



Lot 19 Sixty Eight Road,
Baldivis, WA
Version 2.0

BMP No: BMP24372v2.0

Bushfire Management Plan
Proposed Development of Single Lot
Sb- Multi Lot Subdivision

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Bushfire Management Plan Coversheet

Addressing the Bushfire Protection Criteria

Site Address: Lot 19 Sixty-Eight Road, Baldivis, Western Australia,

Site Visit: Yes No

Date of site visit: 2nd May 2024

Report Author: Dwayne Griggs, WA Fire & Safety

(BMP) Bushfire Management Plan Number: BMP 24372v2.0

BMP Date: 8th May 2024

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)?		X
Have any of the bushfire protection criteria elements been addressed using a performance principle (tick no if only acceptable solutions have been used to address all the bushfire protection criteria elements)?		X
Is the proposal any of the following (see SPP 3.7 for definitions)?		
Unavoidable development (in BAL-40 or BAL-FZ)		X
Strategic planning proposal (including rezoning applications)		X
High risk land-use		X
Vulnerable land-use		X

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

The information provided within this bushfire management plan to the best of my knowledge is true and correct:



Dwayne Griggs, WA Fire & Safety, 8th May 2024

Document control

Report version	Purpose	Author/reviewer and accreditation details	Date submitted
1.0	Approval of a 68 Lot Subdivision	Dwayne Griggs Level 2- BPAD40466	7 th May 2024
2.0	Addition of a Landscape Plan	Dwayne Griggs Level 2- BPAD40466	8 th May 2024

Disclaimer

The Bushfire Management Plan prepared by WA Fire & Safety (Dwayne Griggs BPAD40466), is solely intended for the use of:

1. Current & future landowners
2. Developers & contractors engaged by the current landowners
3. Local Government Authority (LGA)

The enclosed strategies intended for the mitigation of the bushfire risk for this development are the minimum standard and the risk is assessed to the ability of the bushfire consultant and provided information from all stakeholders at the time of the accepted task.

This BMP considers the bushfire aspects of planning only and does not consider all the environmental aspects involved. A limited environmental survey has been completed and further consultation and/or approval for vegetation clearances is up to the Local Government Authority (LGA).

The setbacks and distances for the Asset Protection Zone(s) APZs should be confirmed at the time of vegetation modification for the proposed structures and after the vegetation clearance a final inspection may be required to provide a to confirm distance and issue a BAL certificate, thus ensuring the correct risk mitigation distances has been achieved, the decision for a final inspection is up to the LGA.

There is no guarantee that in the event of a bushfire that property loss will not occur, and the author has used the information provided, appropriate guidelines and due care to provide what they believe is the best possible solution to combat a relatively unpredictable fire threat.

WA Fire & Safety (Dwayne Griggs) excludes all liability for any damage, loss, injury or claim from any fire event, by the acceptance of this BMP the property owner is made aware and agrees to this exclusion of liability.

The ongoing responsibility falls on the landowner for the correct site maintenance to maintain the BAL Levels outlined inside this BMP and their continuance to mitigate the risks involved with extreme fire behaviour. The poor maintenance of vegetation, fuel loads, APZ requirements, Local government fire break notices and fire risk mitigation strategies provided within this BMP can severely impact the level of risk that a fire event can have. If the landowner believes that any factors have changed or modified the potential risk, then the bushfire consultant should be informed, and a new BMP may be required.

On submission of this BMP the landowner authorises direct contact from the LGA to the bushfire consultant for any issues, changes, or queries, contact details are below.

This Bushfire Management Plan is Valid for 3 years from the date completed.

Compliance Statement

This document has been prepared in accordance to the State Planning Policy 3.7 Planning in bushfire prone areas 2021 and the Guidelines for planning in bushfire prone areas v1.4 December 2021.

Bushfire Management Plan Author & Reviewer:
WA Fire & Safety, Maida Vale, Western Australia
Dwayne Griggs
Level 2 FPAA Accredited Practitioner
Accreditation Number: BPAD40466
Phone: 0415684681
Email Admin@wafiresafety.com.au



1.0 Introduction and Proposal Details

This BMP has been requested by the landowners for the proposed subdivision of Lot 19 Sixty Eight Road, Baldivis, Western Australia, within the LGA of the City of Rockingham.

The zoned rural development lots are currently identified as inside the bushfire prone area, they are currently in an undeveloped state.

This proposed application is for a 68-lot subdivision, with a balance lot to the south, balance lot will remain undeveloped and will be managed with an APZ of lot in entirety until future development.

The assessed bushfire risk for the lots is Low to extreme, BAL-29 or less is achievable for lots with an APZ (Asset Protection Zone).

1.1 Site Location

The proposed development is located on Solis Boulevard and Hayling Way with access from East, South and West.

1.2 Aims and Objectives

The aim of this Bushfire Management Plan is to identify issues, requirements and provide bushfire risk mitigation measures for the proposed development. Aims for this site include:

- avoid increasing the threat to people, property and infrastructure
- reduce the developments vulnerability from extreme bushfire behaviour
- allow ingress and egress for fire and emergency services
- consider and minimize environmental impacts by reducing vegetation modification.

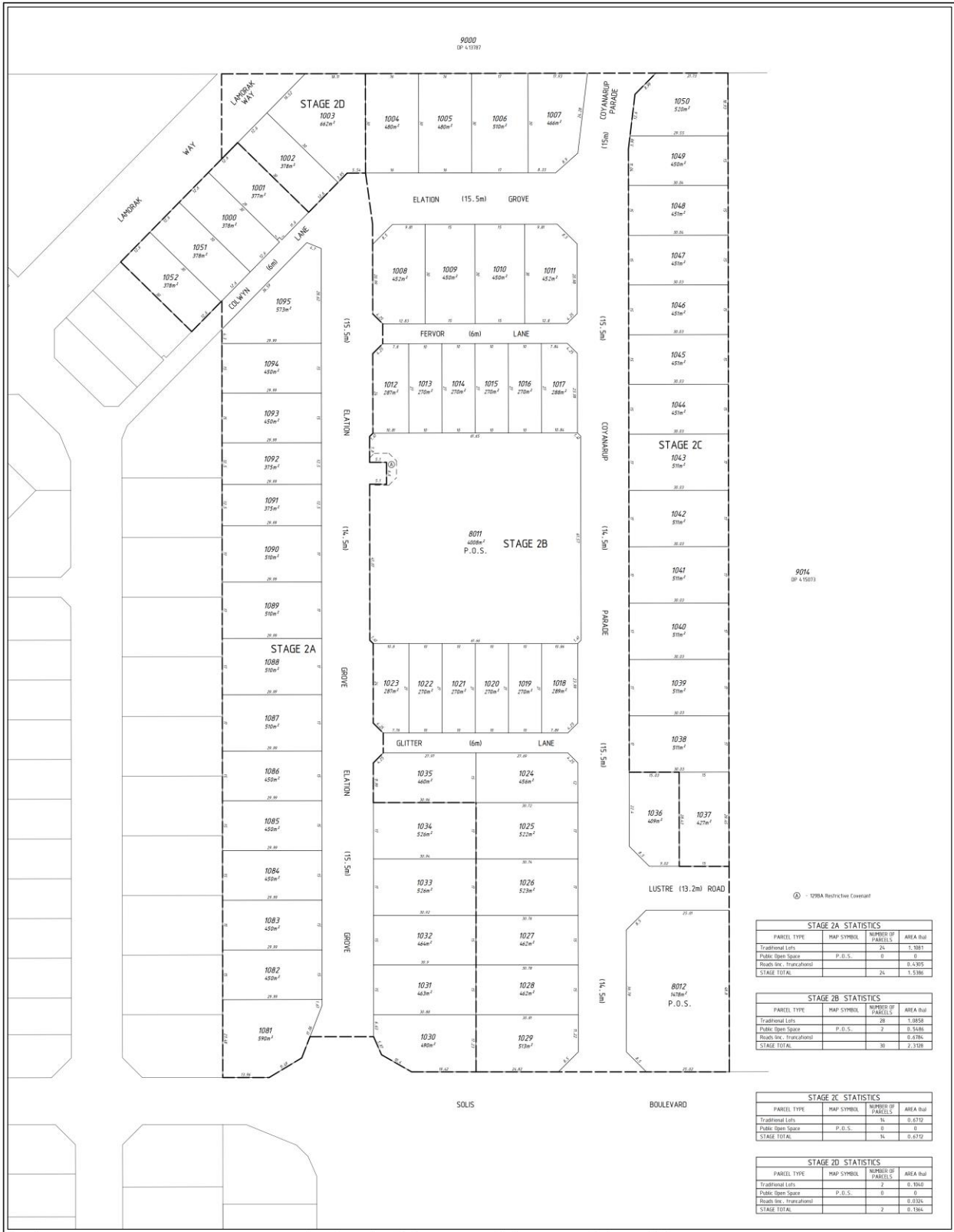
The objectives of this Bushfire Management Plan are to:

- demonstrate suitability for development
- display bushfire risk levels, fuels, vegetation types and the impact before and after
- show Bushfire management strategies recommended for the site
- demonstrate compliance with the bushfire protection criteria and the use of acceptable solutions for the site.

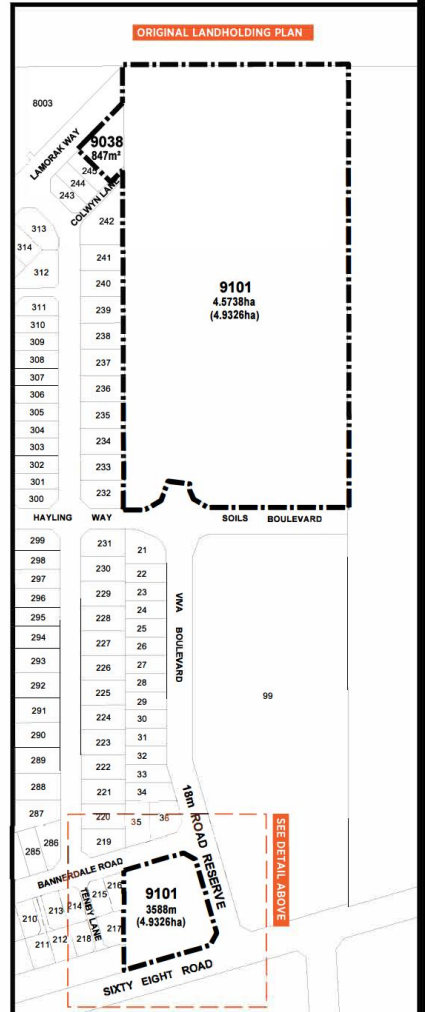
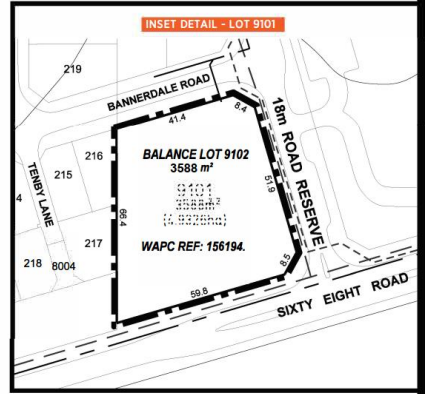
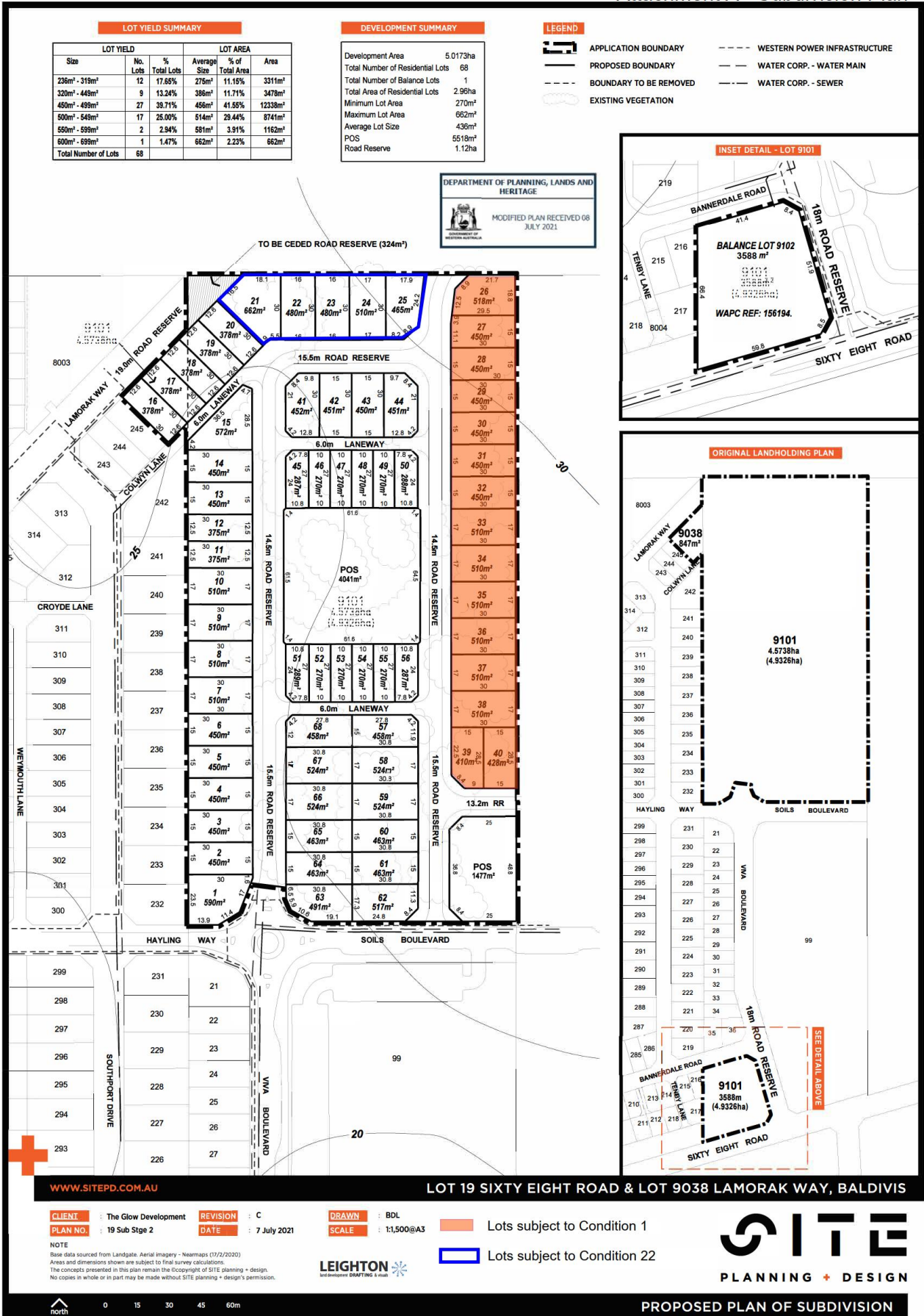
1.3 Document Preparation

Dwayne Griggs from WA Fire & Safety a BPAD Level 2 accredited practitioner with the Fire Protection Association of Australia has conducted the site assessment and prepared this BMP.

FIGURE 1: Copy of Site Plans



<p>LOT 19101, SIXTY EIGHT ROAD STAGE 2 NORTHERN PORTION Baldivis</p> <p>The Glow Development (WA) Pty Ltd</p>		<p>101892 - 008 - E</p>	
<p>Ver. Description</p> <p>1.0 SCALE 1:500 @ A1 - 1:1000 @ A3</p> <p>ALL DISTANCES ARE IN METRES</p> <p>For a true to scale reproduction of this plan, plot it to A1 with the Pacing Scaling set to None.</p>		<p>PLANNER'S DESIGN SOURCE for Rev A Name: GSE Received date: 25/03/2021 File name: 19101_19 Sub Stage Book.pdf</p> <p>ENGINEER'S DESIGN SOURCE for Rev E Engineer: Prithvi Prasad Received date: 25/03/2021 Date approved: Prasad REVISIONS: 01 Rev D.P.pdf</p>	
<p>FILES</p> <p>44482050 - 91509 Control Register - 91509 File Name: 191929-008.dwg</p> <p>PRELIMINARY LEGEND</p> <p>See Notes for Street view for the 'Interim' plan.</p> <p>..... Stage Boundary</p> <p>..... Vehicle Access Restriction</p>		<p>MNG</p> <p>M/S MELBURN HOLDINGS PTY LTD Level 2, 1000 Lakeside Drive Parkville, VIC 3042 Ph: 03 9493 1000 Fax: 03 9493 1001 www.mng.com.au M.A. 0044, 0045, 0046</p> <p>Project No: 101892 - 008 - E Drawn: Prasad Date: 25/03/2021</p>	



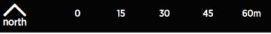
WWW.SITEPD.COM.AU

CLIENT : The Glow Development
PLAN NO. : 19 Sub Stg 2
REVISION : C
DATE : 7 July 2021

DRAWN : BDL
SCALE : 1:1,500@A3

■ Lots subject to Condition 1
■ Lots subject to Condition 22

NOTE
 Base data sourced from Landgate. Aerial imagery - Nearmaps (17/2/2020)
 Areas and dimensions shown are subject to final survey calculations.
 The concepts presented in this plan remain the copyright of SITE planning + design.
 No copies in whole or in part may be made without SITE planning + design's permission.



PROPOSED PLAN OF SUBDIVISION

FIGURE 2: Proposed Location

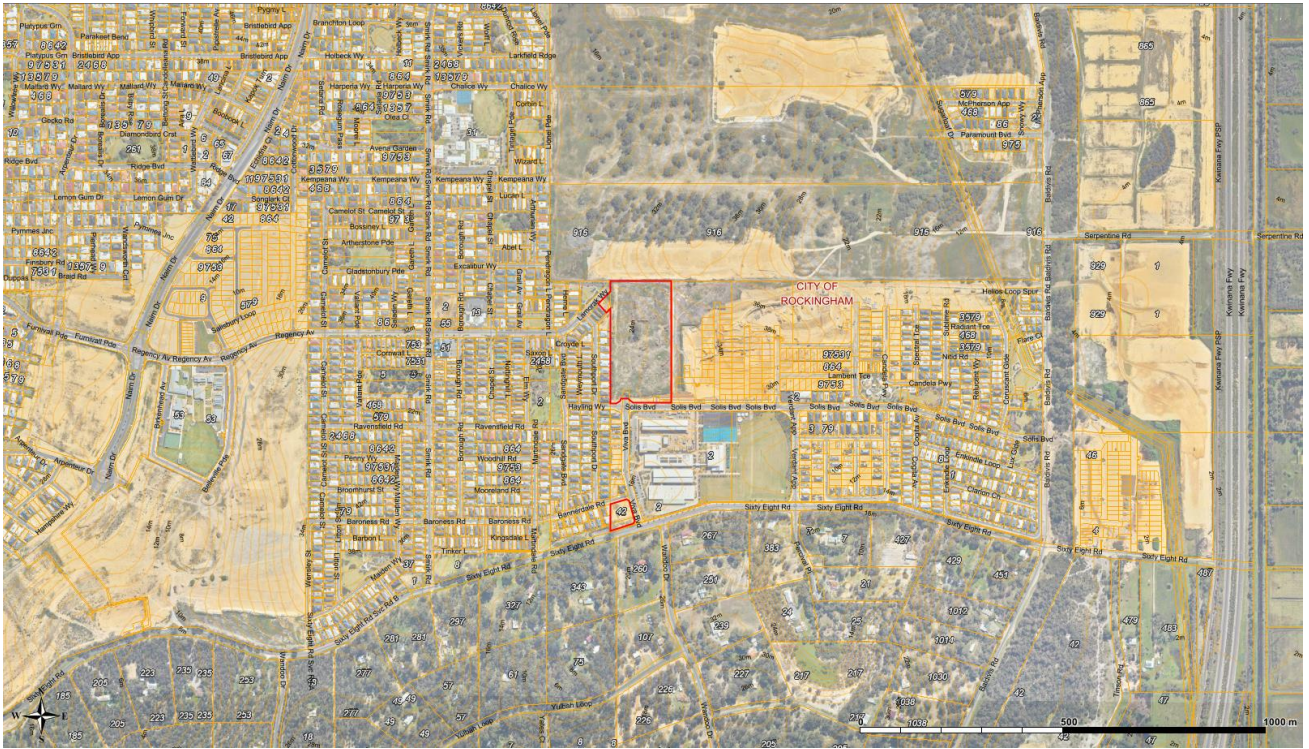
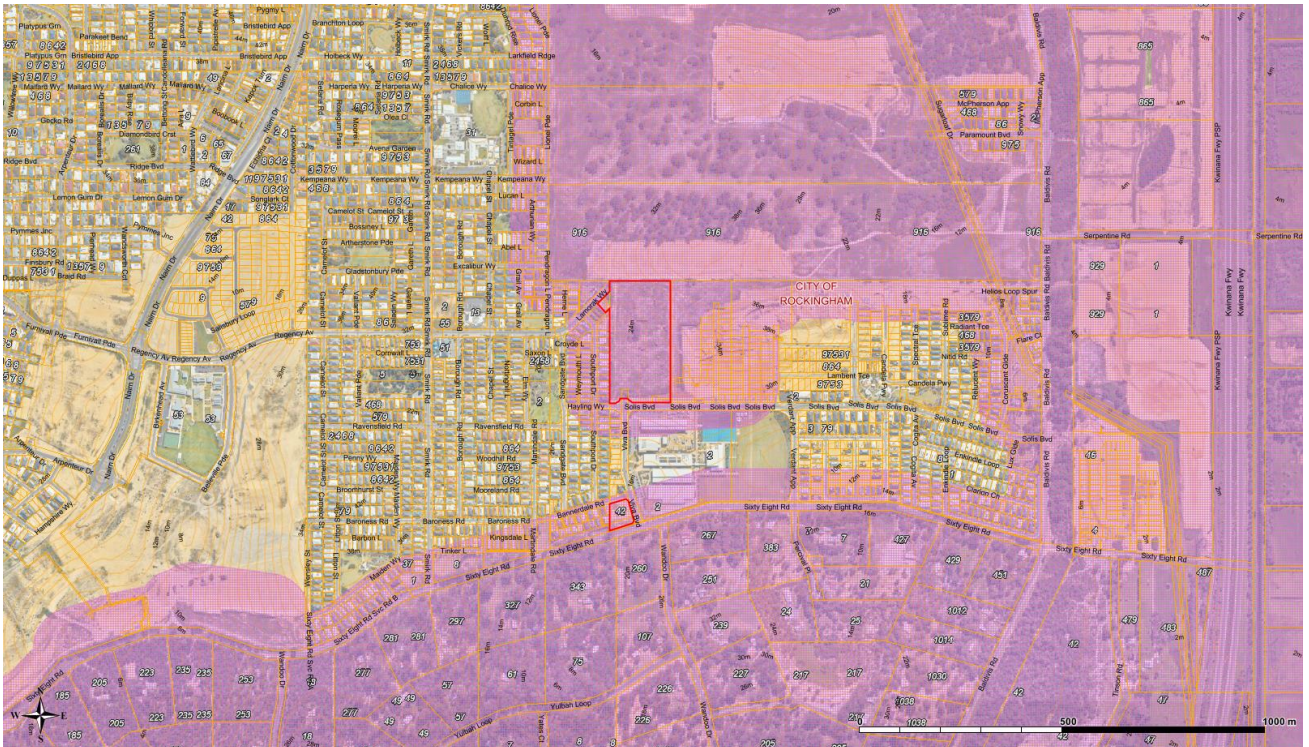


FIGURE 3: Map of Bushfire Prone Areas for the subject site



Site is entirely inside the bushfire prone area.

1.0 Environmental Considerations

Limited considerations below have been assessed with the area being inside DPLH-019:

Department of Biodiversity, Conservation and Attractions (DBCA)

Conservation category wetlands and buffer **DBCA-019**, -nil

Augusta to Walpole **DBCA-017** -nil

RAMSAR wetlands (**DBCA-010**) -nil

Threatened and priority flora (**DBCA-036**)-May require investigation.

Threatened Ecological Communities (**DBCA-038**)-May require investigation.

Department of Planning, Lands and Heritage

Bush Forever areas 2000 (**DPLH-019**)- Lots are entirely inside.

Department of Water and Environmental Resources (DWER)

Clearing regulations – Environmentally Sensitive Areas (**DWER-046**)- nil

Swan Bioplan Regionally Significant Natural Areas 2010 (**DWER-070**)- nil

Department of Primary Industries and Regional Development (DPIRD)

Conservation Covenants Western Australia (**DPIRD-023**)-May require investigation.

2.1 Native vegetation – Modification and Clearing

The area of 658m² of class A Forest and 418m² of class G Grassland will be required to be modified to the Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas – Appendices (appendix 1) and the requirements of the Local Government Authority Firebreak Notice (Appendix 2) in order to establish an APZ of 12.5 or less.

There are no alternative bushfire management design solutions that will reduce the extent of vegetation clearing as the location has been provided to minimise vegetation modification.

The proposed layout will result in an appropriate balance between bushfire risk mitigation and vegetation retention.

2.2 Revegetation/Landscape Plans

Revegetation inside the APZ will be designed and maintained as per the standards for APZ's (Appendix 1) and the Local Government Authority Firebreak Notice (Appendix 2)

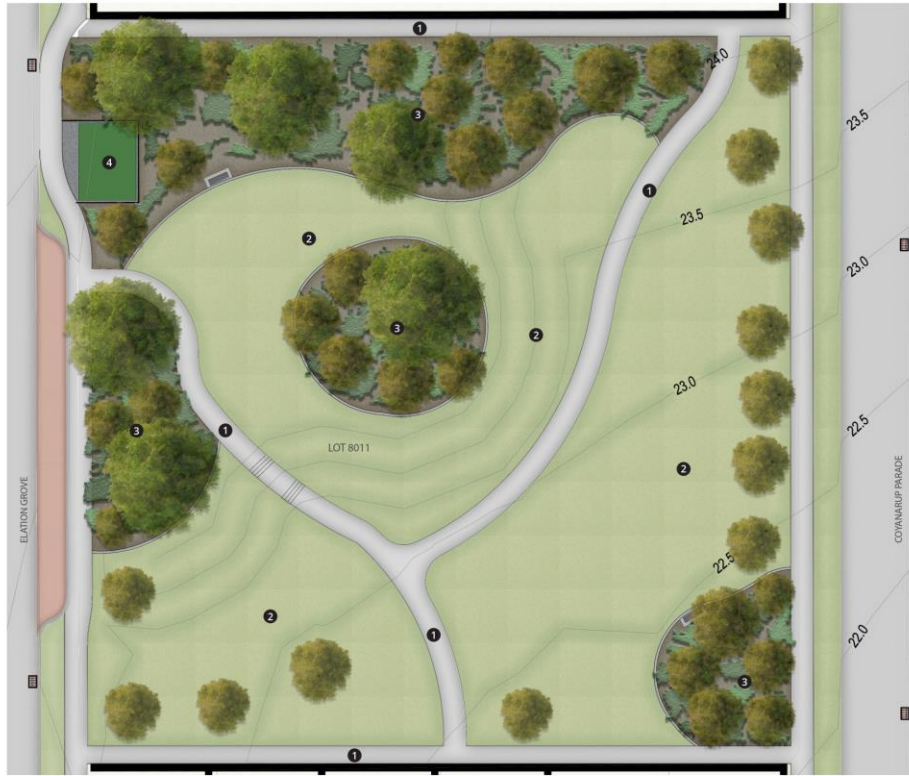
Figure 4: Basic Landscape Plan (low threat grassed area)

Lot 19 Sixty Eight Road, Baldy, Western Australia

Bushfire Management Plan – BAL Contour

Central POS:

Lot 19 Sixty Eight Road - POS 8012 - UWMP
Landscape Input



- Landscape Concept**
- Minor nature play opportunities and local team to skate path.
- Planting Strategy**
- POS planting to be predominately native species
 - Informal clumps of native trees framed with larger native trees
 - Ensure tree species selected have clear trunks for optimal passive surveillance
- Environmental Response**
- Waterside planting strategy
 - Water zoning
 - Controlled fertilisation
 - Consider ongoing maintenance requirements
- Irrigation Strategy**
- All proposed turf and planting to be irrigated

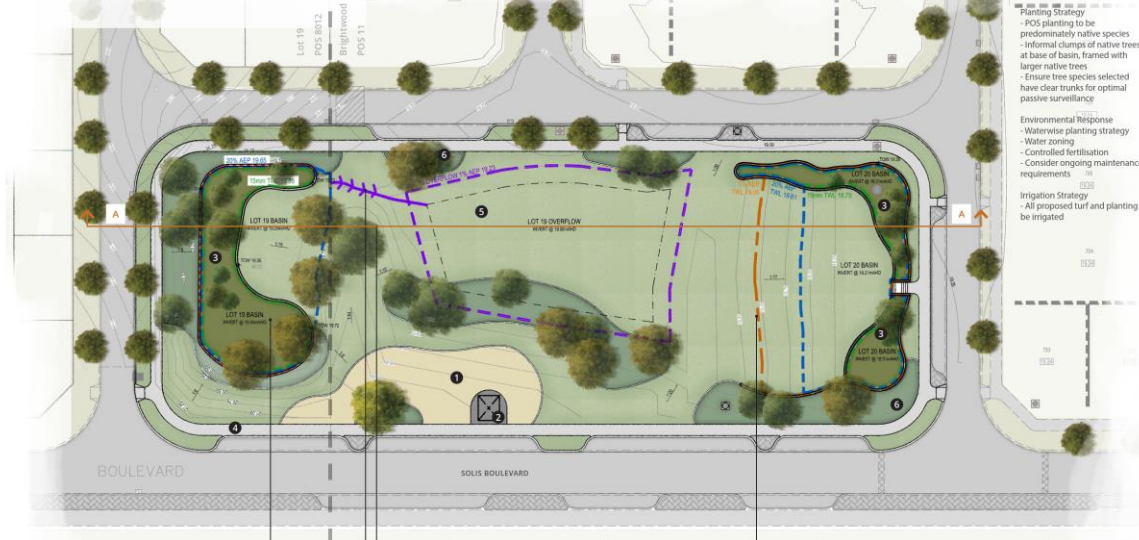
- Legend**
- 1 2.0m Pedestrian Path
 - 2 Open Turf Area
 - 3 Garden bed with native plan
 - 4 Transformer

0 2 4 6 8 10 metres north
POS LANDSCAPE CONCEPT PLAN
scale 1:250
NOTE: Design is subject to water allocation, detailed design, budget allocation and approval with City of Rockingham. Road reserve boundary to be confirmed with additional feature survey and engineering.

LD TOTAL THE GLOW DEVELOPMENT (WA) PTY LTD 10.7179 PROJECT NO. C 29.04.2024 DATE 5 OF 5 PAGES

South-East POS:

Lot 19 Sixty Eight Road - POS 8012 - UWMP
Landscape Input



- Landscape Concept**
- Drainage function POS planted with native species
 - Playground and node to POS South (near School Site)
- Planting Strategy**
- POS planting to be predominately native species
 - Informal clumps of native trees at base of basin, framed with larger native trees
 - Ensure tree species selected have clear trunks for optimal passive surveillance
- Environmental Response**
- Waterside planting strategy
 - Water zoning
 - Controlled fertilisation
 - Consider ongoing maintenance requirements
- Irrigation Strategy**
- All proposed turf and planting to be irrigated

- Legend**
- 1 Playground
 - 2 Node with Shelter and Picnic Setting
 - 3 Planted Drainage Basin
 - 4 2.0m Pedestrian Path
 - 5 Open Turf Area
 - 6 Garden bed with native planting

Lot 19 Overflow - 1:100 ARI
Locally shape ground to ensure spillway between basin and Lot 20 space (spillway outlet level RL 19.65)
Lot 20 Drainage Basin - 1:1, 1:5 and 1:100 ARI
Lot 19 Drainage Basin - 1:1 and 1:5 ARI

0 2 5 10 15 20 25 30 metres north
POS LANDSCAPE CONCEPT PLAN
scale 1:500
NOTE: Design is subject to water allocation, detailed design, budget allocation and approval with City of Rockingham. Road reserve boundary to be confirmed with additional feature survey and engineering.

LD TOTAL THE GLOW DEVELOPMENT (WA) PTY LTD 10.7179 PROJECT NO. C 29.04.2024 DATE 1 OF 5 PAGES

3.0 Bushfire Assessment Results

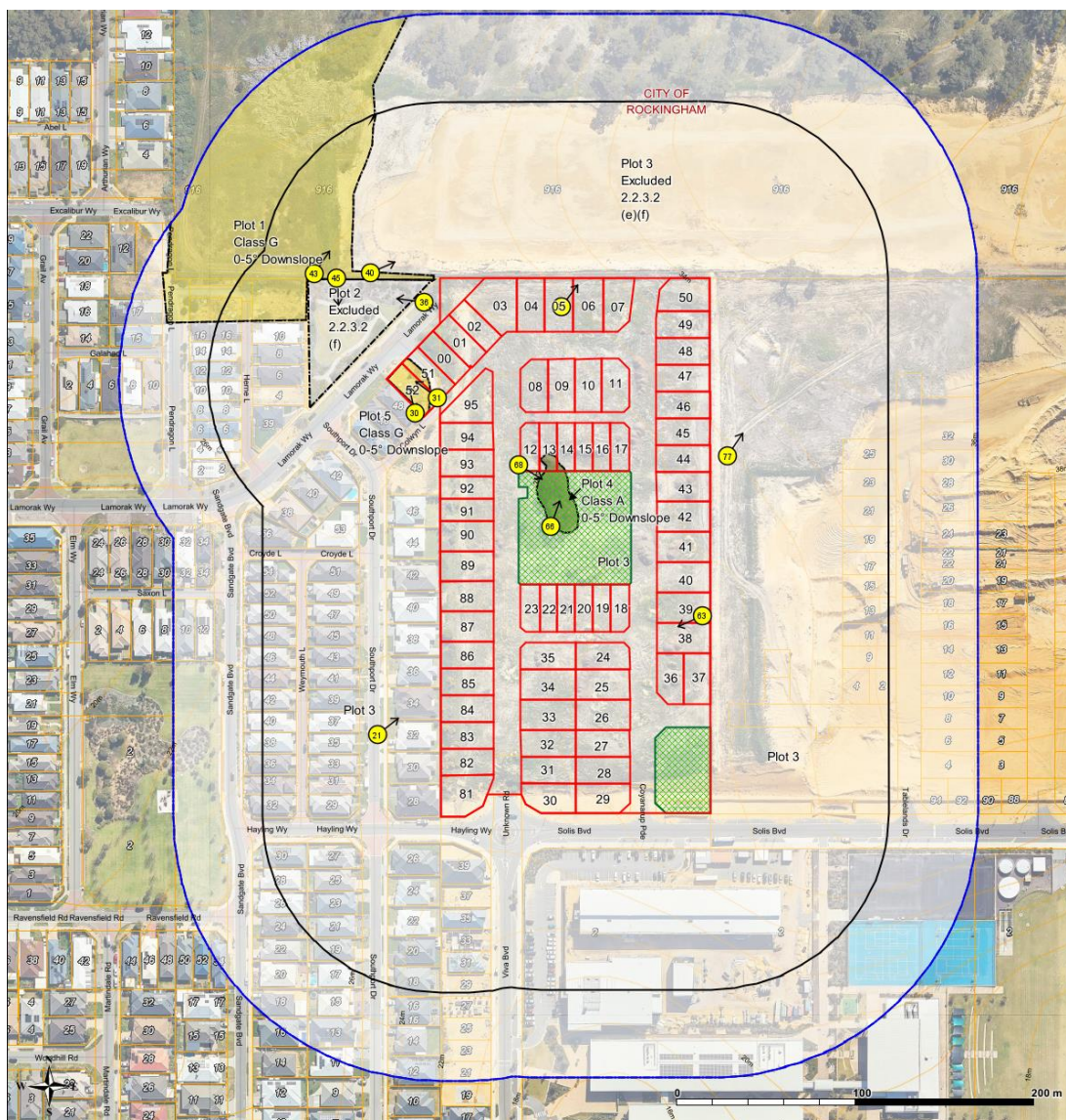
The site requires a BAL assessment in accordance with clause 6.5 of SPP 3.7. The assessment of this site or development was undertaken by Dwayne Griggs of WA Fire & Safety, a BPAD Accredited Level 2 Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018 Simplified Procedure (Method 1). All vegetation within 150m of the proposed site has been assessed and classified in accordance with AS3959.

3.1 Vegetation Classification



Vegetation and land use within 150 m of the site has been classified as per descriptions included in AS 3959 – 2018 Construction of Buildings within Bushfire Prone Areas.



All vegetation inside the 150m Vegetation survey is either Class A Forest or Class G Grassland.

FIGURE 5: Vegetation Classification Map (Lots are numbered example. 1006 = 06)






Legend																																																																							
<ul style="list-style-type: none"> Photo points 100m Vegetation Survey MAIN 150m Vegetation Survey Exc 2.2.2(a) MAHI 150m Survey 	<table border="1"> <tr> <td>ALL Lots</td> <td>1006</td><td>1013</td><td>1020</td><td>1027</td><td>1034</td><td>1041</td><td>1048</td><td>1083</td><td>1090</td> </tr> <tr> <td></td> <td>1000</td><td>1007</td><td>1014</td><td>1021</td><td>1028</td><td>1035</td><td>1042</td><td>1049</td><td>1084</td> </tr> <tr> <td></td> <td>1001</td><td>1008</td><td>1015</td><td>1022</td><td>1029</td><td>1036</td><td>1043</td><td>1050</td><td>1085</td> </tr> <tr> <td></td> <td>1002</td><td>1009</td><td>1016</td><td>1023</td><td>1030</td><td>1037</td><td>1044</td><td>1051</td><td>1086</td> </tr> <tr> <td></td> <td>1003</td><td>1010</td><td>1017</td><td>1024</td><td>1031</td><td>1038</td><td>1045</td><td>1052</td><td>1087</td> </tr> <tr> <td></td> <td>1004</td><td>1011</td><td>1018</td><td>1025</td><td>1032</td><td>1039</td><td>1046</td><td>1081</td><td>1088</td> </tr> <tr> <td></td> <td>1005</td><td>1012</td><td>1019</td><td>1026</td><td>1033</td><td>1040</td><td>1047</td><td>1082</td><td>1089</td> </tr> </table>	ALL Lots	1006	1013	1020	1027	1034	1041	1048	1083	1090		1000	1007	1014	1021	1028	1035	1042	1049	1084		1001	1008	1015	1022	1029	1036	1043	1050	1085		1002	1009	1016	1023	1030	1037	1044	1051	1086		1003	1010	1017	1024	1031	1038	1045	1052	1087		1004	1011	1018	1025	1032	1039	1046	1081	1088		1005	1012	1019	1026	1033	1040	1047	1082	1089
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<ul style="list-style-type: none"> Property boundary(Size) Public Open Spaces 	<ul style="list-style-type: none"> Balance Lot 9102 (3588m2) Lot 9101 (4.5738ha) POS (1) 4008m2 POS (2) 1478m2 																																																																						
<ul style="list-style-type: none"> State Roads Other Roads DIRD 2m Contours Local Government Authority 	<ul style="list-style-type: none"> A. Forest, -5 Excluded, ef, 0 Excluded, f, 0 G. Grassland, -5 																																																																						

Photo ID:	43	Plot:	1	<p>BRG: 35° NE (T) POS: -32.356483, 115.817125 ±3 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:18:24</p>
Vegetation Classification or Exclusion Clause				
Class G Grassland				
Description / Justification for Classification				
Grassland of >100mm in Height Canopy Cover of 10-30% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads				
Photo ID:	40	Plot:	1	<p>BRG: 67° NE (T) POS: -32.356479, 115.817464 ±3 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:17:44</p>
Vegetation Classification or Exclusion Clause				
Class G Grassland				
Description / Justification for Classification				
Grassland of >100mm in Height Canopy Cover of 10-30% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads				
Photo ID:	36	Plot:	2	
Vegetation Classification or Exclusion Clause				
Excludable - 2.2.3.2(f) Low Threat Vegetation				
Description / Justification for Classification				

<p>1-2m in Height Canopy Cover of 10-30% Understorey of Grasses Insufficient Fuels to increase the risk from bushfire Irrigated gardens with low threat ground covers</p>	<p>BRG: 277° W (T) POS: -32.356626, 115.817788 ±11 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:15:13</p>																				
<table border="1"> <tr> <td>Photo ID:</td> <td>45</td> <td>Plot:</td> <td>2</td> </tr> <tr> <td colspan="4">Vegetation Classification or Exclusion Clause</td> </tr> <tr> <td colspan="4">Excludable - 2.2.3.2(f) Low Threat Vegetation</td> </tr> <tr> <td colspan="4">Description / Justification for Classification</td> </tr> <tr> <td colspan="4">1-2m in Height Canopy Cover of 10-30% Understorey of Grasses Insufficient Fuels to increase the risk from bushfire Irrigated gardens with low threat ground covers</td> </tr> </table>	Photo ID:	45	Plot:	2	Vegetation Classification or Exclusion Clause				Excludable - 2.2.3.2(f) Low Threat Vegetation				Description / Justification for Classification				1-2m in Height Canopy Cover of 10-30% Understorey of Grasses Insufficient Fuels to increase the risk from bushfire Irrigated gardens with low threat ground covers				<p>BRG: 176° S (T) POS: -32.356507, 115.817259 ±6 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:19:13</p>
Photo ID:	45	Plot:	2																		
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Excludable - 2.2.3.2(f) Low Threat Vegetation																					
Description / Justification for Classification																					
1-2m in Height Canopy Cover of 10-30% Understorey of Grasses Insufficient Fuels to increase the risk from bushfire Irrigated gardens with low threat ground covers																					
<table border="1"> <tr> <td>Photo ID:</td> <td>21</td> <td>Plot:</td> <td>3</td> </tr> <tr> <td colspan="4">Vegetation Classification or Exclusion Clause</td> </tr> <tr> <td colspan="4">Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated</td> </tr> <tr> <td colspan="4">Description / Justification for Classification</td> </tr> </table>	Photo ID:	21	Plot:	3	Vegetation Classification or Exclusion Clause				Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated				Description / Justification for Classification								
Photo ID:	21	Plot:	3																		
Vegetation Classification or Exclusion Clause																					
Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated																					
Description / Justification for Classification																					

<p>Residential Areas Insufficient Fuels to increase the risk from bushfire Irrigated gardens with low threat ground covers Non-Vegetated Areas</p>	<p>BRG: 51° NE (T) POS: -32.358823, 115.817506 ±3 m ALT: -6m</p>  <p>Baldivis Lot 19 Sixty Eight Rd #2 WA FIRE & SAFETY 02 May 2024, 11:08:47</p>
<p>Photo ID: 63 Plot: 3</p> <p>Vegetation Classification or Exclusion Clause Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated</p> <p>Description / Justification for Classification Sandy Areas mid-development Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas</p>	<p>BRG: 246° SW (T) POS: -32.358218, 115.81946 ±4 m ALT: -10m</p>  <p>Baldivis Lot 19 Sixty Eight Rd #2 WA FIRE & SAFETY 02 May 2024, 11:34:32</p>
<p>Photo ID: 71 Plot: 3</p> <p>Vegetation Classification or Exclusion Clause Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated</p> <p>Description / Justification for Classification Sandy Areas mid-development Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas</p>	<p>BRG: 37° NE (T) POS: -32.35665, 115.818615 ±7 m ALT: -3m</p>  <p>Baldivis Lot 19 Sixty Eight Rd #2 WA FIRE & SAFETY 02 May 2024, 11:38:10</p>
<p>Photo ID: 77 Plot: 3</p> <p>Vegetation Classification or Exclusion Clause</p>	

<p>Excludable - 2.2.3.2 (e) (f) Low Threat Vegetation/Non Vegetated</p> <p>Description / Justification for Classification</p> <p>Sandy Areas mid-development Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas</p>	<p>BRG: 33° N (T) POS: -32.357409, 115.819612 ±3 m ALT: -5m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:40:23</p>
<p>Photo ID: 66 Plot: 4</p> <p>Vegetation Classification or Exclusion Clause</p> <p>Class A Forest</p> <p>Description / Justification for Classification</p> <p>Overstorey up to 30m in height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads</p>	<p>BRG: 20° N (T) POS: -32.357764, 115.818548 ±6 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:35:56</p>
<p>Photo ID: 68 Plot: 4</p> <p>Vegetation Classification or Exclusion Clause</p> <p>Class A Forest</p> <p>Description / Justification for Classification</p> <p>Overstorey up to 30m in height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads</p>	<p>BRG: 123° E (T) POS: -32.357451, 115.818358 ±6 m ALT: -4m</p>  <p>Baldivis WA FIRE & SAFETY</p> <p>Lot 19 Sixty Eight Rd #2 02 May 2024, 11:36:35</p>
<p>Photo ID: 30 Plot: 5</p>	



Vegetation Classification or Exclusion Clause	BRG: 347° NW (T) POS: -32.357188, 115.817731 ±6 m ALT: -4m
Class G Grassland	
Description / Justification for Classification	
Grassland of >100mm in Height Canopy Cover of 10-30% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads	
	Baldivis WA FIRE & SAFETY Lot 19 Sixty Eight Rd #2 02 May 2024, 11:12:36

Photo ID:	31	Plot:	5	BRG: 308° NW (T) POS: -32.357113, 115.817866 ±5 m ALT: -4m
Vegetation Classification or Exclusion Clause				
Class G Grassland				
Description / Justification for Classification				
Grassland of >100mm in Height Canopy Cover of 10-30% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads				Baldivis WA FIRE & SAFETY Lot 19 Sixty Eight Rd #2 02 May 2024, 11:12:49

3.2 Slope

The site is mainly 0-5° Downslope.

Table 3A: Vegetation Classification and Slopes

Plot	Vegetation Classification	Effective Slope
1	Class G Grassland	0-5 Downslope
2	Excludable – Clause 2.2.3.2(f)	-
3	Excludable – Clause 2.2.3.2 (e) & (f)	-
4	Class A - Forest	0-5 Downslope
5	Class G Grassland	0-5 Downslope

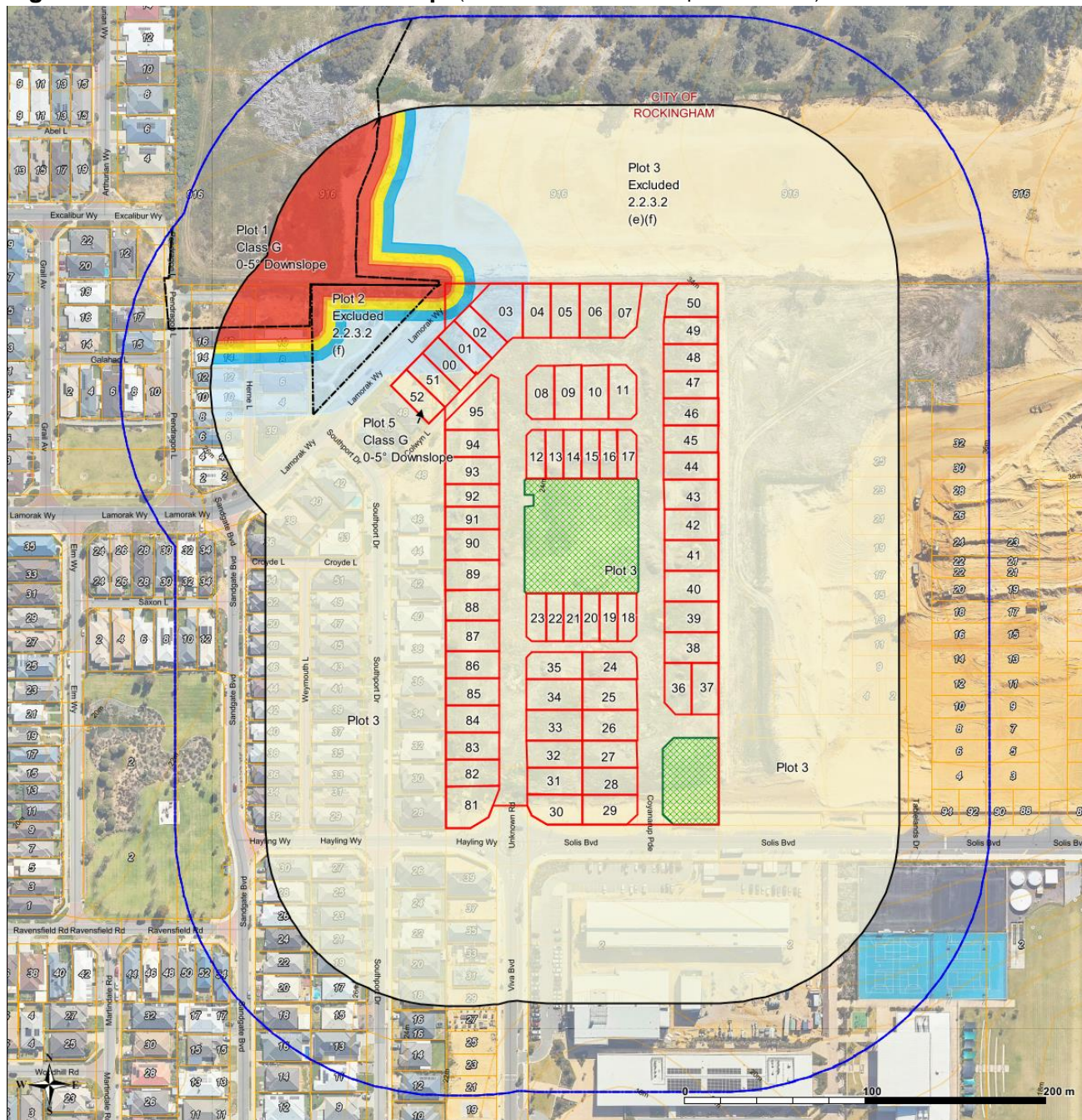
3.3 Fire Danger Index

The nominated fire danger index (FDI) for Western Australia is 80

3.4 BAL- Contour Assessment

Figure 6 is a BAL Contour assessment that shows the ratings within the subject lot where the vegetation inside the lot is in a managed state, this is not what the site will be when completed and demonstrates what ratings are possible inside the subject lot.

Figure 6: Indicative BAL Contour Map (Lots are numbered example. 1006 = 06)



Legend	<ul style="list-style-type: none"> 100m Vegetation Survey MAIN 150m Vegetation Survey Exc 2.2.2.2(a) MAIN 150m Survey ALL Lots 1000 1001 1002 	<ul style="list-style-type: none"> 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090 1091 1092 1093 1094 1095 	<ul style="list-style-type: none"> Property boundary(Size) Balance Lot 9102 (3588m2) Lot 9101 (4.5738ha) Public Open Spaces POS (1) 4008m2 POS (2) 1478m2 	<ul style="list-style-type: none"> MAIN Veg 0-150m ALL Post Modification Excluded, ef, 0 Excluded, f, 0 G. Grassland, -5 Main Lot Contour Prescribed BAL-12.5 BAL-19 BAL-29 	<ul style="list-style-type: none"> BAL-40 BAL-FZ BAL-LOW Local Government Authority State Roads Other Roads 	<ul style="list-style-type: none"> DPIRD 2m Contours
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Table 3B provides the indicative BAL ratings within the proposed lots

3.5 Additional Bushfire Hazard Issues

Below are the identified bushfire hazard issues relating to this site:

- The subject lot consists of a small patch of Class A and has a strip of Class G to the North-East.
- Public open spaces need to be established in a low fuel state and maintained as per the Standards for APZ's (Appendix 1) in perpetuity.
- The indicative BAL ratings are to demonstrate compliance only and will need to be established during the building process.
- As this development is above BAL-LOW the relevant bushfire protection criteria apply and will need to be addressed (section 4.0).

4.0 Compliance and Justifications

4.1 SPP 3.7 Objectives and Application of Policy Measures

The intent of *State Planning Policy (SPP) 3.7 Planning in Bushfire Prone Areas* (Department of Planning and Western Australian Planning Commission, 2015) is to ensure that bushfire risks are considered in a timely manner and that planning documents demonstrate the appropriate application of the various policy measures. Table 3 summarises the intent and objectives of SPP 3.7 and provides evidence of how the site complies.

Table 3: Evidence of compliance with SPP 3.7 intent and objectives

SPP Reference	Description	Evidence of Compliance
Intent	<ul style="list-style-type: none"> ▪ Ensure that risks associated with bushfires are planned using a risk-based approach 	<ul style="list-style-type: none"> ▪ Preparation of a bushfire management plan in accordance with SPP 3.7 ▪ BAL assessment indicates risks associated with bushland are manageable
Objective 1	<ul style="list-style-type: none"> ▪ Avoid any increase in the threat of bushfire to people, property and infrastructure 	<ul style="list-style-type: none"> ▪ BAL assessment indicates risks associated with bushland are manageable ▪ Structures within 100 m of vegetation assigned BAL-rating as per AS-3959 – 2018
Objective 2	<ul style="list-style-type: none"> ▪ Reduce vulnerability to bushfire 	<ul style="list-style-type: none"> ▪ BAL assessment indicates risks associated with bushland are manageable ▪ Structures within 100 m of vegetation assigned BAL-rating as per AS-3959 – 2018
Objective 3	<ul style="list-style-type: none"> ▪ Ensure that higher order strategic planning documents and proposals consider bushfire protection requirements at an early stage 	<ul style="list-style-type: none"> ▪ Planning at the site is largely complete, with bushfire risk being considered at an appropriate stage of the development ▪ This bushfire management plan documents the risks as they stand
Objective 4	<ul style="list-style-type: none"> ▪ Achieve an appropriate balance between bushfire risk management and biodiversity conservation 	<ul style="list-style-type: none"> ▪ Biodiversity values will remain in the surrounding bushland area ▪ Site environmental values have been considered during previous stages of the planning approvals process

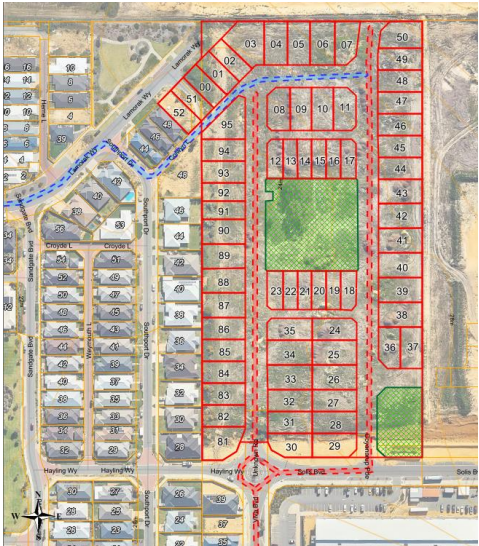
4.2 Compliance table

The Bushfire protection criteria have been provided to assist in the assessment of proposed bushfire risk management measures required for development applications in bushfire prone areas. Table 4 demonstrates the Site's Compliance with Bushfire Protection Criteria.

Bushfire Management Plan – BAL Assessment

Table 4: Compliance with bushfire protection criteria

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
<p>Element 1: Location</p> <p>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</p>	<p>A1.1 Development location</p> <ol style="list-style-type: none"> 1. Bushfire hazard level is or on completion will be moderate or low or 2. BAL Rating is BAL-29 or lower 	<p>BMP concludes that with appropriate vegetation modification and APZ establishment a BAL-29 or lower rating is possible within the proposed lots in the development stage.</p>
<p>Element 2: Siting and design</p> <p>To ensure that the siting and design of development minimises the level of bushfire impact</p>	<p>A2.1 Asset Protection Zone</p> <p>Every habitable building is surrounded by, and every proposed lot can achieve an APZ depicted on plans that meets the following:</p> <ol style="list-style-type: none"> 1. Width – bushfire radiant heat does not exceed radiant heat of 29 kW/m² (BAL-29) as measured from any external wall or supporting post or column in all circumstances 2. Location – APZ contained solely within the boundaries of the lot on which the building is situated, except in instances where the neighbouring lot(s) will be managed in a low-fuel state on an ongoing basis, in perpetuity 3. Management – the APZ is managed in accordance with the requirements of Schedule 1 ‘Standards for Asset Protection Zones’ (BMP Appendix 1) 	<p>Main Development:</p> <p>APZ is to be established and maintained in perpetuity to:</p> <ol style="list-style-type: none"> 1. Lot Boundary for all lots. <p>POS areas and balance lot APZ to be established early and maintained in perpetuity, as per the standards for APZ’s</p> <p>Once APZ has been established, all lots will be able to achieve BAL-12.5 or less as per BAL-Contour and Table 3B.</p> <p>APZ’s are to be maintained in perpetuity in accordance with:</p> <ol style="list-style-type: none"> 1. Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (Appendix 1) and 2. Local Government Authority Firebreak Notice (Appendix 2).
<p>Element 3: Vehicular access</p>	<p>A3.1 Public Roads</p> <p>Minimum requirements under the acceptable solution are applicable to all proposed and existing roads.</p>	<p>The development will be creating public roads. The roads to be created will meet minimum technical requirements in Table 6, Column 1 (BMP Appendix 3)</p>

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
<p>Vehicular access servicing a subdivision/development is available and safe during a bushfire event</p>	<p>1. Public Roads are to meet minimum technical requirements in Table 6, Column 1 (BMP Appendix 3)</p> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known Sb – Structure plan where the lot layout is known and subdivision application Do – Development application for any other development</p>	
	<p>A3.2a Multiple Access Routes Public road access is to be provided in two different directions to at least two different destinations with an all-weather surface (Two Way Access)</p> <p>1. If the public road access to the subject site is via a no-through road which cannot be avoided due to demonstrated site constraints, the road access is to be a maximum of 200m from the subject lot(s) boundary to and intersection providing two way access.</p> <p>2. The no-through road may exceed 200 metres if it is demonstrated that an alternative access, including an emergency access way, cannot be provided due to site constraints and the following requirements are met:</p> <ol style="list-style-type: none"> the no-through road travels towards a suitable destination; and the balance of the no-through road, that is greater than 200 metres from the subject site, is wholly within BAL-LOW, or is within a residential built-out area <p>SP – Strategic planning proposal and structure plan where the lot layout is not known Sb – Structure plan where the lot layout is known and subdivision application Do – Development application for any other development</p>	<p>The Surrounding Roads are Suitable and comply with Table 6, Column 1 and on completion access to and from the site will be compliant with acceptable solution A3.2a, providing access to the South (red) via Viva Boulevard and West (blue) via Colwyn Lane.</p> <p>Access to the south and east are also within a residential built out area and/or a BAL-LOW direction.</p> 

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	<p>A3.2b Emergency Access Way</p> <p>Where it is demonstrated that A3.2a cannot be achieved due to site constraints, or where an alternative design option does not exist, an emergency access way can be considered as an acceptable solution.</p> <p>An emergency access way is to meet all the following requirements:</p> <ol style="list-style-type: none"> 1. requirements in Table 6, Column 2 (BMP Appendix 3); 2. provides a through connection to a public road. 3. be no more than 500 metres in length; and 4. must be signposted and if gated, gates must open the whole trafficable width and remain unlocked. <p>SP – Strategic planning proposal and structure plan where the lot layout is not known Sb – Structure plan where the lot layout is known and subdivision application Do – Development application for any other development</p>	<p>N/A</p>
	<p>A3.3 Through Roads</p> <p>All public roads should be through-roads. No-through roads should be avoided and should only be considered as an acceptable solution where:</p> <ol style="list-style-type: none"> 1. it is demonstrated that no alternative road layout exists due to site constraints; and 2. the no-through road is a maximum length of 200 metres to an intersection providing 3. two-way access, unless it satisfies the exemption provisions in A3.2a of this table. 4. A no-through road is to meet all the following requirements: 5. requirements of a public road Table 6, Column 1 (BMP Appendix 3); and 6. turn-around area as shown in (BMP Appendix 3) 	<p>Lamorak Way (existing) and Coyanarup Parade (proposed) will not be through roads, however they are less than 200m in length before an intersection providing two-way access.</p> <p>All other surrounding roads are suitable and comply with Table 6, Column 1.</p>

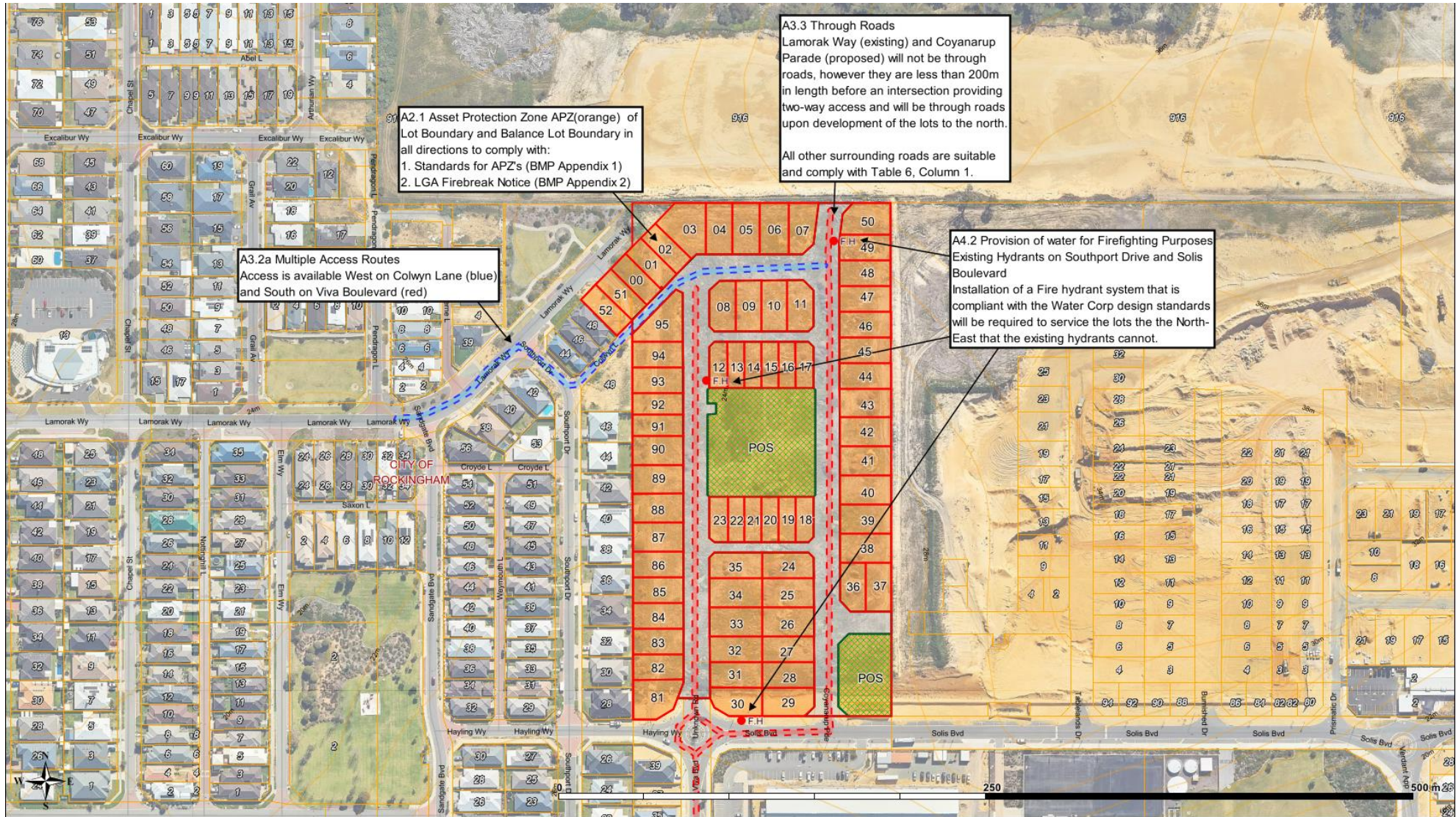
Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	<p>SP – Strategic planning proposal and structure plan where the lot layout is not known</p> <p>Sb – Structure plan where the lot layout is known and subdivision application</p>	
	<p>A3.4a Perimeter roads</p> <p>A perimeter road is a public road and should be provided for greenfield or infill development where 10 or more lots are being proposed (including staged subdivision) with the aim of:</p> <ol style="list-style-type: none"> 1. Separating areas of classified vegetation under AS3959, which adjoin the subject site, from the proposed lot(s) and 2. Removing the need for battle-axe lots that back onto the areas of classified vegetation <p>A perimeter road is to meet the requirements contained in Table 6, Column 1 (BMP Appendix 3)</p> <p>A Perimeter Road may not be required where:</p> <ol style="list-style-type: none"> 1. The adjoining classified vegetation is class G 2. Lots are zoned for rural living or equivalent 3. It is demonstrated that it cannot be provided due to site constraints; or 4. All lots have frontage to an existing public road <p>SP – Strategic planning proposal and structure plan where the lot layout is not known</p> <p>Sb – Structure plan where the lot layout is known and subdivision application</p>	N/A
	<p>A3.4b Fire service access route (FSA)</p> <p>Where proposed lots adjoin classified vegetation under AS3959, and a perimeter road is not required in accordance with A3.4a, a FSA route can be considered as an acceptable solution to provide fire fighter access, where access is not available to the classified vegetation.</p>	N/A

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	<p>FSA is to meet all the following requirements:</p> <ol style="list-style-type: none"> 1. Table 6, column 3 (BMP Appendix 3) 2. Be “through roads” with no dead ends 3. Linked to an internal road system at regular intervals, every 500 metres 4. Be signposted 5. No further than 500 metres to a public road 6. If gated, gates must open the required horizontal clearance and can be locked by the LGA or emergency services, if keys are provided for each gate 7. Have turn-around areas for 3.4 fire appliances every 500m <p>SP – Strategic planning proposal and structure plan where the lot layout is not known Sb – Structure plan where the lot layout is known and subdivision application</p>	
	<p>A3.5 Battle-axe access legs Where it is demonstrated that a battle-axe cannot be avoided due to site constraints, it can be considered as an acceptable solution.</p> <p>There are no battle-axe technical requirements where the point the battle-axe access leg joins the effective area of the lot, is less than 50 metres from a public road in a reticulated area.</p> <p>In circumstances where the above condition is not met, or the battle-axe is in a non-reticulated water area, the battle-axe is to meet all the following requirements:</p> <ol style="list-style-type: none"> 1. requirements in Table 6, Column 4; and 2. passing bays every 200 metres with a minimum length of 20 metres and a 3. minimum additional trafficable width of two metres (i.e. the combined trafficable 4. width of the passing bay and constructed private driveway to be a minimum six metres). <p>See (BMP Appendix 3 E3.5)</p>	<p>N/A- none of the proposed lots have battle-axe legs.</p>

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	<p>Sb – Structure plan where the lot layout is known and subdivision application</p> <p>A3.6 Private Driveways There are no private driveway technical requirements where the private driveway is:</p> <ol style="list-style-type: none"> 1. within a lot serviced by reticulated water; 2. no greater than 70 metres in length between the most distant external part of the development site and the public road measured as a hose lay; and 3. accessed by a public road where the road speed limit is not greater than 70 km/h. <p>In circumstances where all of the above conditions are not met, or the private driveway is in a non-reticulated water area, the private driveway is to meet all the following requirements:</p> <ol style="list-style-type: none"> 1. Requirements in Table 6, Column 4; 2. Passing bays every 200 metres with a minimum length of 20 metres and a minimum additional trafficable width of two metres (i.e. the combined trafficable width of the passing bay and constructed private driveway to be a minimum six metres); and 3. Turn-around area as shown in (BMP Appendix 3, E3.6) and within 30 metres of the habitable building. <p>See BMP Appendix 3, E3.6</p> <p>Dd – Development application for a single dwelling, ancillary dwelling or minor development</p> <p>Do – Development application for any other development</p>	N/A
<p>Element 4: Water</p> <p>Water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire</p>	<p>A4.1 Identification of future water supply Evidence that a reticulated or sufficient non-reticulated water supply for bushfire fighting can be provided at the subdivision and/or development application stage, in accordance with the specifications of the relevant water supply authority or the requirements of Schedule 2 (BMP Appendix 4, Schedule 2).</p>	N/A

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	<p>Where the provision of a strategic water tank(s) is required a suitable area within a road reserve or a dedicated lot the location should be identified, should be identified on the structure plan, to the satisfaction of the local government.</p> <p>SP – Strategic planning proposal and structure plan where the lot layout is not known</p> <p>A4.2 Provision of water for firefighting purposes Where a reticulated water supply is existing or proposed, hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority. Where these specifications cannot be met, then the following applies:</p> <ol style="list-style-type: none"> 1. The provision of a water tank(s), in accordance with the requirements of Schedule 2 (BMP Appendix 4, Schedule 2); and 2. Where the provision of a strategic water tank(s) is applicable, then the following requirements apply: 3. land to be ceded free of cost to the local government for the placement of the tank(s); 4. the lot or road reserve where the tank is to be located is identified on the plan of subdivision. 5. tank capacity, construction, and fittings, provided in accordance with the requirements of Schedule 2(BMP Appendix 4, Schedule 2); and 6. a strategic water tank is to be located no more than 10 minutes from the subject site (at legal road speeds). <p>Where a subdivision includes an existing habitable building(s) that is to be retained, a water supply should be provided to this existing habitable building(s), in accordance with the requirements listed above.</p> <p>Sb – Structure plan where the lot layout is known and subdivision application Dd – Development application for a single dwelling, ancillary dwelling or minor development Do – Development application for any other development that is not a single dwelling, ancillary dwelling or minor development</p>	<p>Existing Fire Hydrants on Southport Drive and Solis Boulevard.</p> <p>And below, due to the existing fire hydrants being unable to service some of the proposed new lots:</p> <p>Installation of a Fire hydrant system that is compliant with the Water Corp design standards below:</p> <p>Residential Standard – hydrants are to be located so that the maximum distance between the hydrants shall be no more than 200 metres.</p> <p><i>Refer to the Water Corporation's No. 63 Water Reticulation Standard</i></p>

5.0 Bushfire Management Strategies



A2.1 Asset Protection Zone APZ(orange) of Lot Boundary and Balance Lot Boundary in all directions to comply with:
 1. Standards for APZ's (BMP Appendix 1)
 2. LGA Firebreak Notice (BMP Appendix 2)

A3.3 Through Roads
 Lamarok Way (existing) and Coyanarup Parade (proposed) will not be through roads, however they are less than 200m in length before an intersection providing two-way access and will be through roads upon development of the lots to the north.
 All other surrounding roads are suitable and comply with Table 6, Column 1.

A3.2a Multiple Access Routes
 Access is available West on Colwyn Lane (blue) and South on Viva Boulevard (red)

A4.2 Provision of water for Firefighting Purposes
 Existing Hydrants on Southport Drive and Solis Boulevard
 Installation of a Fire hydrant system that is compliant with the Water Corp design standards will be required to service the lots the the North-East that the existing hydrants cannot.

ALL Lots	1004	1009	1014	1019	1024	1029	1034	1039	1044	1049	1082	1087	1092	Property boundary(Size)	POS (2) 1478m2	A3.2a Multiple Access Routes	A2.1 Asset Protection Zone (APZ)	State Roads	
	1000	1005	1010	1015	1020	1025	1030	1035	1040	1045	1083	1088	1093	Balance Lot 9102 (3598m2)	A4.2 Provision of Water for Fire Fighting	Access South	APZ of Lot Boundary	Local Government Authority	Other Roads
	1001	1006	1011	1016	1021	1026	1031	1036	1041	1046	1084	1089	1094	Lot 9101 (4.5738ha)	Fire Hydrant	Access West			
	1002	1007	1012	1017	1022	1027	1032	1037	1042	1047	1085	1090	1095	Public Open Spaces		Road Reserves			
	1003	1008	1013	1018	1023	1028	1033	1038	1043	1048	1081	1086	1091	POS (1) 4008m2		Road Reserves (6m+)		DPIRD 2m Contours	

Lot 19 Sixty Eight Road, Baldyis, Western Australia
 Bushfire Management Plan – BAL Contour



Legend

- | | | | | | | | | |
|---------------------------|---------------------|---------------------|---|----------------------------------|----------------------------|-------------|-------------|--------------------|
| Property boundary (Size) | Lot 9101 (4.5738ha) | POS (2) 1478m2 | A4.2 Provision of Water for Fire Fighting | A2.1 Asset Protection Zone (APZ) | Local Government Authority | State Roads | Other Roads | DIPIRD 2m Contours |
| Balance Lot 9102 (3588m2) | Public Open Spaces | Road Reserves | Fire Hydrant | APZ of Lot Boundary | | | | |
| | POS (1) 4008m2 | Road Reserves (6m+) | | | | | | |

6.0 Roles & Responsibilities

Responsibilities & implementation measure for the proposed development, these are shared by the Current and future landowners, project developer and the Local Government Authority (LGA).

Table 5: Roles & Responsibilities

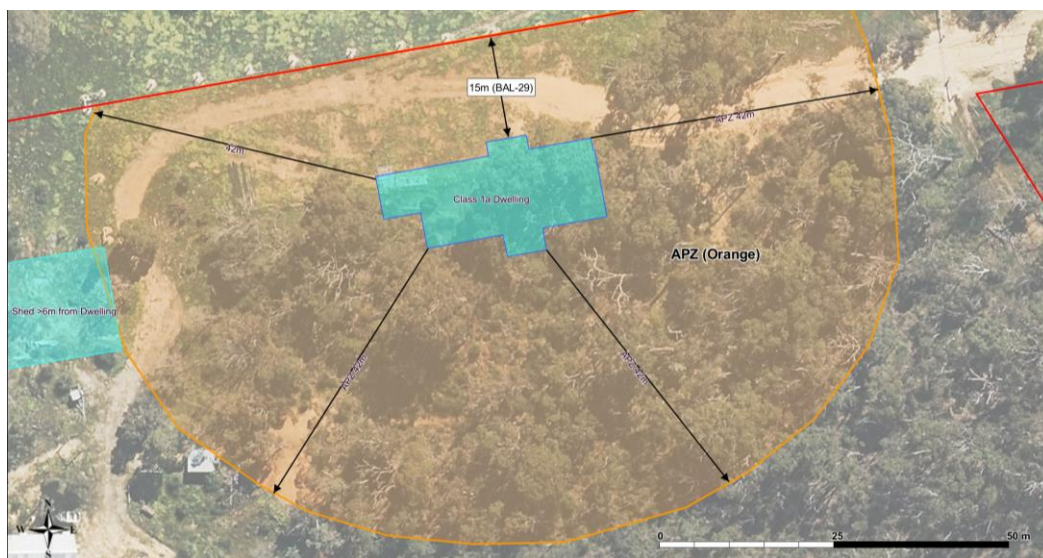
DEVELOPER/LANDOWNER/CONSULTANT – PRIOR TO USE/DISPOSAL/SALE	
No.	Implementation action
1	<p>A notification, pursuant to Section 165 of the Planning and Development Act 2005, is required to be placed on the certificate(s) of title of the proposed lot(s) with a Bushfire Attack Level (BAL) rating of 12.5 or above, advising of the existence of a hazard or other factor. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows</p> <p>“This land is within a bushfire prone area as designated by an Order made by the Fire and Emergency Services Commissioner and is/may be subject to a Bushfire Management Plan. Additional planning and building requirements may apply to development on this land.” (Western Australian Planning Commission).</p> <p><i>Notification placed on title <input type="checkbox"/> dated the ___ of _____ 20___ - Certified by</i></p>
2	<p>Establish an Asset Protection Zones (APZs) as per BMP (Table 4 A2.1), to the dimensions & standard stated in this BMP (Setbacks Table 4, A2.1), Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (Appendix 1) and to the requirements outlined in the Local Government Authority Firebreak Notice (Appendix 2).</p> <p><i>APZ Clearance Certified <input type="checkbox"/> dated the ___ of _____ 20___ - Certified by</i></p>
3	<p>Public Open Spaces (POS) needs to be established and maintained as per BMP, Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (Appendix 1) and to the requirements outlined in the Local Government Authority Firebreak Notice (Appendix 2) maintained by the developer for two years or until handover to the Local Government Authority.</p>
4	<p>Maintain all lot(s) as per the Standards for APZ’s and the LGA firebreak notice until disposal and handover where the responsibility is transferred to the purchaser/landowner. This includes the Balance Lot.</p>
5	<p>Maintain the firebreaks, defendable spaces, fuels and fully comply with the relevant Local Government Authority (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2).</p>
6	<p>Install reticulated water supply / hydrants to the standards outlined in BMP (Table 4 A4.2)</p> <p><i>Hydrants Certified <input type="checkbox"/> dated the ___ of _____ 20___ - Certified by</i></p>
7	<p>Construct public roads to the standard stated in (table 4 A3.1 A3.2 and A3.3)</p> <p><i>Constructed Roads Certified <input type="checkbox"/> dated the ___ of _____ 20___ - Certified by</i></p>
LANDOWNER – ONGOING	
No.	Management action
1	<p>Maintain an Asset Protection Zone (APZ) to the dimensions (Table 4 A2.1) to the dimensions & standard stated in this BMP (Setbacks Table 4, A2.1), Schedule 1 of the Guidelines for Planning in Bushfire Prone Areas (Appendix 1) and also to the requirements outlined in the Local Government Authority Firebreak Notice (Appendix 2).</p>

2	Maintain the firebreaks, defensible spaces, fuels and fully comply with the relevant Local Government Authority (LGA) annual firebreak notice issued under s33 of the Bush Fires Act 1954 to required standard in perpetuity as per Local Government Authority Firebreak Notice (Appendix 2).
LOCAL GOVERNMENT AUTHORITY (LGA) – ONGOING MANAGEMENT	
No.	Management action
1	Inspection and issue of works orders or fines for non-compliance, this includes firebreaks, access, APZ and water supply.

Bushfire Management Plan Appendices

Appendix 1 – Information and SPP3.7, Schedule 1 - Standards for APZ’s

An APZ is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. The width of the required APZ varies with slope and vegetation. The APZ should at a minimum be of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m² (BAL-29). It should be lot specific and will extend from the walls and supporting posts of a dwelling or any structure that is associated (<6m) from the dwelling.



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

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 or rating of BAL-29 or less is achieved.

APZs can adversely affect the retention of native vegetation. Where the loss of vegetation is not acceptable or causes conflict with landscape or environmental objectives, such as waterway

foreshore areas and wetland buffers, reducing lot yield may be necessary in order to minimise the removal and modification of remnant vegetation.

It is the responsibility of the landowner/proponent to maintain their APZ in accordance with Schedule 1 'Standards for Asset Protection Zones'. It is further recommended that maintenance of APZs is addressed through the local government firebreak notice, issued under s33 of the Bushfires Act 1954, and preferably included in a Bushfire Management Plan specifically as a how-to guide for the landowner.

SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES	
OBJECT	REQUIREMENT
Fences within the APZ	<ul style="list-style-type: none"> Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959).
Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness)	<ul style="list-style-type: none"> Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness.
Trees* (>6 metres in height)	<ul style="list-style-type: none"> Trunks at maturity should be a minimum distance of six metres from all elevations of the building. Branches at maturity should not touch or overhang a building or powerline. Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. Canopy cover within the APZ should be <15 per cent of the total APZ area. Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. <p style="text-align: center;">Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity</p>
Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees.	<ul style="list-style-type: none"> Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs)	<ul style="list-style-type: none"> Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height.

Grass	<ul style="list-style-type: none"> • Grass should be maintained at a height of 100 millimetres or less, at all times. • Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation.
Defendable space	<ul style="list-style-type: none"> • Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above.
LP Gas Cylinders	<ul style="list-style-type: none"> • Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. • The pressure relief valve should point away from the house. • No flammable material within six metres from the front of the valve. • Must sit on a firm, level and non-combustible base and be secured to a solid structure.

E2 Managing an Asset Protection Zone (APZ) to a low threat state

An APZ is a low fuel area maintained around a habitable building to increase the likelihood that it will survive a bushfire, by providing a defendable space and reducing the potential for direct flame contact, radiant heat exposure and ember attack.

Vegetation management within an APZ should provide defendable space and be maintained to a low threat state, in perpetuity, in accordance with the requirements outlined in Schedule 1.

The width of an APZ varies with slope and vegetation type, however it should only be as wide as needed to ensure the potential radiant heat impact of a bushfire does not exceed 29kW/m² (BAL-29), or 10kW/m² where a building is identified for use as an on-site shelter. An APZ is generally not required where a building or development site achieves 29kW/m² (BAL-29) or lower in its pre-development state (prior to any vegetation clearing or modification).

An APZ should include an area of defendable space immediately adjoining a building, that is kept free from combustible items and obstructions, within which firefighting operations can be undertaken to defend the structure. Where a lot contains a building envelope, it may not be necessary for the entire building envelope to achieve 29kW/m² (BAL-29) as this may result in significant unnecessary clearing. It is recommended that the BMP identifies that a sufficient APZ can be accommodated within the building envelope, with the development site and associated APZ to be determined at the development approval stage.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated that the vegetation on the adjoining land is managed in a low threat state, as per cl. 2.2.3.2 of AS 3959, such as a road, managed park, rocky outcrop or a water body.

The siting of a habitable building and associated APZ should aim to minimise the clearing of vegetation. The BMP should demonstrate that the proposed APZ has minimised the unnecessary loss of vegetation or potential for conflict with landscape or environmental objectives; and complies with environmental approvals/exemptions (where necessary). A re-design or reduction in lot yield may be necessary to minimise the removal and modification of remnant vegetation.

It is recommended that development be located on flat areas or slopes less than 20 degrees (especially where classified vegetation is located downslope to a building) and away from ridge tops, crests or narrow gullies, as bushfire can spread rapidly in these areas. Circumstances where these locations may be suitable for development to occur include where the land is already cleared, and 29kW/m² (BAL-29) or lower can be achieved for the whole development site without the use of an APZ. To ensure soil stability within an APZ, vegetation removal on slopes exceeding 18 degrees is discouraged.

Fine fuel load should be maintained to less than two tonnes per hectare, however this is often a subjective assessment. Reducing fuel load levels does not necessarily require the removal of existing vegetation. A combination of methods can be utilised to reduce fuel load such as raking, weed removal, pruning, mulching and/or the removal of plant material.

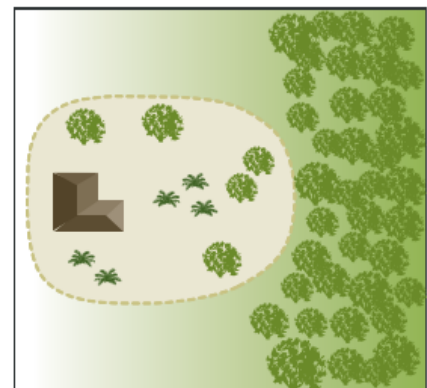
A simple method to estimate fuel load is to roughly equate one tonne of fuel load per hectare as 100 grams per square metre. For example, two tonnes per hectare of leaf litter is roughly 200 grams of leaf litter per square metre and eight tonnes per hectare is roughly 800 grams. Eucalyptus leaf litter is approximately 100 grams per handful, so two handfuls of litter per square metre will roughly equate to two tonnes per hectare. Different types of fine fuel, like mulch or pine needles may be more or less than a handful, however the 100 grams per square metre rule of thumb can still be used.

The landowner or proponent is responsible for maintaining an APZ in accordance with Schedule 1 - Standards for Asset Protection Zones. Ongoing maintenance of an APZ is usually enforced through the local government firebreak notice issued under section 33 of the *Bushfires Act 1954*, and/or through a condition of a development approval, which requires the implementation of measures identified within a BMP.

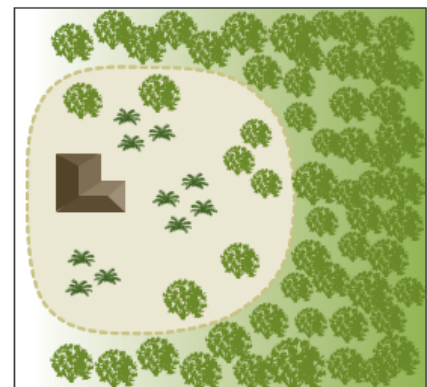
A copy of the firebreak notice and Schedule 1 should be included in a BMP specifically as a how-to guide for the landowner, and to demonstrate to decision-makers that the measures outlined in the BMP to achieve the appropriate BAL rating through provision and ongoing management of an APZ, can be implemented.

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.

Hazard on one side



Hazard on three sides



Legend

- APZ
- trees
- shrubs

Figure 18: Design of Asset Protection Zone

E2 Landscaping and design of an asset protection zone

Landscaping, design, and maintenance of an APZ in a bushfire prone area can significantly improve the bushfire resilience of a building. An APZ should not be seen as an area entirely cleared of vegetation, but as a strategically designed space that gives holistic consideration to how existing or proposed vegetation or non-combustible features interact with, or affect the building's bushfire resilience.

A well designed APZ provides a greater level of vegetation management within the first few metres of a building with, for example, less vegetation or inclusion of non-combustible materials. The vegetation within the remainder of an APZ can increase further away from the building with carefully considered plant selection and landscaping techniques.

Strategic landscaping measures can be applied, such as replacing weeds with low flammability vegetation (refer to E2 Plant Flammability) to create horizontal and vertical separations between the retained vegetation. The accumulation of fine fuel load from different plants is an important consideration for ongoing maintenance in accordance with Schedule 1. For example, when planting ground covers under deciduous trees within an APZ, the total fine fuel load prescribed in Schedule 1 will include any dead plant material from ground covers and leaf litter from the trees.

Plant density and final structure and form of mature vegetation should be considered in the initial landscaping stages. For example, clumps of sapling shrubs planted at a density without consideration of future growth, may increase the bushfire risk as a clump will quickly grow to exceed 5m². It should be noted that in some cases, a single shrub in a mature state may be so dense as to fill a 5m² clump alone.

The location of plants within an APZ is a key design technique. Separation of garden beds with areas of low fuel or non-combustible material, will break up fuel continuity and reduce the likelihood of a bushfire running through an APZ and subjecting a dwelling to radiant heat or direct flame contact. It is important to note, where mature trees are separated from a building by six metres, but the canopy has grown to extend or overhang a building, maintenance and pruning to remove the overhanging branches should be undertaken without the entirety of the tree being removed.

Mulches used within the APZ should be non-combustible. The use of stone, gravel, rock and crushed mineral earth is encouraged. Wood mulch >6mm in thickness may be used, however it is recommended that it is used in garden beds or areas where the moisture level is higher by regular irrigation. These materials could be sourced from non-toxic construction and demolition waste giving the added benefit of reducing the environmental impact of any 'hard landscaping' actions.

Combustible objects, plants, garden supplies such as mulches, fences made from combustible material, should be avoided within 10 metres of a building. Vines or climbing plants on pergolas, posts or beams, should be located away from vulnerable parts of the building, such as windows and doors. Non-flammable features can be used to provide hazard separation from classified vegetation, such as tennis courts, pools, lawns and driveways or paths that use inorganic mulches (gravel or crushed rock). Consider locating firewood stacks away from trees and habitable buildings.

Incorporation of landscaping features, such as masonry feature walls can provide habitable buildings with barriers to wind, radiant heat and embers. These features can include noise walls or wind breaks. Use of Appendix F of AS 3959 for bushfire resistant timber selection within areas of 29kW/m² (BAL-29) or below, or the use of non-combustible fencing materials such as iron, brick, limestone, metal post and wire is encouraged.

In addition to regular maintenance of an APZ, further bushfire protection can be provided at any time by:

- ensuring gutters are free from vegetation;
- installing gutter guards or plugs;
- regular cleaning of underfloor spaces, or enclosing them to prevent gaps;
- trimming and removing dead plants or leaf litter;
- pruning climbing vegetation (such as vines) on a trellis, to ensure it does not connect to a building, particularly near windows and doors;
- removing vegetation in close proximity to a water tank to ensure it is not touching the sides of a tank; and/or
- following the requirements of the relevant local government section 33 fire break notice, which may include additional provisions such as locating wood piles more than 10 metres from a building.

Preparation of a property prior to the bushfire season and/or in anticipation of a bushfire is beneficial even if your plan is to evacuate. As embers can travel up to several kilometres from a bushfire and fall into small spaces and crevices or land against the external walls of a building, best practice recommends that objects within the APZ are moved away from the building prior to any bushfire event. Objects may include, but are not limited to:

- door mats;
 - outdoor furniture;
 - potted plants;
 - shade sails or umbrellas;
 - plastic garbage bins;
 - firewood stacks;
 - flammable sculptures; and/or
 - playground equipment and children's toys.
-

E2 Plant flammability

There are certain plant characteristics that are known to influence flammability, such as moisture or oil content and the presence and type of bark. Plants with lower flammability properties may still burn during a bushfire event, but may be more resistant to burning and some may regenerate faster post-bushfire.

There are many terms for plant flammability that should not be confused, including:

- Fire resistant – plant species that survive being burnt and will regrow after a bushfire and therefore may be highly flammable and inappropriate for a garden in areas of high bushfire risk.
- Fire retardant – plants that may not burn readily or may slow the passage of a bushfire.
- Fire wise – plants that have been identified and selected based on their flammability properties and linked to maintenance advice and planting location within a garden.

Although not a requirement of these Guidelines, local governments may develop their own list of fire wise or fire-retardant plant species that suit the environmental characteristics of an area. When developing a recommended plant species list, local governments should consult with ecologists, land care officers or environmental authorities to ensure the plants do not present a risk to endangered ecological communities, threatened, or endangered species or their habitat.

When selecting plants, private landholders and developers should aim for plants within the APZ that have the following characteristics:

- grow in a predicted structure, shape and height;
- are open and loose branching with leaves that are thinly spread;
- have a coarse texture and low surface-area-to-volume ratio;
- will not drop large amounts of leaves or limbs, that require regular maintenance;
- have wide, flat, and thick or succulent leaves;
- trees that have bark attached tightly to their trunk or have smooth bark;
- have low amounts of oils, waxes, and resins (which will often have a strong scent when crushed);
- do not produce or hold large amounts of fine dead material in their crowns; and/or
- will not become a weed in the area.

Appendix 2 – Local Government Authority Firebreak Notice

Fire Control Notice 2023 – 2024

**Your property must comply
on 1 December 2023 and be
maintained through to
31 May 2024**

**First and final notice
to owners and/or occupiers
of all land within the
City of Rockingham**

**Penalty of up to \$5,000
for non-compliance**



rockingham.wa.gov.au



City of
Rockingham
where the coast comes to life

As a measure to assist in the control of bushfires and pursuant to the powers contained in **Section 33 of the Bush Fires Act 1954**, you have a legal requirement to carry out fire prevention works on your property. Your property must comply on 1 December 2023 and be maintained through to 31 May 2024.

“Take notice that pursuant to **Section 33 (4) of the Bush Fires Act 1954**, where the owner and/or occupier of the land fails or neglects to comply with the requisitions of this Notice within the specified times, the City of Rockingham may by its officers and with such servants, workmen and contractors, vehicles and machinery as the officers deem fit, enter upon the land and carry out the requisitions of this Notice which have not been complied with and pursuant to **Section 33 (5) of the Bush Fires Act 1954**, the amount of any costs and expenses incurred may be recovered from you as the owner and/or occupier of the land.”

Compliance inspections will commence on 1 December 2023. Failure to comply with the City’s Fire Control Notice may result in a penalty of up to \$5,000, with additional contractor and administration costs to carry out fire prevention works on your property.



**All land with an area of 4047m² or more
(more than one acre)**

**Owners/Occupiers of developed and vacant
land are required to:**

- install and maintain mineral earth firebreaks as per firebreak specifications
- ensure driveways and access ways to all buildings are maintained at a minimum of three (3) metres in width and a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back to clear access.

**All land with an area of less than 4047m²
(less than one acre)**

Owners/Occupiers of vacant land are required to:

- remove accumulated fuel such as leaf litter, twigs, dead bush and dead trees capable of carrying a running fire
- have the entire vacant land clear of weed or long grasses by slashing, mowing or other means to a height no greater than 50 mm and maintained in this state.

**Owners/Occupiers of developed land are
required to:**

- ensure driveways and access ways to all buildings are maintained at a minimum of three (3) metres in width and a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back to clear access.

Firebreak Specifications

- must be not less than three (3) metres wide immediately inside and along all boundaries (including on boundaries adjacent to roads, rail and drain reserves and all public open space reserves)
- must be not more than four (4) metres wide (further width extensions may be considered upon written application for approval to the City)
- may have a corner turning radius of up to ten (10) metres
- must have a vertical clearance height of four (4) metres, with all over hanging vegetation trimmed back clear of the firebreak
- must be a mineral earth firebreak with a continuous trafficable surface for a 4WD vehicle, clear of any obstructions and must not terminate in a cul-de-sac (dead end)
- maintained and living lawns are acceptable in conjunction with, or in lieu of mineral earth firebreaks, provided that the same width and height requirements for a firebreak are maintained.

Firebreaks are intended to minimise the spread or extension of a bushfire and provide safe access on your property for emergency vehicles (ensuring fire does not travel under the vehicles or underfoot).



Bushfire Management Plan

Previously known as a Fire Management Plan. All properties that are subject to a Bushfire Management Plan as a result of a subdivision or development application or an approved treatment plan, must comply with the requirements of such plans in their entirety.

Additional Works

In addition to the requirements of this Notice, regardless of land size and location, you **may** be required to carry out further fire prevention works to reduce hazards **considered necessary by an Authorised Officer**. Any further requirement would be specified by way of a "work order" forwarded to the address of the owner(s) and/or occupier(s).

Some examples of these could be:

- ensure roofs, gutters and walls of all buildings on the land are free of flammable matter
- remove accumulated fuel such as leaf litter, twigs, dead bush and dead trees capable of carrying a running fire
- reduce unmanaged grasses/weeds by slashing, mowing or other means
- reduce long grasses in areas not being grazed or cultivated by slashing, mowing, bailing or by other means
- reduce vegetation to a low threat state from the outer edge of the firebreak through to the property boundary (e.g. no long grass or overhanging branches)
- assets identified in the City's **Bushfire Risk Management Plan 2018 - 2022** or any land identified with a treatment plan to reduce risk to assets.

Any owner and/or occupier who engages a contractor to undertake works on their behalf is responsible for ensuring that the completed works meet the requirements of this Fire Control Notice.

Any Fire Control Notice previously published by the City of Rockingham in the Government Gazette or in any locally circulated newsprint is hereby revoked.

Variation to the Fire Control Notice

To request authorisation to use other methods of fire prevention on your land outside of this notice, please apply in writing together with an 'Application to Vary Location and Type of Firebreaks' form (available on the City's website rockingham.wa.gov.au). Submit completed forms to the City of Rockingham no later than 31 October 2023.

A submission for a variation is required annually for the duration of that year's Fire Control Notice period.

If you require further information or would like to talk with a Fire Control Officer, please call **9528 0333** or email **firecontrol@rockingham.wa.gov.au**



Appendix 3 – Vehicular Access Requirements

Table 6: Vehicular access technical requirements

TECHNICAL REQUIREMENTS	1 Public roads	2 Emergency access way ¹	3 Fire service access route ¹	4 Battle-axe and private driveways ²
Minimum trafficable surface (metres)	In accordance with A3.1	6	6	4
Minimum horizontal clearance (metres)	N/A	6	6	6
Minimum vertical clearance (metres)	4.5			
Minimum weight capacity (tonnes)	15			
Maximum grade unsealed road ³	As outlined in the IPWEA Subdivision Guidelines	1:10 (10%)		
Maximum grade sealed road ³		1:7 (14.3%)		
Maximum average grade sealed road		1:10 (10%)		
Minimum inner radius of road curves (metres)		8.5		

Appendix 4 – Water Supply & Schedule 2

Use of Water Supply:

Water supply for firefighting in the event of a bushfire can be provided on a lot for use by emergency services or for use by the landowner, if their Bushfire Survival Plan is to stay and defend their property. Water supply in the form of a dedicated standalone tank may be provided solely for use by emergency services, and/or a water supply may be provided for use by the landowner in the form of non-drinking water (garden or grey water for firefighting) or drinking water. **It is important to note, that a combined tank of drinking water and water for firefighting purposes is not recommended.** It is required to be separated in accordance with section 4.2.3 of AS/NZS 3500.1:2018.

This requirement is necessary, as stagnant water may alter the quality of the drinking water and the emergency services, by law, may not be able to take water from the water supply to suppress a bushfire.

SCHEDULE 2: WATER SUPPLY DEDICATED FOR BUSHFIRE FIREFIGHTING PURPOSES

2.1 Water supply requirements

Water dedicated for firefighting should be provided in accordance with Table 7 below, and be in addition to water required for drinking purposes.

Table 7: Water supply dedicated for bushfire firefighting purposes

PLANNING APPLICATION	NON-RETICULATED AREAS
Development application	10,000L per habitable building
Structure Plan / Subdivision: Creation of 1 additional lot	10,000L per lot
Structure Plan / Subdivision: Creation of 3 to 24 lots	10,000L tank per lot or 50,000L strategic water tank
Structure Plan / Subdivision: Creation of 25 lots or more	50,000L per 25 lots or part thereof Provided as a strategic water tank(s) or 10,000L tank per lot

2.2 Technical requirements

2.2.1 Construction and design

An above-ground tank and associated stand should be constructed of non-combustible material. The tank may need to comply with AS/NZS 3500.1:2018.

Below ground tanks should have a 200mm diameter access hole to allow tankers or emergency service vehicles to refill direct from the tank, with the outlet location clearly marked at the surface. The tank may need to comply with AS/NZS 3500.1:2018. An inspection opening may double as the access hole provided that the inspection opening meets the requirements of AS/NZS 3500.1:2018. If the tank is required under the BCA as part of fire hydrant installation, then the tank will also need to comply with AS 2419.

Where an outlet for an emergency service vehicle is provided, then an unobstructed, hardened ground surface is to be supplied within four metres of any water supply.

2.2.2 Pipes and fittings

All above-ground, exposed water supply pipes and fittings should be metal. Fittings should be located away from the source of bushfire attack and be in accordance with the applicable section below, unless otherwise specified by the local government.

2.2.2.1 Fittings for above-ground water tanks:

- Commercial land uses: 125mm Storz fitting; or
- Strategic water tanks: 50mm or 100mm (where applicable and adapters are available) male camlock coupling with full flow valve; or
- Standalone water tanks: 50mm male camlock coupling with full flow valve; or
- Combined water tanks: 50mm male camlock coupling with full flow valve or a domestic fitting, being a standard household tap that enables an occupant to access the water supply with domestic hoses or buckets for extinguishing minor fires.

2.2.2.2 Remote outlets

In certain circumstances, it may be beneficial to have the outlet located away from the water supply. In such instances in which a remote outlet is to be used, the applicant should consult the local government and DFES on their proposal.