANNING FOR BUSHFIRE PROTECTION

The aim of PBP (RFS, 2006) is to use the NSW development assessment system to provide for the protection of human life and to minimize impacts on property from the threat of bushfire, while having due regard to development potential, on site amenity and protection of the environment.

More specifically the objectives are to:

- i. Afford occupants of any building adequate protection from exposure to bush fire;
- ii. Provide for a defensible space to be located around buildings;
- iii. Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition;
- iv. Ensure that safe operational access and egress for emergency personnel and residents is available
- v. Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the APZ; and
- vi. Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush fire-fighting).

The following comments are provided in relation to satisfying the objectives of PBP.

8.1 Objective 1

- (i) *Afford occupants of any building adequate protection from exposure to bush fire*

Measures that have been identified for any future development in regard to providing APZs between future dwellings and retained vegetation.

8.2 Objective 2

- (ii) *Provide for a defensible space to be located around buildings*

APZs of minimum widths as shown in Table 4-1 and displayed on Figure 4-1 can be implemented if required.



8.3 Objective 3

- (iii) *Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent direct flame contact and material ignition*

The recommended APZs, combined with other BFPMs such as, landscaping of the site and water supply will prevent flame contact and material ignition.

8.4 Objective 4

- (iv) *Ensure that safe operational access and egress for emergency personnel and residents is available*

Access to the Lots will be provided by the Public Road network.

8.5 Objective 5

- (v) *Provide for ongoing management and maintenance of bush fire protection measures, including fuel loads in the APZ*

Future owners of the lots are responsible for the management and maintenance of the land within their lots to ensure that the vegetation would meet the specifications of an APZ.

The proposed perimeter road will act as totally fuel free zones between any retained vegetation and future development within the site.

8.6 Objective 6

- (vi) *Ensure that utility services are adequate to meet the needs of firefighters (and others assisting in bush fire-fighting)*

It is expected that water mains will be extended into the site. To facilitate quick and efficient action by the Fire Brigade / Rural Fire Service upon arrival, it is recommended that all necessary connections / pumps etc be clearly marked and visible, and in good working order.

9 CONCLUSION & RECOMMENDATIONS

If the recommendations contained within this report are duly considered and incorporated, it is considered that the fire hazard present is containable to a level necessary to provide an adequate level of protection to life and property on the site.

In summary, the following is recommended to enable the proposal to meet the relevant legislative requirements:

- APZs are required to be implemented in accordance with Table 4-1 and Figure 4-1.
- Assessment in accordance with AS3959-2009 refer to Section 5 of this report has shown that any future dwelling within the site as a result of the rezoning and subsequent subdivision will be able to comply with AS3959-2009 and the Codes SEPP.
- The proposed access road is to meet the performance criteria of Public Road in accordance with Section 4.2.7. PBP 2006.
- Any proposed landscaping is to be undertaken in accordance with Appendix 5 of PBP 2006 and managed and maintained in perpetuity.
- Any proposed development be linked to the existing mains pressure water supply and that suitable hydrants be clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure should comply with AS2419.1, 2005.

Provided the recommendations stated above are implemented in full Firebird ecoSultants Pty Ltd is of the opinion that the proposed subdivision is able to meet the aims and objectives of PBP (RFS, 2006).

Yours faithfully

Firebird ecoSultants



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10 BIBLIOGRAPHY

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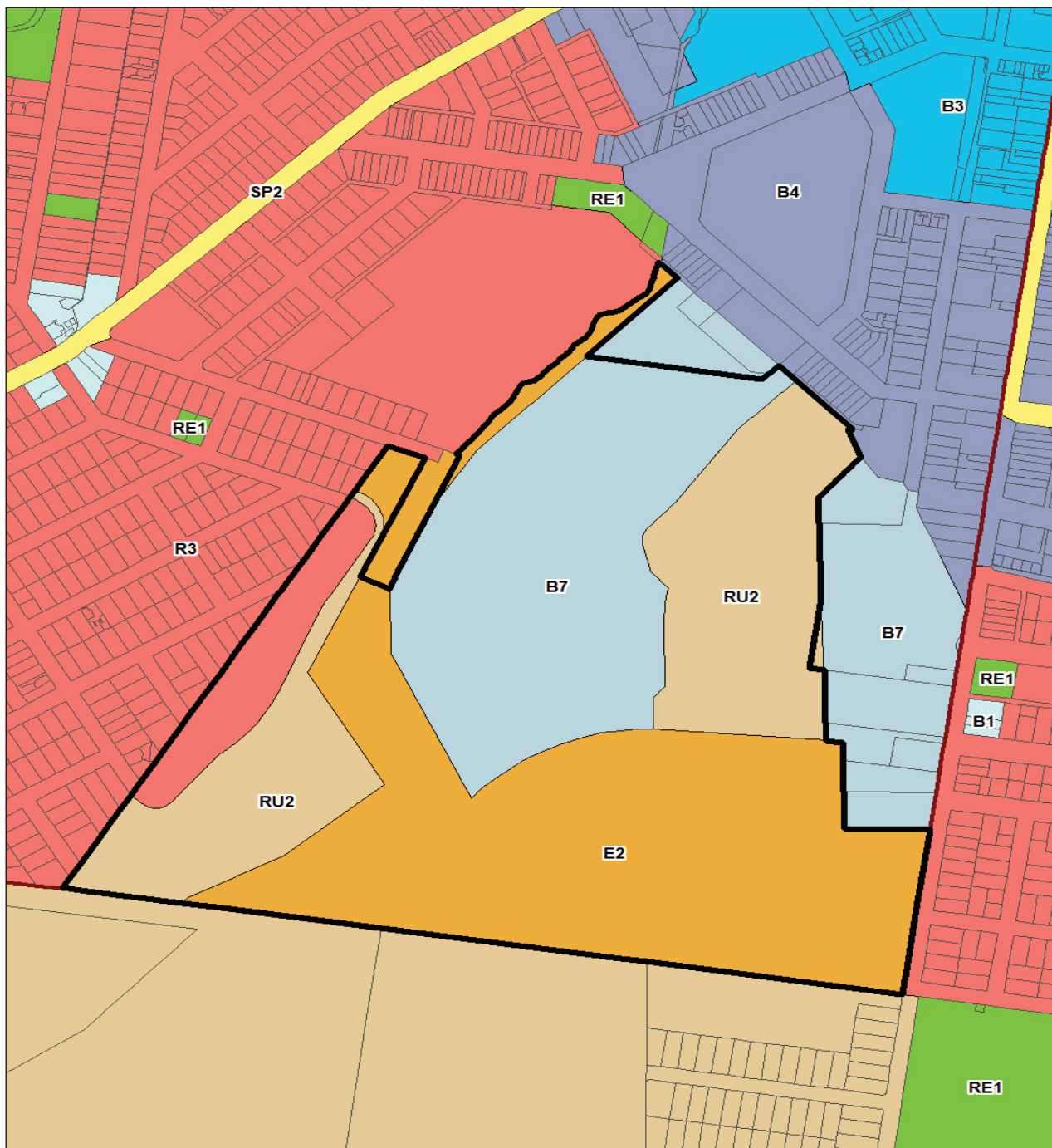
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APPENDIX A PROPOSED ZONE LAYOUT



PROPOSED LAND ZONING MAP



SCALE 1: 6400

R3



B7



RU2



E2



LOCALITY OF CESSNOCK

PARISH OF POKOLBIN

COUNTY OF NORTHUMBERLAND

Ref: James Street Proposed Land Zoning



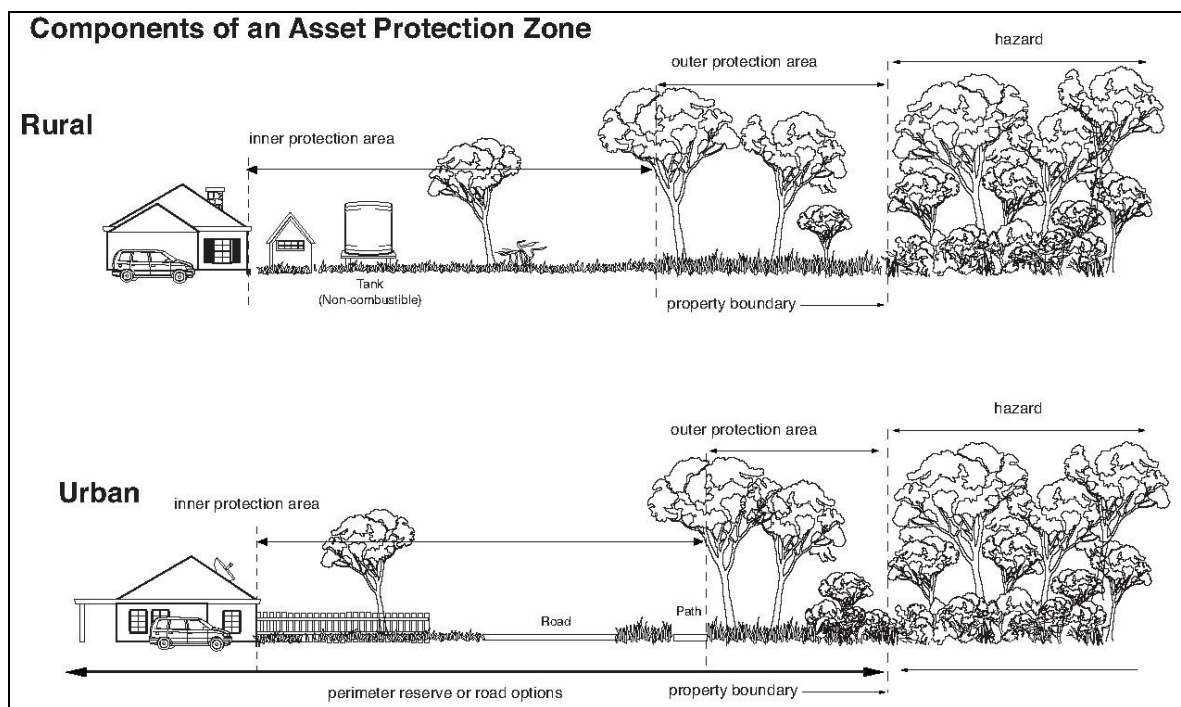
APPENDIX B ASSET PROTECTION ZONES

ASSET PROTECTION ZONES

An Asset Protection Zone (APZ) is an area surrounding a development that is managed to reduce the bushfire hazard to an acceptable level to mitigate the risk to life and property (refer to Figure B-1 below). The required width of the APZ varies with slope and the type of hazard. An APZ can consist of both an Inner Protection Area (IPA) and an Outer Protection Area (OPA). The respective IPA and OPA widths for the required APZs are as detailed in Table 5-1. An APZ can include the following:

- Lawns;
- Discontinuous gardens;
- Swimming pools;
- Driveways;
- Unattached non-combustible garages with suitable separation from the dwelling;
- Open space / parkland; and
- Car parking.

Figure 1: Components of an APZ (PBO 2006)





INNER PROTECTION AREA

The Inner Protection Area (IPA) extends from the edge of the OPA to the development. The IPA aims to ensure that the presence of fuels which could contribute to a fire event / intensity, are minimised close to the development. The performance of the IPA must be such that:

- There is minimal fine fuel at ground level which could be set alight by a bushfire; and
- Any vegetation in the IPA does not provide a path for the transfer of fire to the development – that is, the fuels are discontinuous.

The presence of a few shrubs or trees in the IPA is acceptable provided that they:

- Do not touch or overhang any buildings;
- Are well spread out and do not form a continuous canopy;
- Are not species that retain dead material or deposit excessive quantities of ground fuel in a short period or in a danger period; and
- Are located far enough away from any dwelling so that they will not ignite the dwelling by direct flame contact or radiant heat emission.

Woodpiles, wooden sheds, combustible material storage areas, large areas / quantities of garden mulch, stacked flammable building materials etc are not permitted in the IPA

OUTER PROTECTION AREA

The Outer Protection Area (OPA) is located adjacent to the hazard. Within the OPA any trees and shrubs should be maintained in a manner such that the vegetation is not continuous. Fine fuel loadings should be kept to a level where the fire intensity expected will not impact on adjacent developments.