

Bushfire Management Plan Coversheet

This Coversheet and accompanying Bushfire Management Plan has been prepared and issued by a person accredited by Fire Protection Association Australia under the Bushfire Planning and Design (BPAD) Accreditation Scheme.

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Lot No. 213 (28) Lewis Road

Suburb: Wattle Grove

State: WA

P/code: 6107

Local government area: Shire of Kalamunda

Description of the planning proposal: Construction of a Place of Worship and Community Hall.

BMP Plan / Reference Number: 170174

Version: 1.1

Date of Issue: 18/12/2018

Client / Business Name: Peter Hunt Architect

Reason for referral to DFES	Yes	No
Has the BAL been calculated by a method other than method 1 as outlined in AS3959 (tick no if AS3959 method 1 has been used to calculate the BAL)?	☐	☒
Have any of the bushfire protection criteria elements been addressed through the use of a performance principle (tick no if only acceptable solutions have been used to address all of the BPC elements)?	☐	☒
Is the proposal any of the following special development types (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)	☐	☒
Strategic planning proposal (including rezoning applications)	☐	☒
Minor development (in BAL-40 or BAL-FZ)	☐	☒
High risk land-use	☐	☒
Vulnerable land-use	☒	☐

If the development is a special development type as listed above, explain why the proposal is considered to be one of the above listed classifications (E.g. considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

Note: The decision maker (e.g. local government or the WAPC) should only refer the proposal to DFES for comment if one (or more) of the above answers are ticked "Yes".

BPAD Accredited Practitioner Details and Declaration

Name Mike Scott	Accreditation Level Level 3	Accreditation No. BPAD27795	Accreditation Expiry 01/02/2019
Company Bushfire Prone Planning		Contact No. 6477 1144	

I declare that the information provided within this bushfire management plan is to the best of my knowledge true and correct

Signature of Practitioner



Date 19/12/2018



BPP Group Pty Ltd t/a Bushfire Prone Planning

ABN: 39 166 551 784

Level 1, 159-161 James Street, Guildford, WA 6055

PO Box 388

Guildford WA 6935

08 6477 1144 | admin@bushfireprone.com.au

Bushfire Management Plan

28 Lewis Road, Wattle Grove

Shire of Kalamunda

Project Number: 170174

Assessment Date: 11 April 2017

Report Date: 18 December 2018

Plan Details

BMP Template v5.7

©2018 BPP Group Pty Ltd

Plan Version	Submitted to	Submitted Date
--------------	--------------	----------------

v1.0

Proponent

19-Jul-17

Plan Version	Amendment Record	Submitted Date
--------------	------------------	----------------

v1.1

Minor BMP Updates

18-Dec-18

Compliance Statement

This Bushfire Management Plan (the Plan) meets the requirements of both the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) and the supporting *Guidelines for Planning in Bushfire Prone Areas* (WAPC 2017 v1.3; the 'Guidelines').

Author	Bushfire Planning and Design (BPAD) Accreditation	Signature
--------	---	-----------

Jason Benson

Level 1 BAL Assessor

BPAD37893



BPP Group Pty Ltd t/a Bushfire Prone Planning ACN: 39 166 551 784

Reviewed/Approved	Bushfire Planning and Design (BPAD) Accreditation	Signature
-------------------	---	-----------

Mike Scott

Level 3 Bushfire Planning and Design
Practitioner

BPAD27795



BPP Group Pty Ltd t/a Bushfire Prone Planning ACN: 39 166 551 784

Contents

1	EXECUTIVE SUMMARY	4
2	APPLICATION OF SPP 3.7	5
3	COMMISSIONING AND THE LAND USE PROPOSAL	6
4	THE PLANNING SUBMISSION AND THE DOCUMENTS REQUIRED	9
5	ASSESSMENT OF BUSHFIRE RISK.....	11
5.1	VEGETATION ASSESSMENT/CLASSIFICATION AND GROUND SLOPE.....	11
5.1.1	<i>Existing Vegetation</i>	<i>11</i>
5.1.2	<i>Vegetation Excluded from Classification.....</i>	<i>15</i>
5.1.3	<i>Expected On-site Vegetation Changes Due to Proposed Subdivision or Development</i>	<i>15</i>
5.2	BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT – BAL CONTOUR MAP	18
5.2.1	<i>Construction of the BAL Contours</i>	<i>21</i>
5.2.2	<i>BAL's as Indicated / Determined by the Contour Map.....</i>	<i>22</i>
5.2.3	<i>Identification of Specific Issues Arising from BAL Contour Map</i>	<i>23</i>
5.3	EXISTING HABITABLE BUILDINGS ON SUBJECT SITE – ASSESSED BAL'S	24
6	ENVIRONMENTAL CONSIDERATIONS.....	25
6.1	NATIVE VEGETATION AND RE-VEGETATION.....	25
7	BUSHFIRE RISK MANAGEMENT MEASURES	27
7.1	THE BUSHFIRE PROTECTION CRITERIA – ASSESSMENT OF COMPLIANCE	27
7.2	LOCATION OF BUILDINGS AND APPLICABLE BAL'S	35
7.3	VEGETATION MANAGEMENT	36
7.4	VEHICULAR ACCESS.....	38
7.5	FIREFIGHTING WATER SUPPLY	38
7.6	BUILDING CONSTRUCTION STANDARDS.....	39
7.6.1	<i>Existing Habitable Buildings on the Subject Site</i>	<i>40</i>
8	SPECIFIC LAND USES.....	41
8.1	VULNERABLE LAND-USE – DEFINITION / APPLICATION / REQUIREMENTS	41
9	RESPONSIBILITIES FOR IMPLEMENTATION & MAINTENANCE.....	43
9.1	LANDOWNER / PROPONENT RESPONSIBILITIES (AND THOSE ACTING ON THEIR BEHALF).....	43
9.2	BUILDER RESPONSIBILITIES	45
9.3	LOCAL GOVERNMENT RESPONSIBILITIES.....	46
	APPENDIX 1 – ONSITE VEGETATION MANAGEMENT	47

Disclaimer

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. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions. Additionally, the achievement of and level of implementation of bushfire management measures will depend, among other things, on the actions of the landowners or occupiers over which Bushfire Prone Planning has no control.

All surveys, forecasts, projections and recommendations made in this report associated with the project are made in good faith on the basis of information available to Bushfire Prone Planning at the time.

All maps included herein are indicative in nature and are not to be used for accurate calculations.

Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences (whether or not due to the negligence of their consultants, their servants or agents) arising out of the services provided by their consultants.

Copyright Notice

The format and certain content of this work is copyright. Apart from any use permitted under the Copyright Act 1968, none of these parts may be reproduced by any process, nor may any other exclusive right be exercised, without the permission of BPP Pty Ltd of PO Box 3489 Midland WA 6936. This work was made in 2016.

As this material is in an electronic format, the removal or alteration of this material is prohibited by the Copyright Act in certain circumstances.

1 Executive Summary

This Bushfire Management Plan (the Plan) has been prepared to accompany the development application for 28 Lewis Road, Wattle Grove within the Shire of Kalamunda. The proposed development is for a Community Hall Building and associated carpark and driveways.

The development site of approximately 2 ha is within a designated bushfire prone area and the Proposal requires the application of *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas* (SPP 3.7). The assessed bushfire risk is considered to be manageable and will be achieved by the identified stakeholders implementing and maintaining the bushfire risk management measures that are presented in this Plan.

The Proposal, as set out in this Plan, has addressed all applicable legislation, policy, standards and guidelines including the four elements of the Bushfire Protection Criteria of location, siting and design, vehicular access and firefighting water supply. The determination is that the Proposal can meet all requirements.

An assessment of the site indicates that selective removal and subsequent management of existing native vegetation can be implemented to result in the achievable BAL rating for the proposed Community Hall building being no greater than BAL-12.5.

The BAL Contour Map indicates the existing buildings are exposed to an indicative BAL Rating of BAL-FZ and BAL-40. These buildings are to be retained as part of this development proposal.

For land uses involving Class 4 to Class 9 buildings, the planning process focuses on location, siting, vehicular access and firefighting water supply and not building construction requirements - as the Building Code of Australia only applies to Classes 1, 2, 3 and associated Class 10a buildings or decks. However, the construction requirements as set out in AS 3959 – 2009 can be utilised voluntarily to enhance a buildings survivability if it is subject to a bushfire.

The proposed development is considered a 'Vulnerable land use', evacuation information for the site, with specific consideration to the management of a bushfire emergency has been prepared in support of this proposal. The evacuation advice has given due consideration to the vehicle access/egress options in the area and precautionary and contingency measures have been applied to minimise risk to future onsite occupants.

2 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas* (SPP 3.7) provides the foundation for land use planning to address bushfire risk in Western Australia.

This Proposal must consider SPP 3.7 and, if required, comply with its policy measures. The determination of this requirement is presented below.

Application of SPP 3.7 Policy Measures – Primary Triggers

The subject Proposal is a higher order strategic planning document, a strategic planning proposal or a subdivision or development application: ✓

The project site is in a designated bushfire prone area on the WA Map of Bushfire Prone Areas: ✓

Application of SPP 3.7 Policy Measures – Secondary Trigger/s

The Proposal is a strategic planning proposal, subdivision or development application relating to land that has or will have a Bushfire Hazard Level above low and/or where a Bushfire Attack Level rating above BAL-LOW applies (SPP 3.7 s6.2): ✓

The subject Proposal is a development application for the construction or/and use of a habitable building (other than a single house or ancillary dwelling), or a specified building on any lot size and subject to a BAL rating above BAL-LOW (LPS Amendment Regulations 2015): ✓

3 Commissioning and the Land Use Proposal

Bushfire Prone Planning (BPP Group Pty Ltd) has been commissioned to carry out the assessments and prepare the required bushfire planning documentation to accompany the proponent's planning submission associated with their proposed land use project.

Commissioning Record

Landowner / Proponent: Fount of Life Outreach Ministry Inc

BPP Commissioned by: Peter Hunt Architect

Purpose: Development application

Project Location

Subject Site and Address: Lot No. 213 (28) Lewis Road, Wattle Grove

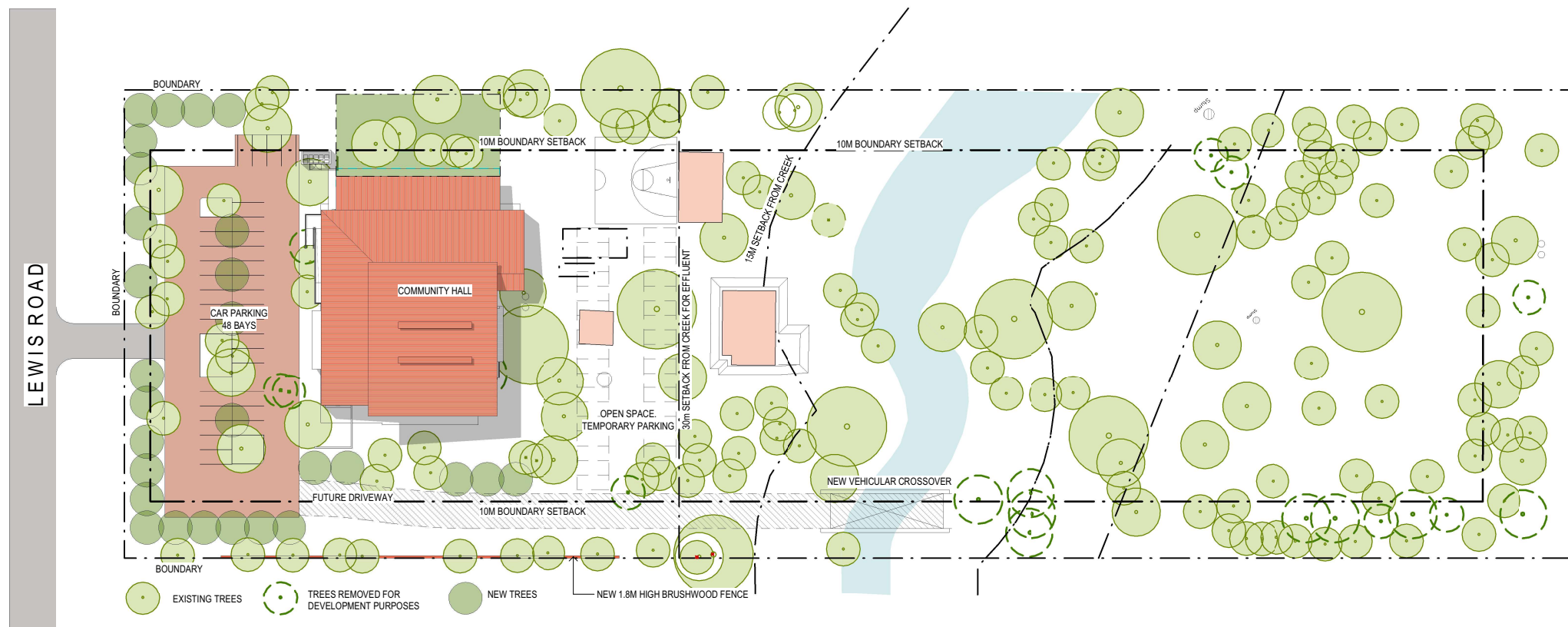
Local Government: Shire of Kalamunda

Project Description

Description: Construction of a Place of Worship and Community Hall.

Building Class: Class 9b

Lot Area: 2 ha



COMMUNITY HALL DEVELOPMENT

FOUNT OF LIFE SANCTUARY INC

LOT 213, 28 LEWIS ROAD, WATTLE GROVE

SITE PLAN

DEVELOPMENT APPLICATION

peter hunt architect

Scale 1 : 500@ A1



02/11/2018 REV 2 **DA100**

Figure 3.2
Proposed Development

Lot 213 on Plan 30747
[No. 28]
Lewis Road
WATTLE GROVE

LEGEND

 Subject Area: Lot

 Other Lots

 Hydrant

Proposed Building

 Class 9(b)

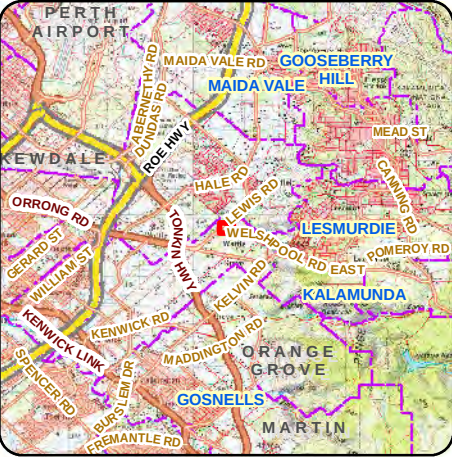
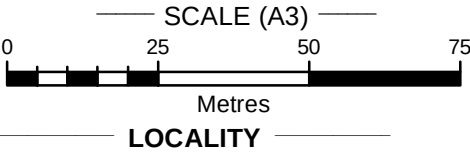
Existing Building

 Class 1(a)

 Class (9)

 Class 10(a)

 Eaves, verandah, etc



Aerial Imagery : Landgate/SLIP
Image Date : May/Jul 2018



Coordinate System: GDA 1994 MGA Zone 50

Projection: Universal Transverse Mercator Units: Metre

Map compiled by: Alex Aitken

Date map compiled: 17/07/2017

Map updated by: Russell Wornes 17/12/2018



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.
Map Document Path / Name: C:\BushfireProneMapping\MXD's\2017\170174_Lot 213 (H28) Lewis Road, Wattle Grove_BMP_(A3L).mxd

4 The Planning Submission and the Documents Required

Policy measures in *SPP 3.7* (and further instruction in the associated document *Guidelines for Planning in Bushfire Prone Areas WAPC 2017 v1.3*) set out the bushfire planning information (including bushfire risk assessments) that are to accompany a planning submission. It is dependent on the type of proposal and stage of the development process. In most circumstances, this information is to be presented in the form of a Bushfire Management Plan (BMP).

The Planning Submission – Stage and Specific Land Use or Development	
Planning Stage:	Development application
For Submission to:	Shire of Kalamunda
Project Type:	Construction of a Class 9b building
‘Vulnerable’ Land Use:	Yes
‘High Risk’ Land Use:	No
‘Minor’ Development:	No
‘Unavoidable’ Development:	No

This Bushfire Management Plan will include the information indicated by the check mark. If an item is checked it is required by either: SPP 3.7 or by a local government variation. It may also have been prepared at an earlier planning stage and therefore re-included or included by the assessor as it improves the information presented in this Bushfire Management Plan.

Bushfire Hazard Level Assessment	Bushfire Attack Level Contour Map	Bushfire Attack Level Assessment	Identify any issues arising from the BAL contour map or BAL assessment	Identify and specifically address the list of issues related to strategic level planning and defined in the <i>Guidelines</i> s5.2	Demonstrate compliance with the Bushfire Protection Criteria can be achieved in subsequent planning stages	Demonstrate compliance with the Bushfire Protection Criteria
	✓		✓			✓

For vulnerable and high risk land use and development in areas with an extreme bushfire hazard level and/or areas where BAL-40 or BAL-FZ applies, the following additional bushfire planning information will accompany and/or be included in this Bushfire Management Plan.

Vulnerable Land Use		High Risk Land Use	Minor Development	Unavoidable Development
Provision for Emergency Evacuation	Emergency Evacuation Plan for Proposed Occupants	Risk Management Plan for Flammable On-site Hazards	Statements Against SPP 3.7 s6.7.1 items (a) to (d)	Statements Against SPP 3.7 s6.7.2 items (b) and (d)
✓	✓			

Note that for vulnerable and high risk land uses involving Class 4 to Class 9 buildings, the planning process focuses on location, siting, vehicular access and firefighting water supply and not building construction requirements - as the Building Code of Australia only applies to Classes 1, 2, 3 and associated Class 10a buildings or decks. However, the construction requirements as set out in AS 3959 – 2009 can be utilised voluntarily to enhance a buildings survivability if it is subject to a bushfire.

5 Assessment of Bushfire Risk

5.1 Vegetation Assessment/Classification and Ground Slope

5.1.1 Existing Vegetation

All vegetation within 100 metres of the building works has been identified and classified or excluded and presented in Table 5.1.1. This has been done with accordance with AS 3959-2009 and reference to the *Visual Guide for Bushfire Risk Assessment in WA* (WAPC February 2016).

The vegetation has been assessed as it will be in its mature state and where deemed appropriate, in its unmanaged state. The areas of classified vegetation that will determine bushfire risk are defined on the topography and vegetation map Figure 5.1. Representative photos of each vegetation area are presented after the table.

Table 5.1.1: Vegetation types identified, the applied classification and effective slope

All Vegetation Within 100 metres of Buildings			
Vegetation Area	Identified Types (AS3959) or Description if 'Excluded'	Applied Classification	Effective Slope Under Classified Vegetation (degrees)
1	Open Woodland B-06	Class B Woodland	0
2	Open Forest A-03	Class A Forest	4
3	Open Woodland B-06	Class B Woodland	0
4	Open Woodland B-06	Class G Grassland	0
5	Open Woodland B-06	Class B Woodland	4
6	Open Woodland B-06	Class B Woodland	4.8
7	Open Woodland B-06	Class B Woodland	4.1
8	Grassland G - 26	Class B Woodland	0

Note: When more than one vegetation type is present each type is classified separately with the worst-case scenario being applied. The predominant vegetation is not necessarily the worst case scenario.

Vegetation Area 1

Classification Applied: Class B Woodland

Assessment Comment: Onsite woodland, planted eucalypts, minor grass understorey



Photo ID: 1a



Photo ID: 1b

Vegetation Area 2

Classification Applied: Class A Forest

Assessment Comment: Onsite forest, creek line, shrub understorey, eucalypts



Photo ID: 2a



Photo ID: 2b

Vegetation Area 3

Classification Applied: Class B Woodland

Assessment Comment: Onsite woodland, planted eucalypts, minor grass understorey



Photo ID: 3a



Photo ID: 3b

Vegetation Area 4

Classification Applied: Class B Woodland

Assessment Comment: Offsite banksia woodland, shrub understorey, tree height ~10m



Photo ID: 4a



Photo ID: 4b

Vegetation Area 4

Classification Applied: Class B Woodland

Assessment Comment: Offsite banksia woodland, shrub understorey, tree height ~10m



Photo ID: 4c



Photo ID: 4d

Vegetation Area 5

Classification Applied: Class B Woodland

Assessment Comment: Offsite open woodland, no understorey, tree height ~12m



Photo ID: 5a



Photo ID: 5b

Vegetation Area 5

Classification Applied: Class B Woodland

Assessment Comment: Offsite open woodland, no understorey, tree height ~12m



Photo ID: 5c

Vegetation Area 6

Classification Applied: Class B Woodland

Assessment Comment: Offsite banksia woodland, shrub understorey, tree height ~10m



Photo ID: 6a



Photo ID: 6b

Vegetation Area 7

Classification Applied: Class B Woodland

Assessment Comment: Offsite open woodland, grass understorey, eucalypts ~18m high, partly cleared



Photo ID: 7a



Photo ID: 7b

Vegetation Area 8

Classification Applied: Class G Grassland

Assessment Comment: Offsite horse paddocks, open tussock grassland



Photo ID: 8a



Photo ID: 8b

5.1.2 Vegetation Excluded from Classification

Certain areas and vegetation within 100m of the subject site may be assessed as 'low threat or non-vegetated'. These are to be excluded from classification and are therefore rated BAL-LOW. They must be managed to maintain the specifications set out in AS3959-2009 s2.2.3.2 in perpetuity (refer to Appendix 3 'Vegetation Classification Exclusions').

For this assessment, various areas have been excluded from classification as presenting a low bushfire threat. This has been done on the basis that areas of managed gardens surrounding private property are categorised under AS 3959-2009 s2.2.3.2 (f).

5.1.3 Expected On-site Vegetation Changes Due to Proposed Subdivision or Development

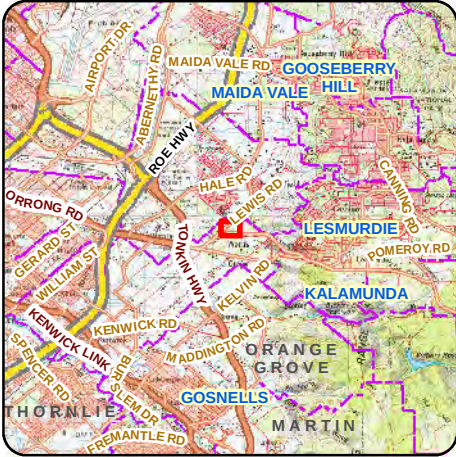
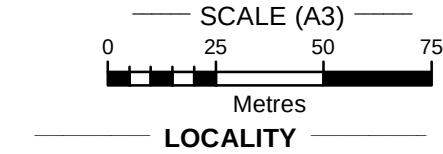
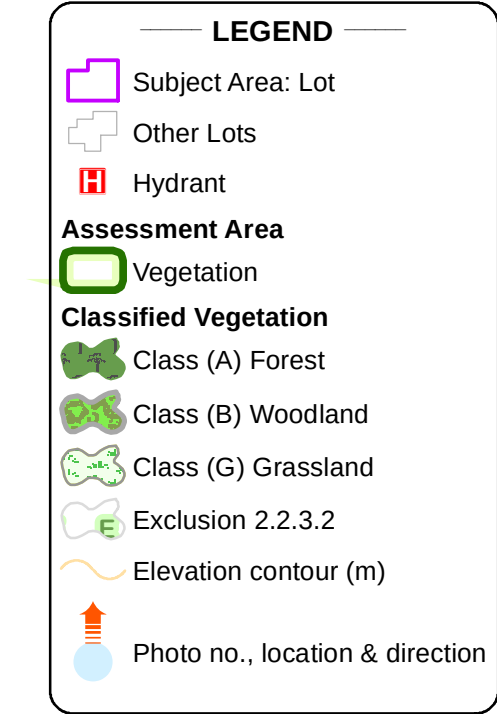
In assessing vegetation for bushfire threat, consideration must be given to possible future vegetation changes likely on the site that is being assessed, particularly those that would have the potential to increase the bushfire risk.

This may be due to growth of existing vegetation or growth of planned landscape plantings, including future roadside or water course re-vegetation. There must be careful consideration of the creation of vegetation corridors where they join offsite vegetation and may provide a route for fire to enter an area of future development.

For this Proposal, the future of the onsite vegetation has been considered. It is expected that most of the vegetation will be removed to make way for the development of car park, buildings and garden areas. This will mean the entire lot will be maintained as "low threat" with a BAL rating of BAL-LOW. It will meet AS 3959-2009 s2.2.3.2 requirements (refer Appendix 3 'Vegetation Classification Exclusions'). Vegetation to be retained or removed are detailed in Figure 5.2.

Figure 5.1
Topography &
Classified Vegetation

Lot 213 on Plan 30747
[No. 28]
Lewis Road
WATTLE GROVE



Aerial Imagery : Landgate/SLIP
Image Date : May/Jul 2018

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Bruce Greentree 08/05/2017
Map updated by: Alex Aitken 17/07/2017
Map updated by: Russell Wornes 18/12/2018



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.
Map Document Path / Name: C:\BushfireProneMapping\MXD\sl\2017\170174_Lot 213 (H28) Lewis Road, Wattle Grove_BMP_(A3L).mxd

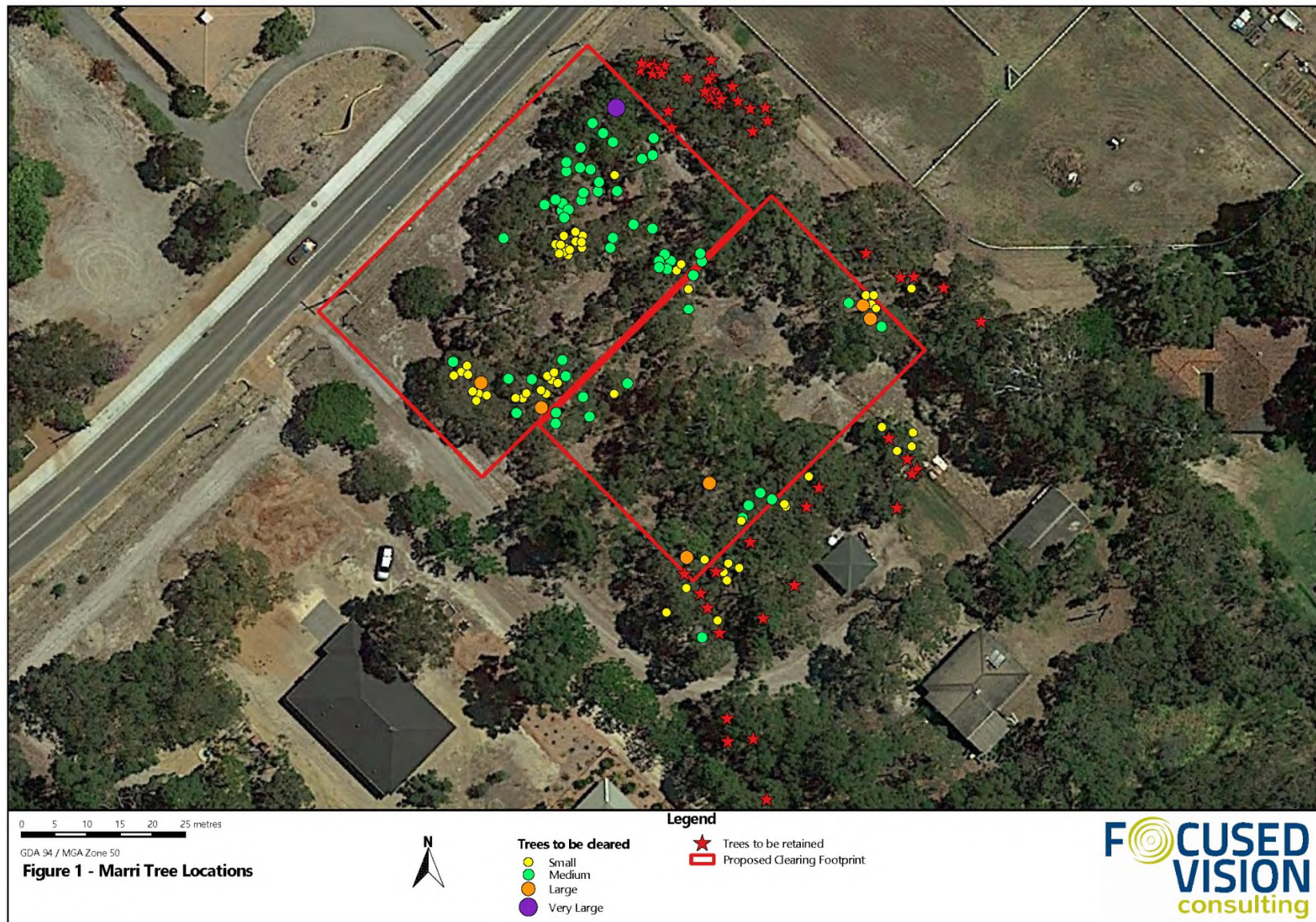


Figure 5.2: Trees to be retained or cleared (Focus

5.2 Bushfire Attack Level (BAL) Assessment – BAL Contour Map

Bushfire Prone Planning's BAL Contour Map Guide

Description and Purpose of the BAL Contour Map ('Guidelines')

A Bushfire Attack Level (BAL) Contour Map identifies land suitable and unsuitable for development and guides the location of building envelopes within a development site. The BAL Contour Map is a scale map of a development site (which can include proposed or an existing lot layout), which identifies indicative BAL ratings across the development site and within the immediate surrounding area. The map illustrates potential bushfire attack levels and radiant heat impacts in relation to any classified vegetation that will remain within 100 metres of the assessment area once development is constructed i.e. when the land has been cleared and all the subdivision works have been undertaken. It needs to take into account any vegetation that will remain or will be introduced when the works are complete (source: WAPC Factsheet "BAL Contour Maps" Version 2 January 2016).

BAL Contour Map Interpretation

The contour map will present different coloured contour intervals constructed around the classified bushfire prone vegetation. These represent the different Bushfire Attack Levels (BAL's) that exist as the distance increases away from the classified vegetation. Each BAL represents a set range of radiant heat flux (refer to Appendix 2) that can be generated by the bushfire in that vegetation. The width of each shaded contour interval (i.e. the applicable vegetation separation distances corresponding to a BAL rating) will vary and is determined by calculations involving vegetation type, fuel structure, ground slope, and climatic conditions (i.e. the expected fire behaviour). They are unique to a site and can vary across a site.

The Primary Use of BAL Contour Mapping - Planning

BAL contour mapping is primarily a planning tool that can give an overview as to the suitability of a site for development with respect to the extent to which bushfire is a potential threat to future buildings and persons on the subject land.

The mapping considers the development site (i.e. all existing or proposed lots) and does not consider the bushfire risk at an individual lot level or over different development time frames. Rather it is assessing the situation that will exist when the entire development has been completed, including any vegetation management that would reasonably be expected to take place as part of establishing buildings on the lots. On this basis, it helps decision makers determine the suitability of the proposed development for planning approval.

As a result, there will be situations where, for the purposes of planning, classifiable vegetation is not contoured (e.g. e.g. Grassland or when the assumption is made that all onsite vegetation can be removed and/or modified). However, at a specific point in time (prior to full completion of a development) this vegetation may impact on a proposed buildings BAL rating.

A Secondary Use of BAL Contour Mapping - Building

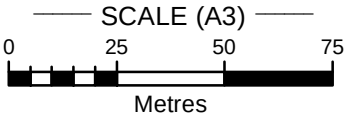
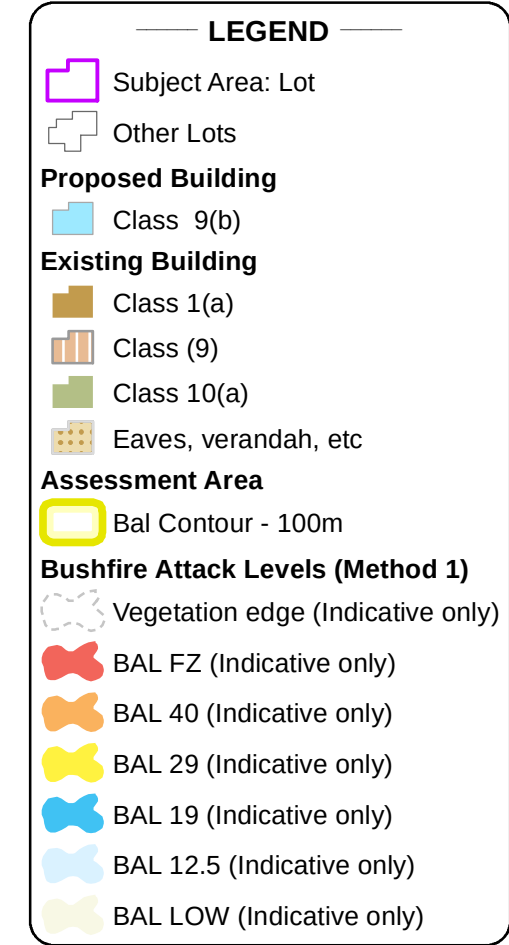
Building approval (and the issue of a building permit) requires that a BAL rating is determined for an actual building and not just a lot or a building envelope (i.e. an 'area'). Determination of this BAL rating must consider the actual location of a building within an individual lot and its separation distance from any classified vegetation at the actual time of applying for building approval. It is a site-specific assessment based on the buildings design and location at a given point in time.

This specific assessment (BAL report and BAL certificate) required for a building application cannot always be derived from an assessment that is primarily designed to inform planning decisions. As a result, there are limitations to obtaining a single BAL rating for a future building of unknown location, from a BAL contour map assessment.

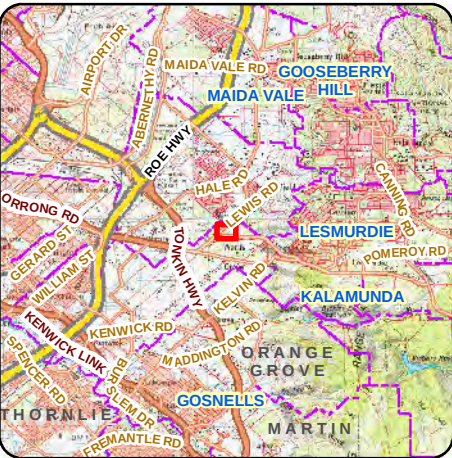
Nonetheless, there are limited specific situations where the required building application information (i.e. a BAL Certificate) might be obtained quickly and cost effectively from a BAL contour map assessment. When these 'determined' BAL's can be derived is explained in Section 5.2.2 'BAL's As Indicated / Determined by the BAL Contour Map'.

Figure 5.2
BAL Contour Map

Lot 213 on Plan 30747
[No. 28]
Lewis Road
WATTLE GROVE

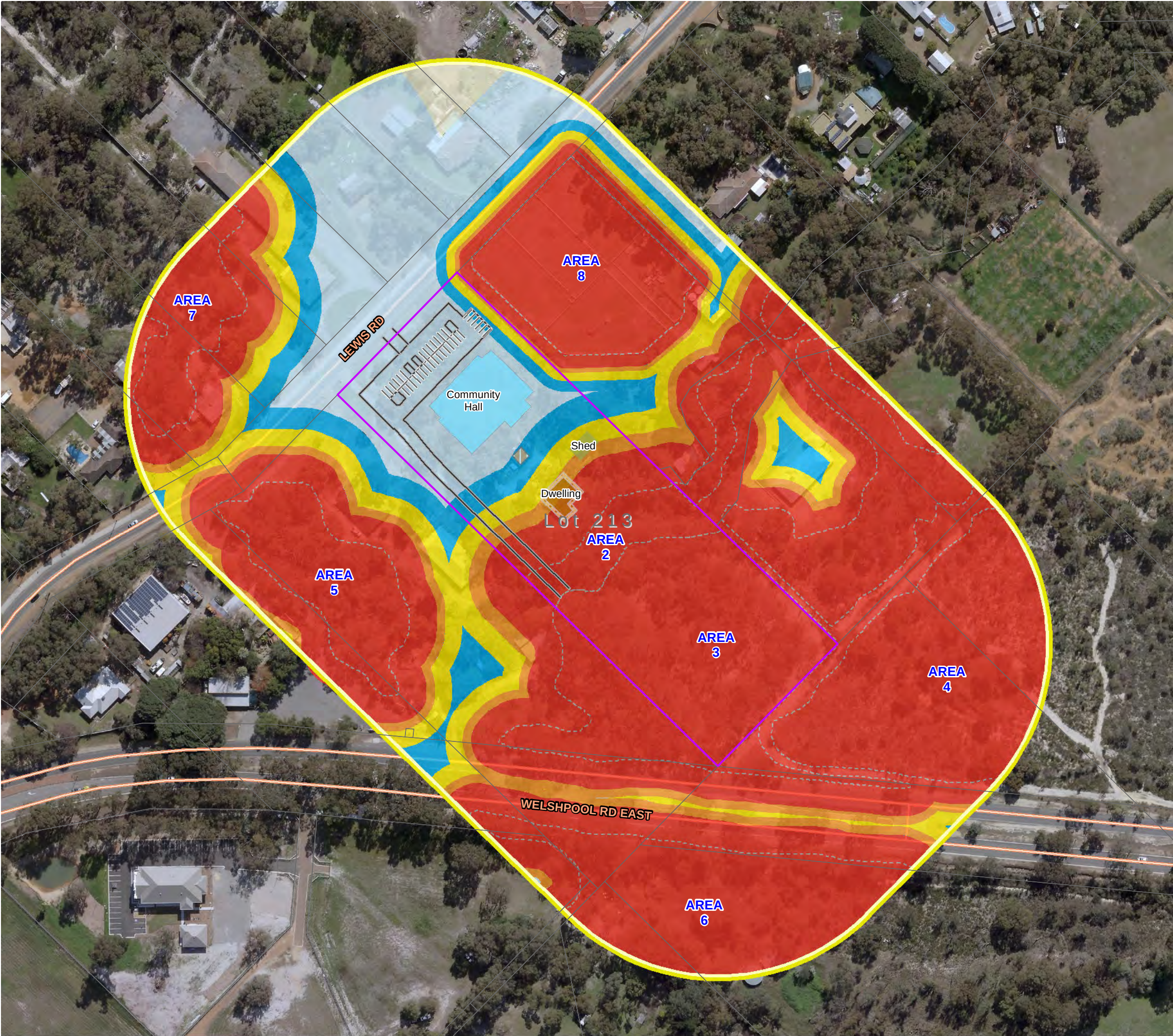


LOCALITY



Aerial Imagery : Landgate/SLIP
Image Date : May/Jul 2018

Coordinate System: GDA 1994 MGA Zone 50
Projection: Universal Transverse Mercator Units: Metre
Map compiled by: Bruce Greentree 08/05/2017
Map updated by: Alex Aitken 17/07/2017
Map updated by: Russell Wornes 18/12/2018



5.2.1 Construction of the BAL Contours

For the subject site, the vegetation separation distance range that corresponds to each Bushfire Attack Level (and represented by Figure 5.2, the BAL Contour Map), has been derived from:

1. An AS3959-2009 Method 1 assessment and sourced from AS3959-2009 Table 2.4.3

Table 5.2.1: Construction of the BAL contours

Statement of Site Data and 'Separation Distance Range' Applied			
Vegetation Area	BAL Assessment Method Used	Site Data Applied in the BAL Assessment	Separation Distance Range Applied/Determined
1-8	AS3959-2009 Method 1	Refer to Table 5.1.1	The distance corresponding to each BAL Rating as per AS3959-2009 Table 2.4.3

Separation Distances Represented by the Mapped BAL Contours					
Separation Distances (metres) – Method 1 (sourced from AS3959-2009 Table 2.4.3)					
Vegetation Area	BAL Rating				
	BAL-FZ	BAL-40	BAL-29	BAL-19	BAL12.5
1, 3, 4 - Woodland, 0 deg	<10	10-<14	14-<20	20-<29	29-<100
5, 6, 7 - Woodland, 0-5 deg	<13	13-<17	17-<25	25-<35	35-<100
2 - Forest, 0-5 deg	<20	20-<27	27-<37	37-<50	50-<100
8 - Grassland, 0 deg	<6	6-<8	8-<12	12-<1	17-<50

5.2.2 BAL's as Indicated / Determined by the Contour Map

Bushfire Prone Planning's Interpretation of Deriving BAL Ratings from the BAL Contour Map

Indicative BAL Ratings

If the assessed BAL for a lot or building envelope (the 'area') is stated as being 'indicative', it is because that 'area' is impacted by more than one BAL contour interval and/or classifiable vegetation remains on the lot, or on adjacent lots, 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 all onsite vegetation can be removed and/or modified). In this report the indicative BAL is presented as either the highest BAL impacting the 'area' or as a range of achievable BAL's within the 'area' – whichever is the most appropriate.

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. It usually requires an onsite visit and a BAL assessment report to be produced before the certificate can be issued.

Determined BAL Ratings

If the assessed BAL for a Lot or building envelope (the 'area') or existing building, is stated as being 'determined' it is because that 'area' or building is impacted by a single BAL contour interval. This has been determined by offsite classified vegetation, and no classifiable vegetation currently exists on the lot or on adjacent lots (i.e. it has been cleared to a minimal fuel, low bushfire threat state).

As a result, a determined BAL can be provided in this limited situation because:

1. No classified vegetation is required to be removed or modified to achieve the determined BAL, either within the lot or on adjacent lots (or if vegetation is excluded from classification, it is reasonable to assume it will be maintained in this state into the future); and
2. A future building can be located anywhere within the 'area' and be subject to the determined BAL rating; and
3. The degree of certainty is more than sufficient to allow for any small discrepancy that might occur in the mapping of the BAL contours.

A BAL Certificate (referring to the BAL Contour Map assessment) can be provided for a future building on those 'areas' assessed as having a determined BAL as long as the assessment is still valid and there is no requirement to reassess the vegetation and update the contour map (this is a dependant on the time that has passed since the original assessment). Note also that a BAL Certificate will only remain valid for one year).

Table 5.2.2: Proposed Buildings – Indicative BAL

Indicative Bushfire Attack Level for Proposed Building	
Relevant Fire Danger Index (AS3959-2009 Table 2.1)	80
BAL Determination Method	Method 1 as per AS 3959-2009 s2.2.6 and Table 2.4.3. Refer to Appendix 2 this Plan
Proposed Lots / Buildings	Indicative BAL
Community Hall	BAL-12.5

5.2.3 Identification of Specific Issues Arising from BAL Contour Map

Onsite Vegetation

Vegetation onsite is within the control of the subject site's landowner and therefore can potentially be removed or modified to lower the bushfire risk, subject to any approval being required by a local government.

For this Proposal, the all classified vegetation onsite will be removed or managed to a low threat state. Therefore, the BAL ratings indicated in Figure 5.2 are purely assessed from offsite vegetation.

Offsite Vegetation

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 and as a result the assessed BAL's determined by this vegetation are unable to be reduced.

Existing buildings within lots 213 are subject to BAL ratings of BAL-FZ. It is recommended that action is taken to reduce their potential exposure to flames and radiant heat by increasing the separation distance from the buildings and the classified vegetation and/or where practical, retrofit with appropriate construction. This can be achieved by managing all vegetation within the lot to a low threat state in perpetuity. The result will be a BAL of 12.5 for the existing buildings.

5.3 Existing Habitable Buildings on Subject Site – Assessed BAL's

For existing habitable buildings on the subject site, Table 5.3.1 states the determined Bushfire Attack Level for each specified building.

The recommended bushfire risk management measures to apply to each building are detailed in Section 7 of this Plan.

Table 5.3.1: Determined BAL's of existing habitable buildings

Determined BAL's of Existing Habitable Buildings	
Relevant Fire Danger Index (AS3959-2009 Table 2.1)	80
BAL Determination Method	Method 1 as per AS 3959-2009 s2.2.6 and Table 2.4.3. Refer to Appendix 2 this Plan
Existing Habitable Buildings	BAL Rating determined from the BAL Contour Map (the highest BAL impacting the building)
Residence	BAL-FZ
Shed	BAL-40
Building	BAL-19

6 Environmental Considerations

“Many bushfire prone areas also have high biodiversity values. SPP 3.7 Policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values” (‘Guidelines’ s2.3).

“Clearing of native vegetation in Western Australia requires a clearing permit under Part V, Division 2 of the Environmental Protection Act 1986 unless clearing is for an exempt purpose. Exemptions from requiring a clearing permit are contained in Schedule 6 of the Act or are prescribed in the Environmental Protection Regulations” (‘Guidelines’ s2.3).

Existing conservation areas that are potentially affected by the development proposal are required to be identified. This may result in vegetation removal/modification prohibition or limitations. These areas include:

- National Parks;
- Nature Reserves; and
- Bush Forever sites.

Further, the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act), administered by the Australian Government Department of Environment, provides a national scheme of environment and heritage protection and biodiversity conservation. The objectives of the EPBC Act include the protection of the environment with respect to matters of national environmental significance and conservation of Australian biodiversity.

Nationally threatened species and ecological communities are a specific matter of significance. Areas of vegetation can be classified as a Threatened Ecological Community (TEC) under the EPBC Act and consequently have removal restrictions imposed.

6.1 Native Vegetation and Re-vegetation

Protection of Native Vegetation

For the proposed development site, have any existing conservation areas been identified?	No
Type of existing conservation classification:	N/A
Other identified conservation issue to be considered:	Proximity to Watercourse
For the proposed development site, have any areas of native vegetation been identified as species that might result in the classification of the area as a Threatened Ecological Community (TEC)?	No
Potential TEC species identified:	N/A

Comment: A creek runs through subject site with a 15m buffer proposed as part of this development. There is an existing dwelling partly inside this buffer.

Minimising Removal of Native Vegetation

Establishing development in bushfire prone areas can adversely affect the retention of native vegetation through clearing associated with the creation of Asset Protection and Hazard Separation Zones. Where loss of vegetation is not acceptable or causes conflict with landscape or environmental objectives, it will be necessary to consider available options to minimise the removal of native vegetation.

Riparian Vegetation Maintenance and Re-vegetation

Where, as part of the Proposal, revegetation of waterway foreshore, wetland or coastal buffers is necessary for their protection or management, this bushfire management plan assesses the ability and practicality of maintaining vegetation separation distances corresponding to determined BAL's.

Maintenance and/or re-vegetation of riparian and/or coastal areas is part of this Proposal?	Yes
Can the required BAL separation distance be maintained into the future?	Yes

Comment: The vegetation associated with the creek line, Area 2, is proposed to be retained at this stage of the development. See comments within environmental report completed by Focus Vision Consulting (10 July 2017) has noted a 20m buffer to be maintained on the perennial creek within the subject site.

7 Bushfire Risk Management Measures

7.1 The Bushfire Protection Criteria – Assessment of Compliance

State Planning Policy 3.7 Planning in Bushfire Prone Areas (Dept. of Planning and WAPC 2015) requires an assessment against the bushfire protection criteria requirements contained in the *Guidelines for Planning in Bushfire Prone Areas - WAPC 2017 v1.3 and Appendix 4*).

This assessment is to accompany any strategic planning proposal, subdivision application or development application.

Strategic planning proposals need to demonstrate that compliance can be achieved in subsequent planning stages. Subdivision and development applications must demonstrate compliance within the boundary of the subject site or provide justification for those criteria that are not able to be fully met.

The bushfire protection criteria are divided into four elements location, siting and design, vehicular access and water.

For each element, there is:

1. An intent stating the required outcome (overall aim);
2. A performance principle that is a general statement of how best to achieve the intent; and
3. One or more specific criteria to be addressed and for which an acceptable solution is provided as an example of one way of meeting the criteria (and therefore the elements intent).

A proposals compliance with each element is determined by either one or a combination of the following:

1. For each relevant criterion, fully meeting the requirements of the acceptable solution (which automatically achieves the intent for that criteria); and/or
2. For one or more relevant criteria, not fully meeting the requirements of the acceptable solution but achieving the requirements of the performance principle by employing a relatively minor variation on the acceptable solution; and/or
3. For one or more relevant criteria, developing an alternative solution that will achieve the performance principle.

Bushfire Prone Planning presents the required assessment against all the bushfire protection criteria as a separate table for each element and includes the intent, the performance principle and acceptable solution examples, for convenient reference.

Summarised Outcome of the Assessment Against the Bushfire Protection Criteria

Element <i>each element consists of one or more criteria</i>	Complies With the Acceptable Solution for ALL Relevant Criteria <i>or will comply</i>	Achieves the Intent of the Element for ALL Relevant Criteria <i>or will achieve</i>	Required Basis of the Planning Assessment				Notes	
			Acceptable Solutions	Performance Principle		As Minor or Unavoidable Development		
				Achieves the Intent of the Element (or will achieve)				
				Complies with the Acceptable Solution for ALL Relevant Criteria <i>or will comply</i>	<i>For one or more criterion, the given acceptable solution is not fully met. A variation of the solution is provided and justified.</i>			<i>An Alternative Solution is Developed</i>
Location	Will in the Future	Will in the Future	✓					
Siting and Design of Development	Will in the Future	Will in the Future	✓					
Vehicular Access	Will in the Future	Will in the Future	✓					
Water	Yes	Yes	✓					

Bushfire Protection Criteria - Element 1- Location

Intent: To ensure that strategic planning proposals, subdivision and development applications are located in areas with the least possible risk of bushfire to facilitate the protection of people, property and infrastructure.

Performance Principle P1 (to be complied with to meet the intent and used to develop alternative solutions): The intent may be achieved where the strategic planning proposal, subdivision or development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low **OR** a BAL-29 or below applies **AND** the risk can be managed. For minor or unavoidable development in areas where BAL-40 or BAL-FZ applies, demonstrating that the risk can be managed to the satisfaction of DFES and the decision maker.

Acceptable Solution	Further Explanation	Compliance	Assessment Statements
A1.1 Development Location The strategic planning proposal, subdivision and development application is located in an area where the bushfire hazard assessment is or will, on completion, be moderate or low OR The development is subject to BAL-29 or below.	Land is most suitable for land use intensification where hazard levels are low. Where there is an extreme bushfire hazard level or requirements for use of BAL-40 or BAL-FZ construction standards, the land is not considered suitable for development unless it meets the definition of minor or unavoidable development (which requires WAPC, DFES and local planning approval).	Will Fully Comply with the Acceptable Solution	The proposed development is located within a designated bushfire prone area. By implementing the positioning and vegetation management measures identified in this Plan the proposed development can meet the acceptable solution of being subject to BAL-29 or below. It does not require the use of BAL-40 or BAL-FZ construction standards.

Bushfire Protection Criteria - Element 2 - Siting and Design of Development

Intent: To ensure that the siting and design of development (*note: not building/construction design*) minimises the level of bushfire impact.

Performance Principle P2 (to be complied with to meet the intent and used to develop alternative solutions): The intent may be achieved where the siting and design of the strategic planning proposal, subdivision or development application, including roads, paths and landscaping, is appropriate to the level of bushfire risk that applies to the site. That it minimises the bushfire risk to people, property and infrastructure, including compliance with AS3959 if appropriate.

Acceptable Solution Either or both solutions to be met to the extent that it satisfies Element 1.	Further Explanation	Compliance	Assessment Statements
A2.1 Asset Protection Zone (APZ) Every building is surrounded by an Asset Protection Zone (minimum of twenty metres wide), depicted on submitted plans, which meets the defined requirements. OR Where a full 20 metre APZ is not possible the APZ should be sufficient enough to ensure the potential radiant heat impact of a fire does not exceed 29 kW/m². The specifications for the establishment and maintenance of the APZ are stated in Appendix 3 and Appendix 4.	The APZ is a low fuel area immediately surrounding a habitable or specified building. All requirements in A2.1 are essential and must be achieved to ensure compliance. If the implementation of protection zones was to result in the loss of vegetation that is not acceptable or causes conflict with landscape and environmental objectives, then the development may need to be modified.	Will Fully Comply with the Acceptable Solution	The proposed development meets the acceptable solution: This is achieved by: - Incorporating an APZ, to the extent possible within the boundary of the lot, into the landscaping surrounding the proposed building work and maintaining it to comply with specified requirements into the future; - The extent of the APZ being established within the boundary of the lot results in the potential radiant heat impact of a fire on the proposed building work not exceeding 29kW/m² For land uses involving Class 4 to Class 9 buildings, the planning process focuses on location, siting, vehicular access and firefighting water supply and not building construction requirements - as the Building Code of Australia only applies to Classes 1, 2, 3 and associated Class 10a buildings or decks.

Bushfire Protection Criteria - Element 3 - Vehicular Access

Intent: To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.

Performance Principle P3 (to be complied with to meet the intent and used to develop alternative solutions): The intent may be achieved where the internal layout, design and construction of public and private vehicular access and egress in the subdivision /development allow emergency and other vehicles to move through it easily and safely at all times.

Acceptable Solution	Further Explanation	Compliance	Assessment Statements
A3.1 Two access routes Two different vehicular access routes are provided, both of which connect to the public road network, provide safe access and egress to two different destinations and are available to all residents and the public at all times and under all weather conditions.	This is to apply to access routes leading into a subdivision as well as those within a subdivision. All access should accommodate type 3.4 fire appliances (4WD 7t chassis). Two-way access should be provided as a public road, however, where a public road cannot be provided (and this will need to be demonstrated by the proponent providing justification), an emergency access way may be considered.	Fully Complies with the Acceptable Solution	Lewis Road provides safe access and egress to two different destinations. As a sealed public road, it is available to all residents and the public at all times and under all weather conditions. Access to Lewis Road is via Welshpool Road East at a distance of approximately 295 metres from the proposed development and it is considered that this route has an associated low bushfire risk.

Bushfire Protection Criteria - Element 3 - Vehicular Access (continued)

Intent: To ensure that the vehicular access serving a subdivision/development is available and safe during a bushfire event.

Performance Principle P3 (to be complied with to meet the intent and used to develop alternative solutions): The intent may be achieved where the internal layout, design and construction of public and private vehicular access and egress in the subdivision /development allow emergency and other vehicles to move through it easily and safely at all times.

Acceptable Solution	Further Explanation	Compliance	Assessment Statements
A3.2 Public Road Minimum trafficable surface of 6m. Constructed to meet the technical requirements stated in Appendix 5.	In special circumstances, where ≤ 8 lots serviced, a minimum 4m trafficable surface for a maximum of 90 might be approved.	Fully Complies with the Acceptable Solution	Lewis Road is an existing public road and complies with the Guidelines
A3.3 Cul-de-sacs - (includes dead-end roads). A maximum length of 200m with a 17.5m turnaround. 600m length if cul-de-sacs services ≤ 8 lots and is joined to another cul-de-sac by an emergency access way of < 600 m). Constructed to meet the technical requirements stated in Appendix 5.	Should be avoided in bushfire prone areas as they do not provide access/egress in different directions. Where no alternative exists this will need to be demonstrated by the proponent including if the lot layout already exists. Cul-de-sac is to connect to a public road.	N/A	
A3.4 Battle-axe Maximum length 600m, minimum width 6m, passing bays @ 200m, turnaround area @ 500m and at house site. Constructed to a minimum of private driveway standards. Constructed to meet the technical requirements stated in Appendix 5.	Should be avoided in bushfire prone areas If no alternative exists this will need to be demonstrated by the proponent.	N/A	

Bushfire Protection Criteria - Element 3 - Vehicular Access (continued)

Acceptable Solutions	Further Explanation	Compliance	Assessment Statements
A3.5 Private Driveways Are required where a house is >50m from a public road. Passing bays @ 200m, turnaround area @ 500m and within 50m of house. Bridges/culverts to support 15t. All weather surface. Constructed to meet the technical requirements stated in Appendix 5.		Will Fully Comply with the Acceptable Solution	The private driveway will be >50m in length and will be developed to the required technical requirements from the Guidelines including width, all weather surface and turn around areas.
A3.6 Emergency Access Way Provided as a right of way or public access easement in gross (maximum length of 600m) to ensure accessibility to the public and fire services in emergencies. It should comply with minimum standards for a public road and be signposted. Constructed to meet the technical requirements stated in Appendix 5.	An access way that does not provide through access to a public road is to be avoided in bushfire prone areas. Where no alternative exists this will need to be demonstrated by the proponent. It is to be provided as an alternative link to a public road during emergencies.	N/A	
A3.7 Fire Service Access Routes - (perimeter roads) Provided as rights of way or public access easements in gross; all weather surface and allow for two-way traffic; dead-end roads not permitted; turnarounds every 500m; less than 600m to a public road and be signposted. Constructed to meet the technical requirements stated in Appendix 5.	Fire service access routes should be established to separate bushfire prone areas from developed areas and to provide access within and around the edge of the subdivisions and related development. To be used during bushfire suppression operations and prevention work.	N/A	
A3.8 Firebreak Width Lots greater than 0.5 hectares must have an internal perimeter firebreak of a minimum width of three metres or to the level prescribed in the local firebreak notice issued by the local government.		Will Fully Comply with the Acceptable Solution	The lot will comply with the requirements of the local government annual firebreak notice issued under s33 of the Bush Fires Act 1954.

Bushfire Protection Criteria - Element 4 – Water

Intent: To ensure water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire.

Performance Principal P4 (to be complied with to meet the intent and used to develop alternative solutions): The intent may be achieved where the subdivision, development or land use is provided with a permanent and secure supply that is sufficient for firefighting purposes.

Acceptable Solution	Further Explanation	Compliance	Assessment Statements
A4.1 Reticulated Areas The subdivision, development or land use is provided with a reticulated water supply, in accordance with the specifications of the relevant water supply authority and DFES. Constructed to meet the technical requirements stated in Appendix 6.	The Water Corporations 'No 63 Water Reticulation Standard' is deemed to be the baseline criterion for developments and should be applied unless local water supply authorities' conditions apply. Additionally, any local government variation must be met (s8.4).	Fully Complies with the Acceptable Solution	A reticulated water supply is available in the area of the subject site. A hydrant is located adjacent to the proposed development on Lewis Road.
A4.2 Non-Reticulated Areas Water tanks for firefighting purposes with a hydrant or standpipe are provided. Minimum of 50,000l/tank; minimum 1 tank/25 lots (or part thereof); house ≤2km from a tank; 20min turnaround time for 2.4 appliance; hardstand area suitable for 3.4 appliance within 3m of tank Must meet the technical requirements stated in Appendix 6. Any local government variation must also be met (s8.4).	The specification of the requirements for the proposal being assessed will be set by the water supply authority and DFES. A procedure must be in place to ensure that water tanks are maintained at or above the designated capacity at all times, including home tanks on single lots. This could be in the form of an agreement with the local government and the fire service. Water tanks and associated facilities are vested in the relevant local government	N/A	
A4.3 Non-reticulated Areas (Individual Lots) Single lots above 500 m ² need a dedicated static water supply on the lot that has the effective capacity of 10,000 litres. Must meet the technical requirements stated in Appendix 6.	A4.3 is only for use if creating one additional lot and cannot be applied cumulatively.	N/A	

7.2 Location of Buildings and Applicable BAL's

Future buildings on the proposed lot are to be located in areas where an appropriate Bushfire Attack Level rating can be achieved and where minimal removal of valuable existing native vegetation is required to achieve this rating. The intent is to have the subject land of this Proposal located in an area where the bushfire hazard level is, or will on completion, be moderate or low or be subject to a maximum Bushfire Attack Level of BAL-29.

The proposed location of the community hall building will result in it being subject to BAL-12.5. As such it is located appropriately but the required separation distances from the classified vegetation will need to be maintained. These distances are stated in the next section of this Plan, Section 7.3 'Vegetation Management'.

The current development application is to including the new community hall building with associated carpark and driveway, retaining the existing dwelling and sheds.

7.3 Vegetation Management

Ongoing Maintenance of Assessed 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 (refer to Appendix 3) 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; and
3. Where a local government issues an annual firebreak notice under s33 of the Bush Fires Act 1954, this will be complied with.

Bushfire Protection Zones

The *Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 v1.3)* set out the requirements to create an Asset Protection Zone (APZ) and a Hazard Separation Zone (HSZ). The aim of these bushfire protection zones is to have a fire of diminishing intensity and flame length as it approaches development. These reduced fuel loads will reduce the intensity of radiant heat onto the buildings, thereby increasing their survivability. This will also be important for firefighter and occupant’s safety during fire suppression activities.

Asset Protection Zone (APZ) – This is to be established, within a subject lot’s boundary such that a building will not be subject to a BAL rating greater than BAL-29. On a lot size where it is possible to achieve, it is to be a minimum width of 20 metres and increased when directed to the width required such that a building will not be subject to a BAL rating greater than BAL-29.

The APZ must be maintained as either a non-vegetated area or as low threat vegetation managed in a minimal fuel condition as per AS 3959-2009 s2.2.3.2 (e) and (f). A minimal fuel condition is stated in the standard as meaning “there is insufficient fuel available to significantly increase the severity of the bushfire attack” and being “recognisable as short cropped grass for example to a nominal height of 100mm.”

Hazard Separation Zone (HSZ) - Where the lot size permits, a Hazard Separation Zone (HSZ) should also be established.

Refer to Appendix 3 and Appendix 4 for specific technical requirements.

Establishing the APZ

An Asset Protection Zone (APZ) creating a low fuel area will be required to be incorporated into the landscaping surrounding current and any future buildings on the lot.

Vegetation will be removed from this site to enable construction to take place. It is proposed to modify the Vegetation Area 1 to the extent that it achieves either the minimum separation distances to attain the BAL-12.5 rating determined achievable with the required separation distances from the identified areas of classified vegetation (as set out in Table 7.3.1).

Minimum Vegetation Separation Distances

To retain the stated BAL rating of BAL-12.5 the separation distances from the classified vegetation to the proposed building will need to be maintained to at least the minimum distances shown in Table 7.3.1.

This minimum separation distance from any classified vegetation, that corresponds to the proposed building's assessed BAL will be maintained as either a non-vegetated area or as low threat vegetation managed in a minimal fuel condition as per AS 3959-2009 s2.2.3.2 (e) and (f). A minimal fuel condition is stated in the standard as meaning "there is insufficient fuel available to significantly increase the severity of the bushfire attack" and being "recognisable as short cropped grass for example to a nominal height of 100mm." Refer to Appendix 3 of this Plan for further detail.

It is also recognised that the local government issues an annual firebreak notice under s33 of the Bush Fires Act 1954 and this will be complied with.

Ongoing Maintenance of Classified and Excluded Vegetation

Classified vegetation onsite will be modified to the standards of excluded vegetation as per AS3959-2009 to attain the minimum separation distances as shown in Table 7.3.1.

Table 7.3.1: Ongoing maintenance of the separation area from any future building works to the classified vegetation (refer to Figure 5.1 for vegetation area details)

The Minimum Separation Distance Required to Retain the Determined BAL Rating						
Vegetation Area	1	2	3	5	7	8
Proposed Building with Determined BAL of BAL-12.5						
Minimum Separation Distance	29	50	29	29	50	17

Note that the classified vegetation associated with the BAL ratings indicated in Table 7.3.1, is primarily vegetation that is offsite (i.e. outside a subject lot). This offsite vegetation has been assessed as it would exist in its mature and unmanaged state. It is a bushfire threat that the owner of the subject land (of this Proposal) has no control over but the level of bushfire threat will not increase above that assessed in this Plan.

7.4 Vehicular Access

The intent of the 'Vehicular Access' element of the bushfire protection criteria is "to ensure that the vehicular access/egress servicing a subdivision/development is available and safe during a bushfire event". The performance principle to be met is that "The internal layout, design and construction of public and private roads must allow emergency and other vehicles to move through the subdivision/development easily and safely at all times".

The required outcome is that in the event of a bushfire, personal safety must be able to be maintained when travelling on the access/egress route.

How this Proposal complies with the acceptable solutions for the vehicular access criterion and is stated in Section 7.1 'The Bushfire Protection Criteria – Assess and Demonstrate Compliance'. If additional information is required to further demonstrate compliance and/or present alternative solutions, this is presented below in this Section 7.4 'Vehicular Access'.

Vehicular Access - Acceptable Solution A3.1 - Two Access Routes

Lewis Road provides safe access and egress to two different destinations. As a sealed public road it is available to all residents and the public at all times and under all weather conditions.

The proposed carparks and private driveway will be developed to comply with the technical requirements of the Guidelines including 6m width, all weather surface and appropriate turn around areas for a 3.4 fire appliance.

7.5 Firefighting Water Supply

The intent is to ensure water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire. This intent may be achieved where the subdivision, development or land use is provided with a permanent and secure supply that is sufficient for firefighting purposes.

A reticulated water supply exists for the proposed development with a hydrant is located on the verge outside of 28 Lewis Road.

7.6 Building Construction Standards

Building Classes 1, 2, 3 and 10a

The Building Code of Australia (BCA) contains bushfire construction requirements that are applied to residential buildings of Class 1, 2 or 3 and associated Class 10a buildings and decks. These are required by the BCA to be designed and constructed to reduce the risk of ignition from a bushfire, appropriate to the potential for ignition caused by burning embers, radiant heat or flame generated by a bushfire, and the intensity of the bushfire attack on the building - as quantified by the BAL rating for the development site.

The BCA references *AS3959-2009 Construction of buildings in bushfire prone areas* or the *(NASH) Standard – Steel Framed Construction in Bushfire Prone Areas* (for Class 1a and 1b buildings only) as deemed to satisfy solutions that provide one way of complying with the Building Code's bushfire performance requirements.

Note: Higher construction standards can be either applied by a planning authority or presented as a part of an alternative solution in this Plan to enable compliance with the intent of the Bushfire Protection Criteria.

Buildings Classes 4 to 9

The BCA does not require Class 4-9 buildings to meet bushfire performance requirements. However, the responsible planning authority may condition planning approval with the requirement for the building works to be designed and constructed to reduce the risk of ignition from a bushfire - or a proponent might voluntarily adopt this approach.

The required bushfire performance measures will be those necessary to reduce the potential risk of ignition caused by burning embers, radiant heat or flame generated by a bushfire, and the intensity of the bushfire attack on the building - as quantified by the assessed BAL rating for the development site.

These measures would need to be determined by a Fire Engineer (with reference to AS3959-2009), certified in working drawings and approved by the responsible authority.

Bushfire Prone Planning Recommendation – in line with the intent of State Planning Policy 3.7 of preserving life and reducing the impact of bushfire on property and infrastructure, we recommend that the construction of a Class 4-9 building should apply bushfire performance measures appropriate to the assessed BAL rating. The appropriate bushfire performance measures will need to be determined by a Fire Engineer and approved by the responsible planning authority.

7.6.1 Existing Habitable Buildings on the Subject Site

Building Classes 1, 2, 3 and 10a

Class 1, 2 and 3 buildings and Class 10a associated buildings and decks, constructed prior to the requirement to comply with bushfire performance requirements, do not need to meet these requirements.

The *Guidelines for Planning in Bushfire Prone Areas (WAPC 2017 v1.3)* state, “The policy measures of SPP 3.7 and these Guidelines are not to be applied retrospectively” (Guidelines s2.2). Further, the WA Building Commission ‘Building in Bushfire Prone Areas’ information note states “Building standards and regulations are generally not retrospective”.

Buildings Classes 4 to 9

Buildings of Class 4 to Class 9 are not required by the Building Code of Australia (BCA) to be constructed to comply with bushfire performance requirements. Although responsible authorities may require it.

Retrospectively upgrading buildings to assist in reducing bushfire risk to persons and property is a voluntary choice.

***Bushfire Prone Planning Recommendation** - As the existing buildings exist in a bushfire prone area and may be subject to a bushfire attack, Bushfire Prone Planning recommends that some degree of upgrading be considered to improve the protection for occupants and the building’s survivability. At a minimum protection from ember attack should be considered (i.e. constructed to the standard required for BAL-12.5).*

The BAL contour map indicates that the existing buildings are subject to a BAL rating of BAL- FZ and BAL-29. These buildings would be a priority to consider with respect to taking action to reduce the BAL that they are subject to. By modifying the onsite vegetation associated with the creek line to reduce the fuel and potentially increase the separation distance may reduce the BAL rating. This may not be possible to the vegetation associated with a creek line. The applicable approvals will need to be attained prior to any removal of vegetation.

8 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.

8.1 Vulnerable Land-Use – Definition / Application / Requirements

Is this 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 this 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 2017 v1.3):

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 ‘Guidelines expand this and state that vulnerable uses of land are typically those that are considered to have occupants with a lesser capacity to respond in the event of a bushfire and that may present evacuation challenges.

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”.

Examples of ‘vulnerable’ land uses include (but are not limited to) hospitals, nursing homes and retirement villages, tourist accommodation including camping grounds and ecotourism, childcare centres, educational establishments, places of worship and corrective institutions. The definition may also encompass places of assembly, retail and office premises, as well as subsidiary uses of residential development, such as family day care centres or home businesses, and essential infrastructure such as energy, transport, telecommunications and other utilities.

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

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

Required Information

- 1. In areas where BAL-12.5 – BAL-29 applies, a subdivision or development application will not be supported unless it is accompanied by a Bushfire Management Plan (BMP) jointly endorsed by the relevant local government and the State authority for emergency services;
- 2. The BMP is to include an assessment against the bushfire protection criteria requirements demonstrating compliance within the boundary of the development site.
- 3. Subdivision applications are to make provision for emergency evacuation;
- 4. Development applications should include a bushfire evacuation plan for proposed occupants; and
- 5. Where BAL-40 or BAL-FZ applies, applications will not be supported unless they meet the definition of 'minor' or 'unavoidable' development.

As part of the Proposal it is recognised that an emergency evacuation plan for occupants is required to be created.

9 Responsibilities for Implementation & Maintenance

This section sets out the responsibilities of landowners/proponents (including future landowners), builders and local government in relation to the implementation and maintenance of the requirements of SPP 3.7 and the 'Guidelines'.

9.1 Landowner / Proponent Responsibilities (and those acting on their behalf)

Implementation

- Ensure anyone listed as having responsibility under the Plan has endorsed it and is provided with a copy for their information. This includes the landowners/proponents, local government and any other authorities or referral agencies ('Guidelines' s4.6.3).
- Construction of private driveways must comply with the standards (Appendix 5 'Vehicular Access').
- Implement the low fuel Asset Protection Zone (APZ) as per s7.3 'Vegetation Management' and Appendix 4 'APZ'.
- Ensure all future buildings the landowner/proponent has responsibility for, are designed and constructed in full compliance with the requirements of the WA Building Act 2011 and the referenced Building Code of Australia (BCA), and with any identified additional requirements of the relevant local government. This should include due consideration of constructing any Class 4-9 buildings to the standard corresponding to their determined BAL even though not required by the BCA.

For any Class 1, 2, or 3 buildings and associated Class 10a buildings or decks this will include compliance with AS 3959-2009 *Construction of Buildings in Bushfire Prone Areas* (2009 as amended) and/or the National Association of Steel Housing – (NASH) *Standard – Steel Framed Construction in Bushfire Prone Areas*, whereby construction standards corresponding to the assessed BAL will be applied (Appendix 2 'Bushfire Risk Assessment – Methodology Explained').

- There is an outstanding requirement, created by this bushfire management plan, that before occupancy of the proposed Community Hall, a bushfire evacuation plan that addresses the circumstance of bushfire will be required. This may form part of an overall emergency evacuation plan.

Deposited Plan and Certificate of Title – Potential Obligation

The local government may condition a development application approval with a requirement for the landowner/proponent to register a notification onto the certificate of title (and may need to be included on the deposited plan). This will be done pursuant to Section 70A Transfer of Land Act 1893 as amended ('Factors affecting use and enjoyment of land, notification on title:'). This is to give notice of the bushfire hazard and any restrictions and/or protective measures required to be maintained at the owner's cost.

This condition ensures that:

1. Landowners/proponents are aware their lot is in a designated bushfire prone area and of their obligations to apply the stated bushfire risk management measures; and
2. Ensures that potential purchasers are alerted to the Bushfire Management Plan so that future landowners/proponents can continue to apply the bushfire risk management measures that have been established in the Plan.

Maintaining Compliance

- Current and future landowners/proponents must continue to apply the bushfire management measures set out in this Plan. They must inform any builders (of future structures on a Lot) of the existence of the Plan and the responsibilities it contains.
- The landowner/proponent is responsible for the ongoing review and implementation of the Bushfire Management Plan to ensure that the bushfire risk management measures remain effective. Bushfire plans do not expire and should be seen as a 'living document'. They may require updating in certain circumstances, including (but not limited to) if site conditions change, if further details are required at subsequent stages of the planning process or to reflect new technologies or methodologies in best practice bushfire risk management ('Guidelines' s4.6.4 and s4.6.5).
- Respond to and comply with fire protection or hazard management notices issued by the local government. This includes compliance with the Shire of Kalamunda Fire Break notice (the current requirements can be found on the Shire of Kalamunda website), issued under s33 of the Bush Fires Act 1954 as directed by the 'Guidelines' s6.1 and referenced in this Plan s7.3 'Vegetation Management', s9.7 'Local Government Firebreak Notice' and Appendix 4 'APZ and HSZ'.
- Maintain the low fuel Asset Protection Zone (APZ) within the Lot boundary as per s7.2 'Vegetation Management' and Appendix 4 'APZ'.

- The stated minimum separation distance (refer to s7.3 Table 7.3.1) from any classified vegetation, that corresponds to a particular lot's assessed BAL, must be maintained as either a non-vegetated area or as low threat vegetation managed in a minimal fuel condition as per AS 3959-2009 s2.2.3.2 (e) and (f). A minimal fuel condition is stated in the standard as meaning "there is insufficient fuel available to significantly increase the severity of the bushfire attack" and being "recognisable as short cropped grass for example to a nominal height of 100mm." Refer to Appendix 3 of this Plan for further detail.
- 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.
- Any classified vegetation that has directly contributed to the determined BAL rating for a given Lot or building, must be managed such as to not change that vegetation to a higher risk classification.

9.2 Builder Responsibilities

The builder (generally named on the building permit) is responsible for ensuring that the building or incidental structure to which a building permit applies is, on completion, compliant with the Building Code of Australia (BCA).

For Classes 1a, 1b, 2, 3 and associated 10a buildings or decks located in a designated bushfire prone area, compliance with the BCA requires that these buildings are constructed to the requirements corresponding to their bushfire attack level rating.

The construction standards for Class 1a and 1b buildings are contained in:

- *AS 3959 - 2009 Construction of buildings in bushfire prone areas; or*
- *National Association of Steel Housing – (NASH) Standard – Steel Framed Construction in Bushfire Prone Areas.*

The construction standards for Classes 2, 3 and associated 10a buildings or decks are contained in:

- *AS 3959 - 2009 Construction of buildings in bushfire prone areas.*

The building/s must also comply with any additional local government requirements.

For any Class 4-9 buildings the builder must comply with any construction requirements that are additional to those contained in the BCA. Of particular issue is any requirement, made by the relevant local government or the owner, to construct to the standard corresponding to the determined BAL for proposed buildings.

9.3 Local Government Responsibilities

Implementation

- Provide advice where the clearing of locally significant vegetation is proposed.
- Register this Bushfire Management Plan and keep a record of the sites referred to for the purpose of identify servicing and infrastructure gaps. ('Guidelines' s4.6.4).

Maintaining Compliance

- Develop and maintain district bushfire fighting services and facilities.
- Monitor landowner compliance with the annual firebreak notice issued under s33 of the Bush Fires Act 1954.

Appendix 1 – Onsite Vegetation Management

It is the responsibility of the landowner to maintain the established bushfire protection measures on their property. Not complying with these responsibilities can result in buildings being subject to a greater potential impact from bushfire than that determined by the assessed BAL rating presented in this Bushfire Management Plan.

For the management of vegetation within a lot (i.e. onsite) the following technical requirements exist:

1. **The APZ:** Installing and maintaining an asset protection zone (APZ) of the required dimensions to the standard established by the Guidelines for Planning in Bushfire Prone Areas (WA Planning Commission, as amended). When, due to the planning stage of the proposal to which this Bushfire Management Plan applies, defined APZ dimensions are known and are to be applied to existing or future buildings – then these dimensions are stated in Section 5.4.1 of this Plan.
2. **The Firebreak/Fuel Load Notice:** Complying with the requirements established by the relevant local government's annual firebreak notice issued under s33 of the Bushfires Act 1954. Note: If an APZ requirement is included in the Notice, the standards and dimensions may differ from the Guideline's APZ Standard – the larger dimension must be complied with.
3. **Changes to Vegetated/Non-Vegetated Areas:**
 - a. If applicable to this Plan, the minimum separation distance from any classified vegetation, that corresponds to the determined BAL for a proposed building, must be maintained as either a non-vegetated area or as low threat vegetation managed to a minimal fuel condition as per AS 3959-2009 s2.2.3.2 (e) and (f). Refer to Part 4 of this Appendix 1.
 - b. Must not alter the composition of onsite areas of classified vegetation (as assessed and presented in Section 3.1.2) to the extent that would require their classification to be changed to a higher bushfire threat classification (as per AS 3959-2009); and
 - c. Must not allow areas within a lot (i.e. onsite) that have been:
 - i. excluded from classification by being low threat vegetation or non-vegetated; and
 - ii. form part of the assessed separation distance that is determining a BAL rating -

...to become vegetated to the extent they no longer represent a low threat (refer to Part 4 of Appendix 1). Note: The vegetation classification exclusion specifications as established by AS 3959-2009 s2.2.3.2, are included at A1.4 below for reference.

1. Requirements Established by the Guidelines – the Asset Protection Zone (APZ) Standards

(Source: Guidelines for Planning in Bushfire Prone Areas - WAPC 2017 v1.3 Appendix 4, Element 2, Schedule 1 and Explanatory Note E2.1)

Defining the Asset Protection Zone (APZ)

Description: An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level (by reducing fuel loads). The width of the required APZ varies with slope and vegetation. For planning applications, the minimum sized acceptable APZ is that which is of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29). It will be site specific.

The APZ may include public roads, waterways, footpaths, buildings, rocky outcrops, golf courses, maintained parkland as well as cultivated gardens in an urban context, but does not include grassland or vegetation on a neighbouring rural lot, farmland, wetland reserves and unmanaged public reserves.

For subdivision planning, design elements and excluded/low threat vegetation adjacent to the lot can be utilised to achieve the required vegetation separation distances and therefore reduce the required dimensions of the APZ within the lot.

Defendable Space: The APZ includes a defendable space which is an area adjoining the asset within which firefighting operations can be undertaken to defend the structure. Vegetation within the defendable space should be kept at an absolute minimum and the area should be free from combustible items and obstructions. The width of the defendable space is dependent on the space which is available on the property, but as a minimum should be 3 metres.

Establishment: The APZ should be contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot or lots will be managed in a low-fuel state on an ongoing basis, in perpetuity.

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

Schedule 1: Standards for APZ

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 mm in thickness reduced to and maintained at an average of two tonnes per hectare (example below).

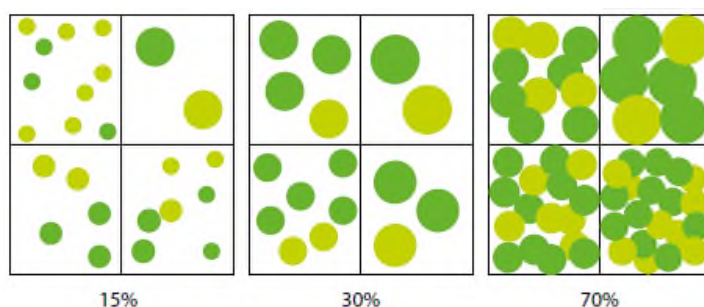
Example Fine Fuel Load of Two Tonnes per Hectare



(Image source: Shire of Augusta Margaret River's Firebreak and Fuel Reduction Hazard 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. Diagram below represents tree canopy cover at maturity.

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 mm 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 mm or less.

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

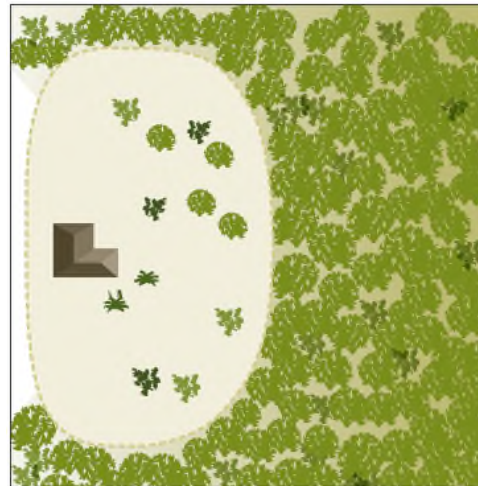
Hazard on one side

APZ



Hazard on three sides

APZ



2. Requirements Established by the Local Government – the Firebreak Notice

These requirements are established by the relevant local government’s Firebreak Notice created under s33 of the Bushfires Act 1954 and issued annually (potentially with revisions). The Notice may include additional components directed at managing fuel loads, accessibility and general property management with respect to limiting potential bushfire impact.

The relevant local government’s current Firebreak Notice is available on their website, at their offices and is distributed as ratepayer’s information. It must be complied with.

If Asset Protection Zone technical requirements are defined in the Notice, the standards and dimensions may differ from the Guideline’s APZ Standards, with the intent to better satisfy local conditions. When these are more stringent than those created by the Guidelines, or less stringent and endorsed by the WAPC and DFES, they must be complied with.

When, due to the planning stage of the proposal to which this Bushfire Management Plan applies, defined APZ dimensions are known and are to be applied to existing or future buildings – then these dimensions are stated in Section 5.4.1 of this Plan.

3. Requirements Recommended by DFES – Property Protection Checklists

Further guidance regarding ongoing/lasting property protection (from potential bushfire impact) is presented in the publication ‘DFES – Fire Chat – Your Bushfire Protection Toolkit’. It is available from the Department of Fire and Emergency Services (DFES) website.

4. Requirements Established by AS 3959-2009 - Maintaining Areas within your Lot as 'Low Threat'

This information is provided for reference purposes. This knowledge will assist the landowner to comply with Management Requirement No. 3 set out in the Guidance Panel at the start of this Appendix. It identifies what is required for an area of land to be excluded from classification as a potential bushfire threat.

"Australian Standard - AS 3959-2009 Section 2.2.3.2: Exclusions - Low threat vegetation and non-vegetated areas:

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

- a) Vegetation of any type that is more than 100m from the site.*
- b) Single areas of vegetation less than 1ha in area and not within 100m of other areas of vegetation being classified.*
- c) Multiple area of vegetation less than 0.25ha in area and not within 20m of the site or each other.*
- d) Strips of vegetation less than 20m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m of the site or each other, or other areas of vegetation being classified.*
- e) Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.*
- 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."*