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Date: 29 March 2018

Project No: CED18142.01

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Bushfire Attack Level (BAL) Compliance Report
Stage 5 Ariella Private Estate

BPAD
Bushfire
Planning & Design
Accredited Practitioner
Level 2

Site Details			
Address: 71 residential lots within Stage 5 Ariella Private Estate			
Suburb:	Brabham	**State:**	Western Australia
Local Government Area:	City of Swan		
Description of building works:	Class 1a buildings with associated Class 10a buildings		

Report details			
Report/Job number:	CED18142.01	**Report version:**	M001 Rev A
Assessment date:	26/10/2017 and 19/03/2018	**Report date:**	29/03/2018
Report Review Endorsement	Z Cockerill 29/03/2018	BPAD37803	Level 2 Accredited

Introduction

This Bushfire Attack Level (BAL) compliance report has been prepared for 71 residential lots within Stage 5 Ariella Private Estate (hereon referred to as the project area), located in Brabham, City of Swan.

This report provides a post-subdivisional works update of the BAL ratings for individual lots within the project area and has been prepared for the benefit of the developer, future lot purchasers and decision-makers. BAL certificates (contained in Appendix 2) have been prepared for all lots assigned with a rating of BAL-12.5 or greater or any lots situated in a designated bushfire prone area for use at the building permit stage based on the final site compliance check.

The BAL assessment outlined in this report is the most up to date assessment relating to the project area and therefore supersedes any previous Strategen BAL assessments undertaken within the project area, including those documented in previously approved Bushfire Management Plans (BMPs) prepared by Strategen to accompany both the original Ariella Private Estate subdivision (2015) and revised subdivision for Stages 5–7 (2018).

The approach for preparation of this BAL compliance report is consistent with Section 4.2 and Appendix 3 of *Guidelines for Planning in Bushfire Prone Areas* (the Guidelines).

The BAL compliance assessment has been completed by a Level 2 accredited Bushfire Planning and Design practitioner (Zac Cockerill, BPAD37803) in accordance with Method 1 of *AS 3959–2009 Construction of Buildings in Bushfire-prone Areas* (AS 3959) and results are consistent with on-ground conditions observed at the time of inspection on 26 October 2017 and reassessment on 19 March 2018.

Should subdivision design or the classified vegetation extent be further modified prior to building construction, then an updated BAL assessment for the affected lots may need to be undertaken to account for these changes.

BAL contour assessment

Results of the BAL contour assessment are provided in Figure 1 and a summary of assessment parameters are provided in the following subsections.

Fire Danger Index

A blanket rating of FDI 80 is adopted for Western Australian environments, as outlined in AS 3959 and endorsed by Australasian Fire and Emergency Service Authorities Council.

Vegetation class

The following provides a summary of classified vegetation and exclusions identified during on-ground assessment:

1. Class B woodland (predominantly Swamp paperbark and Flooded gum) contained within the Resource Enhancement Wetland (REW) to the southeast. Proposed revegetation has been accounted for in accordance with the current Landscape Concept Plan. This vegetation is not considered to be the worst case vegetation from a BAL impact perspective due to the greater proximity maintained to the project area compared to the Class C shrubland outlined below.

2. Class C shrubland (low shrubs within 2 m height at maturity) contained within the REW buffer to the southeast. Proposed revegetation has been accounted for in accordance with the current Landscape Concept Plan. This vegetation is considered to be the worst case vegetation from a BAL impact perspective due to the closer proximity maintained to the project area compared to the abovementioned Class B woodland.

3. Non-vegetated areas where vegetation has been removed to enable construction of roads, buildings and sealed areas, which are excluded from classification under Clause 2.2.3.2 (e) of AS 3959

4. Low threat managed areas where the vegetation has been maintained in a minimal fuel condition throughout road verges, median strips and low threat managed buffers installed throughout adjacent development stages (i.e. future Stage 6 to the east and future Stage 7 to the south), which are excluded from classification under Clause 2.2.3.2 (f) of AS 3959.

The spatial extent of classified vegetation and exclusions identified within 100 m of the project area are depicted in Figure 1. Georeferenced photographs were taken during two site investigations to verify the classified vegetation extent and exclusions identified (refer to site photographs in Appendix 1). The location and direction of these photographs are also depicted in Figure 1.

Effective slope

Strategen assessed effective slope under classified vegetation to be >0–5 degrees in association with the minor decline in elevation throughout the REW and buffer to the southeast.

BAL calculations

The BAL impact to the project area has been assessed in the form of BAL contours utilising assessment results outlined above. Results of the BAL contour assessment are outlined in Table 1 and depicted in the BAL contour map (Figure 1).

Table 1: BAL contour assessment

Vegetation class	Effective slope	BAL contours (separation distance)	BAL rating	Comment
Class C shrubland	Down-slope, >0–5 degrees	<7 m	BAL–FZ	No development is proposed in this area
		7–<10 m	BAL–40	No development is proposed in this area
		10–<15 m	BAL–29	No development is proposed in this area
		15–<22 m	BAL–19	No development is proposed in this area
		22–<100 m	BAL–12.5	Development will occur in this area

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BAL certificates

BAL certificates are provided in Appendix 2 for all lots assigned with a rating of BAL-12.5 or greater (as per the BAL contour assessment outlined in Figure 1) and any lots situated within a designated bushfire prone area. This equates to a total of 20 lots. Should a lower BAL rating be realistically achievable through an appropriate building setback, then the landowner can refer to detailed advice for recommended setbacks in Table 2. The lower BAL rating may be achieved if the recommended building setback is reflected on the building plan for that lot and a revised BAL certificate can be issued at that time.

Table 2: Recommended setbacks to achieve a lower BAL rating

Lot number	Current lot separation distance	Current BAL rating	Recommended building setback to achieve lower BAL	New BAL rating*
249	96.5 m	BAL-12.5	3.5 m tapered front setback	BAL-Low

*The new BAL rating in Table 2 can only be confirmed once the building plan for the relevant lot has been prepared to demonstrate compliance with the recommended setback. Once the setback has been confirmed, a new BAL certificate for the lower BAL rating can be prepared and issued to accompany the building permit application.

Conclusion and recommendations

This BAL compliance report has been prepared for 71 residential lots within Stage 5 Ariella Private Estate to provide a final BAL check for individual lots for use at the building permit stage. Assessment results are consistent with current on-ground conditions observed at time of inspection on 26 October 2017 and reassessment on 19 March 2018. Strategen can confirm that the existing BMPs over the site have been implemented as intended throughout the duration of subdivisional works for the relevant Stage 5 area and adjacent land to achieve the intended bushfire management outcomes and BAL ratings.

In the absence of any change in development design or post-development classified vegetation extent, Strategen considers that the BAL assessment and BAL certificates outlined in this report are accurate to inform individual lot building permit applications.

Should the extent of classified vegetation change or new vegetation be introduced within 100 m of proposed development beyond that already accounted for in this document, then the BAL should be reassessed at the building permit stage to ensure accuracy with on-ground conditions.

Should it be determined through demonstration on the building plan that compliance with the recommended building setbacks has been achieved and subsequently a lower BAL rating has been achieved (as per Table 2), then the lower BAL rating should apply and be reflected in an updated BAL certificate prepared at that time.

The BAL assessment outlined in this report is the most up to date assessment relating to the project area and therefore supersedes any previous Strategen BAL assessments undertaken within the project area.

Ongoing requirements of the Strategen (2015) FMP and Strategen (2018) FMP addendum and current City of Swan annual firebreak notice should continue to be implemented as required, particularly with regards to ongoing fuel management of vacant land, road reserves and APZs.
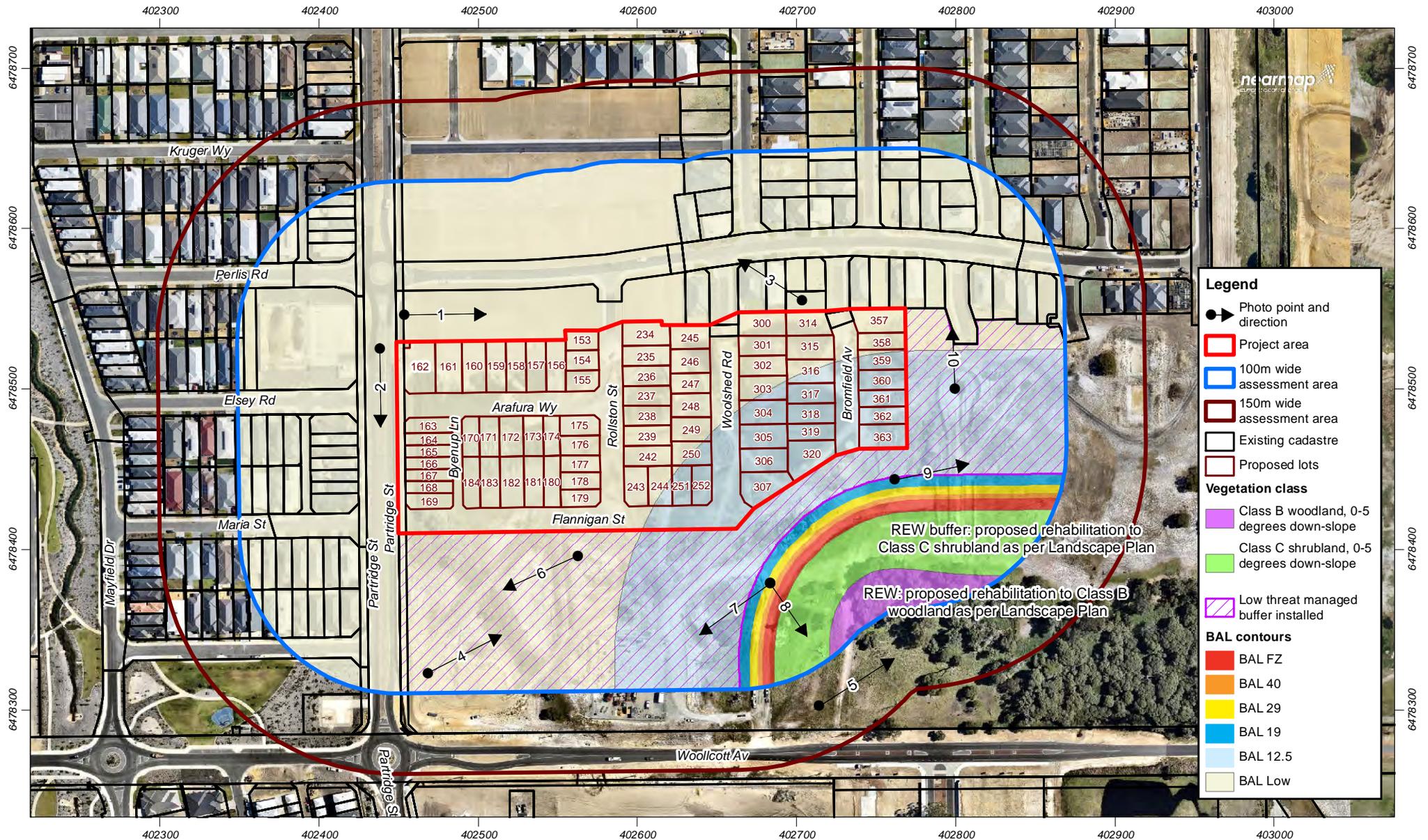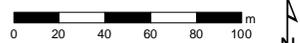
Figure 1 BAL compliance: Stage 5 Ariella

Legend

- Photo point and direction
- Project area
- 100m wide assessment area
- 150m wide assessment area
- Existing cadastre
- Proposed lots

Vegetation class
- Class B woodland, 0-5 degrees down-slope
- Class C shrubland, 0-5 degrees down-slope
- Low threat managed buffer installed

BAL contours
- BAL FZ
- BAL 40
- BAL 29
- BAL 19
- BAL 12.5
- BAL Low

REW buffer: proposed rehabilitation to Class C shrubland as per Landscape Plan

REW: proposed rehabilitation to Class B woodland as per Landscape Plan

Scale 1:3,300   at A4

0 20 40 60 80 100 m

Coordinate System: GDA 1994 MGA Zone 50
Note that positional errors may occur in some areas
Date: 29/03/2018
Author: JCrute
Source: Aerial image: Nearmap, flown 02/2018. Existing cadastre: Landgate 2017. Subdivision layout: Client 03/2018.
Path: Q:\Consult\2018\CED\CED18142\01_GIS_documents\ArcMap_documents\CED18142_G001_RevB.mxd

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Appendix 1
Site photographs

Photo 1: Non-vegetated areas excluded from classification under Clause 2.2.3.2 (e)
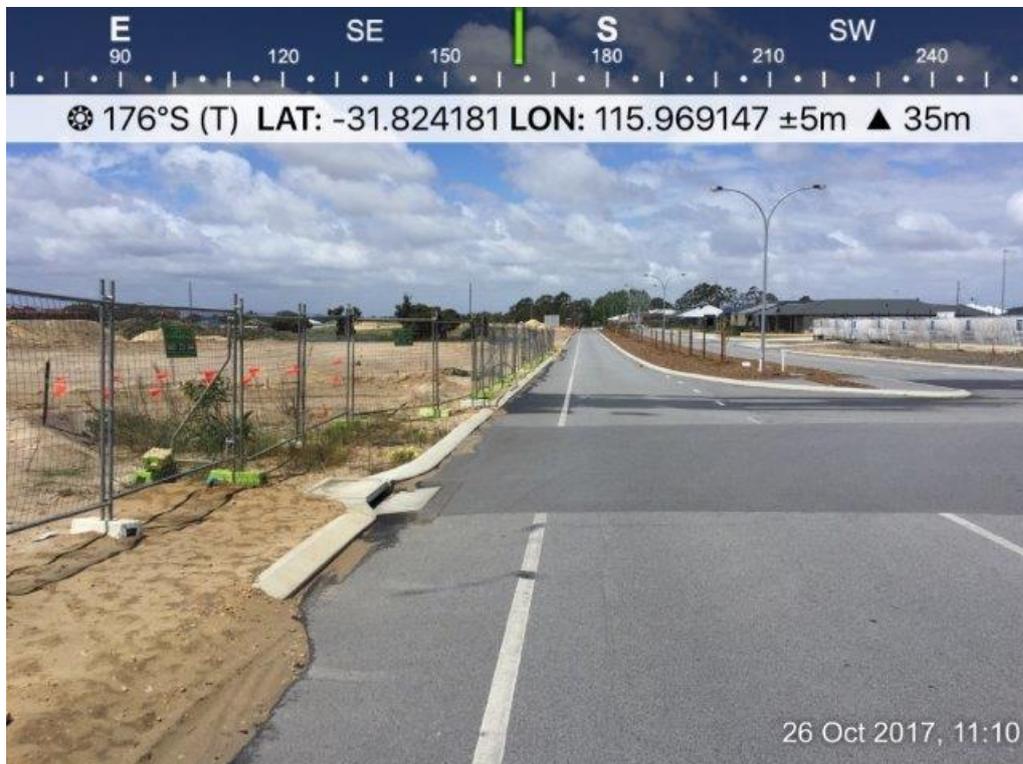

Photo 2: Non-vegetated areas and low threat managed vegetation excluded from classification under Clauses 2.2.3.2 (e) and (f)

Photo 3: Non-vegetated areas and low threat managed vegetation excluded from classification under Clauses 2.2.3.2 (e) and (f)

Photo 4: Low threat managed vegetation excluded from classification under Clause 2.2.3.2 (f)

Photo 5: Future Class C shrubland in foreground (proposed shrubland revegetation within REW buffer) and existing and future Class B woodland in background (proposed woodland revegetation within REW)

Photo 6: Low threat managed vegetation excluded from classification under Clause 2.2.3.2 (f)

Photo 7: Low threat managed vegetation excluded from classification under Clause 2.2.3.2 (f)

Photo 8: Future Class C shrubland (proposed revegetation within REW buffer)

Photo 9: Low threat managed vegetation excluded from classification under Clause 2.2.3.2 (f)

Photo 10: Low threat managed vegetation excluded from classification under Clause 2.2.3.2 (f)