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Date: 21 February 2018

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Project No: CED17470.01

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Bushfire Attack Level (BAL) Compliance Report Kamara Estate



Site Details			
Address: 130 lots within Kamara Estate			
Suburb:	Piara Waters	State:	Western Australia
Local Government Area:	City of Armadale		
Description of building works:	Class 1a buildings with associated Class 10a buildings		

Report details			
Report/Job number:	CED17470.01	Report version:	M001 Rev B
Assessment date:	26/10/2017, 30/11/2017 and 13/12/2017	Report date:	21/02/2018
Report Review Endorsement	Z Cockerill 21/02/2018	BPAD37803	Level 2 Accredited

Introduction

This Bushfire Attack Level (BAL) compliance report has been prepared for Kamara Estate (hereon referred to as the project area), located in Piara Waters in the City of Armadale.

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 for each individual lot have been prepared based on the final site compliance check and are appended to this report for use at the building permit stage. 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.

This approach is consistent with Section 4.2 and Appendix 3 of *Guidelines for Planning in Bushfire Prone Areas*.

The BAL 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; SA 2009) and results are consistent with on-ground conditions observed at the time of inspection on 26 October 2017 and revalidated on 30 November 2017 and again on 13 December 2017.

Should subdivision design or the classified vegetation extent be further modified prior to building construction, then an updated BAL contour 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

Subdivisional works have resulted in the following exclusions within and adjacent to the project area:

- all proposed residential lots and road reserves are in a cleared, non-vegetated state and are excluded from classification under Clause 2.2.3.2 (e)
- adjacent vegetation to the northwest of the project area is excluded from classification under Clause 2.2.3.2 (c)
- adjacent vegetation to the southwest of the project area is excluded from classification under Clause 2.2.3.2 (b)
- POS areas within the project area are cleared and subject to future landscaping and ongoing management to ensure a low threat state is maintained and these areas are excluded from classification under Clause 2.2.3.2 (f)
- the 14 m wide Asset Protection Zone (APZ), as documented in the Strategen (2017) BMP, has been implemented properly and is excluded from classification under both Clause 2.2.3.2 (e) for non-vegetated components (i.e. road reserves and cleared, vacant land) and Clause 2.2.3.2 (f) for managed low threat components (i.e. POS).

Considering the above exclusions, the only remaining intact classified vegetation situated within 100 m of the project area is Class B woodland on flat land situated to the north within Piara Nature Reserve.

Vegetation retained within the Conservation Category Wetland (CCW) buffer within the northern part of the site is proposed to be revegetated to reflect a Class B woodland classification on flat land (as per DPaW and City agreement). This proposed classification has been incorporated into the BAL contour assessment for this site.

The spatial extent of the assessed vegetation classes and exclusions are depicted in Figure 1, along with site photo points to demonstrate the location and direction of the vegetation class and exclusions observed. The photo points depicted in Figure 1 relate to the georeferenced site photographs provided in Appendix 1.

Effective slope

Class B woodland situated to the North within Piara Nature reserve and the CCW buffer is assessed as being on flat land, as depicted in Figure 1.

BAL calculations

The BAL impact to the project area has been assessed in the form of BAL contours, utilising the 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

Classified vegetation	Effective slope	Separation distance (BAL contour width)	BAL rating	Comment
Class B woodland	Flat Land (0 degrees)	<10 m	BAL-FZ	No development is proposed in this area through provision of a 14 m wide APZ
		10-<14 m	BAL-40	No development is proposed in this area through provision of a 14 m wide APZ
		14-<20 m	BAL-29	Proposed development will occur in this area
		20-<29 m	BAL-19	Proposed development will occur in this area
		29-<100 m	BAL-12.5	Proposed development will occur in this area

BAL certificates

BAL certificates are provided in Appendix 2 for all 130 residential lots situated within the project area as per the BAL contour assessment outlined in Figure 1. Where more than one BAL rating applies to a single lot, the highest (worst case) BAL rating has been applied, except for Lots 157–159 where APZ provisions will be implemented to reduce the rating from BAL-40 to BAL-29. Should a lower BAL rating be realistically achievable through a minor 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 separation distance to lot boundary	Current BAL rating	Recommended setback to achieve lower BAL	New BAL rating*
161	26 m	BAL-19	3 m rear setback	BAL-12.5
160	18 m	BAL-29	2 m rear setback	BAL-19
154	27 m	BAL-19	2 m front setback	BAL-12.5
155	22 m	BAL-19	7 m front setback	BAL-12.5
214	97 m	BAL-12.5	3 m 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 Kamara 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 revalidated on 30 November 2017 and again on 13 December 2017. Straten can confirm that the existing BMP over the site has been implemented as intended throughout the duration of subdivisional works for the relevant project area and adjacent land.

In the absence of any change in development design or post development classified vegetation extent, Straten 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, 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, 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 (2017) BMP and current City of Armadale annual firebreak notice should continue to be implemented as required, particularly with regards to ongoing fuel management of vacant land, POS, road reserves and APZs.

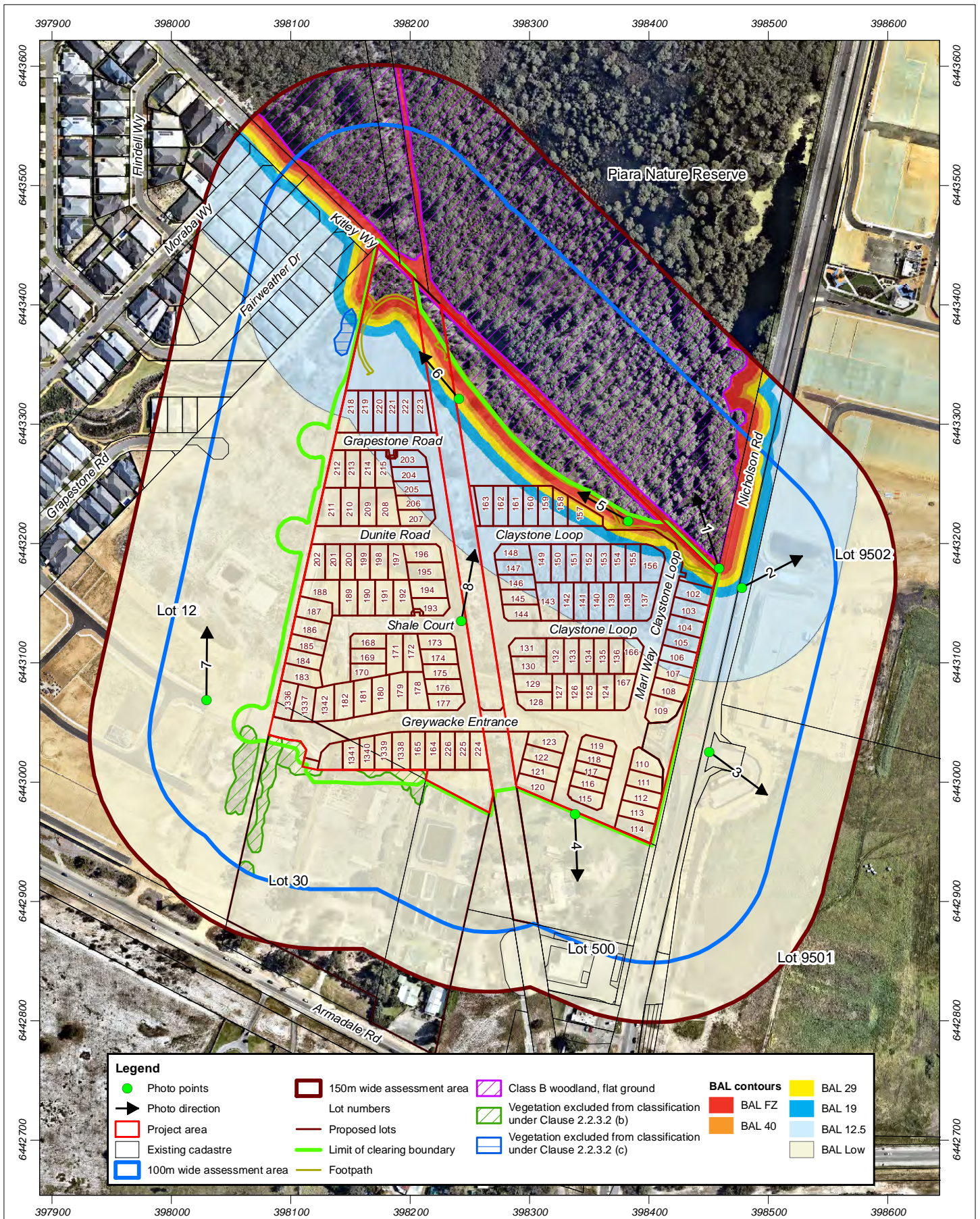
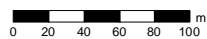


Figure 1 BAL contour map

Scale 1:4,281 at A4



Coordinate System: GDA 1994 MGA Zone 50
 Note that positional errors may occur in some areas
 Date: 14/02/2018

Author: JCrute

Source: Aerial image: Nearmap, flown 10/2017.

Existing cadastre: Landgate 04/2017. Subdivision: Client, 02/2018.

Path: Q:\Consult\2017\CED\CED17470\01_GIS_documents\ArcMap_documents\CED17470_G001_RevG.mxd

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Appendix 1
Site photographs



Photo 1: Class B Woodland on flat land



Photo 2: Non-vegetated land and low threat managed land excluded under Clauses 2.2.3.2 (e) and (f)



Photo 3: Non-vegetated land and low threat managed land excluded under Clauses 2.2.3.2 (e) and (f)



Photo 4: Non-vegetated land and low threat managed land excluded under Clauses 2.2.3.2 (e) and (f)



Photo 5: Low threat managed land excluded under Clause 2.2.3.2 (f) (left) and Class B Woodland on flat land (right)



Photo 6: Low threat managed land excluded under Clause 2.2.3.2 (f) (foreground) and Class B Woodland on flat ground (background)



Photo 7: Non-vegetated land and low threat managed land excluded under Clauses 2.2.3.2 (e) and (f)



Photo 8: Low threat managed land excluded under Clauses 2.2.3.2 (f)