



**2024 COMPLIANCE REPORT FOR EPBC
APPROVAL 2008/4250**

AVON RIDGE ESTATE, BRIGADOON

August 2024

Telephone +61 408 950 852

info@accendoaustralia.com.au

PO Box 5178 West Busselton WA 6280

ABN 11 160 028 642

www.accendoaustralia.com.au

Document Control

| Version | Date | Author | Reviewer |
|----------|----------------------------|--------|----------|
| V1 | 12/08/2024 | KMT | RC |
| V2 | 13/08/2024 | KMT | RC |
| Filename | 2481_Annual Report 2024_V2 | | |

Limitations

This report has been prepared by Accendo Australia Pty Ltd in accordance with the scope limitations provided in this report, or as otherwise agreed, between the Client and Accendo.

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.

This report has been prepared based upon data and other information provided by the Client and other individuals and organisations, most of which are referred to in the report, which Accendo has not independently verified or checked beyond the agreed scope of work. Accendo does not accept liability in connection with such unverified information.

The conclusions and recommendations in this report are based on assumptions made by Accendo described in this report where and as they are required. Accendo disclaims liability arising from any of the assumptions being incorrect.

The report is based on site specific conditions encountered and information received at the time of preparation of this report or the time that site investigations were undertaken. Accendo disclaims responsibility for any changes that may have occurred after this time.

The preparation of this report has been undertaken and performed in a professional manner, in consideration of the scope of services and in accordance with environmental consulting practices. No other warranty is made.

CONTENTS

1 DECLARATION OF ACCURACY 1

2 INTRODUCTION 1

2.1 BACKGROUND.....1

2.2 PURPOSE OF THIS REPORT.....1

3 PROJECT STATUS AND COMPLIANCE..... 2

3.1 PROJECT STATUS2

3.2 COMPLIANCE STATUS.....3

4 SUMMARY..... 17

APPENDIX A – STAGES 5A AND 5B 18

APPENDIX B – HAREWOOD REPORT..... 19

APPENDIX C – BUSHFIRE PLAN.....20

Tables

Table 1. Summary of lot settlement. 2

Table 2. Compliance status terminology. 3

Table 3. EPBC Act Approval 2008/4250 Conditions and Compliance Assessment. 5

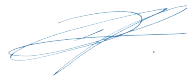
Table 4. Revegetation and Fire Management Plan Compliance Assessment. 10

Table 5. Construction an Environmental Management Plan Compliance Assessment. 13

1 DECLARATION OF ACCURACY

In making this declaration, I am aware that sections 490 and 491 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) make it an offence in certain circumstances to knowingly provide false or misleading information or documents. The offence is punishable on conviction by imprisonment or a fine, or both. I declare that all the information and documentation supporting this compliance report is true and correct in every particular. I am authorised to bind the approval holder to this declaration and that I have no knowledge of that authorisation being revoked at the time of making this declaration.

Signed:



Full Name: Rebecca Cooper

Position: Development Manager

Organisation (include ABN/ACN) Corrib Developments Pty Ltd (ABN 37 110 795 597)

Date: 13 August 2024

2 INTRODUCTION

2.1 Background

Avon Ridge Estate (the development) is located in Brigadoon, approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth Central Business District. The development is located on the Darling Scarp, bound to the north by Walyunga National Park, and is in proximity to the Swan River to the west.

The development consists of a special rural subdivision of 220 Lots over 450 hectares (ha), with Lot sizes ranging from 1.1 ha to 5.1 ha. An additional area of 411 ha adjacent to the development is reserved as Parks and Recreation under the Metropolitan Region Scheme (MRS).

2.2 Purpose of this Report

Commonwealth approval pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was granted for the proposed action on the 8th October 2009. Subject to Condition 12 of the Approval (EPBC 2008/4250) the proponent is required to submit to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) an annual report addressing compliance with the Conditions of the Approval. Specifically, Condition 12 stipulates the following:

12. *The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or as otherwise agreed to in writing by the Minister. The approval holder must:*
 - a) *publish each compliance report on the website within 60 business days following the relevant 12 month period;*
 - b) *notify the Department by email that a compliance report has been published on the website within five business days of the date of publication;*
 - c) *keep all compliance reports publicly available on the website until this approval expires;*
 - d) *exclude or redact sensitive ecological data from compliance reports published on the website; and*
 - e) *where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.*

This report addresses the status and compliance of construction of the project with the conditions in the EPBC Act Approval 2008/4250 for the period 5th July 2023 to 4th July 2024. This report has been prepared for the purpose of meeting the requirements of Condition 12 of the Approval, which requires the proponent to submit annual compliance reports.

3 PROJECT STATUS AND COMPLIANCE

3.1 Project Status

A total of 36 Lots were sold and 24 Lots were settled during this reporting period, as detailed in **Table 1**. None of these lots contained black cockatoo nesting trees that have been identified for retention.

The total number of Lots settled to date is 181.

Table 1. Summary of lot settlement.

| Stage | Lot Number | Status | Acceptance Date | Cancelled | Settlement Date |
|-------|------------|-----------------|-----------------|-----------|-----------------|
| 9 | 300 | Settled | Mar-23 | | Jul-23 |
| 9 | 304 | Settled | May-23 | | Jul-23 |
| 8 | 293 | Settled | May-23 | | Aug-23 |
| 5A | 219 | Settled | Jun-23 | | Feb-24 |
| 5A | 220 | Settled | Jun-23 | | Feb-24 |
| 5A | 332 | Cancelled | Jun-23 | Oct-23 | |
| 5A | 218 | Settled | Jun-23 | | Feb-24 |
| 8 | 288 | Settled | Jun-23 | | Jul-23 |
| 8 | 279 | Settled | Jul-23 | | Aug-23 |
| 8 | 287 | Cancelled | Aug-23 | Oct-23 | |
| 5A | 24 | Settled | Sep-23 | | Mar-24 |
| 8 | 285 | Settled | Sep-23 | | Oct-23 |
| 5A | 217 | Settled | Sep-23 | | Feb-24 |
| 5A | 336 | Settled | Oct-23 | | Feb-24 |
| 5A | 332 | Settled | Oct-23 | | Feb-24 |
| 8 | 278 | Cancelled | Oct-23 | Mar-24 | |
| 5A | 216 | Settled | Oct-23 | | Feb-24 |
| 9 | 309 | Cancelled | Dec-23 | Feb-24 | |
| 9 | 309 | Settled | Feb-24 | | May-24 |
| 8 | 281 | Settled | Feb-24 | | Jun-24 |
| 5A | 23 | Cancelled | Mar-24 | Mar-24 | |
| 5A | 334 | Settled | Mar-24 | | May-24 |
| 5A | 22 | Settled | Mar-24 | | Apr-24 |
| 5A | 23 | Cancelled | Mar-24 | Apr-24 | |
| 5A | 335 | Settled | Mar-24 | | May-24 |
| 5A | 147 | Settled | Mar-24 | | May-24 |
| 5A | 25 | Settled | Apr-24 | | May-24 |
| 8 | 287 | Settled | Apr-24 | | Jun-24 |
| 5A | 23 | Settled | May-24 | | Jun-24 |
| 5B | 9 | Unconditional | May-24 | | |
| 5A | 144 | Settled | May-24 | | Jun-24 |
| 5B | 10 | Unconditional | May-24 | | |
| 5B | 128 | Cancelled | May-24 | Jun-24 | |
| 5B | 137 | Subject to Sale | May-24 | | |
| 5B | 125 | Unconditional | May-24 | | |

| Stage | Lot Number | Status | Acceptance Date | Cancelled | Settlement Date |
|-------|------------|--------------------|-----------------|-----------|-----------------|
| 5B | 169 | Subject to Finance | May-24 | | |
| 5A | 145 | Unconditional | May-24 | | |
| 5B | 168 | Subject to Finance | Jun-24 | | |
| 5B | 127 | Unconditional | Jun-24 | | |
| 5B | 138 | Subject to Finance | Jun-24 | | |
| 5B | 8 | Subject to Finance | Jun-24 | | |
| 5B | 136 | Subject to Finance | Jun-24 | | |
| 8 | 289 | Unconditional | Jun-24 | | |
| 5B | 11 | Subject to Finance | Jun-24 | | |

Clearing activities undertaken during this reporting period involved the installation of the boundary firebreak within Stages 5A and 5B (refer to **Appendix A**).

Clearing works commenced on the 7/08/2023 for Stage 5A and on the 20/05/2024 for Stage 5B. The pre-clearance fauna inspection was undertaken on the 30/04/2023 (refer to **Appendix B**).

The total extent of vegetation clearing associated with the boundary firebreak installation is discussed further in **Table 3** in relation to requirements of condition 1 of the approval.

3.2 Compliance Status

This report addresses the status and compliance of the action against the prescribed Conditions provided within the EPBC Act Approval 2008/4250 for the period 5th July 2023 to 4th July 2024.

Details on the status of compliance have been tabulated separately for conditions under EPBC Act Approval 2008/4250 and the related Revegetation and Fire Management Plan (RFMP) and the Construction and Environmental Management Plan (CEMP) as follows:

- Table 3. - EPBC Act Approval 2008/4250 Conditions - Compliance Assessment Table;
- Table 4. - *Revegetation and Fire Management Plan* - Compliance Assessment Table; and
- Table 5. - Construction and Environmental Management Plan- Compliance Assessment Table.

For each Table mentioned above, the approval condition or management measure is provided with a note on its status of compliance, a general comment and related source of evidence. The DCCEE have prepared updated guidance (2014) related to the preparation of compliance audits, including generic expressions that are used to identify the status of each item (refer to **Table 2**).

Table 2. Compliance status terminology.

| Status | Description |
|----------------|---|
| Compliant | 'Compliance' is achieved when all the requirements of a condition have been met, including the implementation of management plans or other measures required by those conditions. |
| Non-compliant | A designation of 'non-compliance' should be given where the requirements of a condition or elements of a condition, including the implementation of management plans and other measures, have not been met. |
| Completed | Where a requirement with a finite period of application has been satisfactorily completed. |
| Not applicable | A designation of 'not applicable' should be given where the requirements of a condition or elements of a condition fall outside of the scope of the current reporting period. |

The assessment revealed that of the 25 Conditions referenced in the EPBC Act Approval 2008/4250, the following was achieved during the annual reporting period:

- 12 compliances;
- 5 conditions have been completed; and
- 7 conditions were not applicable.

The assessment of compliance for the Revegetation and Fire Management Plan for the reporting period revealed:

- 13 compliances; and
- 12 conditions were not applicable.

The assessment of compliance for the Construction and Environmental Management Plan for the reporting period revealed:

- 36 compliances; and
- 1 condition was not applicable.

No incidents or non-compliances occurred during this report period.

Table 3. EPBC Act Approval 2008/4250 Conditions and Compliance Assessment.

| Condition Number | Condition | Compliance Status | Evidence/Comments | | | | | | | | | | | | | | | | | | | | |
|---|--|-------------------|--|----------|----------|-------|--------|---------------------|---------|-----------------------------|--------|--------|---------|----------|----------|-------|--------|---------------------|---------|-----------------------------|-------|--------|---------|
| 1. | The person taking the action must not clear more than 83.2 hectares of native vegetation within the project area (Attachment 1) comprising: | Compliant | Clearing works within the development occurred during the reporting period as summarised in the tables below. <table><tr><th>Stage 5A</th><th>Clearing</th></tr><tr><td>Roads</td><td>0.0 ha</td></tr><tr><td>Boundary firebreaks</td><td>1.54 ha</td></tr><tr><td>Strategic firebreaks & Dams</td><td>0.0 ha</td></tr><tr><td>TOTALS</td><td>1.54 ha</td></tr></table> <table><tr><th>Stage 5B</th><th>Clearing</th></tr><tr><td>Roads</td><td>0.0 ha</td></tr><tr><td>Boundary firebreaks</td><td>1.23 ha</td></tr><tr><td>Strategic firebreaks & Dams</td><td>0.0ha</td></tr><tr><td>TOTALS</td><td>1.23 ha</td></tr></table> | Stage 5A | Clearing | Roads | 0.0 ha | Boundary firebreaks | 1.54 ha | Strategic firebreaks & Dams | 0.0 ha | TOTALS | 1.54 ha | Stage 5B | Clearing | Roads | 0.0 ha | Boundary firebreaks | 1.23 ha | Strategic firebreaks & Dams | 0.0ha | TOTALS | 1.23 ha |
| | Stage 5A | | Clearing | | | | | | | | | | | | | | | | | | | | |
| | Roads | | 0.0 ha | | | | | | | | | | | | | | | | | | | | |
| | Boundary firebreaks | | 1.54 ha | | | | | | | | | | | | | | | | | | | | |
| | Strategic firebreaks & Dams | | 0.0 ha | | | | | | | | | | | | | | | | | | | | |
| TOTALS | 1.54 ha | | | | | | | | | | | | | | | | | | | | | | |
| Stage 5B | Clearing | | | | | | | | | | | | | | | | | | | | | | |
| Roads | 0.0 ha | | | | | | | | | | | | | | | | | | | | | | |
| Boundary firebreaks | 1.23 ha | | | | | | | | | | | | | | | | | | | | | | |
| Strategic firebreaks & Dams | 0.0ha | | | | | | | | | | | | | | | | | | | | | | |
| TOTALS | 1.23 ha | | | | | | | | | | | | | | | | | | | | | | |
| a) up to 30 hectares for constructing roads; | A total of 70.82 hectares (ha) of native vegetation has been cleared for civil construction to date. | | | | | | | | | | | | | | | | | | | | | | |
| b) up to 45 hectares for constructing boundary firebreaks on individual lots as identified in Attachment 2; and | A total of 26.89 ha of native vegetation has been cleared for the purposes of constructing roads. | | | | | | | | | | | | | | | | | | | | | | |
| | A total of 36.13 ha of native vegetation has been cleared for the purposes of constructing boundary firebreaks on individual lots. | | | | | | | | | | | | | | | | | | | | | | |
| c) up to 8.2 hectares for the purposes of constructing strategic firebreaks and dams. | A total of 7.85 ha of native vegetation has been cleared for the purposes of constructing strategic firebreaks and dams. | | | | | | | | | | | | | | | | | | | | | | |
| 2 | The person taking the action must put in place measures to ensure that clearing of native vegetation undertaken by future landowners within the project area (Attachment 1) will not exceed 70.4 hectares, comprising: | Compliant | Clearing is managed through the Structure Plan and Protective (restrictive) Covenants. Protective (restrictive) Covenants will be placed on titles within Stages 5A, 5B and 6 of the development. Clearing restrictions regarding building envelopes for lots are outlined in the approved Structure Plan. | | | | | | | | | | | | | | | | | | | | |
| | a) 42.1 hectares to construct dwellings, infiltration areas, driveways and buffers around the dwellings; and | | | | | | | | | | | | | | | | | | | | | | |
| | b) 28.3 hectares in accordance with the approved Revegetation and Fire Management Plan. | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Revegetation and Fire Management Plan The person taking the action must prepare a Revegetation and Fire Management Plan that applies to the 100 ha within the Parks and Recreation Reserve and 450 ha of the subdivision (as identified at Attachment 5) including all 214 individual lots. The proponent must obtain written approval from DFES prior to submission to the Department for approval. The person taking the action must not commence clearing or construction within the project area until the Department has approved the Revegetation and Fire Management Plan in writing. Once approved, this plan must be implemented. The person taking the action must ensure that the Revegetation and Fire Management Plan includes (but is not restricted to): | Compliant | The implementation of the RFMP is ongoing throughout the development, however some components have been completed. Refer to Table 4 detailing conformance with the RFMP. | | | | | | | | | | | | | | | | | | | | |
| | a) fuel reduction measures (including cool burn measures) specifying the timing and frequency of fuel reduction measures to minimise impacts on Black Cockatoo habitat. | NA | No prescribed burns were undertaken within the reporting period as vegetation is still recovering from the Wooroloo fire which occurred in 2021. | | | | | | | | | | | | | | | | | | | | |
| | b) revegetation measure to create additional Black Cockatoo habitat across the project site, including in the Parks and Recreation Reserve, specifically: i. revegetation for all condition classes (excluding pristine and excellent classes) and vegetation complexes (including maps); | Completed | All revegetation and monitoring requirements associated with this Condition were completed by the previous proponent. | | | | | | | | | | | | | | | | | | | | |

| Condition Number | Condition | Compliance Status | Evidence/Comments |
|------------------|---|-------------------|---|
| | <p>ii. mix, numbers and density of species to be planted;</p> <p>iii. timing of proposed planting (must be during or following the annual winter rain period and generally between 1 June and 30 November);</p> <p>iv. weed management measures;</p> <p>v. the survivorship rate of all revegetation measures must be at least 90% after three years. If after three years of the date of the planting, a survival rate of 90% of the planted trees is not achieved, all dead trees must be replaced with other Black Cockatoo habitat species within 12 months and maintained for at least an additional two years;</p> <p>vi. annual monitoring measures within the project area undertaken by an appropriately qualified and experienced ecologist and must commence within 12 months of the completion of revegetation and continue for at least three years after the initial revegetation planting in any particular area (given that revegetation will be staged across the development);</p> <p>vii. annual monitoring measures undertaken by an appropriately qualified and experienced specialist must commence in the Parks and Recreation Reserve within 12 months of completion of revegetation and continue for at least three years after the initial revegetation planting in the Parks and Recreation Reserve for the purposes of establishing the survivorship rates and replanting efforts within the project area;</p> <p>viii. mapping of all potential Black Cockatoo habitat trees of 500 mm DBH or greater on individual lots and information on how these will be retained for permanent conservation.</p> | | <p>Known potential habitat trees of 500 mm DBH or greater are flagged with white tape prior to clearing events and construction for each stage of development. Potential habitat trees within the lot are identified in the Restrictive Covenant which only allows for clearing of these trees within the Building Protection Zone or for fire management purposes.</p> |
| 4 | <p>Building Protection Zone</p> <p>The person taking the action may thin native vegetation within the Building Protection Zone (Attachment 2) on each housing lot (Attachment 3). The thinning process must be in accordance with the approved Revegetation and Fire Management Plan, and be personally supervised (pre and post thinning inspections for individual lots) by a qualified Fire Management Consultant. The person taking the action must obtain written approval from DFES of the first appointed Fire Management Consultant(s) prior to the provision of any Building Protection Zone thinning advice. Any subsequent appointment of Fire Management Consultant(s) must be based upon the consultant(s) having similar qualifications as the first appointed consultant.</p> <p>The location of each Building Protection Zone and house site must be chosen in consultation with the Fire Management Consultant for the purpose of retention of trees specified in Condition 5.</p> <p>The person taking the action must ensure that all native vegetation that provides habitat for Black Cockatoos is retained outside the Building Protection Zones within the 214 housing lots. This excludes native vegetation that is specifically managed under the Revegetation and Fire Management Plan.</p> | Compliant | <p>Protective (restrictive) Covenants addressing Building Protection Zone requirements, in accordance with the RFMP, will be implemented throughout the development.</p> <p>The Fire Management Consultant will prepare a Bushfire Attack Level Assessment Report and Management Statement for each lot.</p> <p>The Fire Management Consultant has provided consultation with Buyers:</p> <ul style="list-style-type: none"> o Stage 8: Lots 276, 286, 288, 293 and 295 o Stage 9: Lots 298, 304, 306 and 318 o Stage 12: Lot 124 o Stage 5A: Lots 216, 217, 219, 220, 332 and 336 <p>The Developer has continued to engage with the existing Fire Management Consultant who was appointed in August 2016 for their level of expertise on the project. This has been undertaken to ensure continuity and compliance.</p> <p>A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan.</p> <p>A new Bushfire Management Plan has been prepared for the updated Stage 5A lot layout and was approved by the City of Swan (refer to Appendix C). A new Bushfire Management Plan has been prepared for the updated lot layout for Stages 5B & 6 and will be submitted to the City of Swan for approval.</p> <p>An updated Annexure I has been prepared to reflect 2023/2024 City of Swan Bushfire Compliance Documents (refer to Appendix C).</p> |
| 5 | <p>The person taking the action must ensure that all potential breeding habitat trees for Black Cockatoos (as designated at Attachment 4 and 4A) are protected in perpetuity via a Notification on Title. The person taking the action must ensure that all other trees within the lot area (Attachment 1) with a diameter by breast height (DBH) of 500 mm or greater are retained unless:</p> <p>a) they are located within the house site;</p> <p>b) they are located within the Building Protection Zone; and</p> <p>c) they are required to be removed for Fire Management purposes as advised by a qualified Fire Management Consultant(s).</p> | Compliant | <p>Notifications of Titles and Protective (restrictive) Covenants addressing these requirements will continue to be implemented throughout the development.</p> <p>No Notifications of Titles were required during this reporting period.</p> |
| 6 | <p>The person taking the action must ensure that the 411 ha Park and Recreation Reserve, as highlighted in green at Attachment 5, be ceded to the WA State Government. The Department must be notified in writing once this has occurred.</p> | Completed | <p>The Reserve was ceded to the WA State Government in 2012 by the previous proponent.</p> |

| Condition Number | Condition | Compliance Status | Evidence/Comments |
|------------------|--|-------------------|--|
| 7 | The person taking the action must ensure that a minimum of 88,000 seedlings suitable for foraging and breeding habitat for Black Cockatoos are planted within the Parks and Recreation Reserve as identified in Attachment 7. | Completed | Revegetation and reporting was completed in 2017 by the previous proponent. |
| 7A | The person taking the action must ensure that all purchasers of lots within the project area, prior to sale and settlement: a) are aware of the existence of potential and actual breeding habitat trees over 500 mm dbh on the individual lots, Notifications on Title and the requirements that these must be protected in perpetuity and not be cleared; b) are aware of the Restrictive Covenant; c) are aware of restriction relating to clearing of i. potential breeding habitat trees over 500 mm DBH; and ii. areas within and outside of the Building Protection Zone. d) are aware of proposed revegetation measures for their individual lot by person(s) as outlined in Condition 3; e) are provided with species related information on all Black Cockatoos, their presence in the area, ecology, species range and details on habitat. | Compliant | Information regarding the Notifications of Titles, Protective (restrictive) Covenants and the Lot owner clearing requirements continues to be provided in the purchaser information pack. |
| 8 | The person taking the action must submit a Restrictive Covenant for approval by the Department. The sale and settlement of any lot must not proceed unless the Restrictive Covenant has been approved in writing by the Department and the approved Restrictive Covenant is an annexure to the sale contract. If the person taking the action wishes to vary the approved Restrictive Covenant, a revised Restrictive Covenant must be submitted to the Department for approval. The subsequent sale and settlement of any lot must not proceed unless the currently approved Restrictive Covenant is an annexure to the sale contract. | Compliant | The DCCEEW confirmed that the proposed Restrictive Covenant to be placed on settled lots is approved. This occurred on 3 rd May 2022. |
| 9 | All elements specified in Attachment 6 must be incorporated in either the Structure Plan, approved subdivision conditions or approved Restrictive Covenants. These must be complied with. The Department must be notified in writing on how all the elements in Attachment 6 have been incorporated and complied with. If any of the elements in Attachment 6 are not incorporated, to the Department's satisfaction, the person taking the action must negotiate an outcome to the Department's satisfaction, prior to commencing construction. | Compliant | The Structure Plan was endorsed by the WAPC on 27 March 2014. Subdivision of all lots within the development has been approved, through various subdivision approvals. Protective (restrictive) Covenants are currently applied to all new lots within the site. The Protective (restrictive) Covenants is documented on the Deposited Plan, and it is created under Section 136D of the <i>Transfer of Land Act 1893</i> . These mechanisms collectively incorporate all elements outlined in Attachment 6. |
| 10 | The person taking the action must prepare and implement a Construction Management Plan. This plan must be submitted and approved by the Department prior to and clearing taking place. The Construction Management Plan must clearly demonstrate that: a) all habitat trees at Attachment 4 and 4A are to be retained in perpetuity; and b) all trees to remain that are greater than 500 mm DBH within the subdivision area (as at Attachment 3) and within 10 meters of an area to be proposed to be cleared (excluding those in the Building Protection Zone) are clearly marked and retained. c) areas of vegetation that are Black Cockatoo habitat and not for clearance (including roadside vegetation, streamline vegetation and Public Open Space areas) are clearly marked and retained; d) if clearing outside of stipulated areas occurs by other contracted parties, then the person taking the action must notify the Department in writing and will ensure that these areas will be revegetated to the same density (following the annual winter rain period and between 1 September –30 November); and e) all contracted parties will undergo an induction programme prior to commencement of construction and/or clearing. This programme will include information on EPBC listed species and measures employed within the project area to protect Black cockatoo habitat. | Compliant | A portion of the Avon Ridge Estate was impacted by the Wooroloo Bushfire in January – February 2021. A survey of the 35 habitat trees was undertaken in April and June 2021, which identified 15 trees which were no longer considered to be habitat trees. Therefore, a variation to the EPBC approval Attachment 4 and 4A was submitted to the DCCEEW, with a Variation of Condition to Approval received from the DCCEEW on the 24/03/2023, which reflects the updated habitat tree plan. The civil contractor manages the implementation of the CEMP (Cardno 2010), including the completion of required onsite forms and registers. All completed forms are recorded and stored, and demonstrate compliance with Condition 10. |
| 11 | Within 30 days of commencement of construction, the person taking the action must advise the Department in writing the actual date of commencement. | Completed | Provided by the previous proponent in 2011. |

| Condition Number | Condition | Compliance Status | Evidence/Comments |
|------------------|---|-------------------|---|
| 12 | <p>The approval holder must prepare a compliance report for each 12 month the date of period following the date of commencement of the action, or as otherwise this notice agreed to in writing by the Minister. The approval holder must:</p> <p>a) publish each compliance report on the website within 60 business days following the relevant 12-month period;</p> <p>b) notify the Department by email that a compliance report has been published on the website within five business days of the date of publication;</p> <p>c) keep all compliance reports publicly available on the website until this approval expires;</p> <p>d) exclude or redact sensitive ecological data from compliance reports published on the website; and</p> <p>e) where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication.</p> | Compliant | <p>The Avon Ridge 2024 Compliance Report (for EPBC Approval 2008/4250) will be published on the Avon Ridge Estate website by 27 September 2024.</p> <p>The Department will be notified via email when the Avon Ridge 2024 Compliance Report will be published on the Avon Ridge Estate website.</p> |
| 12A | <p>The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans. The notification must be given as soon as practicable and no later than two business days after becoming aware of the incident or non-compliance. The notification must specify:</p> <p>a) the condition which is or may be in breach; and</p> <p>b) a short description of the incident and/or noncompliance.</p> | Compliant | No known non-compliances with the EPBC Approval conditions occurred during this reporting period. |
| 12B | <p>The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans as soon as practicable and no later than 10 business days after becoming aware of the incident or non-compliance, specifying:</p> <p>a) any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future;</p> <p>b) the potential impacts of the incident or noncompliance; and</p> <p>c) the method and timing of any remedial action that will be undertaken by the approval holder.</p> | Compliant | No known non-compliances with the EPBC Approval conditions or management plans occurred during this reporting period. |
| 13 | If, at any time after five (5) years from the date of this approval, the Minister notifies the person taking the action in writing that the Minister is not satisfied that there has been substantial commencement of the construction of the rural residential development at Brigadoon, Western Australia, the action must not thereafter be commence without the written agreement of the Minister. | NA | The action has substantially commenced. |
| 14 | <p>The person taking the action may choose to revise a plan approved by the Department under conditions 3 and 10 without submitting the revised plan for approval under section 143A of the EPBC Act, if the taking of the action in accordance with the revised plan would not be likely to have a new or increased impact. If the person taking the actions makes this choice they must:</p> <p>a) Notify the Department in writing that the approved plan has been revised and provide the Department with:</p> <ul style="list-style-type: none"> • An electronic copy of the revised plan; • An explanation of the differences between the revised plan and the approved plan; and • The reasons the person taking the action considers that taking the action in accordance with the revised plan would not be likely to have a new or increased impact. <p>b) Advise the Department in writing of an earliest date on which the revised plan will be implemented by the person taking the action. The earliest date of first implementation must be at least 28 days after condition 14a) is satisfied.</p> | NA | No revised plans were submitted to the Department for approval during the reporting period. |
| 15 | The person taking the action may revoke their choice under condition 14 at any time by notice to the Department. If the approval holder revokes the choice to implement a revised plan without approval under section 143A of the EPBC Act, the approval holder must implement the version of the plan most recently approved by the Department. | NA | Refer to Condition 14, no update required. |

| Condition Number | Condition | Compliance Status | Evidence/Comments |
|------------------|--|-------------------|---|
| 15A | <p>If the Department gives a notice to the person taking the action that the Department is satisfied that the taking of the action in accordance with the revised plan would be likely to have a new or increased impact, then:</p> <p>a) Condition 14 does not apply, or ceases to apply, in relation to the revised plan; and</p> <p>b) The person taking the action must implement the version of the plan most recently approved by the Department.</p> <p>To avoid any doubt, this condition does not affect any operation of conditions 14 and 15 in the period before the day after the notice is given. At the time of giving a notice under Condition 15, the Department may also notify that for a specified period of time Condition 15 does not apply for one or more specified plans required under the approval.</p> | NA | Refer to Condition 14, no update required. |
| 15B | Conditions 14, 15 and 15A are not intended to limit the operation of section 143A of the EPBC Act which allows the person taking the action to submit a revised plan to the Department for approval. | NA | Refer to Condition 14, no update required. |
| 15C | <p>If the Department considers that it is necessary or convenient for the protection of threatened species of threatened ecological (s18 & s18A) to do so, the Department may request that the person taking the action make specific revisions to the plans approved under conditions 3 and 10 and submit the revised plan for the Department's approval. The person taking the action must comply with any such request. The revised plan must be implemented in place of the plan originally approved.</p> | NA | Refer to Condition 14, no update required. |
| 16 | The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement management plans required under Conditions 3 and 10 of this approval, and make them available on request by the Department. Such records may be subject to audit by the Department and or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits may be posted on the Department website. The results of audits may also be publicised through the general media. | Compliant | <p>Records of activities undertaken within the site which are associated with these approval conditions are maintained by the proponent and its project team.</p> <p>These records are updated as required and have been used to inform this annual compliance report. Copies of specific records can be made available upon request.</p> |
| 17 | <p>In order to offset the impact of clearing of Black Cockatoo habitat, before 1 September 2017, the person taking the action must:</p> <p>a) provide funds to DPAW for the acquisition and management of one or more properties that contain at least 490 hectares of high quality foraging habitat for Black Cockatoos to be protected in perpetuity. The offset property must be approved in writing by the Department.</p> <p>b) provide documentary evidence to the Department that funds have been provided to the DPAW as required by approval condition 17a.</p> | Completed | The requirements of this condition were completed by the former proponent in 2017. |

Table 4. Revegetation and Fire Management Plan Compliance Assessment.

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|---|-------------------|--|
| RFMP 1 | Undertake revegetation and monitoring activities in alignment with condition 3 of the EPBC Act approval | Compliant | Revegetation and reporting was completed in 2017 by the previous proponent. |
| RFMP 2 | Implement the Fire Management Plan (FMP) across the development site. | Compliant | Refer to RFMP 3. |
| RFMP 3 | Planning for prescribed burning will involve determining and arranging the following: <ul style="list-style-type: none"> • Fuel loadings • Forecast weather conditions (taking into consideration smoke management) • Fire management resources • Traffic control and access • Notification of nearby lot owners and residents | NA | No prescribed burns were undertaken within the reporting period as vegetation is still recovering from the Wooroloo fire which occurred in 2021. |
| RFMP 4 | Experienced fire fighters and fire appliances will be used to carry out all hazard reduction burns. The Brigades will be coordinated by an experienced fire manager acting on behalf of the proponent. | NA | As above, no burns were undertaken during this reporting period. |
| RFMP 5 | The timing for hazard reduction burning within the development site will need to comply with the requirements of the <i>Bush Fires Act 1954</i> (BF Act); <ul style="list-style-type: none"> • Any future hazard reduction burning across the site will be prohibited during “Prohibited Burning Times” and on days when the Fire Danger Index reaches “Very High” to “Catastrophic”. • During “Restricted Burning Time” permits are required from the local Fire Control Officer for any burning under the BF Act. | NA | |
| RFMP 6 | Any hazard reduction burn will be carried out in the September to October period to achieve a low intensity burn and low scorch height. | NA | |
| RFMP 7 | Any future hazard reduction burning will comply with smoke management guidelines as contained in the City of Swan firebreak and hazard reduction notice, Your Guide to the 2014/15 Fire Season. | NA | |
| RFMP 8 | The hazard reduction burn will aim to reduce fuel loads by 60% across 80% of the proposed burn area. | NA | |
| RFMP 9 | Should the undertaking of the prescribed burn be delayed due to unforeseen circumstances such as unsuitable weather conditions and the unavailability of personnel to conduct, DFES will be informed and the proposed prescribed burn be planned for the following year. | NA | |
| RFMP 10 | DFES and the City of Swan will be informed by the proponent’s appointed Fire Management Consultant (FMC) of the completion of prescribed burns. | NA | A revised burn plan will be considered in the subsequent reporting periods in consultation with DFES. |
| RFMP 11 | Should prescribed burns be delayed or not undertaken as proposed a revised prescribed burn plan will be forwarded to DFES. | NA | |
| RFMP 12 | The FMP will be supplied to all lot owners and there will be a notification on the title that the FMP must be adhered to and complied with. | NA | |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|---|-------------------|--|
| | | | <p>The Developer has continued to engage with the existing Fire Management Consultant who was appointed in August 2016 for their level of expertise on the project. This has been undertaken to ensure continuity and compliance.</p> <p>A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan.</p> <p>A new Bushfire Management Plan has been prepared for the updated Stage 5A lot layout and was approved by the City of Swan (refer to Appendix C). A new Bushfire Management Plan has been prepared for the updated lot layout for Stages 5B & 6 and will be submitted to the City of Swan for approval.</p> <p>An updated Annexure I has been prepared to reflect 2023/2024 City of Swan Bushfire Compliance Documents (refer to Appendix C).</p> |
| RFMP 13 | Private lot firebreaks will be installed by the developer prior to the clearance of lot titles and maintained by developer until the lot is sold to the standards outlined in the City of Swan Fire Hazard Reduction Notice. Following sale, the lot purchaser will be responsible for the maintenance of this firebreak in perpetuity. | Compliant | The internal lot firebreaks installed by the developer have been built to a minimum width of 3 m in accordance with the City of Swan <i>Firebreak Notice</i> and the Avon Ridge Estate Bushfire Management Plan (BMP) and established immediately inside and adjacent to all external property boundaries. |
| RFMP 14 | <p>A strategic firebreak will be installed by the developer as development progresses within the site to ensure perimeter access for firefighting purposes is in place around all developed areas. The Strategic fire break will follow the standard outlined below:</p> <ul style="list-style-type: none"> • Minimum 6 m wide with a 4 m trafficable surface • Minimum 4 m vertical clearance over the full 6 m width • Where the strategic firebreak is within private lots, no fencing/gates or any form of obstruction is to cross the strategic firebreak. • At regular intervals (every 4 to 6 lots, approximately), a linking firebreak to the public road network will be provided. This link is to be located within a single lot and can be a part of the lot access (i.e. driveway) within each lot, or adjacent to the lot boundary as part of the internal firebreak. These links do not necessarily have to be located on the lot boundary, but must be accessible at all times. • A minimum 60 m-wide setback between the strategic firebreak and any future dwellings, which is facilitated through the designation of BEAs. | Compliant | <p>The strategic firebreak continues to be installed around the perimeter of Avon Ridge as development progresses to the minimum standard outlined in the City of Swan <i>Firebreak Notice</i> and the Avon Ridge Estate Bushfire Management Plan (BMP).</p> <p>The strategic firebreak will continue to be maintained to the satisfaction of the City of Swan prior to the clearance of Lot titles and maintained until all affected Lots are sold.</p> |
| RFMP 15 | <p>Rural gates (minimum width 4.1 metres) will be installed to provide access from the strategic firebreak to the linking firebreak with a standard City of Swan key system (to prevent unauthorised vehicle access). These gates will be installed by developer prior to the clearance of lot titles.</p> <p>Rural gates (minimum width 4.1 metres) will be erected where the strategic firebreak interfaces with a public road, with a standard City of Swan key system to prevent unauthorised vehicle access. These gates will be installed by developer prior to the clearance of lot titles. Signage will be provided where strategic firebreak meet public roads, indicating the FSARs are for “Fire Access Only.”</p> | Compliant | <p>FSAR gates were installed where a FSAR intersects with a public road:</p> <ul style="list-style-type: none"> ○ Stage 5A: Lots 217 and 219 |
| RFMP 16 | The Developer will provide lot owners purchaser information as part of the contract of sale which explains the requirement of BPZ’s and HSZ’s, the role of the FMC and other fire management information, including the City of Swan maintenance of firebreaks under Section 33 of the <i>Bush Fires Act 1954</i> . | Compliant | <p>A Bushfire Management Plan was prepared on the 13/10/2022 and approved by the City of Swan.</p> <p>A new Bushfire Management Plan will be prepared for the updated Stage 5A lot layout. A new Bushfire Management Plan has been prepared for the updated Stage 5A lot layout and was approved by the City of Swan (refer to Appendix C). A new Bushfire Management Plan has been prepared for the updated lot layout for Stages 5B & 6 and will be submitted to the City of Swan for approval.</p> |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|---|-------------------|---|
| RFMP 17 | The Developer will organise and fund annual information sessions for Avon Ridge Estate residents attended by the FMC and representatives from DFES, the East Swan Volunteer Bushfire Brigade and City of Swan over three years. Information on how to form the Avon Ridge Estate BRG as well as fuel hazard reduction and bushfire readiness training and support by the agencies will be provided. | Compliant | <p>A bushfire aware information session is being prepared and will be held in conjunction with the City of Swan.</p> <p>Two previous workshops have been completed, on 8 April 2017 and 14 December 2017 by the former proponent. It was advised that attendance was poor and therefore workshops have not been progressed.</p> <p>The developer provides each Buyer, at the time of signing their purchase contract with a set of additional documents which form part of their Contract. This includes:</p> <ol style="list-style-type: none"> 1. Locality Plan 2. Strategic Firebreak Plan 3. Bushfire Management Plan prepared March 2019 (NOTE: this will be updated once the new version is provided) 4. 'The Homeowners Bushfire Survival Manual' (2014) sixth edition published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA) 5. 'Prepare. Act. Survive.' (2014) version 5 published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA) 6. City of Swan Fire Hazard Reduction Notice (Firebreak Notice) 2023/2024 7. 'Fire Season Guide 2023/24' published by the City of Swan 8. Vegetation Conditions within Avon Ridge Estate 9. Plant Communities within Avon Ridge Estate 10. Habitat Tree Locations 11. Trees over 500mm Diameter at Breast Height (DBH) Plan 12. Aboriginal Heritage Site Plan 13. Wetland and Creek Locations within Avon Ridge Estate 14. Seller's Fire Management Consultant Bonus Application Form <p>An updated Annexure I has been prepared for Stage 5A sales as it incorporates the updated Fire documents from the City of Swan that are provided to the Buyers.</p> |
| RFMP 18 | A Building Protection Zone of minimum of 20 metres is to be constructed around all buildings and must be within the Lot boundaries. BPZs are to be installed prior to any dwelling construction commencing and are to be part of the Building Licence approval. Bushfire fuel loadings must be maintained to a maximum of 2 tonnes/ha. | Compliant | <p>Restrictive Covenants addressing Building Protection Zone and Hazard separation zone requirements, in accordance with the RFMP, will be implemented throughout the development. Lot owners are required to maintain their BPZ's and HSZ's in accordance with the Protective (restrictive) Covenants.</p> <p>Lot owners are informed of their obligations through the purchaser information pack provided at the time of the lot settlement.</p> <p>The Fire Management Consultant will inspect the quality of the BPZ and HSZ establishment after initial vegetation thinning has occurred within the Lot.</p> |
| RFMP 19 | The Hazard Separation Zone will built to a width determined at the stage of building site assessment (at least a further 30 m beyond the BPZ). HSZs are to be installed by the landowner prior to construction of a dwelling on the site. Bushfire fuel loadings must be maintained to a maximum of 4-6 tonnes/ha. | Compliant | |
| RFMP 20 | The developer will provide a service to purchasers to have the building envelope, BPZ and HSZ within their lot inspected by a qualified FMC to ensure compliance prior to the commencement of any in lot clearing. The FMC will undertake the following assessments: <ul style="list-style-type: none"> • BAL (Bushfire Attack Level) rating assessment in accordance with AS3959. • Pre-clearing checklist to identify trees and shrubs requiring vegetation modification. | Compliant | The developer provides purchasers with a service for Bushfire Safety Consulting to undertake a BAL Assessment pre and post construction. |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|--|-------------------|---|
| | <ul style="list-style-type: none"> Post-clearing checklist to confirm vegetation modification has been undertaken. | | |
| RFMP 21 | <p>Lot owners will need to maintain their fuel loadings within lots as follows:</p> <ul style="list-style-type: none"> Within the BPZ at less than or equal to (\leq) 2 tonnes per hectare (t/ha). Within the HSZ at ≤ 4 to 6 t/ha. Beyond the HSZ at ≤ 6 to 8 t/ha. | Compliant | <p>Restrictive Covenants addressing Building Protection Zone and Hazard separation zone requirements, in accordance with the RFMP, will be implemented throughout the development. Lot owners are required to maintain their BPZ's and HSZ's in accordance with the Protective (restrictive) Covenants.</p> <p>Lot owners are informed of their obligations through the purchaser information pack provided at the time of the lot settlement.</p> <p>The Fire Management Consultant will inspect the quality of the BPZ and HSZ establishment after initial vegetation thinning has occurred within the lot.</p> |
| RFMP 22 | Lot owners will be required to reduce their fire hazards prior to the summer fire season and will need to undertake their fuel reduction in conjunction with the maintenance of firebreaks, which are required to be cleared under Section 33 of the <i>Bush Fires Act 1954</i> . | Compliant | <p>Lot owners are required to maintain their BPZ's, HSZ's, and firebreaks in accordance with the restrictive covenants and City of Swan <i>Firebreak Order</i>.</p> <p>Information regarding the clearing requirements for fuel reduction continues to be provided in the purchaser information pack.</p> |
| RFMP 23 | All habitable buildings will be setback a minimum of 30 m from the edge of the Wetland and Creek Line Conservation area boundary. | Compliant | Building envelopes are set back 60 m from the edge of the Wetland and Creek Line Conservation as set out in the Avon Ridge Estate Structure Plan. |
| RFMP 24 | All habitable buildings located adjacent to the Wetland and Creek Line Conservation Area are to be constructed to BAL 29 (BAL 29 has a heat Flux of less than 19 Kw/m ² to 29 Kw/m ²). | Compliant | Refer to RFMP 21. |
| RFMP 25 | All habitable buildings in lots that are located adjacent to the PR Reserve to the west and north and the Southern POS area to the south are to be setback a minimum of 60 metres from the strategic Firebreaks or fire service access ways. | Compliant | Building envelope areas are set back 60 m from the PR Reserve to the west and north and the Southern POS area to the south as set out in the Avon Ridge Estate Structure plan. |

Table 5. Construction an Environmental Management Plan Compliance Assessment.

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|--|-------------------|--|
| CEMP 1 | The CEMP will be implemented during the construction phase of the Development. | Compliant | Refer to CEMP 1 – 37. |
| CEMP 2 | The Developer and individual members of the management team will be aware of the management framework detailed in Table 1 of the CEMP. | Compliant | The Management Framework is incorporated in contractor site inductions and developer/contractor site meetings. |
| CEMP 3 | <p>Any "Pristine" and "Excellent" vegetation condition as illustrated in Figure 3 of the CEMP will require the following protection measures:</p> <ul style="list-style-type: none"> No clearing, other than for strategic firebreaks will be permitted in "Pristine" or "Excellent" condition areas; Access to "Pristine" and "Excellent" condition vegetation will only be permissible on foot or on designated tracks, such as existing tracks, constructed strategic firebreaks or lot firebreaks; and Areas identified as having "Pristine" or "Excellent" vegetation condition are to be clearly demarcated (with orange coloured flagging tape). | Compliant | No areas of Pristine of Excellent condition vegetation are present within Stages 5A or 5B. |
| CEMP 4 | A land clearing form and register is to be completed and approved by the Proponent and Environmental Consultant prior to any vegetation clearing or ground disturbing activities occurring. | Compliant | Prior to the commencement of vegetation clearing within the Stages 5A and 5B, a land clearing form and register was signed by the construction contractor. |
| CEMP 5 | Site Supervisor/Civil Engineer and Contractors are required to complete a site access form and induction prior to the commencement of construction activities. | Compliant | <p>A site access register has been maintained for all supervisor/civil engineers and contractors.</p> <p>A site induction was completed for relevant personnel prior to the commencement of construction activities.</p> |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|--|-------------------|---|
| CEMP 6 | Vegetation clearing is to be limited to only the areas required for construction activities and cleared areas should be utilised for equipment lay down and machinery parking areas. | Compliant | Vegetation clearing was limited to the areas associated with Stage 5A, 5B and 6 works area. |
| CEMP 7 | No clearing during early evening and night. | Compliant | No clearing was permitted to occur during early evening and night, as detailed in the site induction. |
| CEMP 8 | Topsoil is to be salvaged and stockpiled on site to use for future rehabilitation and placed within an area proposed for revegetation. Cleared vegetation and topsoil is to be stockpiled away from drainage lines and stored down slope wherever practicable to reduce the potential for it to spread downhill. | Compliant | Cleared vegetation and topsoil was stockpiled as specified. Vegetation stockpiling requirements were communicated to contractors during the site induction. |
| CEMP 9 | Road speeds around the Development site will be limited to 20 km/h to reduce the risk of fauna injury. Road kills of native fauna are to be reported to the Site Supervisor/Civil Engineer immediately. | Compliant | No road kills of native fauna were reported to the Site Supervisor/Civil Engineer during the construction activities. Restricted road speeds (10km/hr) were implemented in all areas of the construction site. This requirement was communicated to construction contractors during the site induction. |
| CEMP 10 | No domestic animals will be allowed onto the Development site during construction. | Compliant | The site induction details the requirement to restrict domestic animals. |
| CEMP 11 | Vegetation should be inspected for fauna by Contractors prior to clearing (including tree hollows and bird nests). If fauna are found they should be released 50 metres from the construction site. | Compliant | Greg Harewood visited the site on 30/04/2023 prior to the Stage 5A, 5B and 6 clearing works (refer to Appendix B). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site. No fauna were required to be relocated 50 m from the construction site. |
| CEMP 12 | Any open trenches constructed during civil works are to be provided with a fauna escape ramp. | Compliant | Open trenches constructed during civil works were provided with a fauna escape ramp at the end of each excavation. |
| CEMP 13 | Excavated areas are to be regularly inspected for trapped fauna and trapped fauna are to be released by an appropriate Wildlife Carer (a list is to be developed by the Site Superintendent/Civil Engineer prior to construction activities commencing). | Compliant | Excavated areas were inspected for trapped fauna by the Site Superintendent/Civil Engineer prior to and during the construction activities. No trapped fauna was noted by the Superintendent/Civil Engineer during site walkovers/inspections. |
| CEMP 14 | A fauna incident reporting form and fauna incident register will be used to record any incident of fauna interaction. | Compliant | No fauna incidents or interactions occurred. |
| CEMP 15 | Black cockatoo habitat trees identified in Figure 5 of the CMP will be provided with specific protection methods through: • Clear marking (with yellow spray paint) of Habitat trees to identify these trees during the construction period; • The requirement that these habitat trees must not be cleared; and • Notifications on Title and Protective Covenants of the requirement to protect Habitat Trees on private lots. | Compliant | Greg Harewood visited the site prior to clearing works commencing (refer to Appendix B). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site. No fauna were required to be relocated 50 m from the construction site. Notifications pursuant to section 70A of the <i>Transfer of Land Act 1983</i> are to be registered on the 'certificates of title' of any lots that contain remnant nesting trees identified on the structure plan. |
| CEMP 16 | In accordance with the EPBC Approval, all trees over 500 mm Diameter Breast Height (DBH) will be retained unless within a: • building envelope; • Building Protection Zone (BPZ); • roads; • strategic firebreak; or • lot firebreak. | Compliant | Protective (restrictive) Covenants will be placed on titles to restrict the clearing of vegetation that provides for black cockatoos in accordance with condition 2 of the approval. |
| CEMP 17 | All trees over 500 mm DBH and within 10 metres of any area proposed to be cleared (which are not currently marked as "habitat trees") will be marked with white flagging tape to notify contractors and construction personnel that these trees cannot be cleared unless located in an area listed above. | Compliant | Greg Harewood visited the site on 30/04/2023 prior to clearing works commencing (refer to Appendix B). No breeding trees were disturbed as a result of the construction activities, and therefore no displaced fauna were found within the development site. |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|--|-------------------|--|
| CEMP 18 | There will be no construction or water discharge within the Wetland and Creekline Conservation Area mapped in Figure 6 of the CMP. Clearing in waterways will be restricted for service, roads and strategic firebreaks. | Compliant | Waste was disposed of appropriately and therefore there was no water runoff discharged into the wetland/creekline areas during construction. |
| CEMP 19 | Access within the Wetland and Creekline Conservation Area will be limited to designated tracks only (existing tracks, lot firebreaks and strategic firebreaks). | Compliant | Prior to construction commencing, the developer installed flagging tape around the boundary of this area to ensure any unauthorised access or clearing was prevented. |
| CEMP 20 | Temporary sediment control measures will be employed to reduce runoff into waterways. | Compliant | Cleared vegetation and topsoil was stockpiled away from drainage lines and stored down slope wherever practicable to reduce the potential for spread into waterways. |
| CEMP 21 | Speed limits will be implemented and all vehicle access within the development will be restricted to created roads and existing tracks only. | Compliant | Restricted road speeds (10km/hr) were implemented in all areas of the construction site. Access was restricted to created roads only. These requirements were communicated to construction contractors during the Site Induction |
| CEMP 22 | Access to site will be controlled with signage at all entry points to the site. Access must be granted by the Proponent and a subsequent site environmental induction conducted. | Compliant | Temporary fencing was erected around the boundary of the works area to prohibit unauthorized access and all personnel attended a site induction. Signage was provided on the fences prior to accessing the site regarding restricted access. |
| CEMP 23 | Prior to the construction of the Development weed control measures are to be implemented, including spot spraying of weed species. | Compliant | No weed infestations were reported to the site supervisor/civil engineer and therefore no weed control measures were required. |
| CEMP 24 | Control measures are to be implemented for the spread of feral animal populations during construction of the Development in accordance with the Brigadoon Estate Pest Management Strategy. | Compliant | No pest sightings were reported to the site supervisor/civil engineer within the development and therefore no pest management measures were required. |
| CEMP 25 | A hygiene station should be set up at the entry to the site to ensure no soil is transported in or out of the site. A vehicle hygiene form and register should be completed following vehicle washdown. | Compliant | Machinery, vehicles and plant were inspected regularly by the Site Supervisor/Civil Engineer to ensure no soil was transported into or out of the site. The vehicle hygiene register has been completed for this reporting period. |
| CEMP 26 | The following dust control measures will be undertaken during construction: <ul style="list-style-type: none"> • Management measures to limit dust generation from construction material and equipment. • Dust generation managed using industry current best practice dust suppression measures. • Instances of excessive dust are to be reported immediately to the Site Supervisor/Civil Engineer and managed accordingly. | Compliant | All dust management measures were implemented which resulted in there being no dust incidents or complaints reported. |
| CEMP 27 | The following noise management measures will be undertaken during construction: <ul style="list-style-type: none"> • The vehicles and power generating machinery will be regularly serviced to ensure they are operating efficiently. • Noise minimising equipment will be used where possible. | Compliant | All noise management measures were implemented which resulted in there being no noise incidents or complaints reported. |
| CEMP 28 | The following waste management measures will be undertaken during construction will include: <ul style="list-style-type: none"> • All waste material is to be appropriately disposed of to prevent habitation by feral animals. • A location for the collection of recyclable material for off-site recycling is to be established. • All waste disposal will be recorded on a Waste disposal form and Register. • Hydrocarbon spills are to be reported to the Site Supervisor/Civil Engineer and cleaned up immediately and recorded on the Spill Form and Register. • Hydrocarbon contaminated soil is to be collected and disposed to an approved off-site facility. | Compliant | All waste management measures were implemented which resulted in there being no waste/spill incidents reported. |
| CEMP 29 | Any works completed in summer or during a total fire ban would require the following: <ul style="list-style-type: none"> • Fire suppression unit comprising a minimum of 400 litres of water, operational pump and 20 m of hose located in close proximity to the worksite. • At least one able bodied person capable of operating the fire suppression unit who is not directly involved in the works being undertaken. • Contact the local government or its representative (e.g. fire control officer) prior to commencing works is to be made; | NA | No works were completed during a total fire ban. |

| Reference Code | Action | Compliance Status | Evidence/Comments |
|----------------|---|-------------------|--|
| | <ul style="list-style-type: none"> • Contact must be made with the nearest FESA regional office prior to works commencing; • Fire extinguishers will be located in vehicles and all offices; • All site plant and equipment will be regularly maintained and serviced to ensure that it is in good running order and its operation does not pose a fire risk. | | |
| CEMP 30 | <p>The identified Aboriginal Heritage sites located within the development will be protected and managed as follows:</p> <ul style="list-style-type: none"> • Construct temporary fencing around Aboriginal Heritage sites, based upon the boundaries provided by the DIA. • Erect screens during any blasting works within 20 m of an Aboriginal Heritage site. • Implement the Aboriginal Heritage Management Plan has been prepared for the site. | Compliant | Aboriginal Heritage management measures were implemented during the works which included the use of monitors during the clearing and removal of topsoil. |
| CEMP 31 | Aboriginal Heritage monitors are required for any ground disturbing activities over the site, where it is unlikely that the ground has been disturbed in the past (or it appears that the ground has been disturbed in the past). This would comprise approximately 80% of the site and refers to any ground-disturbing activities, such as vegetation clearing and topsoil stripping. | Compliant | Horizon Heritage Management undertook monitoring during the construction activities. |
| CEMP 32 | The discovery of any previously unrecorded Aboriginal Heritage sites or artefacts is to be reported immediately and will result in work ceasing until appropriately managed. | Compliant | No heritage sites or artefacts were recorded. |
| CEMP 33 | Prior to the commencement of any activities associated with the construction phase of the Development, all members of the Management Team and Contractors are to participate in a Site Environmental Induction. | Compliant | Site environmental inductions were provided for all relevant contractors entering the construction site. |
| CEMP 34 | <p>The Site Environmental Induction includes details relating to:</p> <ul style="list-style-type: none"> • The location of conservation significant species and habitats and Aboriginal Heritage sites; • The requirements for site access; • The requirements for land clearing; • Off road/track driving restrictions • Descriptions of invasive flora and fauna; • Waste management; and • Other management issues. | Compliant | The site environmental induction was provided to all relevant contractors involved with civil works. |
| CEMP 35 | A site meeting minutes form and register will be used to document the discussions and actions during project meetings involving the Proponent, Site Supervisor/Civil Engineer, Consultants and Contractors. | Compliant | The site meeting minutes have been documented including a record of attendees. These can be provided upon request. |
| CEMP 36 | Monthly monitoring and inspections of the Development are to be undertaken by the Environmental Consultant and Site Supervisor/Civil Engineer to ensure that construction activities are undertaken in accordance with the requirements of the CMP. | Compliant | In consultation with the Environmental Consultant, regular inspections were undertaken by the Site Supervisor/Civil Engineer to ensure that construction activities were undertaken in accordance with the requirements of the CEMP. |
| CEMP 37 | All emergencies and incidents are to be reported to the Site Supervisor/Civil Engineer immediately. These incidents will be recorded on an emergency response and incident reporting form. | Compliant | No incidences were reported during the reporting period. |

4 SUMMARY

Avon Ridge Estate is located in Brigadoon, approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth Central Business District. The development consists of a special rural subdivision of 220 Lots over 450 ha, with Lot sizes ranging from 1.1 ha to 5.1 ha. An additional area of 411 ha adjacent to the development is reserved as Parks and Recreation under the Metropolitan Region Scheme (MRS).

Commonwealth approval pursuant to the EPBC Act was granted for the proposed action on the 8th October 2009.

This report addresses the status and compliance of construction of the project with the conditions in the EPBC Act Approval 2008/4250 for the period 5th July 2023 to 4th July 2024. This report has been prepared for the purpose of meeting the requirements of Condition 12 of the Approval, which requires the proponent to submit annual compliance reports.

The compliance assessment for this reporting period revealed the following:

- EPBC Act Approval 2008/4250:
 - 12 compliances;
 - 5 conditions have been completed; and
 - 7 conditions were not applicable.
- Revegetation and Fire Management Plan:
 - 13 compliances; and
 - 12 conditions were not applicable.
- Construction and Environmental Management Plan:
 - 36 compliances; and
 - 1 condition was not applicable.

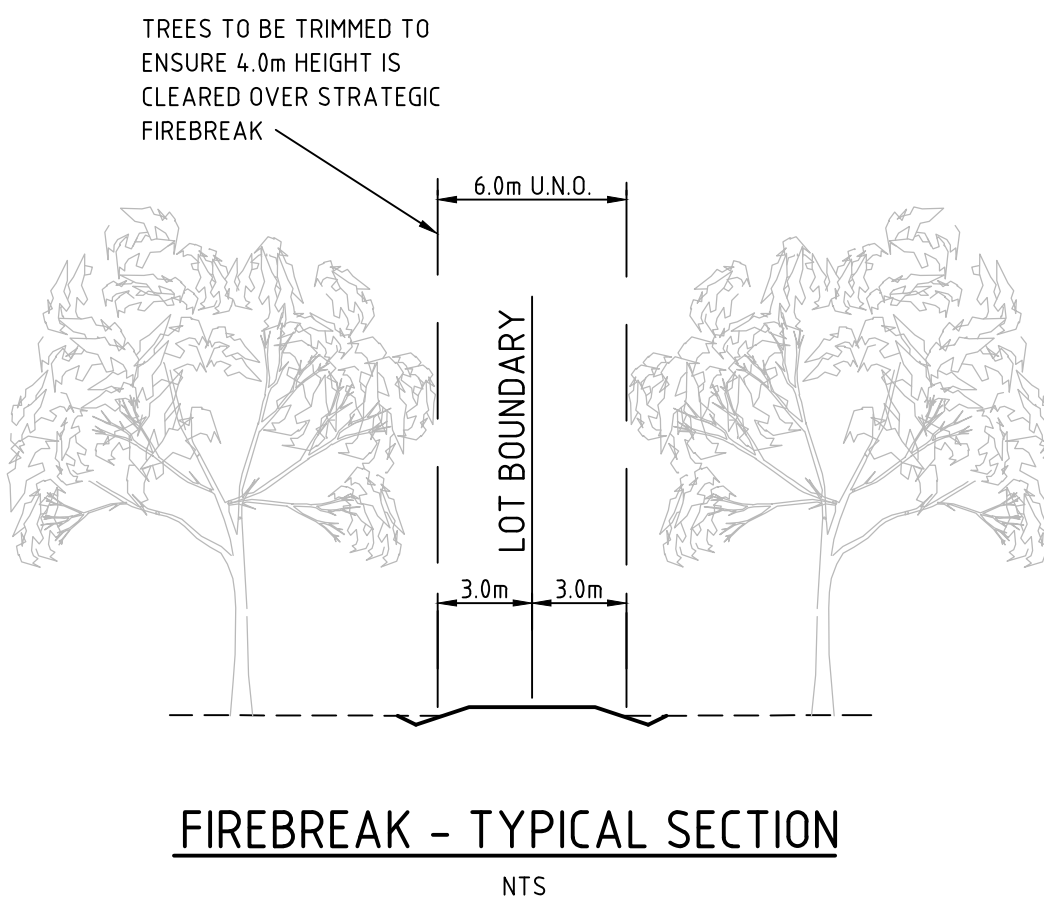
No incidents or non-compliances occurred during this report period.

APPENDIX A – STAGES 5A and 5B



LEGEND

- FIREBREAK TO BE CLEARED
- FIREBREAK CLEARED - EXISTING
- FIREBREAK CLEARED - FUTURE
- ROAD TO BE CLEARED
- ROAD CLEARED - EXISTING
- SERVICE CORRIDOR TO BE CLEARED
- FLAGGED NESTING TREE - TO BE PROTECTED
- STAGE 5A BOUNDARY



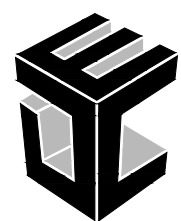
| | | | |
|---|--|--|--|
| Zero Damage - Zero Harm | | | |
| Copyright | | | |
| *This document shall remain the property of Development Engineering Consultants Pty Ltd. The document may only be used for the purpose for which it was commissioned & in accordance with the terms of engagement for the commission. Unauthorised use of this document in any way is prohibited. | | | |
| No. DATE BY | | | |
| REVISION | | | |

| | | | | |
|---|----------|-----|---|-----|
| 2 | 23/05/23 | PMS | FIREBREAKS AMENDED TO SUIT LATEST PRECAL | SRA |
| 1 | 28/04/23 | PMS | CLEARING AMENDED TO SUIT ROAD WIDENING ALONG LOTS 218 & 219 | SRA |
| 0 | 27/04/23 | PMS | ISSUED FOR CONSTRUCTION | SRA |
| C | 19/04/23 | PMS | CLEARING AREAS AMENDED TO SUIT LATEST ROAD LAYOUT | SRA |
| B | 13/04/23 | PMS | CLEARING AREAS ADJUSTED | SRA |
| A | 16/03/23 | PMS | INITIAL ISSUE | SRA |

CLIENT:

CORRIB DEVELOPMENTS

COORDINATE GRID SYSTEM: HUG94, VERTICAL DATUM: AHD



DEVELOPMENT
ENGINEERING
CONSULTANTS

SUITE 3, 123A COLIN ST,
WEST PERTH, 6005
WESTERN AUSTRALIA
Ph: (08) 94.81 1900
Fax: (08) 94.81 1700

PROJECT:

**LOTS 1010 & 1022
CAMPERSC ROAD, BRIGADOON
AVON RIDGE - STAGE 5A**

W.A.P.C. No. - 156399

DRAWING:

**FIREBREAKS
LOT CLEARING PLAN**

CAD DRAWING DO NOT MANUALLY ALTER

| | | | |
|--|----------|----------------|---------|
| SCALE | DRAWN | CHECK | REV No. |
| 1:2000 | PMS | SRA | 2 |
| DATE | DESIGNED | APPROVED | |
| MAR '23 | PMS | SRA | |
| PROJECT NUMBER | | DRAWING NUMBER | |
| BRGRIB05 | | F01 | |
| S:\RIB\BRGRIB05\Drawings\BRGRIB05 F01.dwg 24/05/2023 | | | |

APPENDIX B – HAREWOOD REPORT

Greg Harewood
Zoologist
PO Box 755
BUNBURY WA 6231
02 July 2023

Corrib Developments
PO BOX 244
COTTELSON WA 6911

Attention: Rebecca Cooper

Dear Rebecca

RE: Avon Ridge – Stage 5A, 5B & 6 - Pre-Clearing Fauna Inspection

This letter details a “Pre-Clearing Fauna Inspection” undertaken within the Stage 5A, 5B & 6 areas of Avon Ridge which forms part of the larger Brigadoon Estate.

The pre-clearing fauna inspection was undertaken in accordance with the approved Construction Environmental Management Plan (Cardno 2010) , and specifically section 7.2.2 (Civil Works) - Clearing Protocols, dot point one, which states:

- Vegetation should be inspected for fauna by Contractors prior to clearing (including tree hollows and bird nests). If fauna are found they should be released 50 metres from the construction site.

The inspection of proposed clearing and ground disturbance areas associated with the Stage 5A, 5B & 6 area of Avon Ridge was undertaken by myself on the 30 April 2023.

The inspection was carried out on foot and involved directly inspecting vegetation within the proposed clearing areas (primarily road reserves) for evidence of fauna habitation. Binoculars were used in some cases and where considered necessary and if possible, any hollow bearing trees were also inspected using a drone.

No evidence of the presence of any fauna resident with vegetation to be cleared was observed i.e. no nest sites and no fauna in hollow bearing trees or fallen hollow logs. In general the vegetation was found to be in a state of regeneration after a significant fire event which occurred in the previous year or two. The vast majority of hollow bearing trees and fallen logs appear to have been consumed by the fire thereby reducing the suitability of the area for fauna that rely on hollows for daytime refuge and/or nesting.

Prior to clearing was commencing, the contractors involved were briefed on the importance of remaining vigilant for fauna during site works, and if any were encountered to contact myself so that the appropriate action could be implemented.

It is understood that no fauna was detected during any stage of the clearing and the vegetation in question was removed without incident.



If you have any questions or queries relating the information provided here please contact the undersigned on 0402 141 197 / gharewood@iinet.net.au

GHarewood

Greg Harewood
Zoologist



APPENDIX C – BUSHFIRE PLAN

Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit:

Yes

☐

No

☐

Date of site visit (if applicable):

Day

Month

Year

Report author or reviewer:

WA BPAD accreditation level (please circle):

Not accredited

☐

Level 1 BAL assessor

☐

Level 2 practitioner

☐

Level 3 practitioner

☐

If accredited please provide the following.

BPAD accreditation number:

Accreditation expiry: Month

Year

Bushfire management plan version number:

Bushfire management plan date: Day

Month

Year

Client/business name:

| | 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)? | | |
| 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 bushfire protection criteria elements)? | | |

Is the proposal any of the following (see [SPP 3.7 for definitions](#))?

| | Yes | No |
|---|-----|----|
| Unavoidable development (in BAL-40 or BAL-FZ) | | |
| Strategic planning proposal (including rezoning applications) | | |
| High risk land-use | | |
| Vulnerable land-use | | |

None of the above

☐

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author or reviewer



Date

Bushfire Management Plan

Amended Subdivision Stages 5 and 6

Avon Ridge Estate

Connemarra Drive, Brigadoon

City of Swan



bushfiresafety
CONSULTING
Science. Culture. Solutions.


Prepared For:
Corrib Developments
24 August 2023
Version 4.0

bushfiresafetyconsulting.com.au

© 2023 Bushfire Safety Consulting Pty Ltd.

Document Information

Prepared for: Corrib Developments
Project name: Approved Subdivision Amendment, Avon Ridge Estate - Stages 5 & 6
Address: Connemara Drive, Brigadoon WA 6069
Prepared by: Rohan Carboon
Bushfire Safety Consulting Pty Ltd

| | |
|---|---|
| I hereby declare that I am a BPAD accredited bushfire practitioner. | |
| Accreditation No. | 23160 |
| Signature |  |
| Date | 24/08/2023 |



Document Control

| Bushfire Management Plan – Avon Ridge Estate, Brigadoon | | | |
|---|-----------------------------|---|----------------|
| REPORT VERSION | PURPOSE | AUTHOR/REVIEWER AND ACCREDITATION DETAILS | DATE SUBMITTED |
| V1.0 | Draft for Review | Rohan Carboon (Level 3 BPAD 32160) | 29/11/2022 |
| V2.0 | Final for submission | Rohan Carboon (Level 3 BPAD 32160) | 2/12/2022 |
| V3.0 | Final for submission | Rohan Carboon (Level 3 BPAD 32160) | 6/12/2022 |
| V4.0 | Updated with amended design | Rohan Carboon (Level 3 BPAD 32160) | 24/08/2023 |

Front cover photo: Subdivision Plan

Bushfire Safety Consulting Pty Ltd
PO Box 84
STONEVILLE WA 6081

Tel: 0429 949 262
Email: hello@bushfiresafetyconsulting.com.au
Web: www.bushfiresafetyconsulting.com.au

Disclaimer:

This report has been prepared in good faith and is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this publication is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error in or omission from this publication.

EXECUTIVE SUMMARY

This Bushfire Management Plan (BMP) supports an amendment to stages 5 and 6 of the existing approved subdivision at Avon Ridge Estate. The site is located in Brigadoon approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth CBD.

The southern and western portion of Avon Ridge Estate has been subdivided and developed into rural residential lots and this approved subdivision design is currently under construction according to previous approvals.

The amended lot layout affects the lots south of Lancewood Avenue and east of Connemarra Drive. The site being assessed is shown in Figure 1.

The proposed amendment includes the addition of one lot and the extension of the Fire Service Access Route in two areas between the east perimeter FSAR and Connemarra Drive between lots 40/41 and Lots 42/43. These additional FSAR connections improve fire appliance access to and from the eastern perimeter of the site.

The nature of the terrain remains challenging and full compliance with version 1.4 of the Guidelines is achieved where it can be based on previously approved plans. A Fire Management Plan (FirePlan WA 2013) was originally prepared to support the existing subdivision approval; however, it was prepared prior to the release of the state government's bushfire management framework in December 2015.

The site is extensively vegetated with eucalypt forest and the overall development has been subject to a number of historic environmental and planning approvals which place restrictions on the amount of clearing that can be undertaken within the development, in particular those pursuant to the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Corrib have developed an offset package to mitigate potential impacts on conservation significant values and accordingly lot owners are permitted to clear vegetation (excluding habitat areas and significant trees identified for retention) within their lot to facilitate development within the designated 'Building Envelope Areas' (BEAs) and the associated Asset Protection Zone (APZ) requirements. At completion, all lots can accommodate a dwelling exposed to BAL-29 or lower and the subdivision can be fully achieved. This is outlined further in Section 5.

While there are restrictions on the location of dwellings and outbuildings (restricted to the BEAs), future lot owners will have an ability to modify vegetation within their lot in order to achieve necessary Asset Protection Zone (APZ) requirements. The specific location of the APZ (and associated vegetation modification) will be determined as part of a lot-specific Bushfire Attack Level (BAL) assessment and will be based on the dwelling location.

For the purposes of this BMP, and to demonstrate that dwellings can be located within the BEA and a BAL rating of BAL-29 is not exceeded, it has been assumed that:

- All vegetation within the lot is able to achieve 'low threat' through clearing and/or modification
- Vegetation within the surrounding lots, road reserves and public open space/parks and recreation reserves is unmodified, providing a worst-case assessment of likely bushfire hazards.

Through this approach, the BMP has been able to demonstrate that no matter where the dwelling is located in the BEA, vegetation can be modified within the lot to achieve the necessary setbacks to ensure a BAL rating of BAL-29 is not exceeded at future dwelling locations (without relying on vegetation being modified in adjacent lots).

An interconnected public road network is provided within the site and as part of the broader development to facilitate the movement of people and emergency appliances, with access to existing public roads, Campersic Road to the south via Connemara Drive, and O'Brien Road to the east via Lancewood Avenue.

A fire Service Access Route is being installed on the eastern perimeter where the public road will not exist to provide access for firefighters in the event of a bushfire and/or to facilitate controlled burns (which form part of the broader management objectives for the development).

A permanent reticulated water supply is provided and hydrants are spaced to minimum standards.

The measures to be implemented through the subdivision process have been outlined within this BMP and align with historic measures for the development, which are already in the process of being implemented.

In particular, future dwellings can be located within the designated BEAs and are able to achieve a BAL rating of BAL-29 or less, and is based on vegetation modification and fuel load management only occurring within the lot itself. Specific APZ requirements will be determined through a lot-specific BAL assessment completed to support the building licence process (and will be based on the precise location and design of any proposed dwelling).

The developer is responsible for ensuring requirements for the provision of water and vehicular access are met.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4)*.

TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY | 2 |
| 1 PROPOSAL DETAILS..... | 5 |
| 1.1 Application of SPP 3.7 | 8 |
| 1.2 Guidelines for Planning in Bushfire Prone Areas V1.4 (2021) | 8 |
| 2 ENVIRONMENTAL CONSIDERATIONS | 10 |
| 2.1 Native Vegetation – modification and clearing | 10 |
| 2.1.1 Clearing undertaken by the proponent | 10 |
| 2.1.2 Clearing undertaken by the purchaser | 11 |
| 2.2 Re-vegetation/ Landscape Plans..... | 12 |
| 3 BUSHFIRE ASSESSMENT RESULTS..... | 12 |
| 3.1 Assessment Inputs..... | 12 |
| 3.1.1 Vegetation Classification..... | 12 |
| 3.2 Effective Slope | 20 |
| 3.2.2 Assessment methodology and assumptions..... | 20 |
| 3.3 Assessment Outputs | 21 |
| 4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES | 22 |
| 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA..... | 24 |
| 5.1 Compliance Table | 24 |
| 5.2 Additional Management Strategies..... | 29 |
| 5.2.1 Future site assessment and approval considerations..... | 29 |
| 5.2.2 Landscape Treatments..... | 30 |
| 6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES..... | 33 |
| 7 CONCLUSION | 35 |
| REFERENCES..... | 36 |

TABLES

| | |
|--|----|
| Table 1: Policy measures..... | 8 |
| Table 2: Summary of assessment outputs for all scenarios at the site | 22 |
| Table 3: Compliance table..... | 26 |
| Table 4: Responsibility for bushfire measures | 34 |

FIGURES

| | |
|---|----|
| Figure 1: PROPOSED SUBDIVISION..... | 6 |
| Figure 2: SITE LOCATION | 7 |
| Figure 3: BUSHFIRE PRONE AREAS..... | 9 |
| Figure 4: VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP) | 20 |
| Figure 5: BAL CONTOUR MAP | 24 |
| Figure 6: SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES..... | 33 |

APPENDICES

| |
|---|
| Appendix 1: Asset Protection Zone Standards |
| Appendix 2: Vehicular Access Technical Requirements |
| Appendix 3: City of Swan Fire Control Notice |
| Appendix 4: Fire Service Access Signage |

1 PROPOSAL DETAILS

This Bushfire Management Plan (BMP) has been prepared to support a proposed amendment to stages 5 and 6 of the previous approved subdivision. The site being assessed is shown in Figure 1.

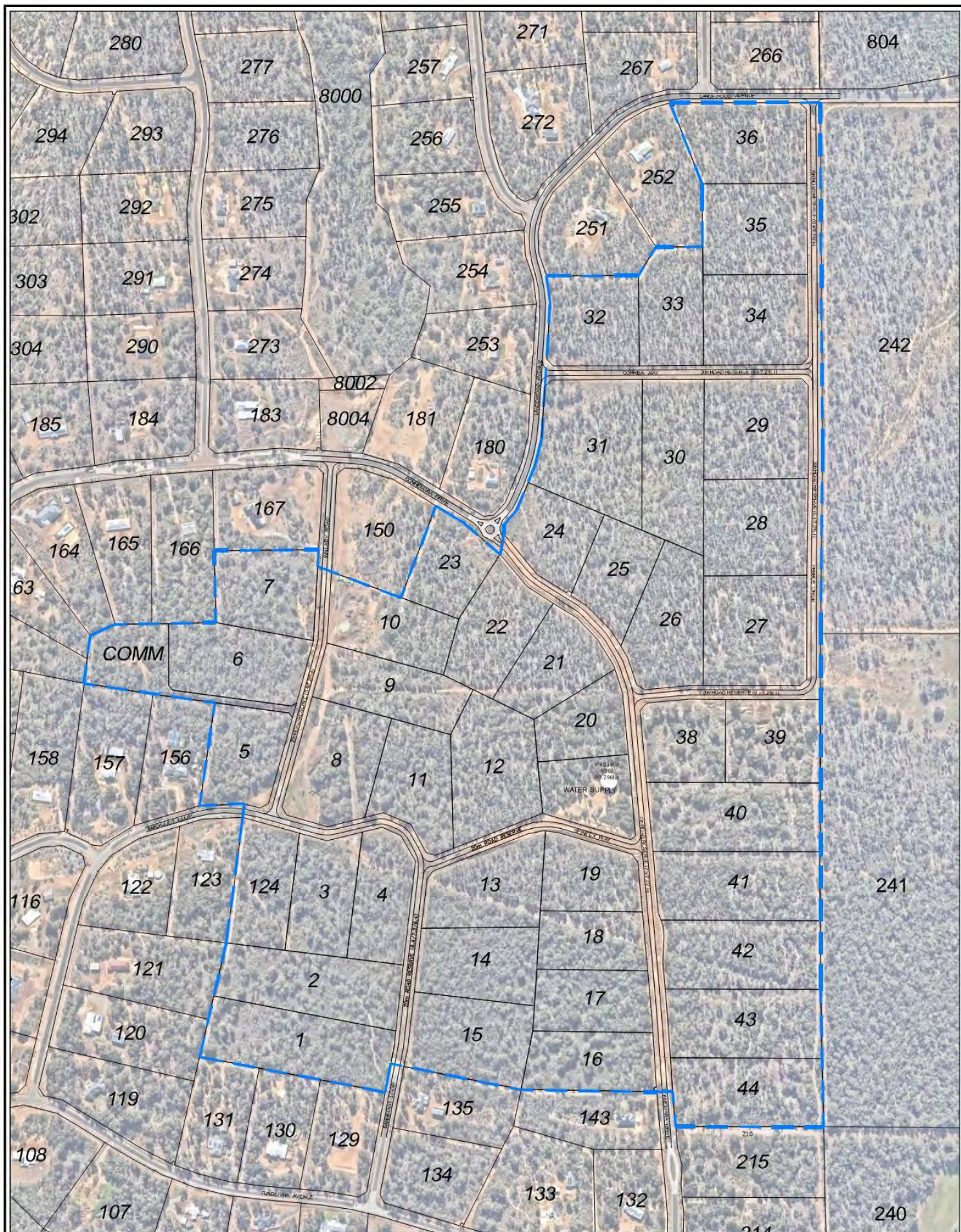
The proposed amendment includes the addition of one lot and the extension of the Fire Service Access Route between the east perimeter FSAR and Connemarra Drive, between lots 40/41 and Lots 42/43. These additional FSAR connections improve fire appliance access to and from the eastern perimeter of the site.

The development site assessed is proposed to be subdivided into 44 residential lots, ranging from 1.3ha to 2.5ha in size. The site also encompasses a lot zoned for the existing communications tower and water tank. The southern portion of Avon Ridge Estate has been subdivided and developed into rural residential lots and some lots within this subject area have already been titled and developed.

The area of Avon Ridge Estate subject to this revised BMP is shown in Figure 1. During the staging of the subdivision, compliance with SPP 3.7 and the guidelines will be achieved.

All lots will have direct driveway access onto a public road that links to Connemara Drive and O'Brien Road where access is provided to the west/east and north/south on the public roads. The area is reticulated, with scheme water provided and fire hydrants within regulated access.

This BMP addresses future subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas V1.4* (WAPC *et.al.* 2021).



Location details: Stages 5 and 6 Avon Ridge
Brigadoon
Assessment date: August, 2022
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2024
Date aerial photo: June, 2023

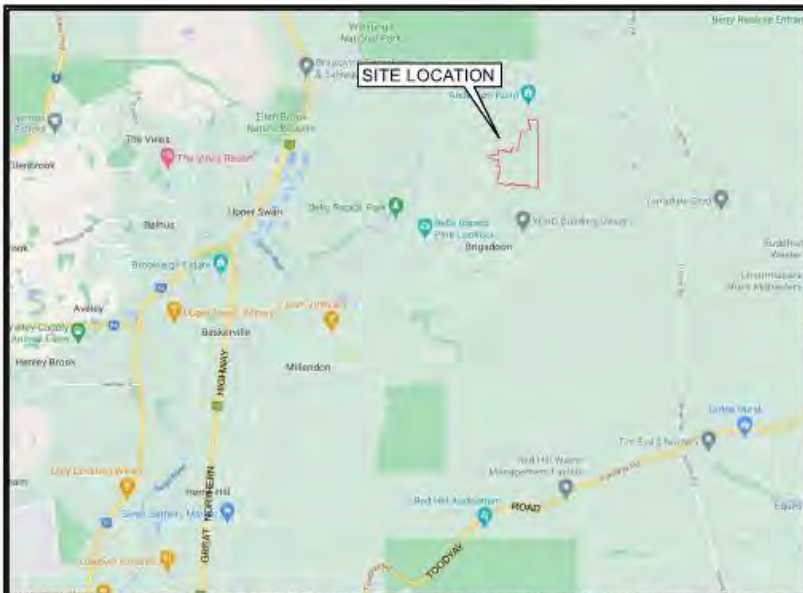
FIGURE 1
SUBDIVISION PLAN

0 50 100 150 200m
SCALE 1:5000 @ A3
DATE: AUGUST 2023



LEGEND: SUBSET LAND

SOURCE OF PHOTOGRAPHY: NEARMAP



Location details: Stages 5 and 6 Avon Ridge Brigadoon

Assessment date: August, 2022

Prepared by: Bushfire Safety Consulting

Accreditation level: Level 3 BPAD Practitioner

Accreditation number: BPAD 23160

Accreditation expiry date: 31st January, 2023

Date aerial photo: May 2022

FIGURE 2
SITE LOCATION PLAN

0 100 200 300 400m

SCALE 1:50 000 @ A4

DATE: NOVEMBER 2022



LEGEND

SUBJECT LAND

Base mapping supplied by Nearmap & Google Maps

bushfire safety
CONSULTING

Science. Culture. Solutions.

PO BOX 84 STONEVILLE WA 6051
Mob 9429 940 262
www.bushfiresafetyconsulting.com.au

Policy and Guidelines

1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners/proponents to help achieve acceptable bushfire protection outcomes.

The policy contains objectives and policy measures as well as reference to the bushfire protection criteria, as outlined in the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4; the 'Guidelines')*. The policy applies to this subdivision amendment proposal because the subdivision amendment is in a designated bushfire prone area on the WA Map of Bushfire Prone Areas (see Figure 3).

The following policy measures will need to comply with SPP 3.7:

Table 1. Policy measures

| | |
|---------------------------|---|
| Policy Measure 6.2 | The subdivision amendment application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW. |
| Policy Measure 6.4 | Policy 6.4 applies meaning the subdivision amendment proposal will be accompanied by: <ul style="list-style-type: none"> - BAL Contour Plan - Lot specific BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the guidelines |

The subdivision amendment proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7*.

1.2 Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)

The requirements of The Department of Planning - *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)* are accommodated within this BMP.

The Guidelines are intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.

2 ENVIRONMENTAL CONSIDERATIONS

The site is extensively vegetated and has been identified to contain a number of environmental values that require protection and/or management as part of future development within the site. These values include:

- Priority flora, which is proposed for retention;
- Foraging and potential breeding habitat for the three federally protected black cockatoo species;

Overall, the site has been subject to a number of historic environmental and planning approvals which dictate vegetation retention and management considerations within the site and relate to the protection or minimisation of impacts on the values identified above. In particular, the development is subject to federal environmental approval pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) which relates to the protection of habitat for the federally protected black cockatoo species.

With regard to bushfire management, the following is a key consideration and have been outlined further below:

- Modification and clearing of vegetation within the proposed development (including roads and strategic firebreaks, etc.) and future lots (including building envelopes, driveways, firebreaks, bushfire management measures etc.)
- Retention of vegetation and revegetation within areas of conservation significance.

2.1 Native Vegetation – modification and clearing

Within the site, clearing and vegetation modification is permitted in accordance with the following:

- Clearing undertaken by the proponent for subdivision, which includes clearing for roads, fire service access route, infrastructure (such as power and water), lot boundaries, lot firebreaks and strategic firebreaks.
- Clearing undertaken by the future lot purchaser, which includes clearing for building envelopes (associated with the dwelling and outbuildings, with no more than 10% of the gross lot area to a maximum of 2000m² clear felled), driveways and asset protection zones.

Bushfire management requirements have been considered as part of the above, and is detailed below.

2.1.1 Clearing undertaken by the proponent

As part of implementing the subdivision, Corrib will undertake typical subdivision works to support development which includes the clearing of vegetation to support the installation of public roads and public infrastructure (such as power, water and telecommunications). In addition, Corrib will install the internal lot firebreak for future private lots (which will be maintained in perpetuity by the lot purchaser), and

a number of strategic perimeter firebreaks throughout the development, which are intended to support firefighting/controlled burn activities.

2.1.2 Clearing undertaken by the purchaser

Overall, construction of dwellings and outbuildings is restricted to the 'building envelope areas' (BEAs), with clearing of vegetation permitted within this area (excluding habitat areas, areas of 'pristine' or 'excellent' condition vegetation and significant trees identified for retention where they occur within the BEA). The BEAs have been designated over all lots in the site to protect environmental values such as creek lines and creek line buffers, areas of 'pristine' and 'excellent' condition vegetation, known and potential priority flora locations and potential black cockatoo breeding habitat. The BEAs are also based on achieving the minimum setbacks from nearby lots, in accordance with the structure plan and City of Swan requirements.

The provisions of the structure plan (as endorsed by the City of Swan) state that final building envelopes (i.e., the footprint for the future dwelling and associated outbuildings within the BEA) are to be 'no more than 10% of the Gross Lot Area to a maximum of 2000m²'. Corrib provide a service to purchasers to have the building envelope and asset protection zone (APZ) within their lot inspected by a qualified bushfire consultant (at Corrib's cost) to ensure compliance prior to the commencement of any clearing within the lot. Generally, vegetation within the BEA can be cleared, while outside of this, vegetation modification should be restricted to the minimum necessary to achieve 'low threat' vegetation standards (where it is required to achieve the asset protection zone requirements).

To assist the development to comply with both the environmental approval requirements and bushfire management requirements, Corrib have instigated the following process:

- BEAs are designated within the subdivision and are based on minimising impacts on environmental values.
- Following purchase of a lot, the qualified bushfire consultant (engaged by Corrib on behalf of the purchaser) meets with the purchaser to determine the site-specific requirements of the lot. This is documented in a Bushfire Management Statement to support planning approval and assist the owner to understand their ongoing obligations.
- The dwelling is designed, with the buildings and associated outbuildings (i.e., sheds etc.) to cover no more than 10 % of the Gross Lot Area to a maximum of 2000m² (i.e., within the BEA).
- Based on the dwelling design, the asset protection zone (the extent of vegetation modified and/or removed) is determined in consultation with the bushfire consultant. This will be sized to ensure a BAL rating of BAL-29 or less is achieved.
- Vegetation clearing and modification is completed by the purchaser. The lot specific BAL assessment is then certified to support the building licence.
- Purchaser maintains the asset protection zone in perpetuity, with vegetation clearing / modification restricted to this area.

2.2 Re-vegetation/ Landscape Plans

Extensive native vegetation will be retained within private lots, with restrictions on the level of clearing within the site and broader Avon Ridge Estate, as outlined above. Further to this a single large area of public open space is identified in the central portion of the site, which has been located to retain and protect areas of significant vegetation, a waterway (and associated buffer), and Aboriginal heritage values.

In addition to the retention of vegetation values within the site, a total of 88,000 seedlings were planted by the previous landowner / developer as required by the conditional EPBC Act approval. Revegetation will be targeted to within the Parks and Recreation Reserve west of the site to optimise the success of plant establishment and survival.

The revegetation works west of the site does not increase the bushfire risk to future dwellings within the site given these revegetation areas are located more than 100 m from the site, and vegetation within 100 m of the site is not expected to change or be modified. Furthermore, vegetation retained within private lots and vegetation that will regenerate naturally in road reserves have been assumed to pose a long-term bushfire hazard to the site and individual lots. In general, the BAL assessment completed to support this BMP assumes all vegetation outside the individual lot will remain in its existing and regenerated condition (and therefore does not include any consideration of the vegetation clearing or modification that all lots will be subject to, as outlined above) in order to provide a worst-case assessment of bushfire hazard.

3 BUSHFIRE ASSESSMENT RESULTS

Bushfires are common in the City of Swan and a large landscape scale bushfire impacted areas of Avon Ridge Estate in February 2021. This bushfire destroyed 86 homes in the broader Gidgegannup area, however all homes in Avon Ridge were saved. The estate will experience more bushfires in the future; hence this BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire from the surrounding vegetation.

3.1 Assessment Inputs

The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The lot layout is known, and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.

Assessing bushfire threat at the site-specific level requires evaluating the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in the Vegetation Classification Map (Figure 4).

3.1.1 Vegetation Classification



An assessment of existing vegetation within and 150 m surrounding the site was undertaken in accordance with AS 3959 and the Guidelines on 7th September 2022. Table 1 below





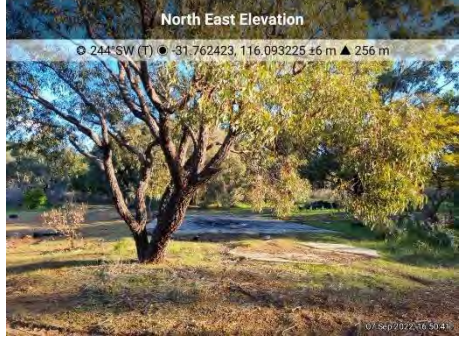
outlines the type of vegetation currently within and surrounding the site, and the classification of this vegetation in accordance with Section 2.2.3 and Table 2.3 of AS 3959. The existing vegetation classifications within and surrounding the site are shown in Figure 4.

Given the scale of the site and in particular the extent of classified vegetation within and surrounding the site, no specific 'effective slope numbers' have been used to identify individual plots because the same area of vegetation can have different effective slopes for different and adjacent dwellings. Plots of classified vegetation is clearly identified on the vegetation classifications in Figure 4. Individual dwelling plots and effective slopes are re-assessed as part of future building licence stage BAL assessments, in order to identify and describe the areas of classified vegetation impacting on each individual dwelling, and will be more relevant to informing the BAL ratings for future dwellings.




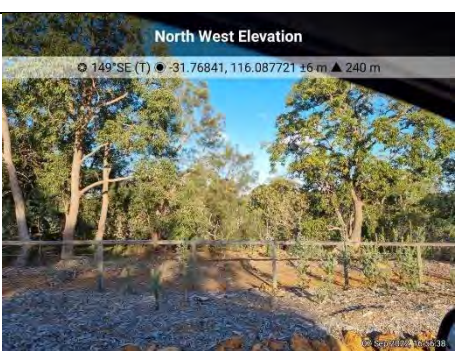

Much of the site was impacted by the Wooroloo bushfire and vegetation classifications have been assessed from aerial photography pre-bushfire which provides a more realistic assessment of eucalypt canopy cover.

The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.

| | |
|--|--|
| <p>Photo ID: 1</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 2</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 3</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 4</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 5</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 6</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 7</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 8</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 9</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 10</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 11</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 12</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 13</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 14</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 15</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 16</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 17</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|---|--|
| <p>Photo ID: 18</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 19</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification:</p> <p>Asset Protection Zone around water infrastructure</p> |  |
| <p>Photo ID: 20</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification:</p> <p>Asset Protection Zone around water infrastructure</p> |  |
| <p>Photo ID: 21</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause:</p> <p>Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification:</p> <p>Mineral earth, cleared for public roads.</p> |  |

| | |
|--|--|
| <p>Photo ID: 22</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Mineral earth, Bandicoot Loop</p> |  |
| <p>Photo ID: 23</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Mineral earth, cleared for public roads.</p> |  |
| <p>Photo ID: 24</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Mineral earth, cleared for public roads.</p> |  |
| <p>Photo ID: 25</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Mineral earth, cleared for public roads.</p> |  |



Location details: Stages 5 and 6 Avon Ridge Brigadoon
 Assessment date: August, 2022
 Prepared by: Bushfire Safety Consulting
 Accreditation level: Level 3 BPAD Practitioner
 Accreditation number: BPAD 23160
 Accreditation expiry date: 31st January, 2024
 Date aerial photo: June, 2023

FIGURE 4 - VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP)

0 50 100 150 200 250m
 SCALE 1:6000 @ A3
 DATE: AUGUST 2023



LEGEND:
 SUBJECT LAND
 ASSESSMENT AREA (150m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
 EXCLUSION AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
 PLOT 1 CLASS A FOREST
 PLOT 2 - EXCLUSION CLAUSE 2.2.3(a)
 PLOT 3 - EXCLUSION CLAUSE 2.2.3(a)

SOURCE OF PHOTOGRAPHY: NEARMAP



bushfire safety
 CONSULTING
 Science. Culture. Solutions.
 PO BOX 84 STONEVILLE WA 6081
 Mbl: 0429 949 262
 www.bushfiresafetyconsulting.com.au

3.2 Effective Slope

The effective slope under areas of classified vegetation will impact the direction and rate of spread of a bushfire. For the purposes of this BMP, the slope of the land beneath classified vegetation varies for every single lot and an analysis has been undertaken on each individual lot to develop the BAL Contour Plan (Figure 5).

The effective slope has been determined through the analysis of topographic survey contours across the site and surrounding 150m. Slope ranges from effectively flat/upslope, to downslope 10-15°, as shown in Table 2.

It is important to note that multiple lots may be oriented differently in relation to the slope beneath any single area of classified vegetation. This means that while one piece of classified vegetation may be upslope from one lot, the same piece of classified vegetation may be downslope from another nearby lot. Where the effective slope of an area of classified vegetation impacts differently on multiple adjacent lots the highest effective slope has been applied to this area of classified vegetation. This provides a subdivision-scale conservative assessment of the slope within the site and nearby.

The topography and effective slope are outlined in Table 2 and have been used to determine the BAL Contour plan in Figure 5.

3.2.2 Assessment methodology and assumptions

The BAL assessment for the site has been undertaken in accordance with method 1 of AS 3959 (as outlined in Section 3.1) to determine the maximum heat flux to which future dwellings within the site are likely to be exposed.

As the site is proposed to be developed for rural residential purposes, the exact location of the dwelling and any associated asset protection zone will be determined at the building licence stage. However, to understand whether the lots and designated BEAs are appropriately sized and located to accommodate a BAL rating of BAL-29 or less for future dwellings, each lot within the site has been assessed individually based on the following:

- Classified vegetation within 150 of each lot, assuming all vegetation outside the lot remains in its existing condition. This is considered a worst-case scenario for bushfire hazard and ensures lot owners are only reliant on management within their own property to achieve a BAL rating of BAL-29 or less.
- Effective slope under the classified vegetation within 150 m of each lot. The effective slope is based on topographic contours and aspect of surrounding areas for each lot.
- The entire lot (being assessed) is considered to be managed in accordance with Clause 2.2.3.2(f) of AS 3959. While it is unlikely for the majority of lots that all vegetation within the lot will be cleared or modified, this approach presents a spatial representation of the likely management areas able to be accommodated within each lot.

The individual BAL assessment results for each lot have then been mapped individually before combining each into a single subdivision-wide BAL contour plan, provided in Figure 5.

Overall, the BAL assessment criteria assumed includes:

- Designated FDI: 80
- Flame temperature: 1090
- Vegetation classification: forest (Class A), (see Figure 4), noting each lot has been assessed individually.
- Effective slope: flat/upslope, downslope 0-5°, downslope 5-10°, downslope 10-15° noting each lot has been assessed individually and the effective slope is considered worst-case.
- Setback distances: as per Table 2.4.3 in AS 3959, and outlined in Table 2 and Figure 4.

In addition to the above, the following key assumptions have informed this assessment:

- Management measures for each lot (i.e. Asset Protection Zone) is assumed to be restricted to within the lot boundary, and is not reliant on management occurring within adjacent rural residential lots.
- A 3 m firebreak will be installed by the developer immediately inside the boundary of each private lot, and will be maintained in the long term by each landowner in accordance with the requirements of the City of Swan's Fire Hazard Reduction Notice.
- Public roads are being installed by the developer in accordance with the approved subdivision layout, to the minimum standards required under Appendix Four of the Guidelines.

3.3 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in the BAL Contour Map at Figure 5.

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site.

Table 2. Summary of assessment outputs for all scenarios at the site

| Vegetation Classification | Effective slope | Minimum setback to achieve BAL-29 |
|---------------------------|------------------|-----------------------------------|
| Class A Forest | Flat / upslope | 21m |
| | Downslope 0-5° | 27m |
| | Downslope 5-10° | 33m |
| | Downslope 10-15° | 42m |
| | Downslope 0-5° | 10m |
| | Downslope 5-10° | 11m |
| | Downslope 10-15° | 13m |
| | Downslope 10-15° | 12m |

The results of the BAL assessment indicate that all future dwellings within the site can be located within the designated BEAs without a BAL rating of BAL-29 being exceeded (noting the BEAs are generally significantly larger than the 10% gross lot area that can be developed in accordance with the structure plan, therefore there is opportunity to locate a dwelling in various locations within the BEA). Each lot can accommodate the relevant separation distances internally to ensure BAL-29 is not exceeded without relying on vegetation modification/management within adjacent private landholdings.

Final dwelling locations will be determined through the building licence process in consultation with the bushfire consultant engaged by Corrib on behalf of lot purchasers, who will assist lot owners to locate their dwelling appropriately within the BEA, with the building BAL rating to be based on modification/management of vegetation within the individual lot only. This managed area will form the basis for the lot-specific asset protection zone, and will be able to accommodate the vegetation protection requirements.

This process may result in classified vegetation being retained within the lot, however the dwelling will be located in such a way that ensures an asset protection zone is completely accommodated within the lot (except where potential to be located outside e.g., within adjacent established firebreak), as assessed by the bushfire consultant.

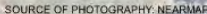
The final developed scenario is outlined in Figure 6 as a spatial representation of the bushfire management strategies.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

From a bushfire hazard management perspective, the key issues requiring management include:

- Separation distances within individual lots to ensure a BAL rating of BAL-29 or less is achieved at the dwelling. This includes consideration of particular areas of vegetation retention and/or revegetation. Overall, given each lot has been assessed on the basis that all surrounding areas will remain in their existing condition, vegetation retention and revegetation has been accommodated through this assessment. Therefore, the primary ongoing consideration will be ensuring that habitat trees are retained within lots where these are located within BEAs and / or asset protection zones.
- Meeting increased building construction standards through the building licence process.
- Fuel management within future individual lots (in particular each lot ensuring the asset protection zone is implemented and maintained in perpetuity).
- Providing appropriate vehicular access.
- Provision of appropriate water supply and associated infrastructure.

Predicted ember attack and radiant heat could impact the site as evident in the BAL contour plan (Figure 5).

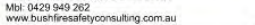


June, 2023

DATE: AUGUST 2023



BAI FLAM



5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution and performance-based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.4 (2021)*. The management issues are:

- Location of the Development.
- Siting and Design of Development.
- Vehicular access.
- Water.

Acceptable solutions are achieved for all of the bushfire protection criteria due to the increased Fire service Access route connections provided in this proposal.

5.1 Compliance Table

Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The compliance checklist is attached as Table 4.

| Table 3: Compliance Table | | |
|-------------------------------------|----------------------------------|---|
| Bushfire Protection Criteria | Method of compliance | Proposed bushfire management strategies |
| | Acceptable Solutions | |
| Element 1: Location | A1.1 Development Location | The Method 1 BAL Assessment in this report demonstrates the classified vegetation in the area surrounding the site and each lot does have an impact, but each lot can accommodate a dwelling exposed to BAL-29 or lower. |
| Element 2: siting and Design | A2.1 Asset Protection Zone (APZ) | <p>The BAL assessment and BAL Contour Plan (Figure 5) indicates that an appropriate APZ can be accommodated within each lot, based on the surrounding vegetation and effective slope. The BAL assessment assumes that no management or modification of vegetation occurs outside the lot. The specific APZ applicable to a future dwelling will be determined as part of the building licence and construction stage by the bushfire consultant, in consultation with the lot owner and will be based on the proposed dwelling location within the BEA. The APZ is managed in accordance with the requirements of the standards in Appendix 1.</p> <p>The determined APZ will be maintained in perpetuity to ensure fuel load is maintained at two tonnes per hectare or less. It is expected that any identified habitat trees will be retained within APZ areas, with dwellings located to minimise removal of these values (with maintenance of understorey fuels enabling the retention of these trees). Lot specific APZ maintenance requirements will be informed by the bushfire consultant through the building licence stage BAL assessment and Bushfire Management Statement.</p> |
| Element 3: Vehicular Access | A3.1 Public Roads | The public roads to be created, as well as surrounding existing roads, comply with minimum public road standards outlined in Appendix 2. |
| | A3.2a Multiple access routes | Public road access is provided in two different directions with access to Campersic Road to the south of Avon Ridge Estate via Connemara Drive and O'Brien Road to the east via Lancewood Avenue. |
| | A3.2b Emergency access way | An Emergency Access Way is not proposed or required. |
| | A3.3 Through roads | All proposed roads in stages 5 and 6 are through roads and comply with A3.3. |
| | A3.4a Perimeter roads | Perimeter roads are achieved around most of the subdivision stage as previously approved. All lots have public road frontage. |

| | | |
|--|---------------------------------|---|
| | A3.4b Fire service access route | <p>Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. This will be installed by the developer initially, then maintained by the lot owner.</p> <p>A strategic firebreak / fire service access route will be installed on the south-west perimeter of the site and have two additional links with Connemarra Drive. This is an improvement on the previously approved subdivision layout.</p> <p>The FSAR will be installed in its entirety when the subdivision is developed. The FSAR links to the internal public road network at regular intervals, as shown in Figure 6.</p> <p>The strategic firebreak / fire service access route will be installed to the following standards</p> <ul style="list-style-type: none"> Where strategic firebreaks are installed, the following is required: <ul style="list-style-type: none"> Minimum 6 metre wide with a 4m trafficable surface Minimum 4m vertical clearance over the full 6 m width Where the FSAR is within private lots, no fencing/gates or any form of obstruction is to cross the FSAR At regular intervals (every 2 to 3 lots, approximately), a linking firebreak to the public road network is provided. This link is to be located within a single lot and can be a part of the lot access (i.e., driveway) within each lot, or adjacent to the lot boundary as part of the internal firebreak. These links do not necessarily have to be located on the lot boundary, but must be accessible at all times. Rural gates (minimum width 4.1 metres) will be installed by Corrib/the developer in the fence line with a standard City of Swan key system (to prevent unauthorised vehicle access) to provide access from the FSAR to the linking firebreak. To prevent unauthorised access through private lots along the FSAR, landowners may fence the side of the FSAR (adjacent the cleared trafficable and shoulder area). Rural gates (minimum width 4.1 metres) will be erected where the FSARs interfaces with a public road, with a standard City of Swan key system to prevent unauthorised vehicle access. These gates will be installed by Corrib/developer prior to the clearance of lot titles. Signage will be provided where FSARs meet public roads, indicating the FSARs are for “Fire Access Only.” Signage will be installed by Corrib/the developer prior to clearance of lot titles (within each applicable clearance stage) and will be to the standards/specifications required by the City of Swan. As a minimum, this is likely to include: <ul style="list-style-type: none"> Signage should be 225 mm X 150 mm where the FSAR linking firebreak meets a public road and/or where the FSAR linking firebreak meets the FSAR. Signage should be 600 mm X 400 mm where the FSAR meets a public road. An example of emergency access signage, as required by the City of Swan, is attached in Appendix 4. The City of Swan may install gates across the FSAR in strategic locations throughout the site, at their |
|--|---------------------------------|---|

| | | |
|--|--|--|
| | | <p>discretion.</p> <p>For the FSARs, these will be installed by Corrib/the developer to the satisfaction of the City of Swan prior to the clearance of lot titles and maintained by Corrib/the developer until all affected lots (within each applicable clearance stage) are sold. The FSAR will be placed in an easement in favour of the City of Swan.</p> <p>Following purchase of the lots, maintenance of FSARs occurring within private property is the responsibility of the purchaser. The City of Swan may choose to maintain FSARs were occurring on private lots and may establish a levy system to fund these maintenance works. Where FSARs occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover from the developer.</p> <p>Corrib/the developer will rectify, at its cost and to the reasonable satisfaction of the City, any defect in respect to the FSAR which arises within two (2) years of the subdivision stage clearance dates for the portion of the land in which the defects arise. Defects shall include any fault in the construction and maintenance of the firebreaks by Corrib/the developer or any failure to seal a portion of the firebreaks which were required to be sealed, but does not include general or routine maintenance.</p> |
|--|--|--|

| | | |
|--|---|--|
| | A3.5 Battle-axe access legs | No battle-axe lots are proposed. |
| | A3.6 Private driveways | <p>It is likely that a number of lots will have dwellings positioned more than 70 metres from a public road based on the location of the BEA and/or the location of the dwelling within the BEA. Where dwellings are sited 70 m from the road, the following will be complied with:</p> <ul style="list-style-type: none"> • Where dwellings are more than 70 m from a public road, access to the dwelling and turn-around areas will be provided for conventional two-wheel drive vehicles as well as type 3.4 fire appliances. • Turn-around areas are to be provided within 50 m of the dwelling, with a loop driveway potentially considered an acceptable alternative. • Where driveways are longer than 200 m, passing bays should be provided at 200 m intervals (or the trafficable width of the driveway increased to 6 m). Passing bays need to be a minimum 20 m in length and 6 m wide. |
| Element 4: Water | A4.1 Identification of future water supply | Reticulated Water supply provided. |
| | A4.2 Provision of water for firefighting purposes | <p>The development is located within an Emergency Services Levy (ESL) Category 3 Urban Metropolitan area, which indicates that bushfire events are responded to by volunteer bushfire brigades with the availability of a network of career firefighters and the State Emergency Services (SES) as required. Fire response services require ready access to an adequate water supply during bushfire emergencies.</p> <p>The development will be provided with a reticulated water supply, together with fire hydrants that will be installed by the developer to meet the standard specifications of Water Corporation (Design Standard DS 63) and DFES.</p> <p>An existing Water Corporation regional water tank is located within the site (see Figure 6). The development has access to a reticulated water supply. Hydrants will be spaced according to the Water Corporation's No. 63 Water Reticulation Standard.</p> |
| Element 5: Vulnerable Tourism Land Uses | A5.1 Siting and Design | Not applicable |

5.2 Additional Management Strategies

5.2.1 Future site assessment and approval considerations

As part of the lot sales process, Corrib have appointed Bushfire Safety Consulting as their designated Fire Management Consultant (FMC). The role of the FMC is to undertake individual lot BAL assessments following purchase and to ensure necessary fuel reduction is undertaken within purchased lots whilst retaining identified habitat and significant trees. The lot specific assessment and advice follows the following key steps:

1. Preliminary onsite inspection

- The lot owner is firstly required to inform Corrib of the proposed house design and building envelope. Corrib then arranges the initial inspection by the FMC to inspect the lot to determine if the building envelope is in a suitable location based on the ability to accommodate an appropriate asset protection zone (APZ) within the lot, surrounding the proposed house.
- The lot owner is encouraged to be present during the inspection to familiarise themselves with and attain knowledge of the BAL assessment process and any fuel hazard reduction requirements.
- If the building envelope is determined to be in a suitable location by the FMC, a bushfire management statement (incorporating the BAL assessment and APZ advice) will be undertaken in accordance with AS 3959 and the lot owner can proceed with an application for a building license from the City of Swan.
- At the initial inspection by the FMC, should the FMC determine that the building envelope is not in a suitable position, an alternative building envelope will be chosen by the lot owner in consultation with the FMC and the pre-clearing site inspection and bushfire management statement will follow.
- The lot owner can then proceed with the building licence application at the City of Swan as described below.

2. Lot specific BAL assessment and APZ advice

- The BAL assessment determines the building construction requirements to withstand bushfire attack, based on the specific placement of the house within the lot and the implementation of suitable APZs. The BAL assessment takes into account a number of factors including the Fire Danger Index, the slope of the land, classification of surrounding vegetation and its proximity to any building.
- Specific advice on modification of vegetation within the APZ will be prepared and the information recorded in the bushfire management statement.
- During the pre-clearing site assessment, the FMC identifies and labels individual trees and identifies areas of leaf litter and fuel load to be removed to attain the fuel load requirements in the APZ as well as advising lot owners on ongoing maintenance requirements to maintain low fuel load levels. The FMC will consider the requirements to meet the APZ in accordance with the Guidelines while avoiding extensive clearing.

- The lot owner submits to the City of Swan the position of building envelope, location of vegetation and the bushfire management statement.

3. Post clearing site inspection and BAL certification

- Following the issue of a conditional building licence approval by the City of Swan, the landowner undertakes vegetation modification in accordance with the bushfire management statement.
- Following vegetation modification, the FMC conducts another site inspection prior to the City of Swan issuing final building approval, to confirm that the vegetation modification has been completed in accordance with the advice provided. If implemented properly, the FMC will complete a BAL and APZ certification.
- This BAL and APZ certification can then be lodged by the lot owner with the City of Swan to clear the condition of approval, and the final building licence can be issued.

A summary of management strategies is outlined in Figure 6.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.

5.2.2 Landscape Treatments

5.2.2.1 Within future lots

As outlined above, the exact location of future dwellings and any associated APZs will be determined at the building licence stage through consultation with the FMC and the City of Swan, and will influence the areas within each lot to be cleared or modified/managed as part of the future development.

The Guidelines (WAPC and DFES 2021) state that an APZ needs to be wide enough to ensure that the maximum BAL rating for buildings adjacent to classified vegetation will not exceed BAL-29. It is the role of the FMC to determine an appropriate APZ width and treatment for each proposed dwelling, based on the ultimate location within the BEA. Typical maintenance standards for APZs are outlined in Appendix 1.

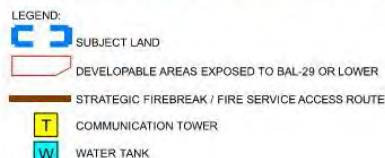
5.2.2.2 Within road reserves

Road reserves are cleared for the civil works, but all BAL ratings are determined on the basis that all road verges naturally revegetated to Class A forest vegetation. It has been assumed as an extreme bushfire hazard as part of this assessment.

5.2.2.3 City of Swan firebreak notice

Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. Corrib will install this firebreak as part of subdivision, but following the purchase of the lot, the lot purchaser will be responsible for the ongoing maintenance of this area.

For the strategic firebreaks, these will be installed by Corrib as part of subdivision, but following purchase of the lots, lot purchasers will be responsible for the maintenance of strategic firebreaks occurring within their property, while where strategic firebreaks occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover as part of the subdivision process.



REQUIREMENTS

1. The proposed lots contain building envelope areas that are exposed to BAL-29 and lower with each lot being able to accommodate an APZ within each the lot boundary.
2. The internal roads comply with minimum standards and provides access around the perimeter of the site and throughout the site. Compliant public roads are provided for fire fighting appliances and residents including access onto the surrounding public road system.
3. All residents have access to surrounding public roads and access to the east and south of the estate on the public road network.
4. The Class A forest vegetation in and around the site poses the greatest threat from bushfire.
5. The area is provided with a water supply and pump infrastructure that is exposed to BAL-29 and lower. Fire hydrants are located throughout the site in the public road reserves to minimum standards.
6. The Fire Service Access Routes/ Strategic Firebreak includes an additional connections between the eastern FSAR and Connemarra Drive.
7. The approved FSAR provides a perimeter connection around the entire site where public roads are not positioned on the perimeter.

FIGURE 6 - SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the Developer, neighbours, future landowners and the City of Swan. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 4. Responsibility for bushfire measures

| DEVELOPER – PRIOR TO ISSUE OF TITLES | | |
|---|---|--------------------------|
| No. | Implementation Action | Subdivision Clearance |
| 1 | Install 3m wide firebreaks inside each residential lot boundary compliant with City of Swan firebreak notice. | <input type="checkbox"/> |
| 2 | Install the public roads to standards outlined in this report. | <input type="checkbox"/> |
| 3 | Install hydrants to the Water Corporation’s No. 63 Water Reticulation Standard. | <input type="checkbox"/> |
| 4 | Install the strategic firebreaks / Fire Service Access Route (as shown in Figure 6). The firebreak should be installed to the standards outlined in Appendix 2. | <input type="checkbox"/> |
| 5 | As part of the building license application stage, have the lots/dwelling(s) assessed for the BAL rating by a qualified consultant with BAL rating submitted to support building license stages. | |
| 6 | A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan.' (Local Government)”. | |
| DEVELOPER – AT SALE OF LOTS | | |
| 7 | Make a copy of this BMP available to each lot along with the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan’s Firebreak Notice. | |
| 8 | Maintain future development stages in a low threat condition so as not to pose a threat to the development | |
| LANDOWNER/OCCUPIER – ONGOING MANAGEMENT | | |
| 9 | Maintain the Asset Protection Zone (APZ) to standards stated in this BMP. | |

| | |
|--|--|
| 10 | Ensure construction of buildings complies with AS 3959:2018. |
| 11 | If buildings are subject to additional construction in the future, AS 3959:2018 compliance is required. |
| CITY OF SWAN – ONGOING MANAGEMENT | |
| 12 | Maintain public roads to appropriate standards and ensure compliance with the City of Swan's Fire Control Notice. |
| 13 | Provide fire prevention and preparedness advice to landowners upon request, including the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan's Fire Control Notice. |

Certification by Bushfire Consultant

I _____ certify that at the time of inspection, the BAL ratings contained within this BMP are correct; and implementation actions 1 - 4 have been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: _____

Date: _____

7 CONCLUSION

This Plan provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The amended subdivision is located in the bushfire prone area (i.e., within 100 m of classified vegetation) and risk is reduced via compliance with AS 3959:2018 standards. BAL-29 is not exceeded. Each lot will contain a lot specific APZ to ensure compliance and a site-specific BAL assessment will be undertaken each time a purchaser applies for building license.

Perimeter vehicular access is provided and increased links are included in this application. A water supply with hydrants spaced to minimum standard is achieved.

A minimum of two access options and fire hydrant spacing requirements for fire-fighting are met. Full compliance is achieved. Overall, this assessment updates the previously approved plan with eight additional lots and improved perimeter fire appliance access. The updated BAL contour plan demonstrates BAL-29 and lower can be achieved on all lots.

REFERENCES

Standards Australia, 2018. *Construction of buildings in bushfire-prone areas (Amendments 1-3)*, AS 3959-2018, Standards Australia International Ltd, Sydney.

Western Australian Planning Commission (WAPC), 2015. *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP3.7)*. December 2015. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.

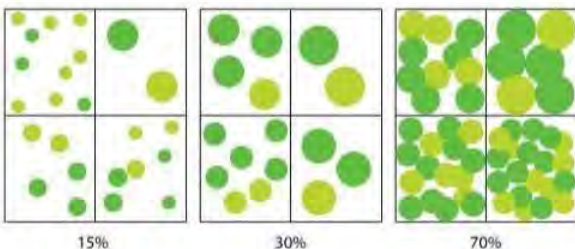
Western Australian Planning Commission (WAPC), 2017. *Guidelines for Planning in Bushfire Prone Areas*. December 2021 V1.4. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.



APPENDICES

- Appendix 1: Asset Protection Zone Standards
- Appendix 2: Vehicular Access Technical Requirements
- Appendix 3: City of Swan Fire Control Notice
- Appendix 4: Fire Service Access Signage

Appendix 1: Asset Protection Zone Standards

| SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES | |
|---|--|
| OBJECT | REQUIREMENT |
| Fences within the APZ | <ul style="list-style-type: none"> Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959). |
| Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness) | <ul style="list-style-type: none"> Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness. |
| Trees* (>6 metres in height) | <ul style="list-style-type: none"> Trunks at maturity should be a minimum distance of six metres from all elevations of the building. Branches at maturity should not touch or overhang a building or powerline. Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. Canopy cover within the APZ should be <15 per cent of the total APZ area. Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. <p>Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity</p>  <p>15% 30% 70%</p> |
| Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees. | <ul style="list-style-type: none"> Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs) | <ul style="list-style-type: none"> Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. |
| Grass | <ul style="list-style-type: none"> Grass should be maintained at a height of 100 millimetres or less, at all times. Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation. |
| Defendable space | <ul style="list-style-type: none"> Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above. |
| LP Gas Cylinders | <ul style="list-style-type: none"> Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. The pressure relief valve should point away from the house. No flammable material within six metres from the front of the valve. Must sit on a firm, level and non-combustible base and be secured to a solid structure. |

Appendix 2: Vehicle Access Technical Requirements

Table 6: Vehicular access technical requirements

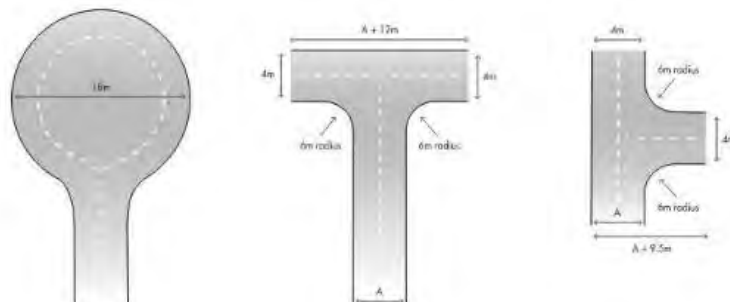
| TECHNICAL REQUIREMENTS | 1 Public roads | 2 Emergency access way ¹ | 3 Fire service access route ¹ | 4 Battle-axe and private driveways ² |
|--|--|---|--|--|
| Minimum trafficable surface (metres) | In accordance with A3.1 | 6 | 6 | 4 |
| Minimum horizontal clearance (metres) | N/A | 6 | 6 | 6 |
| Minimum vertical clearance (metres) | 4.5 | | | |
| Minimum weight capacity (tonnes) | 15 | | | |
| Maximum grade unsealed road ³ | As outlined in the IPWEA Subdivision Guidelines | 1:10 (10%) | | |
| Maximum grade sealed road ³ | | 1:7 (14.3%) | | |
| Maximum average grade sealed road | | 1:10 (10%) | | |
| Minimum inner radius of road curves (metres) | | 8.5 | | |

Notes:

¹ To have crossfalls between 3 and 6%.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% - 7.1 degree) entry and exit angle.



Appendix 3: City of Swan Fire Control Notice

Bush Fires Act 1954 **City of Swan** **Fire Hazard Reduction Notice (Firebreak Notice)**

Notice to Owners and/or Occupiers of land situated within the City of Swan.

To assist in the control of bush fires, and pursuant to Section 33 of the Bush Fires Act 1954, all owners and occupiers of land within the City of Swan are required on or before the 1st day of November, 2021, or within 14 days of becoming an owner or occupier of land after that date, must meet the fire hazard reduction conditions described in this notice and maintain these conditions up to and including the 30th day of April, 2022.

- 1. All land up to 5,000m² (0.5 Hectares or 1.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Maintain all grass to a height of no greater than 10cm.
 - 3) Areas of natural vegetation to be maintained at or below 8 tonnes per hectare.
 - 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- 2. All land between 5,000m² and 25,000m² (0.5 - 2.5 Hectares) or (1.2 - 6.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
 - 3) Maintain all grass to a height of no greater than 10cm.
 - a) If the land is stocked, the grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
 - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
 - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- 3. All land with an area greater than 25,000m² (2.5 Hectares or 6.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
 - a) Properties over 100 hectares require additional firebreaks to divide the land into areas not exceeding 100 hectares.
 - 3) Slash or mow grass to a height no greater than 10cm immediately adjacent to firebreaks to a minimum width of 3 metres.
 - a) If the land is stocked, this grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
 - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
 - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

4. Plantations

- 1) Install and maintain external and internal firebreaks, firebreaks that form compartments (cells), firebreaks and hazard reduction measures that protect neighbouring communities and essential infrastructure in accordance with the requirements of a fire management plan approved in writing by the City; or
- 2) Where no such approved fire management plan exists,
 - a) Unless the City approves an alternative plan in writing in accordance with clause 4(2)(b), install and maintain external and internal firebreaks and firebreaks that form compartments (cells), and carry out all other firebreaks and hazard reduction measures which are required in accordance with the requirements and specifications within the Department of Fire & Emergency Services 'Guidelines for Plantation Fire Protection' 2011 publication; or
 - b) If it is considered impractical for any reason to carry out the plantation requirements outlined above in clause 4 (2)(a), plantation owners and managers may apply in writing to the City to implement an alternative plan or measures in accordance with clause 4 of this notice.

5. Application to Vary Firebreak and Hazard Reduction Requirements

- 1) If it is considered impractical for any reason to clear firebreaks in a manner or location required by this notice, or to carry out any fire hazard reduction work or measures required by this notice, you may apply in writing on or before the 1st of October, for approval to provide firebreaks in alternative positions or to take alternative measures to abate fire hazards on the land. Alternative firebreak application forms can be downloaded from the City of Swan website.
- 2) If permission is not granted in writing by the City prior to the 1st day of November, you shall comply with the requirements of this notice.
- 3) When permission for alternative firebreaks or fire hazard reduction measures has been granted, you shall comply with all conditions on the endorsed permit and maintain the land to the required standard throughout the period specified by this notice.
 - a) Where a property is affected by an approved bushfire management plan, property owners must comply with any additional requirements and responsibilities outlined within that plan.

6. Fuel Dumps and Depots

Remove all flammable material within 10 metres of fuel dumps, fuel ramps or where fuel drums, whether containing fuel or not, are stored.

7. Hay Stacks

Clear and maintain a firebreak completely surrounding any haystack on the land, within 60 metres of the haystack.

8. Fire Service Access (Strategic Firebreaks)

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan Fire Service Access (Strategic Firebreaks) are required on the land, you are required to clear and maintain the Fire Service Access (Strategic Firebreaks) a minimum of 6 metres wide along the agreed alignment to provide restricted vehicular access to emergency services and authorised vehicles.
- 2) Fire Service Access (Strategic Firebreaks) must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates may only be secured with City of Swan Fire Service padlock.
- 4) Fire Service Access (Strategic Firebreaks) shall be graded to provide a continuous 4 wheel drive trafficable surface a minimum of 4 metres wide with a 1 metre shoulder on either side.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre width of the trafficable surface.

9. Emergency Access Ways

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan, Emergency Access Ways are required on private land, you are required to clear and maintain a vehicular access way to a minimum of 6 metres wide along the agreed alignment.
- 2) Emergency access ways must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates on Emergency Access Ways must remain unlocked at all times.
- 4) Emergency Access Ways shall be graded and have suitable drainage to provide a minimum 6 metre wide continuous trafficable surface suitable for all types of 2 wheel drive vehicles.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre

width of the trafficable surface.

10. Firebreak Construction

- 1) Firebreaks are to be developed and maintained clear of all obstacles and flammable materials to create a minimum of 3 metres wide trafficable surface suitable for 4 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the full width of the firebreak surface.
- 3) Boundary firebreaks must be aligned immediately inside and adjacent to the external property boundaries.
- 4) Alternative Firebreaks that are approved in writing by the City, or as depicted within a bushfire management plan approved in writing by the City, are to be constructed to the same standard as general firebreaks and must be constructed along the specified alignment.
- 5) Firebreaks must not terminate in a dead end.
- 6) Firebreaks may be constructed by ploughing, grading, raking, burning, chemical spraying or any other method that achieves the required standard.

11. Driveways

Where building sites are situated more than 50 metres from a public road,

- 1) Driveways must be maintained clear of all permanent obstacles and flammable materials to create a minimum 3 metre wide trafficable surface suitable for all types of 2 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the driveway.

12. Fuel Reduction – Natural Vegetation

- 1) Available bushfire fuels must be maintained at or below:
 - a) Asset Protection Zones - 2 tonnes per hectare
 - b) Hazard Separation Zones - 8 tonnes per hectare

*This requirement only applies where HSZs are depicted within a Fire Management Plan approved in writing by the City.

 - c) Natural Vegetation - 8 tonnes per hectare for areas of natural vegetation within 100 metres of buildings, attached and adjacent structures and essential infrastructure
- 2) Passive Fuel Reduction within natural vegetation may be achieved by burning, raking, pruning, weed management, removal of dead materials and any other approved method.
 - 3) Permanent removal or partial clearing of natural vegetation including individual or groups of native grasses, shrubs or trees may only be carried out to meet the minimum requirements of this notice.
 - 4) Permanent clearing of natural vegetation structures including individual plants, shrubs or trees, that exceeds the requirements of this notice or the specifications outlined within a bushfire management plan approved in writing by the City, is only permitted in accordance with the provisions and exemptions outlined within the Environmental Protection Act 1986, or with the approval of the Department of Water and Environmental Regulation and the City of Swan.

Note: Advice and resources on how to measure and manage native vegetation fuel loads are available from the Department of Fire and Emergency Services or the City of Swan.

13. Asset Protection Zones Specification

Asset protection zones for habitable buildings and other assets must meet the following requirements:

- 1) Extends 20 metres out from any external walls of the building, attached structures, or adjacent structures within 6 metres of the habitable building, unless varied under an approved bushfire management plan.
- 2) On sloping ground the asset protection zone distance shall increase with 1 metre for every degree in slope on the sides of the building/ structure that are exposed to down slope natural vegetation.
- 3) Asset protection zone requirements only apply within the boundaries of the lot on which the asset is located and cannot be enforced across boundaries.
- 4) Recommendation Only - Asset protection zones predominantly consist of non-flammable managed vegetation, reticulated lawns and gardens and other non-flammable features.
- 5) All grass is maintained to or under 10cm.
- 6) Fuel loads must be reduced and maintained at 2 tonnes per hectare or lower.
- 7) The crowns of trees are to be separated where possible to create a clear separation distance between adjoining or nearby tree crowns. The separation distance between tree crowns is not required to exceed 10 metres. Clearing or thinning existing trees to create distances greater than 10 metres separation between tree crowns within an asset protection zone is not required or supported by this notice and requires approval from the Department of Water and Environmental Regulation and the City of Swan.
- 8) A small group of trees within close proximity to one another may be treated as one crown provided the combined

crowns do not exceed the area of a large or mature crown size for that species.

- 9) Trees are to be low pruned (or under pruned) to at least a height of 2 metres from ground.
- 10) No tree, or shrub over 2 metres high is planted within 2 metres of a building, especially adjacent to windows.
- 11) There are no tree crowns or branches hanging over buildings.
- 12) Clear and prune scrub to reduce to a sparse density (able to walk through vegetation with relative ease with minimal deviation around trees and shrubs).
- 13) Install paths or clear flammable or dry vegetation, debris and materials immediately adjacent to the building.
- 14) Wood piles and flammable materials stored a safe distance from buildings.

14. Burning

All burning must be carried out in accordance with the relevant provisions of this notice and the Bush Fires Act 1954, Health Act 1911 and the City's Consolidated Local Laws 2005.

Prohibited Period: All burning, including garden refuse and camping fires are prohibited.

Restricted Period: All burning requires a permit except for the burning of garden refuse and camping fires which are subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) Only one fire is allowed at any time and it does not exceed 1 cubic metre in size.
- 3) No flammable material within 5 m of the fire.
- 4) The fire is only lit between 6 pm and 11 pm and completely extinguished by midnight.
- 5) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

15. Cooking Fires

Fires for the purpose of cooking are exempt from burning period restrictions subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) The fire is contained in a purpose built appliance and
 - a) at a person's home; or
 - b) an area is set aside for that purpose by the State Authority or City of Swan
- 3) No flammable material within 5 m of the fire.
- 4) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

16. Compliance

- 1) In addition to the requirements of this notice, further works which are considered necessary by an Authorised Officer of the City may be required as specified in writing in a subsequent notice addressed to the land owner.
- 2) Where the owner or occupier of the land fails or neglects to comply with the requirements of this notice or a subsequent notice addressed to the land owner, the City of Swan may enter onto the land with workmen, contractors, vehicles and machinery to carry out the requisitions of the notice at the expense of the land owner.
- 3) Failure to comply with this notice and subsequent written notices may result in a penalty not exceeding \$5,000, or the issue of a \$250 infringement notice and liability for any costs incurred by the City in relation to works undertaken on behalf of the land owner.
- 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

17. Definitions

'Alternative Firebreak' is a firebreak that is in an alternative position or alignment to the external boundaries of a property.

'Alternative Firebreak Application' is an application that may be made by a land owner to install firebreaks in an alternative position, or to carry out alternative measures in lieu of general firebreaks.

'Available Fuel' is the bush fuel consisting of live and dead vegetation such as stubble, mulch, leaf litter, twigs, trash, scrub and other vegetation less than 6mm in diameter capable of carrying a running fire and will actually burn under prevailing conditions.

'City' means the City of Swan.

'Buildings, Attached and Adjacent Structures' means habitable buildings that are used as a dwelling, workplace, place of gathering or assembly, a building that is a car park, or a building used for the storage

or display of goods or produce for sale by whole sale in accordance with classes 1-9 of the Building Code of Australia. The term building includes attached and adjacent structures like garages, carports verandas or similar roofed structure(s) that are attached to, or within 6 metres of the dwelling or primary building.

'Asset Protection Zone (APZ)' is a low fuel area that is reduced of flammable vegetation and materials surrounding buildings and essential infrastructure to minimise the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings and assets in the event of a bushfire. This area must extend out from the external walls of a building or asset a minimum of 20 metres.

'Bushfire Management Plan' or **'Fire Management Plan'** is a comprehensive plan that may be placed on the certificate of title(s) of land that has been developed as a condition of development or subdivision. Bushfire Management Plans may become out dated and it's the responsibility of the property owner to review and keep them current. Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in the Annual Fire Hazard Reduction Notice and with any additional requirements outlined within that plan.

'Emergency Access Way' is a two wheel drive trafficable, 6 metre wide access route to provide local residents, general public and emergency services alternative links to road networks at the end of cul-de-sacs or areas where access is limited during an emergency incident.

'Essential Infrastructure' or **'Critical Infrastructure'** means assets, infrastructure, systems and networks that provide essential services necessary for social and economic wellbeing and is typically public infrastructure. Assets and infrastructure, usually of a public nature, that generate or distribute electricity, water supply, telecommunications, gas and dams are typical assets that are essential to society and are often located in, or traverse areas that are prone to bushfires.

'Firebreak' is an area of land cleared of flammable material (see available fuel above) to minimise the spread of a bushfire and to provide access for firefighting services. For the purpose of this notice the term firebreak is a strip of land at minimum 3 metres with a 4 metres vertical clearance, constructed to provide a 4 wheel drive trafficable surface for access by emergency and authorised vehicles. Boundary firebreaks are installed immediately adjacent the external boundaries of a property.

'Fire Hazard' means accumulated fuel (living or dead) such as leaf litter, twigs, trash, bush, dead trees and scrub capable of carrying a running fire, but excludes standing living trees and isolated shrubs.

'Hazard Separation Zone (HSZ)' means an area extending out from an asset protection zone a distance of 80 metres unless otherwise specified, to create a graduated fuel reduction and separation from natural vegetation.

'Natural Vegetation' means natural areas of forest, woodland, shrubland, scrub, mallee or mulga.

'Passive Fuel Reduction' means lowering the amount of available fuel that will burn under prevailing conditions by means that will not permanently reduce or modify the structure or life cycle of plant, shrub, scrub or tree communities within an treated area. This is typically achieved by undertaking a cool, controlled burn of an area during cooler, damper months, or by physical removal of built up leaf litter, dead materials, weeds and slashing long dry grasses without damaging live native plants within the area.

'Plantation' is any area of native or exotic planted trees that exceeds three hectares in a gazetted town site, or elsewhere a stand of trees of 10 hectares or larger that has been planted and managed intensively for their commercial and environmental value. A plantation includes roads, firebreaks and small areas of native vegetation.

'Fire Service Access (Strategic Firebreaks)' is a firebreak that is 6 metres wide established to provide strategic access and links to road networks whilst providing a wider control/containment line to protect town sites, estates and similar exposures during bushfire operations.

By order of the Council,



Leon van der Linde

Acting / Chief Executive Officer

City of Swan

Appendix 4: Fire Service Access Signage



Bushfire management plan/Statement addressing the Bushfire Protection Criteria coversheet

Site address:

Site visit:

Yes

☐

No

☐

Date of site visit (if applicable):

Day

Month

Year

Report author or reviewer:

WA BPAD accreditation level (please circle):

Not accredited

☐

Level 1 BAL assessor

☐

Level 2 practitioner

☐

Level 3 practitioner

☐

If accredited please provide the following.

BPAD accreditation number:

Accreditation expiry: Month

Year

Bushfire management plan version number:

Bushfire management plan date: Day

Month

Year

Client/business name:

| | 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)? | | |
| 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 bushfire protection criteria elements)? | | |

Is the proposal any of the following (see [SPP 3.7 for definitions](#))?

| | Yes | No |
|---|-----|----|
| Unavoidable development (in BAL-40 or BAL-FZ) | | |
| Strategic planning proposal (including rezoning applications) | | |
| High risk land-use | | |
| Vulnerable land-use | | |

None of the above

☐

Note: Only if one (or more) of the above answers in the tables is yes should the decision maker (e.g. local government or the WAPC) refer the proposal to DFES for comment.

Why has it been given one of the above listed classifications (E.g. Considered vulnerable land-use as the development is for accommodation of the elderly, etc.)?

The information provided within this bushfire management plan to the best of my knowledge is true and correct:

Signature of report author or reviewer



Date

Bushfire Management Plan

Proposed Subdivision Stage 5B and 6

Avon Ridge Estate


Connemarra Drive, Brigadoon

City of Swan

© 2024 Bushfire Safety Consulting Pty Ltd.

Document Information

Prepared for: Corrib Developments
Project name: Subdivision Stage 5B and 6, Avon Ridge Estate
Address: Connemara Drive, Brigadoon WA 6069
Prepared by: Rohan Carboon
Bushfire Safety Consulting Pty Ltd

| | |
|---|---|
| I hereby declare that I am a BPAD accredited bushfire practitioner. | |
| Accreditation No. | 23160 |
| Signature |  |
| Date | 08/06/2024 |



Document Control

| Bushfire Management Plan – Avon Ridge Estate, Brigadoon | | | |
|---|----------------------|---|----------------|
| REPORT VERSION | PURPOSE | AUTHOR/REVIEWER AND ACCREDITATION DETAILS | DATE SUBMITTED |
| V1.0 | Draft for Review | Rohan Carboon (Level 3 BPAD 32160) | 07/06/2024 |
| V2.0 | Final for submission | Rohan Carboon (Level 3 BPAD 32160) | 08/06/2024 |
| | | | |
| | | | |

Front cover photo: Subdivision Plan

Bushfire Safety Consulting Pty Ltd
PO Box 84
STONEVILLE WA 6081

Tel: 0429 949 262
Email: hello@bushfiresafetyconsulting.com.au
Web: www.bushfiresafetyconsulting.com.au

Disclaimer:

This report has been prepared in good faith and is derived from sources believed to be reliable and accurate at the time of publication. Nevertheless, this publication is distributed on the terms and understanding that the author is not responsible for results of any actions taken based on information in this publication or for any error in or omission from this publication.

EXECUTIVE SUMMARY

This Bushfire Management Plan (BMP) supports an amendment to stages 5B and 6 of the existing approved subdivision at Avon Ridge Estate. The site is located in Brigadoon approximately 12 kilometres north of the Midland Regional Centre and 30 kilometres northeast of the Perth CBD.

The southern and western portion of Avon Ridge Estate has been subdivided and developed into rural residential lots and this approved subdivision design is currently under construction according to previous approvals.

The site being assessed is shown in Figure 1.

The site is extensively vegetated with eucalypt forest and the overall development has been subject to a number of historic environmental and planning approvals which place restrictions on the amount of clearing that can be undertaken within the development, in particular those pursuant to the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Corrib have developed an offset package to mitigate potential impacts on conservation significant values and accordingly lot owners are permitted to clear vegetation (excluding habitat areas and significant trees identified for retention) within their lot to facilitate development within the designated 'Building Envelope Areas' (BEAs) and the associated Asset Protection Zone (APZ) requirements. At completion, all lots can accommodate a dwelling exposed to BAL-29 or lower and the subdivision can be fully achieved. This is outlined further in Section 5.

While there are restrictions on the location of dwellings and outbuildings (restricted to the BEAs), future lot owners will have an ability to modify vegetation within their lot in order to achieve necessary Asset Protection Zone (APZ) requirements. The specific location of the APZ (and associated vegetation modification) will be determined as part of a lot-specific Bushfire Attack Level (BAL) assessment and will be based on the dwelling location.

For the purposes of this BMP, and to demonstrate that dwellings can be located within the BEA and a BAL rating of BAL-29 is not exceeded, it has been assumed that:

- All vegetation within the lot is able to achieve 'low threat' through clearing and/or modification
- Vegetation within the surrounding lots, road reserves and public open space/parks and recreation reserves is unmodified, providing a worst-case assessment of likely bushfire hazards.

Through this approach, the BMP has been able to demonstrate that no matter where the dwelling is located in the BEA, vegetation can be modified within the lot to achieve the necessary setbacks to ensure a BAL rating of BAL-29 is not exceeded at future dwelling locations (without relying on vegetation being modified in adjacent lots).

An interconnected public road network is provided within the site and as part of the broader development to facilitate the movement of people and emergency appliances, with access to existing public roads, Campersic Road to the south via Connemara Drive, and O'Brien Road to the east via Lancewood Avenue.

A Fire Service Access Route is being installed on the eastern perimeter of proposed lot 34 where the public road will not exist to provide access for firefighters in the event of a bushfire and/or to facilitate controlled burns (which form part of the broader management objectives for the development).

A permanent reticulated water supply is provided and hydrants are spaced to minimum standards.

The measures to be implemented through the subdivision process have been outlined within this BMP and align with historic measures for the development, which are already in the process of being implemented.

In particular, future dwellings can be located within the designated BEAs and are able to achieve a BAL rating of BAL-29 or less, and is based on vegetation modification and fuel load management only occurring within the lot itself. Specific APZ requirements will be determined through a lot-specific BAL assessment completed to support the building licence process (and will be based on the precise location and design of any proposed dwelling).

The developer is responsible for ensuring requirements for the provision of water and vehicular access are met.

It is expected that the implementation of this BMP will reduce the threat to residents, the public and fire fighters in the area addressed by this BMP. The proposal complies with the *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* and the *Guidelines for Planning in Bushfire Prone Areas* (WAPC 2021 V1.4).

TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY | 2 |
| 1 PROPOSAL DETAILS..... | 5 |
| 1.1 Application of SPP 3.7 | 8 |
| 1.2 Guidelines for Planning in Bushfire Prone Areas V1.4 (2021) | 8 |
| 2 ENVIRONMENTAL CONSIDERATIONS | 10 |
| 2.1 Native Vegetation – modification and clearing | 10 |
| 2.1.1 Clearing undertaken by the proponent | 10 |
| 2.1.2 Clearing undertaken by the purchaser | 11 |
| 2.2 Re-vegetation/ Landscape Plans..... | 12 |
| 3 BUSHFIRE ASSESSMENT RESULTS..... | 12 |
| 3.1 Assessment Inputs..... | 12 |
| 3.1.1 Vegetation Classification..... | 12 |
| 3.2 Effective Slope | 19 |
| 3.2.2 Assessment methodology and assumptions..... | 19 |
| 3.3 Assessment Outputs | 20 |
| 4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES | 21 |
| 5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA..... | 23 |
| 5.1 Compliance Table | 23 |
| 5.2 Additional Management Strategies..... | 28 |
| 5.2.1 Future site assessment and approval considerations..... | 28 |
| 5.2.2 Landscape Treatments..... | 29 |
| 6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES..... | 32 |
| 7 CONCLUSION | 34 |
| REFERENCES..... | 35 |

TABLES

| | |
|--|----|
| Table 1: Policy measures..... | 8 |
| Table 2: Summary of assessment outputs for all scenarios at the site | 21 |
| Table 3: Compliance table..... | 25 |
| Table 4: Responsibility for bushfire measures | 33 |

FIGURES

| | |
|---|----|
| Figure 1: PROPOSED SUBDIVISION..... | 6 |
| Figure 2: SITE LOCATION | 7 |
| Figure 3: BUSHFIRE PRONE AREAS..... | 9 |
| Figure 4: VEGETATION CLASSIFICATION MAP (BAL CONTOUR MAP) | 19 |
| Figure 5: BAL CONTOUR MAP | 23 |
| Figure 6: SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES..... | 32 |

APPENDICES

| |
|---|
| Appendix 1: Asset Protection Zone Standards |
| Appendix 2: Vehicular Access Technical Requirements |
| Appendix 3: City of Swan Fire Control Notice |
| Appendix 4: Fire Service Access Signage |

1 PROPOSAL DETAILS

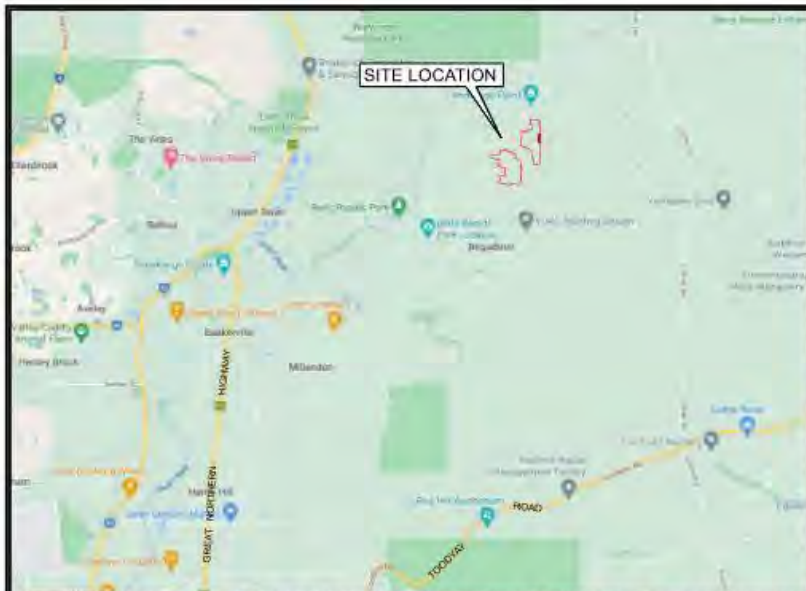
This Bushfire Management Plan (BMP) has been prepared to support a proposed amendment to stages 5B and 6 of the previous approved subdivision. The site being assessed is shown in Figure 1.

The development site assessed is proposed to be subdivided into 32 residential lots, ranging from 1.3ha to 2.5ha in size. The site also encompasses a lot zoned for the existing communications tower and water tank. The southern portion of Avon Ridge Estate has been subdivided and developed into rural residential lots and some lots within this subject area have already been titled and developed.

The area of Avon Ridge Estate subject to this revised BMP is shown in Figure 1. During the staging of the subdivision, compliance with SPP 3.7 and the guidelines will be achieved.

All lots will have direct driveway access onto a public road that links to Connemara Drive and O'Brien Road where access is provided to the west/east and north/south on the public roads. The area is reticulated, with scheme water provided and fire hydrants within regulated access.

This BMP addresses future subdivision conditions by providing responses to the performance criteria in the *Guidelines for Planning in Bushfire Prone Areas V1.4* (WAPC *et.al.* 2021).




Location details: Stages 5B and 6 Avon Ridge
 Brigadoon
 Assessment date: May, 2024
 Prepared by: Bushfire Safety Consulting
 Accreditation level: Level 3 BPAD Practitioner
 Accreditation number: BPAD 23160
 Accreditation expiry date: 31st January, 2025
 Date aerial photo: April, 2024

FIGURE 2
SITE LOCATION PLAN

0 100 200 300 400m
 SCALE 1:50 000 @ A4
 DATE: MAY 2024



LEGEND

 SUBJECT LAND

Base mapping supplied by Nearmap
 & Google Maps



bushfire safety
 CONSULTING
 Science. Culture. Solutions.
 PO BOX 84 STONEVILLE WA 6051
 Mob: 0429 940 252
 www.bushfiresafetyconsulting.com.au

Policy and Guidelines

1.1 Application of SPP 3.7

The *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP 3.7)* provides the foundation for land use planning to address bushfire risk management in Western Australia. It is used to inform and guide decision makers, referral agencies and land owners/ proponents to help achieve acceptable bushfire protection outcomes.

The policy contains objectives and policy measures as well as reference to the bushfire protection criteria, as outlined in the *Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4; the 'Guidelines')*. The policy applies to this subdivision amendment proposal because the subdivision amendment is in a designated bushfire prone area on the WA Map of Bushfire Prone Areas (see Figure 3).

The following policy measures will need to comply with SPP 3.7:

Table 1. Policy measures

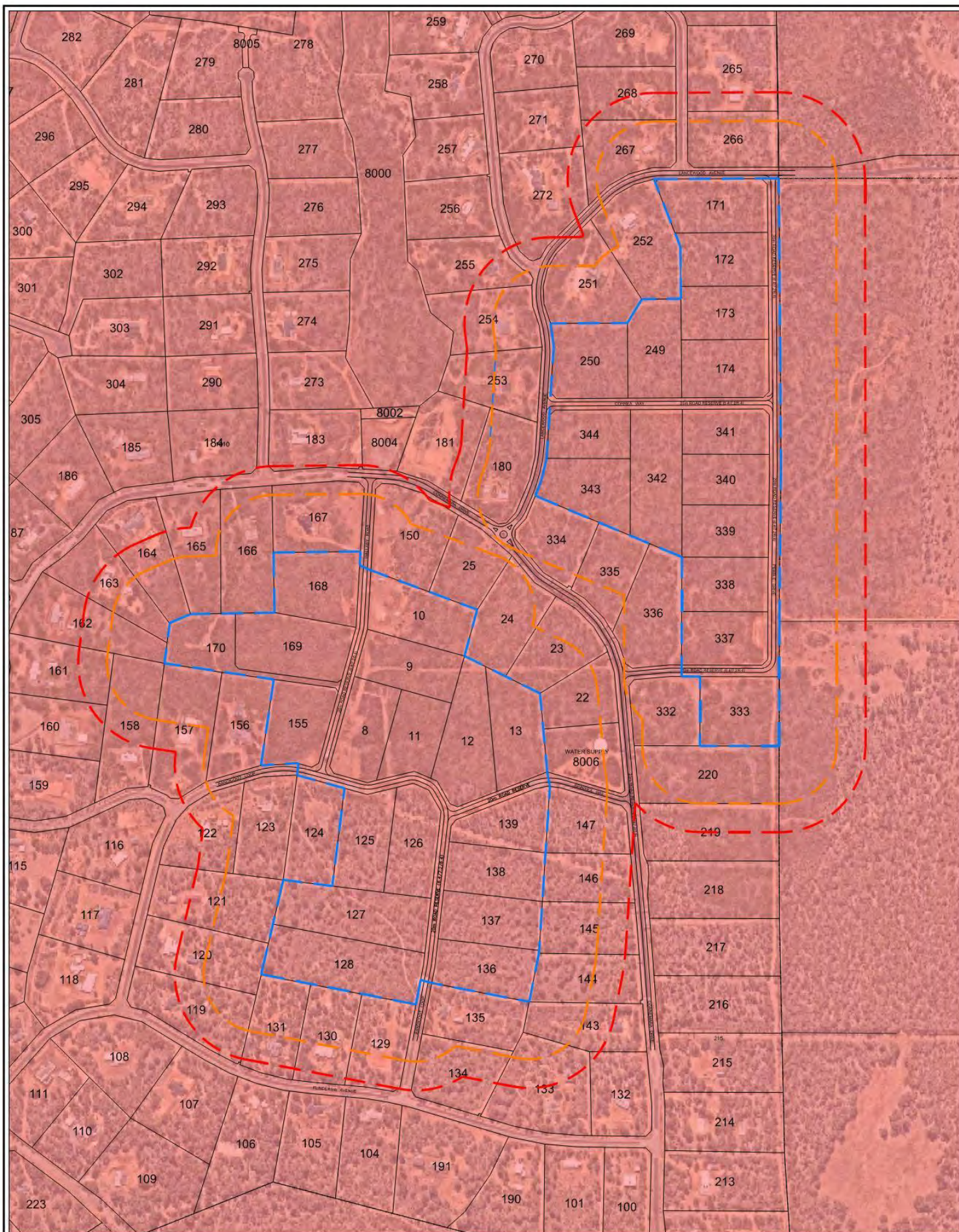
| | |
|---------------------------|---|
| Policy Measure 6.2 | The subdivision amendment application is located within a designated bushfire prone area and will have a Bushfire Hazard Level above low and a Bushfire Attack Level rating above BAL-LOW. |
| Policy Measure 6.4 | Policy 6.4 applies meaning the subdivision amendment proposal will be accompanied by: <ul style="list-style-type: none"> - BAL Contour Plan - Lot specific BAL ratings - Identification of relevant issues; and - Demonstration of compliance with the guidelines |

The subdivision amendment proposal does not propose vulnerable or high-risk land use and is not considered as minor or unavoidable development under *SPP 3.7*.

1.2 Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)

The requirements of The Department of Planning - *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)* are accommodated within this BMP.

The Guidelines are intended to inform and guide decision makers, referral authorities and proponents to achieve acceptable bushfire protection outcomes, including expectations at the different stages of planning.



Location details: Stages 5B and 6 Avon Ridge
Brigadoon
Assessment date: May, 2024
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2025
Date aerial photo: April, 2024

FIGURE 3
BUSHFIRE PRONE AREAS

0 50 100 150 200 250m
SCALE 1:6000 @ A3
DATE: MAY 2024



LEGEND
SUBJECT LAND
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
ASSESSMENT AREA (100m) FROM THE EXTERNAL BOUNDARY OF THE SUBJECT SITE
BUSHFIRE PRONE AREAS

SOURCE OF PHOTOGRAPHY: NEARMAP



bushfire safety
CONSULTING
Science. Culture. Solutions.
PO BOX 84 STONEVILLE WA 6081
Mbl: 0429 949 262
www.bushfiresafetyconsulting.com.au

2 ENVIRONMENTAL CONSIDERATIONS

The site is extensively vegetated and has been identified to contain a number of environmental values that require protection and/or management as part of future development within the site. These values include:

- Priority flora, which is proposed for retention;
- Foraging and potential breeding habitat for the three federally protected black cockatoo species;

Overall, the site has been subject to a number of historic environmental and planning approvals which dictate vegetation retention and management considerations within the site and relate to the protection or minimisation of impacts on the values identified above. In particular, the development is subject to federal environmental approval pursuant to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) which relates to the protection of habitat for the federally protected black cockatoo species.

With regard to bushfire management, the following is a key consideration and have been outlined further below:

- Modification and clearing of vegetation within the proposed development (including roads and strategic firebreaks, etc.) and future lots (including building envelopes, driveways, firebreaks, bushfire management measures etc.)
- Retention of vegetation and revegetation within areas of conservation significance.

2.1 Native Vegetation – modification and clearing

Within the site, clearing and vegetation modification is permitted in accordance with the following:

- Clearing undertaken by the proponent for subdivision, which includes clearing for roads, fire service access route, infrastructure (such as power and water), lot boundaries, lot firebreaks and strategic firebreaks.
- Clearing undertaken by the future lot purchaser, which includes clearing for building envelopes (associated with the dwelling and outbuildings, with no more than 10% of the gross lot area to a maximum of 2000m² clear felled), driveways and asset protection zones.

Bushfire management requirements have been considered as part of the above, and is detailed below.

2.1.1 Clearing undertaken by the proponent

As part of implementing the subdivision, Corrib will undertake typical subdivision works to support development which includes the clearing of vegetation to support the installation of public roads and public infrastructure (such as power, water and telecommunications). In addition, Corrib will install the internal lot firebreak for future private lots (which will be maintained in perpetuity by the lot purchaser), and

a number of strategic perimeter firebreaks throughout the development, which are intended to support firefighting/controlled burn activities.

2.1.2 Clearing undertaken by the purchaser

Overall, construction of dwellings and outbuildings is restricted to the 'building envelope areas' (BEAs), with clearing of vegetation permitted within this area (excluding habitat areas, areas of 'pristine' or 'excellent' condition vegetation and significant trees identified for retention where they occur within the BEA). The BEAs have been designated over all lots in the site to protect environmental values such as creek lines and creek line buffers, areas of 'pristine' and 'excellent' condition vegetation, known and potential priority flora locations and potential black cockatoo breeding habitat. The BEAs are also based on achieving the minimum setbacks from nearby lots, in accordance with the structure plan and City of Swan requirements.

The provisions of the structure plan (as endorsed by the City of Swan) state that final building envelopes (i.e., the footprint for the future dwelling and associated outbuildings within the BEA) are to be 'no more than 10% of the Gross Lot Area to a maximum of 2000m²'. Corrib provide a service to purchasers to have the building envelope and asset protection zone (APZ) within their lot inspected by a qualified bushfire consultant (at Corrib's cost) to ensure compliance prior to the commencement of any clearing within the lot. Generally, vegetation within the BEA can be cleared, while outside of this, vegetation modification should be restricted to the minimum necessary to achieve 'low threat' vegetation standards (where it is required to achieve the asset protection zone requirements).

To assist the development to comply with both the environmental approval requirements and bushfire management requirements, Corrib have instigated the following process:

- BEAs are designated within the subdivision and are based on minimising impacts on environmental values.
- Following purchase of a lot, the qualified bushfire consultant (engaged by Corrib on behalf of the purchaser) meets with the purchaser to determine the site-specific requirements of the lot. This is documented in a Bushfire Management Statement to support planning approval and assist the owner to understand their ongoing obligations.
- The dwelling is designed, with the buildings and associated outbuildings (i.e., sheds etc.) to cover no more than 10 % of the Gross Lot Area to a maximum of 2000m² (i.e., within the BEA).
- Based on the dwelling design, the asset protection zone (the extent of vegetation modified and/or removed) is determined in consultation with the bushfire consultant. This will be sized to ensure a BAL rating of BAL-29 or less is achieved.
- Vegetation clearing and modification is completed by the purchaser. The lot specific BAL assessment is then certified to support the building licence.
- Purchaser maintains the asset protection zone in perpetuity, with vegetation clearing / modification restricted to this area.

2.2 Re-vegetation/ Landscape Plans

Extensive native vegetation will be retained within private lots, with restrictions on the level of clearing within the site and broader Avon Ridge Estate, as outlined above. Further to this a single large area of public open space is identified in the central portion of the site, which has been located to retain and protect areas of significant vegetation, a waterway (and associated buffer), and Aboriginal heritage values.

In addition to the retention of vegetation values within the site, a total of 88,000 seedlings were planted by the previous landowner / developer as required by the conditional EPBC Act approval. Revegetation will be targeted to within the Parks and Recreation Reserve west of the site to optimise the success of plant establishment and survival.

The revegetation works west of the site does not increase the bushfire risk to future dwellings within the site given these revegetation areas are located more than 100 m from the site, and vegetation within 100 m of the site is not expected to change or be modified. Furthermore, vegetation retained within private lots and vegetation that will regenerate naturally in road reserves have been assumed to pose a long-term bushfire hazard to the site and individual lots. In general, the BAL assessment completed to support this BMP assumes all vegetation outside the individual lot will remain in its existing and regenerated condition (and therefore does not include any consideration of the vegetation clearing or modification that all lots will be subject to, as outlined above) in order to provide a worst-case assessment of bushfire hazard.

3 BUSHFIRE ASSESSMENT RESULTS

Bushfires are common in the City of Swan and a large landscape scale bushfire impacted areas of Avon Ridge Estate in February 2021. This bushfire destroyed 86 homes in the broader Gidgegannup area, however all homes in Avon Ridge were saved. The estate will experience more bushfires in the future; hence this BMP plays a critical role in ensuring that the development of the land appropriately mitigates the risk from bushfire from the surrounding vegetation.

3.1 Assessment Inputs

The methodology used to assess the site is outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The lot layout is known, and a strategic level bushfire hazard assessment is not required. A BAL Contour map is provided in accordance with Appendix 3 of the guidelines.

Assessing bushfire threat at the site-specific level requires evaluating the predominant class of vegetation on the site and surrounding area for a minimum of 150 m, as shown in the Vegetation Classification Map (Figure 4).

3.1.1 Vegetation Classification




An assessment of existing vegetation within and 150 m surrounding the site was undertaken in accordance with AS 3959 and the Guidelines on 7th September 2022. Table 1 below outlines the type of vegetation currently within and surrounding the site, and the




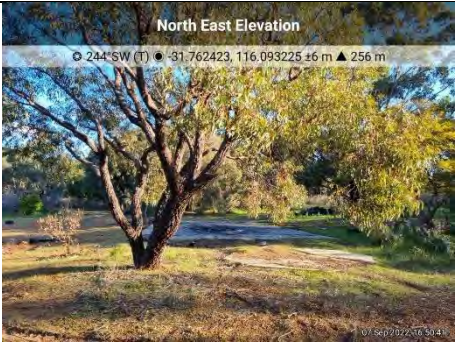

classification of this vegetation in accordance with Section 2.2.3 and Table 2.3 of AS 3959. The existing vegetation classifications within and surrounding the site are shown in Figure 4.

Given the scale of the site and in particular the extent of classified vegetation within and surrounding the site, no specific 'effective slope numbers' have been used to identify individual plots because the same area of vegetation can have different effective slopes for different and adjacent dwellings. Plots of classified vegetation is clearly identified on the vegetation classifications in Figure 4. Individual dwelling plots and effective slopes are re-assessed as part of future building licence stage BAL assessments, in order to identify and describe the areas of classified vegetation impacting on each individual dwelling, and will be more relevant to informing the BAL ratings for future dwellings.


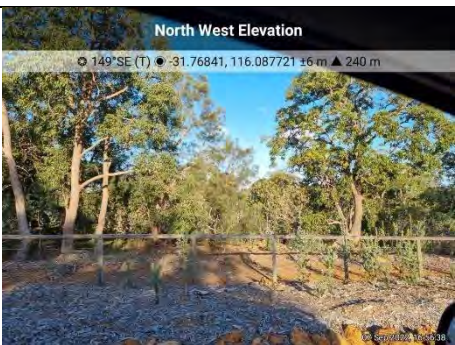


Much of the site was impacted by the Wooroloo bushfire and vegetation classifications have been assessed from aerial photography pre-bushfire which provides a more realistic assessment of eucalypt canopy cover.




The vegetation plots on and surrounding the site and within 150 metres of the site boundary are found in Figure 4 with plot descriptions below.

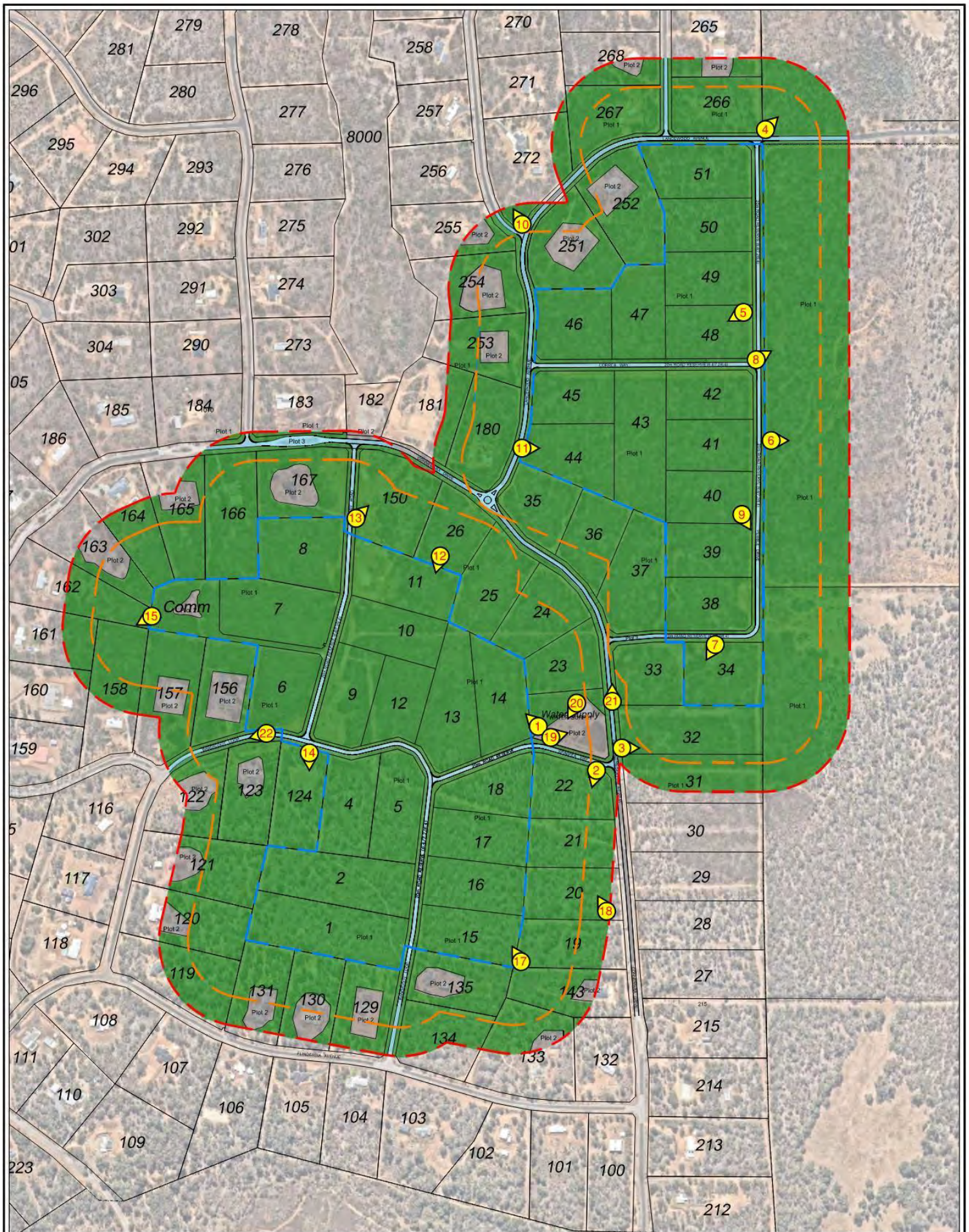
| | |
|--|--|
| <p>Photo ID: 1</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 2</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 3</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 4</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 5</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 6</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 7</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 8</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 9</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 10</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 11</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Area burnt in the Wooroloo bushfire in 2021 and containing an overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and some scrub vegetation.</p> |  |
| <p>Photo ID: 12</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 13</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification:</p> <p>Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|--|--|
| <p>Photo ID: 14</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 15</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 16</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 17</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |
| <p>Photo ID: 18</p> <p>Plot Number: 1</p> <p>Vegetation classification or exclusion clause:</p> <p>Class: A Forest</p> <p>Description/justification of classification: Overstorey of mature Eucalypt trees with canopy foliage cover 30-70%, understorey of shrubs and scrub vegetation.</p> |  |

| | |
|---|--|
| <p>Photo ID: 19</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Asset Protection Zone around water infrastructure</p> |  |
| <p>Photo ID: 20</p> <p>Plot Number: 2</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(f)</p> <p>Description/justification of classification: Asset Protection Zone around water infrastructure</p> |  |
| <p>Photo ID: 21</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Sealed public road.</p> |  |
| <p>Photo ID: 22</p> <p>Plot Number: 3</p> <p>Vegetation classification or exclusion clause: Exclusion Clause 2.2.3.2(e)</p> <p>Description/justification of classification: Sealed public road</p> |  |



Location details: Stages 5B and 6 Avon Ridge
Brigadoon
Assessment date: May, 2024
Prepared by: Bushfire Safety Consulting
Accreditation level: Level 3 BPAD Practitioner
Accreditation number: BPAD 23160
Accreditation expiry date: 31st January, 2025
Date aerial photo: April, 2024

FIGURE 4 - VEGETATION
CLASSIFICATION MAP
(BAL CONTOUR MAP)

0 50 100 150 200 250m
SCALE 1:6000 @ A3
DATE: MAY 2024



LEGEND:
SUBJECT LAND
ASSESSMENT AREA (150m) FROM THE
EXTERNAL BOUNDARY OF THE SUBJECT SITE
ASSESSMENT AREA (100m) FROM THE
EXTERNAL BOUNDARY OF THE SUBJECT SITE
PLOT 1 CLASS A FOREST
PLOT 2 - EXCLUSION CLAUSE 2.2.3(a)
PLOT 3 - EXCLUSION CLAUSE 2.2.3(b)

SOURCE OF PHOTOGRAPHY: NEARMAP



bushfire safety
CONSULTING

Science. Culture. Solutions.

PO BOX 84 STONEVILLE WA 6081
Mbl: 0429 949 262
www.bushfiresafetyconsulting.com.au

3.2 Effective Slope

The effective slope under areas of classified vegetation will impact the direction and rate of spread of a bushfire. For the purposes of this BMP, the slope of the land beneath classified vegetation varies for every single lot and an analysis has been undertaken on each individual lot to develop the BAL Contour Plan (Figure 5).

The effective slope has been determined through the analysis of topographic survey contours across the site and surrounding 150m. Slope ranges from effectively flat/upslope, to downslope 10-15°, as shown in Table 2.

It is important to note that multiple lots may be oriented differently in relation to the slope beneath any single area of classified vegetation. This means that while one piece of classified vegetation may be upslope from one lot, the same piece of classified vegetation may be downslope from another nearby lot. Where the effective slope of an area of classified vegetation impacts differently on multiple adjacent lots the highest effective slope has been applied to this area of classified vegetation. This provides a subdivision-scale conservative assessment of the slope within the site and nearby.

The topography and effective slope are outlined in Table 2 and have been used to determine the BAL Contour plan in Figure 5.

3.2.2 Assessment methodology and assumptions

The BAL assessment for the site has been undertaken in accordance with method 1 of AS 3959 (as outlined in Section 3.1) to determine the maximum heat flux to which future dwellings within the site are likely to be exposed.

As the site is proposed to be developed for rural residential purposes, the exact location of the dwelling and any associated asset protection zone will be determined at the building licence stage. However, to understand whether the lots and designated BEAs are appropriately sized and located to accommodate a BAL rating of BAL-29 or less for future dwellings, each lot within the site has been assessed individually based on the following:

- Classified vegetation within 150 of each lot, assuming all vegetation outside the lot remains in its existing condition. This is considered a worst-case scenario for bushfire hazard and ensures lot owners are only reliant on management within their own property to achieve a BAL rating of BAL-29 or less.
- Effective slope under the classified vegetation within 150 m of each lot. The effective slope is based on topographic contours and aspect of surrounding areas for each lot.
- The entire lot (being assessed) is considered to be managed in accordance with Clause 2.2.3.2(f) of AS 3959. While it is unlikely for the majority of lots that all vegetation within the lot will be cleared or modified, this approach presents a spatial representation of the likely management areas able to be accommodated within each lot.

The individual BAL assessment results for each lot have then been mapped individually before combining each into a single subdivision-wide BAL contour plan, provided in Figure 5.

Overall, the BAL assessment criteria assumed includes:

- Designated FDI: 80
- Flame temperature: 1090
- Vegetation classification: Forest (Class A), (see Figure 4), noting each lot has been assessed individually.
- Effective slope: flat/upslope, downslope 0-5°, downslope 5-10°, downslope 10-15° noting each lot has been assessed individually and the effective slope is considered worst-case.
- Setback distances: as per Table 2.4.3 in AS 3959, and outlined in Table 2 and Figure 4.

In addition to the above, the following key assumptions have informed this assessment:

- Management measures for each lot (i.e. Asset Protection Zone) is assumed to be restricted to within the lot boundary, and is not reliant on management occurring within adjacent rural residential lots.
- A 3 m firebreak will be installed by the developer immediately inside the boundary of each private lot, and will be maintained in the long term by each landowner in accordance with the requirements of the City of Swan's Fire Hazard Reduction Notice.
- Public roads are being installed by the developer in accordance with the approved subdivision layout, to the minimum standards required under Appendix Four of the Guidelines.

3.3 Assessment Outputs

A BAL contour assessment was undertaken according to Appendix 3 of the Guidelines and the results are found in the BAL Contour Map at Figure 5.

A Method 1 BAL Assessment was undertaken to determine the BAL contours impacting the site.

Table 2. Summary of assessment outputs for all scenarios at the site

| Vegetation Classification | Effective slope | Minimum setback to achieve BAL-29 |
|---------------------------|------------------|-----------------------------------|
| Class A Forest | Flat / upslope | 21m |
| | Downslope 0-5° | 27m |
| | Downslope 5-10° | 33m |
| | Downslope 10-15° | 42m |
| | Downslope 0-5° | 10m |
| | Downslope 5-10° | 11m |
| | Downslope 10-15° | 13m |
| | Downslope 10-15° | 12m |

The results of the BAL assessment indicate that all future dwellings within the site can be located within the designated BEAs without a BAL rating of BAL-29 being exceeded (noting the BEAs are generally significantly larger than the 10% gross lot area that can be developed in accordance with the structure plan, therefore there is opportunity to locate a dwelling in various locations within the BEA). Each lot can accommodate the relevant separation distances internally to ensure BAL-29 is not exceeded without relying on vegetation modification/management within adjacent private landholdings.

Final dwelling locations will be determined through the building licence process in consultation with the bushfire consultant engaged by Corrib on behalf of lot purchasers, who will assist lot owners to locate their dwelling appropriately within the BEA, with the building BAL rating to be based on modification/management of vegetation within the individual lot only. This managed area will form the basis for the lot-specific asset protection zone, and will be able to accommodate the vegetation protection requirements.

This process may result in classified vegetation being retained within the lot, however the dwelling will be located in such a way that ensures an asset protection zone is completely accommodated within the lot (except where potential to be located outside e.g., within adjacent established firebreak), as assessed by the bushfire consultant.

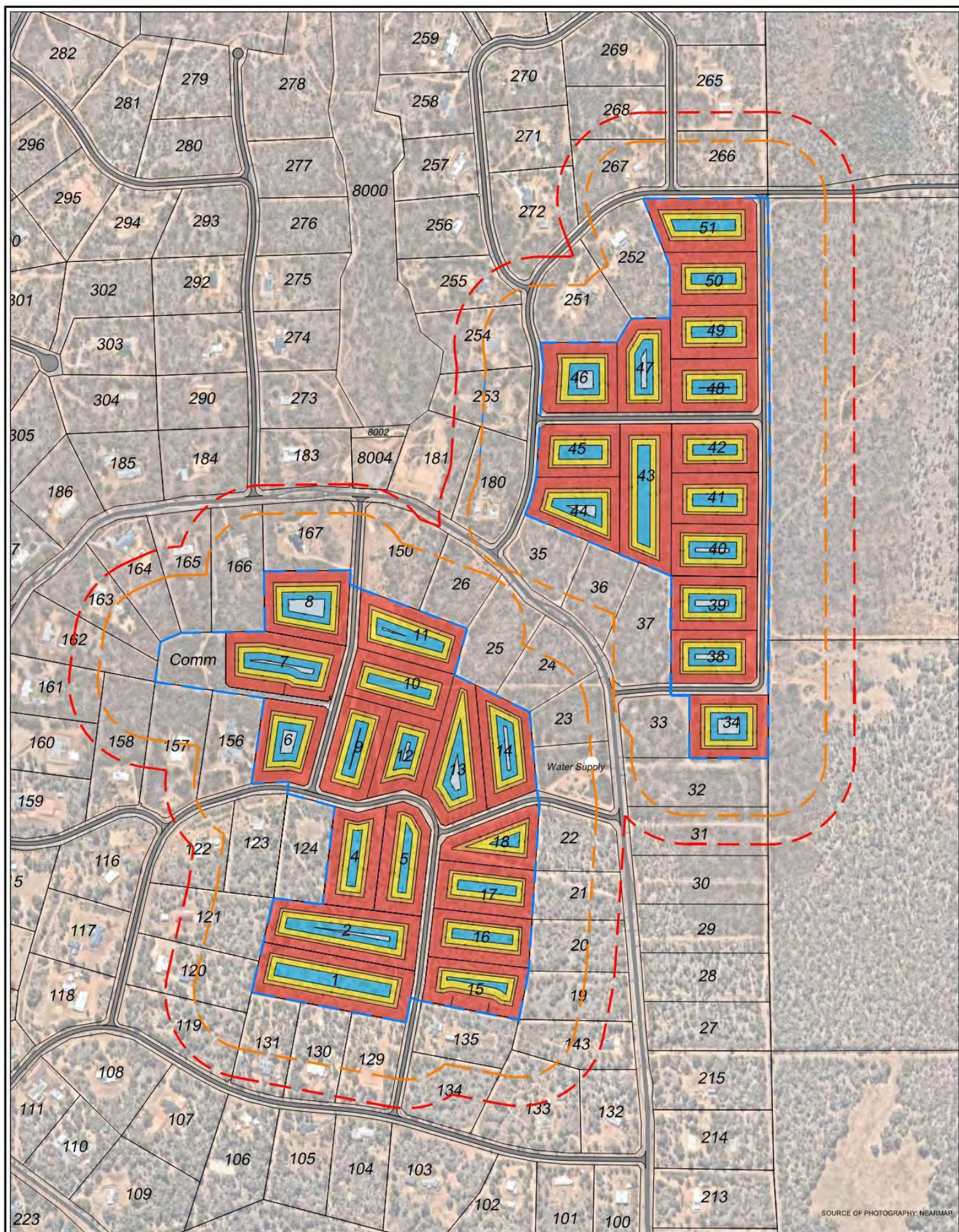
The final developed scenario is outlined in Figure 6 as a spatial representation of the bushfire management strategies.

4 IDENTIFICATION OF BUSHFIRE HAZARD ISSUES

From a bushfire hazard management perspective, the key issues requiring management include:

- Separation distances within individual lots to ensure a BAL rating of BAL-29 or less is achieved at the dwelling. This includes consideration of particular areas of vegetation retention and/or revegetation. Overall, given each lot has been assessed on the basis that all surrounding areas will remain in their existing condition, vegetation retention and revegetation has been accommodated through this assessment. Therefore, the primary ongoing consideration will be ensuring that habitat trees are retained within lots where these are located within BEAs and / or asset protection zones.
- Meeting increased building construction standards through the building licence process.
- Fuel management within future individual lots (in particular each lot ensuring the asset protection zone is implemented and maintained in perpetuity).
- Providing appropriate vehicular access.
- Provision of appropriate water supply and associated infrastructure.

Predicted ember attack and radiant heat could impact the site as evident in the BAL contour plan (Figure 5).



SOURCE OF PHOTOGRAPHY: NEARMAP

Location details: Stages 5B and 6 Avon Ridge Brigadoon
 Assessment date: May, 2024
 Prepared by: Bushfire Safety Consulting
 Accreditation level: Level 3 BPAD Practitioner
 Accreditation number: BPAD 23160
 Accreditation expiry date: 31st January, 2025
 Date aerial photo: April, 2024

FIGURE 5
BAL CONTOUR MAP

0 50 100 150 200 250m
 SCALE 1:6000 @ A3
 DATE: JUNE 2024



INDICATIVE BUSHFIRE ATTACK LEVELS

- BAL LOW
- BAL 12.5
- BAL 19
- BAL 29
- BAL 40
- BAL FLAME ZONE

bushfire safety
 CONSULTING
 Science. Culture. Solutions.
 PO BOX 84 STONEVILLE WA 6081
 Mbl: 0429 949 262
www.bushfiresafetyconsulting.com.au

5 ASSESSMENT AGAINST THE BUSHFIRE PROTECTION CRITERIA

This report adopts an acceptable solution and performance-based system of control for each bushfire protection criteria. This methodology is consistent with Appendix 4 of the *Guidelines for Planning in Bushfire Prone Areas, Version 1.4 (2021)*. The management issues are:

- Location of the Development.
- Siting and Design of Development.
- Vehicular access.
- Water.

Acceptable solutions are achieved for all of the bushfire protection criteria due to the increased Fire service Access route connections provided in this proposal.

5.1 Compliance Table

Land use planning bushfire risk mitigation strategies are comprehensively detailed in the following sections by providing responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the *Guidelines for Planning in Bushfire Prone Areas V1.4 (2021)*. The compliance checklist is attached as Table 4.

| Table 3: Compliance Table | | |
|-------------------------------------|----------------------------------|---|
| Bushfire Protection Criteria | Method of compliance | Proposed bushfire management strategies |
| | Acceptable Solutions | |
| Element 1: Location | A1.1 Development Location | The Method 1 BAL Assessment in this report demonstrates the classified vegetation in the area surrounding the site and each lot does have an impact, but each lot can accommodate a dwelling exposed to BAL-29 or lower. |
| Element 2: siting and Design | A2.1 Asset Protection Zone (APZ) | <p>The BAL assessment and BAL Contour Plan (Figure 5) indicates that an appropriate APZ can be accommodated within each lot, based on the surrounding vegetation and effective slope. The BAL assessment assumes that no management or modification of vegetation occurs outside the lot. The specific APZ applicable to a future dwelling will be determined as part of the building licence and construction stage by the bushfire consultant, in consultation with the lot owner and will be based on the proposed dwelling location within the BEA. The APZ is managed in accordance with the requirements of the standards in Appendix 1.</p> <p>The determined APZ will be maintained in perpetuity to ensure fuel load is maintained at two tonnes per hectare or less. It is expected that any identified habitat trees will be retained within APZ areas, with dwellings located to minimise removal of these values (with maintenance of understorey fuels enabling the retention of these trees). Lot specific APZ maintenance requirements will be informed by the bushfire consultant through the building licence stage BAL assessment and Bushfire Management Statement.</p> |
| Element 3: Vehicular Access | A3.1 Public Roads | The public roads to be created, as well as surrounding existing roads, comply with minimum public road standards outlined in Appendix 2. |
| | A3.2a Multiple access routes | Public road access is provided in two different directions with access to Campersic Road to the south of Avon Ridge Estate via Connemara Drive and O'Brien Road to the east via Lancewood Avenue. |
| | A3.2b Emergency access way | An Emergency Access Way is not proposed or required. |
| | A3.3 Through roads | All proposed roads in stages 5 and 6 are through roads and comply with A3.3. |
| | A3.4a Perimeter roads | Perimeter roads are achieved around most of the subdivision stage as previously approved. All lots have public road frontage. |

| | | |
|--|---------------------------------|--|
| | A3.4b Fire service access route | <p>Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. This will be installed by the developer initially, then maintained by the lot owner.</p> <p>A strategic firebreak / fire service access route will be finalised on the eastern perimeter of the land (forming part of Lot 34) to connect the existing FSAR that link to Connemarra Drive.</p> <p>The strategic firebreak / fire service access route will be installed to the following standards</p> <ul style="list-style-type: none"> Where strategic firebreaks are installed, the following is required: <ul style="list-style-type: none"> Minimum 6 metre wide with a 4m trafficable surface Minimum 4m vertical clearance over the full 6 m width Where the FSAR is within private lots, no fencing/gates or any form of obstruction is to cross the FSAR At regular intervals (every 2 to 3 lots, approximately), a linking firebreak to the public road network is provided. This link is to be located within a single lot and can be a part of the lot access (i.e., driveway) within each lot, or adjacent to the lot boundary as part of the internal firebreak. These links do not necessarily have to be located on the lot boundary, but must be accessible at all times. Rural gates (minimum width 4.1 metres) will be installed by Corrib/the developer in the fence line with a standard City of Swan key system (to prevent unauthorised vehicle access) to provide access from the FSAR to the linking firebreak. To prevent unauthorised access through private lots along the FSAR, landowners may fence the side of the FSAR (adjacent the cleared trafficable and shoulder area). Rural gates (minimum width 4.1 metres) will be erected where the FSARs interfaces with a public road, with a standard City of Swan key system to prevent unauthorised vehicle access. These gates will be installed by Corrib/developer prior to the clearance of lot titles. Signage will be provided where FSARs meet public roads, indicating the FSARs are for “Fire Access Only.” Signage will be installed by Corrib/the developer prior to clearance of lot titles (within each applicable clearance stage) and will be to the standards/specifications required by the City of Swan. As a minimum, this is likely to include: <ul style="list-style-type: none"> Signage should be 225 mm X 150 mm where the FSAR linking firebreak meets a public road and/or where the FSAR linking firebreak meets the FSAR. Signage should be 600 mm X 400 mm where the FSAR meets a public road. An example of emergency access signage, as required by the City of Swan, is attached in Appendix 4. The City of Swan may install gates across the FSAR in strategic locations throughout the site, at their discretion. <p>For the FSARs, these will be installed by Corrib/the developer to the satisfaction of the City of Swan prior to the clearance of lot titles and maintained by Corrib/the developer until all affected lots (within each applicable clearance stage) are sold.</p> |
|--|---------------------------------|--|

| | |
|--|---|
| | <p>The FSAR will be placed in an easement in favour of the City of Swan.</p> <p>Following purchase of the lots, maintenance of FSARs occurring within private property is the responsibility of the purchaser. The City of Swan may choose to maintain FSARs were occurring on private lots and may establish a levy system to fund these maintenance works. Where FSARs occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover from the developer.</p> <p>Corrib/the developer will rectify, at its cost and to the reasonable satisfaction of the City, any defect in respect to the FSAR which arises within two (2) years of the subdivision stage clearance dates for the portion of the land in which the defects arise. Defects shall include any fault in the construction and maintenance of the firebreaks by Corrib/the developer or any failure to seal a portion of the firebreaks which were required to be sealed, but does not include general or routine maintenance.</p> |
|--|---|

| | | |
|--|---|--|
| | A3.5 Battle-axe access legs | No battle-axe lots are proposed. |
| | A3.6 Private driveways | <p>It is likely that a number of lots will have dwellings positioned more than 70 metres from a public road based on the location of the BEA and/or the location of the dwelling within the BEA. Where dwellings are sited 70 m from the road, the following will be complied with:</p> <ul style="list-style-type: none"> • Where dwellings are more than 70 m from a public road, access to the dwelling and turn-around areas will be provided for conventional two-wheel drive vehicles as well as type 3.4 fire appliances. • Turn-around areas are to be provided within 50 m of the dwelling, with a loop driveway potentially considered an acceptable alternative. • Where driveways are longer than 200 m, passing bays should be provided at 200 m intervals (or the trafficable width of the driveway increased to 6 m). Passing bays need to be a minimum 20 m in length and 6 m wide. |
| Element 4: Water | A4.1 Identification of future water supply | Reticulated Water supply provided. |
| | A4.2 Provision of water for firefighting purposes | <p>The development is located within an Emergency Services Levy (ESL) Category 3 Urban Metropolitan area, which indicates that bushfire events are responded to by volunteer bushfire brigades with the availability of a network of career firefighters and the State Emergency Services (SES) as required. Fire response services require ready access to an adequate water supply during bushfire emergencies.</p> <p>The development will be provided with a reticulated water supply, together with fire hydrants that will be installed by the developer to meet the standard specifications of Water Corporation (Design Standard DS 63) and DFES.</p> <p>An existing Water Corporation regional water tank is located within the site (see Figure 6). The development has access to a reticulated water supply. Hydrants will be spaced according to the Water Corporation's No. 63 Water Reticulation Standard.</p> |
| Element 5: Vulnerable Tourism Land Uses | A5.1 Siting and Design | Not applicable |

5.2 Additional Management Strategies

5.2.1 Future site assessment and approval considerations

As part of the lot sales process, Corrib have appointed Bushfire Safety Consulting as their designated Fire Management Consultant (FMC). The role of the FMC is to undertake individual lot BAL assessments following purchase and to ensure necessary fuel reduction is undertaken within purchased lots whilst retaining identified habitat and significant trees. The lot specific assessment and advice follows the following key steps:

1. Preliminary onsite inspection

- The lot owner is firstly required to inform Corrib of the proposed house design and building envelope. Corrib then arranges the initial inspection by the FMC to inspect the lot to determine if the building envelope is in a suitable location based on the ability to accommodate an appropriate asset protection zone (APZ) within the lot, surrounding the proposed house.
- The lot owner is encouraged to be present during the inspection to familiarise themselves with and attain knowledge of the BAL assessment process and any fuel hazard reduction requirements.
- If the building envelope is determined to be in a suitable location by the FMC, a bushfire management statement (incorporating the BAL assessment and APZ advice) will be undertaken in accordance with AS 3959 and the lot owner can proceed with an application for a building license from the City of Swan.
- At the initial inspection by the FMC, should the FMC determine that the building envelope is not in a suitable position, an alternative building envelope will be chosen by the lot owner in consultation with the FMC and the pre-clearing site inspection and bushfire management statement will follow.
- The lot owner can then proceed with the building licence application at the City of Swan as described below.

2. Lot specific BAL assessment and APZ advice

- The BAL assessment determines the building construction requirements to withstand bushfire attack, based on the specific placement of the house within the lot and the implementation of suitable APZs. The BAL assessment takes into account a number of factors including the Fire Danger Index, the slope of the land, classification of surrounding vegetation and its proximity to any building.
- Specific advice on modification of vegetation within the APZ will be prepared and the information recorded in the bushfire management statement.
- During the pre-clearing site assessment, the FMC identifies and labels individual trees and identifies areas of leaf litter and fuel load to be removed to attain the fuel load requirements in the APZ as well as advising lot owners on ongoing maintenance requirements to maintain low fuel load levels. The FMC will consider the requirements to meet the APZ in accordance with the Guidelines while avoiding extensive clearing.

- The lot owner submits to the City of Swan the position of building envelope, location of vegetation and the bushfire management statement.

3. Post clearing site inspection and BAL certification

- Following the issue of a conditional building licence approval by the City of Swan, the landowner undertakes vegetation modification in accordance with the bushfire management statement.
- Following vegetation modification, the FMC conducts another site inspection prior to the City of Swan issuing final building approval, to confirm that the vegetation modification has been completed in accordance with the advice provided. If implemented properly, the FMC will complete a BAL and APZ certification.
- This BAL and APZ certification can then be lodged by the lot owner with the City of Swan to clear the condition of approval, and the final building licence can be issued.

A summary of management strategies is outlined in Figure 6.

There are no specific Vulnerable or High-Risk Land Uses proposed at the site. Any specific applications will trigger the necessary requirements under State Planning Policy 3.7.

5.2.2 Landscape Treatments

5.2.2.1 Within future lots

As outlined above, the exact location of future dwellings and any associated APZs will be determined at the building licence stage through consultation with the FMC and the City of Swan, and will influence the areas within each lot to be cleared or modified/managed as part of the future development.

The Guidelines (WAPC and DFES 2021) state that an APZ needs to be wide enough to ensure that the maximum BAL rating for buildings adjacent to classified vegetation will not exceed BAL-29. It is the role of the FMC to determine an appropriate APZ width and treatment for each proposed dwelling, based on the ultimate location within the BEA. Typical maintenance standards for APZs are outlined in Appendix 1.

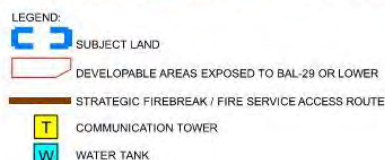
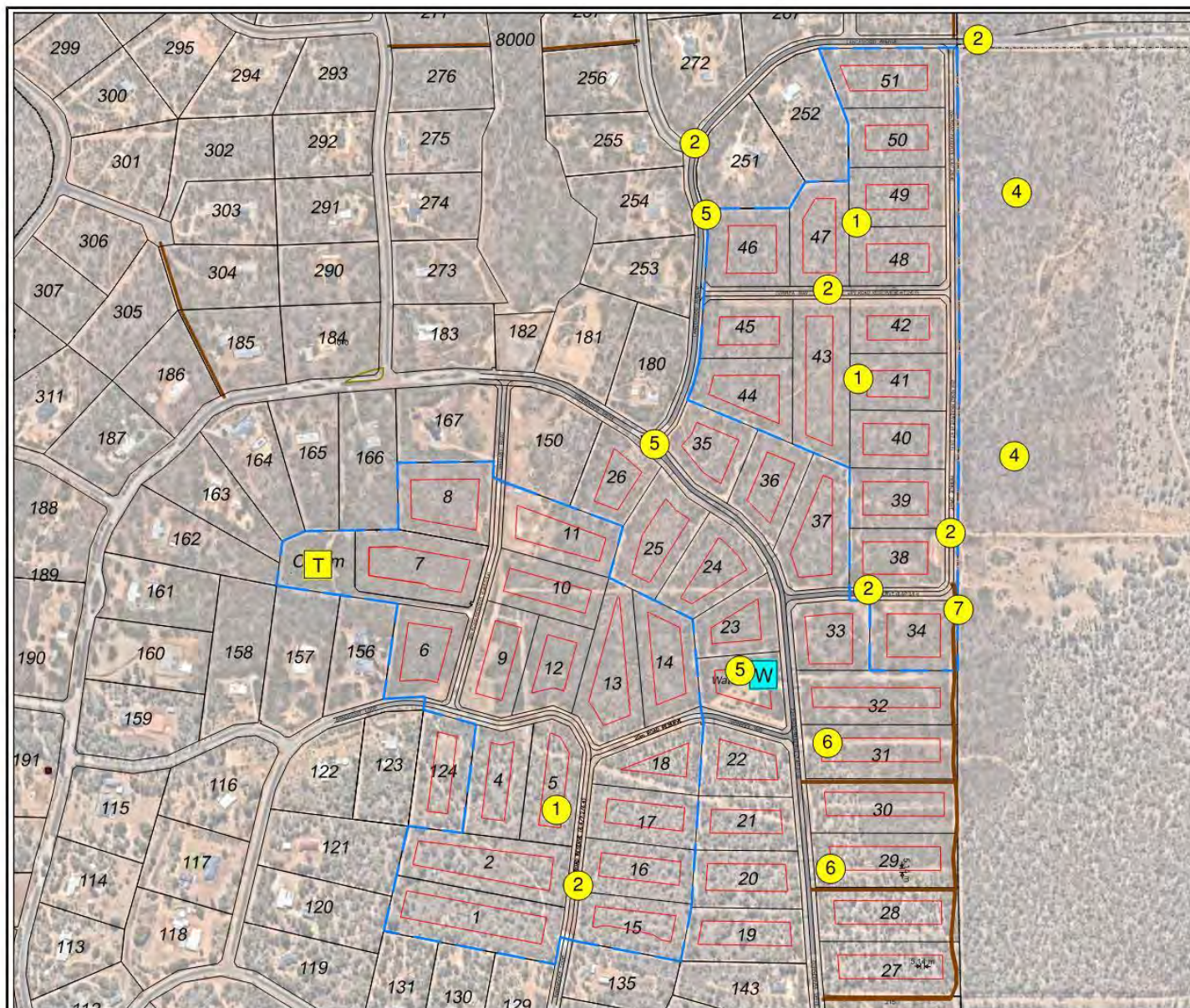
5.2.2.2 Within road reserves

Road reserves are cleared for the civil works, but all BAL ratings are determined on the basis that all road verges naturally revegetated to Class A forest vegetation. It has been assumed as an extreme bushfire hazard as part of this assessment.

5.2.2.3 City of Swan firebreak notice

Each private lot is required to comply with the requirements of the City of Swan Fire Hazard Reduction Notice (as published), which requires a 3 m internal firebreak to be established and maintained immediately inside and adjacent to all external property boundaries. Corrib will install this firebreak as part of subdivision, but following the purchase of the lot, the lot purchaser will be responsible for the ongoing maintenance of this area.

For the strategic firebreaks, these will be installed by Corrib as part of subdivision, but following purchase of the lots, lot purchasers will be responsible for the maintenance of strategic firebreaks occurring within their property, while where strategic firebreaks occur within public open space or the Parks and Recreation Reserve, these will be the responsibility of the City of Swan following handover as part of the subdivision process.



REQUIREMENTS

1. The proposed lots contain building envelope areas that are exposed to BAL-29 and lower with each lot being able to accommodate an APZ within each the lot boundary.
2. The internal roads comply with minimum standards and provides access around the perimeter of the site and throughout the site. Compliant public roads are provided for fire fighting appliances and residents including access onto the surrounding public road system.
3. All residents have access to surrounding public roads and access to the east and south of the estate on the public road network.
4. The Class A forest vegetation in and around the site poses the greatest threat from bushfire.
5. The area is provided with a water supply and pump infrastructure that is exposed to BAL-29 and lower. Fire hydrants are located throughout the site in the public road reserves to minimum standards.
6. The Fire Service Access Routes/ Strategic Firebreak includes an additional connections between the eastern FSAR and Connemarra Drive.
7. The approved FSAR provides a perimeter connection around the entire site where public roads are not positioned on the perimeter.

FIGURE 6 - SPATIAL REPRESENTATION OF BUSHFIRE MANAGEMENT STRATEGIES

6 RESPONSIBILITIES FOR IMPLEMENTATION AND MANAGEMENT OF THE BUSHFIRE MEASURES

Table 5 outlines the initial and ongoing responsibilities, actions and associated works that need to be undertaken by the Developer, neighbours, future landowners and the City of Swan. The check boxes for implementation actions will be used for subdivision clearance. A Bushfire Planning Practitioner will certify the BAL ratings are correct and necessary implementation actions have been completed.

Table 4. Responsibility for bushfire measures

| DEVELOPER – PRIOR TO ISSUE OF TITLES | | |
|---|---|--------------------------|
| No. | Implementation Action | Subdivision Clearance |
| 1 | Install 3m wide firebreaks inside each residential lot boundary compliant with City of Swan firebreak notice. | <input type="checkbox"/> |
| 2 | Install the public roads to standards outlined in this report. | <input type="checkbox"/> |
| 3 | Install hydrants to the Water Corporation’s No. 63 Water Reticulation Standard. | <input type="checkbox"/> |
| 4 | Install the strategic firebreaks / Fire Service Access Route (as shown in Figure 6). The firebreak should be installed to the standards outlined in Appendix 2. | <input type="checkbox"/> |
| 5 | As part of the building license application stage, have the lots/dwelling(s) assessed for the BAL rating by a qualified consultant with BAL rating submitted to support building license stages. | |
| 6 | A notification, pursuant to Section 70A of the Transfer of Land Act 1893 is to be placed on the certificate(s) of title of the lots within the Bushfire Prone Area. Notice of this notification is to be included on the diagram or plan of survey (deposited plan). The notification is to state as follows: 'The lot(s) is/are subject to a Bushfire Management Plan.' (Local Government)”. | |
| DEVELOPER – AT SALE OF LOTS | | |
| 7 | Make a copy of this BMP available to each lot along with the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan’s Firebreak Notice. | |
| 8 | Maintain future development stages in a low threat condition so as not to pose a threat to the development | |
| LANDOWNER/OCCUPIER – ONGOING MANAGEMENT | | |
| 9 | Maintain the Asset Protection Zone (APZ) to standards stated in this BMP. | |

| | |
|--|--|
| 10 | Ensure construction of buildings complies with AS 3959:2018. |
| 11 | If buildings are subject to additional construction in the future, AS 3959:2018 compliance is required. |
| CITY OF SWAN – ONGOING MANAGEMENT | |
| 12 | Maintain public roads to appropriate standards and ensure compliance with the City of Swan's Fire Control Notice. |
| 13 | Provide fire prevention and preparedness advice to landowners upon request, including the <i>Homeowners Bush Fire Survival Manual, Prepare, Act, Survive</i> (or similar suitable documentation) and the City of Swan's Fire Control Notice. |

Certification by Bushfire Consultant

I _____ certify that at the time of inspection, the BAL ratings contained within this BMP are correct; and implementation actions 1 - 4 have been undertaken in accordance with the BMP.

Clearance is recommended.

Signature: _____

Date: _____

7 CONCLUSION

This Plan provides acceptable solutions and responses to the performance criteria that fulfil the intent of the bushfire hazard management issues outlined in the Guidelines for Planning in Bushfire Prone Areas (WAPC 2021 V1.4).

However, community bushfire safety is a shared responsibility between governments, fire agencies, communities and individuals.

The amended subdivision is located in the bushfire prone area (i.e., within 100 m of classified vegetation) and risk is reduced via compliance with AS 3959:2018 standards. BAL-29 is not exceeded. Each lot will contain a lot specific APZ to ensure compliance and a site-specific BAL assessment will be undertaken each time a purchaser applies for building license.

Perimeter vehicular access is provided and increased links are included in this application. A water supply with hydrants spaced to minimum standard is achieved.

A minimum of two access options and fire hydrant spacing requirements for fire-fighting are met. Full compliance is achieved. Overall, this assessment updates the previously approved plan with eight additional lots and improved perimeter fire appliance access. The updated BAL contour plan demonstrates BAL-29 and lower can be achieved on all lots.

REFERENCES

Standards Australia, 2018. *Construction of buildings in bushfire-prone areas (Amendments 1-3)*, AS 3959-2018, Standards Australia International Ltd, Sydney.

Western Australian Planning Commission (WAPC), 2015. *State Planning Policy No. 3.7: Planning in Bushfire Prone Areas (SPP3.7)*. December 2015. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.

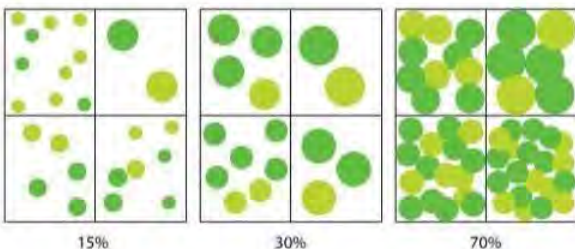
Western Australian Planning Commission (WAPC), 2017. *Guidelines for Planning in Bushfire Prone Areas*. December 2021 V1.4. Western Australian Planning Commission and Department of Planning WA, Government of Western Australia, Perth.



APPENDICES

- Appendix 1: Asset Protection Zone Standards
- Appendix 2: Vehicular Access Technical Requirements
- Appendix 3: City of Swan Fire Control Notice
- Appendix 4: Fire Service Access Signage

Appendix 1: Asset Protection Zone Standards

| SCHEDULE 1: STANDARDS FOR ASSET PROTECTION ZONES | |
|---|--|
| OBJECT | REQUIREMENT |
| Fences within the APZ | <ul style="list-style-type: none"> Should be constructed from non-combustible materials (for example, iron, brick, limestone, metal post and wire, or bushfire-resisting timber referenced in Appendix F of AS 3959). |
| Fine fuel load (Combustible, dead vegetation matter <6 millimetres in thickness) | <ul style="list-style-type: none"> Should be managed and removed on a regular basis to maintain a low threat state. Should be maintained at <2 tonnes per hectare (on average). Mulches should be non-combustible such as stone, gravel or crushed mineral earth or wood mulch >6 millimetres in thickness. |
| Trees* (>6 metres in height) | <ul style="list-style-type: none"> Trunks at maturity should be a minimum distance of six metres from all elevations of the building. Branches at maturity should not touch or overhang a building or powerline. Lower branches and loose bark should be removed to a height of two metres above the ground and/or surface vegetation. Canopy cover within the APZ should be <15 per cent of the total APZ area. Tree canopies at maturity should be at least five metres apart to avoid forming a continuous canopy. Stands of existing mature trees with interlocking canopies may be treated as an individual canopy provided that the total canopy cover within the APZ will not exceed 15 per cent and are not connected to the tree canopy outside the APZ. <p>Figure 19: Tree canopy cover – ranging from 15 to 70 per cent at maturity</p>  <p>15% 30% 70%</p> |
| Shrub* and scrub* (0.5 metres to six metres in height). Shrub and scrub >6 metres in height are to be treated as trees. | <ul style="list-style-type: none"> Should not be located under trees or within three metres of buildings. Should not be planted in clumps >5 square metres in area. Clumps should be separated from each other and any exposed window or door by at least 10 metres. |
| Ground covers* (<0.5 metres in height. Ground covers >0.5 metres in height are to be treated as shrubs) | <ul style="list-style-type: none"> Can be planted under trees but must be maintained to remove dead plant material, as prescribed in 'Fine fuel load' above. Can be located within two metres of a structure, but three metres from windows or doors if >100 millimetres in height. |
| Grass | <ul style="list-style-type: none"> Grass should be maintained at a height of 100 millimetres or less, at all times. Wherever possible, perennial grasses should be used and well-hydrated with regular application of wetting agents and efficient irrigation. |
| Defendable space | <ul style="list-style-type: none"> Within three metres of each wall or supporting post of a habitable building, the area is kept free from vegetation, but can include ground covers, grass and non-combustible mulches as prescribed above. |
| LP Gas Cylinders | <ul style="list-style-type: none"> Should be located on the side of a building furthest from the likely direction of a bushfire or on the side of a building where surrounding classified vegetation is upslope, at least one metre from vulnerable parts of a building. The pressure relief valve should point away from the house. No flammable material within six metres from the front of the valve. Must sit on a firm, level and non-combustible base and be secured to a solid structure. |

Appendix 2: Vehicle Access Technical Requirements

Table 6: Vehicular access technical requirements

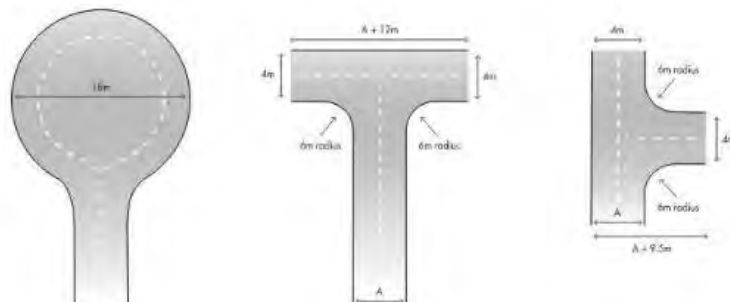
| TECHNICAL REQUIREMENTS | 1 Public roads | 2 Emergency access way ¹ | 3 Fire service access route ¹ | 4 Battle-axe and private driveways ² |
|--|---|---|--|--|
| Minimum trafficable surface (metres) | In accordance with A3.1 | 6 | 6 | 4 |
| Minimum horizontal clearance (metres) | N/A | 6 | 6 | 6 |
| Minimum vertical clearance (metres) | 4.5 | | | |
| Minimum weight capacity (tonnes) | 15 | | | |
| Maximum grade unsealed road ³ | As outlined in the IPWEA Subdivision Guidelines | 1:10 (10%) | | |
| Maximum grade sealed road ³ | | 1:7 (14.3%) | | |
| Maximum average grade sealed road | | 1:10 (10%) | | |
| Minimum inner radius of road curves (metres) | | 8.5 | | |

Notes:

¹ To have crossfalls between 3 and 6%.

² Where driveways and battle-axe legs are not required to comply with the widths in A3.5 or A3.6, they are to comply with the Residential Design Codes and Development Control Policy 2.2 Residential Subdivision.

³ Dips must have no more than a 1 in 8 (12.5% - 7.1 degree) entry and exit angle.



Appendix 3: City of Swan Fire Control Notice

Bush Fires Act 1954 **City of Swan** **Fire Hazard Reduction Notice (Firebreak Notice)**

Notice to Owners and/or Occupiers of land situated within the City of Swan.

To assist in the control of bush fires, and pursuant to Section 33 of the Bush Fires Act 1954, all owners and occupiers of land within the City of Swan are required on or before the 1st day of November, 2021, or within 14 days of becoming an owner or occupier of land after that date, must meet the fire hazard reduction conditions described in this notice and maintain these conditions up to and including the 30th day of April, 2022.

- 1. All land up to 5,000m² (0.5 Hectares or 1.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Maintain all grass to a height of no greater than 10cm.
 - 3) Areas of natural vegetation to be maintained at or below 8 tonnes per hectare.
 - 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- 2. All land between 5,000m² and 25,000m² (0.5 - 2.5 Hectares) or (1.2 - 6.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
 - 3) Maintain all grass to a height of no greater than 10cm.
 - a) If the land is stocked, the grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
 - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
 - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.
- 3. All land with an area greater than 25,000m² (2.5 Hectares or 6.2 Acres)**
 - 1) Install and maintain an asset protection zone in accordance with the requirements specified in clause 13 of this notice.
 - 2) Install firebreaks immediately inside and adjacent to all external property boundaries. Firebreaks need to be 3 metres wide with a 4 metre vertical height clearance free from flammable materials and overhanging branches (see section 10 in this notice for further details).
 - a) Properties over 100 hectares require additional firebreaks to divide the land into areas not exceeding 100 hectares.
 - 3) Slash or mow grass to a height no greater than 10cm immediately adjacent to firebreaks to a minimum width of 3 metres.
 - a) If the land is stocked, this grass must be reduced and maintained to a height of no greater than 10cm by the 1st day of December.
 - 4) Natural vegetation within 100 metres of buildings including attached and adjacent structures and essential infrastructure shall be maintained at or below 8 tonnes per hectare, by passive methods of fuel reduction that does not permanently remove or reduce the quantity or occurrence of the native plants, shrubs and trees within the subject area.
 - 5) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

4. Plantations

- 1) Install and maintain external and internal firebreaks, firebreaks that form compartments (cells), firebreaks and hazard reduction measures that protect neighbouring communities and essential infrastructure in accordance with the requirements of a fire management plan approved in writing by the City; or
- 2) Where no such approved fire management plan exists,
 - a) Unless the City approves an alternative plan in writing in accordance with clause 4(2)(b), install and maintain external and internal firebreaks and firebreaks that form compartments (cells), and carry out all other firebreaks and hazard reduction measures which are required in accordance with the requirements and specifications within the Department of Fire & Emergency Services 'Guidelines for Plantation Fire Protection' 2011 publication; or
 - b) If it is considered impractical for any reason to carry out the plantation requirements outlined above in clause 4 (2)(a), plantation owners and managers may apply in writing to the City to implement an alternative plan or measures in accordance with clause 4 of this notice.

5. Application to Vary Firebreak and Hazard Reduction Requirements

- 1) If it is considered impractical for any reason to clear firebreaks in a manner or location required by this notice, or to carry any fire hazard reduction work or measures required by this notice, you may apply in writing on or before the 1st of October, for approval to provide firebreaks in alternative positions or to take alternative measures to abate fire hazards on the land. Alternative firebreak application forms can be downloaded from the City of Swan website.
- 2) If permission is not granted in writing by the City prior to the 1st day of November, you shall comply with the requirements of this notice.
- 3) When permission for alternative firebreaks or fire hazard reduction measures has been granted, you shall comply with all conditions on the endorsed permit and maintain the land to the required standard throughout the period specified by this notice.
 - a) Where a property is affected by an approved bushfire management plan, property owners must comply with any additional requirements and responsibilities outlined within that plan.

6. Fuel Dumps and Depots

Remove all flammable material within 10 metres of fuel dumps, fuel ramps or where fuel drums, whether containing fuel or not, are stored.

7. Hay Stacks

Clear and maintain a firebreak completely surrounding any haystack on the land, within 60 metres of the haystack.

8. Fire Service Access (Strategic Firebreaks)

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan Fire Service Access (Strategic Firebreaks) are required on the land, you are required to clear and maintain the Fire Service Access (Strategic Firebreaks) a minimum of 6 metres wide along the agreed alignment to provide restricted vehicular access to emergency services and authorised vehicles.
- 2) Fire Service Access (Strategic Firebreaks) must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates may only be secured with City of Swan Fire Service padlock.
- 4) Fire Service Access (Strategic Firebreaks) shall be graded to provide a continuous 4 wheel drive trafficable surface a minimum of 4 metres wide with a 1 metre shoulder on either side.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre width of the trafficable surface.

9. Emergency Access Ways

- 1) Where under a written agreement with the City, or where depicted on an approved bushfire management plan, Emergency Access Ways are required on private land, you are required to clear and maintain a vehicular access way to a minimum of 6 metres wide along the agreed alignment.
- 2) Emergency access ways must be free from flammable material and unimpeded by obstructions including boundary fences and gates unless approved in writing by the City.
- 3) Gates on Emergency Access Ways must remain unlocked at all times.
- 4) Emergency Access Ways shall be graded and have suitable drainage to provide a minimum 6 metre wide continuous trafficable surface suitable for all types of 2 wheel drive vehicles.
- 5) All branches must be pruned and obstacles removed to maintain a 4 metre vertical height clearance above the full 6 metre

width of the trafficable surface.

10. Firebreak Construction

- 1) Firebreaks are to be developed and maintained clear of all obstacles and flammable materials to create a minimum of 3 metres wide trafficable surface suitable for 4 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the full width of the firebreak surface.
- 3) Boundary firebreaks must be aligned immediately inside and adjacent to the external property boundaries.
- 4) Alternative Firebreaks that are approved in writing by the City, or as depicted within a bushfire management plan approved in writing by the City, are to be constructed to the same standard as general firebreaks and must be constructed along the specified alignment.
- 5) Firebreaks must not terminate in a dead end.
- 6) Firebreaks may be constructed by ploughing, grading, raking, burning, chemical spraying or any other method that achieves the required standard.

11. Driveways

Where building sites are situated more than 50 metres from a public road,

- 1) Driveways must be maintained clear of all permanent obstacles and flammable materials to create a minimum 3 metre wide trafficable surface suitable for all types of 2 wheel drive vehicles.
- 2) Overhanging branches must be pruned to provide a 4 metre vertical clearance above the driveway.

12. Fuel Reduction – Natural Vegetation

- 1) Available bushfire fuels must be maintained at or below:
 - a) Asset Protection Zones - 2 tonnes per hectare
 - b) Hazard Separation Zones - 8 tonnes per hectare

*This requirement only applies where HSZs are depicted within a Fire Management Plan approved in writing by the City.

 - c) Natural Vegetation - 8 tonnes per hectare for areas of natural vegetation within 100 metres of buildings, attached and adjacent structures and essential infrastructure
- 2) Passive Fuel Reduction within natural vegetation may be achieved by burning, raking, pruning, weed management, removal of dead materials and any other approved method.
 - 3) Permanent removal or partial clearing of natural vegetation including individual or groups of native grasses, shrubs or trees may only be carried out to meet the minimum requirements of this notice.
 - 4) Permanent clearing of natural vegetation structures including individual plants, shrubs or trees, that exceeds the requirements of this notice or the specifications outlined within a bushfire management plan approved in writing by the City, is only permitted in accordance with the provisions and exemptions outlined within the Environmental Protection Act 1986, or with the approval of the Department of Water and Environmental Regulation and the City of Swan.

Note: Advice and resources on how to measure and manage native vegetation fuel loads are available from the Department of Fire and Emergency Services or the City of Swan.

13. Asset Protection Zones Specification

Asset protection zones for habitable buildings and other assets must meet the following requirements:

- 1) Extends 20 metres out from any external walls of the building, attached structures, or adjacent structures within 6 metres of the habitable building, unless varied under an approved bushfire management plan.
- 2) On sloping ground the asset protection zone distance shall increase with 1 metre for every degree in slope on the sides of the building/ structure that are exposed to down slope natural vegetation.
- 3) Asset protection zone requirements only apply within the boundaries of the lot on which the asset is located and cannot be enforced across boundaries.
- 4) Recommendation Only - Asset protection zones predominantly consist of non-flammable managed vegetation, reticulated lawns and gardens and other non-flammable features.
- 5) All grass is maintained to or under 10cm.
- 6) Fuel loads must be reduced and maintained at 2 tonnes per hectare or lower.
- 7) The crowns of trees are to be separated where possible to create a clear separation distance between adjoining or nearby tree crowns. The separation distance between tree crowns is not required to exceed 10 metres. Clearing or thinning existing trees to create distances greater than 10 metres separation between tree crowns within an asset protection zone is not required or supported by this notice and requires approval from the Department of Water and Environmental Regulation and the City of Swan.
- 8) A small group of trees within close proximity to one another may be treated as one crown provided the combined

crowns do not exceed the area of a large or mature crown size for that species.

- 9) Trees are to be low pruned (or under pruned) to at least a height of 2 metres from ground.
- 10) No tree, or shrub over 2 metres high is planted within 2 metres of a building, especially adjacent to windows.
- 11) There are no tree crowns or branches hanging over buildings.
- 12) Clear and prune scrub to reduce to a sparse density (able to walk through vegetation with relative ease with minimal deviation around trees and shrubs).
- 13) Install paths or clear flammable or dry vegetation, debris and materials immediately adjacent to the building.
- 14) Wood piles and flammable materials stored a safe distance from buildings.

14. Burning

All burning must be carried out in accordance with the relevant provisions of this notice and the Bush Fires Act 1954, Health Act 1911 and the City's Consolidated Local Laws 2005.

Prohibited Period: All burning, including garden refuse and camping fires are prohibited.

Restricted Period: All burning requires a permit except for the burning of garden refuse and camping fires which are subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) Only one fire is allowed at any time and it does not exceed 1 cubic metre in size.
- 3) No flammable material within 5 m of the fire.
- 4) The fire is only lit between 6 pm and 11 pm and completely extinguished by midnight.
- 5) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

15. Cooking Fires

Fires for the purpose of cooking are exempt from burning period restrictions subject to the following conditions:

- 1) The fire must not be lit if the Fire Danger Rating is Very High or above, or if a Total Fire Ban or a Harvest and Vehicle Movement Ban is declared.
- 2) The fire is contained in a purpose built appliance and
 - a) at a person's home; or
 - b) an area is set aside for that purpose by the State Authority or City of Swan
- 3) No flammable material within 5 m of the fire.
- 4) At least one person capable of controlling the fire is in attendance at all times with adequate means of extinguishing the fire.

16. Compliance

- 1) In addition to the requirements of this notice, further works which are considered necessary by an Authorised Officer of the City may be required as specified in writing in a subsequent notice addressed to the land owner.
- 2) Where the owner or occupier of the land fails or neglects to comply with the requirements of this notice or a subsequent notice addressed to the land owner, the City of Swan may enter onto the land with workmen, contractors, vehicles and machinery to carry out the requisitions of the notice at the expense of the land owner.
- 3) Failure to comply with this notice and subsequent written notices may result in a penalty not exceeding \$5,000, or the issue of a \$250 infringement notice and liability for any costs incurred by the City in relation to works undertaken on behalf of the land owner.
- 4) Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in this notice and with any additional requirements outlined within that plan.

17. Definitions

'Alternative Firebreak' is a firebreak that is in an alternative position or alignment to the external boundaries of a property.

'Alternative Firebreak Application' is an application that may be made by a land owner to install firebreaks in an alternative position, or to carry out alternative measures in lieu of general firebreaks.

'Available Fuel' is the bush fuel consisting of live and dead vegetation such as stubble, mulch, leaf litter, twigs, trash, scrub and other vegetation less than 6mm in diameter capable of carrying a running fire and will actually burn under prevailing conditions.

'City' means the City of Swan.

'Buildings, Attached and Adjacent Structures' means habitable buildings that are used as a dwelling, workplace, place of gathering or assembly, a building that is a car park, or a building used for the storage

or display of goods or produce for sale by whole sale in accordance with classes 1-9 of the Building Code of Australia. The term building includes attached and adjacent structures like garages, carports verandas or similar roofed structure(s) that are attached to, or within 6 metres of the dwelling or primary building.

'Asset Protection Zone (APZ)' is a low fuel area that is reduced of flammable vegetation and materials surrounding buildings and essential infrastructure to minimise the likelihood and impact that direct flame contact, radiant heat or ember attack may have on buildings and assets in the event of a bushfire. This area must extend out from the external walls of a building or asset a minimum of 20 metres.

'Bushfire Management Plan' or **'Fire Management Plan'** is a comprehensive plan that may be placed on the certificate of title(s) of land that has been developed as a condition of development or subdivision. Bushfire Management Plans may become out dated and it's the responsibility of the property owner to review and keep them current. Where a property is affected by an approved bushfire management plan, property owners must still comply with all requirements in the Annual Fire Hazard Reduction Notice and with any additional requirements outlined within that plan.

'Emergency Access Way' is a two wheel drive trafficable, 6 metre wide access route to provide local residents, general public and emergency services alternative links to road networks at the end of cul-de-sacs or areas where access is limited during an emergency incident.

'Essential Infrastructure' or **'Critical Infrastructure'** means assets, infrastructure, systems and networks that provide essential services necessary for social and economic wellbeing and is typically public infrastructure. Assets and infrastructure, usually of a public nature, that generate or distribute electricity, water supply, telecommunications, gas and dams are typical assets that are essential to society and are often located in, or traverse areas that are prone to bushfires.

'Firebreak' is an area of land cleared of flammable material (see available fuel above) to minimise the spread of a bushfire and to provide access for firefighting services. For the purpose of this notice the term firebreak is a strip of land at minimum 3 metres with a 4 metres vertical clearance, constructed to provide a 4 wheel drive trafficable surface for access by emergency and authorised vehicles. Boundary firebreaks are installed immediately adjacent the external boundaries of a property.

'Fire Hazard' means accumulated fuel (living or dead) such as leaf litter, twigs, trash, bush, dead trees and scrub capable of carrying a running fire, but excludes standing living trees and isolated shrubs.

'Hazard Separation Zone (HSZ)' means an area extending out from an asset protection zone a distance of 80 metres unless otherwise specified, to create a graduated fuel reduction and separation from natural vegetation.

'Natural Vegetation' means natural areas of forest, woodland, shrubland, scrub, mallee or mulga.

'Passive Fuel Reduction' means lowering the amount of available fuel that will burn under prevailing conditions by means that will not permanently reduce or modify the structure or life cycle of plant, shrub, scrub or tree communities within an treated area. This is typically achieved by undertaking a cool, controlled burn of an area during cooler, damper months, or by physical removal of built up leaf litter, dead materials, weeds and slashing long dry grasses without damaging live native plants within the area.

'Plantation' is any area of native or exotic planted trees that exceeds three hectares in a gazetted town site, or elsewhere a stand of trees of 10 hectares or larger that has been planted and managed intensively for their commercial and environmental value. A plantation includes roads, firebreaks and small areas of native vegetation.

'Fire Service Access (Strategic Firebreaks)' is a firebreak that is 6 metres wide established to provide strategic access and links to road networks whilst providing a wider control/containment line to protect town sites, estates and similar exposures during bushfire operations.

By order of the Council,



Leon van der Linde

Acting / Chief Executive Officer

City of Swan

Appendix 4: Fire Service Access Signage





Annexure I
Document Acknowledgement

The Buyer acknowledges having received a copy of the following documents:

1. Locality Plan
2. Strategic Firebreak Plan
3. Bushfire Management Plan - Stages 8, 9 & 12 prepared October 2022
4. Bushfire Management Plan - Stage 5A Prepared August 2023
5. Bushfire Management Plan DRAFT - Stage 5B & 6 Prepared June 2024
6. 'The Homeowners Bushfire Survival Manual' (2014) sixth edition published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA)
7. 'Prepare. Act. Survive.' (2014) version 5 published by Department of Fire and Emergency Services (formerly known as The Fire and Emergency Services Authority of WA)
8. City of Swan Fire Hazard Reduction Notice (Firebreak Notice) 2023/2024
9. 'Fire Season Guide 2023/2024' published by the City of Swan
10. Vegetation Conditions within Avon Ridge Estate
11. Plant Communities within Avon Ridge Estate
12. Habitat Tree Locations
13. Trees over 500mm Diameter at Breast Height (DBH) Plan
14. Aboriginal Heritage Site Plan
15. Wetland and Creek Locations within Avon Ridge Estate
16. Seller's Fire Management Consultant Bonus Application Form