Project Lead: Planning Officer - Zack Soper
Direct Telephone: 07 4189 9100
Our Reference: RAL24/0044

SOUTH BURNETT REGIONAL COUNCIL

South Burnett Regional Council
ABN 89 972 463 351
PO Box 336
Kingaroy QLD 4610
1300 789 279 or (07) 4189 9100
(07) 4162 4806
info@southburnett.qld.gov.au
www.southburnett.qld.gov.au

8 January 2025

K Howell
C/- ONF Surveyors
PO Box 896
KINGAROY QLD 4610

Dear Sir/Madam

Decision Notice
Planning Act 2016

I refer to your application and advise that on 8 January 2025, Council's Delegated Authority decided to approve the application in full subject to conditions.

Details of the decision are as follows:

APPLICATION DETAILS

Application No:	RAL24/0044
Street Address:	267 Bowman Road BLACKBUTT NORTH QLD 4314
Real Property Description:	Lot 6 on RP154859
Planning Scheme:	South Burnett Regional Council

DECISION DETAILS

Type of Decision:	Approval
Type of Approval:	Development Permit for Reconfiguration of a Lot – Subdivision (1 Lot into 2 Lots)
Date of Decision:	8 January 2025

CURRENCY PERIOD OF APPROVAL

The currency period for this development approval is four (4) years starting the day that this development approval takes effect. (Refer to Section 85 "Lapsing of approval at end of currency period" of the *Planning Act 2016*.)

INFRASTRUCTURE

Where conditions relate to the provision of infrastructure, these are non-trunk infrastructure conditions unless specifically nominated as a "***necessary infrastructure condition***" for the provision of trunk infrastructure as defined under Chapter 4 of the *Planning Act 2016*.

ASSESSMENT MANAGER CONDITIONS

GENERAL

GEN1. The approved development must be completed and maintained generally in accordance with the approved plans and documents except where, amended by the conditions of this permit:

Drawing Title	Prepared by	Ref No.	Sheet	Date
Proposal Plan	ONF Surveyors	12504-P1	1 of 1	09/09/2024
Bushfire Management Report	Range Environmental	J002095	-	23/10/2024

Timing: At all times.

GEN2. All works, including the repair or relocation of services is to be completed at no cost to Council.

COMPLIANCE

GEN3. All conditions of this approval are to be satisfied prior to Council endorsing the Survey Plan, and it is the applicant's responsibility to notify Council to inspect compliance with Conditions.

A fee will be charged, with payment required prior to Council's approval of the associated documentation requiring assessment.

OUTSTANDING FEES

GEN4. Prior to the sealing of the Plan of Survey, the applicant is required to pay the Council all rates and charges or any expenses being a charge over the subject land under any Act in accordance with Schedule 18, Section 69 of the *Planning Regulation 2017*.

SURVEY MARKS

GEN5. Prior to the submission of the Survey Plan to Council, the applicant is to reinstate survey marks and install new survey marks in their correct position in accordance with the Survey Plan, and the work is to be certified in writing by a Licensed Surveyor.

PLANNING

GEN6. All development involving the emission of noise, odour and dust from ongoing uses, building and/or construction activities, must ensure that the emissions are in accordance with the requirements of the Environmental Protection Act 1994.

Timing: As indicated.

BUSHFIRE MANAGEMENT

GEN7. Establish and maintain the Asset Protection Zone (APZ) identified in the Bushfire Management Plan, prepared by Range Environmental and dated 23 October 2024.

Timing: At all times.

PROPERTY NOTE

PN1. Proposed Lots 1 & 2 (original parcel Lot 6 on RP154859) is subject to an approved Bushfire Management Plan. Future dwelling house/habitable building is to be sited

in accordance within the approved building location envelope of the approved bushfire management plan.

Document Title	Prepared by	Date	Ref No.	Rev
Bushfire Management Report	Range Environmental	23/10/2024	J002095	Version 1

VALIDITY OF BUSHFIRE MANAGEMENT PLAN

BMP1. Prior to sealing of the survey plan provide written evidence that the approved bushfire management plan (BMP) and its recommendations are current in accordance with the BMP disclaimer.

Timing: as indicated.

ENGINEERING WORKS

ENG1. Complete all works approved and works required by conditions of this development approval and/or any related approvals at no cost to Council, prior to Council's endorsement of the Survey Plan unless stated otherwise.

ENG2. Be responsible for any alteration necessary to electricity, telephone, water mains, sewer mains, stormwater drainage systems or easements and/or other public utility installations resulting from the development or from road and drainage works required in connection with the development.

LOCATION, PROTECTION AND REPAIR OF DAMAGE TO COUNCIL AND PUBLIC UTILITY SERVICES INFRASTRUCTURE AND ASSETS

ENG3. Be responsible for the location and protection of any Council and public utility services infrastructure and assets that may be impacted on during construction of the development.

ENG4. Repair all damages incurred to Council and public utility services infrastructure and assets, as a result of the proposed development immediately should hazards exist for public health and safety or vehicular safety. Otherwise, repair all damages immediately upon completion of works associated with the development.

STORMWATER MANAGEMENT

ENG5. Provide overland flow paths that do not adversely alter the characteristics of existing overland flows on other properties or that create a nuisance on other properties.

ON-SITE WASTEWATER DISPOSAL

ENG6. Future Dwellings must be connected to an on-site wastewater disposal system, in accordance with AS 1547 and the Queensland Plumbing and Waste Water Code.

Timing: Prior to the issue of a Building Approval for a future Dwelling on the proposed lots.

VEHICLE ACCESS

ENG7. Design and construct an access to proposed Lot 1 and Lot 2 generally in accordance with Councils Standard Drawing No. 00049.

Comment: A culvert under the access is not required where the table drain is shallow enough for a low clearance vehicle to traverse the table drain.

ENG8. The access handle for proposed lot 2 shall be constructed with 100mm compacted gravel with a minimum width of 4 metres. Design and construct all services for the lot along the full length of the access strip.

FILLING OF DAM

ENG9. The proposed boundary of the access handle crosses a dam located approximately 55m from the Bowman Rd frontage of the property. This dam shall be filled and suitably compacted with clean and uncontaminated fill.

ELECTRICITY & TELECOMMUNICATIONS

ENG10. Design and provide reticulated electricity (to Ergons requirements), and telecommunications to all lots within the development.

ENG11. Submit to Council, written confirmation from an electricity provider that an agreement has been made for the supply of electricity.

SERVICES - EXISTING CONNECTIONS

ENG12. Ensure that all services provided to the existing house on proposed Lot 1 are wholly located within the lot(s) it serves.

EROSION AND SEDIMENT CONTROL - GENERAL

ENG13. Ensure that all reasonable actions are taken to prevent sediment or sediment laden water from being transported to adjoining properties, roads and/or stormwater drainage systems.

ENG14. Remove and clean-up the sediment or other pollutants in the event that sediment or other pollutants are tracked or released onto adjoining streets or stormwater systems, at no cost to Council.

REFERRAL AGENCIES

Not Applicable.

APPROVED PLANS

The following plans are Approved plans for the development:

Approved Plans

Plan No.	Rev.	Plan Name	Date
12504-P1 – Sheet 1 of 1	-	*Proposal Plan,* prepared by ONF Surveyors.	09/09/2024

REFERENCED DOCUMENTS

The following documents are referenced in the assessment manager conditions:

Referenced Documents

Document No.	Rev.	Document Name	Date
J002095	-	*Bushfire Management Report*, prepared by Range Environmental.	23/10/2024

ADVISORY NOTES

The following notes are included for guidance and information purposes only and do not form part of the assessment manager conditions:

ADVICE

ADV1. The ***relevant period*** for the development approval (Reconfiguring a Lot) shall be four (4) years starting the day the approval is granted or takes effect. In accordance with Section 85(1)(b) of the Planning Act 2016 (PA), the development approval for Reconfiguring a Lot lapses if a plan for the Reconfiguration that is required to be given to a local government is not given.

An applicant may request Council to extend the relevant period provided that such request is made in accordance with Section 86 of PA and before the development approval lapses under Section 85 of the PA.

ADV2. This development approval does not authorise any activity that may harm Aboriginal Cultural Heritage. Under the Aboriginal Cultural Heritage Act 2003 you have a duty of care in relation to such heritage. Section 23(1) provides that "A person who carries out an activity does not harm Aboriginal Cultural Heritage." Council does not warrant that the approved development avoids affecting Aboriginal Cultural Heritage. It may therefore be prudent for you to carry out searches, consultation, or a Cultural Heritage assessment to ascertain the presence or otherwise of Aboriginal Cultural Heritage. The Act and the associated duty of care guidelines explain your obligations in more detail and should be consulted before proceeding. A search can be arranged by visiting https://www.datsip.qld.gov.au and filling out the Aboriginal and Torres Strait Islander Cultural Heritage Search Request Form.

APPEAL RIGHTS

ADV3. Attached for your information is a copy of Chapter 6 of the Planning Act 2016 as regards to Appeal Rights.

INFRASTRUCTURE CHARGES

ADV4. Council is offering a reduction in infrastructure charges payable through the development incentive scheme which is available between 1 December 2020 and 31 December 2025. Eligible development under this scheme is required to be completed by 31 December 2025. For further information or application form please refer to the rules and procedures available on Council's website.

ADV5. Infrastructure charges are now levied by way of an infrastructure charges notice, issued pursuant to section 119 of the *Planning Act 2016*.

FUTURE DWELLING HOUSES

ADV6. All buildings should be designed and constructed to meet the requirements of the relevant building standards prevailing at the time. This includes the Building Code of Australia (BCAC), the Australian Standard for Construction of buildings in bushfire prone areas (AS3959 – 2018) and relevant Council Bylaws and building regulations.

PROPERTY NOTES

The following property notes will be placed against the subject property in Council's property record system:

PROPERTY NOTE

PN1. Proposed Lots 1 & 2 (original parcel Lot 6 on RP154859) is subject to an approved Bushfire Management Plan. Future dwelling house/habitable building is to be sited in accordance within the approved building location envelope of the approved bushfire management plan.

Document Title	Prepared by	Date	Ref No.	Rev
Bushfire Management Report	Range Environmental	23/10/2024	J002095	Version 1

VARIATION APPROVAL

Not Applicable.

FURTHER DEVELOPMENT PERMITS REQUIRED

Not Applicable.

SUBMISSIONS

Not Applicable.

RIGHTS OF APPEAL

You are entitled to appeal against this decision. A copy of the relevant appeal provisions from the *Planning Act 2016* is attached.

During the appeal period, you as the applicant may suspend your appeal period and make written representations to council about the conditions contained within the development approval. If council agrees or agrees in part with the representations, a "negotiated decision notice" will be issued. Only one "negotiated decision notice" may be given. Taking this step will defer your appeal period, which will commence again from the start the day after you receive a "negotiated decision notice".

OTHER DETAILS

If you wish to obtain more information about Council's decision, electronic copies are available on line at www.southburnett.qld.gov.au, or at Council Offices.

Yours faithfully

REBECCA BAYNTUN
ACTING GENERAL MANAGER FINANCE AND LIVEABILITY

Enc: Adopted Infrastructure Charge Notice
Approved Plans/Documents
Appeal Rights

INFRASTRUCTURE CHARGES NOTICE

(Section 119 of the Planning Act 2016)

APPLICANT:	K Howell C/- ONF Surveyors PO Box 896 KINGAROY QLD 4610
APPLICATION:	Reconfiguring of a Lot - Subdivision (1 Lot into 2 Lots) - Code Assessable
DATE:	13 January 2025
FILE REFERENCE:	RAL24/0044

AMOUNT OF THE LEVIED CHARGE: *(Details of how these charges were calculated are shown overleaf)*

$4,419.00	**Total**
$0.00	Water Supply Network
$0.00	Sewerage Network
$2,410.00	Transport Network
$2,009.00	Parks and Land for Community Facilities Network
$0.00	Stormwater Network

AUTOMATIC INCREASE OF LEVIED CHARGE:	The amount of the levied charge is subject to an automatic increase. Refer to the Information Notice attached to this notice for more information on how the increase is worked out.
LAND TO WHICH CHARGE APPLIES:	Lot 6 RP154859
SITE ADDRESS:	267 Bowman Road BLACKBUTT NORTH
PAYABLE TO:	**South Burnett Regional Council**
WHEN PAYABLE: *(In accordance with the timing stated in Section 122 of the Planning Act 2016)*	Reconfiguring a Lot – When South Burnett Regional Council approves the Plan of Subdivision.
OFFSET OR REFUND:	Not Applicable.

This charge is made in accordance with South Burnett Regional Council's ***Charges Resolution (No. 3) 2019***

DETAILS OF CALCULATION

Water Supply

Adopted Charges

Development Description	Number of Units	Units of Measure	Charge Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Discounts*

Description	Number of Units	Units of Measure	Discount Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Sewerage

Adopted Charges

Development Description	Number of Units	Units of Measure	Charge Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Discounts*

Description	Number of Units	Units of Measure	Discount Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Transport

Adopted Charges

Development Description	Number of Units	Units of Measure	Charge Rate	Reference	Amount
Reconfiguring a Lot	2	allotments	$2,410.00	CR Table 2.3	$4,820.00

Discounts*

Description	Number of Units	Units of Measure	Discount Rate	Reference	Amount
Reconfiguring a Lot	1	allotments	$2,410.00	CR Table 2.3	$2,410.00

Parks and Land for Community Facilities

Adopted Charges

Development Description	Number of Units	Units of Measure	Charge Rate	Reference	Amount
Reconfiguring a Lot	2	allotments	$2,009.00	CR Table 2.3	$4,018.00

Discounts*

Description	Number of Units	Units of Measure	Discount Rate	Reference	Amount

Reconfiguring a Lot	1	allotments	$2,009.00	CR Table 2.3	$2,009.00

Stormwater

Adopted Charges

Development Description	Number of Units	Units of Measure	Charge Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Discounts*

Description	Number of Units	Units of Measure	Discount Rate	Reference	Amount
Not Applicable	-	-	$0.00	-	$0.00

Levied Charges

Development Description	Water Supply	Sewerage	Transport	Parks & Land for Community Facilities	Stormwater	Total
Reconfiguring a Lot	$0.00	$0.00	$2,410.00	$2,009.00	$0.00	$4,419.00
Total	**$0.00**	**$0.00**	**$2,410.00**	**$2,009.00**	**$0.00**	**$4,419.00**

** In accordance with Section 3.3 of the Charges Resolution, the discount may not exceed the adopted charge. Any surplus discounts will not be refunded, except at South Burnett Regional Council's discretion.*

INFORMATION NOTICE

Authority and Reasons for Charge	This Infrastructure Charges Notice has been given in accordance with section 119 of the *Planning Act 2016* to support the Local government's long-term infrastructure planning and financial sustainability.
Appeals	Pursuant to section 229 and Schedule 1 of the *Planning Act 2016* a person may appeal an Infrastructure Charges Notice. Attached is an extract from the *Planning Act 2016* that details your appeal rights.
Automatic Increase Provision of charge rate ($)	An infrastructure charge levied by South Burnett Regional Council is to be increased by the difference between the Producer Price Index (PPI) applicable at the time the infrastructure charge was levied, and PPI applicable at the time of payment of the levied charge, adjusted by reference to the 3-yearly PPI average[1]. If the levied charge is increased using the method described above, the charge payable is the amount equal to the sum of the charge as levied and the amount of the increase. However, the sum of the charge as levied and the amount of the increase is not to exceed the maximum adopted charge the Authority could have levied for the development at the time the charge is paid.
GST	The Federal Government has determined that contributions made by developers to Government for infrastructure and services under the *Planning Act* 2016 are GST exempt.
Making a Payment	This Infrastructure Charges Notice cannot be used to pay your infrastructure charges. To pay the levied charge, you must request an Itemised Breakdown showing the total levied charge payable at the time of payment. An Itemised Breakdown must be presented at the time of payment. An Itemised Breakdown may be requested by emailing info@southburnett.qld.gov.au

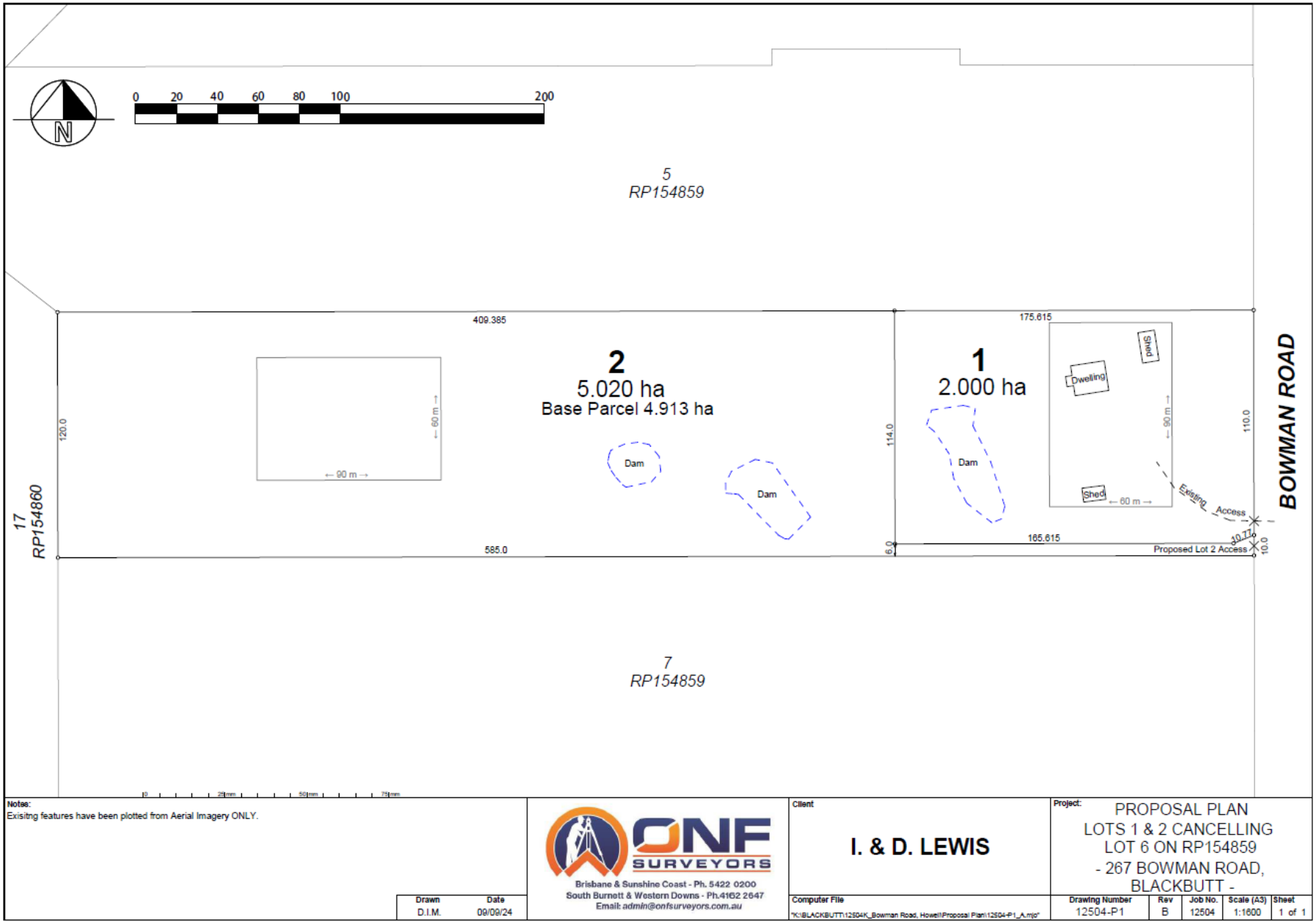
[1] 3-yearly PPI average is defined in section 114 of the *Planning Act 2016* and means the PPI adjusted according to the 3-year moving average quarterly percentage change between financial quarters. PPI Index is the producer price index for construction 6427.0 (ABS PPI) index number 3101 – Road and Bridge construction index for Queensland published by the Australian Bureau of Statistics.

Payment can be made at any of the following South Burnett Regional Council Offices:

- 69 Hart Street, Blackbutt, 4314;
- 45 Glendon Street, Kingaroy, 4610;
- 42 Stephens Street West, Murgon, 4605;
- 48 Drayton Street, Nanango, 4615;
- McKenzie Street, Wondai, 4606; or
- via other methods identified on the Itemised Breakdown.

Enquiries

Enquiries regarding this Infrastructure Charges Notice should be directed to the SOUTH BURNETT REGIONAL COUNCIL, Department of Planning and Land Management, during office hours, Monday to Friday by phoning (07) 4189 9100 or email at info@southburnett.qld.gov.au



Notes:
Exisitng features have been plotted from Aerial Imagery ONLY.

Drawn	Date
D.I.M.	09/09/24

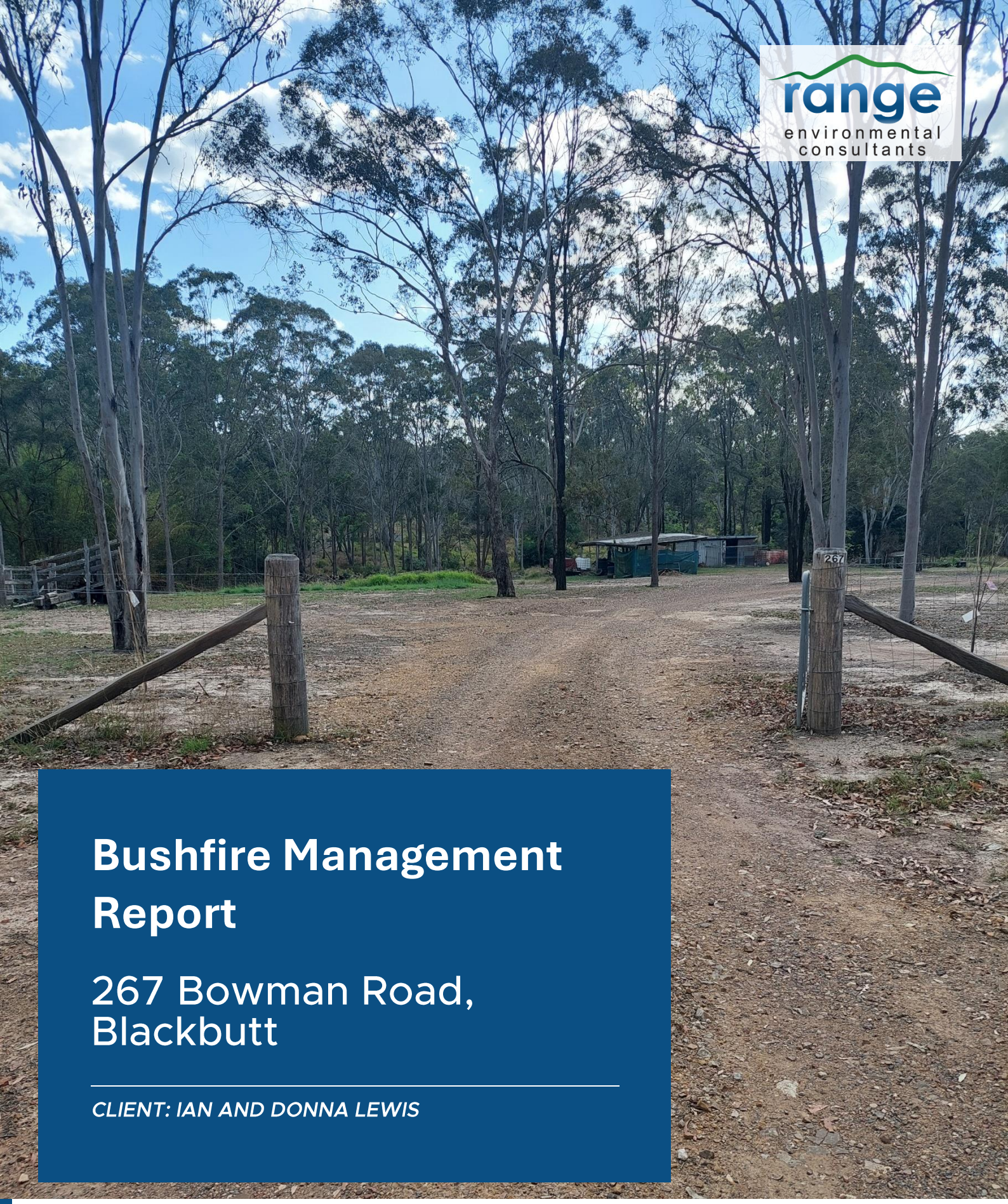
ONF SURVEYORS
Brisbane & Sunshine Coast - Ph. 5422 0200
South Burnett & Western Downs - Ph.4162 2647
Email: admin@onfsurveyors.com.au

Client: I. & D. LEWIS

Project: PROPOSAL PLAN
LOTS 1 & 2 CANCELLING
LOT 6 ON RP154859
- 267 BOWMAN ROAD,
BLACKBUTT -

Computer File: "K:\BLACKBUTT\12504K_Bowman Road, Howell\Proposal Plan\12504-P1_A.mjo"

Drawing Number	Rev	Job No.	Scale (A3)	Sheet
12504-P1	B	12504	1:1600	1 of 1



Bushfire Management Report

267 Bowman Road, Blackbutt

CLIENT: IAN AND DONNA LEWIS

PROJECT NO.	**J002095**
STATUS	**FINAL**
DATE	**23/10/2024**
VERSION	**1**

rangeenviro.com.au

Disclaimer

Range Environmental provides this report directly and exclusively to Ian and Donna Lewis (the client) for their sole use and solely for the specific purpose for which it is supplied. This report is not to be distributed to any other party without the consent of Range Environmental and Range Environmental will not be liable to any other entity other than the Client in relation to any matters dealt with in this report. Third parties (including, but not limited to, successors or assigns of the Client) may not rely on anything contained in this report whatsoever. The Client indemnifies Range Environmental against any claim, loss, expense, damage or the like arising from any third party which results from the Client providing this report to that third party without the prior knowledge or consent of Range Environmental.

This report has been prepared based on the information, documentation and representations given by the Client to Range Environmental. The Client releases Range Environmental from any claim for damage, cost, loss, expense or the like which is caused or contributed to by the incorrect, inaccurate, false, misleading or deceptive information, documentation or representations given by the Client to Range Environmental. The validity and comprehensiveness of any information given by the Client has not been independently verified by Range Environmental and, for the purposes of this report, it is assumed that the information provided to Range Environmental is both complete and accurate.

Where site inspections, testing, surveying or fieldwork have taken place, this report is based on the site conditions and information made available by the Client or their agents or nominees during the visit, the visual observations and any subsequent discussions with regulatory authorities. It is further assumed that normal activities were being undertaken at the site on the day of the site visit(s), unless explicitly stated otherwise.

The Client acknowledges that this Report and all information and content in it shall at all times be and remain the property of Range Environment and must not be disclosed to any third party at any time, except with the prior consent of Range Environmental or where the Client is required by statute, rule, regulation, judicial process or in connection with any litigation to which it is a party.

It must be borne in mind that the measures dealt with in this report cannot guarantee that a building will survive a bushfire event. This is due mainly to the unpredictable nature and behaviour of fire and the difficulties associated with extreme weather conditions.

It must also be stated that this report is based on site conditions prevailing at the time the inspection was undertaken. These conditions can and will change dependent on both weather conditions and the maintenance undertaken by property owners.

This fire report has been prepared on the basis that bushfire mitigation measures identified are implemented and maintained into the future. Failure to maintain these measures may contribute to the development being exposed to a higher level of bushfire threat and attack.

As site conditions can and will change over time this report is valid for a period of 2 years. Where a development application is lodged greater than 2 years following the version date of this report Range Environmental Consultants are to be contacted to ensure accuracy of this report.

Document Control

Version	Purpose	Lead Author	Reviewer	Approved by	Date
1.	Final Report	SM	RG	LMT	23/10/2024

Executive Summary

A rural residential development comprising a Reconfiguration of a Lot (RoL) is proposed for 267 Bowman Road, Blackbutt, which is formally described as Lot 6 RP154859 (Figure 1) (hereafter referred to as 'the site'). The development comprises a one (1) into two (2) lot rural residential subdivision with lot sizes of 2.12 and 4.73ha (Figure 2 and Appendix A).

Consideration of bushfire hazard assessment is triggered through development located in an area mapped by the South Burnett Regional Council (SBRC) Bushfire Hazard Overlay. The site is mapped within a Bushfire Hazard Zone under the South Burnett Regional Council Planning Scheme (2017 Version 1.4), which duplicates the Queensland Government State Planning Policy (SPP) Interactive Mapping System Natural Hazards and Risk Resilience Mapping.

Bushfire

The site is identified by the SBRC Planning Scheme (2017 Version 1.4) and SPP mapping as containing areas of Very High Potential Bushfire Intensity with minimal areas of Potential Impact Buffer. The South Burnett Regional Council (SBRC) Planning Scheme utilises the SPP mapping.

Range Environmental completed both desktop and site-based field assessments to establish vegetation hazard classes and potential bushfire risk present and to prepare a bushfire hazard map to guide the development of a bushfire management plan to mitigate the risk of bushfire to life and property at the site.

Mitigation Measures

The implementation of the following measures will assist in identifying potential bushfire hazards and providing mitigating measures to manage potential risks. Mitigation of bushfire risks is predominantly proposed to be achieved through sensitive building design and construction, with adequate separation from adjacent areas of potentially hazardous vegetation achieved through subdivision design.

Construction of Buildings

Careful design of new buildings should be undertaken, taking into consideration site characteristics and relevant building standards including the Australian Standard for Construction of buildings in bushfire-prone areas (AS3959-2018) and the Building Code of Australia.

Bushfire Attack Levels (BALs) in the order of BAL-12.5 to BAL-29 are identified for the Building Location Envelope on Lot 2 (Appendix B), dependent on the final location of a dwelling, extent of vegetation management undertaken, and separation distances achieved and maintained.

A site specific bushfire building report should be prepared for new dwellings that identifies actual building location, separation distances from potentially hazardous vegetation, BAL and level of construction required.

Access and Egress

Access to the site is via Bowman Road which is located on the eastern boundary of the site and is of sealed all-weather construction.

Vegetation Management

The site is mapped as containing Category X vegetation and Category C (regrowth) vegetation comprising Regional Ecosystem (RE) 12.5.6/12.12.2/12.11.3/12.9-10.14. The majority of the site contains non-hazardous vegetation comprising mature eucalypt canopy trees with a managed grassy understorey and limited shrub cover in the central and eastern portions of the site. Areas of potentially hazardous vegetation are located in the western extent of the site and within adjacent Lot 17 RP154860 to the west of the site and adjacent Lot 7 RP154859 to the

south of the site. To the north and east, roads, areas of non-remnant vegetation and maintained lands are located between the site and potentially hazardous vegetation.

Fire Trails

No fire trails are proposed due to the extent of native and introduced vegetation present, level of bushfire hazard and separation distances achieved from potentially hazardous vegetation provided by the establishment of APZs at the time of constructing dwellings on individual lots.

All lots will be readily accessible by emergency service vehicles from Bowman Road. Adequate access to the site is available from Bowman Road to the east. The development is buffered to the north and east by roads, properties containing managed vegetation, lawns and driveways.

Water Supply

The South Burnett Regional Council (SBRC) Planning Scheme (2017 Version 1.4) Bushfire Hazard Overlay Code for Rural Residential areas requires that the development be provided with a reliable water supply for fire-fighting purposes that is safely located and freely accessible. This can be achieved by provision of a dedicated on site water tank that permanently holds a minimum of 25,000 litres for fire fighting purposes at the time of constructing a dwelling.

It is noted that the State Planning Policy (2019) 'Natural Hazards, Risk and Resilience - Bushfire identifies that a reliable water supply for fire-fighting purposes is provided that is safely located and freely accessible with a minimum supply of 10,000 litres.

Prepare, Act, Survive

It is important that residents are well prepared during times of high fire danger and have well made plans that can be readily enacted in a time of bushfire emergency. The key message being; Prepare, Act and Survive.

Maintenance of Bushfire Mitigation Measures

This bushfire management report has been prepared on the basis that bushfire mitigation measures identified are implemented and maintained into the foreseeable future. Failure to maintain these measures may contribute to the development being exposed to a higher level of bushfire threat and attack.

Routine maintenance of structures should be undertaken to ensure continual compliance with AS3959-2018.

Table of Contents

Tables

Figures

Photographs

Appendices

1 Introduction

Range Environmental was engaged by Ian and Donna Lewis to prepare a Bushfire Management Report for a proposed development at 267 Bowman Road, Blackbutt which is formally described as Lot 6 RP154859 (Figure 1), (hereafter referred to as 'the site'). A development application is proposed for a one (1) into two (2) lot rural residential subdivision with lot sizes of 2.12 and 4.73ha (Figure 2 and Appendix A).

This bushfire hazard assessment is provided as an attached supporting document for lodgement of the Development Application (DA) for the site and allows for assessment against the SBRC Planning Scheme (2017 Version 1.4) Bushfire Hazard Overlay Code and the SPP (2017) Natural hazards, risk and resilience (Bushfire) assessment requirements.

1.1 Site Context and Proposed Development

The site occurs on 7.02 hectares of land currently zoned as Rural Residential under the SBRC Planning Scheme (2017 Version 1.4). The site is bounded by Bowman Road to the east (Figure 1). Rural Residential properties are located in all directions surrounding the site. Properties to the north and east of the site contain maintained grassy areas with canopy trees and maintained gardens. Areas of unmanaged vegetation are present to the west and south of the site. The site currently contains an existing dwelling, shed and associated infrastructure within the eastern extent. A summary of general site details is provided in Table 1.

Table 1 General site detail summary

Address	267 Bowman Road, Blackbutt
Lot on Plan	Lot 6 RP154859
Area	7.02 hectares
Local Government Area	South Burnett Regional Council
Planning Scheme / Local Plan	South Burnett Regional Council Planning Scheme (2017 Version 1.4) State Planning Policy
Overlays	Bushfire Hazard
VMA 1999	Category C and Category X
Area Classification / Zone	Rural Residential
Proposed Land use	Rural Residential

The proposed development will comprise a one (1) into two (2) lot rural residential subdivision (Figure 2). The Building Location Envelope is located on a hilltop, with the land falling to the north, east and west with underlying slopes in the order of 7 to 12% or 4 to 7 degrees and rises to the south (Figure 3). The lot on plan and addresses of adjacent properties are provided in Figure 4 for where reference to these are made.

The majority of the site contains scattered mature canopy trees with a managed grassy understorey in the central and eastern extents. In the western extent of the site, potentially hazardous vegetation was present, primarily comprising of mature canopy trees with an understorey containing scattered weed species Lantana (*Lantana camara*). The existing infrastructure to the east is located within a relatively clear area containing maintained grass and sparse canopy trees. The following photographs provide an overview of the condition of the site and surrounds at the time of site assessment.

Photograph 1 View to the north from the Building Location Envelope on proposed Lot 2.

Photograph 2 View to the east from the Building Location Envelope on proposed Lot 2.

Photograph 3 View to the south over the Building Location Envelope on proposed Lot 2.

Photograph 4 View to the west from the Building Location Envelope on proposed Lot 2.

Photograph 5 View to the north of maintained areas of VHC 39.2 surrounding the existing dwelling on proposed Lot 1.

Photograph 6 View to the south of proposed Lot 2 of VHC 9.2 on adjacent lots (Lot 7 RP154859).

Photograph 7 View to the north of proposed Lot 2 of maintained VHC 39.2 on adjacent lots (Lot 5 RP154859).

Photograph 8 View of typical VHC 9.2 across the western portions of proposed Lot 2.

Figure 1 Site Locality

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 2/10/2024
Approved by: Will Gibson Date: 2/10/2024

Metres
0 70 140

Legend

- Cadastre
- Roads
- Site Boundary

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

N

range environmental consultants

Figure 2 Proposed Development

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 2/10/2024
Approved by: Will Gibson Date: 2/10/2024

Metres
0 30 60

Legend

- Cadastre
- Roads
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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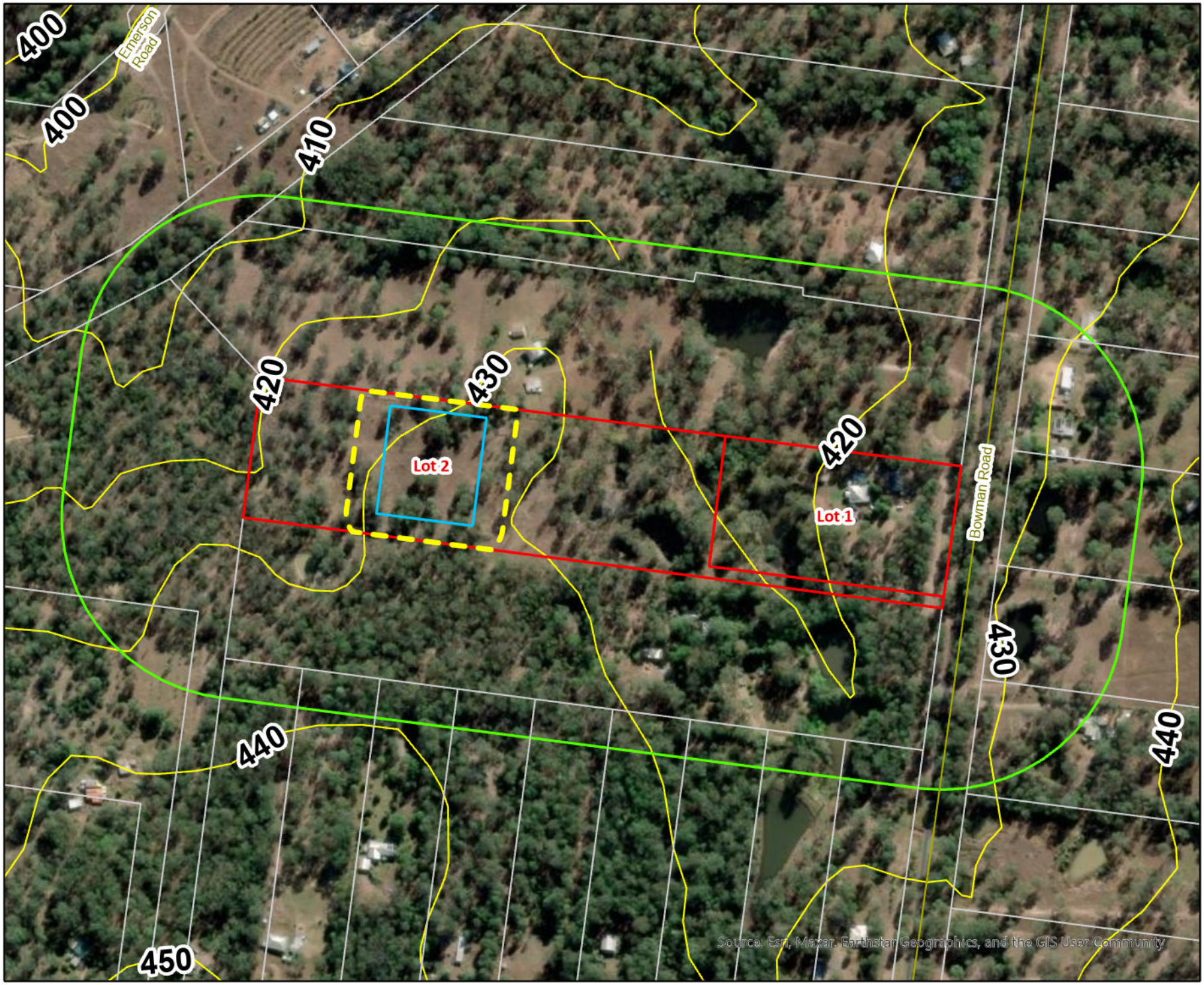

Figure 3 Topography of the Site

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 50 100

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- Contours (10m)

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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Figure 4
Real Property Descriptions for Adjacent Lots

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 2/10/2024
Approved by: Will Gibson Date: 2/10/2024

Metres
0 70 140

Legend

- Cadastre
- Roads
- Site Boundary

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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2 Vegetation

2.1 Regulated Vegetation

The current Vegetation Management Supporting Map identifies that the vegetation on the site is mapped as Category X and Category C (regrowth) vegetation comprising RE 12.5.6/12.12.2/12.11.3/12.9-10.14.

The extent of mapped vegetation in the area and its conservation status is shown in Figure 5, with Table 2 providing a description of the mapped RE. Grey ironbark (*Eucalyptus siderophloia*), Small-fruited grey gum (*Eucalyptus propinqua*) and Sydney blue gum (*Eucalyptus saligna*) were the dominant mature overstorey species on site, with heights in the order of 15 - 20 metres.

Table 2 Description of regional ecosystems for the site

Regional Ecosystem	12.5.6	**Conservation Status**	Endangered
Description	*Eucalyptus siderophloia*, *E. propinqua* and/or *E. pilularis* open forest +/- *Corymbia intermedia*, *E. microcorys*, *E. acmenoides*, *E. tereticornis*, *E. biturbinata*, *Lophostemon confertus* with *E. saligna*, *E. montivaga* at higher altitudes. Occurs on remnant Tertiary surfaces. Usually deep red soils. Not a Wetland. (BVG1M: 9a).		
Regional Ecosystem	12.12.2	**Conservation Status**	Least concern
Description	*Eucalyptus pilularis* tall open forest with shrubby or grassy understorey. Other canopy species include *Syncarpia glomulifera* or *S. verecunda*, *Angophora woodsiana*, *Eucalyptus microcorys*, *E. resinifera*, *E. tindaliae*, *E. propinqua* and *E. saligna*. Occurs on Mesozoic to Proterozoic igneous rocks. Not a Wetland. (BVG1M: 8b).		
Regional Ecosystem	12.11.3	**Conservation Status**	Least concern
Description	*Eucalyptus siderophloia* and *E. propinqua* open forest +/- *E. microcorys*, *Lophostemon confertus*, *Corymbia intermedia*, *E. biturbinata*, *E. acmenoides*, *E. tereticornis*, *E. moluccana*, *Angophora leiocarpa*, *Syncarpia verecunda* with vine forest species and *E. grandis* or *E. saligna* in gullies. *Eucalyptus pilularis* and *E. tindaliae* sometimes present e.g. mid D'Aguilar Range, Conondale Range. Occurs predominantly on hills and ranges of Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 9a).		
Regional Ecosystem	12.9-10.14	**Conservation Status**	Least Concern
Description	*Eucalyptus pilularis* tall open forest with shrubby understorey. Other species include *Syncarpia glomulifera subsp. glomulifera*, *S. verecunda*, *Corymbia intermedia*, *Angophora woodsiana* and *Eucalyptus microcorys* in coastal areas and species of RE 12.9-10.5 in drier sub coastal areas. *Eucalyptus pilularis* sometimes extends onto colluvial lower slopes. Occurs on Cainozoic and Mesozoic sediments especially sandstone. Not a Wetland. (BVG1M: 8b).		

2.2 Vegetation Management

The site is mapped as containing Category X vegetation and Category C regulated vegetation.

Vegetation in the western extent of the site comprises eucalypt woodland with a grassy understory containing sparse introduced weed Lantana (*Lantana camara)*. Vegetation across the central and eastern extents of the site comprises maintained areas of scattered eucalypt canopy with a maintained grassy understory in association with existing infrastructure onsite. The lot layout and Building Location Envelope for proposed Lot 2 have been designed to site a future dwelling within the lot to achieve a minimum separation distance of 25m from potentially hazardous vegetation to the south and west, achieving a maximum radiant heat exposure equivalent to BAL-29.

The *Planning Regulation 2017* identifies the exemptions that can be utilised to clear regulated vegetation for the purposes of constructing buildings and other assets and establishing firebreaks and asset protection zones. The following exemptions are identified.

Native vegetation clearing at the site in association with the development application (to establish future dwellings, associated infrastructure and asset protections zones is exempt clearing under the *Planning Regulation 2017*, Schedule 21, Part 1, (1).

Clearing vegetation under a development approval for a material change of use or reconfiguring a lot, if—

a. the approval is for a development application for which the chief executive is a referral agency in relation to vegetation clearing; or

b. the approval is for a development application—

   i. that relates only to lots of less than 5ha; and
   ii. for which a local government is the prescribed assessment manager.

As the clearing is for a reconfiguration of a lot for a lot less than 5ha, and for which the local government is the prescribed assessment manager vegetation clearing at the site is exempt.

The publication 'List of exempt clearing work' State of Queensland, 2019 summarises the exemptions under the *Planning Regulation 2017* that can be utilised to clear regulated vegetation for the purposes of constructing buildings and other assets and establishing firebreaks and asset protection zones (Table 3 & Table 4).

Table 3 Exempt clearing work on land generally

Clearing activity/purpose	Applicable vegetation category / status or clearing requirement / limitation
• Clearing under a development approval for a material change of use or reconfiguring a lot, if the approval is given for a development application and: a. for which the chief executive is a referral agency for clearing vegetation; or b. relates to a lot of less than 5 ha – for which a local government is the assessment manager. • Clearing vegetation in an area declared under the Vegetation Management Act 1999, section 19F if the clearing is carried out under the management plan for the area and for either: a. one or more of the following purposes listed in section 22A of the Vegetation Management Act 1999: i. controlling non-native plants or declared pests; ii. ensuring public safety;	• Category A area unless stipulated by the department on a notice issued under the Vegetation Management Act 1999 or Planning Act 2016 • Category B • Category C • Category R

iii. fodder harvesting; iv. managing thickened vegetation; v. clearing for encroachment; vi. necessary environmental clearing; or b. establishing a necessary fence, firebreak, road or vehicular track and the clearing can not reasonably be avoided or minimised.	

Note: Sourced from Table 1: Exempt clearing work on land generally, List of exempt clearing work State of Queensland, 2019

Table 4 Exempt clearing work on freehold and Indigenous land

Clearing activity / purpose	Applicable vegetation category / status or clearing requirement / limitation
For any purpose.	Category X
• For a forest practice. • For residential clearing, where: a. the building work for the dwelling that necessitates the clearing is carried out: i. under a development permit; or ii. by, or for, the State or a public sector entity; or b. the dwelling that necessitates the clearing is for public housing. • For establishing or maintaining a necessary firebreak to protect infrastructure, other than a fence, road or vehicular track, if the maximum width of firebreak is 1.5 times the height of the tallest vegetation next to the infrastructure, or 20m, whichever is the wider. • For establishing a necessary fire management line up to 10m wide. • Necessary to remove or reduce the imminent risk that the vegetation poses of serious personal injury or damage to infrastructure	• Category A area unless stipulated by the department on a notice issued under the Vegetation Management Act 1999 or Planning Act 2016 • Category B • Category C • Category R

Note: Sourced from Table 2: Exempt clearing work on freehold and Indigenous land, List of exempt clearing work State of Queensland, 2019

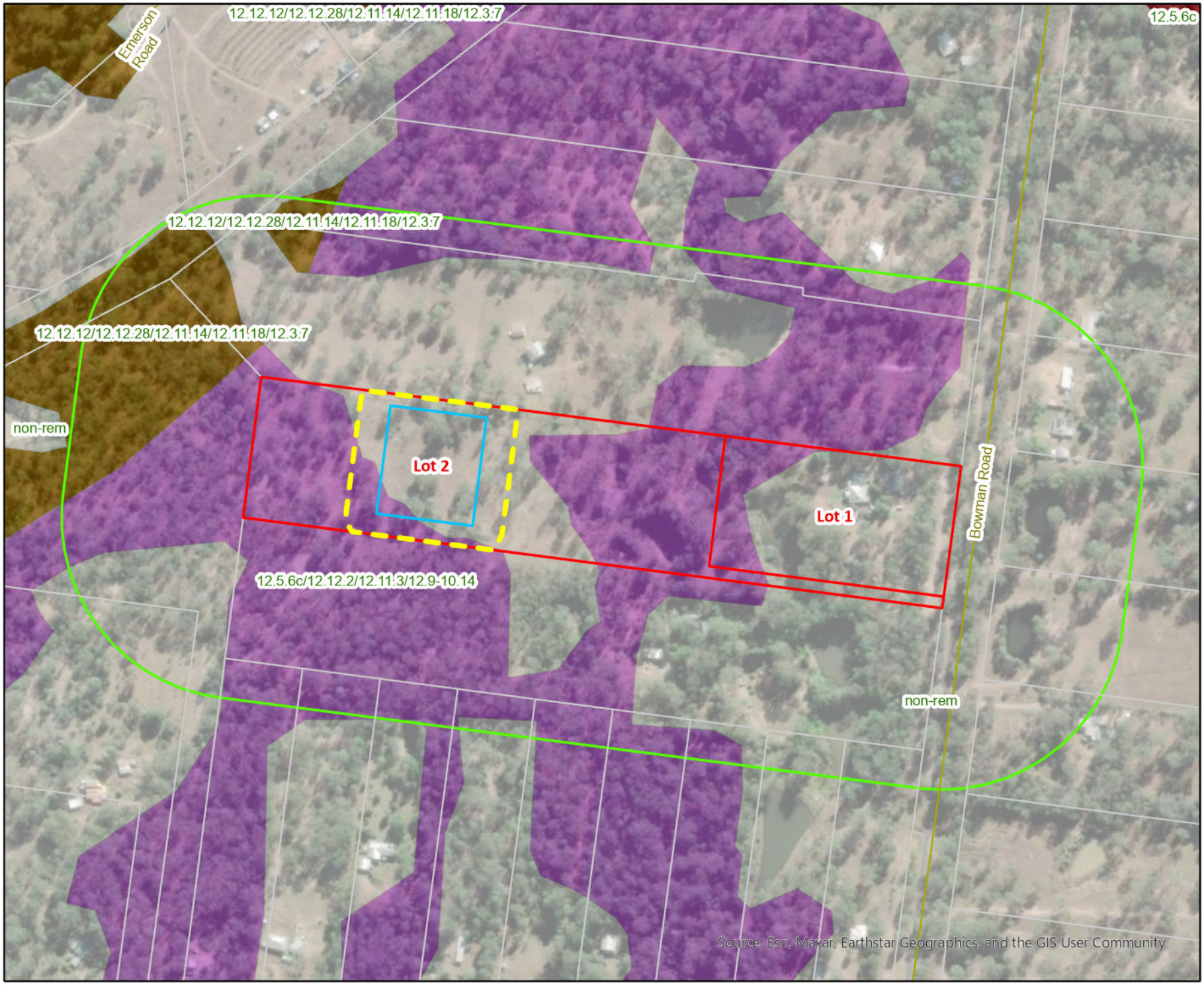

Figure 5 Regulated Vegetation and Regional Ecosystems

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 50 100

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- Category A or B containing endangered
- Category C or R containing endangered
- Category C or R containing of concern
- non-remnant

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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3 Bushfire

3.1 Overview

The Queensland State-wide mapping methodology was used to identify Bushfire Prone Areas on and surrounding the site. This methodology scales bushfire hazard based on the Potential Fire-line Intensity of a severe bushfire and can be used to predict the radiation profile of areas adjacent to potentially hazardous vegetation. The Potential Fire-line Intensity is a useful indicator of the level of safety afforded for resident egress and firefighter access.

The Potential Fire-line Intensity is calculated using 3 key factors operating at a landscape level, these being Potential Fuel Load (tonnes / hectare), Maximum Landscape Slope (degrees) and Fire Weather Severity (Forest Fire Danger Index). Figure 6 illustrates the variables used to determine the Potential Fire-line Intensity.

Figure 6 Variables used to determine Potential Fire-line Intensity. (Redrawn from Leonard et al 2013)

Potential Fuel Load represent the approximate mass (measured in tonnes/ha) of combustible fuel material that would typically accumulate if vegetation is not regularly burnt or subject to fuel reduction practices. Potential fuel loads vary according to the type of vegetation present and management of it. Fuel; its availability, arrangement, size, amount and moisture content contribute to the speed and intensity of a bushfire. The type of vegetation present determines the flammability of the fuel, with the finer and drier the fuel, the more easily it will burn. Fuel loads in general are related to the quantities of fine fuels available to burn. The primary components of fuel loads are the fine fuels; that is; flammable materials that are less than 6 mm in diameter such as leaves, twigs and bark principally on or near the ground.

Slope or steepness of land (described as Landscape Slope) is a major determinant of fire behaviour, controlling fire spread, the rate of fuel consumption and thus Potential Fire-line Intensity.

Fire behaviour is influenced by a range of weather variables including recent precipitation, current wind speed, relative humidity and temperature. Due to the complexity of these influences, they are commonly combined into a single weather index that can be used to estimate potential fire behaviour. The McArthur (1973) Forest Fire Danger Index (FFDI) is the best known, most widely used and thoroughly tested fire weather index adopted by fire agencies throughout Australia.

3.2 Bushfire Hazard Mapping

The bushfire hazard for the site and surrounds as identified by the Queensland Government SPP Interactive Mapping System using the Statewide mapping methodology is shown in Figure 7. The SPP mapping indicates the site contains areas of Very High Potential Bushfire Hazard and Potential Impact Buffer. SBRC utilises the SPP Bushfire Hazard mapping.

The site assessment identified that the bushfire hazard is less than levels mapped by the Queensland Government due to historical and current vegetation management practices on the site and in the surrounding landscape. Additional details are provided in Section 3.6 which identifies the VHCs present.

Under adverse conditions, a bushfire could potentially approach from virtually any direction. Severe fire weather conditions are typically associated with hot strong westerly to northerly winds. Bushfires in the area have the potential to generate quantities of embers that could impact on a building even though the fire does not necessarily reach it.

A field assessment was conducted to ground-truth the vegetation hazard classes (VHCs) present within and surrounding the site and the level of exposure to bushfire risk. VHCs are discussed in Section 3.6.

3.3 Fire Brigade

The development site is contained within the Queensland Fire and Rescue Service Taromeo Rural Fire Brigade district. The closest fire brigade equipped to fight structural fires is the Blackbutt Fire Station (Auxiliary) located at 72 Hart Street, Blackbutt approximately 3 kilometres to the south of the site. The Yarraman Fire Station (Auxiliary) is located at 7 Toomey Street, Yarraman approximately 18 kilometres northwest of the site.

3.4 Fire Run

The length of fire run influences the area in which a fire has to develop and reach its potential maximum intensity for the conditions prevailing at the time. It is important to assess the length of fire run to determine the potential scale and intensity of fires that may occur in the area. Fire runs less than 1 kilometre in length are generally considered to pose a lesser risk than those with a longer run. Fire runs may be modified by natural features such as creeks, rock formation and vegetation types and be influenced by weather and fuel conditions.

A fire run of greater than 1km from the northeast and east, 0.9km from the southwest, 0.5km to the north and less than 0.5km to the west and south has been identified and is connected to the site by areas of unmanaged vegetation on neighbouring properties. Fire runs to the north, south and southwest are fragmented by rural residential areas with fire runs to the northeast and east fragmented by rural residential areas and roads.

Figure 8 shows the location of potential fire runs and their relationship to the development.

Figure 7
SPP Bushfire Hazard Map

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 50 100

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- Very High Potential Bushfire Intensity
- High Potential Bushfire Intensity
- Medium Potential Bushfire Intensity
- Potential Impact Buffer

The content of this document includes third party data. Range Environmental Consultants does not guarantee the accuracy of such data.

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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Figure 8 Potential Fire Runs

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 180 360

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Potential Fire Runs

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3.5 Climatic Conditions and Forest Fire Danger Index

The McArthur Forest Fire Danger Index (or FFDI) is the most common proxy of fire weather severity in Australia and is used for bushfire hazard assessments, emergency management and in regulations such as the Australian Standard 3959–2018 Construction of buildings in bushfire-prone areas.

Unlike Queensland's adoption of AS 3959–2018 (Method 1) that uses a single FFDI value for all of Queensland (40), the estimate of fire weather severity is used as an input to identifying the SPP bushfire prone areas in Queensland recognises that weather conditions vary across the state.

Spatially explicit 5% annual exceedance probability (AEP) fire weather event FFDI values for Queensland have been estimated from a gridded (83 kilometre, three-hourly resolution) prediction of FFDI from long-term spatial weather products produced by the Australian Bureau of Meteorology (BoM). The adopted FFDI values reflect a 5% AEP weather event. Adopted FWS (i.e. 5% AEP fire weather event FFDI) values for Queensland vary from 50 in Southeast Queensland and Cape York bioregions to 130 in the south-western parts of the state.

Adopting a worst case scenario, an FDI of 60 was used for the site when calculating Bushfire Attack Levels (BAL) for 'the site'. Figure 9 provides a Fire Danger Index (FDI) map of Southeast Queensland and identifies the location of the site.

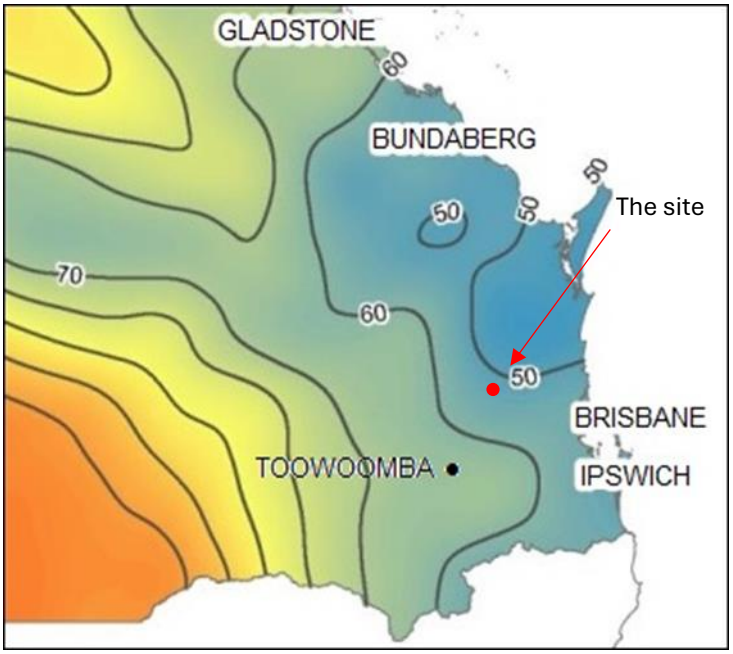

Figure 9 FDI map for Southeast Queensland. Leonard. J. A New Methodology for State-wide Mapping of Bushfire Prone Areas in Queensland. 2014

3.6 Vegetation Hazard Classes

The new methodology for State-wide mapping of bushfire prone areas in Queensland identifies Potential Fuel Loads that are assigned to vegetation categories (Vegetation Hazard Classes) formed by amalgamating land use and vegetation types with a moderately consistent fuel load and structure. The Potential Fuel Load assigned to each Vegetation Hazard Class (VHC) is generally representative of the higher fuel load expected for the typical vegetation types, landscape and site conditions within each Vegetation Hazard Class. This Potential Fuel Load of each Vegetation Hazard Class would approximate the 80th percentile fuel load of the "long unburnt condition" for the class (generally greater than 10 years without burning). A field assessment was conducted to ground-truth the vegetation hazard classes (VHCs) present within and surrounding the site and the level of exposure to bushfire risk. The mapped VHCs for the site are shown in Figure 10.

The Queensland State Government has introduced a State-wide mapping methodology to identify Bushfire Prone Areas. This methodology was developed by the CSIRO Climate Adaptation Flagship and scales bushfire hazard based on the Potential Fire-line Intensity of a severe bushfire. It is used to predict the radiation profile of areas adjacent to potentially hazardous vegetation. A key component of the methodology is the allocation of Vegetation Hazard Classes (VHC) which are used to estimate Potential Fuel Loads. These fuel loads were derived from a combination of expert appraisals and field measurements using the upper range of fuel loads for each fuel element (i.e. surface, near surface, elevated and bark). A "long unburnt condition" of generally greater than 10 years without burning was used for estimating fuel loads.

The dominant VHC mapped for the site and immediate adjoining areas by the State-wide mapping methodology was VHC 8.1 Wet eucalypt tall open forest, VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges, VHC 40.4 Continuous low grass or tree cover and VHC 42.6 Nil to very low vegetation cover (Figure 10). Table 5 provides a summary of the mapped VHCs and potential fuel loads.

Table 5 Mapped Vegetation Hazard Classes and Potential Fuel Loads

Vegetation Hazard Class (VHC)	Surface and near surface Fuel Load (t/ha)	Total Fuel Load (t/ha)	Prone type[1]	Fuel continuity[2]
8.1 Wet eucalypt tall open forest	31.0	35.0	1	1
9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	14.9	17.2	1	1
40.4 Continuous low grass or tree cover	4.5	5.0	2	1
42.6 Nil to very low vegetation cover	2.0	2.0	3	2

Fuel load data sources from Bushfire Resilient Communities Technical Reference Guide October 2019

Range Environmental completed a detailed site assessment to facilitate preparation of a representative vegetation hazard class map in relation to the site. Based on detailed field assessment a site-based vegetation hazard class map has been produced to accurately determine potential bushfire hazards and resulting building requirements for the site. Vegetation within the eastern extent of the site was assessed as aligning more closely with VHC 40.4 Continuous low grass or tree cover in association with the existing dwelling and VHC 43.6 Water bodies or very low vegetation cover in association with water features onsite. Vegetation within the central portion of the site was assessed as aligning more closely with VHC 39.2 Low to moderate tree cover in built up areas. Vegetation within the western extent of the site was assessed as aligning more closely with VHC 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges. Vegetation within 150m of the site to the west and south was dominated by VHC 9.2. Vegetation within 150m of the site to the east and north was dominated by VHC 39.2, 40.4, 42.6 and 43.6. The ground-truthed VHCs for the site and surrounds are shown in Figure 11. Following development of the site, the post-development VHC map will replicate the ground-truthed VHC map with the proposed BLE and APZ on Lot 2 currently located in maintained areas onsite. Table 6 provides a summary of the ground-truthed VHCs and potential fuel loads.

The identification of VHCs determines the extent to which the vegetation contributes to prevailing bushfire hazard. All VHCs are identified as being one of three prone types[1], with prone types being a categorical indicator of the capacity of a VHC to support a significant bushfire. VHCs are also given a binary indicator of fuel

[1] Prone type: 1= Bushfire prone, 2 = Grass fire prone, 3 = Low hazard

[2] Fuel continuity: 1= Continuous, 2 = Discontinuous

continuity[2]. Continuous fuel vegetation generally has a consistent distribution of fuel. Discontinuous fuel types include non-hazardous vegetation or land uses.

VHC 39.2, 40.4, 41.4 and 42.6 are considered non-bushfire prone VHCs under Bushfire Resilient Communities (2019) and BAL calculations using the SPP APZ calculator involving these VHCs results in a radiant heat flux of 0kW/m^2 (BAL-Low). The Building Location Envelope on proposed Lot 2 is located within an area of VHC 39.2 which have a prone type of Low hazard and discontinuous fuel loads and have been assessed as having Potential Bushfire Hazard Class of 'Low hazard' (further detailed in Section 3.7).

Table 6 Ground-truthed Vegetation Hazard Classes and Potential Fuel Loads

Vegetation Hazard Class (VHC)	Surface and near surface Fuel Load (t/ha)	Total Fuel Load (t/ha)	Prone type[1]	Fuel continuity[2]
9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges	14.9	17.2	1	1
39.2 Low to moderate tree cover in built-up areas	5.0	8.0	3	2
40.4 Continuous low grass or tree cover	4.5	5.0	2	1
42.6 Nil to very low vegetation cover	2.0	2.0	3	2
43.6 Water bodies or very low vegetation cover	0.0	0.0	3	2

Fuel load data sources from Bushfire Resilient Communities Technical Reference Guide October 2019

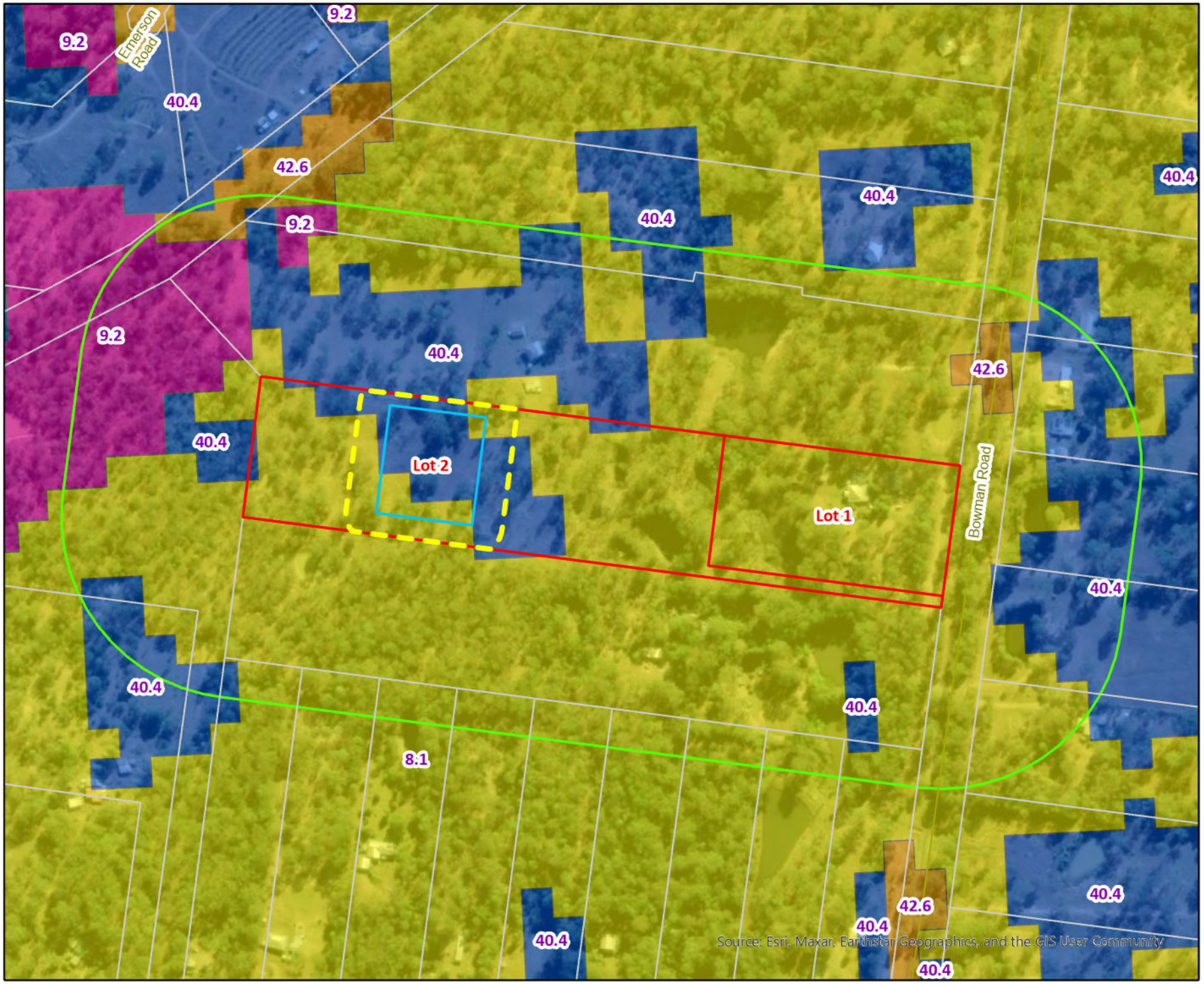

Figure 10 Vegetation Hazard Class Mapping

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 50 100

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- 8.1 Wet eucalypt tall open forest
- 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
- 40.4 Low grass or tree cover in rural areas
- 42.6 Nil to very low vegetation cover

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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Figure 11 Ground-truthed Vegetation Hazard Class

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

0 50 100 Metres

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
- 39.2 Low to moderate tree cover in built-up areas
- 40.4 Low grass or tree cover in rural areas
- 42.6 Nil to very low vegetation cover
- 43.6 Water bodies or very low vegetation cover

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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3.7 Potential Bushfire Hazard Classes

A 'fit for purpose' approach was undertaken to identify the bushfire risk present using the statewide mapping methodology in conjunction with local-scale vegetation and slope maps. The location of ground-truthed VHCs on the site and in the surrounding landscape in conjunction with the underlying slope of land was utilised to develop Potential Bushfire Hazard Classes. The Potential Fireline Intensity calculator was used to calculate the Potential Fireline Intensity (kW/m) to which a Potential Bushfire Hazard Class was attributed. The maximum slope in any direction was used for each area of identified ground-truthed VHC as outlined in Figure 11. Potentially hazardous vegetation is located downslope and level with and upslope of the proposed development. Table 7 provides the various site attributes used to calculate the Potential Bushfire Hazard Class at representative locations around the site. Table 8 provides the correlation between Potential Fireline Intensity and Potential Bushfire Hazard Class.

Table 7 Attributes used to calculate the Potential Bushfire Hazard Class

Vegetation Hazard Class (VHC)	Potential Fuel Load (t/ha)	Potential Fire Weather Severity (FFDI)	Slope under hazardous vegetation (deg)	Potential Fireline Intensity (kw/m)	Potential Bushfire Hazard Class
VHC 9.2 Moist to dry eucalypt woodlands on coastal lowlands and ranges	17.2	60	1	11791	Medium
VHC 9.2 Moist to dry eucalypt woodlands on coastal lowlands and ranges	17.2	60	6	16649	Medium
VHC 39.2 Low to moderate tree cover in built up areas	8.0	60	6	3602	Low
VHC 39.2 Low to moderate tree cover in built up areas	8.0	60	7	3859	Low
VHC 39.2 Low to moderate tree cover in built up areas	8.0	60	1	2551	Low
VHC 40.4 Low grass or tree cover in rural areas	5.0	60	1	996	Low
VHC 42.6 Nil to very low vegetation cover	2.0	60	1	159	Low
VHC 43.6 Water bodies or very low vegetation cover	0.0	60	5	0	Low

Table 8 Potential Bushfire Hazard Classes

Potential Bushfire Intensity Class	Potential Fire-line Intensity
1. Very high (potential intensity)	40,000+kW/m
2. High (potential intensity)	20,000 – 40,000kW/m
3. Medium (potential intensity)	4,000 – 20,000kW/m
4. Low hazard (potential impact buffer)	<4,000kW/m

Figure 12 identifies the Potential Bushfire Hazard for the site and immediate surrounding areas (within a radius of 150 metres of the site). Areas assessed as Low hazard within a 100 metre radius of vegetation mapped as comprising Medium Potential Intensity or higher were classified as 'Potential Impact Buffer'.

The location of vegetation in relation to the site is a key attribute to be considered when mapping bushfire hazards. In this situation, most of the potentially hazardous vegetation is located downslope and level with and upslope of the site.

Additional details on the Bushfire Attack Level (BAL) that the site may be exposed to is provided in Appendix D Explanation of Bushfire Attack Levels.

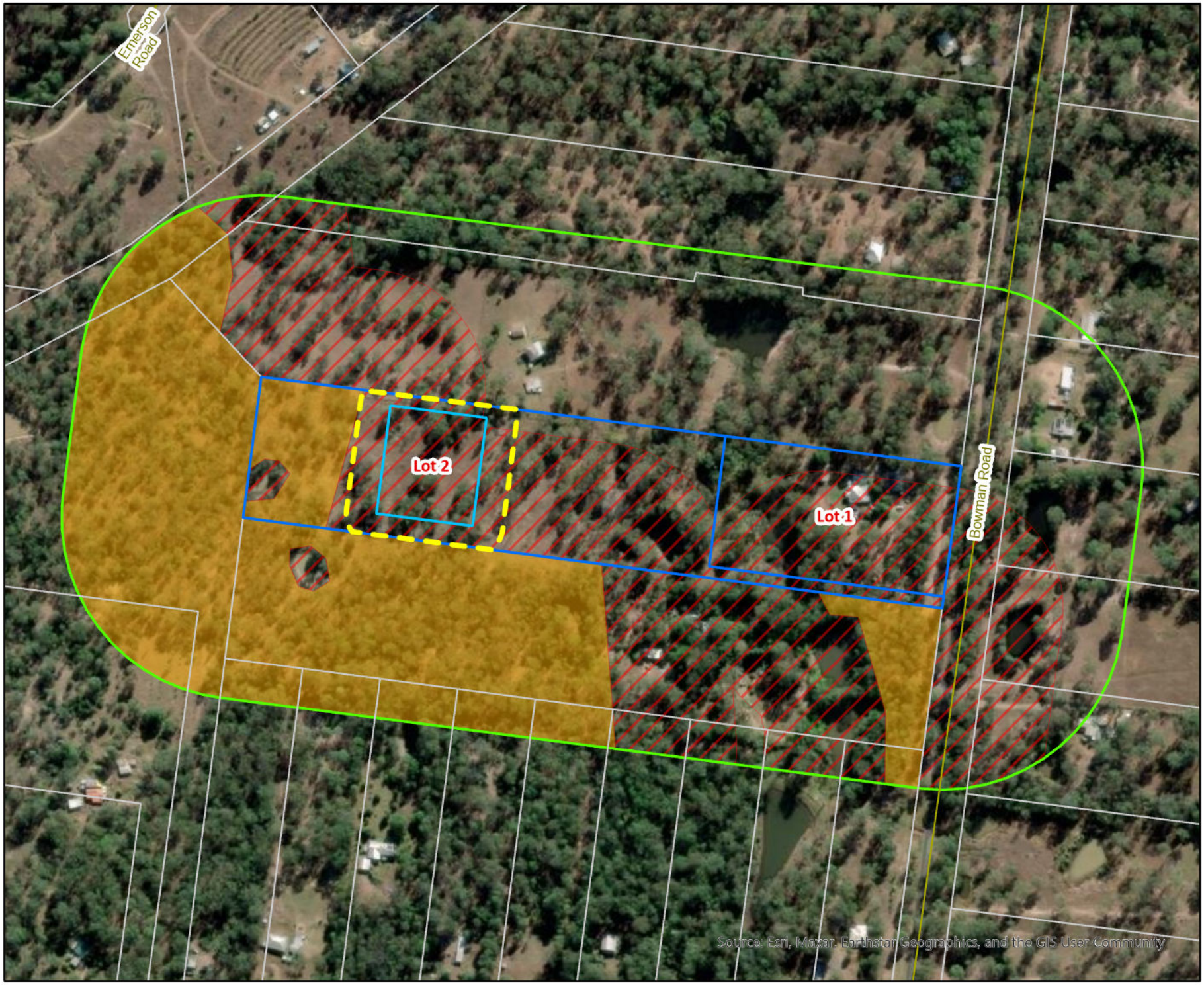

Figure 12 Potential Bushfire Hazard Map

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 8/10/2024
Approved by: Will Gibson Date: 8/10/2024

Metres
0 50 100

Legend

- Cadastre
- Roads
- 150m Buffer
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone

Potential Bushfire Hazard

- Very High Potential Bushfire Intensity
- High Potential Bushfire Intensity
- Medium Potential Bushfire Intensity
- Potential Impact Buffer

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Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

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4 Mitigating Potential Bushfire Impact

A number of actions should be implemented to mitigate the potential impacts of bushfire on the development. This suite of bushfire mitigation measures, when implemented in an integrated manner can achieve a better outcome for the site than when used individually and in isolation from other measures. This suite of potential measures is illustrated in Figure 13.

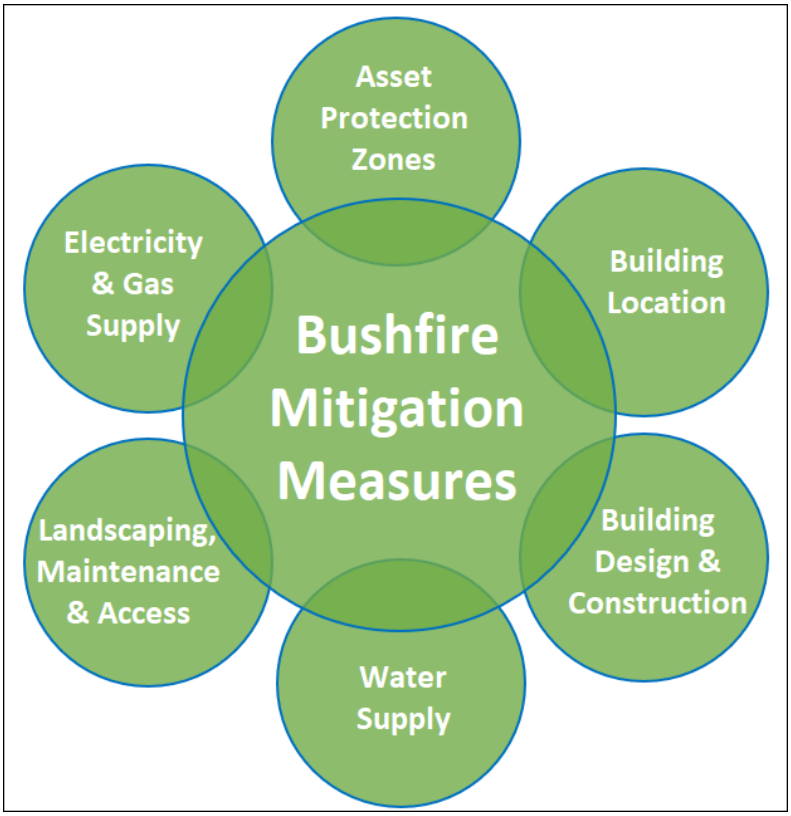

Figure 13 Bushfire mitigation measures in combination. (Redrawn from Guideline for Building in Bushfire Prone Areas; Emergency Management Victoria 2016)

4.1 Building Location and Separation

The location of buildings and their relationship with vegetation in the immediate surrounding area is critical for maximising their survival in the event of a bushfire. A Building Location Envelope of 90 x 80 metres has been identified for the proposed development to ensure that a potential dwelling achieves a minimum separation distance of 25 metres from hazardous vegetation to enable a BAL of no greater than BAL-29 to be achieved (Appendix B). Failure to maintain these separation distances will result in a higher Bushfire Attack Level (BAL) being applied to the dwelling. Building issues can be adequately addressed during the design and construction phase with compliance to the National Construction Code and the Australian Standard for construction of buildings in bushfire-prone areas (AS3959-2018).

Appendix C Calculation of Bushfire Hazard contains additional information on the methodologies used to calculate the potential bushfire hazard that the site is exposed to and Appendix D has an explanation of BALs.

4.2 Asset Protection Zones

The establishment of an Asset Protection Zone (APZ) is an effective mechanism for reducing bushfire hazards that a building may be exposed to. An APZ is a fuel-reduced area surrounding a built asset or structure. Potential

bushfire fuels should be minimised within an APZ, so that the vegetation within it does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy. An APZ, if designed correctly, implemented and maintained regularly, will reduce the risk of:

- direct flame contact on the asset;
- damage to the built asset from intense radiant heat; and
- ember attack.

The APZ is located between the asset and the bushfire hazard and consists of an Inner Protection Area (IPA) and an Outer Protection Area (OPA). The IPA is the area closest to the asset and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and be a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous. The OPA is located between the IPA and the unmanaged vegetation. Vegetation within the OPA can be managed to a more moderate level with the reduction of fuel in this area substantially decreasing the intensity of an approaching fire. It also assists restricting the pathways to crown fuels; reducing the level of direct flame, radiant heat and ember attack on the IPA and built assets. Figure 14 provides a visual representation of a building, separation from areas of potentially hazardous vegetation and the creation of an APZ.

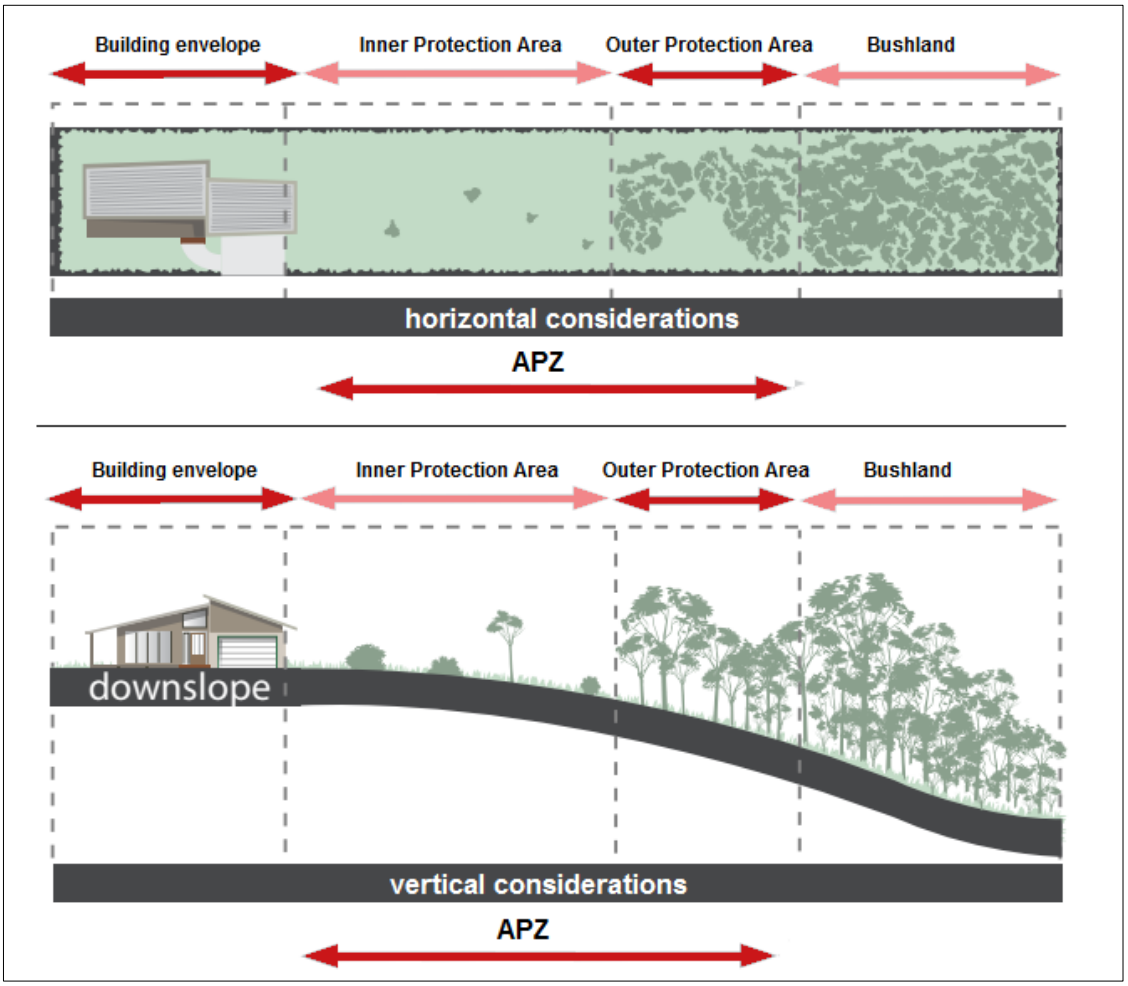

Figure 14 Building envelopes and their relationship to potentially hazardous vegetation. (Planning for Bushfire Protection 2017)

Additional details on creating and managing an APZ are provided Appendix E Living in a Bushfire Prone Area.

4.3 Building Design and Construction

Careful design of new buildings in areas of mapped bushfire hazard needs to be undertaken; which includes consideration of site characteristics. Buildings should be constructed to meet the requirements of the relevant building standards and Council bylaws prevailing at the time to enable a building to be designed and constructed according to the site conditions. This includes the Building Code of Australia (BCA 2019) and the Australian Standard for "Construction of buildings in bushfire-prone areas (AS3959 – 2018). Currently a site-specific assessment is required for all new dwellings being constructed in identified bushfire prone areas.

Indicative Bushfire Attack Levels (BAL) for the Building Location Envelope are in the order of BAL-12.5 to BAL-29 (Appendix B), dependent on the final location of a dwelling, separation distances from unmanaged and potentially hazardous vegetation and extent of vegetation management activities undertaken on the site.

In assessing vegetation classes for forests, woodlands and rainforests, the classified vegetation will be determined by the unmanaged understorey rather than either the canopy (drip line) or trunk of any trees (AS3959-2018).

Appendix C Calculation of bushfire hazard contains information on the potential Bushfire Attack Levels that could be experienced on the site and Appendix D has an explanation of BALs.

4.4 Access and Egress

Unhindered access and egress is required to the site to enable ready access by emergency services in a time of need. Ready access is available from Bowman Road to the east and is of sealed all-weather construction. This enables safe and unhindered ingress and egress to the site.

4.5 Vegetation Management

The site is mapped as containing Category X vegetation and Category C (regrowth) vegetation comprising Regional Ecosystem (RE) 12.5.6/12.12.2/12.11.3/12.9-10.14.

Vegetation in the western extent of the site comprises eucalypt woodland with a grassy understory containing sparse introduced weed Lantana *(Lantana camara)*. Vegetation across the central and eastern extents of the site comprises maintained areas of scattered eucalypt canopy with a maintained grassy understory in association with existing infrastructure onsite. The lot layout and Building Location Envelope for proposed Lot 2 have been designed to site a future dwelling within the lot to achieve a minimum separation distance of 25m from potentially hazardous vegetation to the south and west, achieving a maximum radiant heat exposure equivalent to BAL-29.

A BLE has been identified for the site that enables a dwelling to be constructed and to be well-separated from areas of unmanaged vegetation. Ongoing vegetation management and control of woody weeds (such as lantana) will assist in the prevention of potentially hazardous fuel loads accumulating. General site maintenance (i.e. slashing or mowing) on proposed lots will limit the potential for the accumulation of potentially hazardous vegetation to occur and maintain the existing level of low bushfire hazard.

Failure to maintain these measures may contribute to the development being exposed to a higher level of bushfire threat and attack.

4.6 Fire Trails

No fire trails are proposed due to limited nature of the development (one into two subdivision), the extent of native vegetation present, level of bushfire hazard and separation distances achieved from potentially hazardous vegetation provided by the establishment of APZs at the time of constructing dwellings on individual lots.

Vegetation within the site will be managed at low fuel loads and provide adequate separation from potentially hazardous vegetation such that dwellings are able to achieve a bushfire attack level (BAL) no greater than BAL-29

dependent on the final location of a dwelling on the lot, separation distances from unmanaged and potentially hazardous vegetation and extent of vegetation management activities undertaken on the site.

All lots will be readily accessible by emergency service vehicles from Bowman Road. The development is buffered to the north and east by roads, properties containing managed vegetation, lawns and driveways.

4.7 Water Supply

The South Burnett Regional Council (SBRC) Planning Scheme (2017 Version 1.4) Bushfire Hazard Overlay Code for Rural Residential areas requires that the development be provided with a reliable water supply for fire-fighting purposes that is safely located and freely accessible. This can be achieved by:

- Where a reticulated water supply is not available and development involves buildings with a gross floor area greater than 50m^2, one tank within 100m of each residential building that has:
    a. fire brigade tank fittings; and
    b. 25,000 litres dedicated for fire fighting purposes.

It is noted that the SPP identifies water supply requirements and requires that an adequate water supply is provided for fire-fighting purposes. An appropriate static water supply (in bushfire prone areas where reticulated supply is not provided) to support effective emergency services response includes a water tank that is available solely for firefighting purposes and can be accessed by firefighting appliances. The water tank is to be provided within 10 metres of each building (other than a class 10 building), which:

- is either below ground level or of non-flammable construction;
- has a take-off connection at a level that allows the following dedicated, static water supply
- to be left available for access by firefighters:
    i. 10,000 litres for residential buildings;
- is protected from bushfire attack, including shielding of tanks and pumps in accordance with AS 2304–2011 Water storage tanks for fire protection systems;
- allows medium rigid vehicle (15 tonne fire appliance) clear access within six metres of the tank;
- if serviced by a rural fire brigade, is provided with rural fire brigade tank fittings of a 50 millimetre ball valve and male camlock coupling and, if underground, an access hole of 200 millimetres (minimum) to accommodate suction lines; and
- is clearly identified by directional signage at the street frontage.

4.8 Landscaping

The design, management and maintenance of the landscape in the immediate vicinity of buildings are fundamental to the chances of survival of both people and buildings in a bushfire event. Vegetation provides the major fuel element in a bushfire. All vegetation, regardless of how succulent or green it is will eventually burn, provided the fire has sufficient intensity. Contrary to common belief, the area around the building does not need to be totally devoid of vegetation, and in fact some trees in this area can serve a valuable role in trapping embers before they impact on the asset. It is important however that:

- There are substantial gaps (of at least 2 - 5m) between the canopies of any trees in this area;
- There are no continuous fuels linked horizontally or vertically. (Smooth barked trees provide a lesser fuel ladder to the canopy than rough barked or ribbon barked species);
- Tree canopies do not overhang the roof;

- Surface and near surface fuels are kept to a minimum. This includes lawns to be kept short (less than 10 cm in height) and removal of accumulated leaf and bark litter;
- Avoidance of flammable mulches on garden beds such as woodchip or straw within 10 metres of dwellings; and
- Use of non-flammable mulches such as river pebbles or stones on garden beds near dwellings and buildings.

Guidelines for landscaping in fire prone areas are provided in Appendix F.

4.9 Prepare, Act, Survive

It is important that residents are well prepared during times of high fire danger and have well made plans that can be readily enacted in a time of bushfire emergency. This includes having plans in place to guide actions on days of extreme and catastrophic, identifying safe refuge areas and planning to either 'stay' or 'go'. The key message being; Prepare, Act and Survive. The Queensland Fire and Emergency Services have information readily available to assist people living in bushfire prone areas to develop their own plans. Details can be downloaded from:

https://www.qfes.qld.gov.au/sites/default/files/2023-06/Bushfire-Safety-Guide_0.pdf and

https://bushfire-survival-plan.qfes.qld.gov.au/

4.10 Maintenance of Bushfire Mitigation Measures

This fire report has been prepared on the basis that bushfire mitigation measures identified are implemented and maintained into the foreseeable future. Failure to maintain these measures may contribute to the development being exposed to a higher level of bushfire threat and attack.

5 Planning Requirements

The Queensland Government's State Planning Policy (SPP) for Natural Hazards (Bushfire) contains development assessment requirements that developments in bushfire prone areas are required to address. Likewise, the SBRC (2017 V 1.4) Bushfire hazard overlay code contains provisions to protect the safety of people and property in bushfire risk areas. The Code proposes Performance outcomes and Acceptable outcomes which have been addressed through Proposed Solutions.

A summary of compliance with SPP and SBRC Bushfire hazard overlay code is presented in Table 9.

Table 9 Summary of compliance to the Queensland SPP and SBRC Bushfire hazard overlay code

	Compliance		Reference		
Development Action	Queensland State Planning Policy	SBRC Bushfire Hazard Overlay Code	QLD SPP Table 10	QLD SPP Table 11	SBRC Table 12
Risk mitigation	✓	✓	PS1	PS1	PS15.2-3
Water access	✓	✓	PS1 (iii), PS2 (i)		PS15.3 (d)
Access and Egress	✓	✓	PS1 (iv), PS2 (ii)	PS9	PS15.3 (b,c)
Vegetation management	✓	✓	PS1 (i), PS2 (iii), PS3 (i), (iii), (iv),		PS17.1
Asset Protection Zones	✓	✓	PS1 (i), PS3 (ii)	PS1.2	PS17.1(a)
Location of buildings	✓	✓	PS1 (i)	PS2	PS15.1, PS17.1 (a)
Building design & construction	✓	✓	PS1 (ii)		PS15.2, PS15.3(a)
Hazardous materials	✓		PS4		N/A
Community infrastructure	N/A	N/A	N/A	N/A	N/A

5.1 State Planning Policy – Bushfire

The State Planning Policy (July 2017) provides a comprehensive set of principles which underpin Queensland's planning system to guide local government and the state government in land use planning and development assessment. The State's interest in relation to natural hazards is: "The risks associated with natural hazards are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards". The State Planning Policy (July 2017) development assessment requirements have been addressed in Table 10.

Table 10 State Planning Policy development assessment requirements (Natural hazards, risk and resilience - Bushfire)

Assessment Benchmark	Development Assessment Requirement	Proposed Solution
Applicable development	A development application for a material change of use, reconfiguration of a lot or operational works on premises in any of the following: 1. bushfire prone areas 2. flood hazard areas 1. landslide hazard areas 2. storm tide inundation areas 3. erosion prone area.	Development is a Reconfiguration of a Lot (RoL) that will result in the creation of two (2) Rural Residential lots with lot sizes of 2.12 and 4.73ha. Development is proposed in an area identified as bushfire prone.
3	Bushfire, flood, landslide, storm tide inundation, and erosion prone areas outside the coastal management district: Development other than that assessed against (1) above, avoids natural hazard areas, or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level.	PS1. The development is located in an area of mapped Very High Potential Bushfire Intensity and Potential Impact Buffer by the Queensland Government Development Assessment Mapping System Natural Hazards Risk and Resilience mapping (Bushfire). The majority of the proposed Building Location Envelope is located within an area of mapped Potential Impact Buffer. A site assessment was conducted to confirm the presence of mapped VHC classes and the level of potential bushfire hazard present. The Potential Bushfire Hazard for the site was assessed to comprise Medium Bushfire Hazard and Potential Impact Buffer. The site assessment identified that the bushfire hazard is less than levels mapped by the Queensland Government due to historical and current vegetation management practices on the site and in the surrounding landscape. A Bushfire Management Plan was prepared that identifies measures to mitigate the risks to people and property to an acceptable level. Included in the hazard assessment were identification of vegetation hazard class (VHC) present and the calculation of Bushfire Attack Levels. Mitigation measures identified include: 1. Establishment of Asset Protection Zones at the time of constructing new dwellings on the site;

		2. Buildings to comply with relevant standards of building construction including the BCA and AS3959-2018. Indicative BALs range in the order of BAL12.5 to BAL-29 for the Building Location Envelope dependant on the final location of a dwelling and extent of vegetation management undertaken. A 'worst case scenario' was adopted with an FDI of 60 used in BAL calculations; 3. Provision of an adequate water supply that can be readily accessed for fire-fighting purposes; and 4. Adequate ingress and egress to the site. Provided the measures identified in the bushfire management plan are implemented and maintained, the bushfire risk to people, property and infrastructure can be kept to an acceptable level.
4	All natural hazard areas: Development supports and does not hinder disaster management response or recovery capacity and of capabilities.	PS2. A development comprising a one (1) into two (2) lot subdivision proposed to occur at the site in an area mapped by the Queensland Government Development Assessment Mapping System as comprising Very High Potential Bushfire Intensity and Potential Impact Buffer. The development actively assists and supports disaster management capacity and capabilities by: 1. Providing ready access to a water supply suitable for fire-fighting purposes. This can be achieved by provision of a dedicated on-site water storage system that permanently holds a minimum of 25,000 litres at the time of constructing a dwelling. 2. Provision of all-weather constructed access to all lots; 3. Managing potentially hazardous fuel loads on the site; and 4. The identification of a Building Location Envelope on the site ensures that a dwelling will not be located in areas of Very High Potential Bushfire Intensity (Figure 12).
5	All natural hazard areas:	PS3.

	Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties	The development takes into consideration topography, location of existing vegetation and potential natural hazards. The site comprises eucalypt woodland. Mitigation measures identified include: 1. Maintenance of vegetation (including understorey) on the site to prevent the accumulation of hazardous fuel loads; 2. Establishment of Asset Protection Zones around new dwellings at the time of their construction; 3. Ongoing management of woody environmental and highly flammable weeds on the site such as Lantana in the vicinity of dwellings; 4. Landscaping near buildings to consist of plants that have low flammability.
6	All natural hazard areas: Risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard are avoided.	PS4. Development is a Rural Residential subdivision. It does not involve the location or use of hazardous materials on the site. In this situation there is no potential for the release of these materials as a result of a natural hazard event.
7	All natural hazard areas: The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	PS5 The development seeks to maintain and enhance the protective function of landforms and vegetation present on the site by: 1. Ongoing and effective management of environmental weeds on the site; 2. Retaining the natural landform by minimising the extent of major earthworks required; and 3. Ensuring that any landscape plantings are compatible with the natural environment and do not contribute to an elevated bushfire hazard. Incorporation of these measures in the development will enable natural processes and functions to continue and aid in the mitigation of risks associated with potential natural hazards.

Table 11 State Planning Policy planning scheme assessment benchmarks

Performance outcomes	Acceptable outcomes	Proposed solutions
Section A **Reconfiguring a lot (RaL) – where creating any number of lots of more than 2,000 square metres**		
PO1 The subdivision layout: (a) enables future buildings to be located away from slopes and land forms that expose people or property to an intolerable risk to life or property; and (b) facilitates emergency access and operational space for firefighters in a reduced fuel area between future buildings and structures and hazardous vegetation, that reduce risk to an acceptable or tolerable level	AO1.1 A development footprint plan is identified for each lot that avoids ridgelines, saddles and crests where slopes exceed 28 per cent. AO1.2 A development footprint plan is identified for each lot that is separated from the closest edge to the adjacent mapped medium, high or very high potential bushfire intensity area by: (a) a distance that achieves a radiant heat flux level of 29 kW/m2 or less at all development footprint plan boundaries.	PS1.1 Development is the Reconfiguring a Lot that will result in the creation of two (2) Rural Residential Lots with areas of 2.12 and 4.73ha. It avoids ridgelines, saddles and crests and contains underlying slopes in the order of 7 to 12%. The majority of the land within the Building Location Envelope is relatively level, with the north-western corner falling to the northwest with a gradient of 7%. Proposed Lot 1 contains an existing dwelling and auxiliary structures, and a Building Location Envelope has been identified for proposed Lot 2. PS1.2 Development occurs in an area mapped as Very High Potential Bushfire Intensity and Potential Impact Buffer. The Potential Bushfire Hazard for the site was assessed to comprise Medium Bushfire Hazard and Potential Impact Buffer. The site assessment identified that the bushfire hazard is less than levels mapped by the Queensland Government due to historical and current vegetation management practices on the site and in the surrounding landscape. The Building Location Envelope on Lot 2 has been identified to achieve a minimum separation distance of 25 metres from areas of potentially hazardous vegetation, which will achieve a radiant heat flux level of less than or equal to 29 kW/m^2 (BAL-29).
PO2 The subdivision layout enables: (a) future buildings to be located as close as possible to property entrances to facilitate safe evacuation during a bushfire event; and (b) future site access to be located and designed to allow safe evacuation of the	AO2 A development footprint plan is identified for each lot that: (a) is located within 60 metres of the street frontage; and	PS2 (a) A Building Location Envelope has been identified for proposed Lot 2 that enable a dwelling to be safely located with ready access to Bowman Road on the eastern boundary of the site. A minimum separation distance of 25m is achieved from potentially hazardous vegetation to the south and west of the site to achieve a maximum of BAL-29.

site by occupants and maintain access by emergency services under critical event conditions	(b) sited to enable a route between the development footprint plan and the street frontage with a gradient that does not exceed of 12.5 per cent.	(b) the land within the Building Location Envelope is relatively level, with the north-western corner falling to the northwest with a gradient of 7%.
Section D **Reconfiguring a lot (RaL) – where creating additional lots for the purpose of residential development and a reticulated water supply is not provided:**		
PO9 The subdivision layout provides for perimeter roads or fire trail and working areas that are accessible by the type of fire-fighting vehicles servicing the area, to facilitate emergency access and operational space for fire-fighting, maintenance works and hazard reduction activities	AO9 The subdivision layout includes: (a) a fire trail and working area designed and constructed in accordance with the design parameters in Table 2 (Natural hazards, risk and resilience state interest –Bushfire Example planning scheme assessment benchmarks) that separates the residential lot or development footprint plan from adjacent mapped medium, high or very high potential bushfire intensity areas; or (b) a perimeter road designed and constructed in accordance with Measure 8.1. (Natural hazards, risk and resilience state interest –Bushfire Example planning scheme assessment benchmarks)	PS9 (a) A fire trail is not identified for the development due to the level of bushfire hazard exposure, ready site access, limited fuel loads and separation distances achieved from potentially hazardous vegetation. The Building Location Envelope for proposed Lot 2 is able to achieve a minimum separation distance of 25m from potentially hazardous vegetation and areas assessed as containing potential bushfire hazard. This effectively separates areas where a dwelling may be constructed from areas of Very High potential bushfire intensity and is suitable for use by QFES rural fire brigade vehicles. (b) a perimeter road is not prescribed for the reasons identified in PS9(a).
Section F **Where involving an asset protection zone**		
PO17 Asset protection zones are designed and managed to ensure they do not increase the potential for bushfire hazard. Note – The preparation of a landscape management plan undertaken in accordance with the methodology in the QFES Bushfire resilient communities document may assist in demonstrating compliance with this performance outcome.	AO17.1 Landscaping treatments within any asset protection zone comprise only low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks. Note – Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack, for example short-cropped grass to a nominal height of 10 centimetres. OR	PS17.1 Landscaping within an asset protection zone are to comply with the requirements of AO17.2 as discussed in Appendix E and Appendix F of this report.

	AO17.2 Landscaping management within any asset protection zone maintains a: (a) potential available fuel load which is less than eight tonnes/hectare in aggregate; and (b) fuel structure which is discontinuous. Note – The preparation of a landscape management plan undertaken in accordance with the methodology in the QFES Bushfire resilient communities document may assist in demonstrating compliance with this acceptable outcome.	

5.2 South Burnett Regional Council Planning Scheme – Bushfire

The South Burnett Regional Council Planning Scheme (SBRC) (2017 V 1.4) contains a rural residential zone code which includes a Bushfire hazard overlay code.

The purpose of the rural residential zone code is to provide for residential uses and activities on large lots, including lots for which the local government has not provided infrastructure and services.

This code identifies performance outcomes and acceptable outcomes. Where appropriate, this Code has been applied to the development and outcomes proposed to comply with the accepted development and assessment benchmarks. Table 12 provides responses to the bushfire hazard overlay code.

Table 12 SBRC Rural Residential Zone Bushfire Hazard Overlay Code – Accepted development subject to requirements and assessable development

Performance outcomes	Acceptable Outcomes	Proposed solutions
PO15 Development is not placed at unacceptable risk from bushfire, does not increase the extent or severity of bushfire and maintains the safety of people and property from bushfire.	AO15.1 Development does not occur in areas mapped as Very High or High Potential Bushfire Intensity Areas on the SPP Interactive Mapping (Plan Making). or AO15.2 A written assessment by a suitably experienced or qualified person confirms that the site is of Low Bushfire Hazard. or AO15.3 For areas mapped as Medium Potential Bushfire Intensity Areas on the SPP Interactive Mapping (Plan Making), bushfire risk is mitigated through a Bushfire Management Plan incorporating: a. Lot design and the siting of buildings and uses so: i. high intensity uses are located on the least bushfire prone area on the site and activities least susceptible to fire are sited closest to the bushfire hazard; and ii. efficient emergency access is optimised; and iii. bushfire risk is effectively minimised having regard to aspect, elevation, slope and vegetation. b. Including firebreaks that provide adequate:	PS15.1 Development occurs in areas mapped as Very High Potential Bushfire Intensity and Potential Impact Buffer as identified by the SPP Bushfire Hazard mapping. Following desktop and site assessment, the site was identified as being located within an area of Medium and Low hazard (Potential Impact Buffer). PS15.2 A Bushfire Management Plan was prepared that identifies measures to mitigate the risks to people and property to an acceptable level. Bushfire Attack Levels (BAL) for the Building Location Envelope on proposed Lot 2 are in the order of BAL-12.5 to BAL-29 dependent on the individual location of a dwelling, extent of vegetation management undertaken and separation distances achieved and maintained. PS15.3 a. A Bushfire Management Plan has been prepared for the site which identifies standard of building required, emergency fire-fighting water supplies and ingress and egress requirements. New buildings to be constructed are to comply with current relevant building standards. This includes the Building Code of Australia (Parts 1 and 2) and the Australian Standard for Building in bushfire-prone areas (AS3959-2018). b. A potential dwelling within the Building Location Envelope on proposed Lot 2 will be able to achieve a minimum separation distance of 25m from potentially hazardous vegetation on the site. Firebreaks are not proposed due to adequate

	i. setbacks between buildings/ structures and hazardous vegetation; and ii. access for fire fighting or other emergency vehicles; and c. Road access for fire-fighting appliances and firebreaks are provided through a perimeter road that separates the use from areas of bushfire hazard and that road has a minimum cleared width of 20 metres; and d. Where a reticulated water supply is not available and development involves buildings with a gross floor area greater than 50m2, one tank within 100m of each residential building that has: i. fire brigade tank fittings; and ii. 25,000 litres dedicated for fire fighting purposes.	separation distance and good site access from Bowman Road. c. Construction of a new perimeter road is not required as all proposed lots front Bowman Road. A Building Location Envelope has been identified to allow for a minimum 25m separation from potentially hazardous vegetation to the west and south, dependant on final building location. An existing dwelling and auxiliary infrastructure are present on proposed Lot 1. Vegetation within the APZ will be managed at low fuel loads such that future dwellings will not be subject to a BAL greater than BAL-29. d. The proposed development will not be connected to a reticulated water supply. A dedicated fire-fighting water supply is to be provided at the time of constructing a dwelling on a lot in accordance with AO15.3 (d). These supplies can be readily accessed by urban and rural fire brigades for bushfire purposes. It is noted that the SPP 'Natural Hazards, Risk and Resilience – Bushfire' identifies that a dedicated water supply of 10,000 litres is to be provided.
PO16 Community infrastructure in any area mapped as Very High to Medium (Potential Intensity) Areas are able to function effectively during and immediately after bushfire events.	No outcome specified.	NA
PO17 Major risks to the safety or property and to the wellbeing of occupants in areas mapped as Very High to Medium (Potential Intensity) Areas is minimised through appropriate siting,	AO17.1 New dwellings on land mapped as Very High to Medium (Potential Intensity) Areas are located: a. Centrally within existing cleared areas on a lot which allows a regular shaped area (with a minimum dimension of 50m) of 5,000m^2 to be identified that:	PS17.1 The development site was mapped by the Queensland Government as being subject to a Very High Potential Bushfire Intensity and Potential Impact Buffer. The site assessment identified that a bushfire hazard rating of Medium and Low (Potential Impact Buffer) was present on the site.

servicing and managing of residential premises.	i. is free of highly combustible vegetated areas; and ii. is on southerly to easterly facing slopes not exceeding 15% gradient; or iii. on flat lands at the base of north to western facing slopes not exceeding 15% gradient. b. A fire protection buffer is established around the complete perimeter of the dwelling unit within a lot for a minimum width of 50m.	a. The Building Location Envelope achieve a minimum of 25 metres separation from potentially hazardous vegetation to the south and west. This will enable future dwellings to achieve a BAL of no greater than BAL-29. Proposed Lot 1 contains an existing dwelling and associated infrastructure. Lot 2 allows for a dwelling to be located centrally within a regular shaped cleared area of 90x80m (7200m2) that is: i. Free of highly combustible vegetated areas; and ii. The land within the Building Location Envelope is relatively level, with the north-western corner falling to the northwest with a gradient of 7%. Suitable areas are available on the site that enable future buildings to be located in areas of least hazard. Adequate separation from areas of hazardous vegetation can be achieved that minimise potential exposure to bushfire hazards. Appendix C contains additional information on the methodologies used to calculate the potential bushfire hazard that the site is exposed to.

6 Conclusion

The bushfire assessment of the site identified that in general hazards are in the Medium category with Bushfire Attack Levels (BAL) in the order of BAL-12.5 to BAL-29 for potential dwellings on the site, dependent on the final location of a dwelling, extent of vegetation management undertaken, and separation distances achieved and maintained (Appendix B). The bushfire risk to built assets can be effectively managed through the identification of the Building Location Envelope, ready ingress and egress to the site from Bowman Road, ongoing management of the site to maintain it in a low fuel load state (less than 5 tonnes per hectare) and the provision of a dedicated fire-fighting water supply at the time of constructing a dwelling on the site.

Building measures can be adequately addressed at the design and construction phase through the application of the National Construction Code and the Australian Standard Construction of buildings in bushfire-prone areas (AS3959-2018).

6.1 Recommendations

The following recommendations are made for the proposed development with reference to the ecological values and bushfire management requirements of the site:

- A Building Location Envelope be sited over a portion of proposed Lot 2 to ensure that a dwelling is subject to a radiant heat flux exposure of BAL-29 or below.
- An Asset Protection Zone for 25 metres be established around the BLE on Lot 2 and maintained on lands under the management of the landholder.
- That buildings are designed and constructed to meet the requirements of the relevant building standards prevailing at the time. This includes AS3959 – 2018, the BCA and relevant Council bylaws and building regulations.
- A minimum 25,000L permanent water supply be established at the time of construction of a structure which is capable of supplying water for fire-fighting purposes.
- That vegetation be managed in the proposed BLE and APZ to prevent the accumulation of hazardous fuel loads to minimise the accumulation of hazardous fuel loads and to control understory woody and highly flammable weeds such as Lantana.
- That any landscaping works utilise plant species and design principles suitable for bushfire prone areas and in accordance with Appendix F.
- That bushfire mitigation measures identified in this bushfire management report are implemented and maintained.

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Appendices

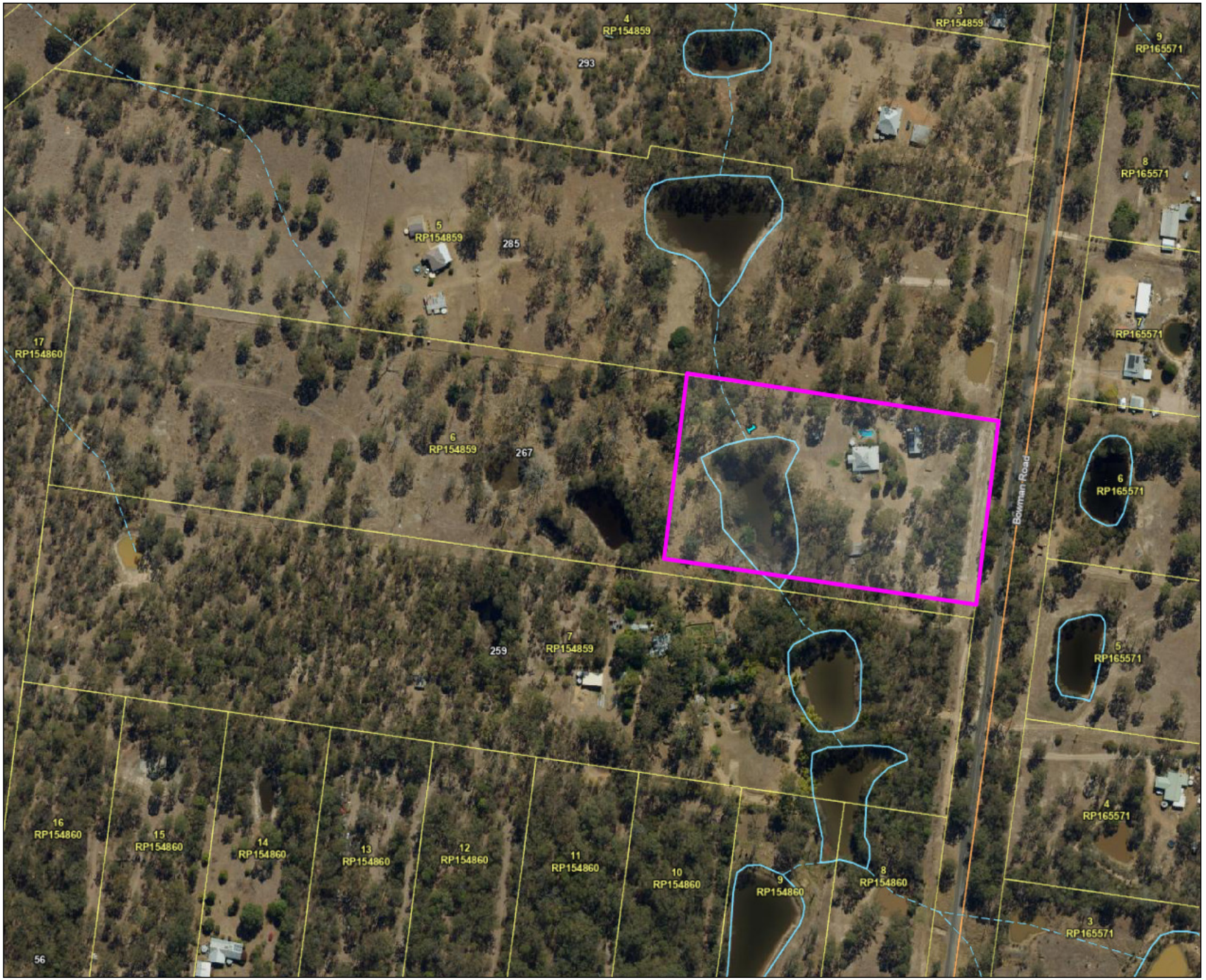
Appendix A Site Plan

Ian & Donna Lewis

Subdivision Enquiry - 267 Bowman Road, Blackbutt

26°51'21"S 152°5'56"E

26°51'21"S 152°6'23"E



26°51'40"S 152°5'56"E

26°51'40"S 152°6'23"E

A product of Queensland Globe

Legend located on next page

N

0 50 metres

Scale: 1:2500

Printed at: A3

Print date: 22/3/2024

Not suitable for accurate measurement.

Projection: Web Mercator EPSG 102100 (3857)

For more information, visit https://qldglobe.information.qld.gov.au/help-info/Contact-us.html

Queensland Government

Department of Resources

Appendix B Bushfire Attack Levels

Appendix B Bushfire Attack Levels

Project: BMR, 267 Bowman Road, Blackbutt

Client: Ian & Donna Lewis

Project No.: J002095

Compiled by: SkyeMelton Date: 3/10/2024
Approved by: Will Gibson Date: 3/10/2024

Metres
0 30 60

Legend

- Cadastre
- Roads
- Proposed Lot Layout
- Proposed Building Location Envelope
- Asset Protection Zone
- BAL-12.5
- BAL-19
- BAL-29
- BAL-40
- BAL-FZ

Source: Cadastral data sourced from DNRME (2024). Aerial imagery sourced from NearMap (2024).

N

range environmental consultants

Appendix C Calculation of Bushfire Hazard

In accordance with SPP guidance material (Bushfire Resilient Communities (QFES 2019) the vegetation hazard class (VHC) mapping was reviewed and modified to accurately represent the on-ground matters through a field assessment.

Vegetation hazard class and 80th percentile potential fuel load inputs from QFES (2019) were utilised to determine the radiant heat exposure using a Method 2 Calculator.

Determination of Bushfire Attack Level – SPP APZ Calculator

The bushfire hazard that buildings could potentially be exposed to was calculated using the QFES SPP Asset Protection Zone Calculator and fuel loads consistent with the ground-truthed VHCs as set out in SPP technical reference guide 'Bushfire Resilient Communities' (2019). AS 3959-2018 identifies the level of construction required for the purpose of ensuring that a building is constructed to withstand a potential bushfire attack. This Standard is primarily concerned with improving the ability of buildings in designated bushfire-prone areas to better withstand attack from bushfire, thus giving a measure of protection to the building occupants (until the fire front passes) as well as to the building itself. AS3959-2018 requires that vegetation be assessed within 100 metres of a building when determining the Bushfire Attack Level.

Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire' (2019) requires that bushfire hazard is to be assessed within 150m of the development footprint.

Adopting a worst-case scenario, an FDI of 60 was used for the site when calculating Bushfire Attack Levels (BAL) for 'the site'. The following steps were carried out using information collected from the relevant site and applying this information to the conditions required and set out in QFES SPP Bushfire Asset Protection Zone Calculator and the Australian Standard 'Construction of Buildings in Bushfire-prone areas' (AS 3959-2018).

Table 13 Parameters used in SPP APZ calculations

Step	Procedure	Value north	Value east	Value south	Value west
1	Fire Danger Index (FDI)	60	60	60	60
2	Vegetation Hazard Class (VHC)	39.2	39.2	9.2	9.2
3	Surface fuel load (t/ha)	5.0	5.0	14.9	14.9
4	Overall fuel load (t/ha)	8.0	8.0	17.2	17.2
5	Location of vegetation (Upslope/Downslope)	Downslope	Downslope	Upslope	Downslope
6	Site slope	5 degrees	6 degrees	1 degree	4 degrees
7	Effective slope of land under classified vegetation	7 degrees	6 degrees	1 degree	6 degrees

In assessing vegetation classes for forests, woodlands and rainforests, the classified vegetation will be determined by the unmanaged understorey rather than either the canopy (drip line) or trunk of any trees (AS3959-2018).

The site assessment identified that vegetation within the site aligned predominantly with VHC 39.2, with vegetation to the west of the site aligning with VHC 9.2 and vegetation to the east of the site aligning with VHC 40.4 and VHC 43.6. Given that it is a rural residential area however, an unmaintained understory may develop in association with a change of management regimes or landholder. Table 14 to Table 17 provides details of the BAL calculations for the site using the SPP APZ Calculator in relation to the area of vegetation to the north, east, south and west.

Table 14 State Planning Policy Asset Protection Zone Width Calculator (VHC 39.2 to the north – downslope)

SPP Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	**VARIABLE**	**UNITS**	**VALUE**
Input Values			
FIRE WEATHER SEVERITY	**FDI**		60.00
VEGETATION HAZARD CLASS	**VHC**	-	39.2 Low to moderate tree cover in built-up areas
REMNANT STATUS	**-**	-	Non-remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	**ST**	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	**eSlope**	degrees	7.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	**θ**	degrees	5.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	**d**	m	10.00
Output Values			
SURFACE FUEL LOAD	**-**	t/ha	2.00
NEAR SURFACE FUEL LOAD	**-**	t/ha	3.00
BARK FUEL LOAD	**-**	t/ha	2.00
ELEVATED FUEL LOAD	**-**	t/ha	1.00
TOTAL OVERALL FUEL LOAD	**W**	t/ha	8.00
TOTAL SURFACE FUEL LOAD	**w**	t/ha	2.00
POTENTIAL FIRE LINE INTENSITY	**I**	kW/m	0
RADIANT HEAT FLUX	**q**	kW/m^2	0.00
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	**BAL**	-	BAL-LOW
DISCLAIMER: Fire-line intensity and radiant heat calculations where effective slope exceeds 20 degrees (downslope) or 15 degrees (upslope) may be unreliable. In these locations, specialist assessment is warranted.			

Table 15 State Planning Policy Asset Protection Zone Width Calculator (VHC 39.2 to the east -downslope)

SPP Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	**VARIABLE**	**UNITS**	**VALUE**
Input Values			
FIRE WEATHER SEVERITY	**FDI**		60.00
VEGETATION HAZARD CLASS	**VHC**	-	39.2 Low to moderate tree cover in built-up areas
REMNANT STATUS	**-**	-	Non-remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	**ST**	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	**eSlope**	degrees	6.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	**θ**	degrees	6.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	**d**	m	25.00
Output Values			
SURFACE FUEL LOAD	**-**	t/ha	2.00
NEAR SURFACE FUEL LOAD	**-**	t/ha	3.00
BARK FUEL LOAD	**-**	t/ha	2.00
ELEVATED FUEL LOAD	**-**	t/ha	1.00
TOTAL OVERALL FUEL LOAD	**W**	t/ha	8.00
TOTAL SURFACE FUEL LOAD	**w**	t/ha	2.00
POTENTIAL FIRE LINE INTENSITY	**I**	kW/m	0
RADIANT HEAT FLUX	**q**	kW/m^2	0.00
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	**BAL**	-	BAL-LOW
DISCLAIMER: Fire-line intensity and radiant heat calculations where effective slope exceeds 20 degrees (downslope) or 15 degrees (upslope) may be unreliable. In these locations, specialist assessment is warranted.			

Table 16 State Planning Policy Asset Protection Zone Width Calculator (VHC 9.2 to the south-upslope)

SPP Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	**VARIABLE**	**UNITS**	**VALUE**
Input Values			
FIRE WEATHER SEVERITY	**FDI**		60.00
VEGETATION HAZARD CLASS	**VHC**	-	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
REMNANT STATUS	**-**	-	Remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	**ST**	-	Upslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	**eSlope**	degrees	1.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	**θ**	degrees	1.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	**d**	m	17.00
Output Values			
SURFACE FUEL LOAD	**-**	t/ha	11.40
NEAR SURFACE FUEL LOAD	**-**	t/ha	3.50
BARK FUEL LOAD	**-**	t/ha	1.30
ELEVATED FUEL LOAD	**-**	t/ha	1.00
TOTAL OVERALL FUEL LOAD	**W**	t/ha	17.20
TOTAL SURFACE FUEL LOAD	**w**	t/ha	14.90
POTENTIAL FIRE LINE INTENSITY	**I**	kW/m	10215
RADIANT HEAT FLUX	**q**	kW/m^2	26.45
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	**BAL**	-	BAL-29
DISCLAIMER: Fire-line intensity and radiant heat calculations where effective slope exceeds 20 degrees (downslope) or 15 degrees (upslope) may be unreliable. In these locations, specialist assessment is warranted.			

Table 17 State Planning Policy Asset Protection Zone Width Calculator (VHC 9.2 to the west-downslope)

SPP Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	**VARIABLE**	**UNITS**	**VALUE**
Input Values			
FIRE WEATHER SEVERITY	**FDI**		60.00
VEGETATION HAZARD CLASS	**VHC**	-	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
REMNANT STATUS	**-**	-	Remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	**ST**	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	**eSlope**	degrees	6.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	**θ**	degrees	4.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	**d**	m	25.00
Output Values			
SURFACE FUEL LOAD	**-**	t/ha	11.40
NEAR SURFACE FUEL LOAD	**-**	t/ha	3.50
BARK FUEL LOAD	**-**	t/ha	1.30
ELEVATED FUEL LOAD	**-**	t/ha	1.00
TOTAL OVERALL FUEL LOAD	**W**	t/ha	17.20
TOTAL SURFACE FUEL LOAD	**w**	t/ha	14.90
POTENTIAL FIRE LINE INTENSITY	**I**	kW/m	14423
RADIANT HEAT FLUX	**q**	kW/m^2	22.18
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	**BAL**	-	BAL-29
DISCLAIMER: Fire-line intensity and radiant heat calculations where effective slope exceeds 20 degrees (downslope) or 15 degrees (upslope) may be unreliable. In these locations, specialist assessment is warranted.			

Appendix D Explanation of Bushfire Attack Levels

Table 18 BAL Descriptions - Australian Standard - Construction of Buildings in Bushfire-prone Areas (AS 3959-2018)

				
BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ
The risk is considered to be LOW	The risk is considered to be MODERATE	The risk is considered to be HIGH.	The risk is considered to be VERY HIGH.	The risk is considered to be EXTREME.
There is a risk of ember attack. The construction elements are expected to be exposed to a heat flux not greater than 12.5 kW/m^2.	There is a risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to radiant heat. The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m^2.	There is an increased risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to an increased level of radiant heat. The construction elements are expected to be exposed to a heat flux not greater than 29 kW/m^2.	There is a much increased risk of ember attack and burning debris ignited by windborne embers, a likelihood of exposure to a high level of radiant heat and some likelihood of direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux not greater than 40 kW/m^2.	There is an extremely high risk of ember attack and burning debris ignited by windborne embers, and a likelihood of exposure to an extreme level of radiant heat and direct exposure to flames from the fire front. The construction elements are expected to be exposed to a heat flux greater than 40 kW/m^2.

Images sourced from Planning Practice Note 65 September 2014 Victoria State Government

Appendix E Living in a Bushfire Prone Area

Bushfire embers can ignite fuel and spread in three ways:

- Embers and burning debris carried by wind;
- Heat radiation from fire; and
- Direct flame contact.

Ignition of buildings by burning embers carried by the wind

Ignition of buildings *by heat radiation from the fire*

Ignition of buildings by direct flame contact

Figure 15 The three main elements of bushfire which threaten life and property (Ramsay & Rudolf 2003)

Overall, the intention of bush fire protection measures should be to prevent flame contact to a structure, reduce radiant heat to below the ignition thresholds for various elements of a building, to minimise the potential for wind driven embers to cause ignition and reduce the effects of smoke on residents and fire-fighters.

Whilst research shows that ember attack ultimately claims more vacant houses than radiant heat or flames, if a house is occupied, ember attack can be relatively easily dealt with. The consequence of leaving a house unattended is that there will probably be nobody there to prevent the small fires which initially start, from gradually taking hold of various parts of the structure. This process can occur over a significant period of time, usually simply with embers which fly about and settle, and start smouldering. The hot windy conditions associated with the fire help fan the smouldering clumps of fuel, and bring many small fires to life. These are

usually easy fires to extinguish if there is someone there with the equipment and water to put them out. In their absence, often some time, even hours after the initial fire front, the house succumbs to small fires which have grown to larger ones.

Over 90% of houses burnt down in bushfires are attributable to ember attack, and the vast majority of these are unattended at the time. In the 1984 study of the Ash Wednesday Fires around Mt Macedon, the survival rate amongst the 450 houses was 82% where they were occupied and 90% where the occupants were active, able bodied defenders, while only 30% of houses survived without someone to patrol them (Wilson & Ferguson, 1984).

Asset Protection Zones

The most immediate form of defence for an asset is a well-designed Asset Protection Zone (APZ). An APZ is a fuel reduced area surrounding a built asset or structure. This can include any residential building or major building such as farm and machinery sheds, or industrial, or commercial buildings.

Various amenities can contribute to the Asset Protection Zone, provided they are not combustible or otherwise they will add to radiant heat levels. Such amenities include driveways, tennis courts, swimming pools or fire trails, each adding to the distance from the hazard.

Radiant heat barriers such as non-combustible walls or water tanks can help shield assets from radiant heat, thereby complementing the APZ, and in some cases reducing the requirement for distance from the hazard to a degree.

An APZ provides:

- a buffer zone between a bush fire hazard and an asset;
- an area of reduced bush fire fuel that allows suppression of fire;
- an area from which backburning may be conducted; and
- an area which allows emergency services access and provides a relatively safe area for firefighters and home owners to defend their property

Potential bush fire fuels should be minimised within an APZ. This is so that the vegetation within the planned zone does not provide a path for the transfer of fire to the asset either from the ground level or through the tree canopy.

An APZ, if designed correctly and maintained regularly, will reduce the risk of:

- direct flame contact on the asset;
- damage to the built asset from intense radiant heat; and
- ember attack on the asset.

The APZ can be made up of an Inner Protection Area (IPA) and an Outer Protection Area (OPA).

Inner Protection Area (IPA)

The IPA is the area closest to the building and creates a fuel-managed area which can minimise the impact of direct flame contact and radiant heat on the development and act as a defendable space. Vegetation within the IPA should be kept to a minimum level. Litter fuels within the IPA should be kept below 1cm in height and be discontinuous.

In practical terms the IPA is typically the curtilage around the building, consisting of a mown lawn and well-maintained gardens.

When establishing and maintaining an IPA the following requirements apply:

Trees

- tree canopy cover should be less than 15% at maturity;
- trees at maturity should not touch or overhang the building (preferably, there should be no trees within 10 metres of a dwelling);
- lower limbs should be removed up to a height of 2m above the ground; and
- tree canopies should be separated by 2 to 5m.

Shrubs

- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided;
- shrubs should not be located under trees;
- shrubs should not form more than 10% ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.

Grass

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed.

Outer Protection Area (OPA)

An OPA is located between the IPA and the unmanaged vegetation. It is an area where there is maintenance of the understorey and some separation in the canopy. The reduction of fuel in this area aims to decrease the intensity of an approaching fire and restricts the potential for fire spread from crowns; reducing the level of direct flame, radiant heat and ember attack on the IPA.

When establishing and maintaining an OPA the following requirements apply:

Trees

- tree canopy cover should be less than 30%; and
- canopies should be separated by 2 to 5m

Shrubs

- shrubs should not form a continuous canopy; and
- shrubs should form no more than 20% of ground cover.

Grass

- grass should be kept mown to a height of less than 100mm; and
- leaf and other debris should be removed.

An APZ should be maintained in perpetuity to ensure ongoing protection from the impact of bushfires. Maintenance of the IPA and OPA as described above should be undertaken regularly, particularly in advance of the bush fire season.

The required distances for Asset Protection Zones are dependent on the vegetation type (hazard), the slope of the site and whether the hazard is upslope or downslope from the asset. An example of an APZ in relation to a dwelling is provided in Figure 16.

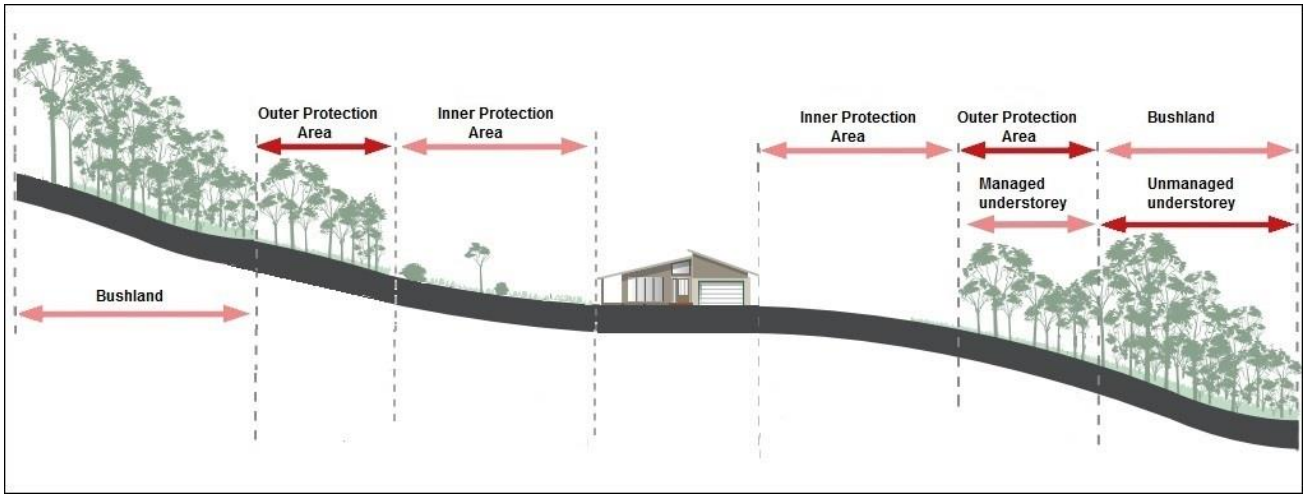


Figure 16 APZ Elements (Adapted from Planning for Bushfire Protection 2019)

Information presented in this Appendix was drawn from Planning for Bushfire Protection, A guide for councils, planners, fire authorities and developers (NSW Rural Fire Service November 2019) and Standards for Asset Protection Zones (NSW Rural Fire Service undated).

Appendix F Landscaping in Fire Prone Areas

The design, management and maintenance of the landscape in the immediate vicinity of buildings are fundamental to the chances of survival of both people and buildings in a bushfire event. Vegetation provides the major fuel element in a bushfire. All vegetation, regardless of how succulent or green it is will eventually burn, provided the fire has sufficient intensity. When landscaping in bushfire prone areas, it is important to use or retain plants of low flammability that have the relevant characteristics as identified in Table 19.

Table 19 Characteristics of low flammability species and effect on performance in bushfire situations

Plant attribute	Effect	Design measure
Foliage moisture content	Leaves with higher moisture content retard ignition and slow the rate of combustion	Select species with high leaf moisture content (e.g. rainforest species, succulents and semi-succulents)
Foliage volatile oil content	Foliage with higher volatile oil content ignite more readily and enhance ignition of surrounding vegetation, even though volatile oils themselves do not contribute significantly to total radiant heat	Select species with lower volatile oil content
Foliage mineral content	Foliage with higher mineral content tend to be less flammable (e.g. Amyema spp mistletoes)	Species selection should favour species with higher leaf mineral content
Leaf fineness	The ratio of area-to-volume of leaves is one of the main factors affecting ease of ignition and intensity of burning. Finer leaves (greater area to volume ratio) tend to ignite and burn more easily than broader leaves	Species selection should favour broad-leafed species
Density of foliage and continuity of plant form	Species with continuous, denser foliage can act as a barrier to wind-borne embers and radiant heat; however, increased density can increase flammability. Species with open branching and low foliage density are less effective as a barrier, though can be less flammable	Select species on a case-by-case basis
Height of lowest foliage	Shrub and tree species with persistent low height foliage are more likely to be ignited by surface fires, allowing the spread of fires into the canopy above	Species selection should favour species which can be maintained or pruned to reduce persistent, near-ground foliage
Size of plant (volume and spread)	The effect of plant size varies according to volume or spread. Species with a greater spread tend to be more effective as a barrier to the diffusion of radiant heat than narrower trees with the same volume. Species with a greater volume can result in increased ember attack, radiation and flame if ignited. For example, narrow columnar trees are less effective as a barrier than wider trees with the same overall volume	Species selection should ensure plant size (volume and spread) does not increase ignition likelihood

Plant attribute	Effect	Design measure
Dead foliage on plant	Persistent dead leaves and woody twigs increase flammability	Species selection should favour species which have a low volume of persistent dead leaves and woody material or can be maintained or pruned to reduce persistent, dead leaves and woody material
Bark texture	Loose, flaky, stringy, papery or ribbon-like bark contribute to ladder fuels which: • can contribute to destructive crown fires • act as a potential source of flame, radiant heat and ember attack	Avoid species with persistent loose, flaky, stringy, papery or ribbon-like bark. Species selection should favour smoothbarked and tightly-held bark species
Potential available surface fuel	The availability of surface fuel is a function of volume (quantity) and fineness. The fireline intensity increases in proportion to available fine fuel quantity. Fine fuel includes dead fallen material such as leaves, bark, twigs and branches up to 6mm in diameter (forest) and grass greater than 5cm in height (grasslands). Coarse fuel ignites less readily but may burn for longer	Species selection should favour species which do not contribute significantly to persistent, fine ground fuel

The characteristics of low flammability species and effect on performance in bushfire situations was sourced from the publication *Bushfire Resilient Communities, Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'*.

To assist building survival in a bushfire event, it is important that a fuel-reduced zone is maintained around it. This can be achieved by keeping all vegetation away from the building or by using low flammability plantings to help shield the building from radiant heat. Trees and shrubs that drop litter should not be planted or retained close to buildings where they can contribute to the accumulation of flammable material.

Ongoing maintenance of vegetation should be undertaken in the area surrounding the site to prevent hazardous fuel loads from occurring. These actions include:

- Pruning lower branches of trees to provide a minimum vertical 2 metre high fire break;
- Removal of loose bark, dead twigs, leaves;
- Regular mowing of lawns;
- Keeping other grassed areas to less than 100mm in height;
- Use of non-flammable mulches such as river pebbles or stones on garden beds near buildings; and
- Avoidance of flammable mulches on garden beds such as woodchip or straw.

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Appeal Rights

PLANNING ACT 2016 & THE PLANNING REGULATION 2017

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

(1) Schedule 1 of the *Planning Act 2016* states –
  (a) Matters that may be appealed to –
    (i) either a tribunal or the P&E Court; or
    (ii) only a tribunal; or
    (iii) only the P&E Court; and
  (b) The person-
    (i) who may appeal a matter (**the *appellant***); and
    (ii) who is a respondent in an appeal of the matter; and
    (iii) who is a co-respondent in an appeal of the matter; and
    (iv) who may elect to be a co-respondent in an appeal of the matter.

(Refer to Schedule 1 of the Planning Act 2016)

(2) An appellant may start an appeal within the appeal period.
(3) The ***appeal period*** is –
  (a) for an appeal by a building advisory agency – 10 business days after a decision notice for the decision is given to the agency; or
  (b) for an appeal against a deemed refusal – at any time after the deemed refusal happens; or
  (c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises – 20 business days after a notice us published under section 269(3)(a) or (4); or
  (d) for an appeal against an infrastructure charges notice – 20 business days after the infrastructure charges notice is given to the person; or
  (e) for an appeal about a deemed approval of a development application for which a decision notice has not been given – 30 business days after the applicant gives the deemed approval notice to the assessment manager; or
  (f) for any other appeal – 20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

  Note –
  See the P&E Court Act for the court's power to extend the appeal period.

(4) Each respondent and co-respondent for an appeal may be heard in the appeal.
(5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.
(6) To remove any doubt. It is declared that an appeal against an infrastructure charges notice must not be about-
  (a) the adopted charge itself; or
  (b) for a decision about an offset or refund-
    (i) the establishment cost of trunk infrastructure identified in a LGIP; or
    (ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

(1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that-
  (a) is in the approved form; and
  (b) succinctly states the grounds of the appeal.
(2) The notice of appeal must be accompanied by the required fee.
(3) The appellant or, for an appeal to a tribunal, the registrar must, within the service period, give a copy of the notice of appeal to –
  (a) the respondent for the appeal ; and
  (b) each co-respondent for the appeal; and
  (c) for an appeal about a development application under schedule 1, table 1, item 1 – each principal submitter for the development application; and
  (d) for and appeal about a change application under schedule 1, table 1, item 2 – each principal submitter for the change application; and
  (e) each person who may elect to become a co-respondent for the appeal, other than an eligible submitter who is not a principal submitter in an appeal under paragraph (c) or (d); and
  (f) for an appeal to the P&E Court – the chief executive; and
  (g) for an appeal to a tribunal under another Act – any other person who the registrar considers appropriate.
(4) The *service period* is –
  (a) if a submitter or advice agency started the appeal in the P&E Court – 2 business days after the appeal has started; or
  (b) otherwise – 10 business days after the appeal is started.
(5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).
(6) A person elects to be a co-respondent by filing a notice of election, in the approved form, within 10 business days after the notice of appeal is given to the person.

231 Other appeals

(1) Subject to this chapter, schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.
(2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.
(3) A person who, but for subsection (1) could have made an application under the Judicial Review Act 1991 in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.
(4) In this section –
  decision includes-
  (a) conduct engaged in for the purpose of making a decision; and
  (b) other conduct that relates to the making of a decision; and
  (c) the making of a decision or failure to make a decision; and
  (d) a purported decision ; and
  (e) a deemed refusal.
  non-appealable, for a decision or matter, means the decision or matter-
  (a) is final and conclusive; and
  (b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the Judicial Review Act 1991 or otherwise, whether by the Supreme Court, another court, a tribunal or another entity; and
  (c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, a tribunal or another entity on any ground.

232 Rules of the P&E Court

(1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.
  However, the P&E Court may hear and decide an appeal even if the person has not complied with the rules of the P&E Court.