PROMPT ENGINEERING

Site Classification and Footing Detail Report

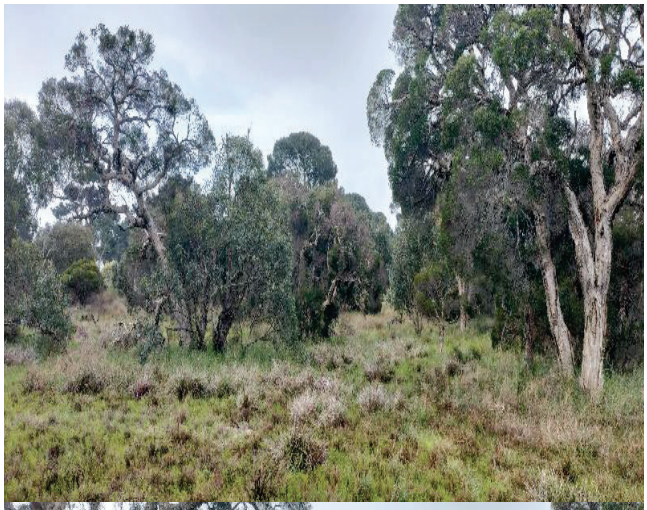
Site Details

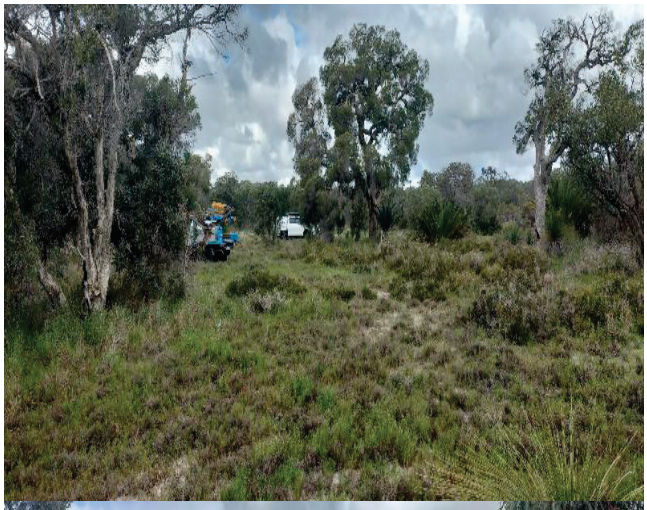
Client:	**Chris Coles**
Owner:	Chris Coles
Address:	**95 Paini Way Jandabup 6077 WA**

Report References

Client Ref No:	
Project No:	pln_94404
Inspection Date:	06-09-2024
Report Reference No:	rpt_86184
Date Certified:	08-09-2024

Site Description





Recommendation

Site Classification	**A** (in accordance with AS2870)
Footing Detail	**Refer to Engineer's Details and Specifications**
Sand pad requirements:	**No structural sand pad required, low lying area, refer to council for minimum FFL**
Wind Classification:	**N2 Equivalent** (single and double storey to AS4055)
Terrain Category	**TC2.5**
Shielding	**NS**
Topography	**T0**
Corrosion classification:	**R1 (in accordance with AS3700)**
Bush Fire Prone Area:	**YES**
Designation	Bush Fire Prone Area (additional planning and building requirements may apply to development on this site)
Designation Date	11/12/21 (since 08/12/15)
Local Government Authority	WANNEROO
Comments	This site has been in a designated bush fire prone area for longer than four months. Additional planning and building requirements may apply to development on this site.

Comments

This site is classified as "A" class site subject to the below earthworks being carried out.

Remove all topsoil and vegetation from the building area.

Turn over the site a minimum 800mm to ensure all building material/organic material including topsoil and tree roots are removed from the building area.

Backfill in horizontal layers of loose thickness not exceeding 300 mm using clean sand, compacted to achieve the following compaction criteria:

- minimum 6 PSP blows over the 150 mm to 450 mm depth interval;
- minimum 7 PSP blows over the 450 mm to 750 mm depth interval;
- minimum 9 PSP blows over the 750 mm to 1050 mm depth interval.

Waterproof membrane (WPM) is to be installed as shown on the footing details attached.

Notes

- This office is to be contacted should the site conditions encountered differ from those noted in this report.
- The site classification is provided subject to site preparation being in accordance with the provisions of AS3798 "Guidelines on earthworks for commercial and residential developments".
- The recommentations are based on performance as defined in AS2870. Minor foundation movement is to be expected. This can result in cracking up to a level 2 damage criteria. This is non structural cracking.
- **This site has been nominated as in a bushfire prone area as nominated on https://maps.slip.wa.gov.au/landgate/bushfireprone which is current at the time of the report being written. Please refer to local authority and land developer to determine if a BAL assessment is required.**
- All referenced standards to be the current version at the time of construction.
- Unless otherwise noted on the soil profile below, water table was not encountered on site at the time of inspection.

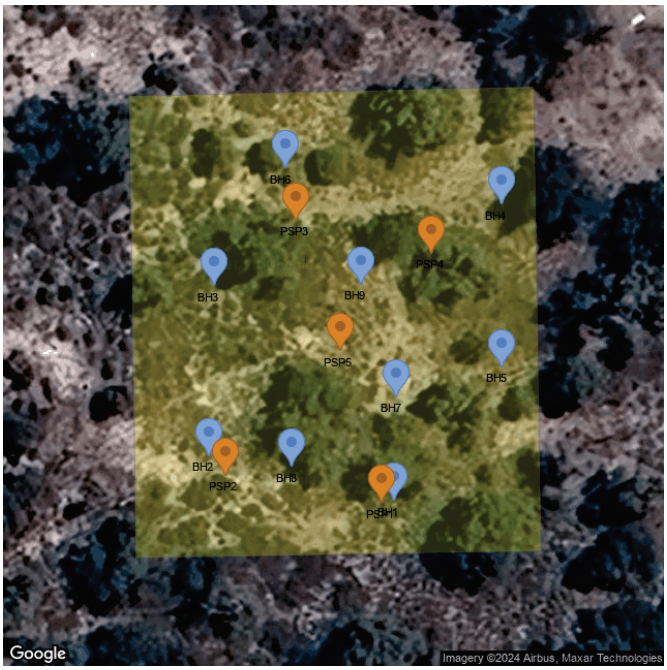
Soil Profile

BH1:	0-200mm	Topsoil
	200-500mm	Sand with trace silt and roots-grey white
	500-3300mm	Sand - white
BH2:	0-200mm	Topsoil
	200-500mm	Sand with trace silt and roots-grey white

	500-3300mm	Sand - white
BH3:	0-200mm	Topsoil
	200-700mm	Sand with trace silt and roots-grey white
	700-3300mm	Sand - white
BH4:	0-200mm	Topsoil
	200-600mm	Sand with trace silt and roots-grey white
	600-3000mm	Sand - white
	3000-3300mm	Silty SAND- dark brown
BH5:	0-200mm	Topsoil
	200-600mm	Sand with trace silt and roots-grey white
	600-2700mm	Sand - white
	2700-3300mm	Sand with silt
BH6:	0-200mm	Topsoil
	200-700mm	Sand with trace silt and roots-grey white
	700-3300mm	Sand - white
BH7:	0-200mm	Topsoil
	200-600mm	Sand with trace silt and roots-grey white
	600-3300mm	Sand - white
BH8:	0-200mm	Topsoil
	200-700mm	Sand with trace silt and roots-grey white
	700-3300mm	Sand - white
BH9:	0-200mm	Topsoil
	200-600mm	Sand with trace silt and roots-grey white
	600-3300mm	Sand - white

Borehole / PSP location Plan

Legend:
PSP = Perth Sand Penetrometer
BH = Bore Hole location

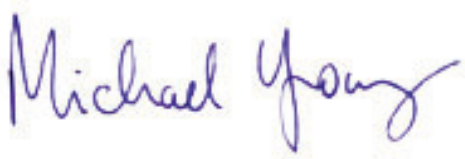


Additional information and Notes

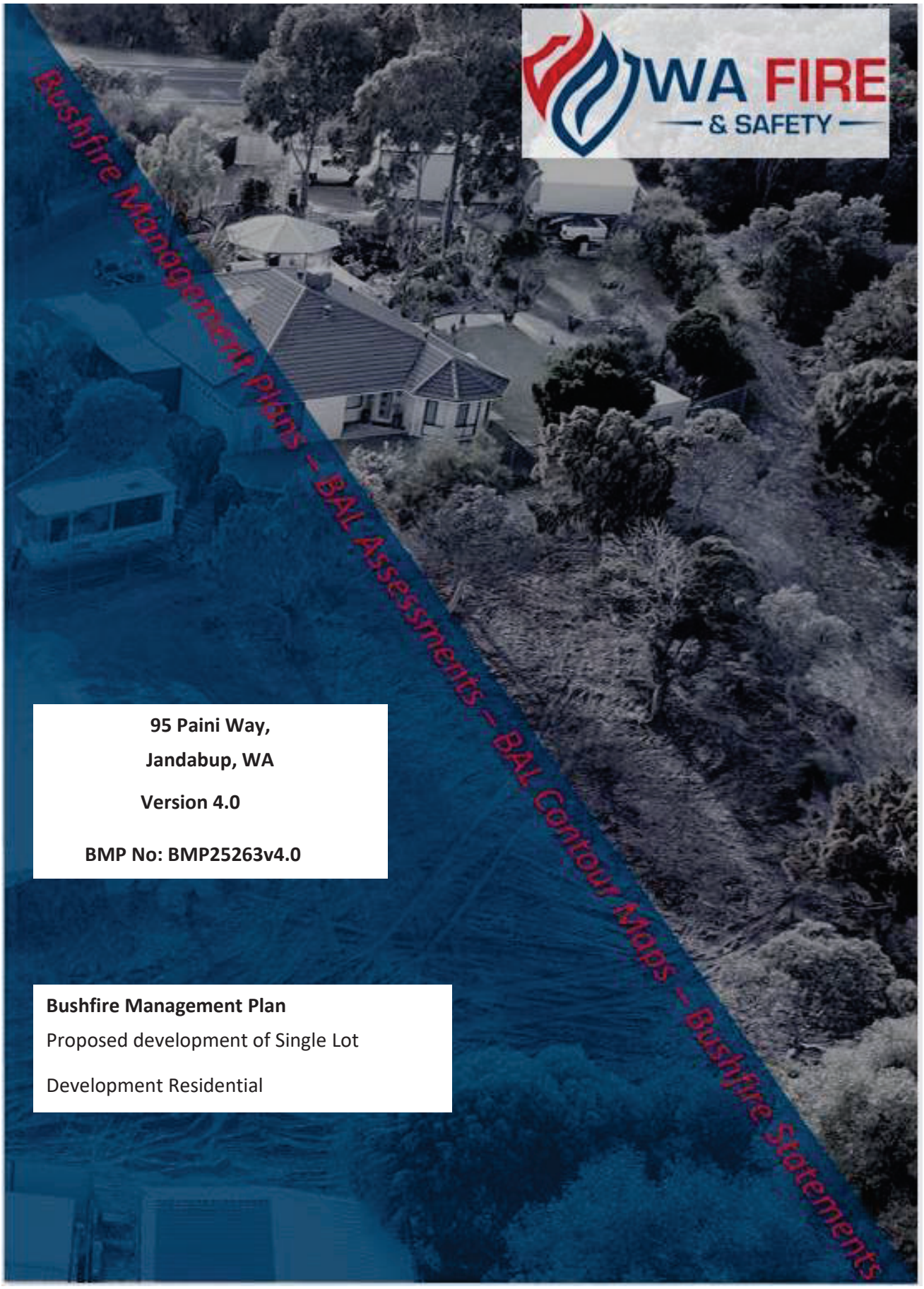
PROMPT ENGINEERING

PSP Results

Location	0-150mm	150-450mm	450-750mm	750-1050mm	1050-1350mm	1350-1650mm	1650-1950mm
PSP1	SET	1	3	4			
PSP2	SET	1	3	5			
PSP3	SET	1	4	4			
PSP4	SET	1	3	4	8	11	16
PSP5	SET	1	3	3	8	11	15



Michael Anthony Young
Michael Young BE MIE (276533)



95 Paini Way,

Jandabup, WA

Version 4.0

BMP No: BMP25263v4.0

Bushfire Management Plan

Proposed development of Single Lot

Development Residential

Table of Contents

List of figures

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: 95 Paini Way, Jandabup, Western Australia,

Date of site visit: 6 December 2024

Report Author and/ or Reviewer: Dwayne Griggs, Level 2, BPAD 40466 - WA Fire & Safety

(BMP) Bushfire Management Plan Number: BMP 25263v4.0

BMP Date: 9 December 2025

If one or more of the following are marked **X / YES**, then this BMP should be referred to DFES for comment:

	Yes	No
Has the BAL been calculated by a method other than Method 1 as outlined in AS3959?		X
Have any of the bushfire protection criteria elements been addressed through the use of an outcomes-based approach?		X
Strategic planning proposal (including rezoning applications)		X
Local planning scheme amendment containing supplementary provisions, additional to the deemed provisions for bushfire risk management		X
Where a bushfire local planning policy, or variation to the acceptable solutions or the APZ is proposed		X
Where there is a conflict of opinion between the decision maker and proponent		X
Expert technical advice on bushfire behaviour, emergency management, or other occasions where bushfire technical advice is required to support planning decision-making		X
Expert technical advice on bushfire matters referred to State Administrative Tribunal (SAT) or Development Assessment Panel (DAP)		X
Comments on future buildings' compliance with FES Commissioner's operational requirement guidelines		X
Decision maker discretionary referral, (e.g. renewable energy, hazardous materials, vulnerable land use)		X

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". Referral to DFES Checklist

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

Dwayne Griggs, WA Fire & Safety, 9 December 2025

Document control

Report version	Purpose	Author/reviewer and accreditation details	Date submitted
1.0	Approval of a Building Envelope Change, Class 1a Primary Dwelling, Class 1a Ancillary Dwelling & non associated Class 10a Shed	Dwayne Griggs Level 2- BPAD40466	10 September 2025
2.0	Changes to Driveway and Water Tank Location	Dwayne Girggs Level 2 – BPAD40466	28 November 2025
3.0	Ancillary Dwelling Moved Slightly Tree plan updated	Dwayne Griggs Level 2 – BPAD40466	4 December 2025
4.0	Ancillary Dwelling Location Update	Dwayne Griggs Level 2 – BPAD40466	9 December 2025

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 comply with the latest State Planning Policy 3.7 Bushfire April 2023 and the Planning for Bushfire Guidelines September 2024.

Bushfire Management Plan Author & Reviewer:
WA Fire & Safety, Maida Vale, Western Australia
Dwayne Griggs
Level 2 FPAA Accredited Practitioner
Accreditation Number: BPAD40466
Admin (M-F / 0800-1600) - Phone: 0473078179
Admin Email: Admin@wafiresafety.com.au
Webpage: https://www.wafiresafety.com.au/

1.0 Introduction and Proposal Details

This BMP has been requested by the landowners for the proposed development of 95 Paini Way, Jandabup, Western Australia, within the LGA of the City of Wanneroo.

The zoned Rural - water protection lot is currently identified as inside the Bushfire Prone area. Currently this lot is in an undeveloped state.

This proposed application is for a Building Envelope Change, Class 1a primary Dwelling, Class 1a Ancillary Dwelling and Non-Associated Class 10a Shed.

The assessed bushfire risk for the lot is extreme, BAL-29 is achievable for the dwellings with vegetation separation and an APZ (Asset Protection Zone) established inside the lot.

Determined BAL rating is BAL-FZ on the day of the site visit and further vegetation modification is required to achieve BAL-29.

1.1 Site Location

The proposed development is located on Paini Way having access from the North.

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.

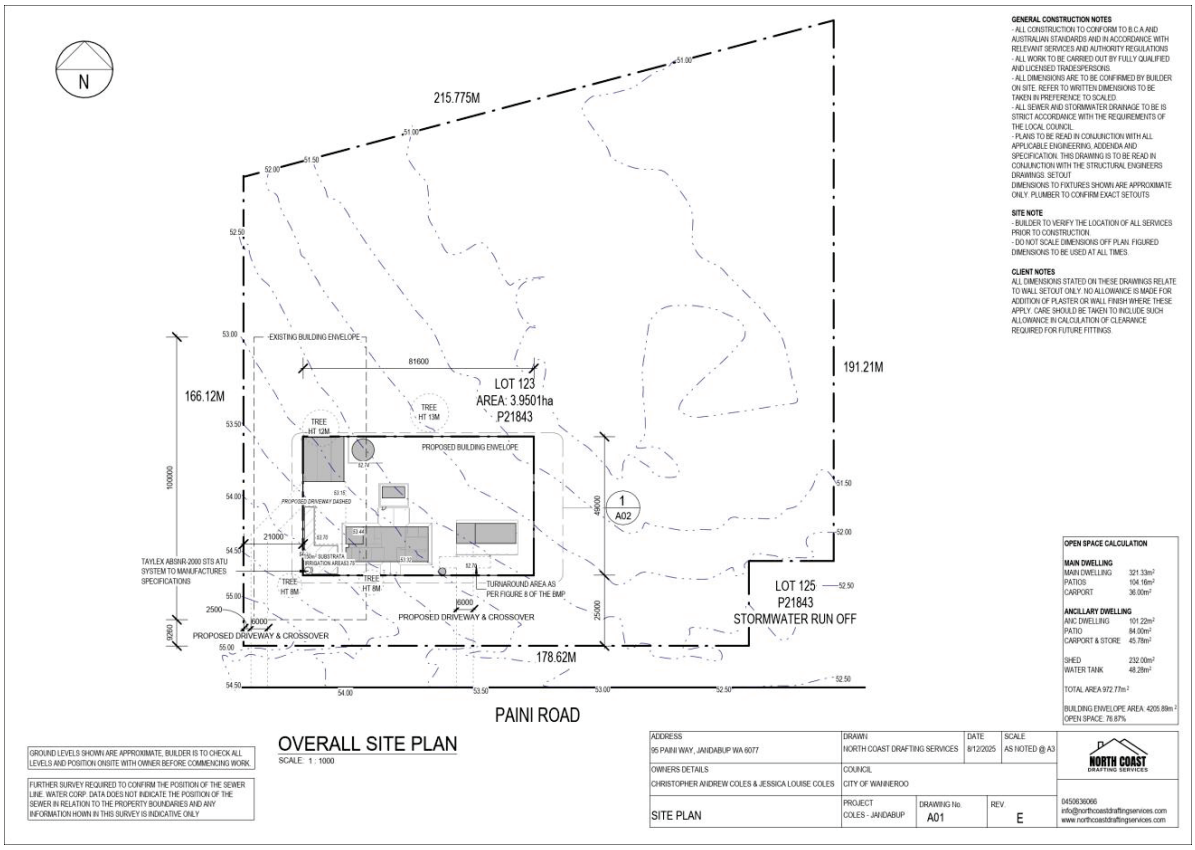
The objectives of this Bushfire Management Plan are to:

- 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



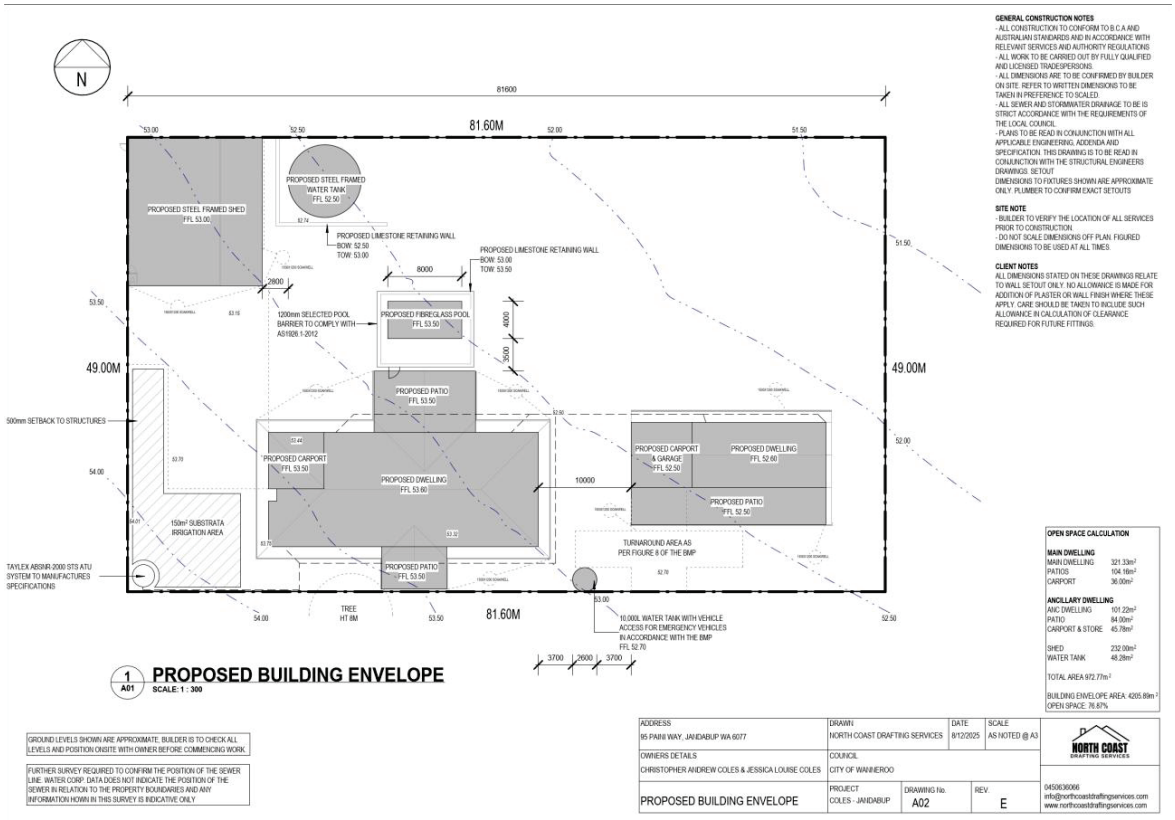


FIGURE 2: Proposed Location

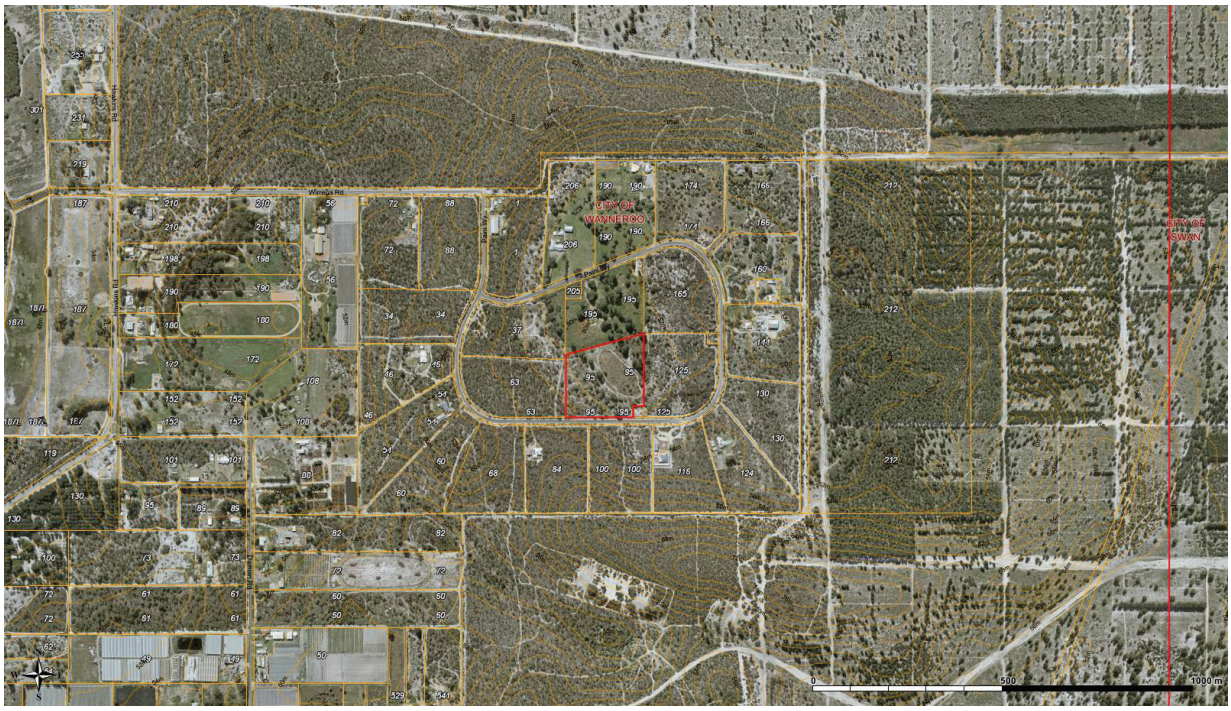
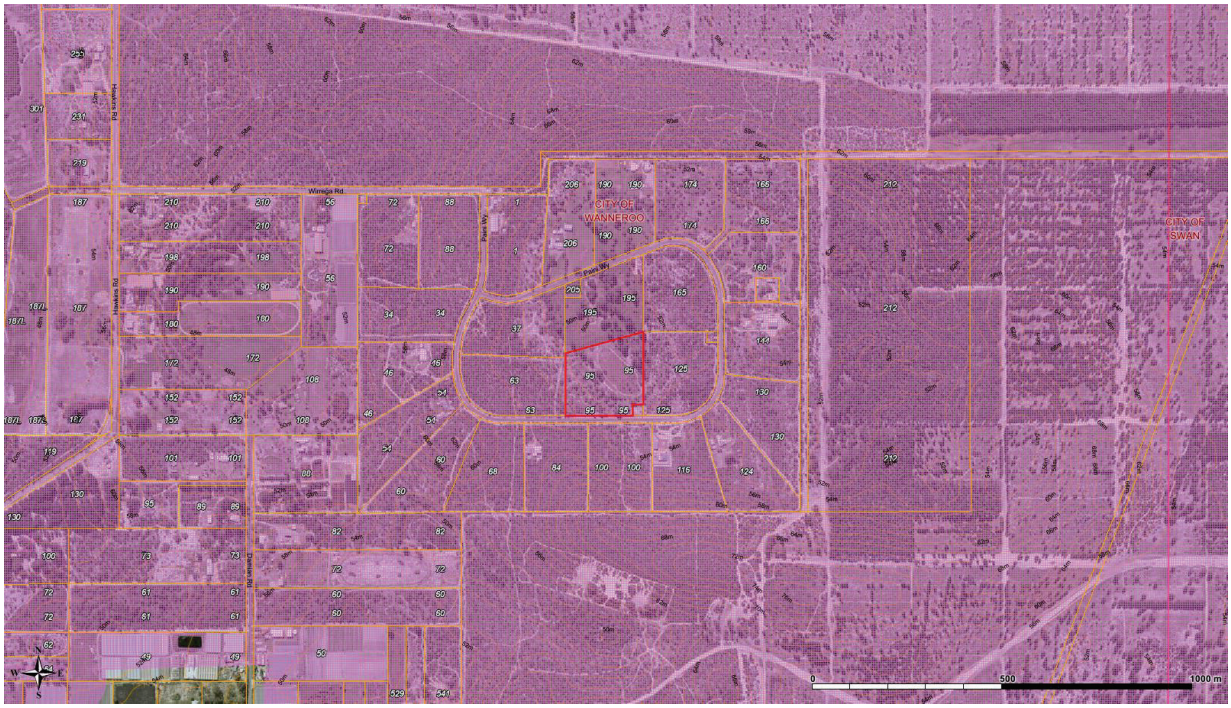


FIGURE 3: **Map of Bushfire Prone Areas for the subject site**



Site is entirely inside the bushfire prone area.

2.0 Environmental Considerations

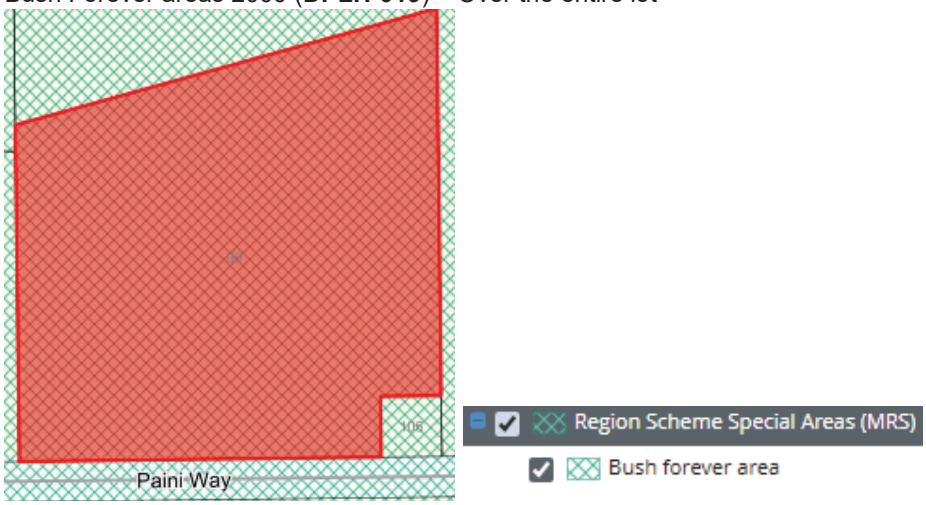
Limited considerations below have been assessed with the following issues:

Department of Biodiversity, Conservation and Attractions (DBCA)

Conservation category wetlands and buffer (**DBCA-019)**
Augusta to Walpole **DBCA-017**)
RAMSAR wetlands (**DBCA-010**)
Threatened and priority flora (**DBCA-036**)-May require investigation.
Threatened Ecological Communities (**DBCA-038**)-May require investigation.

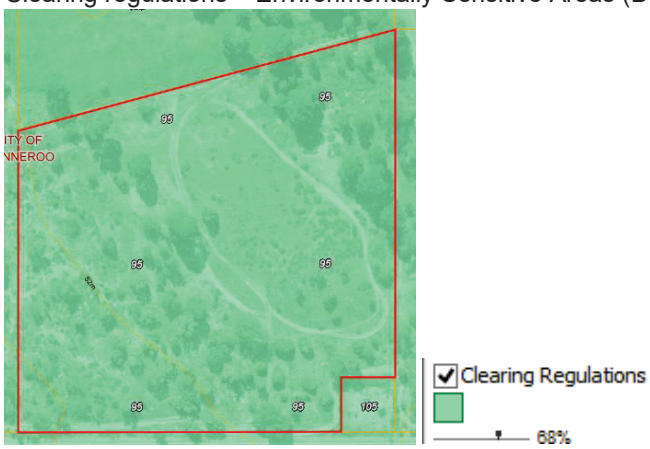
Department of Planning, Lands and Heritage

Bush Forever areas 2000 (**DPLH-019**) – Over the entire lot



Department of Water and Environmental Resources (DWER)

Clearing regulations – Environmentally Sensitive Areas (**DWER-046**) -Over the entire lot



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

Department of Primary Industries and Regional Development (DPIRD)

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

2.1 Native vegetation – Modification and Clearing

Vegetation modification is required to achieve BAL-29 within the proposed lot.
The area of 7168m2 of class A Forest will be required to be modified to Asset Protection Zone – Siting and Design (Appendix 1) and the requirements of the Local Government Authority Firebreak Notice (Appendix 2) in order to establish and APZ of BAL-29 for the dwellings.

There are no alternative bushfire management design solutions that will reduce the extent of vegetation clearing as the dwelling location has been provided to minimise vegetation modification while providing suitable access in and out without restriction.

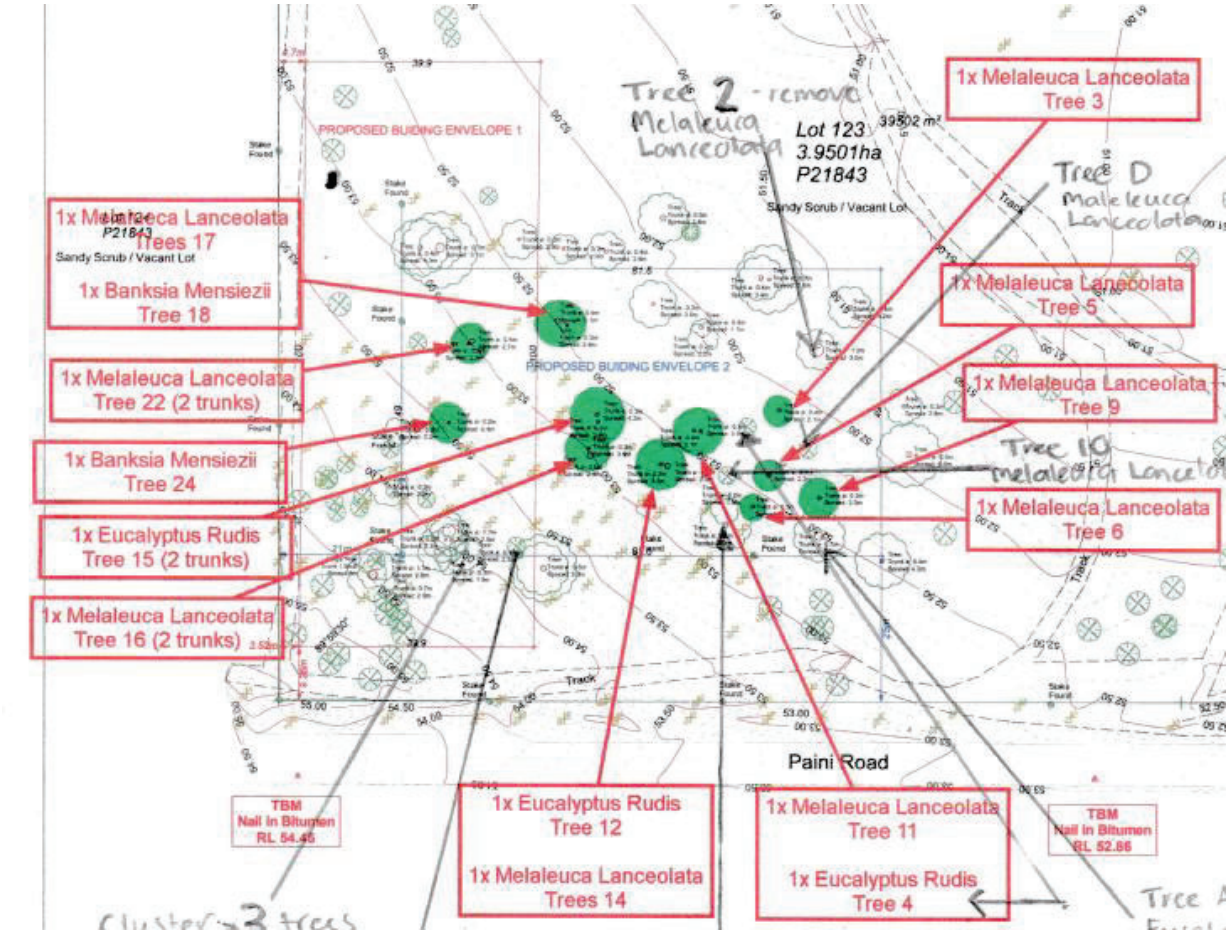
The proposed layout will result in an appropriate balance between bushfire risk mitigation and vegetation retention, the already established driveway and proposed turn-around area is inside the proposed APZ.

2.2 Revegetation/Landscape Plans

Revegetation inside the APZ will be designed and maintained as per the Asset Protection Zone – Siting and Design (Appendix 1) and the Local Government Authority Firebreak Notice (Appendix 2)

Landscaping plans have been provided; the intention is to have the existing native vegetation modified to a low threat state inside the APZ as per the Asset Protection Zone – Siting and Design (Appendix 1).

Tree Plan as below:



Trees not mentioned in this tree plan will be retained, pruned and managed, and BAL-29 will be achieved.

3.0 Bushfire Assessment Results

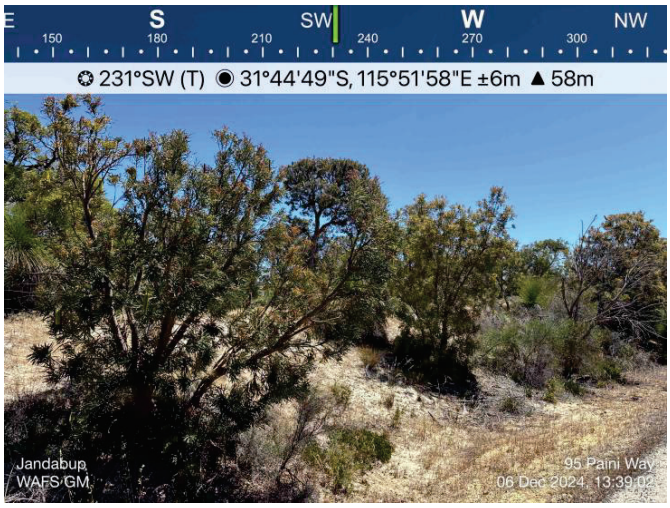
The site requires a BAL assessment in accordance with clause 6.5 of SPP 3.7. The assessment of this site or development was undertaken by Dwayne Griggs of WA Fire & Safety, a BPAD Accredited Level 2 Practitioner for the purpose of determining the Bushfire Attack Level in accordance with AS 3959 - 2018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

3.1 BAL Assessment Inputs

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 Class A Forest, Class D Scrub, Class C Shrub and Class G Grassland.

Photo ID:	149	**Plot:**	1
Vegetation Classification or Exclusion Clause			
Class D Scrub			
Description / Justification for Classification			
More than 2m in height less than 6m Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads			



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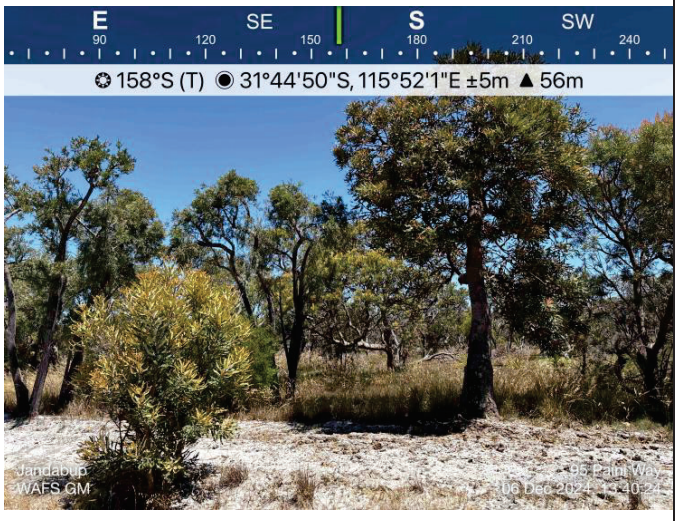
Description / Justification for Classification			
More than 2m in height less than 6m Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads			



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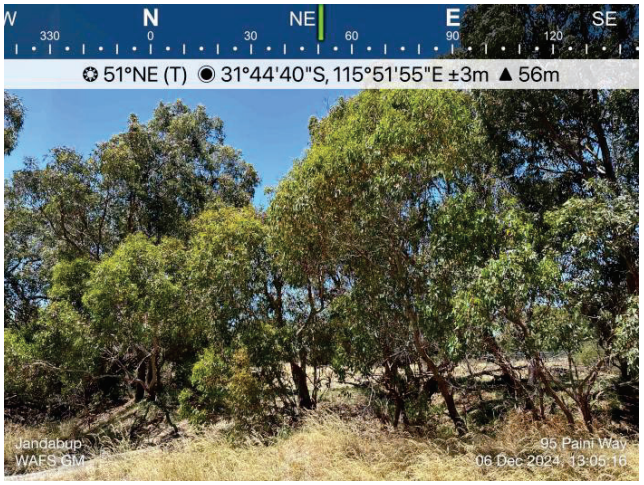
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			

Photo ID:	40	**Plot:**	2
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			



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Description / Justification for Classification			
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Photo ID:	140	**Plot:**	3
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			

Photo ID:	189	**Plot:**	3
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			

Photo ID:	104	**Plot:**	4
Vegetation Classification or Exclusion Clause			
Class G Grassland			
Description / Justification for Classification			
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads			

Photo ID:	106	**Plot:**	4
Vegetation Classification or Exclusion Clause			
Class G Grassland			
Description / Justification for Classification			
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads			

Photo ID:	117	**Plot:**	5
Vegetation Classification or Exclusion Clause			
Class C Shrubland			
Description / Justification for Classification			
Less Than 2m in Height Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads			

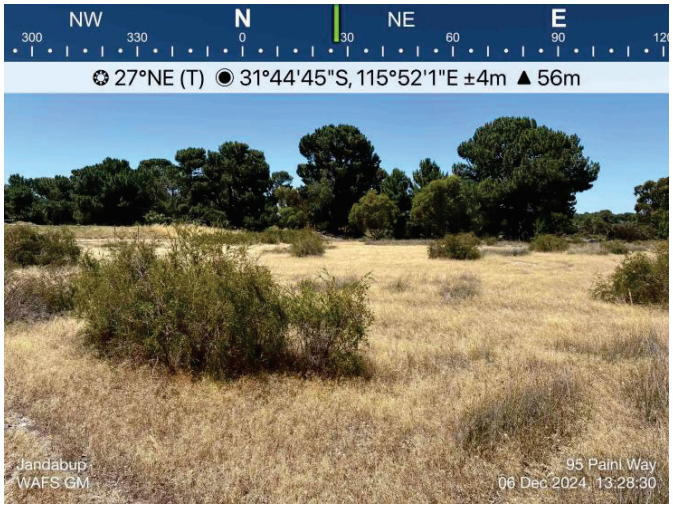

Photo ID:	186	**Plot:**	5
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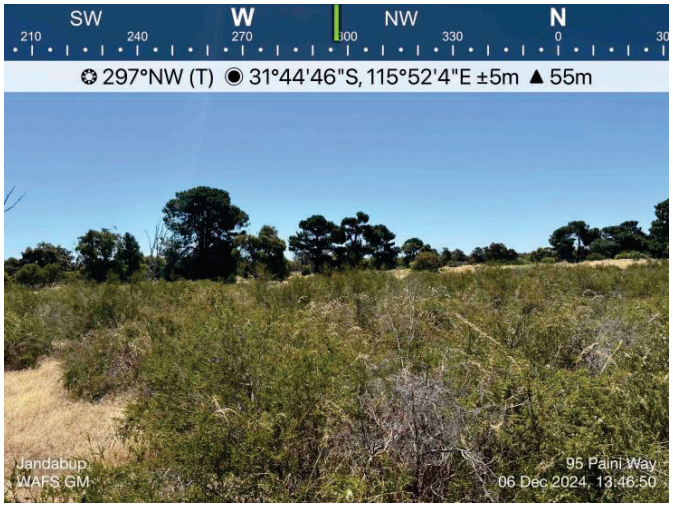
Class C Shrubland			
Description / Justification for Classification			
Less Than 2m in Height Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads			



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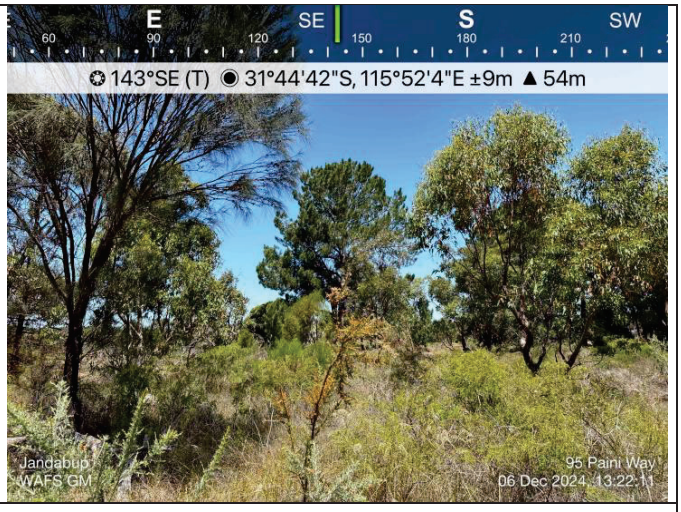
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			
Photo ID:	184	**Plot:**	6
Vegetation Classification or Exclusion Clause			
Class A Forest			
Description / Justification for Classification			
Overstorey 10-30m in Height Canopy Cover of 30-70% Understorey of Low Trees, Shrubs, Scrub and Grasses High surface, Near surface and Intermediate Fuel loads			
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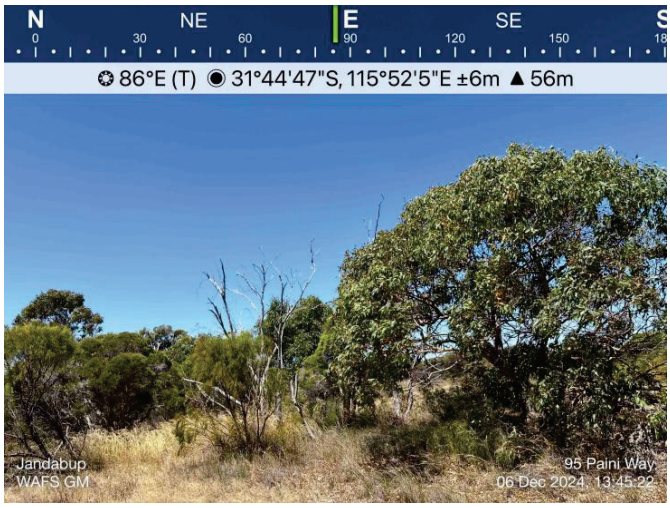
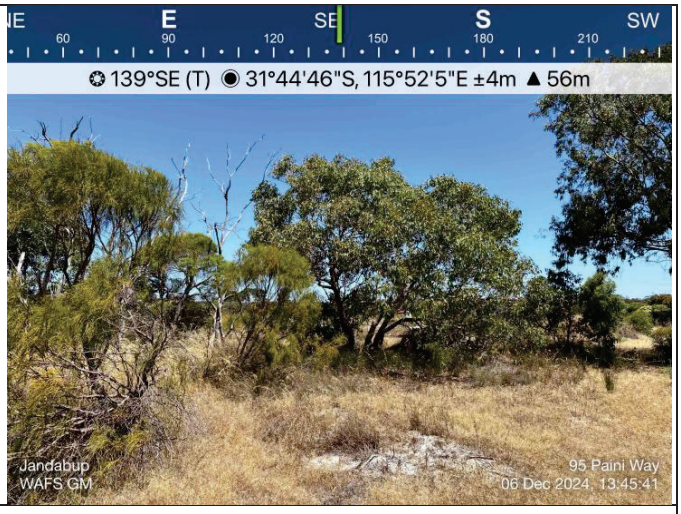
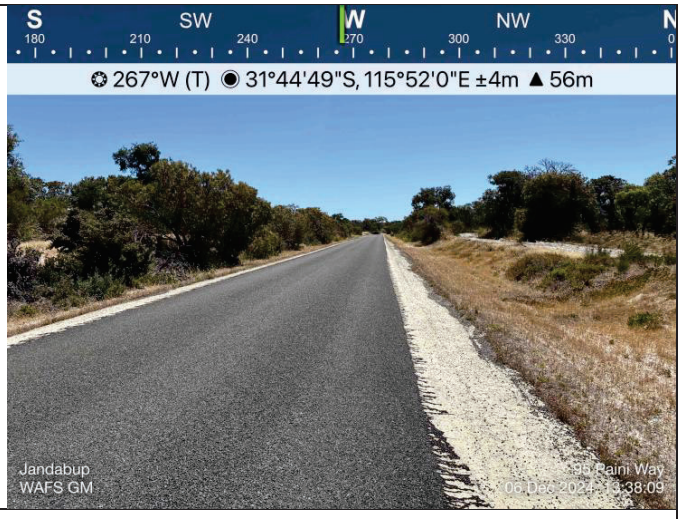
Vegetation Classification or Exclusion Clause			
Class D Scrub			
Description / Justification for Classification			
More than 2m in height less than 6m Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads			
Photo ID:	179	**Plot:**	7
Vegetation Classification or Exclusion Clause			

Class D Scrub	
Description / Justification for Classification	
More than 2m in height less than 6m Canopy Cover of 30-70% Understorey of Grasses Moderate surface, Near surface and Intermediate Fuel loads	
Photo ID: 148 **Plot:** 8	
Vegetation Classification or Exclusion Clause	
Class G Grassland	
Description / Justification for Classification	
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads	
Photo ID: 176 **Plot:** 8	
Vegetation Classification or Exclusion Clause	
Class G Grassland	
Description / Justification for Classification	
Grassland of >100mm in Height Canopy Cover of Less than 10% Understorey of Grasses Minimal surface, Near surface and Intermediate Fuel loads	
Photo ID: 144 **Plot:** 9	
Vegetation Classification or Exclusion Clause	

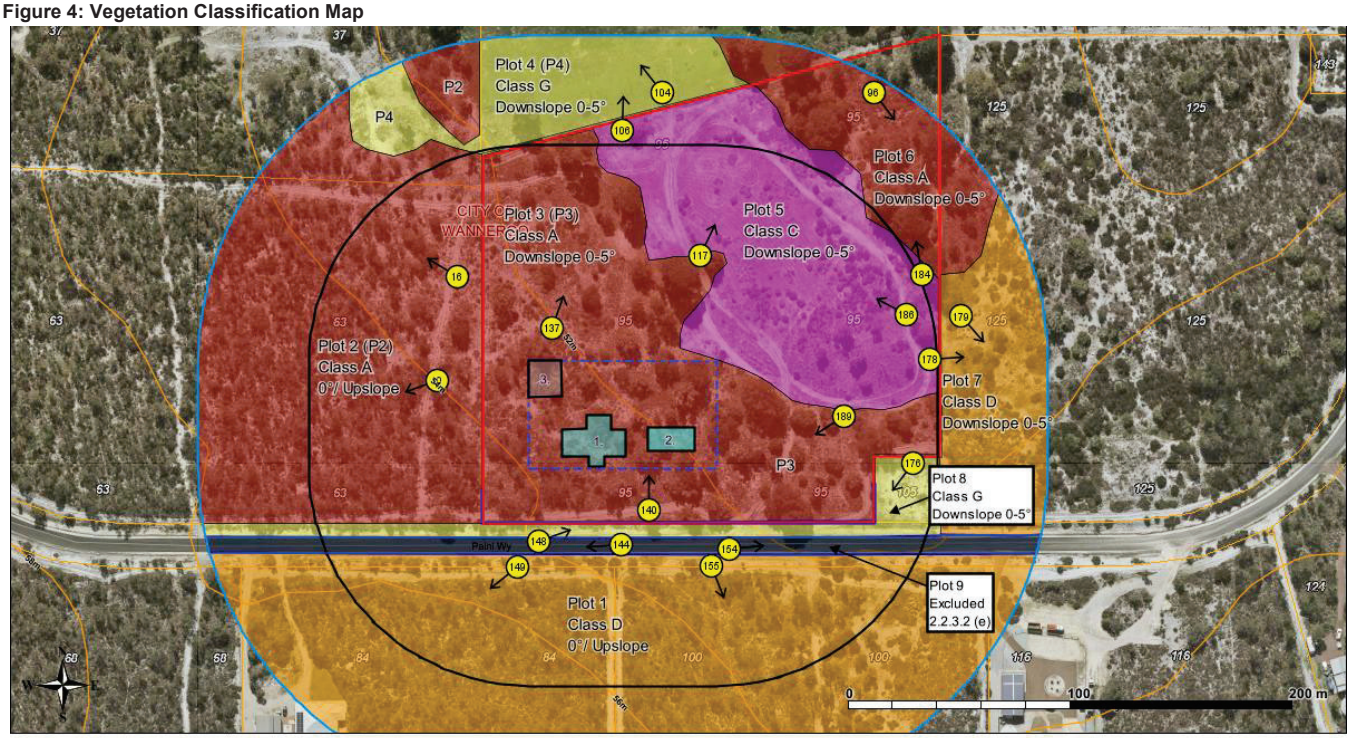
Excludable - 2.2.3.2(e) Non Vegetated Areas	
Description / Justification for Classification	
Maintained Areas Canopy Cover of Less than 10% Paini Way Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas	
Photo ID: 154 **Plot:** 9	
Vegetation Classification or Exclusion Clause	
Excludable - 2.2.3.2(e) Non Vegetated Areas	
Description / Justification for Classification	
Maintained Areas Canopy Cover of Less than 10% Paini Way Insufficient Fuels to increase the risk from bushfire Non-Vegetated Areas	

This site is upslope to the South-West, and downslope to the North-East.

Table 3A: Vegetation Classification and Slopes

Plot	Vegetation Classification	Effective Slope
1	Class D Scrub	0/Upslope
2	Class A - Forest	0/Upslope
3	Class A - Forest	0-5 Downslope
4	Class G Grassland	0-5 Downslope
5	Class C Shrubland	0-5 Downslope
6	Class A - Forest	0-5 Downslope
7	Class D Scrub	0-5 Downslope
8	Class G Grassland	0-5 Downslope
9	Excludable – Clause 2.2.3.2(e)	-

Figure 4: Vegetation Classification Map



Legend

Photo points

100m Vegetation Survey
100m

150m Vegetation Survey Exc 2.2.2.2(a)
150m

Property boundary(Size)
Property Boundary 3.9 ha

Buildings
1. Class 1a Primary Dwelling
2. Class 1a Ancillary Dwelling
3. Class 10a Non-Associated Shed

Proposed Building Envelope
Proposed Building Envelope (4194m2)

Vegetation 0-150m ALL
A. Forest, -5
A. Forest, 0
C. Shrubland, -5
D. Scrub, -5
D. Scrub, 0
Excluded, e, 0.0
G. Grassland, -5

Local Government Authority

State Roads

Other Roads

DPIRD 2m Contours

3.2 BAL-Assessment Outputs

Table 3B, 3C and 3D provide the distances and determined radiant heat impact in the form of a BAL rating before vegetation modification or the establishment of APZ.

Table 3B: Determined BAL Ratings 1.Class 1a Primary Dwelling

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	40m	BAL – 12.5
2	Class A - Forest	0/Upslope	36m	BAL – 19
3	Class A - Forest	0-5 Downslope	0m	BAL – FZ
4	Class G Grassland	0-5 Downslope	>100m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	43m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	26m	BAL – 12.5
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

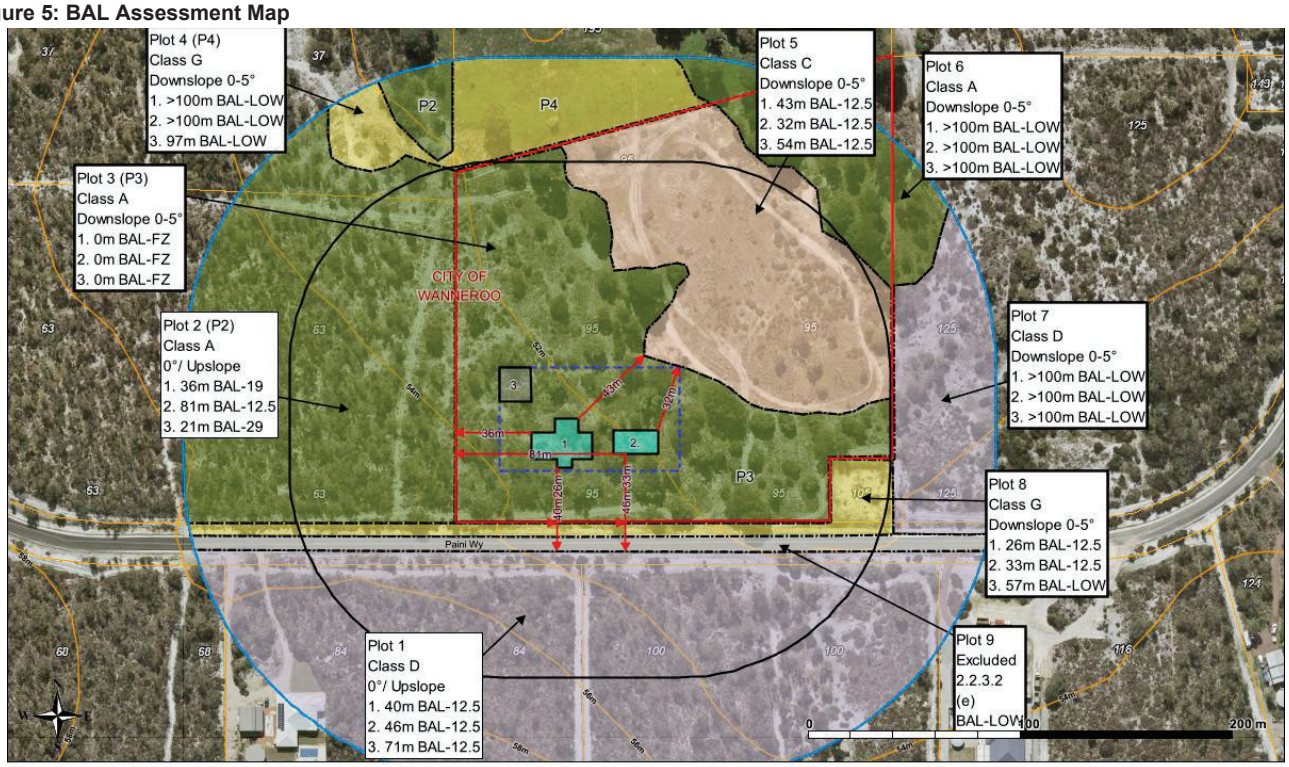
Table 3C: Determined BAL Ratings 2.Class 1a Ancillary Dwelling

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	46m	BAL – 12.5
2	Class A - Forest	0/Upslope	81m	BAL – 12.5
3	Class A - Forest	0-5 Downslope	0m	BAL – FZ
4	Class G Grassland	0-5 Downslope	>100m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	32m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	33m	BAL – 12.5
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

Table 3D: Determined BAL Ratings 1.Class 10a Non-Associated Shed

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	71m	BAL – 12.5
2	Class A - Forest	0/Upslope	21m	BAL – 29
3	Class A - Forest	0-5 Downslope	0m	BAL – FZ
4	Class G Grassland	0-5 Downslope	97m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	54m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	57m	BAL – LOW
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

Figure 5: BAL Assessment Map



Legend

100m Vegetation Survey
100m
150m Vegetation Survey Exc 2.2.2.2(a)
150m
Dimensions Pre APZ
Effective Slope(°)
Separation Distance (m)
Property boundary(Size)
Property Boundary 3.9 ha
Buildings
1. Class 1a Primary Dwelling
2. Class 1a Ancillary Dwelling
3. Class 10a Non-Associated Shed
Proposed Building Envelope
Proposed Building Envelope (4194m2)
Vegetation 0-150m ALL
A. Forest, -5
A. Forest, 0
C. Shrubland, -5
D. Scrub, -5
D. Scrub, 0
Excluded, e, 0.0
G. Grassland, -5
Local Government Authority
State Roads
Other Roads
DPIRD 2m Contours

Table 3E, 3F and 3G provides the indicative BAL rating after the proposed APZ has been established inside the lot boundary.

Table 3E: Prescribed BAL ratings and APZ distances 1. Class 1a primary Dwelling

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	40m	BAL – 12.5
2	Class A - Forest	0/Upslope	36m	BAL – 19
3	Class A - Forest	0-5 Downslope	27m	BAL – 29
4	Class G Grassland	0-5 Downslope	>100m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	43m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	26m	BAL – 12.5
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

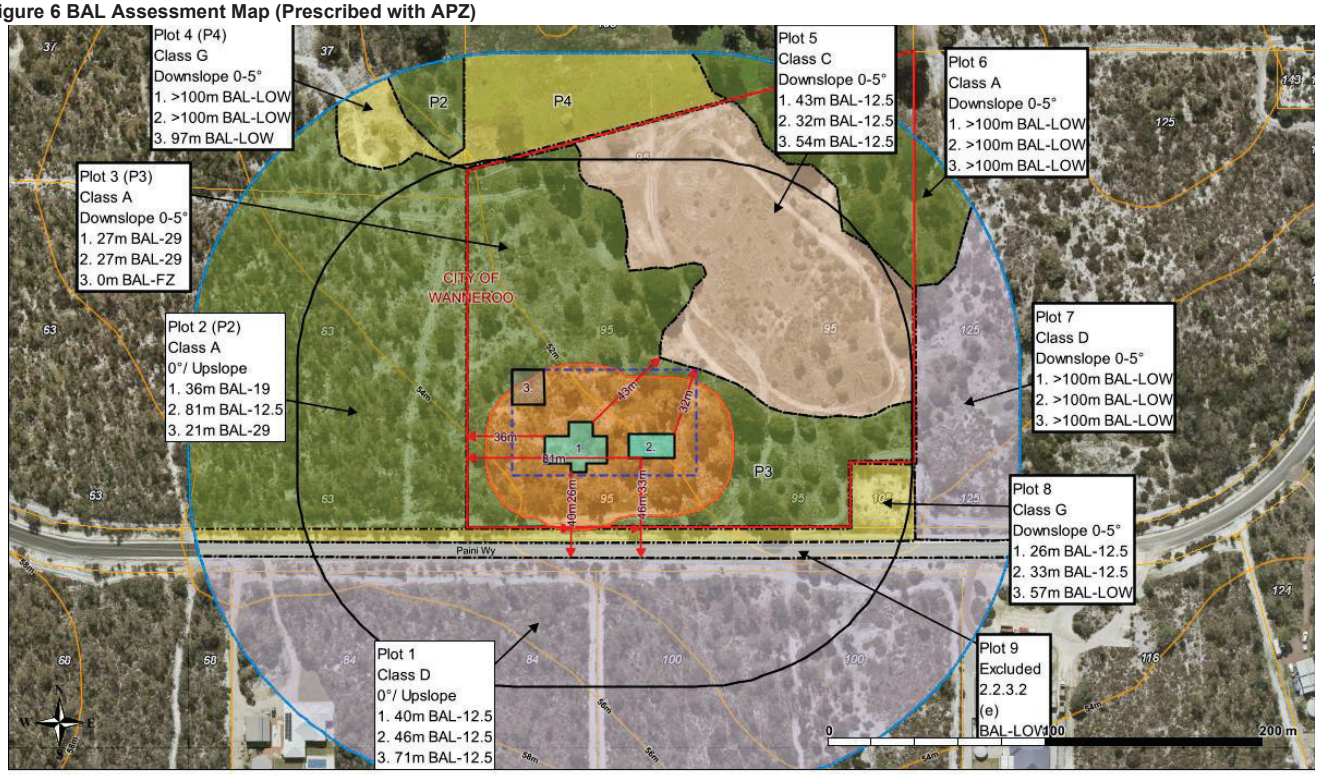
Table 3F: Prescribed BAL ratings and APZ distances 2. Class 1a Ancillary Dwelling

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	46m	BAL – 12.5
2	Class A - Forest	0/Upslope	81m	BAL – 12.5
3	Class A - Forest	0-5 Downslope	27m	BAL – 29
4	Class G Grassland	0-5 Downslope	>100m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	32m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	33m	BAL – 12.5
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

Table 3G: Prescribed BAL ratings and APZ distances 3. Class 10a Non-Associated Shed

Plot	Vegetation Classification	Effective Slope in Degrees	Separation (m)	BAL
1	Class D Scrub	0/Upslope	71m	BAL – 12.5
2	Class A - Forest	0/Upslope	21m	BAL – 29
3	Class A - Forest	0-5 Downslope	0m	BAL – FZ
4	Class G Grassland	0-5 Downslope	97m	BAL – LOW
5	Class C Shrubland	0-5 Downslope	54m	BAL – 12.5
6	Class A - Forest	0-5 Downslope	>100m	BAL – LOW
7	Class D Scrub	0-5 Downslope	>100m	BAL – LOW
8	Class G Grassland	0-5 Downslope	57m	BAL – LOW
9	Excludable – Clause 2.2.3.2(e)	-	-	BAL – LOW

Figure 6 BAL Assessment Map (Prescribed with APZ)

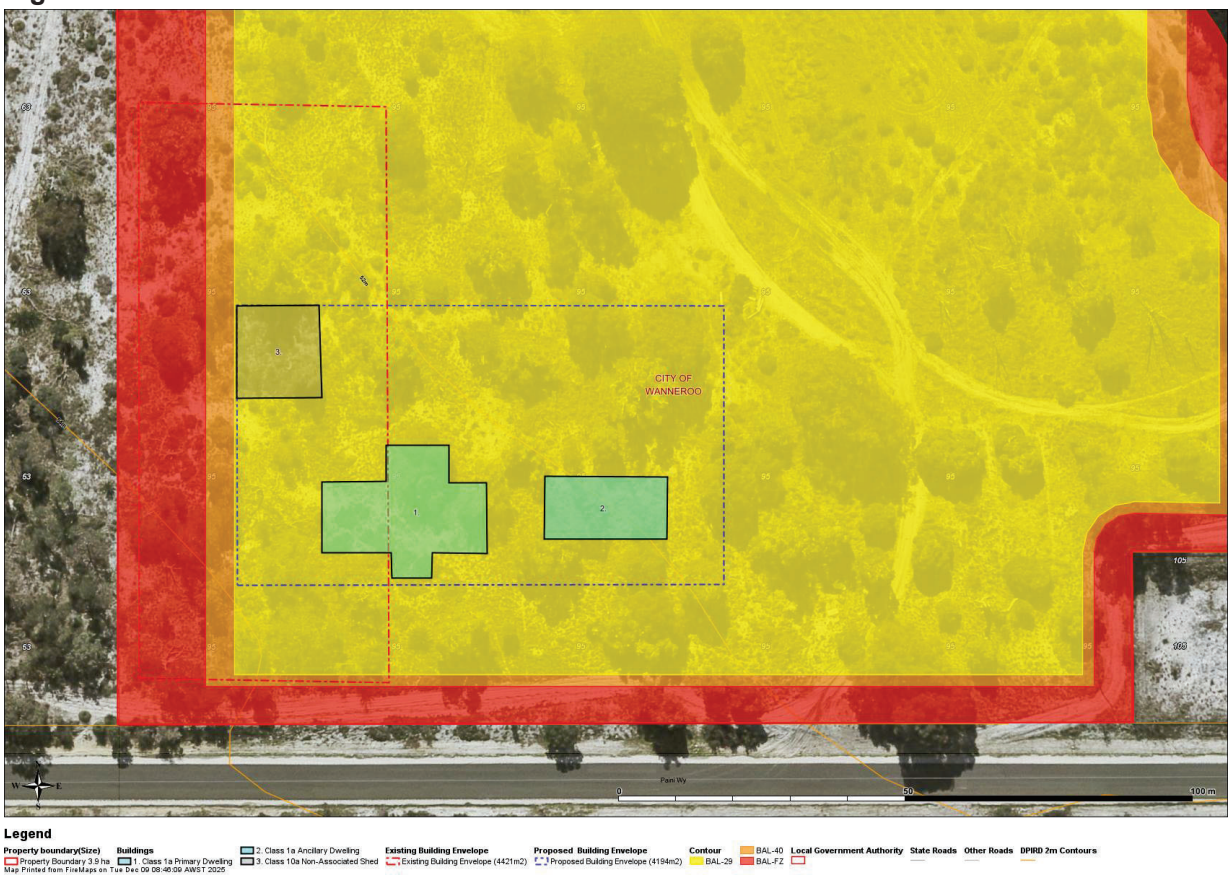


Legend

100m Vegetation Survey
100m
150m Vegetation Survey Exc 2.2.2.2(a)
150m
Dimensions Post APZ
Effective Slope(°)
Separation Distance (m)
Property boundary(Size)
Property Boundary 3.9 ha
Buildings
1. Class 1a Primary Dwelling
2. Class 1a Ancillary Dwelling
3. Class 10a Non-Associated Shed
Proposed Building Envelope
Proposed Building Envelope (4194m2)
A2.1 Asset Protection Zone (APZ)
APZ of 27m/ Lot Boundary South
Vegetation 0-150m -APZ
A. Forest, -5
A. Forest, 0
C. Shrubland, -5
D. Scrub, -5
D. Scrub, 0
Excluded, e, 0.0
G. Grassland, -5
Local Government Authority
State Roads
Other Roads
DPIRD 2m Contours

Figure 7 shows the prescribed BAL Rating within the Proposed Building Envelope (Blue). The map illustrates that the proposed Building Envelope is entirely within the BAL-29 area. The old BE did not achieve BAL-29, was too close to the boundary and forces habitable structures away from the road increasing driveway length, APZ sizes and clearing.

Figure 7



4.0 Identification of Bushfire Hazard Issues

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

- The development is bounded by class A Forest on all sides from both proposed dwellings. The vegetation is <10m from the walls of the proposed structures before APZ is established.
- Asset Protection Zones are to be established and maintained in perpetuity to ensure the class 1a dwellings will maintain BAL-29.
- The indicative BAL ratings are to demonstrate compliance only and will need to be established during the building process with building permit being issued after BMP is approved by the local government authority, APZ has been established and the issue of a BAL-29 Report and certificate.
- As this development is above BAL-LOW the relevant bushfire protection criteria apply and will need to be addressed (section 4.0).

5.0 Assessment against the Bushfire Protection Criteria

5.1 Compliance Table

Table 4: Compliance with bushfire protection criteria

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
Element 1: Location Avoid broader landscapes that present an unacceptable bushfire risk to life, property and infrastructure	**BPA Area 1**	**Not Applicable** for Residential Development
	BPA Area 2	**Not Applicable** for Residential Development
Element 2: Siting and design Ensure siting and design solutions: • manage or mitigate the bushfire risk to people, property and infrastructure; and • avoid, or where unavoidable, minimises the clearing of native vegetation	**A2.1a Siting and Design** Every proposed new residential habitable building or associated structure achieves a radiant heat impact not exceeding 29 kW/m² (BAL-29).	All proposed habitable dwellings within the subject lot can achieve BAL-29 or less in the proposed location(s). Entire proposed building envelope can achieve BAL-29 anywhere within with an Asset Protection Zone. This will need to be assessed/prescribed for any future dwellings that are not a part of this application.
	A2.1b Siting in an area with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). The siting of a residential habitable building, with a radiant heat impact exceeding 29 kW/m² (BAL-40 or BAL-FZ). **Should only be considered where:** • the lot was created prior to December 2015; and	BAL-29 or less and A2.1a can be achieved.

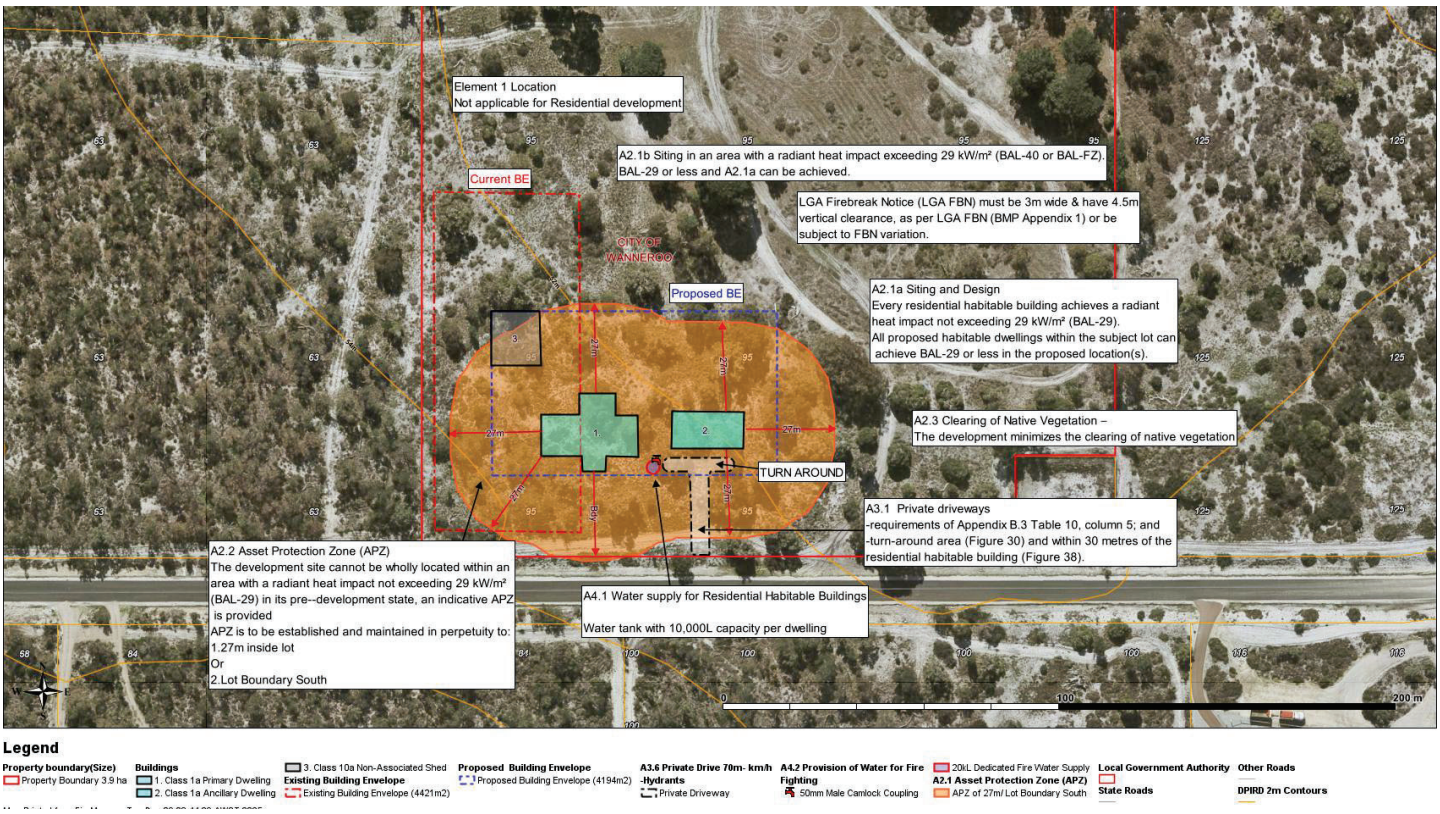
Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	• there are demonstrated site characteristics and/or biodiversity or conservation values that prevent the achievement of a radiant heat impact not exceeding 29 kW/m2 (BAL-29); and • it is demonstrated that the reduction of the building footprint or a redesign to manage or mitigate the risk, is not practical or appropriate. If the provision of an APZ in accordance with acceptable solution A2.2 cannot be achieved, then the vegetation immediately surrounding the building is to be managed as defendable space in accordance with Appendix 1, Table 9 – APZ technical requirements.	
	A2.2 Asset Protection Zone (APZ) Where a residential habitable building cannot be wholly within an area with a radiant heat impact not exceeding 29 kW/m2 (BAL-29) in its pre-development state, an APZ is to be provided and meet the following requirements: **Width:** the APZ is to be measured from any external wall or supporting post or column of the building, and of sufficient size to ensure the radiant heat impact of a bushfire does not exceed 29 kW/m² (BAL-29) in all circumstances. **Location:** the APZ is to be contained solely within the boundaries of the lot, except in instances where: – the vegetation on the adjoining lot(s) is, and will continue to be, low threat as per Clause 2.2.3.2 of AS 3959 or the requirements of Appendix B.2, Table 9 - APZ technical requirements, or an alternative standard in a local planning scheme, on an ongoing basis in perpetuity; or	APZ is to be established and maintained in perpetuity to: 1. 27m inside lot Or 2. Lot Boundary South APZ has been designed to minimise environmental impact within the lot boundary. APZ's are to be maintained in perpetuity in accordance with: 1. APZ Siting and Design (Appendix 1 - Table 9) and 2. Local Government Authority Firebreak Notice (Appendix 2).

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
	– the adjoining land is and will remain in perpetuity, non-vegetated. **Management:** the APZ is managed in accordance with the requirements of Appendix B.2, Table 9 – APZ technical requirements (Appendix 1), or an alternative standard in a gazetted local planning scheme.	
	A2.3 Clearing of native vegetation The development avoids, or where unavoidable, minimises the clearing of native vegetation	Proposed location is deemed suitable, avoids excessive vegetation management and clearing.
Element 3: Ensure the design and capacity of vehicular access and egress provide: • for efficient and effective evacuation to a suitable destination(s) and/or • as a contingency measure for vulnerable land uses, an on-site shelter, where demonstrated appropriate, as a last resort option	**A3.1 Private Driveways** There are no private driveway technical requirements (prescribed by these Guidelines) where the private driveway is within a lot: 1. serviced by reticulated water and 2. is no greater than 70 metres in length between the most distant external part of the habitable building and the public road (curb as a hose lay). In circumstances where the above conditions are not met, the private driveway is to meet all of the following requirements: • requirements of Appendix 3 - Table 10, column 5; and • passing bays every 200 metres with a minimum length of 20 metres and a minimum additional carriageway width of 2 metres (i.e. the combined carriageway width of the passing bay and constructed private driveway is to be a minimum 6 metres); and • turn-around area (Figure 30) and within 30 metres of the residential habitable building (Figure 38).	the private driveway is to meet all of the following requirements: • requirements of Appendix 3 - Table 10, column 5; and • turn-around area (Figure 30) and within 30 metres of the residential habitable building (Figure 38).

Bushfire protection criteria Intent	Acceptable solutions	Proposed bushfire management strategies/solutions
Element 4: Water Water is available to the subdivision, development or land use to enable people, property and infrastructure to be defended from bushfire	**A4.1 Water supply for residential habitable buildings** Where a reticulated water supply is existing or proposed, a hydrant connection(s) should be provided in accordance with the specifications of the relevant water supply authority. Where these specifications cannot be met, a water tank(s) should be provided in accordance with the requirements of Appendix 4, Table 11 – Water supply dedicated for bushfire firefighting.	1. Water tank with 10,000L capacity (**per dwelling** and includes established Class 1a structures), constructed of steel or able to maintain integrity though a bushfire 2. 50mm male camlock coupling with full flow valve shielded from the bushfire hazard by facing away from the threat and towards the emergency vehicle access. 3. Having unobstructed hardened ground provided 4m from water supply point where emergency vehicles can freely move. 4. Within 50m of the dwelling and 30m from the turn around area. 5. As per Appendix 4,

5.2 Bushfire Mitigation Measures

Figure 8: Spatial representation of the bushfire mitigation measures (BMS)



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	
No.	Implementation action
1	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 "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." Notification placed on title ☐ *Certified* ☐ *dated the ___ of _____ 20____ - Certified by _____*
2	Establish an Asset Protection Zone (APZ) to the - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2). *APZ Clearance Completed* *Certified* ☐ *dated the ___ of _____ 20____ - Certified by _____*
3	Maintain the lot and firebreaks to comply with the relevant (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) or per approved variation issued by LGA.
4	Install dedicated fire water supply tank(s) of 10,000L per habitable dwelling as per - BMP (table 4 A4.1) and - the standards stated in BMP Water Supply (Appendix 4) ** Combining drinking water and water for firefighting purposes is contrary to provisions within clause 4.2.3 of AS/NZS 3500.1:2021.
5	Construct / maintain Private Driveway to the standard stated in this BMP Table 4, A3.1 including: - Horizontal clearance of 6m with 4.5m vertical clearance and - the standard stated in BMP (Appendix 3) and Table 10, Column 5 & B3.8
LANDOWNER – ONGOING	
No.	Management action
1	Maintain an Asset Protection Zone (APZ) to: - dimensions (Table 4 A2.2), and - standard stated in this BMP in APZ Siting and Design (Appendix 1) and - to the additional requirements outlined in the LGA Firebreak Notice (Appendix 2).

2	Maintain the lot and firebreaks to comply with the relevant (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) or per variation issued by LGA.
3	Maintain functionality, couplings, hard stand to 4m, accessibility and level of fire water tank as per (table 4 A4.1) and the standard stated in BMP (Appendix 4).
4	Maintain Private Driveway to the standard stated in this BMP Table 4, A3.1 including: - Horizontal clearance of 6m vertical clearance and - the standard stated in BMP (Appendix 3) and Table 10, Column 5 & B3.8

LOCAL GOVERNMENT AUTHORITY (LGA) – ONGOING MANAGEMENT	
No.	Management action
1	Inspection and issue of works orders or fines for non-compliance, this includes firebreaks, private driveway, Asset Protection Zone and water supply.

Bushfire Management Plan Appendices

Appendix 1 – Asset Protection Zone (APZ) – Siting and Design

B.2: SITING AND DESIGN

State Planning Policy outcome for Element 2: Siting and design

Ensure siting and design solutions:

- **manage or mitigate the bushfire risk to people, property and infrastructure; and**
- **avoid, or where unavoidable, minimise clearing of native vegetation.**

B.2.1 IDENTIFYING AN ASSET PROTECTION ZONE

An Asset Protection Zone (APZ) is a low fuel area, maintained around a building to increase the likelihood a building will survive a bushfire, by reducing the potential for direct flame contact, radiant heat exposure and ember attack. The APZ allows emergency services access and provides an area for firefighters and home-owners to defend their property.

The width of an APZ should ensure the radiant heat impact does not exceed 29 kW/m^2 for a habitable building, or 10 kW/m^2 where a building is identified for use as an on-site shelter. Where a building or development site achieves a radiant heat impact of 29k W/m^2 or lower in its pre-development state (prior to any vegetation clearing or modification), an APZ is generally not required.

However, providing for the ongoing management of an APZ in perpetuity, as low threat vegetation, within the implementation section of the BMP and/or condition of development approval, will ensure the BAL rating of the building does not increase over time.

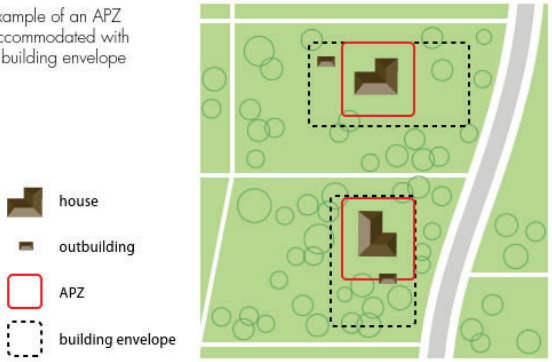
Clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m^2 is generally not supported.

At the subdivision stage where a lot contains a building envelope, and the development site(s) is yet to be determined, the BMP should demonstrate the lot(s) can achieve an indicative development site(s) with a radiant heat impact not exceeding 29 kW/m^2, within the building envelope (**Figure 24**).

It may not be necessary for an entire building envelope to achieve 29 kW/m^2 or lower, where this results in unnecessary clearing or modification of native vegetation.

An APZ should be contained within the boundaries of the lot on which the building is situated, except in instances where it is demonstrated the vegetation on the adjoining land is, and will continue to be, low threat as per cl. 2.2.3.2 of AS 3959, or the vegetation on the adjoining lot is, and will remain in perpetuity, non-vegetated. However, it should be noted there is no requirement for a neighbouring landowner or land manager (public or private) to be party to a legal agreement to undertake ongoing management of vegetation as low threat, in perpetuity.

Figure 24: Example of an APZ accommodated with a building envelope



Exclusion of vegetation on adjoining land, which is covered by a local government firebreak notice, issued under section 33 of the *Bushfires Act 1954*, may occur in limited circumstances at the development application stage. Where it is evident the adjoining landowner is managing the vegetation in accordance with the firebreak notice, a copy of the firebreak notice and photographic evidence of the managed vegetation should be included in a BMP. It will also be necessary to seek written confirmation from the local government, to confirm support for the exclusion.

B.2.2 DESIGNING AN ASSET PROTECTION ZONE

An APZ should not be seen as an area entirely cleared of vegetation, but as a strategically designed space that considers how existing and future mature vegetation, and combustible and non-combustible features interact with and affect the building's resilience to bushfire.

An APZ should provide the greatest level of vegetation management within at least three metres of a habitable building, to ensure adequate unobstructed defendable space for emergency services to operate. This area should contain minimal vegetation and be free of combustible materials and obstructions. Within the remainder of the APZ, planting of vegetation can increase as you move farther away from the building.

The placement 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 vegetation within an APZ supporting a bushfire. It is important to consider the plant density and final structure and form of plants in their mature state.

Strategic landscaping measures can be applied, such as replacing weeds with low flammability vegetation to create horizontal and vertical separations between the retained vegetation.

Mulches used within the APZ should be non-combustible. The use of stone, gravel, shells, rock and crushed mineral earth is encouraged. Very fine or light mulch (such as shredded pine bark, pine needles, or poplar woodchips) less than five millimeters in diameter should be avoided. It is recommended that wood mulch is used in garden beds or areas where the moisture level is higher by regular irrigation, and these areas are separated with non-combustible elements, such as pathways and open spaces.

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 or the use of non-combustible fencing materials such as iron, brick, limestone, metal post and wire is encouraged within an APZ.

B.2.3 MANAGEMENT OF AN ASSET PROTECTION ZONE

Ongoing maintenance of an APZ is usually enforced through a condition of a development approval, which should refer to **Table 9** APZ technical requirements within this Appendix.

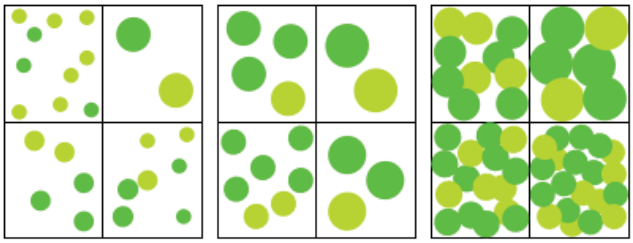
In addition to regular maintenance of an APZ, further bushfire protection can be provided by:

- 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
- following the requirements of the relevant local government firebreak 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. 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 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
- playground equipment and children's toys.

Table 9: Asset Protection Zone (APZ) technical requirements

OBJECT	REQUIREMENT
Fences within the APZ	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 less than 6 mm in thickness)	• Should be managed and removed on a regular basis to be maintained as low threat vegetation • Should be maintained at less than two tonnes per hectare (on average) • Mulches should be non-combustible such as stone, gravel, shells, rock or crushed mineral earth or wood mulch more than five millimetres in thickness.
Trees* (more than 6 m in height)	• 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 less than 15 per cent of the total APZ area • Tree canopies at maturity should be at least 5 m apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided the total canopy cover within the APZ does not exceed 15 per cent and is not connected to the tree canopy outside the APZ. **Tree canopy cover – ranging from 15 to 70 per cent at maturity**  15% 30% 70%
Shrub* and scrub* (0.5 m to 6 m in height). Shrub and scrub more than 6 m in height are to be treated as trees.	• Should not be located under trees or within three metres of buildings • Should not be planted in clumps more than five square metres in area • Clumps should be separated from each other and any exposed window or door by at least 10 metres.
Ground cover* (less than 0.5 m in height. Ground cover more than 0.5 m in height is to be treated as shrub)	• 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 more than 100 mm in height.
Grass	• Grass should be maintained at a height of 100 mm 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	Within three metres of each wall or supporting post of a habitable building; the area is kept free from vegetation but can include ground cover, grass and non- combustible mulches as prescribed above.
Liquid petroleum gas cylinders	• Should be located on the side of a building farthest 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.

Notes:
** Plant flammability, landscaping design and maintenance should be considered – refer to following explanatory notes*

Appendix 2 – Local Government Authority Firebreak Notice

City of Wanneroo

IMPORTANT
Fire Mitigation Notice

Fire mitigation measures must be in place by 1 NOVEMBER and maintained until 30 APRIL EACH YEAR.

This is a requirement under the Bush Fires Act 1954 Section 33.

Failure to comply with this notice may incur penalties of up to $5,000 and the works required by this notice will be carried out at the expense of the owner/occupier.

Fire management requirements for land LESS than 4000sqm

- Maintain grasses and inflammable materials with the exception of living trees on the entire property to a height of no more than 50 millimetres. The entire property is required to be maintained below 50 millimetres from 1 November each year until 30 April the following year.

  OR
- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
  - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
  - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- Additional mitigation work may be required by a Fire Control Officer to maintain a 20 metre asset protection zone around buildings.

Fire management requirements for land GREATER than 4000sqm

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
  - If it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If this requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required.
  - Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to enable vehicles to drive along the firebreaks without access being obstructed.
- Install and maintain a 20 metre bare earth area around all hay stacks and/or fuel storage.
- Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- Additional mitigation work may be required by a Fire Control Officer to maintain a 20 metre asset protection zone around buildings.

IMPORTANT Fire Mitigation Notice

All vacant land GREATER than 4000sqm

- A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.
- Ensure a minimum vertical clearance of 4 metres is maintained along the firebreaks to ensure vehicles can drive along the firebreaks without being impeded by tree branches.
- For pastoral and grassed properties in rural and semi-rural areas, if the land is an area of 50,000sqm (5 hectares) or greater, the grass must be maintained on the land to a height of no greater than 50 millimetres for a distance of 10 metres from any firebreak.

Frequently asked questions

I live in a residential area, does this notice apply to me?

Yes. All City of Wanneroo property owners must comply with the Bush Fires Act 1954.

Please refer overleaf for fire management requirements to be in place by 1 November to ensure your property is compliant.

Most properties under 1000sqm will automatically comply if gardens are maintained.

How will inspections be carried out?

Inspections will be carried out by trained Fire Control Officers who are authorised to enter a property by foot, vehicle, quad bike and /or drone.

Do I need a Bushfire Survival Plan?

If you live in, on or near bushland, you are at risk from a bushfire and developing a bushfire survival plan is critical.

Visit the Department of Fire and Emergency Services website for information on how to develop a plan for your property **dfes.wa.gov.au**

I am concerned my neighbour's property is not compliant, what can I do?

All properties are required to be compliant by 1 November.

If you think your neighbour's property does not comply with the requirements as outlined in this notice, please contact the Community Safety and Emergency Management team on **9405 5000**.

I own a vacant lot, do I need a firebreak?

Yes. A 3 metre wide trafficable firebreak as close as possible to all external boundaries of the property must be installed by 1 November each year and maintained until 30 April the following year.

I am unable to meet the requirements outlined, what should I do?

If it is considered impracticable for any reason to implement any of the requirements of this notice, an application for a firebreak variation must be made to the City of Wanneroo by no later than 18 October of each year.

If permission is not granted, the requirements of this notice must be complied with.

Visit the City's website **wanneroo.wa.gov.au/firebreakvariation** to apply for a variation.

Where can I learn more about this notice and bushfire prevention?

Visit the City's website **wanneroo.wa.gov.au/fireandemergencymanagement** to learn more.

Please note, in addition to the requirements of this notice, if a City of Wanneroo Fire Control Officer considers further works are necessary to reduce the risk of bushfire, landowners will be notified via letter to the address shown on the City of Wanneroo rates record for the relevant land.

The City strongly recommends creating a 20 metre asset protection zone around buildings.

For further information call the City of Wanneroo Community Safety and Emergency Management Team on **9405 5000** or visit **wanneroo.wa.gov.au/fireandemergencymanagement**

TO REPORT ALL FIRES **CALL 000**

Appendix 3 – Vehicular Access Requirements – Private Driveway

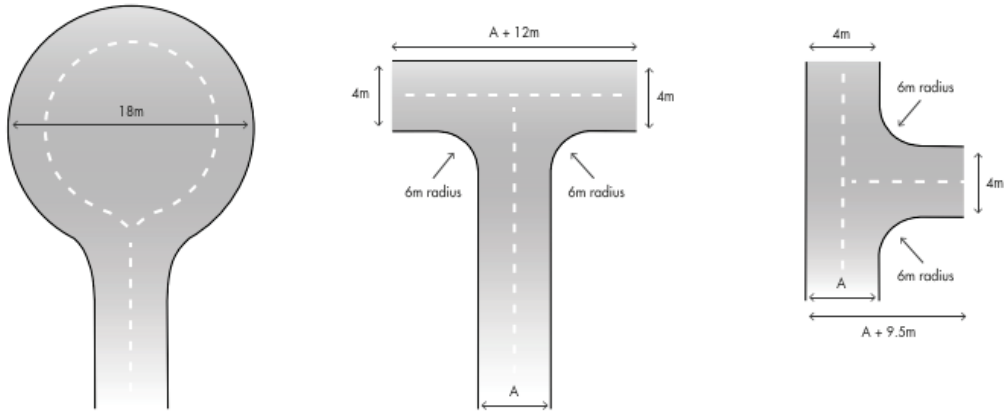
Table 10: Vehicular access technical requirements

	1		2		3		4		5	
TECHNICAL REQUIREMENTS	**PERIMETER ROADS**		**PUBLIC ROADS**		**EMERGENCY ACCESS WAY[3]**		**FIRE SERVICE ACCESS ROUTE[3]**		**BATTLE-AXE & PRIVATE DRIVEWAYS[1]**	
MAP OF BUSH FIRE PRONE AREAS DESIGNATION	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**	**Area 2**	**Area 1**
Minimum horizontal clearance (metres)	12	8	See note 5		10	6	10	6	6	
Minimum vertical clearance (metres)	4.5									
Minimum weight capacity (tonnes)	15									
Maximum grade unsealed road[2]	See note 5		See note 5		1:10 (10% or 6°)					
Maximum grade sealed road[2,4]					1:7 (14.3% or 8°)					
Maximum average grade sealed road					1:10 (10% or 6°)					
Minimum inner radius of road curves (metres)					8.5					

Notes:

1. Driveways and battle-axe legs to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision where not required to comply with the widths in this Appendix or the Guidelines.
2. Dips must have no more than a 1 in 8 (12.5% - 7.1 degrees) entry and exit angle.
3. To have crossfalls between 3 per cent and 6 per cent.
4. For sealed roads only the maximum grade of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50 metres is permissible, except for short constrictions to 3.5 metres for no more than 30 metres in length where an obstruction cannot be reasonably avoided or removed.
5. As outlined in the Institute of **Public Works Engineering Australasia (IPWEA) subdivision guidelines, Liveable Neighbourhoods, Austroads Standards** Main Roads standard, supplement, policy or guideline and/or any applicable or relevant local government standard or policy.

Figure 30: Design requirements for a turn-around area



B.3.8 PRIVATE DRIVEWAYS

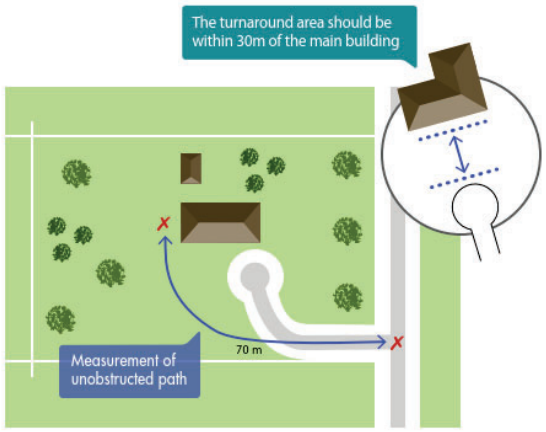
Emergency services vehicles typically operate from the street frontage in areas serviced by reticulated water and where the distance from the public road to the farthest part of the habitable building is no greater than 70 metres.

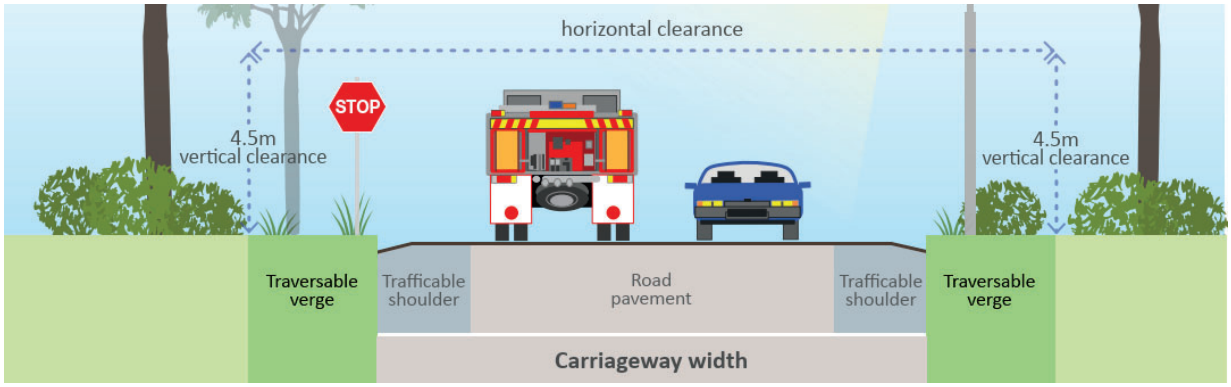
In the event the habitable building cannot be reached by hose reel from the public road, emergency services vehicles will need to gain access via the driveway to the property. Emergency services vehicles will also need to gain access to the property where access to water is provided by onsite water tanks. In these situations, the driveway and battle-axe access leg (if applicable) will need to be wide enough for access by an emergency services vehicle and a vehicle to evacuate.

It is acceptable for a private driveway to have a carriageway width of four metres with a traversable verge of one metre on either side of the carriageway.

Turn-around areas (**Figure 38**) should be available for conventional two-wheel drive vehicles and type 3.4 fire appliances and should be located within 30 metres of habitable buildings. Circular and loop driveway design may also be considered.

Figure 38: Design requirements for a private driveway where required





Horizontal clearance: The carriageway width (including the road pavement and trafficable shoulder) and traversable verge that provides for the movement and parking of vehicles and area required by emergency services to operate. Infrastructure and vegetation within the traversable verge should be frangible, however, non-frangible items can occur providing they do not restrict vehicular movement in the event of an emergency.

Appendix 4 – Water Supply – Residential Development

Table 11: Water supply dedicated for bushfire firefighting purposes

SECTIONS FROM THE PLANNING FOR BUSHFIRE GUIDELINES					
SECTION 5[2] STRUCTURE PLANS AND SUBDIVISION APPLICATIONS		**SECTION 6[2] DEVELOPMENT – RESIDENTIAL**	**SECTION 7[2] DEVELOPMENT – COMMERCIAL & INDUSTRIAL**	**SECTION 8[2] – DEVELOPMENT – VULNERABLE LAND USES**	
One additional lot	10,000 litre water tank per lot	10,000 litre water tank per habitable building	For each habitable building - 10,000 litre per 1,500 m² of floor space up to 50,000 litre. Provided in a water tank	Camping ground	At the discretion of the local government
Three to 24 lots	10,000 litre water tank per lot[1] **or** 50,000 litre strategic water tank				
25 lots or more	50,000 litre per 25 lots or part thereof, provided as a strategic water tank(s) **and/or** 10,000 litre water tank per lot			Other vulnerable land uses	For each habitable building - 10,000 litre per 500 m² of floor space up to 50,000 litre. Provided in a water tank

Notes:
[1] Evidence that the identified water supply amounts in either column denoted is to be provided at the relevant planning stage.
[2] where more than one habitable building is proposed, strategic water tanks are to be provided in accordance with Section 5 requirements and at the discretion of the Local Government.

B.4: WATER SUPPLY

State Planning Policy outcome for Element 4: Water Supply

Ensure that sufficient water is available and accessible for emergency services use, to enable people, property and infrastructure to be defended from bushfire.

B.4.1 CONSTRUCTION AND DESIGN

An above-ground tank and associated stand should be constructed of non-combustible material.

Below-ground tanks should have a 200 millimetres diameter access hole to allow tankers or emergency services vehicles to refill direct from the tank, with the outlet location clearly marked on the surface.

Above and below ground tanks 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.

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

B.4.1.1 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 hazard and be in accordance with the applicable section below, unless otherwise specified by the local government.

B.4.1.2 Fittings for above-ground water tanks:

- Commercial land uses: 125 millimetres Storz fitting; or
- Strategic water tanks: 50 millimetres or 100 millimetres (where applicable and adapters are available) male camlock coupling with full flow valve; or
- Standalone water tanks: 50 millimetres male camlock coupling with full flow valve; or
- Combined water tanks: 50 millimetres 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.

B.4.1.3 Remote outlets

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

B.4.2 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.

The combination of drinking water and water for firefighting purposes is not recommended, 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.

Combining drinking water and water for firefighting purposes is contrary to provisions within clause 4.2.3 of AS/NZS 3500.1:2021.

B.4.3 INDEPENDENT WATER AND POWER SUPPLY

Bushfires can directly impact a water service provider's equipment or pipes. As such, a reticulated water supply may not be reliable due to a reduction in water pressure or loss of supply. Where development is in an area designated as Area 2 on the *Map of Bush Fire Prone Areas* and/or where the local government area has known issues with water supply or pressure, it is recommended that the landowner consider providing a water tank in accordance with **Table 11**, Water supply dedicated for bushfire firefighting purposes.

In non-reticulated water supply areas, it is recommended that any pumping equipment be powered by means other than the electricity network. The pumping equipment could be a diesel or petrol-powered pump, or an electric pump if there is an onsite generator or backup power supply independent of the electricity network grid.

It is recommended that combustion pumps should be a minimum five hp or three kW diesel or petrol-powered pump and should be shielded against bushfire attack.

B.4.4 STRATEGIC WATER SUPPLIES

Many local governments have a well-developed network of strategic water tanks for firefighting within their local government area. Given this, it is at the discretion of the local government to determine if the water supply within a locality is sufficient to cater for an increasing population when a subdivision is proposed. Local governments are encouraged to work with local emergency services to ensure the water supply needs for firefighting are understood.

Where a structure plan or subdivision proposes to create more than three but fewer than 24 lots, it is at the discretion of the local government whether it requires a strategic water tank or for each lot to be provided with a 10,000-litre tank.

A strategic water tank should preferably be located no more than 10 minutes from the farthest development site (20 minute turnaround time at a maximum). The turnaround time is the time it takes an emergency services vehicle to travel at legal road speeds from a lot to the water supply and back to the lot. Where a strategic water tank has been provided at the subdivision stage, the local government should consider whether the tank has the capacity to serve applications for development approval.

A landowner should enquire with their local government to determine whether a private water tank on their lot will be required.

When there is fragmented ownership of a structure plan area, or when staging of a subdivision is to occur and the local government has determined that a strategic water tank is required, then the first stage should include arrangements for the installation of a strategic water tank and the identification of land to be ceded. This should occur free of cost, without any payment or compensation by the Crown, as a Crown reserve for 'strategic water

supply for firefighting purposes' (if applicable). Where local planning scheme provisions provide for developer contributions for public infrastructure and the local government is supportive, then a cash-in-lieu arrangement may be established for the provision of a strategic water tank.

B.4.5 LOCATION OF WATER TANKS AND HYDRANTS

Surrounding vegetation should be considered when locating a water tank. Avoid locations where the tank will be situated underneath existing vegetation or where vegetation will grow against or overhang the tank, (**Figure 39**). Where a tank is on the bushfire hazard side of a building, sufficient shielding for the protection of firefighters should be provided. In addition to the tank location, the fitting should be positioned and/or shielded from the bushfire hazard to allow access by emergency services.

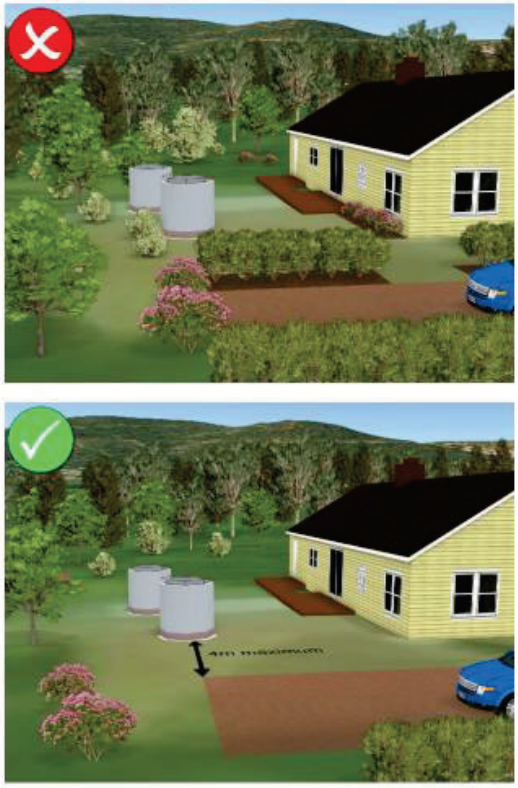
In areas serviced by reticulated water, where the distance from the public road to the farthest part of the habitable building is greater than 70 metres, emergency services vehicles will need to gain access within the property and be provided with a water supply for firefighting purposes. This is because access to reticulated water (fire hydrants) is not possible further than 70 metres, due to the length of the hose reel.

B.4.6 OUTCOMES BASED APPROACH

A dam, river or other source may be considered a firefighting water source for emergency services if it complies with **DFES guidelines for acceptable sources of water**, and it can be demonstrated that the water level will be maintained above the top of the highest fire brigade suction point.

Approval for the use of these types of water supplies is on a case-by-case basis and at the discretion of the decision-maker, in consultation with emergency services and local government.

Figure 39: A good and bad example of landscaping around a water tank



Appendix 3 – Tree Plan