



Bushfire Management Plan Coversheet

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

Bushfire Management Plan and Site Details

Site Address / Plan Reference: Lot 150 (720) Welshpool Road East

Suburb: Wattle Grove

State: WA

P/code: 6107

Local government area: City of Kalamunda

Description of the planning proposal: Development Application for garden centre

BMP Plan / Reference Number: 20PER-18016

Version: v2

Date of Issue: 3/03/21

Client / Business Name: Community Greenwaste Recycling Pty Ltd

Reason for referral to DFES

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

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

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

BPAD Accredited Practitioner Details and Declaration

Name Alex Aitken	Accreditation Level Level 2	Accreditation No. 37739	Accreditation Expiry November 2021
Company Eco Logical Australia		Contact No. 08 6218 2200	

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

Signature of Practitioner 	Date 03-Mar-21
---	--------------------------



Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool
Road East, Wattle Grove

Community Greenwaste Recycling Pty Ltd



1300 646 131
www.ecoaus.com.au

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

DOCUMENT TRACKING

Project Name	Bushfire Management Plan: Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove
Project Number	2OPER-18016
Project Manager	Alex Aitken
Prepared by	Alex Aitken (BPAD Level 2 – 37739)
Reviewed by	Daniel Panickar (BPAD Level 3 – 37802)
Approved by	Daniel Panickar (BPAD Level 3 – 37802)
Status	Final
Version Number	v2
Last saved on	3 March 2021

This report should be cited as 'Eco Logical Australia 2021. *Bushfire Management Plan: Lot 150 (720) Welshpool Road East, Wattle Grove.* Prepared for Community Greenwaste Recycling Pty Ltd.

ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Community Greenwaste Recycling Pty Ltd (the client) and Harley Dykstra.

Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and the client. The scope of services was defined in consultation with the client, by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Template 2.8.1

Contents

1. Introduction	1
1.1 Proposal details	1
1.2 Purpose and application of the plan	1
1.3 Environmental considerations	1
2. Bushfire assessment results	5
2.1 Bushfire assessment inputs	5
2.1.1 Fire Danger Index	5
2.1.2 Vegetation classification	5
2.1.3 Topography and slope under vegetation	5
2.2 Bushfire assessment outputs	7
2.2.1 BAL assessment	7
2.2.2 Method 1 BAL assessment	7
2.3 Identification of issues arising from the BAL assessment	8
3. Assessment against the Bushfire Protection Criteria	10
3.1 Compliance	10
3.2 Additional Bushfire Requirements	11
4. Implementation and enforcement	13
5. Conclusion	14
6. References	15
Appendix A – Classified Vegetation Photos	16
Appendix B – Proposed Landscape Plan	19
Appendix C – Standards for Asset Protection Zones	20
Appendix D - Vehicular access technical requirements (WAPC 2017)	22

List of Figures

Figure 1: Site overview	2
Figure 2: Site Plan	3
Figure 3: Bushfire Prone Areas	4
Figure 4: Vegetation classification	6
Figure 5: Bushfire Attack Level (BAL) Contours	9
Figure 6: Spatial representation of the bushfire management strategies	12
Figure 7: Illustrated tree canopy cover projection (WAPC 2017)	20

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

List of Tables

Table 1: Classified vegetation as per AS 3959-2018.....5

Table 2: Method 1 BAL calculation (BAL contours)..... 7

Table 3: BAL rating for the subject site8

Table 4: Summary of solutions used to achieve bushfire protection criteria10

Table 5: Proposed work program.....13

1. Introduction

1.1 Proposal details

Eco Logical Australia (ELA) was commissioned by Community Greenwaste Recycling Pty Ltd to prepare a Bushfire Management Plan (BMP) to support a development application for Lot 150 (720) Welshpool Road East, Wattle Grove (hereafter referred to as the subject site, Figure 1). The proposed development will result in an intensification of land use and involves the establishment of a garden centre utilising the existing and new infrastructure.

The subject site is within a designated bushfire prone area as per the *Western Australia State Map of Bush Fire Prone Areas* (DFES 2019; Figure 3), which triggers bushfire planning requirements *under State Planning Policy 3.7 Planning in Bushfire Prone Areas* (SPP 3.7; Western Australian Planning Commission (WAPC) 2015) and reporting to accompany submission of the development application in accordance with the associated *Guidelines for Planning in Bushfire Prone Areas v 1.3* (the Guidelines; WAPC 2017).

The subject site is located in the City of Kalamunda and is zoned Rural Composite under the Local Planning Scheme (LPS). The proposed garden centre will utilise the existing dwelling and storage shed and require the construction of a sales office; carparking; and landscaping supplies storage area. The proposed development area is located on the front half of the subject site and the rear of the subject site is to be left undeveloped at this stage apart from minor revegetation associated with Yule Brook (Figure 2).

This assessment has been prepared by ELA Senior Bushfire Consultant Alex Aitken (FPAA BPAD Level 2 Certified Practitioner No. BPAD37739) with quality assurance undertaken by Principal Bushfire Consultant Daniel Panickar (FPAA BPAD Level 3 Certified Practitioner No. BPAD37802).

1.2 Purpose and application of the plan

The primary purpose of this BMP is to act as a technical supporting document to inform planning assessment. This BMP is also designed to provide guidance on how to plan for and manage the bushfire risk to the subject site through implementation of a range of bushfire management measures in accordance with the Guidelines.

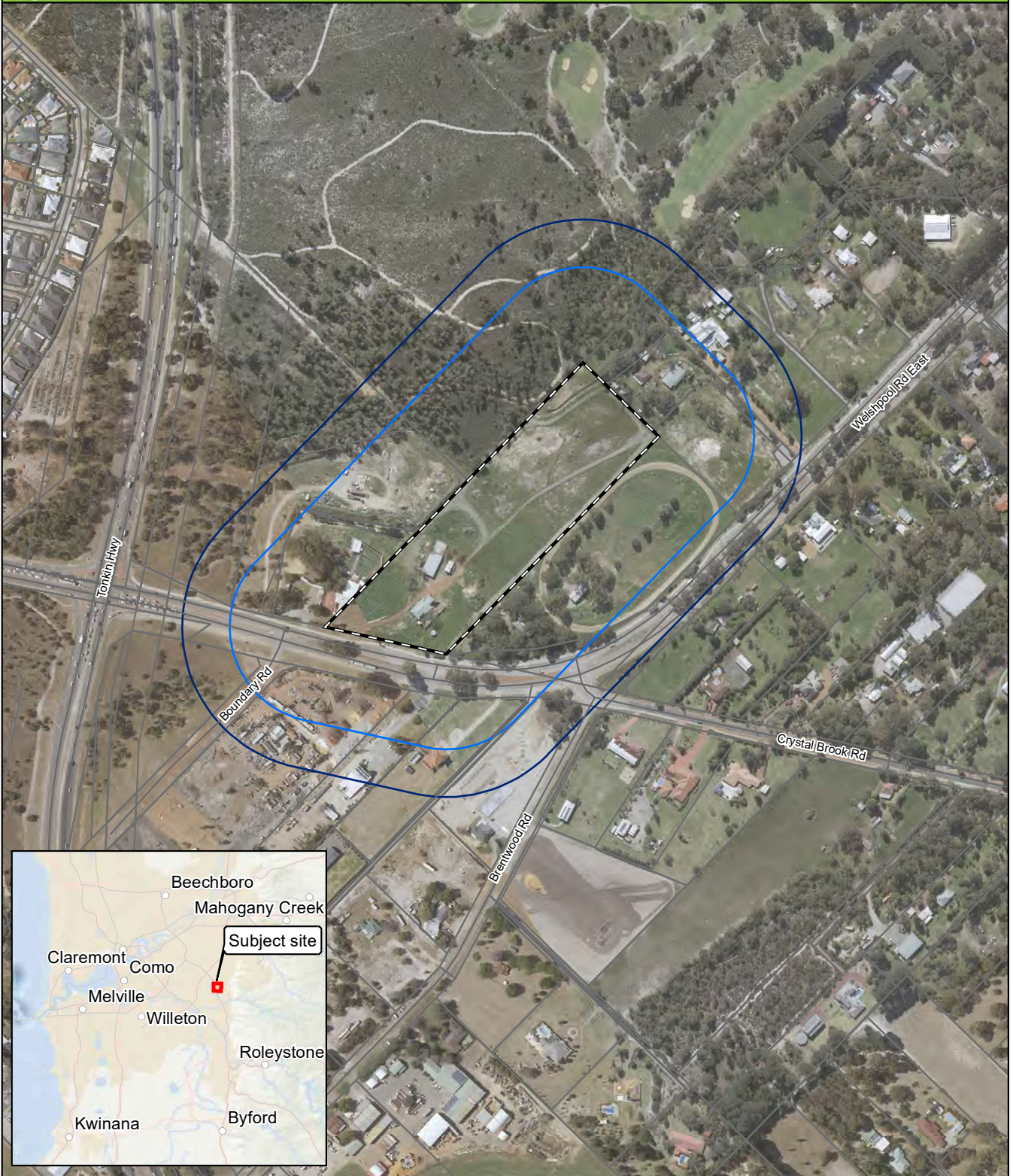
1.3 Environmental considerations

SPP 3.7 policy objective 5.4 recognises the need to consider bushfire risk management measures alongside environmental, biodiversity and conservation values.





The subject site has been previously cleared, resulting in no existing native vegetation on site.

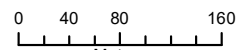
Revegetation is proposed for the development adjacent to Yule Brook at the rear of the lot with the existing unmanaged grassland to remain onsite. The development area (front portion of lot) will be maintained in a low-threat state. The landscape plan shown in Appendix B is proposed to be undertaken as part of this development.

Figure 1: Site location



Legend

-  Subject Site
-  100m Assessment Area
-  150m Assessment Area
-  Cadastre



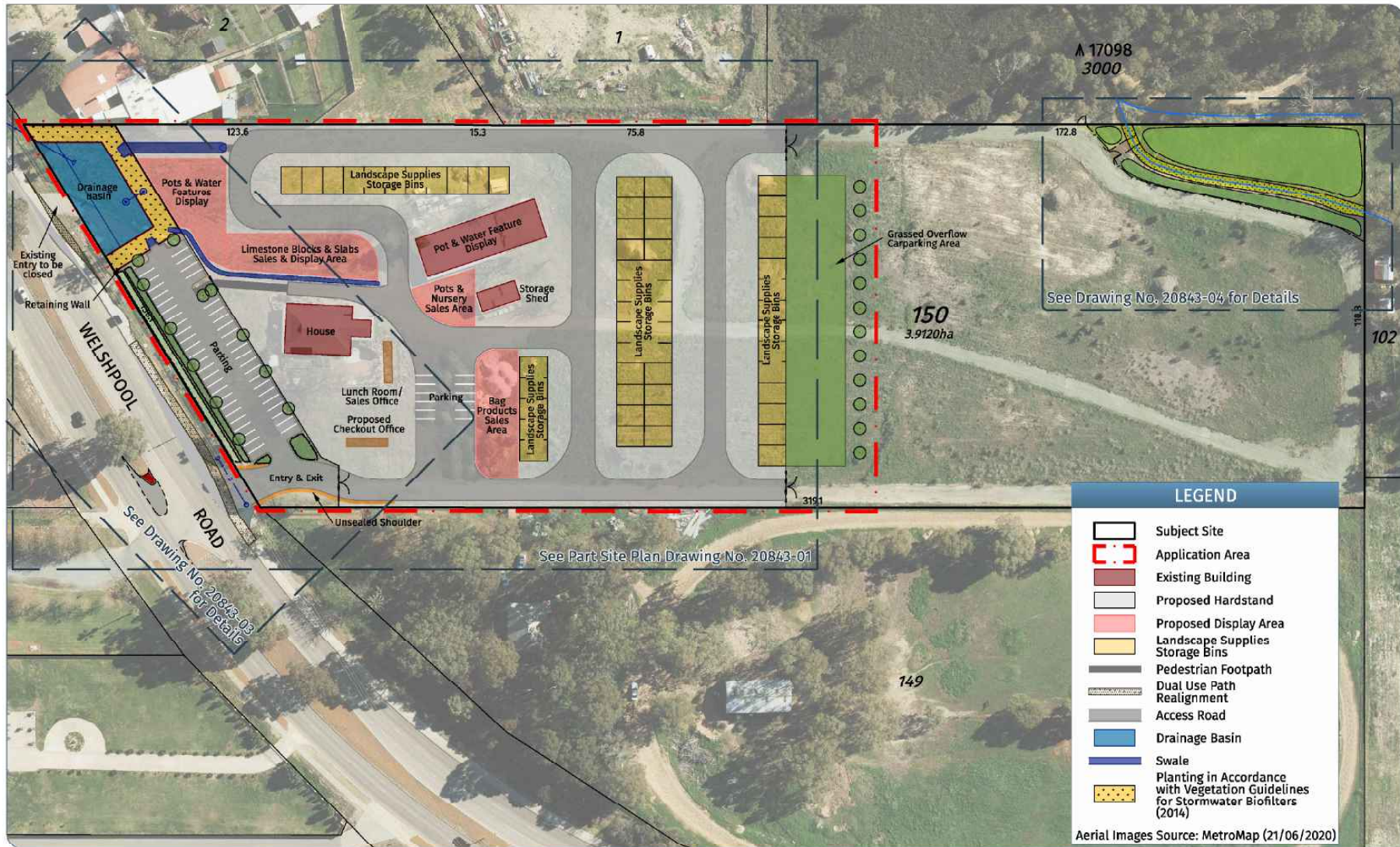
Datum/Projection:
GDA 1994 MGA Zone 50



www.ecoaus.com.au

20PER-18016; JL; Date: 22/01/2021

Figure 2: Site Plan



DEVELOPMENT APPLICATION
 Proposed Garden Centre
 Lot 150 Welshpool Road East, WATTLE GROVE

Plan No. | 20843-01
 Date | 24/02/21
 Drawn | NP
 Checked | DM
 Revision | 1

PERTH OFFICE:
 Level 1, 202 Fitzgerald Street,
 Perth WA 6000
 T: 08 9226 9201
 E: perth@harleydykstra.com.au
 W: www.harleydykstra.com.au
 Offices also at Albany, Bunbury,
 Busselton and Katanning

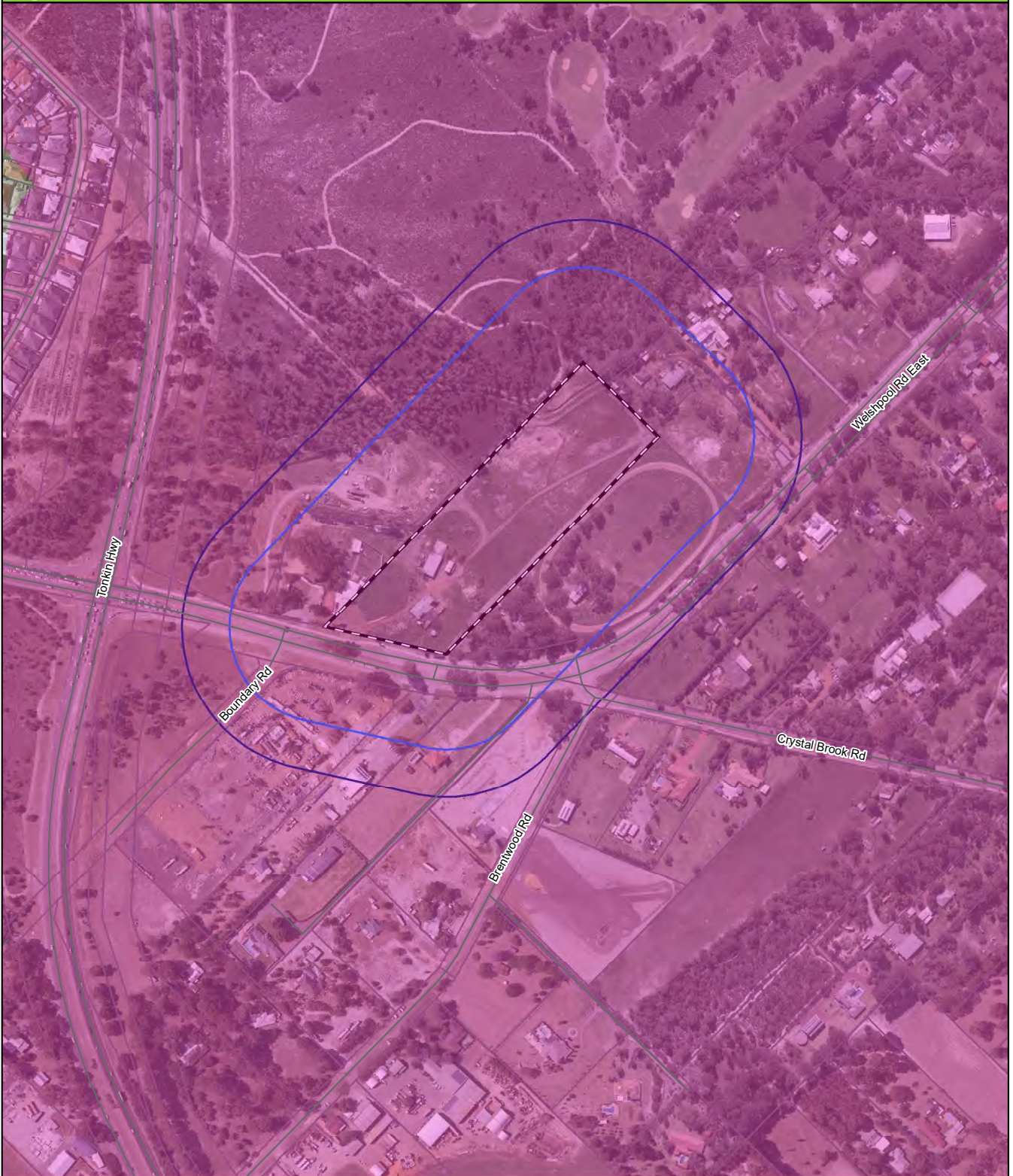
COPYRIGHT:
 This document is and shall remain the
 property of Harley Dykstra.
 The document may only be used for the
 purposes for which it was commissioned
 and in accordance with the terms of
 engagement for the commission.
 Unauthorised use of this document in
 any form whatsoever is prohibited.

Scale | 1:1000@A3






NOTE: This plan has been prepared for planning purposes. Areas, Contents and Dimensions shown are subject to survey

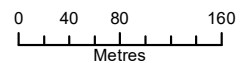


Figure 3: Bushfire Prone Areas



Legend

-  Subject Site
-  100m Assessment Area
-  150m Assessment Area
-  Cadastre
-  Bushfire Prone Areas (DFES 2019)



Datum/Projection:
GDA 1994 MGA Zone 50



www.ecoaus.com.au

20PER-18016; JL; Date: 22/01/2021

2. Bushfire assessment results

2.1 Bushfire assessment inputs

The following section is a consideration of spatial bushfire risk and has been used to inform the bushfire assessment in this report.

2.1.1 Fire Danger Index

A blanket rating of FDI 80 is adopted for Western Australia, as outlined in Australian Standard (AS) 3959–2018 and endorsed by Australasian Fire and Emergency Service Authorities Council (AFAC).

2.1.2 Vegetation classification

Vegetation within the subject site and surrounding 150 m (the assessment area) was assessed in accordance with the Guidelines and *AS 3959-2018 Construction of Buildings in Bushfire Prone Areas* (SA 2018) with regard given to the *Visual guide for bushfire risk assessment in Western Australia* (DoP 2016). Site assessment was undertaken on 19 January 2021.

The classified vegetation for the site from each of the identified vegetation plots are identified below, Table 1 and Figure 4.

Table 1: Classified vegetation as per AS 3959-2018

Plot	Vegetation Classification	Effective Slope
1	Class A Forest	All upslopes and flat land (0 degrees)
2	Class G Grassland	All upslopes and flat land (0 degrees)
3	Class G Grassland	All upslopes and flat land (0 degrees)
5	Excluded AS 3959-2018 2.2.3.2 (e) & (f)	-

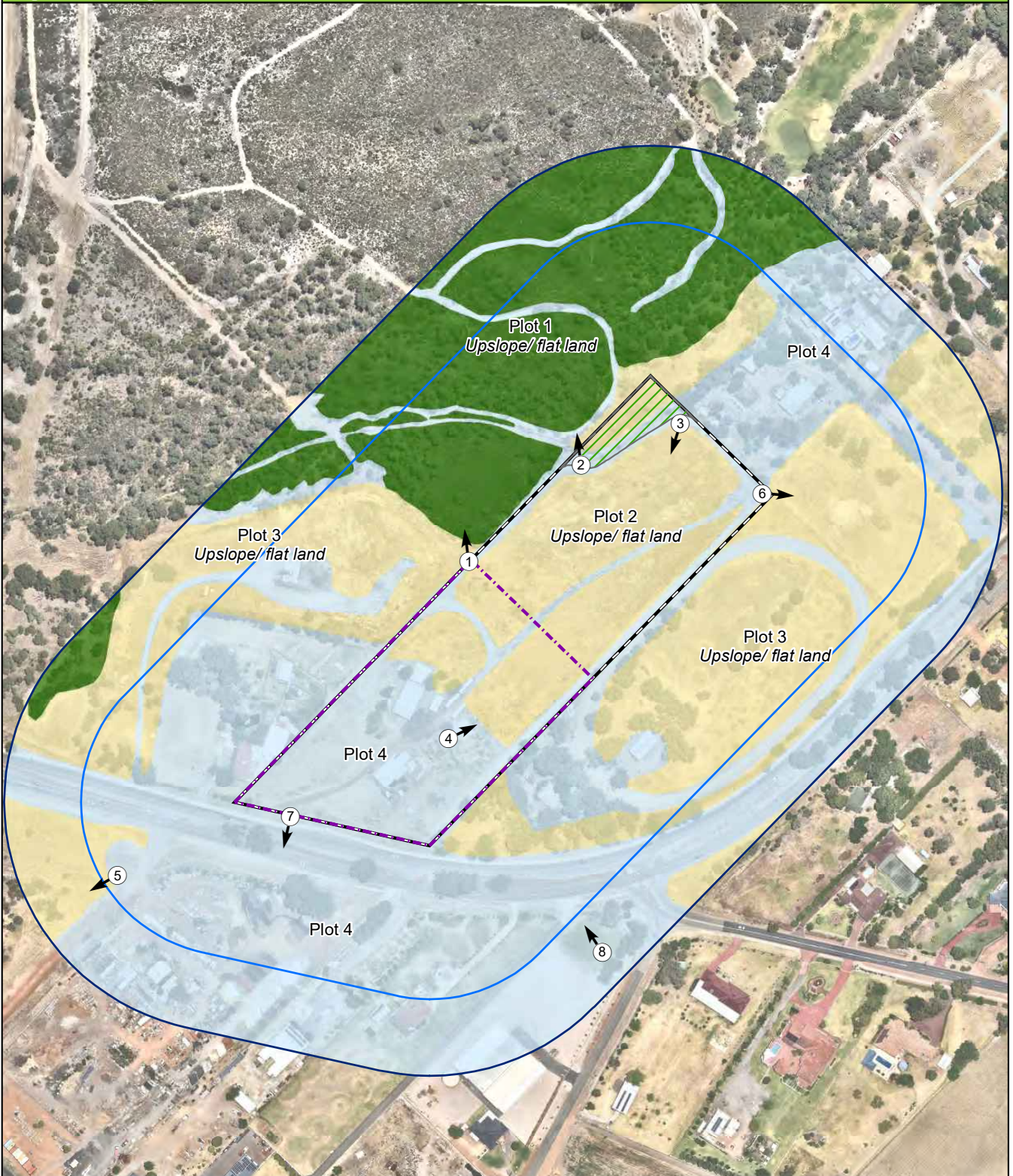
Photographs relating to each area and vegetation type are included in Appendix A.

The vegetation indicated in Table 1 and Figure 4 is based on the pre-development assessment. The proposed revegetation associated within the landscape plan shown in Appendix B will be classified as Class A -Forest based on the species indicated.

2.1.3 Topography and slope under vegetation

Effective slope under vegetation was assessed for a distance of 150 m from the subject site in accordance with the Guidelines and AS 3959-2018 and is depicted in Figure 4. Slope under classified vegetation was assessed and is shown in Table 1.

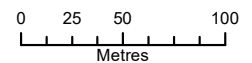
Figure 4: Vegetation Classification



Legend

- Subject Site
- Development Envelope
- 100m Assessment Area
- 150m Assessment Area
- Cadastre
- Contours (5m Intervals)
- Photo locations

- Revegetation Area- Class A Forest
- Vegetation classification**
- Class A forest
- Class G grassland
- Excluded under clause 2.2.3.2 (e) and (f)



Datum/Projection:
GDA 1994 MGA Zone 50



www.ecoaus.com.au
20PER-18016; JL; Date: 17/02/2021

2.2 Bushfire assessment outputs

A Bushfire Attack Level (BAL) assessment has been undertaken in accordance with SPP 3.7, the Guidelines, AS 3959-2018 and the bushfire assessment inputs in Section 2.1.

2.2.1 BAL assessment

All land located within 100 m of the classified vegetation depicted in Figure 4 considered bushfire prone and is subject to a BAL assessment in accordance with AS 3959-2018.

A Method 1 BAL assessment (as outlined in AS 3959-2018) has been completed for the proposed development and incorporates the following factors:

- Fire Danger Index (FDI) rating;
- Vegetation class;
- Slope under classified vegetation; and
- Distance between proposed development area and the classified vegetation.

Based on the identified BAL, construction requirements for proposed buildings can then be assigned. The BAL rating gives an indication of the expected level of bushfire attack (i.e. radiant heat flux, flame contact and ember penetration) that may be received by proposed buildings and subsequently informs the standard of construction required to increase building survivability.

2.2.2 Method 1 BAL assessment

Table 2 and Figure 5 display the Method 1 BAL assessment (in the form of BAL contours) that has been completed for the proposed development in accordance with AS 3959-2018 methodology.

Table 2: Method 1 BAL calculation (BAL contours)

Plot and vegetation classification	Effective slope	Hazard separation distance	BAL rating	Comment
Plot 1 Class A Forest	All upslopes and flat land (0 degrees)	0-<16	BAL-FZ	No development proposed in this area
		16-<21	BAL-40	No development proposed in this area
		21-<31	BAL-29	No development proposed in this area
		31-<42	BAL-19	No development proposed in this area
		42-<100	BAL-12.5	Development proposed in this area
Plot 2 Class G Grassland	All upslopes and flat land (0 degrees)	0-<6	BAL-FZ	No development proposed in this area
		6-<8	BAL-40	No development proposed in this area
		8-<12	BAL-29	No development proposed in this area
		12-<17	BAL-19	No development proposed in this area
		17-<50	BAL-12.5	Development proposed in this area
Plot 3 Class G Grassland	All upslopes and flat land (0 degrees)	0-<6	BAL-FZ	No development proposed in this area
		6-<8	BAL-40	No development proposed in this area
		8-<12	BAL-29	No development proposed in this area
		12-<17	BAL-19	No development proposed in this area
		17-<50	BAL-12.5	Development proposed in this area

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

Plot and vegetation classification	Effective slope	Hazard separation distance	BAL rating	Comment
Plot 4				
Excluded as per clause 2.2.3.2 (e) and (f) of AS3959- 2018		N/A		

Based on the site assessment inputs and BAL assessment, all proposed components of the garden centre within the subject site have BAL ratings of BAL-12.5 or lower.

Table 3: BAL rating for the subject site

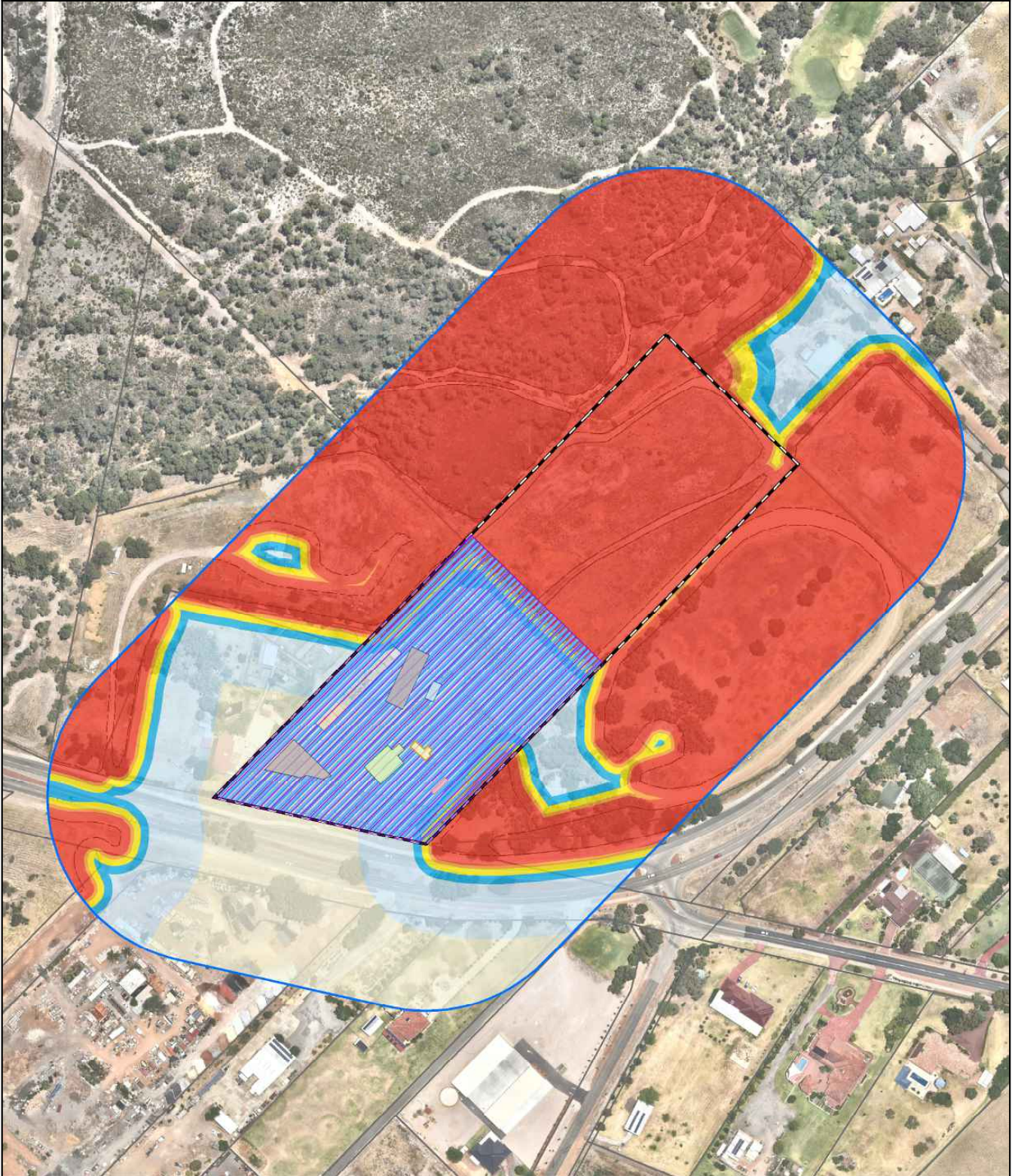
Proposed building	BAL Rating
Existing residence	BAL-12.5
Existing Storage Shed	BAL-12.5
Proposed Check out office	BAL-12.5
Proposed Lunch room/sales office	BAL-12.5

2.3 Identification of issues arising from the BAL assessment

The landscape plan (Figure 2, Figure 6 and Appendix B) indicates the area to be revegetated will be classified as Class A - Forest at maturity, as indicated by the species to be planted. This vegetation classification has been utilised in the BAL assessment shown in Figure 5 and Figure 6. The rear of the lot (i.e. outside of the development envelope, see Figure 2 and Plot 2 from Figure 4) will be retained as unmanaged grassland with existing firebreaks.

Should there be any changes in development design or revegetation extent that requires a modified bushfire management response, then the above BAL ratings will need to be reassessed for the affected areas and documented in a brief addendum to this BMP.

Figure 5: Bushfire Attack Level (BAL) Contours



Legend

- Subject Site
- Development Envelope
- 100m Assessment Area
- 150m Assessment Area
- Asset Protection Zone (APZ)
- Cadastre
- Bushfire hazard interface

Buildings

- Existing house
- Existing storage shed
- Existing Pot Feature Display
- Proposed Lunch room / sales office
- Proposed checkout office

Bushfire Attack Level (BAL)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5
- BAL - LOW

0 20 40 80
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

N
eco logical
AUSTRALIA
www.ecoaus.com.au
20PER-18016; JL; Date: 3/03/2021

3. Assessment against the Bushfire Protection Criteria

3.1 Compliance

The proposed development is required to comply with policy measures 6.2 and 6.5 of SPP 3.7 and the Guidelines. Implementation of this BMP is expected to meet objectives 5.1-5.4 of SPP 3.7.

In response to the above requirements of SPP 3.7 and the Guidelines, bushfire risk management measures, as outlined, have been devised for the proposed development in accordance with Guideline acceptable solutions to meet compliance with bushfire protection criteria.

Table 4 outlines the Acceptable Solutions (AS) that are relevant to the proposal and summaries how the intent of each Bushfire Protection Criteria has been achieved. No Performance Solutions (PS) have been proposed for this proposal. These management measures are depicted in Figure 6 where relevant.

Table 4: Summary of solutions used to achieve bushfire protection criteria

Bushfire Protection Criteria	AS	PS	N/A	Comment
Element 1: Location A1.1 Development location	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The proposed development within the subject site will be located in an area subject to BAL ratings of ≤BAL-29 (Figure 5; Figure 6). The proposed development is considered to be compliant with A1.1.
Element 2: Siting and design of development A2.1 Asset Protection Zone (APZ)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The proposed development will implement an APZ sufficient for the potential radiant heat flux to not exceed 29kW/m ² and will be managed in accordance with the requirements of 'Standards for Asset Protection Zones' (WAPC 2017; Appendix C). The APZ can be contained within the boundaries of the lot or managed in perpetuity in a low fuel state. The proposed development is considered to be compliant with A2.1.
Element 3: Vehicular access A3.1 Two access routes	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	There will be one access point to/from the subject site. This access point connects to Welshpool Road East which provides access/egress in two directions (east and west) (Figure 6). Existing roads are public roads and comply with requirements outlined in the Guidelines (Appendix D). The proposed development is considered to be compliant with A3.1.
A3.2 Public road	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No public roads are proposed as part of this development.
A3.3 Cul-de-sac	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No cul-de-sacs are proposed as part of this development.
A3.4 Battle-axe	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No battle axe lots are proposed.

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

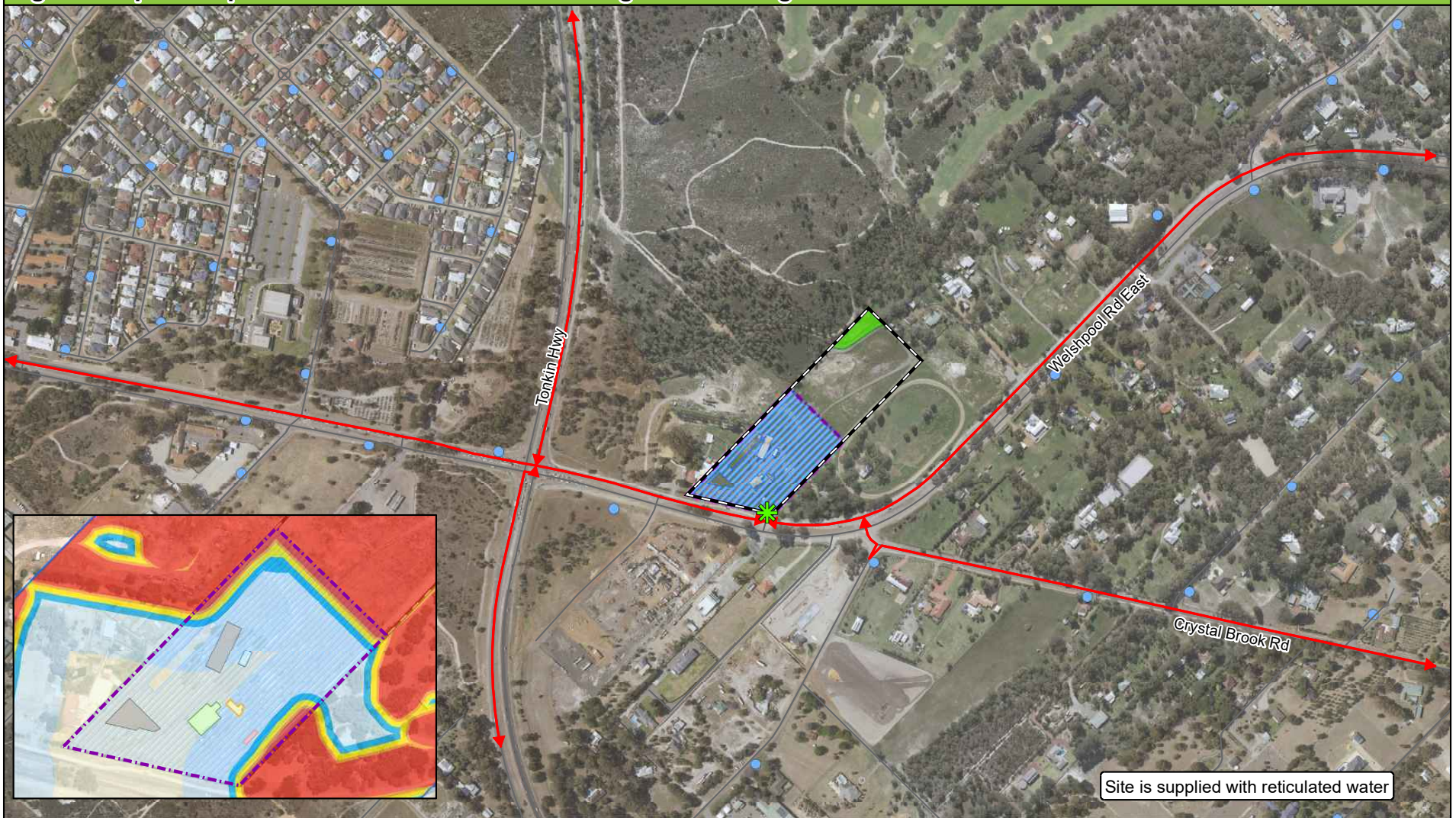
Bushfire Protection Criteria	AS	PS	N/A	Comment
A3.5 Private Driveway longer than 50 m	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The internal access roads are longer than 50 m and will be designed and constructed to meet the requirements of the Guidelines indicated in Appendix D. The proposed development is considered to be compliant with A3.5.
A3.6 Emergency Access way	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No emergency access way is required.
A3.7 Fire-service access routes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	No fire service access routes are required or proposed.
A3.8 Firebreak width	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire breaks are currently installed and maintained as per the City of Kalamunda Firebreak Notice 2020.
Element 4: Water				The subject site is connected to a reticulated water supply.
A4.1 Reticulated areas	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A hydrant is located ~95 m west on Welshpool Road East and ~170 m east on the corner of Brentwood Rd & Crystal Brook Road. The proposed development is considered to be compliant with A4.1. A4.2 and A4.3 are not applicable to this proposed development.
A4.2 Non-Reticulated areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reticulated water is present within the area.
A4.3 Individual Lots within non-reticulated areas	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Reticulated water is present within the area.

NOTE – AS- ACCEPTABLE SOLUTION, PS- PERFORMANCE SOLUTION, N/A- NOT APPLICABLE

3.2 Additional Bushfire Requirements

Any changes to the revegetation area, unmanaged grassland and low threat areas incorporated into the APZ may require future bushfire risk assessments.

Figure 6: Spatial representation of the bushfire management strategies



Legend

- Subject Site
- Development Envelope
- 100m Assessment Area
- Access/ egress route
- Access/ egress point

- Asset Protection Zone (APZ)
- Revegetation Area
- Hydrants
- Buildings**
- Existing house

- Existing storage shed
- Existing Pot Feature Display
- Proposed Lunch room / sales office
- Proposed checkout office

Bushfire Attack Level (BAL)

- BAL - FZ
- BAL - 40
- BAL - 29
- BAL - 19
- BAL - 12.5
- BAL - LOW

Site is supplied with reticulated water

0 65 130 260
Metres
Datum/Projection:
GDA 1994 MGA Zone 50

eco logical
AUSTRALIA
www.ecoaus.com.au
20PER-18016; JL; Date: 3/03/2021

4. Implementation and enforcement

Implementation of the BMP applies to the developer, future owners within the subject site and the local government to ensure bushfire management measures are adopted and implemented on an ongoing basis. A summary of the bushfire management measures described in Section 3, as well as a works program, is provided in Table 5. These measures will be implemented to ensure the ongoing protection of life and property assets is achieved. Timing and responsibilities are also defined to assist with implementation of each measure.

Table 5: Proposed work program

No	Bushfire management measure	Responsibility
Prior to occupancy		
1	Ensure proposed development is located outside of areas subject to BAL-FZ and BAL-40 as per the design in Figure 6.	Developer
2	Ensure all APZs are implemented and maintained to the standard in the Guidelines.	Developer
3	Design and construct internal access roads to meet the standards for private driveways in the Guidelines.	Developer
Ongoing management		
4	Maintain APZs to the standard in the Guidelines.	Owner
5	Implement landscape plan as per Appendix B	Owner

Bushfire Management Plan:

Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

5. Conclusion

In the author's professional opinion, the bushfire protection requirements listed in this assessment provide an adequate standard of bushfire protection for the proposed development. As such, the proposed development is consistent with the aim and objectives of SPP 3.7 and associated guidelines and is recommended for approval.

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

6. References

Department of Fire and Emergency Services, 2019, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <http://www.dfes.wa.gov.au/regulationandcompliance/bushfireproneareas/Pages/default.aspx>

Department of Planning (DoP), 2016, *Visual guide for bushfire risk assessment in Western Australia*. DoP, Perth.

Standards Australia, 2018, *Construction of buildings in bushfire-prone areas, AS 3959-2018*. SAI Global, Sydney.

Western Australian Planning Commission, 2015, *State Planning Policy 3.7 Planning in Bushfire Prone Areas*. WAPC, Perth.

Western Australian Planning Commission, 2017, *Guidelines for Planning in Bushfire Prone Areas Version 1.3 (including appendices)*, WAPC, Perth.

Western Australian Planning Commission, 2019, *A guide to developing a Bushfire Emergency Evacuation Plan, October 2019*.

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

Appendix A – Classified Vegetation Photos

Plot	Classification or Exclusion Clause	Class A Forest
<p>Plot 1</p> <p>Photo Point 1</p> <p>Classified vegetation within this plot is comprised of trees between 8-12 m tall with approximately 30% foliage cover. There is a shrub understorey with grasses on the margins of the area.</p> <p>Slope under the vegetation has been assessed as upslope/flat land.</p>	<p>Plot 1</p> <p>Classification or Exclusion Clause</p> <p>Class A Forest</p>	
<p>Photo Point 2</p> <p>Classified vegetation within this plot is comprised of trees between 8-12 m tall with approximately 30% foliage cover. There is a shrub understorey with grasses on the margins of the area.</p> <p>Slope under the vegetation has been assessed as upslope/flat land.</p>	<p>Plot 1</p> <p>Classification or Exclusion Clause</p> <p>Class A Forest</p>	
<p>Photo Point 3</p> <p>Classified vegetation is onsite unmanaged grassland.</p> <p>Slope under the vegetation has been assessed as upslope/flat land.</p>	<p>Plot 2</p> <p>Classification or Exclusion Clause</p> <p>Class G Grassland</p>	

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

Plot	Classification or Exclusion Clause	Class G Grassland
Plot 2	Photo Point 4 Classified vegetation is onsite unmanaged grassland. Slope under the vegetation has been assessed as upslope/flat land.	
Plot 3	Photo Point 5 Classified vegetation is offsite unmanaged grassland. Slope under the vegetation has been assessed as upslope/flat land.	
Plot 3	Photo Point 6 Classified vegetation is offsite unmanaged grassland. Slope under the vegetation has been assessed as upslope/flat land.	

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

Plot	4	Classification or Exclusion Clause	Excluded AS 3959-2018 2.2.3.2 (f)
Photo Point 7		<p>This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018.</p> <p>Area managed for commercial businesses and maintained as low threat vegetation.</p>	
Plot	4	Classification or Exclusion Clause	Excluded AS 3959-2018 2.2.3.2 (f)
Photo Point 8		<p>This plot has been excluded under Clause 2.2.3.2 (e) & (f) of AS 3959-2018.</p> <p>Area managed for commercial businesses and maintained as low threat vegetation.</p>	

Appendix C – Standards for Asset Protection Zones

The following standards have been extracted from the *Guidelines for Planning in Bushfire Prone Areas v 1.3* (WAPC 2017).

Every habitable building is to be surrounded by, and every proposed lot can achieve, an APZ depicted on submitted plans, which meets the following requirements:

a. Width: Measured from any external wall or supporting post or column of the proposed building, and of sufficient size to ensure the potential radiant heat impact of a fire does not exceed 29kW/m^2 (BAL-29) in all circumstances.

b. Location: the APZ should be contained solely within the boundaries of the lot on which a 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 (see explanatory notes).

c. Management: the APZ is managed in accordance with the requirements of 'Standards for Asset Protection Zones' (below):

- Fences: within the APZ are constructed from non-combustible materials (e.g. iron, brick, limestone, metal post and wire). It is recommended that solid or slatted non-combustible perimeter fences are used
- Objects: within 10 metres of a building, combustible objects must not be located close to the vulnerable parts of the building i.e. windows and doors
- Fine Fuel load: combustible dead vegetation matter less than 6 millimetres in thickness reduced to and maintained at an average of two tonnes per hectare
- Trees (> 5 metres in height): trunks at maturity should be a minimum distance of 6 metres from all elevations of the building, branches at maturity should not touch or overhang the building, lower branches should be removed to a height of 2 metres above the ground and or surface vegetation, canopy cover should be less than 15% with tree canopies at maturity well spread to at least 5 metres apart as to not form a continuous canopy (Figure 7).

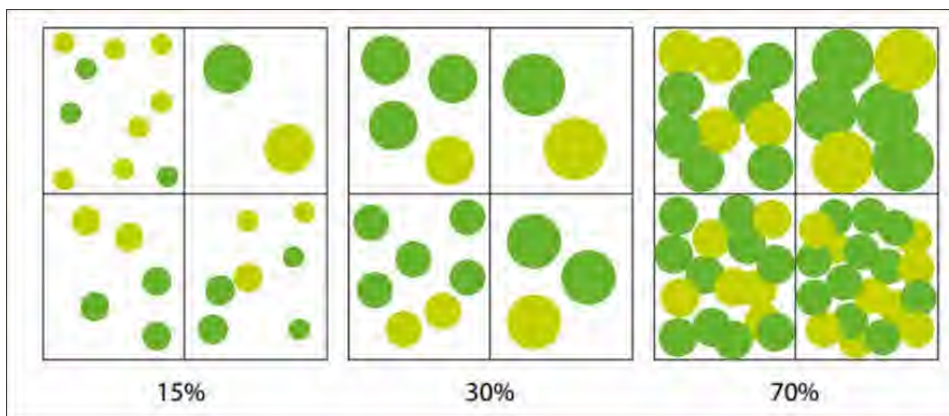


Figure 7: Illustrated tree canopy cover projection (WAPC 2017)

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

- **Shrubs (0.5 metres to 5 metres in height):** should not be located under trees or within 3 metres of buildings, should not be planted in clumps greater than 5m² in area, clumps of shrubs should be separated from each other and any exposed window or door by at least 10 metres. Shrubs greater than 5 metres in height are to be treated as trees
- **Ground covers (<0.5 metres in height):** can be planted under trees but must be properly maintained to remove dead plant material and any parts within 2 metres of a structure, but 3 metres from windows or doors if greater than 100 millimetres in height. Ground covers greater than 0.5 metres in height are to be treated as shrubs
- **Grass:** should be managed to maintain a height of 100 millimetres or less.

Additional notes

The Asset Protection Zone (APZ) is an area surrounding a building that is managed to reduce the bushfire hazard to an acceptable level. Hazard separation in the form of using subdivision design elements or excluded and low threat vegetation adjacent to the lot may be used to reduce the dimensions of the APZ within the lot.

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

Bushfire Management Plan:
Development Application: Lot 150 (720) Welshpool Road East, Wattle Grove | Community Greenwaste Recycling Pty Ltd

Appendix D - Vehicular access technical requirements (WAPC 2017)

Technical requirements	Public road	Cul-de-sac	Private driveway	Emergency access way	Fire service access route
Minimum trafficable surface (m)	6*	6	4	6*	6*
Horizontal distance (m)	6	6	6	6	6
Vertical clearance (m)	4.5	N/A	4.5	4.5	4.5
Maximum grade <50 m	1 in 10	1 in 10	1 in 10	1 in 10	1 in 10
Minimum weight capacity (t)	15	15	15	15	15
Maximum crossfall	1 in 33	1 in 33	1 in 33	1 in 33	1 in 33
Curves minimum inner radius	8.5	8.5	8.5	8.5	8.5
* Refer to E3.2 Public roads: Trafficable surface					



1300 646 131
www.ecoaus.com.au