



APPENDIX I

Bushfire Management Plan

Reference: 18-058 Report
Prepared by The Consultancy Bureau
dated September 2019



THE CONSULTANCY BUREAU

UPDATED

BUSHFIRE MANAGEMENT PLAN

**FOR THE DEVELOPMENT OF STAGES 3A &
3B AT “FLINDERS”**

**FOR PACIFIC INTERNATIONAL
DEVELOPMENT CORPORATION PTY LTD**

by

L.S. Hawkes, B.Sc.(For), MIFA, MRFAQ
The Consultancy Bureau Pty Ltd
September 2019

1. Introduction

A large property west of Jimboomba has been cattle grazing lands for decades. Recently the area has been investigated and received MCU "Whole of Site" approval for future residential development.

The subject site forms part of the Greater Flagstone Priority Development Area. (see Aerial Photograph No. 1)

The presence of hazardous vegetation has triggered an assessment and definition of mitigating actions to comply with Logan City Council's Bushfire Overlay Code.

2. Description of the Site

The lower lands of the property have been cleared to pasture and adjacent ridgelines have been selectively cleared or retained as native forest.

The area has been logged for logs suitable for milling and there is an extensive network of road tracks and dams.

Hazard reduction burning has been practised in past over selected areas on the property. Grazing has maintained the overall pasture in a manicured condition.

The proposed reconfiguration is in two locations separated by a linear parkland. (see Overall Plan)

2.1 Stage 3a

This site enjoys some cleared areas and the remainder is regrowth or open woodland. The land to the east includes areas assigned to future residential development. (see Photograph No. 1 and Plan of Development)

There is an existing access track along the eastern boundary. (see Photograph No. 2)



2.2 Stage 3b

This site is south of Stage 3a and is located between two gully systems. (see Plan of Development)

Neighbourhoods 3a and 3b are bound in part by the Environmental Protection Zone to the north and a proposed recreational Lake to the south-west. Two major linear parks are located either side of Neighbourhood 3a and reflect the location of existing waterways. Flinders Lake Drive, located to the south and west of the site, will ultimately be constructed as a part 2, part 4-lane trunk connector road.

The proposed subdivision adjoins a separate PDA land holding, which has an endorsed Context Plan (DEV2018/857) over the property.

3. Assessment of Potential Bushfire Hazard for the Site

State Planning Policy Bushfire Hazard Mapping confirms the site as a mixture of low hazard buffer, medium hazard and a section of high hazard on the northern ridge area. (see SPP Map)

There is hazardous vegetation to the north and east with a substantial creek system to the south. The proposed development nodes will reduce the entire site to low hazard. The linear park areas are currently low threat pasture lands.

The existence of hazardous vegetation to the north and east requires the delineation of a suitable set of mitigating actions to satisfy Council's Bushfire Overlay Code.



4. Proposed Mitigating Actions

4.1 Access

Stage 3a

The roading design provides a perimeter road system with only one lot exposed to retained park land. (see Stage 3A Lot Layout).

Lot 100 will require a 10 metre low threat separation from the adjoining park land. This low threat zone is provided within the adjoining park strip (Lot 905), located adjacent Lot 100's southern boundary. This area is already approved to be cleared under the UXO – Tree Clearing Approval (DEV2017/865) and is to contain low threat vegetation. No further separation is necessary.

Lots 273-288 will have a 20 metre asset protection zone against the adjoining hazardous vegetation. This zone will be maintained in a low threat condition and can also include driveways, paths, swimming pools etc.

Stage 3b

This stage also enjoys a perimeter road design with only Lot 103 having exposure to the parkland. This area has an effective asset protection zone adjoining in the form of a low hazard retaining wall.

Lot 1 adjoins a bio retention basin which is designed to remain a low threat vegetation and no further action is required.

4.2 Water

The entire stage will be serviced by a reticulated water system.

It would be prudent to have a fire hydrant suitable for Rural Fire appliances along the western boundary of Stage 3a (near Lot 273 or 288).



4.3 Vegetation Management

The adjoining conservation lands to the north and west and the linear parks will be the subject of a Management Plan. This plan should include the maintenance of fuel loads in these areas to <10 tonne/ha in line with ecological requirements.

4.4 Construction Standards under AS3959-2009 Bushfire Attack Level (BAL)

AS3959-2009 provides a methodology for assessing the appropriate BAL for each residence. This can only accurately be assessed when the location of the residence is established.

On this site, when all actions in Section 4 of this plan are in place, a BAL of 29 or less will easily be achieved i.e. a separation distance of 10 metres on slopes of 10° with fuel loads of 10 tonne/ha.

5. Compliance with Logan Planning Scheme 2015 Version 2.1

The Logan Planning Scheme (2015) provides a Part 8 regarding the Bushfire Code. (see Appendix 1)

This details actions necessary to protect people and premises from bushfire attack.

The proposed mitigating actions in Section 4 of this Plan confirm that the proposal will comply with the Code. (see Acceptable solutions in Appendix 1)



6. Conclusion

There is considerable areas of hazardous vegetation to the north and west of these proposal, they are either distant and upslope or with significant separation from the hazard.

This proposal is not limited by bushfire provided all the mitigating actions in Section 4 are implemented and maintained.















L.S. Hawkes, B.Sc.(For), MIFA, MRFAQ

Senior Associate

(CV attached)



LEGEND

- | | |
|---|-----------------------------|
|  | NEIGHBOURHOOD BOUNDARY |
|  | BUILDING ENVELOPE |
|  | BUILD TO BOUNDARY PERMITTED |
|  | DUPLEXES PERMITTED |
|  | 3-STOREYS PERMITTED |
|  | NO DRIVEWAYS PERMITTED |
|  | SHARED PATH |
|  | FOOTPATH |
|  | LOTS <10m WIDE |
|  | LOTS 10m to 14m WIDE |
|  | LOTS >14m WIDE |
|  | PUBLIC / OPENSAPCE |



SCALE : NOT TO SCALE



This Plan of Development shall be read in conjunction with the endorsed
FLINDERS PRECINCT ONE | LAND USE & DEVELOPMENT CODE
Particularly, dwellings shall be designed in accordance with Section 2.0 – Parts C, D and E

PROJECT NAME



FLINDERS
LAKES
NEIGHBOURHOOD 3A

CLIENT

PACIFIQ

RP DESCRIPTION:

LOT 3 ON S311896

ASSOCIATED CONSULTANTS



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DRAWING TITLE

PLAN OF DEVELOPMENT


DESIGNED	APPROVED <i>a.k. m</i>	RPO# 4706
DRAWN CB	DATE 20/11/18	AMEND KC DATE 12-09-19
DRAWING NUMBER		AMEND.
23301-NH3A-POD001		D


Legend


Cadastre (50k)

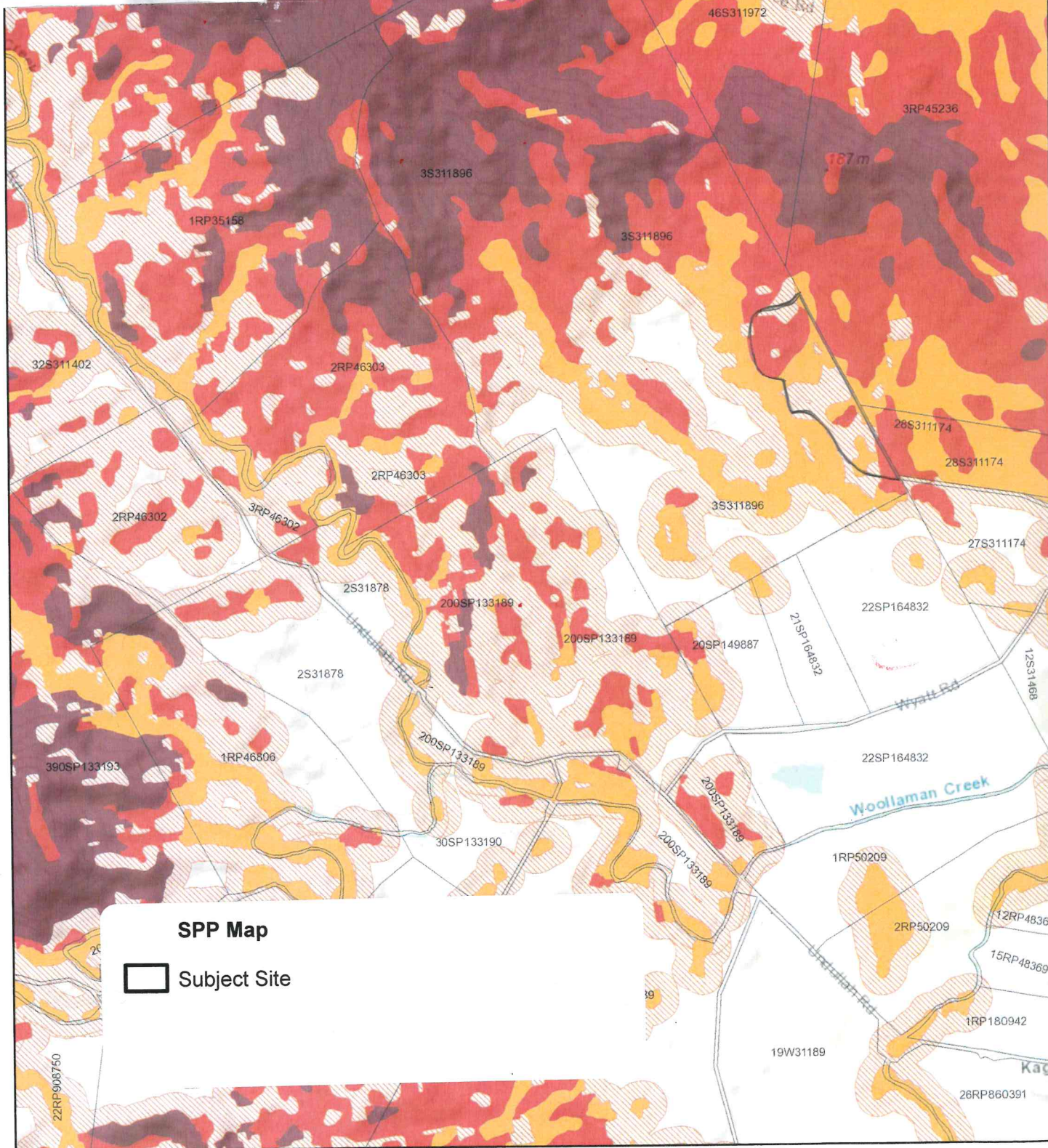
 Cadastre (50k)

Bushfire prone area

 Very High Potential Bushfire Intensity

 High Potential Bushfire Intensity

 Medium Potential Bushfire Intensity



LEGEND

- NEIGHBOURHOOD BOUNDARY
- BUILDING ENVELOPE
- BUILD TO BOUNDARY PERMITTED
- DUPLEXES PERMITTED
- 3-STOREYS PERMITTED
- NO DRIVEWAYS PERMITTED
- FOOTPATH
- LOTS <10m WIDE
- LOTS 10m to 14m WIDE
- LOTS >14m WIDE
- PUBLIC / OPENSOURCE



This Plan of Development shall be read in conjunction with the endorsed
FLINDERS PRECINCT ONE | LAND USE & DEVELOPMENT CODE
Particularly, dwellings shall be designed in accordance with Section 2.0 – Parts C, D and E

PROJECT NAME

**FLINDERS
LAKES**
NEIGHBOURHOOD 3B

CLIENT

PACIFIQ

RP DESCRIPTION:

LOT 3 ON S311896

ASSOCIATED CONSULTANTS

BMT robertsday
saunders havill group
Cardno HDG
Steven Hooking Surveys Pty Ltd

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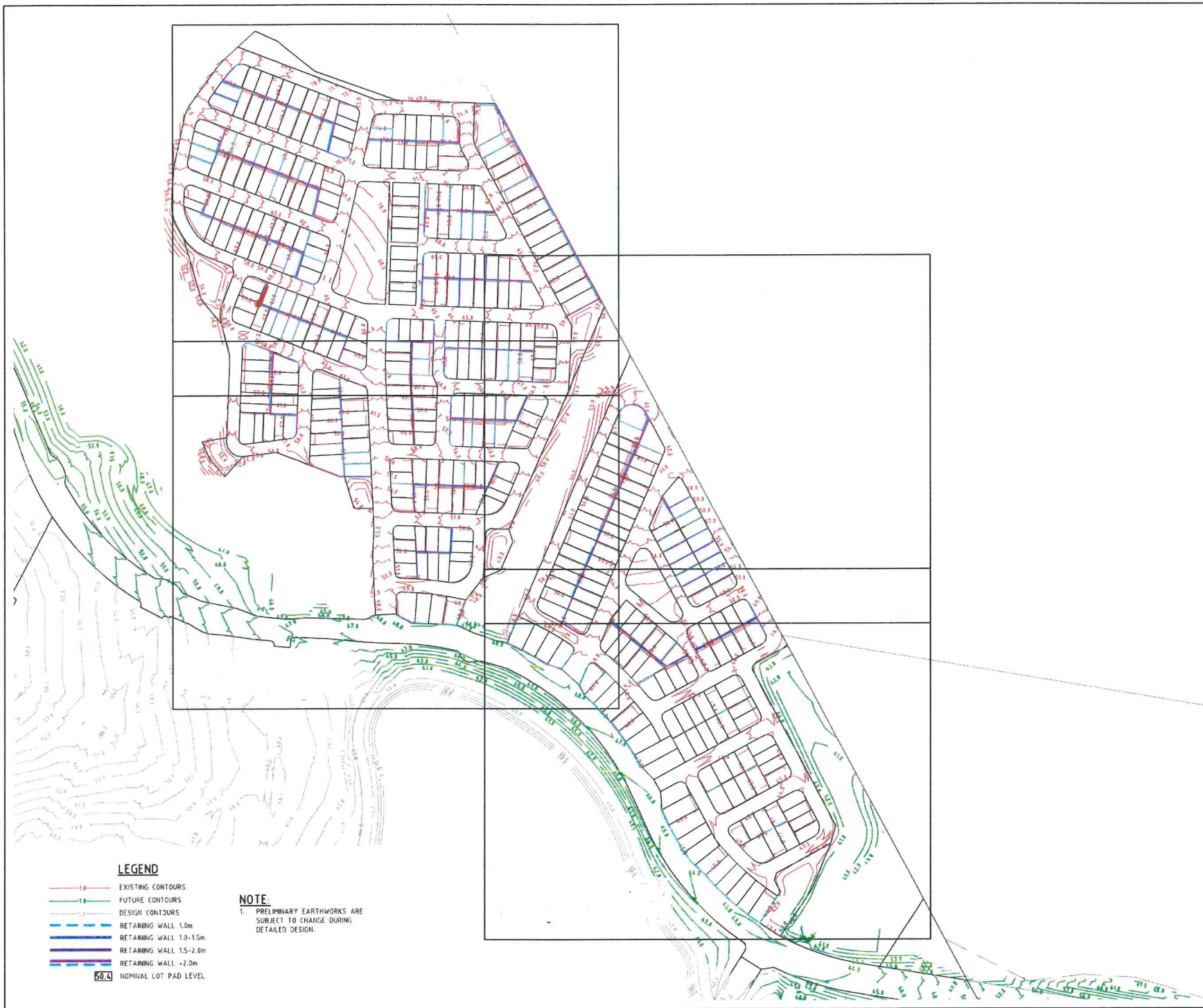
DRAWING TITLE

**PLAN OF
DEVELOPMENT**

DESIGNED	APPROVED	RPE 4706
DRAWN CB	DATE 11/10/18	AMEND CB DATE 28-08-19
DRAWING NUMBER		AMEND
23301-NH3B-POD001		C

Vertical Panorama Terrain Roadmap
Street Maps ☒ Properties ☐

[illegible]



PROJECT NAME



NEIGHBORHOOD 3A & 3B
PRELIM ENGINEERING

CLIENT

PACIFIQ



0 25 50 75 100 125m
Scale 1:2500 - A1 1:15000 - A3

ISSUES	DATE
TENDER	
COUNCIL	
CONSTRUCTION	

R	25-28-29	DRAFT FOR TEAM REVIEW
A		DRAFT FOR TEAM REVIEW

PRE DATE	AMENDMENT
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DRAWING TITLE

OVERALL PLAN



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DESIGNED BY	PP	DRAWN BY	KC
APPROVED BY	PP	DATE	23-10-18

DRAWING NUMBER	REVISION
23301-3A3B-PRE040	B



Photograph No. 1



Photograph No. 2



Photograph No. 3

Part 8 Overlays

8.2 Overlay codes

8.2.3 Bushfire hazard overlay code

8.2.3.1 Application

- (1) This code applies to self-assessable and assessable development for which the Bushfire hazard overlay code is identified in the assessment criteria 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 level of assessment and, where applicable, section 5.3.3–Determining the assessment criteria 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 Criteria for assessment

Part A–Criteria for self-assessable and assessable development

Table 8.2.3.3.1–Bushfire hazard overlay code: self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Comments
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Performance outcomes	Acceptable outcomes	Comments
For self-assessable and assessable development		
Location, design and siting of development		
PO1 Development is designed to: (a) minimise risk of bushfire hazard; (b) provide safe premises; (c) create efficient emergency access for fire-fighting and other emergency vehicles. Note—Planning scheme policy 6—Management of bushfire hazard provides guidelines on how to achieve this outcome.	AO1 Development: (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 bushfire hazard determines is of low bushfire hazard.	COMPLIES

Performance outcomes	Acceptable outcomes	Comments
<p>PO2</p> <p>Development is sited and constructed to minimise the bushfire hazard and maximise the protection of life and property from bushfire.</p>	<p>AO2</p> <p>Development is located and constructed:</p> <p>(a) where there is no bushfire management plan approved by an existing development approval:</p> <ul 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 <p>(b) where an approved bushfire management plan directs development to be located.</p> <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.</p> <p>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>Editor's note—Planning scheme policy 6—Management of bushfire hazard contains guidance on the preparation of bushfire management plans.</p>	<p>COMPLIES</p>

Performance outcomes	Acceptable outcomes	Comments
PO3 Reconfiguring a lot ensures that lots are designed to minimise bushfire hazard and provide safe sites for people, property and buildings.	AO3 Lots: <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. 	COMPLIES
Vehicular access and fire maintenance trails		
PO4 Access for fire management and evacuation is provided by access that: <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. Editor's note—Planning scheme policy 6– Management of	AO4 Access for fire management and evacuation is provided by vehicular access in the form of a perimeter road: <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. 	COMPLIES

Performance outcomes	Acceptable outcomes	Comments
bushfire hazard provides details on alternative solutions for providing fire management access and evacuation		
Water supply		
PO5 Development has access to adequate water supply for fire fighting purposes.	AO5 Development: <ul style="list-style-type: none"> (a) is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all times with a minimum pressure and flow of 10 litres per second at 200kPa; or (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: <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. Editor's note—The requirement in AO5 is: <ul style="list-style-type: none"> – in addition to the requirement for potable water supply/storage in AO2 in Table 9.4.3.3.2—Infrastructure code: self-assessable and assessable development.; – reflected in AO5 in Table 9.4.3.3.2—Infrastructure code: self-assessable and assessable development. 	COMPLIES

Performance outcomes	Acceptable outcomes	Comments
For assessable development		
Community infrastructure		
PO6 Community infrastructure is not located in a bushfire hazard area or is able to function effectively during and immediately after a bushfire event.	AO6 Community infrastructure is: (a) not located in a Bushfire hazard area identified on Bushfire hazard overlay map—OM—03.00; or (b) located to ensure that: (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.	N/A
Hazardous materials		
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.	AO7 Hazardous materials: (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.	N/A

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 1000m ²	5000 litres
(b) between 1000m ² and less than 1 hectare	10,000 litres
(c) greater than 1 hectare	20,000 litres
Multiple dwelling	5000 litres per dwelling up to a maximum of 20,000 litres
A use other than Multiple dwelling	5000 litres or the prevailing rural fire brigade standard