



Bushfire Hazard Assessment

(PREPARED FOR PLANNING APPLICATION ASSESSMENT PURPOSES)



Noffke Court and Calume Court Logan Reserve

Logan City Council

Development Application - Residential Development

20 October 2025

Job Reference No: 250718

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DOCUMENT CONTROL


PREPARATION					
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VERSION HISTORY					
Version	Status/Details		Date		
1.0	Draft For Comment		15 October 2025		
1.0	Final		20 October 2025		
DISTRIBUTION					
Destination		Version	No. Copies	Hard Copy	Electronic Copy
Person	Email				
Geoff McWilliam	geoff@gdmproperty.com.au	1.0		<input type="checkbox"/>	<input checked="" type="checkbox"/>
		-		<input type="checkbox"/>	<input type="checkbox"/>
<p>Limitations: The protection measures that will be implemented based on information presented in this Bushfire Hazard Assessment are minimum requirements and they do not guarantee that buildings or infrastructure will not be damaged in a bushfire, persons injured, or fatalities occur either on the subject site or off the site while evacuating.</p> <p>This is substantially due to the unpredictable nature and behaviour of fire and fire weather conditions. Additionally, the correct implementation of the required protection measures (including bushfire resistant construction) and any other required or recommended measures, will depend upon, among other things, the ongoing actions of the landowners and/or operators over which Bushfire Prone Planning has no control.</p> <p>All surveys, forecasts, projections and recommendations made in this report associated with the proposed development are made in good faith based on information available to Bushfire Prone Planning at the time. All maps included herein are indicative in nature and are not to be used for accurate calculations.</p> <p>Notwithstanding anything contained therein, Bushfire Prone Planning will not, except as the law may require, be liable for any loss or other consequences whether or not due to the negligence of their consultants, their servants or agents, arising out of the services provided by their consultants.</p> <p>Copyright © 2025 BPP Group Pty Ltd: All intellectual property rights, including copyright, in format and proprietary content contained in documents created by Bushfire Prone Planning, remain the property of BPP Group Pty Ltd. Any use made of such format or content without the prior written approval of Bushfire Prone Planning, will constitute an infringement on the rights of the Company which reserves all legal rights and remedies in respect of any such infringement.</p>					
BMP (Master) Template v10.0					

TABLE OF CONTENTS

STATEMENT OF PURPOSE – THE BUSHFIRE HAZARD ASSESSMENT	3
EXECUTIVE SUMMARY	4
1 THE PLANNING PROPOSAL	5
1.1 DETAILS, PLANS AND MAPS.....	5
1.2 THE PLANNING PROPOSAL AND ITS REQUIREMENT TO ADDRESS BUSHFIRE RISK	7
1.2.1 APPLIED TRIGGERS ESTABLISHED BY THE LOCAL GOVERNMENT AS THE DECISION MAKER.....	8
1.3 DOCUMENTS RELEVANT TO PREPARING THE BMP.....	10
2 ENVIRONMENTAL CONSIDERATIONS – NATIVE VEGETATION.....	11
2.1 BIODIVERSITY OR CONSERVATION VALUES IDENTIFIED.....	11
3 BUSHFIRE HAZARD ASSESSMENT.....	14
3.1 BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT SUMMARY.....	14
3.1.1 BAL DETERMINATION METHODOLOGY AND LOCATION OF DATA AND RESULTS.....	14
3.1.2 BAL RATINGS DERIVED FROM THE CONTOUR MAP.....	15
3.1.3 SITE ASSESSMENT DATA APPLIED TO CONSTRUCTION OF THE BAL CONTOUR MAP(S).....	16
3.2 DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION.....	19
3.3 BAL ASSESSMENT INPUTS COMMON TO THE METHOD 1 AND METHOD 2 PROCEDURES	19
3.3.1 FIRE DANGER INDICES (FDI/FDI/GFDI)	19
3.4 VEGETATION ASSESSMENT AND CLASSIFICATION.....	19
4 OVERLAY CODE RESPONSES	24
4.1 LOGAN PLANNING SCHEME 2015 V9.2	24
APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION	29
A2.5: FLAME WIDTH	29
APPENDIX B: GUIDANCE – BUSHFIRE ATTACK LEVELS AND ASSET PROTECTION ZONES	32
B1: BUSHFIRE ATTACK LEVEL (BAL) - UNDERSTANDING THE RESULTS	32
B4: BAL /APZ AND PLANNING VS BUILDING APPROVAL REQUIREMENTS.....	33
B2: BAL CONTOUR MAP INTERPRETATION.....	34

LIST OF FIGURES

Figure 1.1: Proposed development plan.	6
Figure 1.2: Extract from Map of Bushfire Prone Areas (Bushfire Resilient Communities, QFES)	9
Figure 1.3: Extract from Map of Bushfire Prone Areas (Logan Planning Scheme 2015)	9
Figure 2.1: Land identified with known environmental, biodiversity and conservation values.	13
Figure 3.1: Topography and Classified Vegetation	18

STATEMENT OF PURPOSE – THE BUSHFIRE HAZARD ASSESSMENT

EXPLANATORY INFORMATION

SITE/USE PLANNING

This BHA is produced to present the information necessary for a planning proposal's assessment against local government planning schemes and the State's bushfire planning requirements. The developed information is to inform and assist decision-making authorities, planners, landowners/proponents and referral agencies in their implementation Qld's State Planning Policy 2017 and any provisions of a local planning scheme or policy. The assessment demonstrates compliance with the SPP state interest guidance material – Natural hazards, risk and resilience - Bushfire, supported by the Bushfire Resilient Communities (BRC) guidance material, and methodologies outlined in Leonard et al. 'A new methodology for Statewide mapping of bushfire prone areas in Queensland' (CSIRO 2014) and Leonard & Opie 'Estimating the potential bushfire hazard of patches and corridors' (CSIRO 2017)

Policy Document Versions Applied in This BHA	State Planning Policy 2017	December 2017	Local Planning Scheme	November 2024

SITE OPERATIONS

This BHA is not an 'operational' Bushfire Management Plan (BMP) for property and operations management. Such a BMP would apply additional and more specific bushfire protection measures to more comprehensively reduce the level of risks associated with a bushfire event. These being the potential loss of life, injury, or destroyed or damaged assets which results in personal loss and economic loss.

However, this BHA does establish certain responsibilities for the implementation and maintenance of the bushfire protection measures that are considered the minimum for bushfire planning decision making.

BUSHFIRE RESISTENT CONSTRUCTION

This BHA is not required to consider the requirement to construct certain buildings, in designated bushfire prone areas, to the standard corresponding to the Bushfire Attack Level (BAL) they are subject to. This requirement is dealt with under the State Building Act 1975/Building Regulations 2021 and the referenced National Construction Code (NCC).

DETERMINED BUSHFIRE ATTACK LEVEL (BAL) RATINGS AND CONSTRUCTION – CAUTION!

For construction purposes a determined (not indicative) BAL rating is required to be known and a BAL Certificate produced for submission with a building application. This establishes the construction design and materials that are to be complied with in accordance with AS 3959 Construction in bushfire prone areas (as amended) and/or NS 300 NASH Standard Steel Framed Construction in Bushfire Areas (as amended).

This BHA cannot necessarily determine a BAL rating that will apply to a future building. All variables required for that calculation may not be known at the assessed stage of planning. For example, actual location of a building footprint on a lot and/or any classified vegetation that will remain, at the time of construction, within the lot or on neighbouring lots.

This BHA is only required to identify if a viable sized building can be located on a lot and be subject to a BAL rating not exceeding BAL-29, based on certain allowable assumptions. This is a planning requirement not a building requirement and a BAL contour map can be used to illustrate this information as an 'indicative' BAL rating.

Be aware that typically you cannot derive the determined BAL rating for a future building(s) on a specific lot from a BAL contour map (when presented in a BMP prepared for planning approval purposes). This is only possible in limited circumstances.

Planning assessment requirements are different to building assessment requirements. Refer to explanatory information above and Appendix B1 for additional information.

EXECUTIVE SUMMARY

Significant development works are occurring in Logan Reserve, with most of the land surrounding the site approved for development. As a natural consequence of development, clearing has been undertaken to the north and west of the site, with neighbouring development in an operational works phase. Land to the east is partially managed grassland with dwellings removed and early development phases underway. Larger areas of vegetation to the north, have been reduced, with woody vegetation remaining along boundaries only.

This Bushfire Hazard Assessment (BHA) methodology uses AS3959-2018 Method 2 and demonstrates compliance with State Planning Policy and supporting documents under the Bushfire Resilient Communities Technical reference guidelines.

The reduction in vegetation coverage in surrounding land will determine the bushfire assessment process. For areas of retained vegetation determination of the level of potential bushfire hazard of small patches and narrow corridors has been employed following Leonard & Opie (2017), where:

1. Small patches of vegetation less than 3ha in size have a reduced bushfire potential and are downgraded according to the size of the patch and potential fireline intensity.
2. Narrow corridors of vegetation, less than 100 metres wide, surrounded by discontinuous bushfire fuel sources are removed as potential bushfire hazards.

Following field assessments and determination of reduced fireline intensity of small patches and narrow corridors, the proposed development will not be exposed to a potential bushfire hazard.

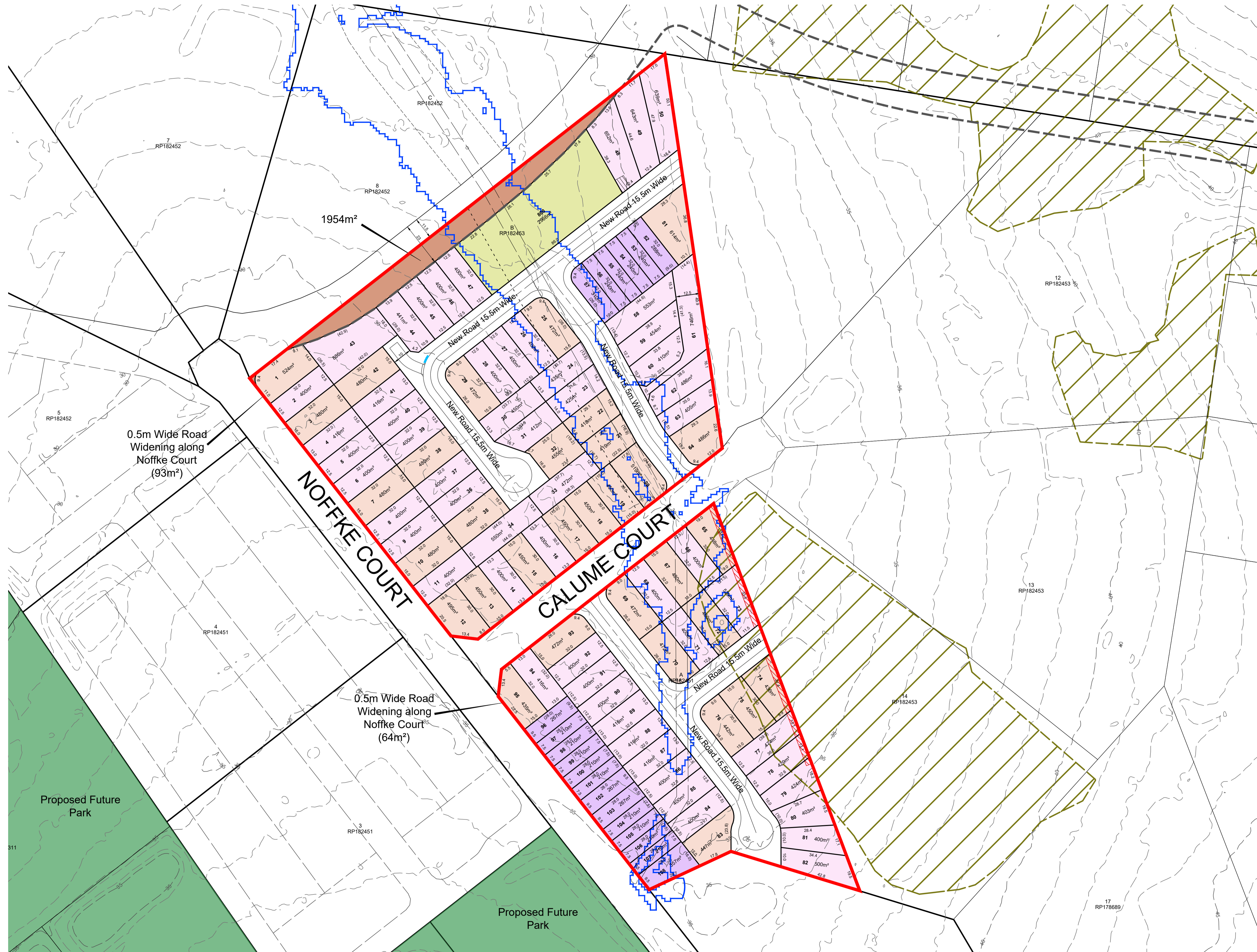
The proposed new lots are subject to a BAL Low rating.

1 THE PLANNING PROPOSAL

1.1 Details, Plans and Maps

SUBJECT LAND AND PROPONENT (LANDOWNER)	
Address Details	43 Noffke Court, 1 to 15 and 20 Calume Court, Logan Reserve QLD
RPD	800SP337868, 15RP182451, 801SP337868,
Applicable Local Government	Logan City Council
Entity Commissioning Production of the BMP	GDM Project 2 Pty Ltd ATF The GDM Project 2 Unit Trust
THE PLANNING PROPOSAL STAGE AND TYPE	
Development Application	<input checked="" type="checkbox"/> Reconfigure a Lot, Emerging Community Zone
DESCRIPTION	
Number of Additional Lots Created	Existing lot(s) = 3 / Proposed lot(s) = 108
<p>Application is for a Reconfiguration of a Lot (3 into 108) with new internal roadways, stormwater detention basin and new road dedication on two boundaries.</p> <p>A stormwater easement is to be located on the north east boundary.</p>	
The Primary Proposed Construction	
Type(s)	New Building(s)
BCA Classification	Class 1a (house)
Vulnerable Land Use Determination	
<p><u>Assessment Supporting Details:</u></p> <p>Not a vulnerable use development</p>	

PROPOSAL PLAN



LEGEND

- Site Boundary
- Major Contour (5.0m interval)
- Minor Contour (1.0m interval)
- Koala Habitat Area
- Flood Investigation Area
- Collector Road Corridor
- Stormwater Easement
- Temporary Turnaround Easement
- Future Proposed Park

DEVELOPMENT STATISTICS - Overall			
RESIDENTIAL ALLOTMENTS			
Terrace	No. Lots	%	Net Area
	19	17.6%	0.461 ha
10.0m - 14.99m Frontage	57	52.8%	2.551 ha
15m+ Frontage	32	29.6%	1.504 ha
Total Residential Allotments	108	100.0%	4.516 ha
Land Budget			
Area of Subject Site / Stage	6.017 ha	—	
Net Residential Area (no roads)	4.516 ha	75.1%	
Detention / Drainage	0.297 ha	4.9%	
Road Widening	0.211 ha	3.5%	
Road Areas	0.993 ha	16.5%	
Total	6.017 ha	100.0%	

SCALE @A1 1:1000 @A3 1:2000 - LENGTHS ARE IN METRES



1.2 The Planning Proposal and its Requirement to Address Bushfire Risk

EXPLANATORY INFORMATION

For the subject planning proposal, the intent of this section is to:

- Identify the relevant statutory bushfire planning provisions that have established its requirement to address bushfire risk;
- Identify the relevant policy/guideline 'triggers' to apply SPP 2017 State Interest: Natural Hazards Risk and resilience – Bushfire;
- Identify when a local government, as the decision maker, has established additional 'triggers' to apply defined bushfire planning assessments
- Identify the consideration of any relevant exemptions from application of SPP and associated guidance material.

The site is mapped by the SPP Bushfire Resilient Communities as within bushfire prone area trigger mapping. Vegetation within the north of the site is mapped as a medium potential bushfire hazard area with a secondary polygon mapped in the south and into a neighbouring vegetated lot to the east. A third polygon of medium potential bushfire hazard is mapped over neighbouring lands to the north. The associated 100 metre potential impact buffer zones cover the remaining area of the lots.

A PLANNING AND A BUILDING APPLICATION or A PLANNING APPLICATION or A BUILDING APPLICATION IS TO BE SUBMITTED TO THE LOCAL GOVERNMENT FOR DETERMINATION

For the proposed development (construction and/or use) the local government is the decision maker. The local government determination will be made under:

- The Planning Act 2016, its relevant subsidiary legislation (e.g. Regulations) and associated policies that establish the objectives and high-level guidance; and/or
- The local government's local planning scheme and associated policies that establishes objectives and guidance, specific to the jurisdiction, in addressing the requirements established by the above legislation and associated policy.

A BUILDING OR PLANNING APPLICATION REQUIRES A BAL RATING AND PLANNING APPROVAL

The proposed development is for building works subject to the Building Code of Australia and is located in a designated bushfire prone area (Map of Bushfire Prone Areas). One or more of the following applies.:

- The local government requires submission of a building permit application including a bushfire attack level (BAL) assessment (and certificate). Applicable when the proposed development is a class of building subject to bushfire construction requirements (i.e. Classes 1, 2, 3 buildings and associated Class 10a, and certain Class 9 buildings under the Building Code of Australia).
- The local government has a responsibility under the Planning Regulation 2017 to ensure strategic planning proposals; structure plans and development applications address SPP Natural Hazards risk and resilience -bushfire and the Bushfire Resilient Communities Guidelines (BRC).
- The local government, in accordance with its local planning scheme, is responsible to administer the relevant development controls, with due regard to SPP and the Guidelines.

✓

1.2.1 Applied Triggers Established by the Local Government as the Decision Maker

ESTABLISHING THE NEED TO APPLY LOCAL GOVERNMENT DEFINED BUSHFIRE PLANNING REQUIREMENTS	
Identification of the Relevant Instrument	Local Planning Policy
RELEVANT DETAILS OF LOCAL PLANNING BUSHFIRE POLICY	
<p>Logan Planning Scheme 2015 V9.2</p> <p>8.2.3 Bushfire Hazard overlay code</p> <ol style="list-style-type: none"> 1. The purpose of the code is to protect people and premises in a Bushfire hazard area. 2. The purpose of the code will be achieved through the following overall outcomes: <ol style="list-style-type: none"> a. Development protects people and premises from <u>bushfire risk</u>: <ol style="list-style-type: none"> i. through allotment design and siting of development envelope areas and asset protection zones; ii. by providing vehicular <u>access</u>, fire maintenance trails and evacuation routes that are safe and facilitate easy way finding; iii. by providing an accessible water supply for firefighting purposes; iv. by ensuring the function of <u>community infrastructure</u> is not adversely impacted by bushfire; v. by protecting personal health and safety and the environment from hazardous materials. <p>Logan City Council Bushfire Hazard overlay mapping is the same as and superseded by the SPP 2017 Bushfire Resilient Communities bushfire prone area mapping (Figure 1.2 and 1.3)</p>	



Figure 1.2: Extract from Map of Bushfire Prone Areas (Bushfire Resilient Communities, QFES)



Figure 1.3: Extract from Map of Bushfire Prone Areas (Logan Planning Scheme 2015)

1.3 Documents Relevant to Preparing the BMP

EXPLANATORY INFORMATION					
<p>This section identifies any known assessments, reports or plans that have been conducted and prepared previously, or are being prepared concurrently, and are relevant to the subject planning proposal.</p> <p>They may have implications for the assessment of bushfire hazard threats and the identification and implementation of the bushfire protection measures that are established by this BHA.</p>					
RELEVANT DOCUMENTS					
Document	Relevant	Exists	To Be Concurrently Developed	Copy Provided by Proponent / Developer	Title
Structure Plan	Yes	Yes	Yes	N/A	-
<p><u>Implications for the BMP:</u> Proposed residential lots and any bio retention that will be impacted by bushfire or change the bushfire hazards.</p>					
Bushfire Hazard Assessment	Yes	Yes	Yes	Yes	This Report
<p><u>Implications for the BHA:</u></p>					
Preliminary bushfire advice (may include a BAL contour map)	No	N/A	N/A	N/A	-
<p><u>Implications for the BHA:</u></p>					
Bushfire Emergency Plan	No	N/A	N/A	N/A	-
<p><u>Implications for the BHA:</u></p>					
Environmental Asset or Vegetation Survey	Yes	Yes	N/A	N/A	-
<p>Refer to Section 2.1 for details.</p>					

2 ENVIRONMENTAL CONSIDERATIONS – NATIVE VEGETATION

EXPLANATORY INFORMATION

VEGETATION CLEARING

Some bushfire prone areas also have high biodiversity values. The SPP prioritises the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

Clearing of native vegetation in Queensland is governed by the *Vegetation Management Framework*. The **Vegetation Management Act 1999** (VMA), the **Vegetation Management Regulation 2023**, the **Planning Act 2016 (Planning Act)** and the **Planning Regulation 2017**, in conjunction with associated policies and codes, form the Vegetation Management framework.

Regulated Vegetation Management maps are sourced from Queensland Globe version 2.15 released 29 January 2024.

Clearing native vegetation is an offence, unless done under a clearing permit or the clearing is for an exempt purpose. Exemptions are contained in the **Planning Regulation 2017**. Approvals under other legislation, from other agencies, may also be required, dependent on the type of flora or fauna present.

Assessment of vegetation for clearing is required through an application to the State Assessment and Referral Agency (SARA). Approval for clearing is against benchmarks in the State Development Assessment Provisions (SDAP)

- State Code 16: Native Vegetation Clearing.

Local Planning Policy: Natural areas that are not protected by the above Act and Regulation (or any other National or State Acts) may be protected by a local planning policy or local biodiversity strategy. Permission from the local government will be required for any modification or removal of native vegetation. Refer to the relevant local government for detail.

KOALA HABITAT

The State government has mapped koala habitat areas as part of the South East Queensland Koala Conservation Strategy (2020 – 2025). Two koala conservation habitat types are defined and identified in trigger mapping requiring further assessment:

- Core Koala Habitat Area (KHA)
- Koala Priority Area (KPA)

The koala habitat mapping is supported by the State Planning Policy 2017 (SPP) as well as the SDAP with the relevant state codes:

- State Code 25 – Development in South East Queensland koala habitat areas
- State Code 16 – Native Vegetation Clearing

KPA and KHA are regulated under the **Planning Act 2016** and **Planning Regulation 2017** and in this circumstance will require assessment against **Schedule 10** of the Regulation. Any 'modification' or 'clearing' of vegetation to reduce bushfire risk requires a clearing permit unless for an exempt purpose.

2.1 Biodiversity or Conservation Values Identified

EXPLANATORY INFORMATION

The required information, relevant to bushfire planning and informing the production of this BHA, is sourced and presented as indicated below.

Note that where a 'desktop' assessment has been conducted, this should not be considered a replacement for a full Environmental Impact Assessment. It is a summary of potential biodiversity or conservation values

<p><i>at the subject site, inferred from information contained in public available datasets and/or reports, which are only current to the date of last modification.</i></p> <p><i>The information provided in the BHA should be considered indicative where the subject site has not previously been subject to a site-specific environmental assessment by an appropriate professional.</i></p>	
<p>The required information is sourced from the environmental/planning consultant report developed for the subject site and provided to the bushfire consultant (details below when applicable).</p> <p>The information it contains is not repeated in this BHA as it will accompany the planning submission. The implications for the subject planning proposal and this BHA are stated below when relevant.</p>	<p>Yes - Fully</p>
<p>Saunders Havill Ecological Assessment Report</p>	
<p>The required information is sourced by the bushfire consultant as a 'desktop' assessment from publicly available data bases and/or a local government's local biodiversity strategy or local planning strategy.</p> <p>When applicable, this information is presented on the following pages of this BHA.</p>	<p>Yes - Partly</p>

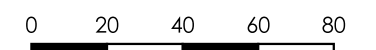
Figure 2.1

Environmental Considerations Map

800SP337868, 15RP182451, 801SP337868
45 Noffke Court, 1 to 15 and 20 Calume Court
LOGAN RESERVE
Logan City Council

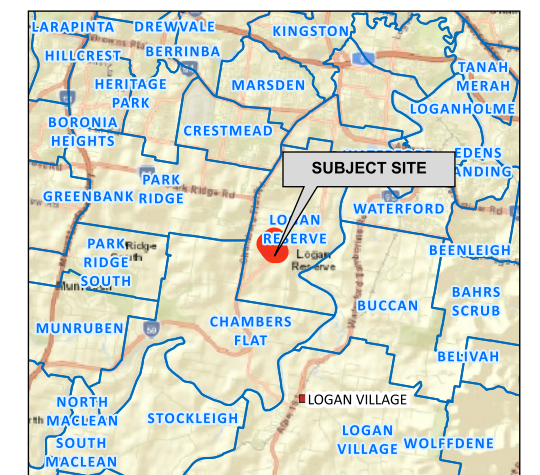
----- LEGEND -----

-  Subject Site
-  Koala Habitat Area



Metres

----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP



Coordinate System: GDA2020 / MGA zone 56
 Projection: Universal Transverse Mercator Units: Metre
 Map by: 25-08-2025
 SCALE (A3): 1 : 2000



Disclaimer and Limitation: This map has been prepared for bushfire management planning purposes only. All depicted areas, contours and any dimensions shown are subject to survey. Bushfire Prone Planning does not guarantee that this map is without flaw of any kind and disclaims all liability for any errors, loss or other consequence which may arise from relying on any information depicted.

3 BUSHFIRE HAZARD ASSESSMENT

3.1 Bushfire Attack Level (BAL) Assessment Summary

EXPLANATORY INFORMATION

Caution! Future building works require a 'determined' BAL rating for building permit applications. When a BAL contour map is being used for planning assessment purposes, (as opposed to a building assessment purpose), the required 'determined' BAL rating typically is not able to be derived from the map (there are only limited scenarios where this is possible).

The BAL ratings identified from the map will more likely be only 'indicative' of what can be achieved – with planning compliance for this factor being achieved when BAL-29 is indicated.

Otherwise, an additional assessment of the site data for building application purposes is required, and potentially approval will need to be obtained for native vegetation modification and/or removal from the relevant authority.

Refer to Appendix B for additional information including interpretation of the BAL Contour Map.

3.1.1 BAL Determination Methodology and Location of Data and Results

LOCATION OF DATA & RESULTS					
BAL Determination Methodology		Location of the Site Assessment Data			Location of the Results
AS 3959:2018	Applied to Assessment	Classified Vegetation and Topography Map(s)	Calculation Input Variables		Assessed Bushfire Attack Levels and/or Radiant Heat Levels
			Summary Data	Detailed Data with Explanatory and Supporting Information	
Method 2 (Detailed)	Yes	Figure 3.1	Table 3.2	-	Table 3.1 Section 3.2 Excluded Vegetation
Small Patch and Narrow Corridor	Yes	Figure 3.1	Table 3.2	Appendix A1	
Reasons for the Application of the Method 2 Procedure					
1.	To determine the reduction in potential bushfire impact (radiant heat and flame contact), from a smaller area / width / depth of classified vegetation, due to its inability to support a fully developed fire.				
2.	The conditions of the subject site and/or surrounding land are outside the scope of Method 1.				

3.1.2 BAL Ratings Derived from the Contour Map

Table 3.1: Indicative and determined BAL(s) for future buildings/structures on the proposed lots.

BUSHFIRE ATTACK LEVEL FOR FUTURE BUILDINGS / STRUCTURES ON STATED LOT ¹		
Lot No.	Future Buildings / Structure	
	Indicative BAL ²	Determined BAL ²
All lots	BAL-LOW	BAL-LOW

¹ The assessment data used to derive the BAL ratings is sourced from Table 3.1 and Figure 3.2 'BAL Contour Map'.

² Refer to the start of Section 3 for an explanation of indicative versus determined BAL ratings.

3.1.3 Site Assessment Data Applied to Construction of the BAL Contour Map(s)

RELEVANT CLASSIFIED VEGETATION	
Identification of Classified Vegetation that is Relevant to the Production of the BAL Contour Map(s)	Relevant Vegetation Map
<p>The relevant vegetation for the post-development BAL contour map will be any area of classified vegetation - both within the subject site (onsite) and external to the subject site (offsite) - that will remain at the intended end state of the subject development once earthworks, any clearing and/or landscaping and re-vegetation have been completed.</p>	<p>Figure 3.1</p>
<p><u>Supporting Assessment Details:</u></p> <p>Vegetation within the site will be removed as a natural consequence of development and no potential bushfire hazards will remain within the site.</p> <p>Mapped potentially hazardous vegetation areas to the northwest and west of the site have been cleared recently for development. No potential bushfire hazard areas remain to the northwest and west.</p> <p>To the immediate south of the site, some areas of vegetation are present within a larger area of cleared grassland. Lots to the south are approved for commercial development and have not been assessed as potential hazards.</p> <p>The remaining land to the east and north are likely to undergo development to some degree in the near future.</p> <p>Assessments of potentially hazardous vegetation are undertaken with the possible future scenarios where:</p> <ol style="list-style-type: none"> 1. Vegetation in neighbouring lots to the east may or may not be removed as part of the neighbouring development proposal (Vegetation Area 1). 2. Vegetation to the northeast may or may not be revegetated in future (Vegetation Area 2). <p>Both areas have been assessed as future potential bushfire hazards if vegetation is to remain in place following development of the surrounding lands according to the larger area structure plans. Areas of possible future retained vegetation have been assessed as small patches and narrow corridors, with a reduced potential fire line intensity following Leonard & Opie 2017¹.</p> <ol style="list-style-type: none"> 1. To the northeast, even where revegetated, the corridor of vegetation will be less than 100 metres wide and be considered an area of low bushfire hazard. 2. To the east, the remaining small patch of vegetation will be less than 3 ha in size and have a reduced potential fire line intensity based on the reduced patch size fuel loads. This area will also be considered a low bushfire hazard. 	

¹ Leonard, J. & Opie, K. 2017, *Estimating the potential bushfire hazard of vegetation patches and corridors*, CSIRO Land & Water.

Table 3.2: Calculation inputs applied to deriving the vegetation separation distances corresponding to different levels of potential radiant heat transfer.

DATA APPLIED TO CALCULATE THE SITE SPECIFIC VEGETATION SEPARATION DISTANCES CORRESPONDING TO POTENTIAL RADIANT HEAT TRANSFER LEVELS ¹											
Applied BAL Determination Method		METHOD 2 - DETAILED PROCEDURE (AS 3959:2018 APPENDIX A)									
The Calculation Input Variables - Corresponding to the Applied BAL Determination Method ²											
Methods 2		Fuel Loads		Method 2							
Vegetation Classification		VHC Fuel Loads		Site Slope	FFDI or GFDI	Flame Temp.	Elevation of Receiver	Flame Width	Fireline Intensity	Flame Length	Modified View Factor
Area	Class	Understory	Total	degrees		K	metres	metres	kW/m	metres	% Reduction
1	VHC 9.2	7.45 (50%)	8.6 (50%)	flat 0	54	1090	Default	Default	Reduced 50%	Default	Default
2	VHC 9.2	14.9	17.2	flat 0	54	1090	Default	Default	Default	Default	Default

Note 1: The values used to indicate levels of potential radiant heat transfer (from fire in bushfire prone vegetation to exposed elements at risk), will be stated in subsequent tables as either as a bushfire attack level (BAL) and/or as kilowatts per square metre (kW/m²), as relevant to the application of the value and the type and use of the element at risk.

Note 2: All data and information supporting the determination of the classifications and values stated in this table is presented in Appendix A. Where the values are stated as 'default' these are either the values stated in AS 3959:2018, Table B1 or the values calculated as intermediate or final outputs through application of the equations of the AS 3959:2018 BAL determination methodology. They are not values derived by the assessor.

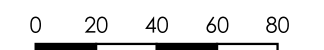
Figure 3.1

Existing Topography & Classified Vegetation

800SP337868, 15RP182451, 801SP337868
45 Noffke Court, 1 to 15 and 20 Calume Court
LOGAN RESERVE
Logan City Council

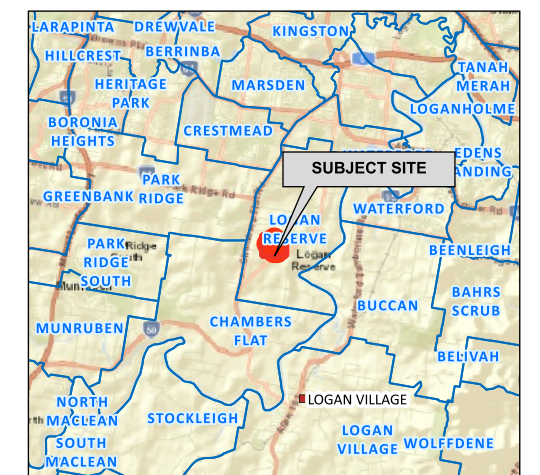
----- LEGEND -----

- Subject Site
- Photo and Direction
- Buildings
- 150m Assessment Area
- 100m Assessment Area



Metres

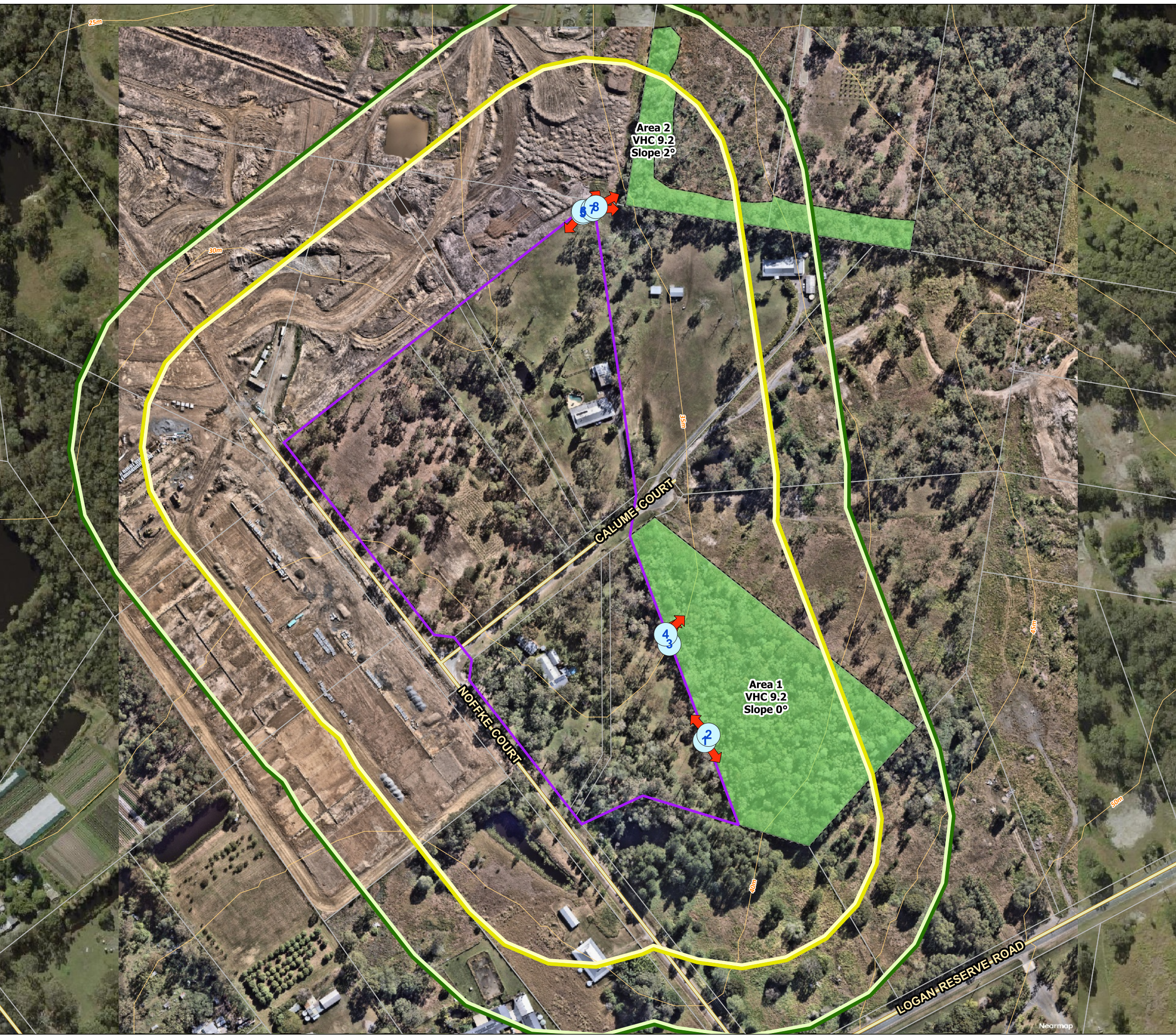
----- LOCALITY -----



AERIAL IMAGERY: Landgate/SLIP



Coordinate System: GDA2020 / MGA zone 56
Projection: Universal Transverse Mercator Units: Metre
Map by: 01-09-2025
SCALE (A3): 1 : 2500



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3.2 DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

3.3 BAL Assessment Inputs Common to the Method 1 and Method 2 Procedures

3.3.1 Fire Danger Indices (FDI/FDI/GFDI)

The Bushfire Resilient Communities mapping provides estimated spatially explicit 5% annual exceedance probability (AEP) fire weather event FFDI values for Queensland.

Unlike Queensland's adoption of AS 3959–2018, that uses a single FFDI value for all of Queensland (40), the estimate of fire weather severity in Queensland recognises that weather conditions vary across the state.

Relevant Jurisdiction:	Qld	Region:	FFDI Contours	Method 1	Applied FDI:	N/A
				Method 2	Applied FFDI:	54
					Applied GFDI:	N/A

3.4 Vegetation Assessment and Classification

<p>Vegetation Types and Classification</p> <p>In accordance with AS 3959:2018 and the BRC all vegetation types within 100 metres of the 'site' (defined as "the part of the allotment of land on which a building stands or is to be erected"), are identified and classified. Any vegetation more than 100 metres from the site that has influenced the classification of vegetation within 100 metres of the site, is identified and noted.</p> <p>The States BRC Vegetation Hazard Class (VHC) mapping has been used to identify hazardous vegetation. VHCs are based on the Queensland Herbarium's statewide regional ecosystem mapping at the broad vegetation group level, and several other mapping data sets such as foliage projective cover mapping. Ground truthing of vegetation to confirm understory and species composition is conducted to determine post development VHC.</p> <p>Modified Vegetation</p> <p>The vegetation types have been assessed as they will be in their natural mature states, rather than what might be observed on the day. Vegetation destroyed or damaged by a bushfire or other natural disaster has been assessed on its expected re-generated mature state. Modified areas of vegetation can be excluded from classification if they consist of low threat vegetation and that any required active management can be expected to continue in perpetuity, and this can be adequately justified.</p> <p>The Influence of Ground Slope</p> <p>Where significant variation in effective slope exists under a consistent vegetation type, these will be delineated as separate vegetation areas to account for the difference in potential bushfire behaviour, in accordance with AS 3959:2018 clauses 2.2.5 and C2.2.5.</p>	
THE INFLUENCE OF VEGETATION GREATER THAN 100 METRES FROM THE SUBJECT SITE	
Vegetation area(s) within 100m of the site whose classification has been influenced by the existence of bushfire prone vegetation from 100m – 200m from the site:	No. 2
Assessment Statement:	Area 2 to the northeast of the site is a continuous corridor of vegetation less than 100 metres wide and is currently mapped as Koala Habitat Area. This vegetation may remain intact or be revegetated in the future as part of the larger area development plan.

VEGETATION AREA 1							
Classification	VHC 9.2 Moist to dry eucalypt woodlands on coastal lowlands and ranges						
Exclusion Clause	Small patch less than 3ha						
Effective Slope	Measured	flat 0 degrees	Applied Range (Method 1)		N/A		
Foliage Cover (all layers)	30-70%	Shrub/Heath Height	1-2m	Tree Height	Up to 30m		
Dominant & Sub-Dominant Layers	Vegetation is a disturbed eucalypt woodland with regenerating Paperbark (<i>Melaleuca quinquenervia</i>) present as well as Slash pine (<i>Pinus elliotii</i>) in the canopy.						
Understorey	Part of the patch is heavily infested with Singapore daisy (<i>Sphagneticola trilobata</i>).						
Justification Comments:	<p>The neighbouring lot is in an early development application phase, and this patch of vegetation may or may not be retained. It is mapped as a Koala Habitat Area.</p> <p>The vegetation patch retained within larger surroundings to be developed is 2 ha in size.</p> <p>This remaining vegetation will be classified as a small, isolated patch and will have downgraded fuel loads (Leonard & Opie 2017). Downgrading of fuel loads based on the 50% reduction for a patch that is 2 to 3ha in size, using the VHC with the highest fuel loads, will result in a significantly reduced fire line intensity. The reduced fire line intensity results in the patch of vegetation being a non-hazardous area or not bushfire prone.</p>						
	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 No
	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges		5.85	54	0	1,145	2
	Input fields		Calculated fields				
	Reference: Leonard, J., Newnham, G., Opie, K., and Bianchi, R. (2014) A new methodology for state-wide mapping of bushfire prone areas in Queensland. CSIRO, Australia.						
Post Development Assumptions:	<ol style="list-style-type: none"> Where vegetation is retained, the patch will be considered a low hazard area. Where vegetation is removed as a consequence of neighbouring development the bushfire hazard will not be present. 						



PHOTO ID: 1



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PHOTO ID: 3



PHOTO ID: 4



VEGETATION AREA 2					
Classification	VHC 9.2 Moist to dry eucalypt woodlands on coastal lowlands and ranges				
Exclusion Clause	Narrow corridor less than 100metres wide				
Effective Slope	Measured	d/slope 2 degrees	Applied Range (Method 1)	N/A	
Foliage Cover (all layers)	10-30%	Shrub/Heath Height	N/A	Tree Height	Up to 30m
Dominant & Sub-Dominant Layers	Eucalypt and Acacia dominated.				
Understorey	Grassland				
Maximum Possible Direct Impact Fire Run Length (m)	80 metres				
Justification Comments:	Any area of vegetation remaining post development will be a corridor less than 100 metres wide and will not reach a fireline intensity over 4000kW/m and be considered a potential bushfire hazard. Aerial imagery shows a large portion of vegetation with the site to the northeast has been cleared. The land is still mapped as a Koala Habitat Area and has the potential to be revegetated. Neighbouring land is earmarked and approved for development which will retain a narrow corridor only, less than 100 metres wide.				
Post Development Assumptions:	<ol style="list-style-type: none"> Where vegetation is retained, the narrow corridor will be considered a low hazard area. Where vegetation is removed as a consequence of neighbouring development the bushfire hazard will not be present. 				
 <p>-27.72054, 153.10004, 78.0m, 222° 23 July 2025 11:35:10 am</p>			 <p>-27.72053, 153.10004, 76.0m, 39° 23 July 2025 11:35:14 am</p>		
PHOTO ID: 5			PHOTO ID: 6		



PHOTO ID: 7



PHOTO ID: 8

4 OVERLAY CODE RESPONSES

4.1 Logan Planning Scheme 2015 V9.2

8.2.3 Bushfire hazard overlay code

8.2.3.1 Application

1. This code applies to accepted development (subject to requirements) and assessable development for which the Bushfire hazard overlay code is identified in the 'assessment benchmarks for assessable development and requirements for accepted development' column in Table 5.10.3.1 - Bushfire hazard overlay map OM-03.00 in Part 5 - Tables of assessment.
2. When using this code, reference should be made to section 5.3.2 - Determining the category of development and category of assessment and, where applicable, section 5.3.3 - Determining the requirements for accepted development and assessment benchmarks and other matters for assessable development located in Part 5 - Tables of assessment.

Note - Pursuant to section 32(a) of the *Building Act 1975* and section 12 of the *Building Regulation 2006*, land identified as a Bushfire hazard area on Bushfire hazard overlay map OM-03.00 is a 'designated bushfire prone area' for the Building Code of Australia and the Queensland Development Code.

8.2.3.2 Purpose

1. The purpose of the code is to protect people and premises in a Bushfire hazard area.
2. The purpose of the code will be achieved through the following overall outcomes:
 - a. Development protects people and premises from bushfire risk:
 - i. through allotment design and siting of development envelope areas and asset protection zones;
 - ii. by providing vehicular access, fire maintenance trails and evacuation routes that are safe and facilitate easy way finding;
 - iii. by providing an accessible water supply for firefighting purposes;
 - iv. by ensuring the function of community infrastructure is not adversely impacted by bushfire;
 - v. by protecting personal health and safety and the environment from hazardous materials.

8.2.3.3 Assessment benchmarks for assessable development and requirements for accepted development

Part A - Requirements for accepted development (subject to requirements) and assessment benchmarks for assessable development

Table 8.2.3.3.1 - Bushfire hazard overlay code: accepted development (subject to requirements) and assessable development

Performance outcomes	Acceptable outcomes	Comments
For accepted development (subject to requirements) and assessable development		
Location, design and siting of development		
PO1 Development is designed to: <ol style="list-style-type: none"> a. minimise risk of bushfire hazard; b. provide safe premises; c. create efficient emergency access for fire-fighting and other emergency vehicles. 	A01 Development: <ol style="list-style-type: none"> a. does not increase the number of persons living in, or lots in, the Bushfire hazard area identified on Bushfire hazard overlay map OM-03.00; or b. is on a site that a bushfire hazard assessment prepared in accordance with the methodology in Planning scheme policy 6 - Management of 	R1 A site-specific Bushfire Hazard Assessment has been undertaken Bushfire Prone Planning (dated October 2025). The assessment finds:

<p>Note - Planning scheme policy 6 - Management of bushfire hazard provides guidelines on how to achieve this outcome.</p>	<p>bushfire hazard determines is of low bushfire hazard.</p>	<p>(a) Revegetation of open space/environmental areas will result in a potential bushfire hazard in the south of the proposed residential development. (a) all lots can be located at a radiant heat flux of 29kw/m² or less</p>
<p>PO2 Development is sited and constructed to minimise the bushfire hazard and maximise the protection of life and property from bushfire. Editor's note - Planning scheme policy 6 - Management of bushfire hazard contains guidance on the preparation of bushfire management plans.</p>	<p>AO2 Development is located and constructed:</p> <ol style="list-style-type: none"> a. where there is no bushfire management plan approved by an existing development approval: <ol style="list-style-type: none"> i. such that the bushfire attack level is less than or equal to BAL-29; ii. away from the most likely direction of a fire front; iii. so that elements of the development least susceptible to fire are sited closest to the bushfire hazard; iv. such that asset protection zones are sited on land with a slope less than 18 degrees; v. such that asset protection zones are entirely within the boundaries of the private property of the development site; or b. where an approved bushfire management plan directs development to be located. <p>Note - BAL = Bushfire attack level is the radiant heat flux a building will experience during a bushfire and is a measure of heat energy impacting on a surface expressed as kW/m². BAL is calculated from the following factors; vegetation type, fuel loads, distance to vegetation, Forest Fire danger Index (FDI), flame length, fire behaviour/intensity and slope. BAL is used to determine the required construction level of a building and the size of asset protection zones (inner and outer radiation zones). Further information on calculating the BAL can be obtained from AS3959-2009. Editor's note - Asset protection zones are not located on slopes greater than 18 degrees to ensure maintenance is practical, soil stability is not compromised and the potential for crown/canopy fires is reduced.</p>	<p>R2 Development is exposed to a low bushfire hazard. All lots can achieve a BAL Low construction.</p>

<p>PO3 Reconfiguring a lot ensures that lots are designed to minimise bushfire hazard and provide safe sites for people, property and buildings.</p>	<p>AO3 Lots:</p> <ul style="list-style-type: none"> a. are suitable for people, property and buildings by: <ul style="list-style-type: none"> i. having a bushfire attack level less than or equal to BAL-29; or ii. containing a development envelope area that has a bushfire attack level less than or equal to BAL-29; b. provide asset protection zones that: <ul style="list-style-type: none"> i. are located on land with a slope less than 18 degrees; ii. are located on the same lot. 	<p>R3 All lots can achieve a bushfire attack level less than BAL 29.</p>
Vehicular access and fire maintenance trails		
<p>PO4 Access for fire management and evacuation is provided by access that:</p> <ul style="list-style-type: none"> a. separates premises from adjoining vegetation; b. is safely accessible by fire fighting vehicles; c. has regular vehicular access points for bushfire management, response and evacuation; d. has regular vehicle passing and turning areas for bushfire management, response and evacuation; e. allows access at all times for fire fighting vehicles; f. allows for maintenance, burning off and bushfire response; g. has vehicular links to an alternative through road; h. is readily maintained. <p>Editor's note - Planning scheme policy 6 - Management of bushfire hazard provides details on alternative solutions for providing fire management access and evacuation</p>	<p>AO4 Access for fire management and evacuation is provided by vehicular access in the form of a perimeter road:</p> <ul style="list-style-type: none"> a. with a minimum reserve width of 20 metres; b. located between the premises and adjoining vegetation; c. with a maximum gradient of 12.5 percent; d. constructed to otherwise comply with section 3.4 - Movement infrastructure standards of Planning scheme policy 5 - Infrastructure; e. that has a layout that does not include a cul-de-sac. 	<p>R4 No bushfire hazards are found within 100 meters of the development.</p>
Water supply		
<p>PO5 Development has access to adequate water supply for fire fighting purposes.</p>	<p>AO5 Development:</p> <ul style="list-style-type: none"> a. is connected to a reticulated water supply scheme that has sufficient flow and pressure 	<p>R5 Development is connected to reticulated water.</p>

	<p>characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or</p> <p>b. has an on-site water storage in accordance with Table 8.2.3.3.2 - Water storage for fire fighting, dedicated or retained for fire fighting purposes that is made of fire resistant materials and is:</p> <ul style="list-style-type: none"> i. a separate tank; or ii. a reserve section in the bottom part of the main water supply tank. <p>Editor's note - The requirement in AO5 is: - in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development.; - reflected in AO5 in Table 9.4.3.3.1 - Infrastructure code: accepted development (subject to requirements) and assessable development.</p>	
For assessable development		
Community infrastructure		
<p>PO6 Community infrastructure is not located in a bushfire hazard area or is able to function effectively during and immediately after a bushfire event.</p>	<p>AO6 Community infrastructure is:</p> <ul style="list-style-type: none"> a. not located in a Bushfire hazard area identified on Bushfire hazard overlay map OM-03.00; or b. located to ensure that: <ul style="list-style-type: none"> i. the core services provided by the community infrastructure is able to function effectively during bushfire events; ii. access to the community infrastructure is not compromised by bushfire events; iii. the safe storage of valuable records, public records and items of cultural or historic significance is able to be maintained during a bushfire event. 	<p>R6 No community infrastructure is proposed for the development.</p>
Hazardous materials		

<p>PO7 Public safety and the environment are not adversely affected by the adverse impacts of bushfire on hazardous materials including fuels, explosives and flammable chemicals manufactured or stored in bulk on premises.</p>	<p>AO7 Hazardous materials:</p> <ul style="list-style-type: none"> a. storage is in compliance with AS1940 - The storage and handling of flammable and combustible liquids; b. manufacturing does not occur in a Bushfire hazard area on Bushfire hazard overlay map OM-03.00. 	<p>R7 No storage of hazardous materials is proposed for the development.</p>
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Table 8.2.3.3.2 - Water storage for fire fighting

Column 1 Lot size / use type	Column 2 Water requirement
For each residential lot:	
(a) less than 1,000m ²	5,000 litres
(b) between 1,000m ² and less than 1 hectare	10,000 litres
(c) greater than 1 hectare	20,000 litres
Multiple dwelling	5,000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5,000 litres or the prevailing rural fire brigade standard

APPENDIX A: DETAILED BAL ASSESSMENT DATA AND SUPPORTING INFORMATION

A2.5: FLAME WIDTH

FLAME WIDTH APPLIED

AS 3959:2018 – BUSHFIRE BEHAVIOUR AND RADIANT HEAT MODELLING - THE DEFAULT FLAME WIDTH

"Flame width is assumed to be 100 metres unless the width of classified vegetation and /or the relative orientation between the classified vegetation and the site justify the use of a lesser value" (AS 3959:2018, clause B8).

The default flame width applied in the AS 3959:2018 modelled bushfire represents a **fully developed fire** within the specific vegetation type. This is large fire travelling at its potential quasi-steady rate of spread (i.e., after it has undergone its initial growth phase), burning at its maximum intensity and travelling directly towards the subject building/structure. Based on research, it is assumed that the fully developed stage is not reached until the head fire width is at least 100 metres.

SITUATIONS WHERE THE ASSUMPTION OF A FULLY DEVELOPED FIRE MAY NOT PROPERLY REPRESENTATIVE OF THE LOCAL CONDITIONS

Small or narrow parcels of vegetation have less opportunity to support fully developed bushfires because of their limited size. They are a lower threat hazard for which determining the potential bushfire impact requires the modification of expected fire behaviour, including the expected flame width and flame length (height). For flame width there are two types of size constraint:

1. **Vegetation Width (Fire Width) Constraint:** When the relevant area of classified vegetation is not wide enough for a fire to travel directly towards and arrive at the subject building/structure with a flame width of 100m; and/or
2. **Vegetation Depth (Fire Run) Constraint:** When the relevant area of classified vegetation is not deep enough to support the spread of a developing fire (directly towards the subject building/structure), for the length of time and distance required to grow into a fully developed fire. This is called a short fire run (SFR).

OPTIONS AVAILABLE TO DETERMINE THE REDUCTION IN BUSHFIRE THREAT

EVIDENCE OF THE VALIDITY OF DETERMINING THE REDUCTION IN BUSHFIRE THREATS FROM SMALLER AREAS OF VEGETATION

1. CSIRO reports that support the Bushfire Resilient Communities technical reference guide for the SPP:
 Leonard, J., & Opie, K. (2017). *Estimating the potential bushfire hazard of vegetation patches and corridors*. Australia: CSIRO.
 Opie, K., Leonard, J., Newnham, G., & Bianchi, R. (2014). *A new methodology for State-wide mapping of bushfire prone areas in Queensland*. Australia: CSIRO.
 The following information is taken from the CSIRO report that details the improvements made to the Queensland methodology for their mapping of bushfire prone areas. These are applied to account for the reduced bushfire impact from small and narrow areas of vegetation. Assessing narrow corridors and patches is a GIS based exercise following the steps in the extract below.
2. The existence of the SFR methodology developed by NSW RFS. The following is quoted from their Short Fire Run Fact Sheet (v6 2019): "To date ... SFRs are usually assessed as if they are large scale hazards which can often resulting in unrealistic and onerous bush fire protection requirements. Historically ... SFRs have been assessed based on expert judgement which can result in an inconsistent approach. This methodology paper provides an overview of the NSW RFS proposal for assessing lower threat bushfire hazards for SFR in bushfire prone areas".

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Estimating the potential bushfire hazard of vegetation patches and corridors

An enhancement of Queensland's methodology for State-wide mapping of bushfire prone areas

Justin Leonard & Kimberley Opie
June 2017
EP167343
CSIRO Land & Water

This report describes the improvement to the mapping rules that have been integrated into the spatial modelling process in order to better reflect the spatial complexities of bushfire behaviour for small and narrow patches of hazardous vegetation.

Table 1: Potential Bushfire Intensity classes and corresponding Potential Fire-line Intensity ranges

Potential Bushfire Intensity	Potential Fire-line Intensity
1. Very high	40,000+ kW/m
2. High	20,000 – 39,999 kW/m
3. Medium	4,000 – 19,999 kW/m

Mapping rules to estimate hazard of small vegetation patches

The State-Wide mapping methodology (Leonard et al. 2014) also describes spatial procedures that identify and amend the estimated hazard potential of narrow or small patches of vegetation likely to reduce the likelihood that a running fire front will reach its full potential (Gould et al. 2008).

These filtering rules remove or downgrade hazard levels of small patches and narrow corridors in three stages, firstly by merging small patches of a single vegetation class less than 0.5 ha; secondly by merging small vegetation patches between 0.5 and 1 ha with higher or moderate fuel loads (greater than 8 tonnes/ha); and thirdly by removing narrow corridors of vegetation less than 100m wide, through a process

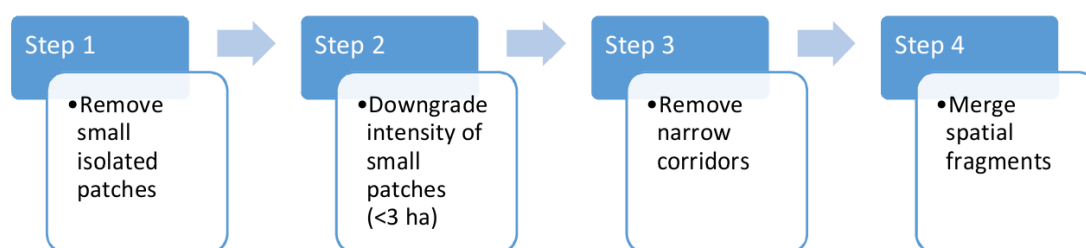


Figure 5. Patch and corridor map processing stages

Step 1 – Remove small isolated patches

Small isolated patches of vegetation are less likely to ignite due to their disconnection with fuels that can carry running fire fronts. They are most likely to be ignited from point sources, which require both distance and area to develop into a fire-front of considerable hazard. If a fire front emerges from a patch of 1 hectare, it is likely to be narrow in width and have significantly lower intensity than a fire front which has had sufficient time and area to develop. The combination of these likelihood and intensity estimates are likely to result in a fire-line intensity less than 4000kW/m, and can be considered a low hazard for the purpose of land use planning to mitigate bushfire risks.

This process removes sub-hectare areas of continuous fuel (that are completely surrounded by either no fuel or discontinuous fuel) if they are further than 100m from any other continuous fuel greater than 2 hectares in size.

Step 2. Downgrade intensity of small patches (0.5 to 3 ha)

Patches of less than 3 hectares in size are less likely to ignite due to their disconnection with vegetation that can carry a running fire front. If ignited, these patches are most likely to be ignited from point sources which require both distance and size to develop into a significant fire front of high intensity.

If a fire front emerges from these patches, it is likely to be narrow in width and significantly less in intensity than a fire front which has had sufficient time and size to develop. The combined effect of both lower ignition likelihood and lower fire-line intensity are reasonably expected to result in a fire-line intensity. It is also significantly less intensity than larger areas of continuous vegetation fire fronts.

Knowledge of fire behaviour and its associated impacts on people and property suggest that fire-line intensity would decrease by two third for patches of 0.5-2 ha, and half for patches of 2-3 ha (Table 2), (Gould et al. 2008).

Table 2. Assumed effect of patch size on fire-line intensity

Patch size	Approx. patch dimensions	Assumed decrease of fire-line intensity
(a) 0.5 - 2 hectares	100m x 100m - 100m x 200m	66%
(b) 2-3 hectares	100m x 200m - 150m x 200m	50%

Step 3. Remove narrow corridors

Narrow corridors are less likely to ignite due to their disconnection with fuels that can carry a running fire front. If the corridor is ignited by either a point source or line ignition, these areas will limit the width of the fire head and hence fire line intensity. The combination of these likelihood and intensity estimates indicate it is unlikely that a fire line intensity of 4000kW/m would be achieved, and can be considered a low hazard for the purpose of land use planning to mitigate bushfire risks.

This process removes narrow corridors and areas of continuous fuel (2 pixels or less in width – i.e. 50m) that are not sufficiently wide to support a fully developed flame front. It erodes then dilates by one pixel (25m in width) all continuous-fuel patches, in relation to non-continuous areas, as illustrated in Figure 9.

Step 4. Remove small fragments

Because of the varied quality of vegetation mapping inputs, only patches of tree or shrub dominated vegetation greater than 0.5 hectares (or 8 pixels) in size are consistently observed with high confidence. Patches of 1 to 7 pixels are often observed to contain mixtures of different land uses or continuous and discontinuous vegetation. As a consequence, isolated patches of hazardous vegetation less than 0.5 ha in size are not likely to generate a fire-line intensity of 4,000 kW/m or provide high exposure to built assets.

This process removes small areas of hazardous tree or shrub-dominated vegetation (i.e. areas of combined very high, high and medium potential bushfire hazard) of 8 or less pixels (<0.5 ha) by merging vegetation patches into the most prevalent surrounding Bushfire Hazard Class (i.e. Grassfire Prone or Low Hazard).

APPENDIX B: GUIDANCE – BUSHFIRE ATTACK LEVELS AND ASSET PROTECTION ZONES

B1: Bushfire Attack Level (BAL) - Understanding the Results

UNDERSTANDING A BAL RATING

The potential transfer (flux/flow) of radiant heat from a bushfire to a receiving object is measured in kW/m². The AS 3959:2018 Bushfire Attack Level (BAL) determination methodology establishes the ranges of radiant heat flux that correspond to each bushfire attack level. These are identified in increasing levels of flux as BAL-LOW, BAL-12.5, BAL-19, BAL-29, BAL-40 and BAL-FZ.

The bushfire performance requirements for certain classes of buildings are established by the Building Code of Australia (Vol. 1 & 2 of the NCC). The BAL will establish the bushfire resistant construction requirements that are to apply in accordance with AS 3959:2018 - *Construction of buildings in bushfire prone areas* and the NASH Standard – *Steel framed construction in bushfire areas (NS 300 2021)*, whose solutions are deemed to satisfy the NCC bushfire performance requirements.

DETERMINED BAL RATINGS

A BAL can only be classed as 'determined' for an existing or future building/structure when:

1. The building/structure final design and position on the lot are known and the stated separation distance from classified bushfire prone vegetation exists and can justifiably be expected to remain in perpetuity; or
2. The building/structure will always remain subject to the same BAL regardless of:
 - (a) The retention of all existing classified vegetation either onsite or offsite; and
 - (b) Its design or position on the lot - including, as relevant and necessary, accounting for any regulatory or enforceable building setbacks from lot boundaries (i.e. R-codes, restrictive covenants and defined building envelopes).

A BAL Certificate can be issued for a determined BAL. If the BMP derives determined BAL(s), the BAL Certificate(s) required for submission with building applications can be provided, using the BMP as the supporting assessment data.

INDICATIVE AND CONDITIONAL BAL RATINGS

An indicative BAL indicates the highest BAL rating that exists for the applied set of assessment parameters (which may vary resulting in the inability to be considered 'determined').

A conditional BAL establishes the BAL rating that will be considered as a 'determined' rating once the stated required conditions are approved by the relevant authority and confirmed as being met.

The possible variables of the 'conditions' include:

- The future development sites being either identified accurately or modified; and/or
- Classified vegetation being modified or removed to establish the required vegetation separation distances.

A BAL Certificate cannot be issued for an indicative or conditional BAL rating.

B4: BAL /APZ and Planning vs Building Approval Requirements

BAL RATINGS AND APZ DIMENSIONS - PLANNING VERSUS BUILDING APPROVAL REQUIREMENTS

Statement: It is not the purpose of this 'planning' BMP to derive a 'determined' BAL rating that will apply to an existing or future habitable or specified building to establish its bushfire resistant construction requirements in accordance with the Building Code of Australia (although in limited situations this can be done – refer to Appendix B1).

Planning Applications: To be compliant, a planning proposal must demonstrate it will be possible to install the required minimum sized asset protection zone (APZ), to the required technical requirements, surrounding a habitable or specified building, while applying APZ location constraints and allowances established by the Guidelines.

The Minimum Sized APZ: Is one whose dimensions ensure the potential radiant heat impact on the relevant buildings does not exceed 29 kW/m² from fire in any surrounding types of classified vegetation. This is the upper limit of the range of radiant heat flux corresponding to the BAL-29 rating. The dimensions of this 'BAL-29 APZ' will vary dependent on the site specific conditions.

Building Permit Applications: Require a determined BAL rating for proposed buildings works (stated on a BAL Certificate). The lower the BAL rating the greater the size of the corresponding APZ that would need to be installed and maintained in a low bushfire threat state to ensure the building's exposure to bushfire threats continues to be matched to the bushfire resistant construction applied.

APZ Dimensions: A larger APZ, potentially requiring the modification/removal of additional native vegetation, is required to subject a building to a lower BAL rating. However, bushfire planning policy does not support such an approach as evidenced by the following guidance to which due regard must be given:

SPP 3.7 Bushfire, Policy Objectives, cl. 5.5 states – “Prioritise the retention of native vegetation for biodiversity conservation, environmental protection and landscape amenity.

SPP 3.7 Bushfire, Policy Outcomes, cl. 6.2 - establishes that clearing of native vegetation is to be avoided or minimised in managing or mitigating bushfire risk.

The Guidelines, Appendix B2, B.2.1 states “clearing or modification of native vegetation to reduce the radiant heat impact below 29 kW/m² is generally not supported.”

Additional Assessment and Reporting: The implication of the planning policy's guidance is if developers/landowners desire to lower the BAL rating to which future building works are subjected – by modification or removal of native vegetation greater than the BAL-29 dimensioned APZ - additional site assessment and reporting would be required to be submitted to the relevant authority for approval to modify/remove that vegetation.

Consequently, the determination of a BAL rating for building permit application purposes is likely to require a separate assessment as:

- It will potentially have implications regarding the obtaining of approvals for native vegetation modification and/or removal – the retention of which is an objective of State Planning Policy 3.7 Bushfire; and/or
- The precise location of a future building/structure within a lot and relative to any bushfire hazard may not be known at the time of producing this BMP.

Dimensions of the APZ to be Installed and Maintained by the Landowner: The dimensions of the APZ that will be the responsibility of a landowner to implement and maintain around a habitable or specified building (to align the building bushfire resistance to its level of exposure to flames, radiant heat and embers), will be those corresponding to the building's 'determined' BAL rating and the site specific conditions.

The dimensions of the 'BAL-29 APZ' identified in this BMP for planning assessment purposes, will not necessarily be the APZ that is to be implemented and maintained by a landowner in perpetuity.

B2: BAL Contour Map Interpretation

THE BAL CONTOUR MAP

Caution! Future building works require a 'determined' BAL rating for building permit applications. When a BAL contour map is being used for planning assessment purposes, (as opposed to a building assessment purpose), the required 'determined' BAL rating typically is not able to be derived from the map (there are only limited scenarios where this is possible).

The BAL ratings identified from the map will more likely be only 'indicative' of what can be achieved – with planning compliance for this factor being achieved when BAL-29 is indicated.

Otherwise, an additional assessment of the site data for building application purposes is required, and potentially approval will need to be obtained for native vegetation modification and/or removal from the relevant authority.

The Bushfire Attack Level (BAL) contour map, when used, is a diagrammatic representation of the results of the bushfire attack level assessment that has been conducted. It presents different coloured contours extending out from the different areas of classified vegetation.

Each contour represents a set range of radiant heat, corresponding to the BAL rating as defined by the AS 3959:2018 BAL determination methodology. When an exposed element (building, person or other defined element), is fully or partly located within a specific contour, it is potentially subject to the corresponding level of radiant heat transfer.

The width of each coloured BAL contour is dependent on both the BAL rating it represents, and the relevant site specific calculation inputs and will vary. It represents the minimum and maximum vegetation separation distances that correspond to each BAL rating for that site.

For post development BAL contour maps, the areas of classified vegetation applied to the production of the BAL contours, are those that will remain at the intended end state of the subject development once earthworks, clearing and/or landscaping and/or re-vegetation have been completed.