



Bushfire Attack Level Assessment BAL Contour Map (Strategic Level Proposal)

Lot 1107 (40) Masonmill Road, Carmel

City of Kalamunda

Project Number: 16656

Assessment Date: 11 February 2016

Report Date: 14 March 2018

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The measures contained in this Bushfire Management Plan are considered to be minimum standards and they do not guarantee that a building will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions. Additionally, the correct implementation of the required bushfire protection measures (and any associated response/evacuation plan if applicable) will depend, among other things, on the actions of the landowners or occupiers over which Bushfire Prone Planning has no control.

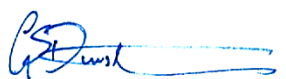
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Document Control

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The Bushfire Attack Level Contour Map - Assessment

BPP commissioned by: Landinsights

Purpose: To satisfy an unresolved issue of a deferred development application

For Submission to: City of Kalamunda

Document Content Compliance Statement

This BAL Contour Map report (the Report) provides the required information to address State Planning Policy No. 3.7: Planning in Bushfire Prone Areas - December 2015 (SPP 3.7), the associated Guidelines for Planning in Bushfire Prone Areas - WAPC 2017 v1.3 (Guidelines), and any additional information as directed by the WA Planning Commission (WA Department of Planning, Lands and Heritage). It is fit for accompanying a development application.

Subdivision BAL Contour Map Assessment Template - v1.0

Table of Contents

DOCUMENT CONTROL	1
1 THE PROPOSAL	3
1.1 DETAILS	3
2 POTENTIAL BUSHFIRE IMPACT ASSESSMENT	7
2.1 ASSESSMENT INPUT	7
2.1.1 Fire Danger Index (FDI) Applied	7
2.1.2 Existing Vegetation Identification, Classification - Effective Slope & Site Slope	7
2.1.3 Vegetation Separation Distance	9
2.2 ASSESSMENT OUTPUT	10
2.2.1 Indicative BAL Results Presented as a BAL Contour Map	10
2.3 ASSESSMENT SUMMARY	11
BAL Contour Map Summary - Indicative/Determined Bushfire Attack Levels (BAL's)	15
3 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES ARISING FROM BAL CONTOUR MAP	16
3.1 ADDITIONAL MANAGEMENT STRATEGIES	16
3.1.1 Location Vegetation Management	16
4 SPECIFIC LAND USES	17
4.1 VULNERABLE LAND-USE – DEFINITION / APPLICATION / REQUIREMENTS	17
APPENDIX 1 – ONSITE VEGETATION MANAGEMENT RESPONSIBILITIES	18

List of Figures

FIGURE 1.1: PROPOSED SITE PLAN	4
FIGURE 1.2: PROPOSED SITE PLAN (SPATIAL CONTEXT PLAN)	5
FIGURE 1.3: MAP OF BUSHFIRE PRONE AREA FOR THE SUBJECT SITE (SCREEN SHOT)	6
FIGURE 2.1: TOPOGRAPHY & CLASSIFIED VEGETATION MAP	13
FIGURE 2.2: BAL CONTOUR MAP	14

1 The Proposal

1.1 Details

Landowner / Proponent:	R Tieleman
Site Address:	Lot 1107 (40) Masonmill Road, Carmel
Local Government:	City of Kalamunda
Site Area:	4.0496 ha
No. of Proposed Lots:	N/A
Planning Stage:	Development application - addition to land use
Project Type:	Strategic planning proposal

Overview of the Proposal:

Development application of subject property for tourism purposes, resulting in minimal intensification and vulnerable land use proposal for the subject site.

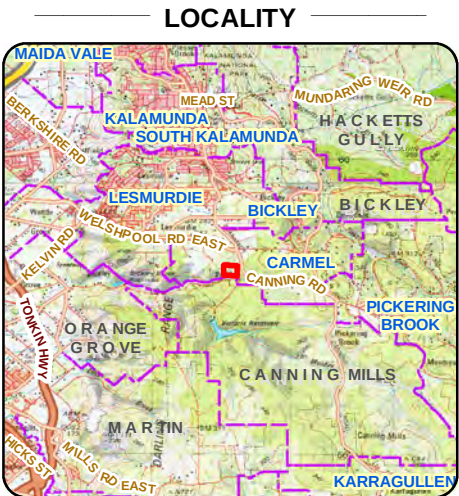
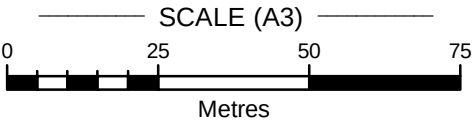
Figure 1.1
Proposed Development

Lot 1107 on Plan 250063
Masonmill Road
CARMEL

LEGEND

 Subject Area: Lot 1107

 Other Lots



Aerial Imagery : Landgate/SLIP
Image Date : Aug 2017

 BUSHFIRE PRONE PLANNING

Coordinate System: GDA 1994 MGA Zone 50

Projection: Universal Transverse Mercator Units: Metre

Map compiled by: Russell Wornes

Date map compiled/updated: 13/03/2018



- 1 Café - Restaurant
- 2 Amenities & Administration
- 3 Caretaker & Ground Floor Support Building
- 4 Beer Garden with Shade Sails
- 5 Wedding Garden 1
- 6 Wedding Garden 2
- 8 Maintenance Building
- 10 Pro Shop & Gift Shop
- 11 External Store & Servery
- 12 Railway Carriage
- 13 Mini Golf
- 14 Grassed Amphitheatre
- 15 Toilets
- 16 Parking with Ramp
- 21 Parking
- 22 Service Area

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Figure 1.2
Proposed Development
(SPATIAL CONTEXT)

Lot 1107 on Plan 250063
Masonmill Road
CARMEL

LEGEND

Subject Area: Lot 1107

Other Lots

Local Government Authority

Locality / Suburb

Assessment Area

Vegetation - 150m

Managed & Unmanaged Reserves

Regional Park

National Park

State Forest; Timber reserve

Crown Freehold - DBCA Interest

Other Crown Reserve

Unallocated Crown Land

SCALE (A3)

0

250

500

750

1,000

1,250

Metres

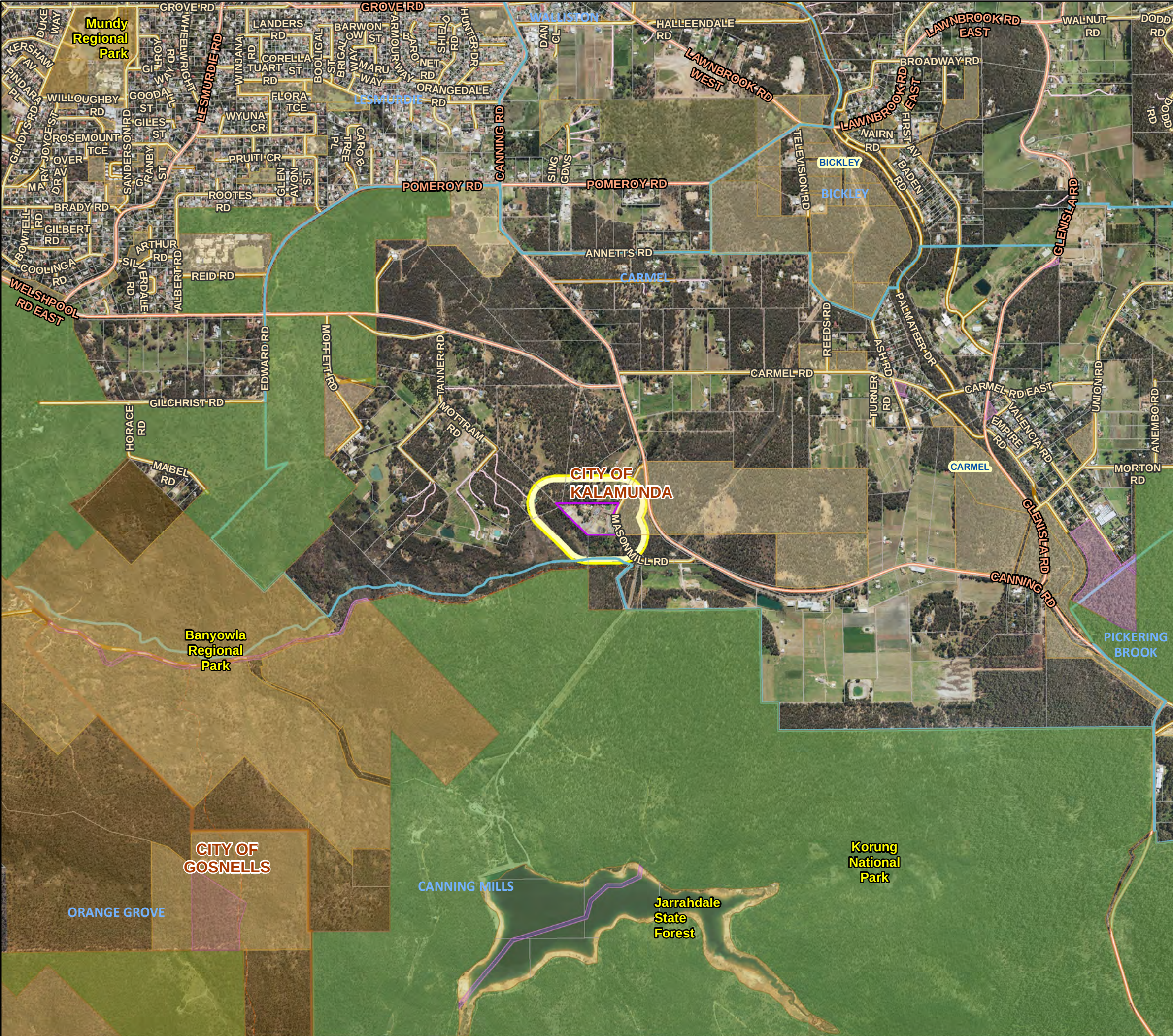
LOCALITY

Aerial Imagery : Landgate/SLIP

Image Date : Aug 2017

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre

Map compiled by: Russell Wornes
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Figure 1.3: Map of Bushfire Prone Area for the subject site (screen shot)

(Source: DFES - Office of Bushfire Risk Management 2017)



2 Potential Bushfire Impact Assessment

2.1 Assessment Input

AS 3959-2009 specifies the fire danger index values to apply for different regions as per Table 2.1 indicated in AS 3959-2009. The values used in the model calculations are for the Forest Fire Danger Index (FFDI) and for which equivalent representative values of the Grassland Fire Danger Index (GFDI) are applied as per 'Appendix B' of AS 3959-2009. The values can be refined if appropriately justified.

2.1.1 Fire Danger Index (FDI) Applied

Table 2.1.1: Applied FDI Value

FDI Value			
Vegetation Area/s	As per AS 3959 - 2009 Table 2.1	As per DFES for the Location	Value Applied
1 - 8	80	N/A	80

2.1.2 Existing Vegetation Identification, Classification - Effective Slope & Site Slope

Vegetation identification and classification has been conducted in accordance with AS 3959-2009 s2.2.3 and the Visual Guide for Bushfire Risk Assessment in WA (DoP February 2016). When more than one vegetation type is present, each type is identified separately with the worst-case scenario being applied as the classification. The predominant vegetation is not necessarily the worst-case scenario. The vegetation structure has been assessed as it will be in its mature state (rather than what might be observed on the day). Areas of modified vegetation are assessed as they will be in their natural unmodified state (unless maintained in a permanently low threat, minimal fuel condition, satisfying AS 3959 s2.2.3.2(f). Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its revegetated mature state. When there is a significant change in ground slope under classified vegetation that will impact a site, the vegetation will be identified as a separate area to enable correct assessment (and construction of the BAL contour map).

Effective Slope: Is the ground slope under the classified vegetation and is determined for each area of classified vegetation. It is the measured or assessed slope which will most significantly influence the bushfire behaviour in that vegetation as it approaches a building or site. When there is a significant change in effective ground slope under an area of classified vegetation, that will cause a change in fire behaviour, separate vegetation areas will be identified, based on the change in effective slope, to enable the correct assessment and the construction of the BAL contour map.

Site Slope: Is the slope along the ground by line of sight between the site or building and the area of classified vegetation to which the assessment applies. AS 3959-2009 Method 1 assumes that site slope is the same as the effective slope while Method 2 allows input of the actual slope. The site slope is used to position a building relative to the potential fire for the correct calculation of bushfire impact.

Table 2.1.2: Vegetation identification and classification

All Vegetation Within 150 metres of the Proposed Development				
Vegetation Area	Identified Classification Types ¹ or Description if 'Excluded'	Applied Classification ²	Effective Slope Under Classified Vegetation (degrees)	Effective Slope Range (degrees)
1	Open Jarrah/Marri Forest A-03	Class A Forest	11.0°	downslope >10-15
2	Open Jarrah/Marri Forest A-03	Class A Forest	0°	upslope or flat
3	Open Jarrah/Marri Forest A-03	Class A Forest	8.0°	downslope >5-10
4	Marri / Wandoo Woodland B-05	Class B Woodland	7.0°	downslope >5-10
5	Closed Tussock Grassland G-21	Class G Grassland	6.0°	downslope >5-10
6	Open Jarrah/Marri Forest A-03	Class A Forest	0°	upslope or flat
7	Managed Gardens	Excluded AS3959-2009 2.2.3.2 (f)	N/A	N/A
8	Closed Tussock Grassland G-21	Class G Grassland	0°	upslope or flat

Representative photos of each vegetation area, descriptions and classification justification, are presented in the BMP. The areas of classified vegetation are defined and the photo locations identified on the topography and classified vegetation map, Figure 2.1 of this report.

Note¹: As per AS 3959-2009 Table 2.3 and Figures 2.3 and 2.4 a-g.

Note²: As per AS 3959-2009 Table 2.3.

2.1.3 Vegetation Separation Distance

Vegetation Separation Distance: Is the distance from the site or building to the area of classified vegetation and is measured in the horizontal plane.

In determining Bushfire Attack Level's (BAL's), the separation distance is either:

- A measured input variable to apply to calculations as per AS 3959-2009; or
- A range of distances (corresponding to BAL ratings) that is derived from the same calculations.

Measured Separation Distance (m): This is an actual measured distance, used as a calculation input to determine a BAL rating. Its use will apply when the actual location of a 'site' (building, envelope or Lot) has been defined (refer to the site plan), and the separation distance can be measured. In this situation, a BAL rating for the 'site' can be determined.

Derived Separation Distance (m): This is a result derived from calculations using all other required inputs. The derived range states the distance away from an area of classified vegetation that corresponds to each BAL rating. Use of this methodology will apply when:

- The actual location of a 'site' (building, envelope or lot) has not been defined and therefore an actual separation distance cannot be measured; or
- The use of a distance range that corresponds to a BAL rating is more appropriate to the assessment of the proposal; or
- The assessment requires the production of a BAL contour map to assess planning viability and provide indicative BAL ratings (and in certain circumstances, determined BAL ratings).

BAL Contour Map: Where a calculated separation distance range is used to construct a BAL Contour Map, the distances that have been determined as corresponding to each BAL rating for the subject site are presented in Section 2.2 'Assessment Output' rather than this assessment inputs section.

Table 2.1.3: Statement of the determination method applied and location of results.

Vegetation Area/s	Method Applied for Determination of Separation Distance	Location of Results in this Plan
1-8	Distance Range (m) - Method 1 Default Range	Table 2.5 in s3.2.1 'BAL Contour Map'

2.2 Assessment Output

2.2.1 Indicative BAL Results Presented as a BAL Contour Map

Interpretation of the Bushfire Attack Level (BAL) Contour Map

The contour map will present different coloured contour intervals constructed around the classified bushfire prone vegetation. These represent the different Bushfire Attack Levels that exist at varying distances away from the classified vegetation. Each BAL represents a set range of radiant heat flux (as defined by AS 3959-2009) that can be generated by the bushfire in that vegetation at that location.

The width of each shaded contour (i.e. the distance interval) will vary and is determined by consideration of variables including vegetation type, fuel structure, ground slope, climatic conditions. They are unique to a site and can vary across a site. The width of each contour is a diagrammatic expression of the separation distances from the classified vegetation that apply for each BAL rating, for that site. A building (or 'area') located within any given BAL contour will be subject to that BAL rating or multiple BAL ratings. The highest rating will be the one applied in most instances.

Separation Distances Measured and/or Calculated to Construct the BAL Contours

Table 2.2.1: Vegetation separation distances applied to construct the BAL contours.

Derived Vegetation Separation Distances								
Vegetation Area	Vegetation Classification	Effective Slope (degrees)	BAL Rating and Corresponding Separation Distance ¹ (metres)					
			BAL-FZ	BAL-40	BAL-29	BAL-19	BAL-12.5	BAL-LOW
1	Class A Forest	11.0°	<33	33-<42	42-<56	56<73	73-<100	>100
2	Class A Forest	0°	<16	16-<21	21-<31	31<42	42-<100	>100
3	Class A Forest	8.0°	<26	26-<33	33-<46	46-<61	61-<100	>100
4	Class B Woodland	7.0°	<16	16-<22	22-<31	31-<43	43-<100	>100
5	Class G Grassland	6.0°	<8	8-<10	10-<16	16-<23	23-<50	>50
6	Class A Forest	0°	<16	16-<21	21-<31	31<42	42-<100	>100
7	Excluded AS3959-2009 2.2.3.2 (f)	N/A	-	-	-	-	-	-
8	Class G Grassland	0°	<6	6-<8	8-<12	12-<17	17-<50	>50

¹ Method 1 as per AS 3959-2009 Table 2.4.3

2.3 Assessment Summary

Table 2.3: Indicative bushfire attack levels for the existing/proposed buildings & Asset Protection Zone (APZ)

Indicative Bushfire Attack Levels for buildings on the Lot						
Buildings.	Highest Indicative BAL Impacting the site	Relevant Vegetation Area ¹	Relevant Vegetation Area ¹	BAL Determination Method Applied ²	Required minimum Building Setback (APZ) from Classified Vegetation (worst case scenario) to Achieve Stated BAL Rating	
					All upslope & Flat Land (Metres)	Downslope (Metres)
Café & Restaurant	BAL-19	6	-	Method 1	31	-
Amenities & Administration	BAL-12.5	6	-	Method 1	42	-
Caretaker & Ground Floor Support Building	BAL-FZ	6	-	Method 1	<16	-
Maintenance Building	BAL-FZ	6	-	Method 1	<16	-
Pro-Shop & Gift Shop	BAL-FZ	3	-	Method 1	-	<26
External Store & Servery	BAL-12.5	2	-	Method 1	42	-
Railway Carriage	BAL-12.5	3	-	Method 1	-	61

¹ Determines the indicative BAL rating and the boundary or vegetation edge from which the stated building setback is to apply. More than one vegetation area may impact a site.

² As per AS 3959-2009 s2.2.6 and Table 2.4.3.

Note: This BAL Contour Map assessment assumes that all onsite vegetation (i.e. all vegetation within the subject Lot boundaries and under Landowner/Proponent control) will be managed to a low bushfire threat state.

The APZ is required to comply with the minimum standards as specified within the City of Kalamunda Fire Break and Fuel Load Notice (Firebreak Notice) and the bushfire management plan for the site. (Refer also Appendix 1 of this report)

The indicative Bushfire Attack Levels for the proposed Lots are stated in Table 2.3 and the corresponding required building setback for a future building/s to achieve the stated BAL rating. The building setback is the distance from the corresponding classified vegetation areas presenting the highest indicative BAL. This distance indicated in Table 2.3 is also the recommended asset protection zone extent for the BAL indicated.

BAL ratings for specific buildings may need to be determined by an onsite visit to confirm vegetation management has taken place and measure the separation distances as required.

The assessed BAL for the building envelopes (the 'area') is stated as being 'indicative', this is because that 'area' is impacted by more than one BAL contour interval and/or classifiable vegetation remains on the Lot, that can influence a future building's BAL rating (and this vegetation may have been omitted from being contoured for planning purposes e.g. Grassland or when the assumption is made that onsite vegetation can be removed and/or modified to low threat criteria).

In this report, the indicative BAL is presented as the highest BAL impacting the 'area'. A lower BAL may be achievable. The BAL rating that will apply to any future building within that 'area' will be dependent on:

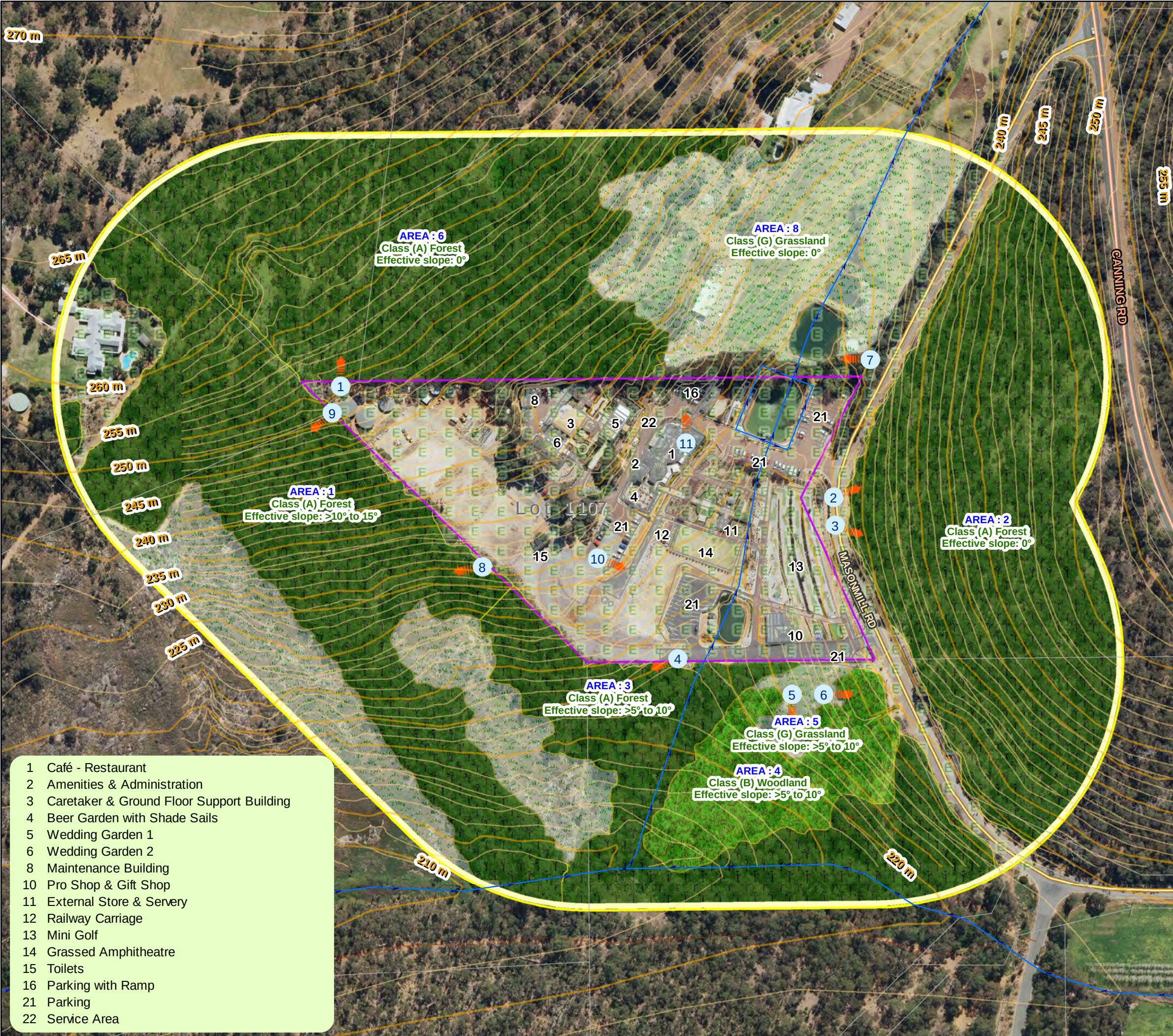
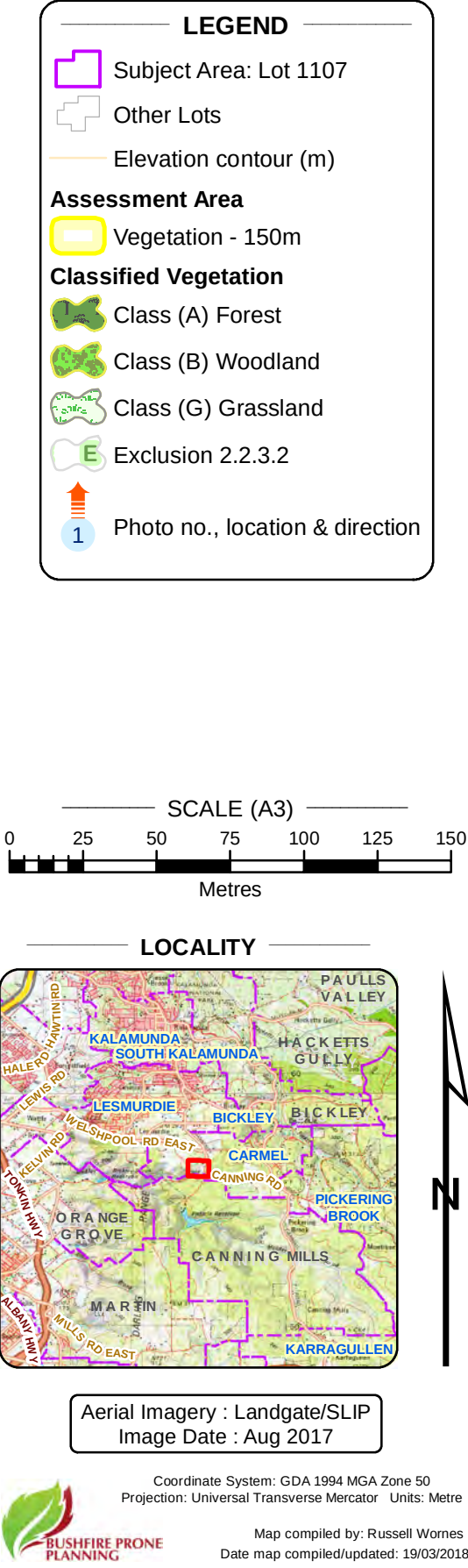
1. vegetation management onsite; and/or
2. vegetation remaining on adjacent lots; and/or
3. the actual location of the future building within that 'area'.

A BAL Certificate cannot be provided for future buildings within an 'area' with an indicative BAL until the location of any future building has been determined. A report confirming the location and BAL rating will be required and submitted with the BAL certificate.

The BAL Contour Map (Figure 2.1) indicates that it is possible to develop within a BAL-29 or lower rating with the management of all onsite vegetation.

Figure 2.1
Topography &
Classified Vegetation

Lot 1107 on Plan 250063
Masonmill Road
CARMEL

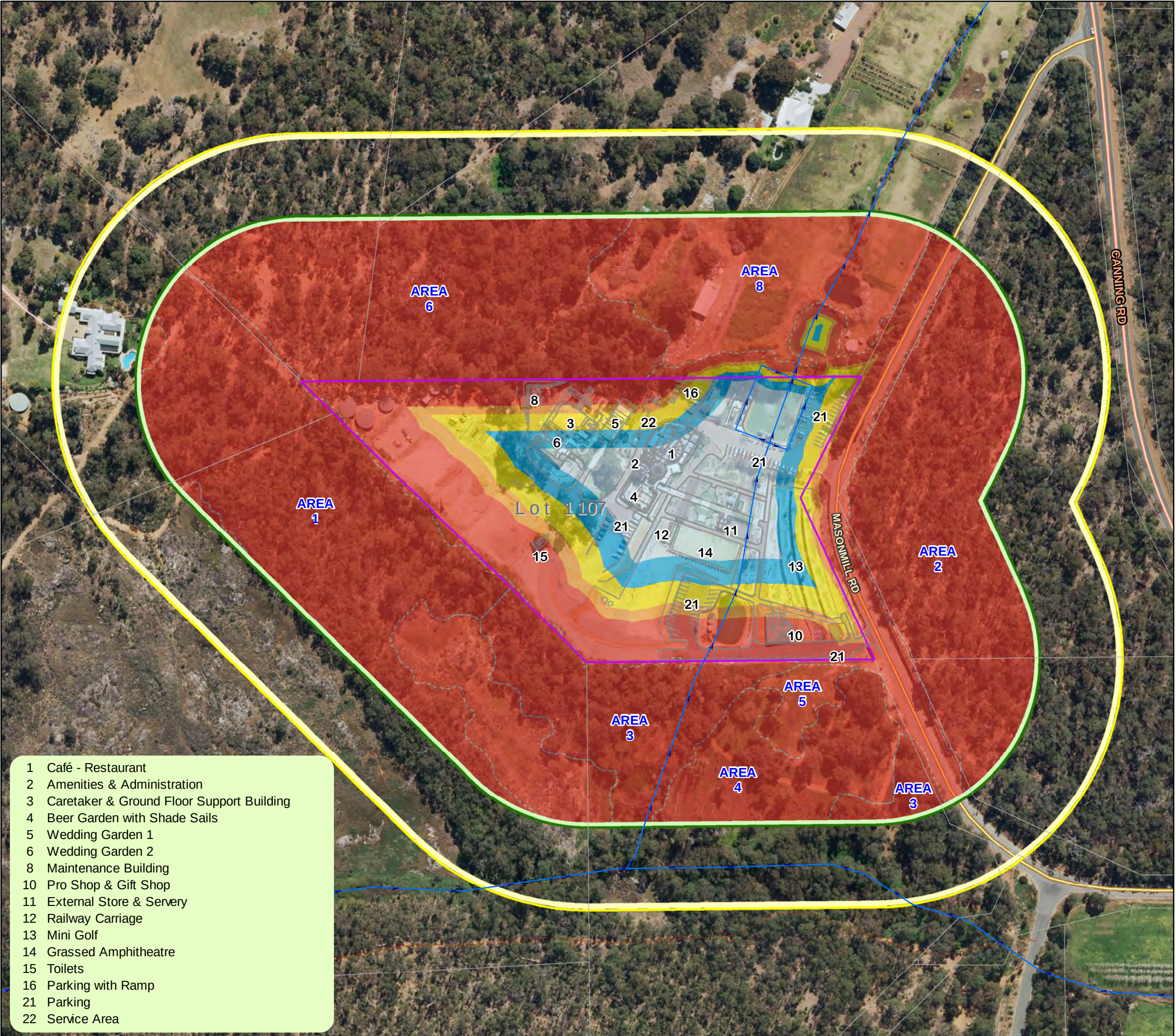
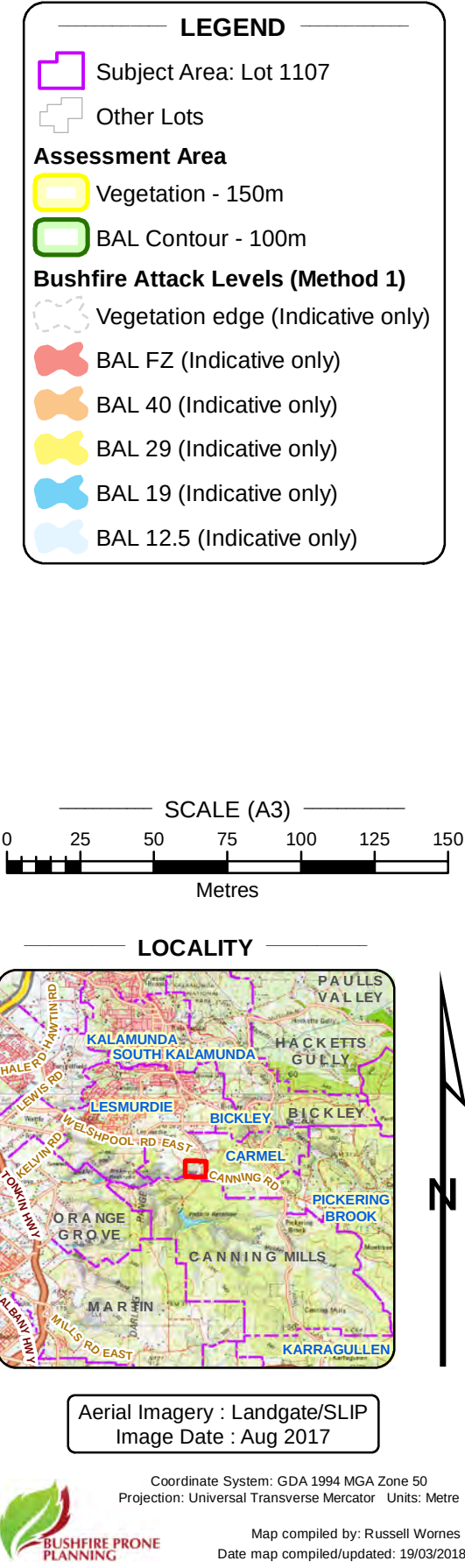


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Document Path: G:\BushfireProne\Mapping\MXD\S\16656_Lot 1107 Masonmill Rd, Carmel (A3L) v18-3.mxd

Figure 2.2
BAL Contour Map

Lot 1107 on Plan 250063
Masonmill Road
CARMEL



BAL Contour Map Summary - Indicative/Determined Bushfire Attack Levels (BAL's)

[Guidance Panel]

Understanding the Bushfire Assessment Results - Application of Bushfire Attack Levels (BAL)

The BAL rating has a different application in the building environment compared to the planning environment and the BAL assessment can result in a determined BAL or an indicative BAL which have different implications.

Building versus Planning Applications

In the building environment, a determined BAL rating is required (for the proposed building) at the building application stage. This is to inform approval considerations and establish the construction standards that are to apply if approved.

In the planning environment, assessing the ability of a proposed development site to achieve BAL-29 or less is the objective (although that is just one of the bushfire protection criteria being assessed). Therefore, a range of BAL ratings $\leq$ BAL-29 is an acceptable outcome for that criteria, as established by SPP 3.7 and the associated Guidelines.

Determined BAL Ratings

A determined BAL rating is to apply to a building and not to a Lot. Its purpose is to state the potential radiant heat flux to which the building will be exposed.

A determined BAL cannot be given for a future building whose location, elevation design and footprint (on a given Lot) are unknown. It is not until these variables have been fixed that a BAL can be determined (typically at the development application or building application stage).

The one exception is when a building of **any dimension** can be **positioned anywhere** on a proposed Lot or within defined limits within the Lot (i.e. building setbacks or building envelope) and always remain subject to the same BAL rating. For this to be the case, there needs to be no classified vegetation either onsite or offsite that if retained could impact upon the determined BAL rating.

Indicative BAL Ratings

When this Plan presents a single indicative BAL rating for a building, this will be because the proposal is still subject to a building location being confirmed or a vegetation separation distance being achieved. That is, it will be conditional upon some factor being confirmed at a later stage.

For planning applications associated with proposed Lots, the building location, elevation design and footprint have typically not been established. Therefore, indicative rather than determined BAL rating/s will be presented for each Lot (with the exception as noted above under 'Determined BAL Ratings').

When this Plan presents a single indicative BAL rating for a Lot or building envelope (i.e. an 'area' that is not a located building footprint) it will represent the highest BAL rating affecting that 'area'. The BAL rating of a future building on that 'area' will be dependent on its eventual location.

Otherwise, this Plan will present all BAL ratings for each Lot and for each BAL rating the vegetation separation distances from each area of classified vegetation that are to apply. These distances will be presented as either:

1. Figures in a table; or
2. Presented as a BAL contour map.

From this indicative BAL information, it can be assessed if viable BAL ratings can be achieved for future buildings.

3 Identification of Bushfire Hazard Issues Arising from BAL Contour Map

The proposed subdivision lies within a bushfire prone area as defined by the OBRM Map of Bushfire Prone Areas. The bushfire hazard issues are detailed in the BMP prepared for the development area and will address the issue of onsite vegetation management, vehicle access, water supply and future development of buildings within the Lot being constructed to AS 3959 - 2009 standards.

Vegetation onsite, including the future subdivision area, is within the control of the subject site's landowner/s and therefore can potentially be removed or modified to lower the bushfire risk, subject to any approval being required by a local government. Vegetation offsite is not within the control of the subject site's landowner and therefore the vegetation cannot be removed or modified by the landowner/s and as a result the assessed BAL's determined by this vegetation may alter or restrict the BAL if building setbacks to boundaries are reduced.

3.1 Additional Management Strategies

The additional management strategies that apply to this proposal include:

- Local vegetation management requirements.

3.1.1 Location Vegetation Management

The City of Kalamunda annual Fire Break and Fuel Load Notice (Firebreak Notice) indicates a variation to the Bushfire Protection Criteria acceptable solutions. The annual Notice should be reviewed for the most recent detail and requirements for that time. Landowners are encouraged to include their verges in fire hazard management for their property. Prior to undertaking works or planned burning of verges, permission must be granted from the City of Kalamunda.

The City of Kalamunda gives notice pursuant to Section 33 of the Bush Fires Act 1954 to all landowners or occupiers of land in its district that they are required as the landowner or occupier of the land to annually plough, cultivate, scarify, or otherwise clear firebreaks as specified the Notice and to maintain the firebreaks clear of flammable matter, for a set duration of time. The information contained within the City of Kalamunda annual Fire Break and Fuel Load Notice (Firebreak Notice) is subject to change annually, landowners or occupiers must obtain the current version of the 'Notice' from the City of Kalamunda and ensure compliance annually.

4 Specific Land Uses

State Planning Policy 3.7 Planning in Bushfire Prone Areas (Department of Planning and WAPC 2015) sets out in policy measure 6.6 what is required for 'vulnerable' or 'high risk' land uses to be supported in bushfire prone areas subject to BAL-12.5 or higher.

4.1 Vulnerable Land-Use – Definition / Application / Requirements

Is the Bushfire Management Plan (BMP) to accompany a development application for building work associated with a land use that is considered a 'vulnerable' land use?	Yes
Is a Bushfire Evacuation Plan for Proposed Occupants to be provided as a separate document and be considered as forming a part of the Bushfire Management Plan?	Yes
Is the required content of a Bushfire Evacuation Plan for Proposed Occupants to be provided as an addition to the proponents existing emergency evacuation plan?	No
In certain circumstances the required information to fully compile the Bushfire Evacuation Plan (e.g. position, names and contact numbers for responsible persons) is not available at the development application stage. In such a situation the responsibility to complete the required details prior to occupancy of the subject building will noted in the Landowner/Proponent Responsibilities section of this BMP. Does this situation apply to this application?	Yes

Information reference: SPP 3.7 *Planning in Bushfire Prone Areas* (Department of Planning and WAPC 2015 s6.6 and s7) and the *Guidelines for Planning in Bushfire Prone Areas* (WAPC v1.3 2017 s5.5):

Definition and Application

SPP 3.7 defines vulnerable land use as a land use where persons may be less able to respond in a bushfire emergency.

The intent of the policy measure "is to recognise that such sites require special consideration when located in bushfire prone areas. This will ensure that bushfire risk management is sufficiently addressed in the planning assessment of these land uses".

In general, terms the following scenarios might need to be considered as vulnerable land uses:

- 1) Where persons are present that have a lesser physical/mental capacity to respond to emergencies;
- 2) Where occupancy is transient in nature;
- 3) Where greater numbers of persons may be present at certain times;
- 4) Where occupants are typically not fully familiar with the building or area.

As part of the Proposal a Bushfire Evacuation (Response) Plan for onsite occupants has been created.

Appendix 1 – Onsite Vegetation Management Responsibilities

Asset Protection Zone (APZ) Management

It is the responsibility of the landowner to maintain the established bushfire protection measures on their property. This includes maintaining an asset protection zone (APZ) of the required dimensions, as a non-vegetated area or as low threat vegetation managed to a minimal fuel condition, as defined in the Schedule 1, Standards for Asset Protection Zones of the Guidelines and AS 3959-2009 s2.2.3.2 part (f) Low Threat Vegetation. This is to ensure the potential radiant heat impact on a building from of a bushfire doesn't exceed 29kW/m² (BAL-29).

Ongoing Maintenance of Classified and Excluded Vegetation:

1. Where any existing or planned re-vegetation has been assessed as “Low Threat” (meeting AS 3959-2009 Section 2.2.3.2 requirements) and excluded from classification then this area will be managed to continue to meet those requirements and enable the buildings to retain their determined BAL ratings;
2. Any classified vegetation onsite (i.e. within a subject Lot) that has directly contributed to the determined BAL rating for a given building, will be managed such as to not change that vegetation to a higher risk classification.

Extract from AS 3959-2009 Section 2.2.3.2 – Low Threat Vegetation definition

The Bushfire Attack Level shall be classified BAL-LOW where the vegetation is one or a combination of the following:

a), b), c), d), e) – not relevant to vegetation management within the APZ.

f) low threat vegetation, including grassland managed in a **minimal fuel condition** (i.e. insufficient fuel available to significantly increase the severity of a bushfire attack – recognisable as short cropped grass to a nominal height of 100mm for example), maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.

Standards for Asset Protection Zones

('Guidelines' WAPC 2017 v1.3 Appendix 4, Schedule 1)

Fences: within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used.

Objects: within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors.

Fine Fuel load: combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare.

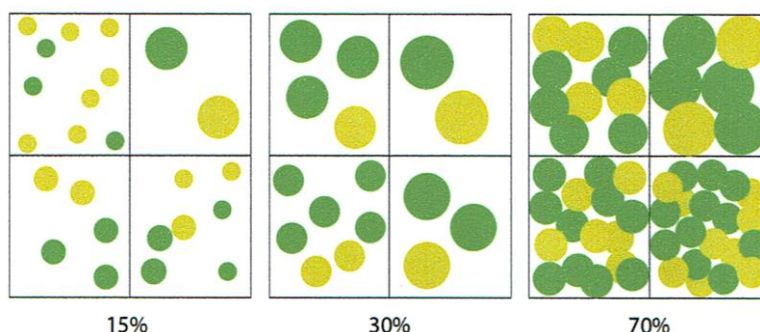
Additional information: Ground fuels/fine fuels applicable within the APZ indicated below. This equates to approximately 2 tonnes per hectare of fuel loading.



(Image source: Shire of Augusta Margaret River's Firebreak and Fuel Hazard Reduction Notice).

Trees (> 5 metres in height): trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy.

Tree canopy cover – ranging from 15 to 70 per cent at maturity



Source: Guidelines for Planning in Bushfire Prone Areas 2017, Appendix 4

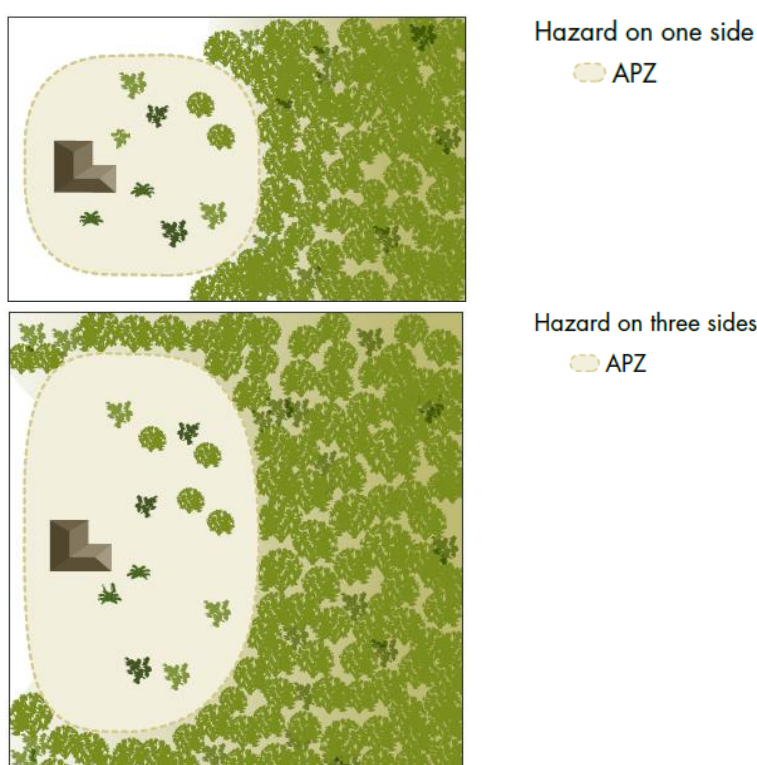
Shrubs (0.5 metres to 5 metres in height): should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees.

Ground covers (<0.5 metres in height): can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs.

Grass: should be managed to maintain a height of 100 millimetres or less.

Note that individual local governments may set their APZ standards with differing requirements compared to the standard set in the 'Guidelines'. These will be contained in their annual firebreak notice issued under s33 of the Bushfires Act 1954 and are to be complied with.

The following example diagrams illustrate how the required dimensions of the APZ will be determined by the type and location of the vegetation.



Additional DFES Guidance

- 1) Store firewood at least 20 metres away from the building.
- 2) Keep gutters free of leaves and other combustible material.
- 3) Roof mounted evaporative coolers to be fitted with ember screens.
- 4) Gas cylinders to vent away from a building and be tethered to prevent falling over.
- 5) Driveways and access ways must allow for safe passage of a fire appliance to all buildings on the land.
- 6) Land owners/occupiers must maintain compliance with the local government's annual firebreak notice issued under s33 of the Bush Fires Act 1954.

Regardless of whether an Asset Protection Zone exists in accordance with the acceptable solutions and is appropriately maintained, it should be noted that fire fighters are not obliged to protect an asset if they think the separation distance between the dwelling and vegetation is unsafe.