

Richard Noble
Bushfire Attack Level (BAL) Compliance Report
Stage 6 Vivente Estate, Hammond Park, WA

8 July 2022

62957/ 145,663 (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	48 proposed residential lots within Stage 6 Vivente Estate, Hammond Park WA 6164
Local government area	City of Cockburn
Description of building works	Construction of a single residential dwelling (Class 1a building and associated Class 10a buildings) within each lot

1.2 Purpose of report

This Bushfire Attack Level (BAL) compliance report has been prepared for 48 proposed residential lots within Stage 6 Vivente Estate (hereafter referred to as the project area).

All proposed lots except for Lots 147 and 173 are situated within a designated bushfire prone area on the Map of Bush Fire Prone Areas (DFES 2021, see Plate 1). As such, bushfire risk considerations and BAL assessment are required for the 46 designated bushfire prone lots within the project area to facilitate future building approvals.

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, future lot purchasers and decision makers. 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 to facilitate future lot sales and building approvals.

The BAL assessment outlined in this report has been prepared in consideration of previous BAL contour assessments documented in the Bushfire Management Plans (BMPs) prepared to accompany the Local Structure Plan (LSP) (Strategen 2013, 2015) and LSP amendment (Strategen-JBS&G 2020) for the development. 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 2021).

The BAL assessment outlined in this report is the most up to date assessment by Strategen-JBS&G relating to the project area and therefore supersedes any previous Strategen/Strategen-JBS&G assessments undertaken within the project area, including those documented in the following previously prepared reports:

- Fire Management Plan for Barfield Road Local Structure Plan, prepared by Strategen (2015)
- Bushfire Management Plan Amendment for Vivente Estate Structure Plan, including Stages 9 and 10, prepared by Strategen-JBS&G (2020).
- Bushfire Management Plan BAL Compliance report Stage 4 Prepared by Strategen-JBS&G August 2020
- Bushfire Management Plan BAL Compliance report Stage 8 Prepared by Strategen-JBS&G September 2021
- Bushfire Management Plan BAL Compliance report Stages 9 and 12 prepared by Strategen-JBS&G November 2021.
- Bushfire Management Plan BAL Compliance report Stages 8 and 9 interface lots prepared by Strategen-JBS&G February 2022.

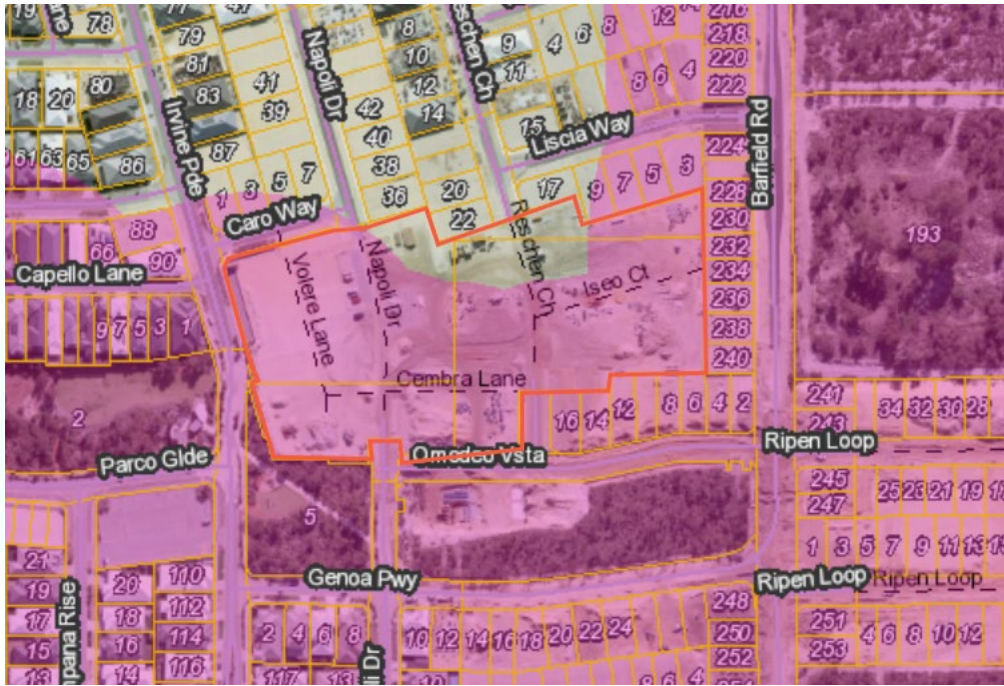


Plate 1: Map of Bush Fire Prone Areas (DFES 2021)

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 17 May 2022 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 the vegetation classifications generally align with the post-development vegetation classifications determined by the endorsed BMPs, except for:

Classified vegetation in the form of Class D scrub and Class G grassland was identified to the east and northeast of the project area. This vegetation was previously assessed as Class B woodland, which is an outdated classification that is no longer appropriate for a predominant banksia scrub fuel profile.

All remaining land situated within 150 m of the project area was identified to be excluded from classification as a result of Stage 6 subdivisional works, construction of adjacent development stages and roadside clearing along Barfield Road. The following exclusions were observed:

- the project area is in a cleared, non-vegetated state in preparation for development and is excluded from classification under Clauses 2.2.3.2 (e) and (f)
- existing non-vegetated and low threat managed land surrounding the project area, including land cleared for future development, existing residential development and low threat managed POS/landscaped areas, excluded under Clauses 2.2.3.2 (e) and (f).

On-site POS has been excluded under Clause 2.2.3.2 (f) as low threat vegetation due to the fragmentation of the vegetation cells and lack of fuel carrying capacity within the vegetation, as previously adopted by the City and DFES under the approved BMPs for Vivente estate.

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 17 May 2022 in accordance with AS 3959. Results were cross-referenced with DPIRD 2 m contour data and are depicted in Figure 1.

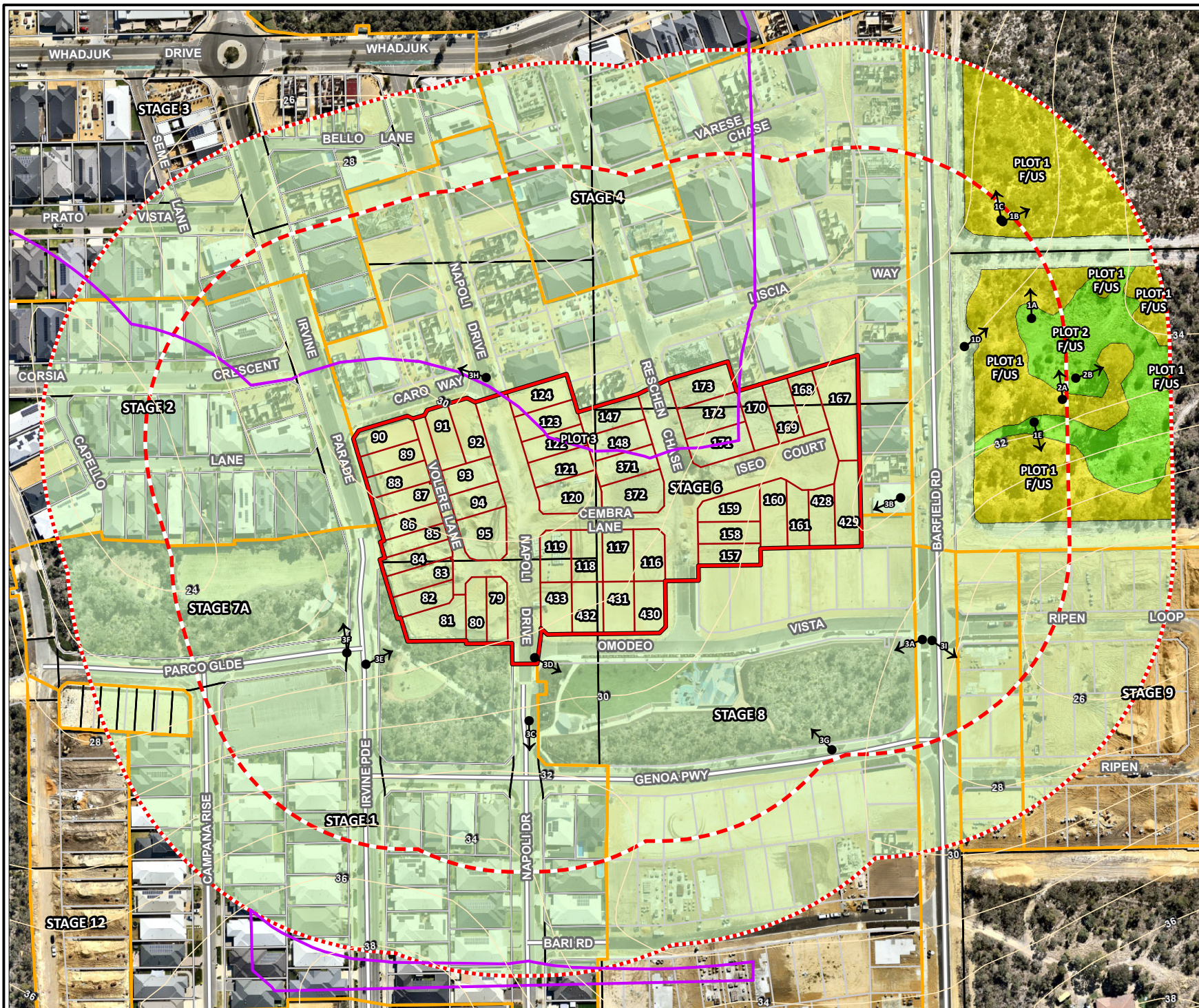
Site observations indicate that effective slope under the classified vegetation aligns with the effective slopes identified within the endorsed BMPs. Classified vegetation within the assessment area is situated on flat or upsloping land in relation to the project area, resulting in an effective slope of flat/upslope (i.e. 0 degrees).

2.1.3 Summary of inputs

Figure 1 illustrates the current post-development vegetation classifications and exclusions observed during the inspection. 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°)	Scrub vegetation predominantly 2–6 m in height with a continuous horizontal fuel profile consisting predominantly of banksia/sheoak.
2	Class G Grassland	Flat/upslope (0°)	Unmanaged grassland vegetation greater than 100 mm in height.
3	Excluded – Non-vegetated and Low threat (Clause 2.2.3.2 [e] and [f])	N/A	Existing non-vegetated areas (i.e. roads, buildings, cleared vacant lots, driveways, footpaths) and low threat managed vegetation (i.e. mowed grass, managed gardens/POS, etc).



- Legend**
- Project area
 - 100m assessment area
 - 150m assessment area
 - Cadastral boundary
 - Bushfire prone areas
- Vegetation classification**
- Class D Scrub
 - Class G Grassland
 - Clause 2.2.3.2 (e) & (f)
- Proposed lots
 - Stage boundaries
 - Future indicative lot layout on adjacent stages
 - Photo point directions
 - Topographic contours (mAHd)
 - Roads (MRWA)



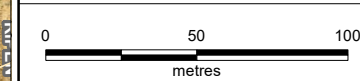
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Client: Richard Noble & Company

Version: A Date 25/05/2022

Drawn By: ianandagoda Checked By: JC

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**Stage 6 Vivente
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.

The BAL contours are based on the current on-ground site conditions confirmed during site assessment and results are detailed in Table 3 and illustrated in Figure 2.

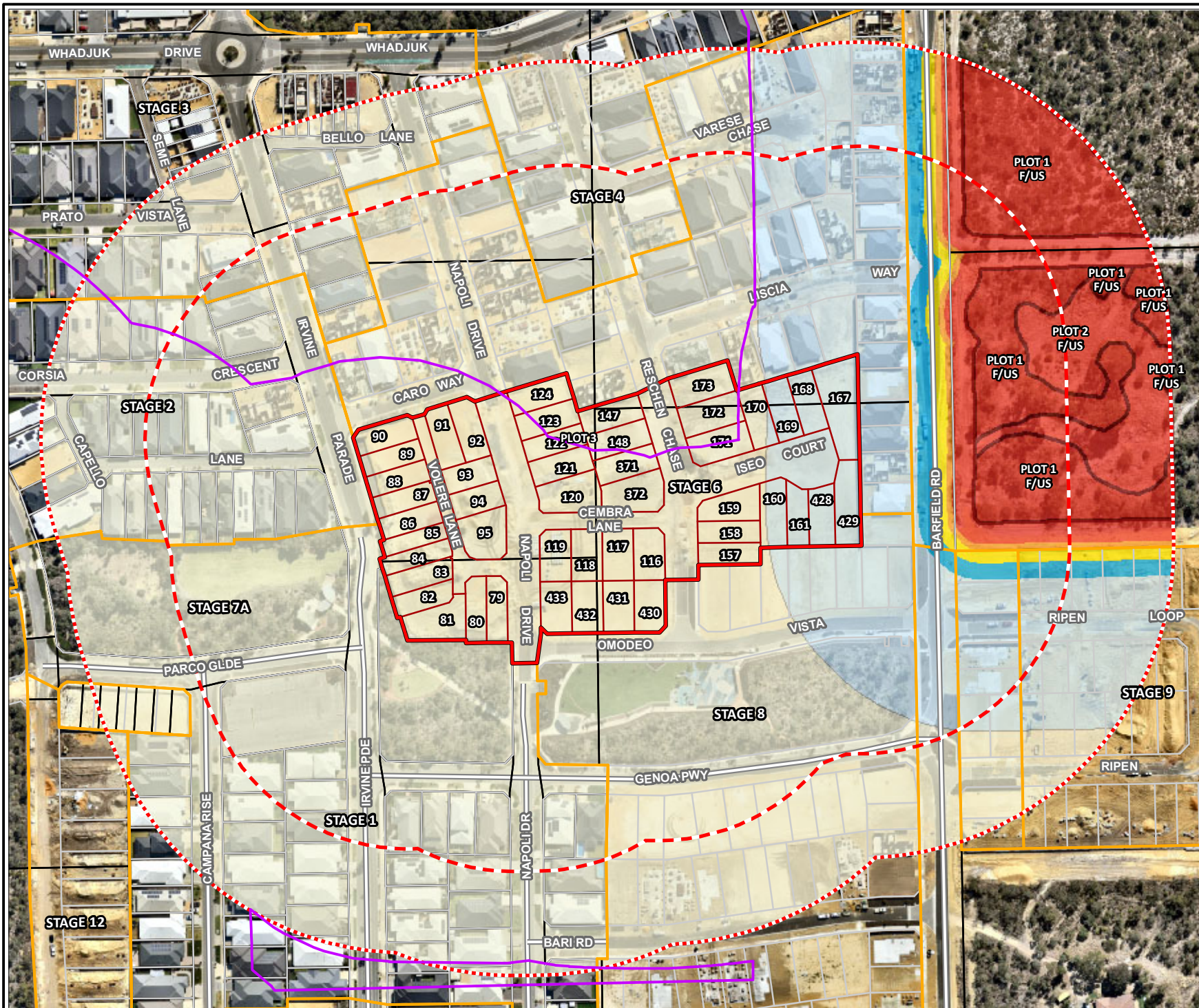
Table 3: BAL contour assessment results

Lot	Bushfire prone	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL
79	Yes	1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
80		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
81		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
82		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
83		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
84		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
85		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
86		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
87		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
88		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
89		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
90		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
91		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
92		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
93		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
94		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
95		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
116		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
117		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
118		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
119		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
120		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
121		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
122		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
123		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
124		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
147	No	N/A				
148	Yes	1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
157		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
158		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
159		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
160		1	Class D Scrub	Flat/upslope (0°)	90 m	BAL-12.5
161		1	Class D Scrub	Flat/upslope (0°)	79 m	BAL-12.5
167		1	Class D Scrub	Flat/upslope (0°)	55 m	BAL-12.5
168		1	Class D Scrub	Flat/upslope (0°)	70 m	BAL-12.5
169		1	Class D Scrub	Flat/upslope (0°)	82 m	BAL-12.5
170		1	Class D Scrub	Flat/upslope (0°)	94 m	BAL-12.5
171	No	1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
172		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
173	No	N/A				
371	Yes	1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low

Lot	Bushfire prone	Vegetation plot	Vegetation classification	Effective slope	Separation distance	Highest BAL
372	Yes	1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
428		1	Class D Scrub	Flat/upslope (0°)	66 m	BAL-12.5
429		1	Class D Scrub	Flat/upslope (0°)	55 m	BAL-12.5
430		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
431		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
432		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low
433		1	Class D Scrub	Flat/upslope (0°)	>100 m	BAL-Low

2.2.2 BAL certificates

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



- Legend**
- Project area
 - 100m assessment area
 - 150m assessment area
 - Cadastral boundary
 - Bushfire prone areas
 - Classified vegetation
- BAL contours**
- BAL FZ
 - BAL 40
 - BAL 29
 - BAL 19
 - BAL 12.5
 - BAL Low
- Proposed lots
 - Stage boundaries
 - Future indicative lot layout on adjacent stages
 - Roads (MRWA)



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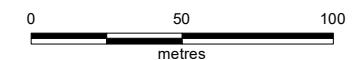
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Checked By: JC

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**Stage 6 Vivente
Hammond Park, WA**

BAL CONTOUR MAP

FIGURE 2

3. Conclusion and recommendations

This BAL compliance report has been prepared for 48 proposed residential lots within Stage 6 Vivente Estate to provide a final BAL check and certification for individual lots for use at the building permit stage. A BAL certificate has been prepared for each of the 46 proposed lots situated within a designated bushfire prone area, noting that proposed Lots 147 and 173 are not situated within a designated bushfire prone area and therefore do not require any further bushfire risk consideration or BAL assessment to facilitate future building approval.

Assessment results are consistent with current on-ground conditions confirmed during site assessment. Strategen-JBS&G can confirm that the existing BMPs over the site have been implemented throughout the duration of subdivisional works for the relevant Stage 6 area and adjacent land to achieve the BAL outcomes as intended.

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.

4. References

- Department of Fire and Emergency Services (DFES) 2021, *Map of Bush Fire Prone Areas*, [Online], Government of Western Australia.
- 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) 2015, *Fire Management Plan: Barfield Road Local Structure Plan*, Strategen, Bunbury.
- Strategen-JBS&G 2020, *Bushfire Management Plan: Vivente Estate Structure Plan Amendment, including Stages 9 and 10*, Strategen, Bunbury.
- Strategen-JBS&G 2020, *Bushfire Management Plan BAL Compliance report Stage 4 Vivente Estate*, report prepared for Richard Noble, August 2020.
- Strategen-JBS&G 2021, *Bushfire Management Plan BAL Compliance report Stage 8 Vivente Estate*, report prepared for Richard Noble, September 2021.
- Strategen-JBS&G 2021, *Bushfire Management Plan BAL Compliance report Stages 9 and 12 Vivente Estate*, report prepared for Richard Noble, November 2021.
- Strategen-JBS&G 2022, *Bushfire Management Plan BAL Compliance report Stages 8 and 9 Interfacing lots, Vivente Estate*, report prepared for Richard Noble, February 2022.
- Western Australian Planning Commission (WAPC) 2021, *Guidelines for Planning in Bushfire Prone Areas*, Version 1.4 December 2021, 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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In preparing the report, Strategen-JBS&G has relied upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ("the data"). Except as otherwise expressly stated in the report, Strategen-JBS&G has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. Strategen-JBS&G has also not attempted to determine whether any material matter has been omitted from the data. Strategen-JBS&G will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to Strategen-JBS&G. The making of any assumption does not imply that Strategen-JBS&G has made any enquiry to verify the correctness of that assumption.

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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

Plot 1

Vegetation classification	Class D Scrub Flat/Upslope
Description / justification	Vegetation with a continuous horizontal and vertical structure, greater than 2 m high at maturity



Photo ID: 1a



Photo ID: 1c



Photo ID: 1e



Photo ID: 1b



Photo ID: 1d

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



Photo ID: 2a



Photo ID: 2b

Plot 3	
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



Photo ID: 3a

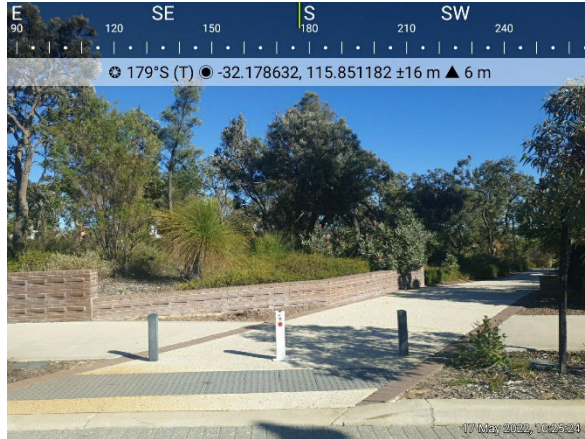


Photo ID: 3c



Photo ID: 3e



Photo ID: 3b



Photo ID: 3d

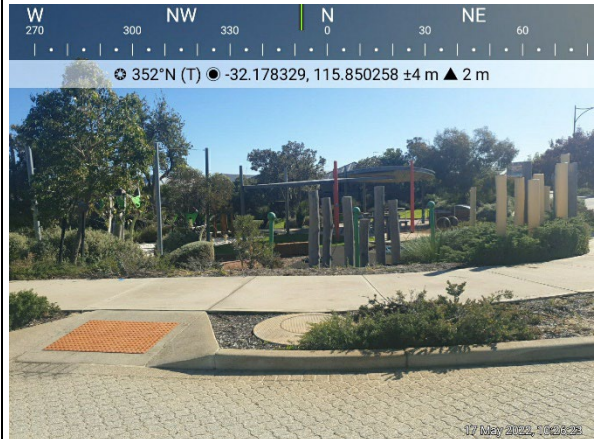


Photo ID: 3f

Plot 3



Photo ID: 3g



Photo ID: 3h



Photo ID: 3i

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Document Status

Report version	Rev No.	Purpose	Author	Reviewed and Approved for Issue	
				Name	Date
Final Report	Rev 0	Issued for use: to facilitate future lot sales and building approvals	Kaitlin Southgate (BPAD 57034, Level 1)	Zac Cockerill (BPAD 37803, Level 2)	8 July 2022

