

Richard Noble
Bushfire Attack Level (BAL) Compliance Report

Stage 5 – Vivente Estate
Hammond Park

25 February 2020

58178/127,038 (Rev 0)

JBS&G Australia Pty Ltd T/A Strategen-JBS&G

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Appendices

- Appendix A BAL certificates
- Appendix B Vegetation plot photos and description

1. Introduction

1.1 Site/development summary

Table 1 provides a summary of the site and proposed development. The development layout and subject lots are shown in Figure 1 and Figure 2.

Table 1: Site/development summary

Site details	
Address details	Lot 135-136, 209-217, 219-222 and 701 Whadjuk Drive Lot 138-142, 187-188, 205-208 and 700 Reschen Chase Lot 230-231 and 406-409 Barfield Road Lot 223-229 Scolaro Road
Local government area	City of Cockburn
Description of building works	Construction of a single residential dwelling (Class 1 a building and associated Class 10a structures) within each lot

1.2 Purpose of report

This Bushfire Attack Level (BAL) compliance report has been prepared for 41 residential lots within Stage 5 Vivente Estate, Hammond Park (hereafter referred to as the project area).

This report provides a post-subdivisional works update of the Bushfire Attack Level (BAL) ratings for individual lots within the project area and has been prepared for the benefit of the developer and future lot purchasers. BAL certificates for each individual lot (contained in Appendix A) 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 Strategen-JBS&G assessment relating to the project area and has been prepared in consideration of the previous BAL contour assessment documented in the Bushfire Management Plan (BMP) prepared to accompany the Structure Plan amendment for Vivente Estate (Strategen 2019). 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; WAPC 2017).

2. Bushfire assessment results

2.1 Assessment inputs

2.1.1 Vegetation classification

Strategen-JBS&G assessed classified vegetation and exclusions within the 150 m assessment area through on-ground verification on 30 January 2020 in accordance with AS 3959—2018 *Construction of Buildings in Bushfire-Prone Areas* (AS 3959; SA 2018) and the *Visual Guide for Bushfire Risk Assessment in Western Australia* (DoP 2016). Georeferenced site photos and a description of the vegetation classifications and exclusions are contained in Appendix B and depicted in Figure 1.

Site observations indicate that, apart from a small area of vegetation (i.e. Plot 3) that is greater than 100 m from the project area being reclassified from Class D Scrub to Class B Woodland, the vegetation classifications align with the post-development vegetation classifications determined by the endorsed Strategen (2019) BMP.

2.1.2 Effective slope

Strategen-JBS&G assessed effective slope under classified vegetation within the 150 m assessment area through on-ground verification on 30 January 2020 in accordance with AS 3959 Results were cross-referenced with DPIRD 2 m contour data and are depicted in Figure 1.

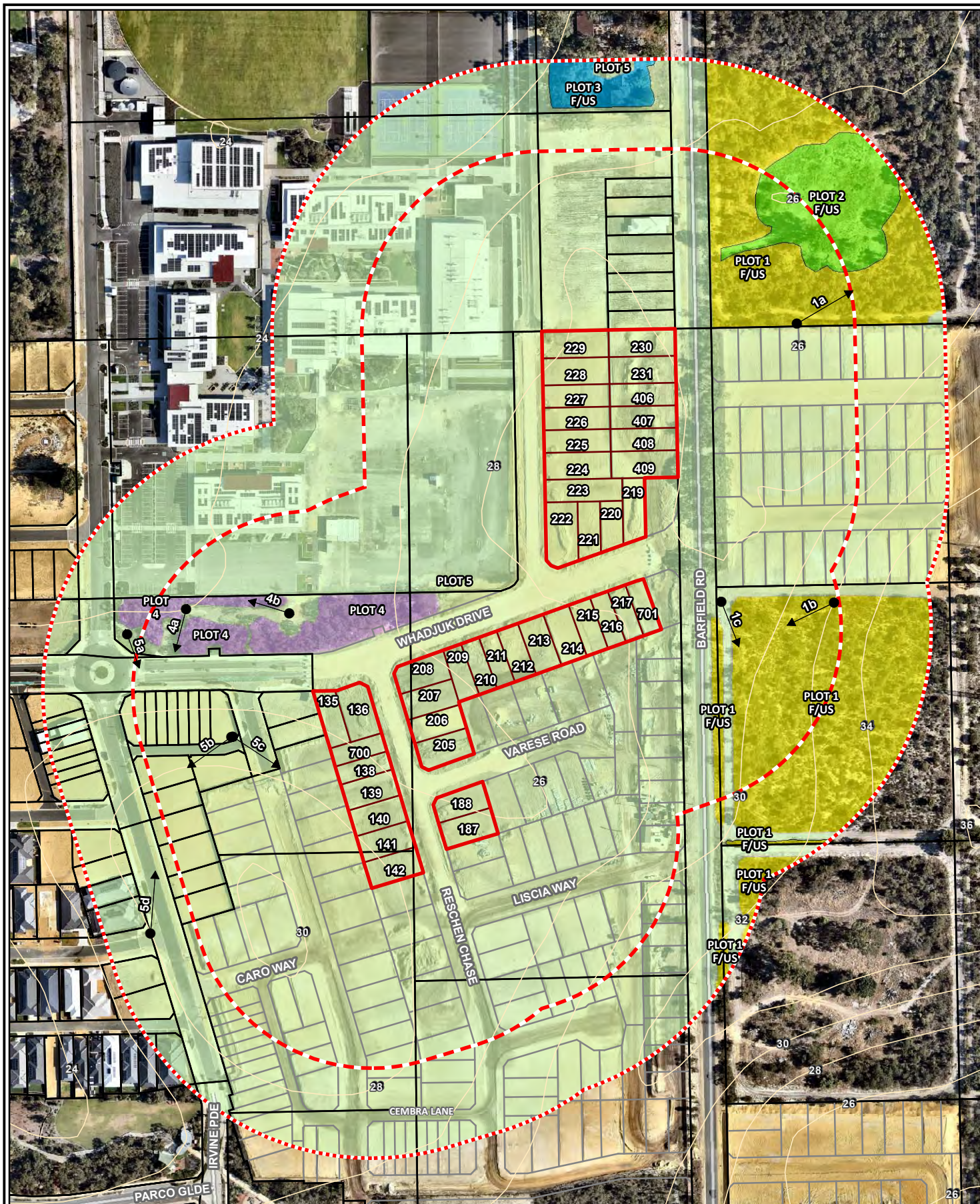
Site observations indicate that effective slope under the classified vegetation aligns with the effective slopes identified within the endorsed Strategen (2019) BMP.

2.1.3 Summary of inputs

Figure 1 illustrates the current vegetation classifications and exclusions observed during the inspection, which represent post-development conditions for the site. The vegetation classifications/exclusions and effective slope are summarised in Table 2.

Table 2: Summary of vegetation classifications, exclusions and effective slope

Vegetation plot	Vegetation classification	Effective slope	Comments
1	Class D Scrub	Flat/upslope (0°)	Dominated by Banksia and Casuarina species.
2	Class G Grassland	Flat/upslope (0°)	Unmanaged grassland.
3	Class B Woodland	Flat/upslope (0°)	Vegetation is >100 m from the project area but within 150 m, and has been reclassified from Class D Scrub to Class B Woodland to more accurately reflect the vegetation structure (scattered trees over grassy understorey).
4	Excluded – Clause 2.2.3.2 [b]	N/A	Single areas of vegetation less than 1 ha in size and not within 100 m of other classified vegetation.
5	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Non-vegetated surfaces such as roads and footpaths, and managed landscaping.



Legend:

- Project area
- 100m assessment area
- 150m assessment area
- Cadastral boundary
- Proposed lots
- Surrounding subdivisions
- Topographic contours (mAHD)
- Photo point and direction

Vegetation classification

- Class B Woodland
- Class D Scrub
- Class G Grassland
- Clause 2.2.3.2 (b)
- Clause 2.2.3.2 (e) & (f)
- Roads (MRWA)

Scale 1:2,800 at A4

0 25 50
metres

Coord. Sys. GDA 1994 MGA Zone 50



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Client: Richard Noble

Version: A

Drawn By: jcrute

Date: 18-Feb-2020

Checked By: CT

Stages 1 to 10 and 1A
Vivente Estate, Hammond Park, WA

VEGETATION CLASSIFICATION
AND EFFECTIVE SLOPE

FIGURE 1



2.2 Assessment outputs

2.2.1 Bushfire Attack Level (BAL) contour assessment

Strategen-JBS&G has undertaken a BAL contour assessment in accordance with Method 1 of AS 3959 for the project area (Figure 2). The Method 1 procedure incorporates the following factors:

- state-adopted FDI 80 rating
- vegetation classification
- effective slope
- distance maintained between proposed development areas and the classified vegetation.

BAL contours for the project area are based on the assessed current ground conditions. Results of the BAL contour assessment are detailed in Table 3 and illustrated in Figure 2. Where applicable, Table 3 recommends building setbacks for future buildings to achieve a lower BAL. Implementation of building setbacks at the building stage may result in BAL reductions for various lots.

18 of the lots within Stage 5 are not situated within a designated bushfire prone area (as per the state Map of Bush Fire Prone Areas; see Plate 1) and therefore do not trigger a formal requirement for bushfire consideration/BAL assessment at the building stage. As such, BAL certificates have not been provided for the below lots:

- Lots 135-136 and 209-212 Whadjuk Drive
- Lots 138-142, 187-188, 205-208 and 700 Reschen Chase.

Table 3: BAL contour assessment results

Method 1 BAL determination								
Lot	Designated bushfire prone	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL	Setback required to achieve lower BAL	Potential modified BAL [^]
135	No	Lot is not located within a designated bushfire prone area and therefore no further BAL assessment or bushfire risk consideration is required as part of the building stage				N/A	N/A	N/A
136	No					N/A	N/A	N/A
138	No					N/A	N/A	N/A
139	No					N/A	N/A	N/A
140	No					N/A	N/A	N/A
141	No					N/A	N/A	N/A
142	No					N/A	N/A	N/A
187	No					N/A	N/A	N/A
188	No					N/A	N/A	N/A
205	No					N/A	N/A	N/A
206	No					N/A	N/A	N/A
207	No					N/A	N/A	N/A
208	No					N/A	N/A	N/A
209	No					N/A	N/A	N/A
210	No					N/A	N/A	N/A
211	No					N/A	N/A	N/A
212	No					N/A	N/A	N/A
213	Yes	1	Class D Scrub	Flat/upslope (0°)	83.1m	BAL-12.5	N/A	N/A
214	Yes	1	Class D Scrub	Flat/upslope (0°)	68.7m	BAL-12.5	N/A	N/A
215	Yes	1	Class D Scrub	Flat/upslope (0°)	57.0m	BAL-12.5	N/A	N/A
216	Yes	1	Class D Scrub	Flat/upslope (0°)	47.1m	BAL-12.5	N/A	N/A
217	Yes	1	Class D Scrub	Flat/upslope (0°)	36.9m	BAL-12.5	N/A	N/A
219	Yes	1	Class D Scrub	Flat/upslope (0°)	56.8m	BAL-12.5	N/A	N/A
220	Yes	1	Class D Scrub	Flat/upslope (0°)	62.6m	BAL-12.5	N/A	N/A
221	Yes	1	Class D Scrub	Flat/upslope (0°)	70.0m	BAL-12.5	N/A	N/A
222	Yes	1	Class D Scrub	Flat/upslope (0°)	79.2m	BAL-12.5	N/A	N/A
223	Yes	1	Class D Scrub	Flat/upslope (0°)	80.9m	BAL-12.5	N/A	N/A

Method 1 BAL determination								
Lot	Designated bushfire prone	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL	Setback required to achieve lower BAL	Potential modified BAL [^]
224	Yes	1	Class D Scrub	Flat/upslope (0°)	88.7m	BAL-12.5	N/A	N/A
225	Yes	1	Class D Scrub	Flat/upslope (0°)	79.3m	BAL-12.5	N/A	N/A
226	Yes	1	Class D Scrub	Flat/upslope (0°)	71.6m	BAL-12.5	N/A	N/A
227	Yes	1	Class D Scrub	Flat/upslope (0°)	64.8m	BAL-12.5	N/A	N/A
228	Yes	1	Class D Scrub	Flat/upslope (0°)	59.0m	BAL-12.5	N/A	N/A
229	Yes	1	Class D Scrub	Flat/upslope (0°)	57.4m	BAL-12.5	N/A	N/A
230	Yes	1	Class D Scrub	Flat/upslope (0°)	20.1m	BAL-19	6.9m	BAL-12.5
231	Yes	1	Class D Scrub	Flat/upslope (0°)	25.2m	BAL-19	1.8m	BAL-12.5
406	Yes	1	Class D Scrub	Flat/upslope (0°)	36.4m	BAL-12.5	N/A	N/A
407	Yes	1	Class D Scrub	Flat/upslope (0°)	47.3m	BAL-12.5	N/A	N/A
408	Yes	1	Class D Scrub	Flat/upslope (0°)	58.7m	BAL-12.5	N/A	N/A
409	Yes	1	Class D Scrub	Flat/upslope (0°)	70.4m	BAL-12.5	N/A	N/A
700	No	Lot is not located within a designated bushfire prone area and therefore no further BAL assessment or bushfire risk consideration is required as part of the building stage				N/A	N/A	N/A
701	Yes	1	Class D Scrub	Flat/upslope (0°)	27.2m	BAL-12.5	N/A	N/A

[^] The modified BAL can only be confirmed once the building plan for the relevant lot has been prepared to demonstrate compliance with the recommended setback.

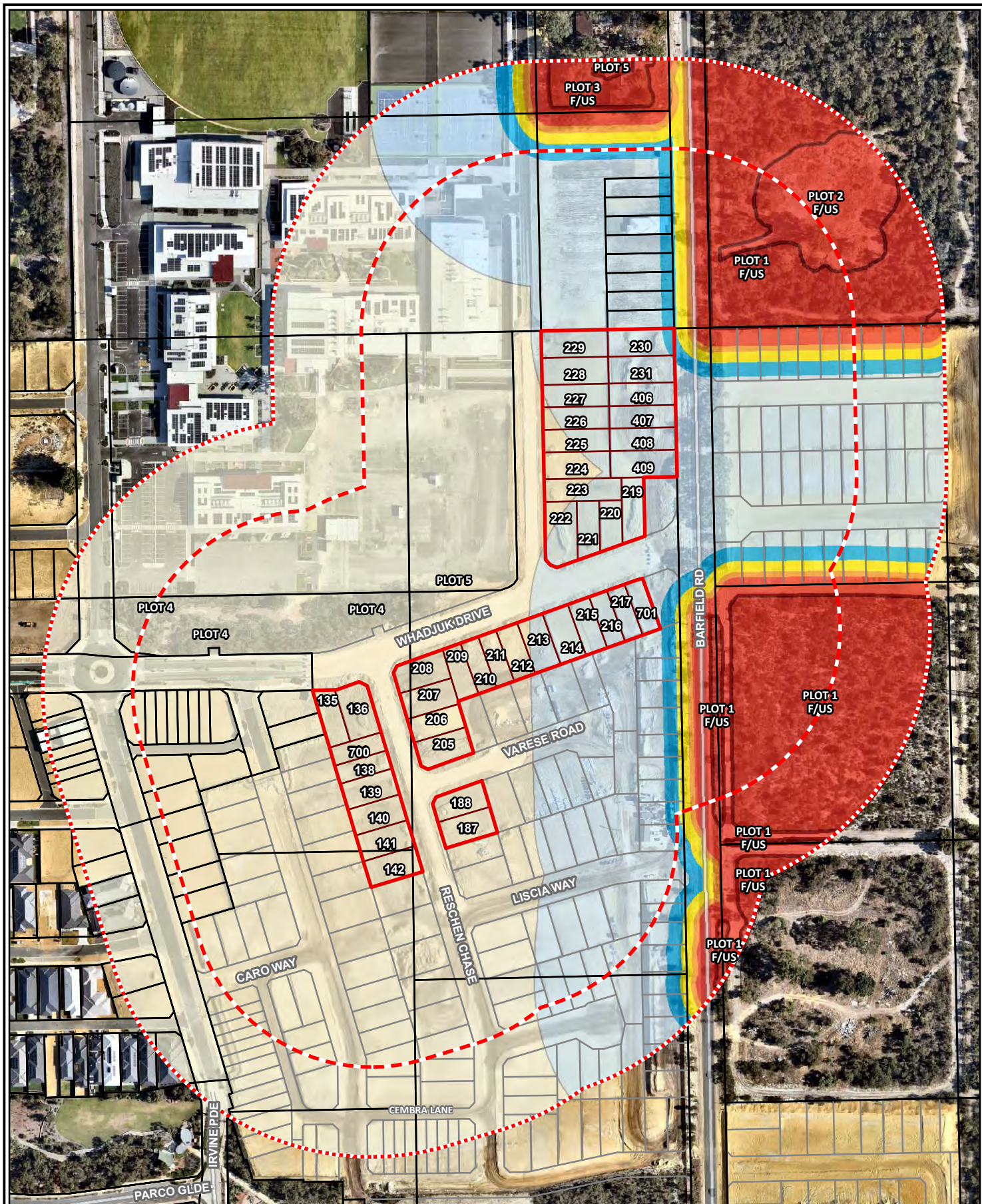


Plate 1 : Map of Bush Fire Prone Areas (DFES 2020)

2.2.2 BAL certificates

BAL certificates for the subject lots are provided in Appendix A in accordance with the BAL contour assessment results detailed in Table 3 and Figure 2.

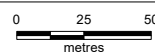
Should a lower BAL rating be realistically achievable through an appropriate building setback, then the landowner can refer to the recommended setbacks listed in Table 3. The lower BAL rating may be achieved if the recommended building setback is reflected on the building plan for that lot and a revised BAL certificate can be issued at that time.



Legend:

- | | |
|--|--|
| Project area | Classified vegetation |
| 100m assessment area | BAL contours |
| 150m assessment area | BAL FZ |
| Cadastral boundary | BAL 40 |
| Proposed lots | BAL 29 |
| Surrounding subdivisions | BAL 19 |
| Roads (MRWA) | BAL 12.5 |
| | BAL Low |

Scale 1:2,800 at A4



Coord. Sys. GDA 1994 MGA Zone 50



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Client: Richard Noble

Version: A

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Date: 14-Feb-2020

Checked By: CT

Stages 1 to 10 and 1A
Vivente Estate, Hammond Park, WA

BAL CONTOUR MAP

FIGURE 2



3. Conclusion and recommendations

This BAL compliance report has been prepared for 41 residential lots within Stage 5 Vivente Estate, Hammond Park 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. Strategen-JBS&G can confirm that the existing BMP over the site has been implemented as intended throughout the duration of subdivisional works for the relevant Stage 5 area and adjacent land to achieve the intended BAL outcomes.

Strategen-JBS&G considers that the BAL contour assessment and BAL certificates outlined in this report are accurate to inform individual lot building permit applications. Should it be determined through demonstration on individual building plans that compliance with the recommended building setbacks has been achieved and subsequently a lower BAL rating has been attained (as per Table 3), then the lower BAL rating should apply and be reflected on an updated BAL certificate prepared at that time.

Ongoing requirements of the current City of Cockburn annual firebreak notice should continue to be implemented as required, particularly with regards to ongoing fuel management of vacant land and road reserves by the relevant land managers/owners.

4. References

Department of Fire and Emergency Services (DFES) 2020, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia, available from: <https://maps.slip.wa.gov.au/landgate/bushfireprone/>, [20/02/2020].

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

Standards Australia (SA) 2018, *Australian Standard AS 3959–2018 Construction of Buildings in Bushfire-prone Areas*, Standards Australia, Sydney.

Strategen Environmental (Strategen) 2019, *Bushfire Management Plan: Vivente Estate Structure Plan Amendment, including Stages 9 and 10*, Report prepared for Roberts Day on behalf of Gold Estate Holdings Pty Ltd.

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

5. Limitations

Scope of services

This report ("the report") has been prepared by Strategen-JBS&G in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and Strategen-JBS&G. In some circumstances, a range of factors such as time, budget, access and/or site disturbance constraints may have limited the scope of services. This report is strictly limited to the matters stated in it and is not to be read as extending, by implication, to any other matter in connection with the matters addressed in it.

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Environmental conclusions

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted environmental consulting practices. No other warranty, whether express or implied, is made.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

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Appendix B Vegetation plot photos and description



Photo ID: 1a (Plot 1)



Photo ID: 1b (Plot 1 LHS, Plot 5 RHS)



Photo ID: 1c (Plot 1)

Plot number	Plot 1
Vegetation classification	Class D Scrub
Description / justification	Vegetation dominated by low <i>Banksia</i> spp. and <i>Casuarina</i> spp. with a continuous horizontal and vertical structure, greater than 2 m high but less than 6 m high at maturity.

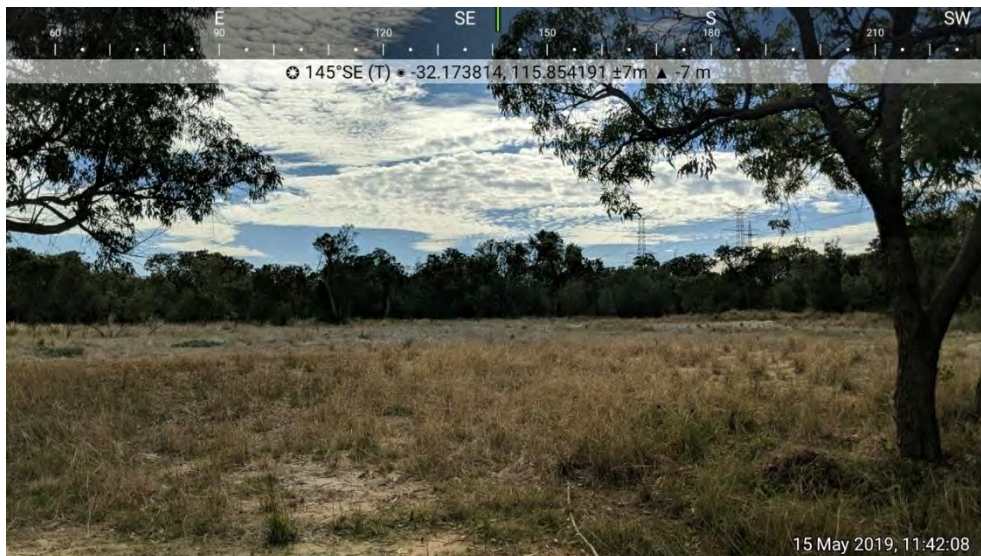


Photo ID: 2a (Plot 2)

Plot number	Plot 2
Vegetation classification	Class G Grassland
Description / justification	Grassland at maturity, greater than 100 mm in height



Photo ID: 3a (Plot 3, Background RHS)

Plot number	Plot 3
Vegetation classification	Class B Woodland
Description / justification	Trees 2-30 m at maturity, dominated by trees with a grassy understorey (lacks shrubby middle layer and deep surface litter)

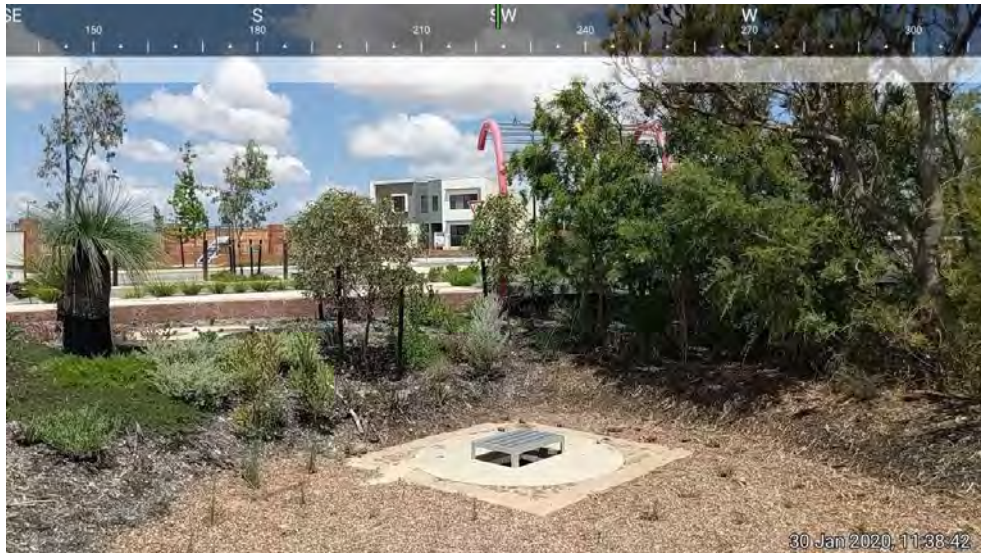


Photo ID: 4a (Plot 4)



Photo ID: 4b (Plot 4)

Plot number	Plot 4
Vegetation classification	Excluded – Clause 2.2.3.2 [b]
Description / justification	A single area of vegetation less than 1 ha in size and not within 100 m of other classified vegetation.



Photo ID: 5a (Plot 5)



Photo ID: 5b (Plot 5)



Photo ID: 5c (Plot 5)



Photo ID: 5d (Plot 5)

Plot number	Plot 5
Vegetation classification	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])
Description / justification	Low threat cultivated gardens and maintained lawns within surrounding properties and non-vegetated areas including roads, footpaths, driveways and building footprints

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Document Status

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				Name	Date
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