
Bushfire management plan

Proposed development | 67, 69-75 Talinga Drive | Park Ridge | Queensland
Prepared for Gumtree Developments | 13 December 2024

Bushfire management plan

Final

Report 24048 | Gumtree Developments | 13 December 2024

Approved by Robert Janssen

Position Managing principal

Signature



Date 13 December 2024

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Document control

Version	Date	Prepared by	Reviewed by
Draft	24 October 2024	R. Janssen	LEC
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Disclaimer

Notwithstanding the precautions adopted in this report, it should always be remembered that bushfires burn under a range of conditions. An element of risk, no matter how small always remains, and although AS 3959-2018 is designed to improve the performance of such buildings, there can be no guarantee, because of the variable nature of bushfires, that any building will withstand bushfire attack on every occasion.

It should be noted that upon lodgement of a development proposal, State Government, council and/or the fire service may recommend additional construction requirements.

Although every care has been taken in the preparation of this report, Land and Environment Consultants Pty Ltd accept no responsibility resulting from the use of the information in this report.

1 Introduction

Land and Environment Consultants Pty Ltd (LEC) was engaged to prepare a bushfire management plan (BMP) for the proposed residential subdivision (**proposed development**) at 67, 69-75 Talinga Drive, Park Ridge, properly described as lots 35 and 36/SP179449 (**the site**).

A development application will be made for the proposed development under the Logan Planning Scheme 2015.

The site is identified as a bushfire hazard area by the Logan Planning Scheme 2015 *Bushfire hazard overlay map – OM-3.00 (Bushfire hazard overlay map)*. Therefore, the development application for the proposed development is subject to compliance with the Logan Planning Scheme 2015 *Bushfire hazard overlay code (Bushfire hazard overlay code)*.

This BMP has been prepared in general accordance with the Logan Planning Scheme 2015 Policy 6 – *Management of bushfire hazard (Bushfire planning scheme policy)* and *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest ‘Natural Hazards, Risk and Resilience – Bushfire (QFES 2019a) (BRC guide)* which was prepared by the former Queensland Fire and Emergency Services, now the Queensland Fire Department (QFD), to provide technical guidance for the implementation of the *Natural Hazards, Risk and Resilience – Bushfire, State Planning Policy State Interest guidance material (DSDMIP 2019)(SPP guidance material – bushfire)*. It documents the bushfire hazard assessment and demonstrates how the proposed development will comply with the Bushfire hazard overlay code. It includes:

- an introduction (this section) and description of methods and information resources used for the preparation of this BMP;
- description of the site and proposed development;
- bushfire hazard assessment;
- identification of bushfire hazards associated with the site and proposed development;
- a plan for mitigating bushfire hazards; and
- assessment of the proposed development against the Bushfire hazard overlay code.

1.1 Method

To meet requirements of the Bushfire planning scheme policy and BRC guide, the following tasks were undertaken:

- review of the Bushfire hazard overlay map in Logan City Council’s (**Council’s**) online mapping (LCC 2024), fire history data in the Queensland Globe (DR 2024) and the Queensland regional ecosystem map, vegetation hazard class (**VHC**) map and severe fire weather map in the QFD online mapping system (QFD 2024) (**Catalyst**);
- inspection of land adjacent to the proposed development for vegetation characteristics, current land management practices, slope and evidence of previous fires;
- bushfire hazard assessment in general accordance with the method in the BRC guide;
- radiant heat exposure assessment using the Fire Protection Association of Australia *BAL calculator V4.9 (BAL calculator)* which models the ‘method 2’ bushfire attack level (**BAL**) assessment procedure in the *Australian Standard (AS 3959-2018) Construction of buildings in bushfire prone areas*; and
- assessment of the proposed development against the Bushfire hazard overlay code.

Aerial imagery of the site and measuring tools were accessed online from Google Earth and Queensland Globe to assist with validating observations and measurements made during the site inspection.

1.2 Suitably qualified person

This BMP was prepared by Robert Janssen who is a suitably qualified and experienced bushfire management consultant.

Robert is the managing principal at LEC and has over 25 years of experience in bushfire planning and operations. He has prepared bushfire management plans for residential, commercial and industrial property developments, utilities, government facilities and conservation estates.

Robert's formal qualifications as an environmental scientist and consulting experience are coupled with 10 years of experience as a nationally accredited fire-fighter with the national parks and wildlife service in New South Wales and Queensland.

2 Description of the site and proposed development

This chapter provides a description of the site and proposed development.

2.1 Site description

The location of the site is shown in Figure 3.1. The site is 2.23 hectares (**ha**), has frontage to Talinga Drive and access to mains water.

The site adjoins residential properties and a childcare and preschool. The adjoining properties are extensively maintained with formal garden beds and low cut grass. However, some narrow corridors and small patches of unmanaged bushland vegetation have been retained.

A combined development application has been made over lot 3/RP131003, which is north of the site, for an 89 allotment residential subdivision and operational works (Council application reference number COM/77/2023). Approval and development of this residential subdivision would result in the removal of bushland vegetation adjacent to the northern elevation of site.

2.2 Proposed development

The proposed development involves a residential subdivision. The subdivision plan is provided in Appendix 1 and shows the proposed layout of roads, residential allotments and stormwater management basin.

The stormwater management basin will be a constructed landform that will be landscaped with a variety of groundcover species, ie grass, reeds, sedges and lilies, and tree plantings for privacy screening.

Access and egress for the proposed development will be via a new road connection to Talinga Drive. Provisions have been made for future access and egress through the eastern and western boundaries of the site as adjacent development occurs.

The proposed development will be connected to mains water and a hydrant system will be installed in new road reserves.

2.3 Bushfire hazard overlay map

The Bushfire hazard overlay map for the site is provided in Appendix 2. Verification of the bushfire hazard areas shown in the Bushfire hazard overlay map is provided via the bushfire hazard assessment in Chapter 3.

3 Bushfire hazard assessment

This chapter provides details about the desktop review, site inspection and bushfire hazard assessment.

3.1 Severe fire weather

The severe fire weather map in Catalyst indicates the 5 % annual exceedance probability forest fire danger index (**FFDI**) for the site is 55. This FFDI value has been used for the potential bushfire intensity calculations in Section 3.5 and the radiant heat exposure assessment in Section 5.5.

3.2 Fire history

Fire history data indicates there have been no bushfires within 1 kilometre (**km**) of the site during the past 10 years.

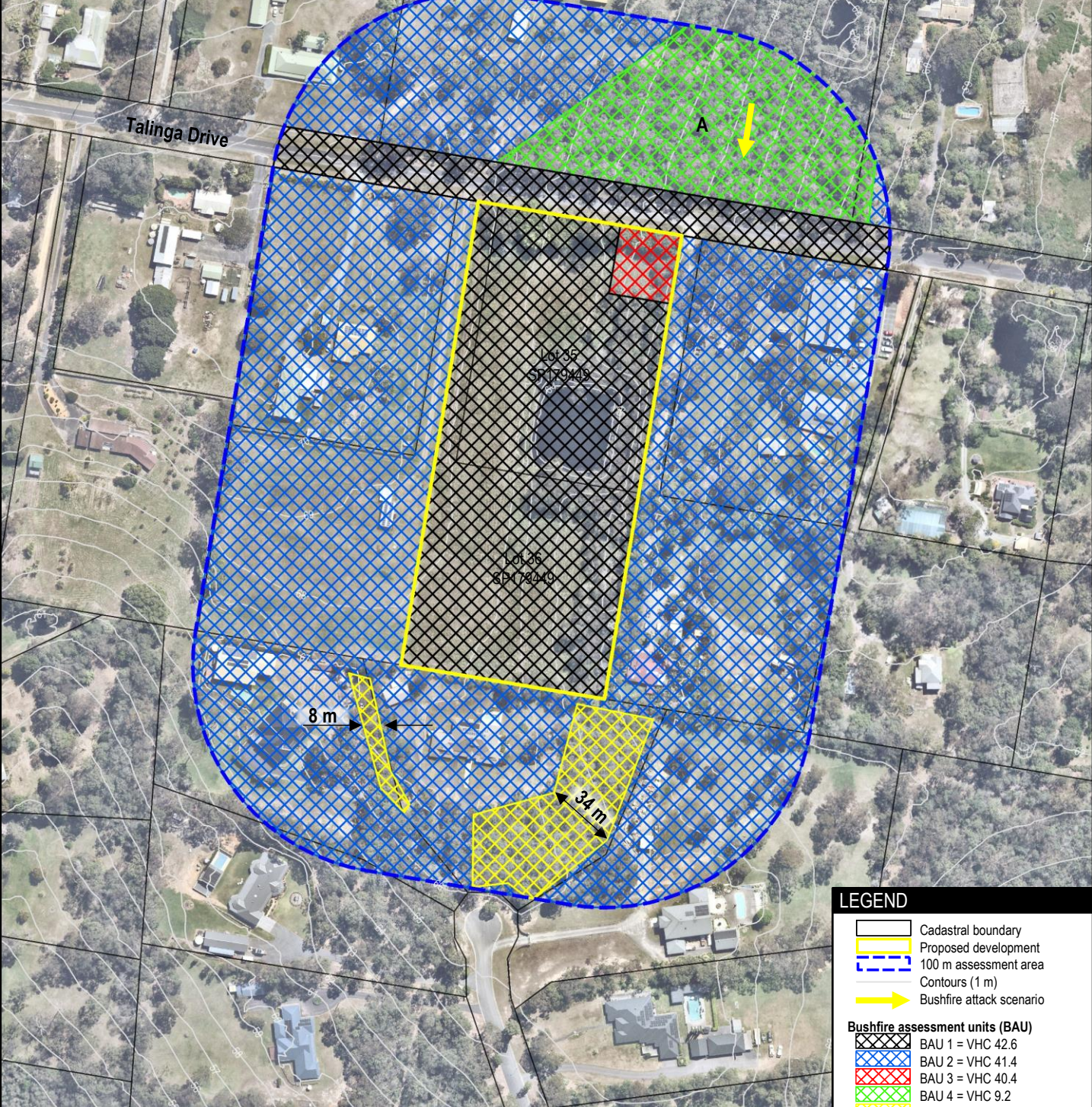
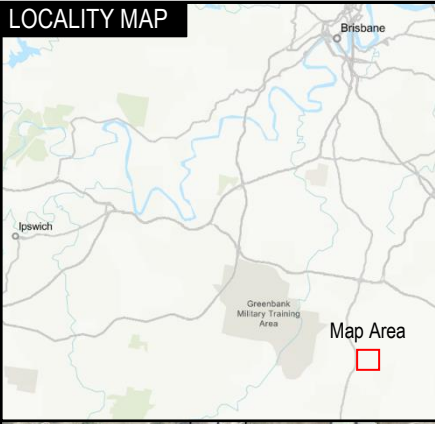
3.3 Site inspection

LEC inspected the site on the 28 April 2024. Observations were recorded about current land use and management, vegetation characteristics, the slope of land and evidence of previous fires.

Bushfire assessment units (**BAUs**) have been used to describe characteristics of vegetation within 100 metres (**m**) of the site and are shown in Figure 3.1. They consider the post development landform of the site, ie development of residential allotments, roads and stormwater management basin.

Table 3.1 provides a summary of the desktop review, observations from the site inspection and notes about the bushfire hazard assessment of BAUs. Features of BAUs are shown in Photographs 3.1-3.3

LOCALITY MAP

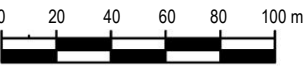


LEGEND

- Cadastral boundary
- Proposed development
- 100 m assessment area
- Contours (1 m)
- Bushfire attack scenario

- Bushfire assessment units (BAU)**
- BAU 1 = VHC 42.6
 - BAU 2 = VHC 41.4
 - BAU 3 = VHC 40.4
 - BAU 4 = VHC 9.2
 - BAU 5 = VHC 9.2

Aerial image: Nearmap (September 2024)
Scale: 1 : 2,500



Client:
Gumtree Developments

Design: Land and Environment Consultants Date: 21.10.2024
Drawn: LW
Scale: 1:2,500
File: J24048_67-75_Talinga_Dr_Figure_3-1_21Oct24.docx

Bushfire management plan
67, 69-75 Talinga Drive
Park Ridge

Title:
Site locality and Site assessment

Figure
3.1

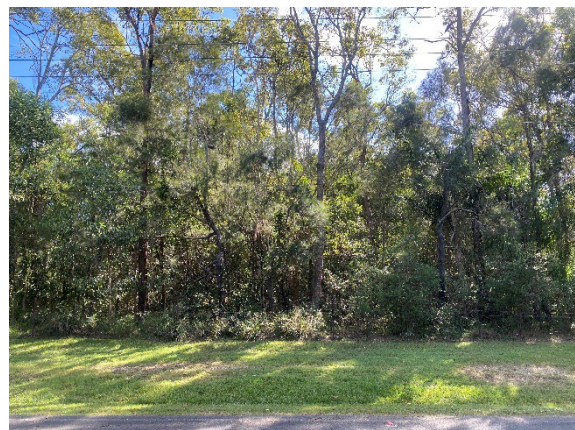
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Table 3.1 Site observations

BAU	Catalyst VHC	VHC	Notes
BAU 1	VHC 9.2 <i>Moist to dry eucalypt woodland on coastal lowlands and ranges (VHC 9.2)</i> , VHC 40.4 <i>Continuous low grass or tree cover (VHC 40.4)</i> , VHC 41.4 <i>Discontinuous low grass or tree cover (VHC 41.4)</i> and VHC 43.6 <i>Water bodies or very low vegetation cover (VHC 43.6)</i> .	VHC 42.6 <i>Nil to very low vegetation cover (VHC 42.6)</i>	BAU 1 is aligned with Talinga Drive and the proposed development and represents the post development landform which will consist of the proposed residential allotments and roads. It will have nil to very low vegetation cover.
BAU 2	VHC 9.2, VHC 40.4 and VHC 41.4	VHC 41.4	BAU 2 is aligned with a built-up area consisting of residential properties and a childcare and preschool which are extensively maintained with formal garden beds and low cut grass, ie nominal height of < 100 millimetres (mm). BAU 2 has a low level of discontinuous bushfire fuel.
BAU 3	VHC 9.2	VHC 40.4	BAU 3 is aligned with the 994 m ² stormwater management basin which will be mostly landscaped with a variety of groundcover species, ie grass, reeds, sedges and lilies, and tree plantings for privacy screening.
BAU 4	VHC 9.2 and VHC 41.4	VHC 9.2	BAU 4 is aligned with an existing area of bushland vegetation to the north of Talinga Drive.
BAU 5	VHC 9.2 and VHC 41.4	VHC 9.2	BAU 5 are narrow corridors of bushland which are < 50 m wide and adjoin BAU 2 which has discontinuous bushfire fuels. Therefore, these narrow corridors of bushland have been assessed against the 'narrow corridors filter' in Step 3 of Section 4.2.6 of the BRC guide which is explained in Section 3.4.



Photograph 3.1 Example of VHC 41.4 in BAU 2



Photograph 3.2 Example of VHC 9.2 in BAU 4



Photograph 3.3 Example of the narrow corridors of VHC 9.2 in BAU 5

3.4 Small patch and narrow corridor mapping rules

The narrow corridors of VHC 9.2 within BAU 5, shown in Figure 3.1, were assessed against the small patch and narrow corridor mapping rules in Section 4.2.6 of the BRC guide which ‘reflect the likelihood of lower fireline intensities in smaller vegetation patches and vegetation corridors’.

BAU 5 consists of narrow corridors of VHC 9.2 which are < 50 m wide. The narrow corridors adjoin built up areas with VHC 41.4 which is defined in the BRC guide as a low hazard class with discontinuous bushfire fuels. The areas of VHC 41.4 will not carry a bushfire into the narrow corridors of VHC 9.2 within BAU 5. Therefore, the narrow corridors of VHC 9.2 within BAU 5 are consistent with the ‘narrow corridors filter’ in Step 3 of Section 4.2.6 of the BRC guide.

The BRC guide recognises that narrow corridors of continuous fuel which are consistent with the narrow corridors filter are less likely to ignite due to their disconnection with large bushland areas that can carry a full intensity running fire front. Therefore, if a narrow corridor of continuous fuel is ignited it will likely be from a point ignition which requires both distance and area to develop into a running fire front of considerable hazard. On this basis, if a fire front did emerge from the narrow corridors of VHC 9.2 within BAU 5 they would be narrow in width and significantly less in intensity than a fire front which has had sufficient time and area to develop. As a result, the BRC guide assigns the narrow corridors of VHC 9.2 within BAU 5 a potential bushfire intensity of < 4,000 kilowatts (**kW**)/m and deems them to be a non-bushfire hazard class for the purpose of land use planning and development assessment.

3.5 Potential bushfire intensity calculations

The potential bushfire intensity of BAUs was determined using the Queensland Public Safety Business Agency *Potential Bushfire Intensity Calculator* (version November 2014) which is an Excel spreadsheet calculator that models the bushfire hazard assessment method in the BRC guide.

The BRC guide defines bushfire hazard classes as follows:

- very high – potential bushfire intensity > 40,000 kW/m;
- high – potential bushfire intensity 20,000-40,000 kW/m;
- medium – potential bushfire intensity 4,000-20,000 kW/m; and
- non-bushfire hazard – potential bushfire intensity < 4,000 kW/m.

Results of the potential bushfire intensity calculations which determine the bushfire hazard class of BAUs shown in Figure 3.1 are presented in Table 3.2.

Table 3.2 Potential bushfire intensity

BAU	VHC	Potential fuel load tonnes/ha ¹	Slope (°) ²	Potential bushfire intensity (kW/m)	Bushfire hazard class
BAU 1	VHC 42.6	2	0	136	Non-bushfire hazard
BAU 2	VHC 41.4	3	0	307	Non-bushfire hazard
BAU 3	VHC 40.4	5	0	853	Non-bushfire hazard
BAU 4	VHC 9.2	17.2	3	12,408	Medium
BAU 5	VHC 9.2	-	-	< 4,000 ³	Non-bushfire hazard

Notes

1. Potential fuel load taken from the BRC guide.

2. Slope defaults to 0° for VHC 41.4 and VHC 42.6 which are defined in the BRC guide as a low hazard class with discontinuous bushfire fuel.

3. The narrow corridors of VHC 9.2 within BAU 5 are consistent with the narrow corridors filter in step 3 of Section 4.2.6 of the BRC guide and are deemed to be a non-bushfire hazard class.

3.6 Bushfire hazard areas

Results of the potential bushfire intensity calculations in Table 3.2 confirm the proposed development is affected by a medium potential bushfire intensity area and the 100 m potential impact buffer which is applied to this area. Therefore, the proposed development is within a bushfire hazard area and the development application is subject to compliance with the Bushfire hazard overlay code.

4 Bushfire hazards associated with the site

This chapter identifies bushfire hazards associated with the site.

4.1 Fire danger season

The fire danger season at the site starts in August, peaks in September and will begin to fall when consistent summer rainfall occurs. Typically, the worst fire weather conditions will be experienced during the fire danger season when the wind direction is from the north or west.

An FFDI of 55 will be associated with hot, dry and windy conditions. If a bushfire starts and takes hold under these conditions, it will be difficult to control and fast moving in large areas of unmanaged vegetation.

4.2 Fire history

As discussed in Section 3.2, fire history data indicates there have been no bushfires within 1 km of the site during the past 10 years. Therefore, it is considered unlikely the site would be exposed to bushfire attack in the future.

4.3 Potential directions of bushfire attack

Notwithstanding the fire history discussed in Section 4.2, if the site was exposed to bushfire attack it would likely be from the north where the medium potential bushfire intensity area occurs. This bushfire attack scenario is identified in Figure 3.1 and is further analysed in Section 5.5.

4.4 Potential bushfire hazards from adjacent land uses

The built-up areas adjoining the site, ie the residential and childcare/education uses, are not a bushfire hazard to the proposed development.

4.5 Water and access for emergency services

The site has access to mains water for fire-fighting and a public road network which provides access and egress for emergency services and future occupants.

5 Bushfire hazards associated with the proposed development

This chapter identifies potential bushfire hazards associated with the proposed development.

5.1 Siting and design

The proposed development will be designed to mitigate the risk of bushfire hazard determined by the bushfire hazard assessment in this BMP.

The topography of the site and adjoining land does not involve landscape features that exacerbate the risk of bushfire hazard and influence the layout of the proposed development.

5.2 Land use

The proposed development will not involve vulnerable uses or community infrastructure uses defined in Table SC1.2.2 of the Logan Planning Scheme 2015 or involve the manufacture or storage of hazardous chemicals in bulk.

5.3 Fire-fighter water supply

The proposed development will be connected to mains water and a hydrant system will be installed in the new road reserves.

5.4 Access and egress

Access and egress for the proposed development will be via a new road connection to Talinga Drive. Provisions have been made for future access and egress through the eastern and western boundaries of the site as adjacent development occurs.

New roads will be designed and constructed in accordance with the design criteria for an urban fire truck.

5.5 Radiant heat exposure

The Bushfire hazard overlay code provides guidance about the acceptable level of radiant heat exposure for development within a bushfire hazard area. It requires development to provide allotment boundaries or development footprints that are separated from hazardous vegetation by a distance which achieves a radiant heat flux level $\leq 29 \text{ kW/m}^2$ at the allotment boundaries or development footprint.

As discussed in Section 4.3, the proposed development could be exposed to bushfire attack from the north as identified in Figure 3.1. The radiant heat profile of this bushfire attack scenario was analysed with the BAL calculator. Inputs used in the BAL calculator and results are provided in Appendix 3.

Figure 5.1 demonstrates the proposed residential allotments have boundaries which are separated from hazardous vegetation by a distance which achieves a radiant heat flux level $\leq 29 \text{ kW/m}^2$ and comply with the radiant heat exposure outcome of the Bushfire hazard overlay code.

No asset protection zones are required within the proposed residential allotments.



LEGEND

- Cadastral boundaries
- Property boundary
- 29 kW/m² radiant heat flux contour
- Contours (1 m)



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Land and environment consultants

Client:
Gumtree Developments

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Bushfire management plan
67, 69-75 Talinga Drive
Park Ridge

Title:
29 kW/m² radiant heat flux contour

Figure
5.1

Aerial image: Nearmap (September 2024)

Scale: 1:1,200

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6 Bushfire mitigation plan

This chapter identifies mitigation measures that must be implemented as part of the proposed development to comply with the Bushfire hazard overlay code.

It is the total of the mitigation measures in this chapter that will reduce the risk of bushfire hazard to a tolerable level. Failure to implement all actions in their entirety could result in an increased level of exposure to bushfire hazards.

6.1 Landscaping

Landscaping within the proposed residential allotments must be designed and maintained in accordance with Part 5 of *Bushfire Resilient Building Guidance for Queensland Homes* (QRA 2020) (**Bushfire resilient building**) which is publicly available online. Plant selection must favour the list of plant species in Appendix E of Bushfire resilient building.

Landscaping must be maintained at regular time intervals throughout the calendar year. Weeds and vegetation debris must be removed from garden beds and grass must be maintained as lawn at a nominal height of < 100 mm.

6.2 Fire-fighting water supply

The proposed residential allotments must be connected to mains water and a hydrant system must be installed in the new road reserves.

The mains water supply and connection must be tested (and if required, augmented) to ensure that it has sufficient flow and pressure characteristics for fire-fighting purposes at all times, ie minimum flow and pressure of 10 litres/second at 200 kilopascals.

The hydrant system must be designed and constructed in accordance with *Fire hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial lots* (QFES 2019b) (**Fire hydrant and vehicle access guidelines**) which defers to the local water retailer's specifications and the *Australian Standard (AS 2419.1-2021) Fire hydrant installations, System design, installation and commissioning*.

Where there are differences between the local water retailer's specifications and AS 2419.1-2021, the higher-level standard should prevail.

6.3 Access and egress

New roads must be designed and constructed for an urban fire truck in accordance with Fire hydrant and vehicle access guidelines which defers to the *Road Planning and Design Manual – 2nd Edition* (DTMR 2013) for load bearing capacity, geometry and turning radii.

6.4 Prospective purchaser notification

The prospective purchasers of the proposed allotments must be notified about the effects of this BMP at the point of sale.

The prospective purchaser notification must include advice about the BAL rating of the proposed residential allotments. The proposed residential allotments are in a 'designated bushfire prone area' under Section 7 of the Queensland *Building Regulation 2021* and provisions of the *National Construction Code* (ABCB 2022) and the *Queensland Development Code* (QG 2021) that apply to a designated bushfire prone area will apply to any building assessment work within them. This will include compliance with BAL design and construction specifications in AS 3959-2018.

A BAL rating is a matter relevant to a building application. Therefore, it is appropriate that this matter is dealt with outside of the development application process and this BMP.

6.5 Service installation

Reticulated services, ie water, electricity, gas and communications, must be installed underground.

7 Conclusion

This BMP was prepared by a suitably qualified person and is in general accordance with the Bushfire planning scheme policy and BRC guide.

A bushfire hazard assessment determined the site is within a bushfire hazard area and the proposed development is subject to compliance with the Bushfire hazard overlay code.

Mitigation measures that must be implemented as part of the proposed development are specified in Chapter 6. With the implementation of these mitigation measures the proposed development complies with the Bushfire hazard overlay code as demonstrated in Appendix 4.

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Standards Australia Limited (Standards Australia) 2018, *Australian Standard 3959-2018 Construction of buildings in bushfire prone areas*, Fourth edition, November 2018

Appendix 1 Subdivision plan



Easement Schedule			
Identifier	Encumber	Benefit	Type
A	15	12,13,16	Access/Services
B	15	QUU	Sewer
C	14	QUU	Sewer
D	14	2,3,10	Access/Services
E	25	COL	Access/Services

No.	Description	Date
A	ISSUE TO COUNCIL	09/12/2024

NOTES

1. ALL DIMENSIONS AND FLOOR AREAS TO BE VERIFIED PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.
2. ANY DISCREPANCIES ARE TO BE CONFIRMED BY THE DESIGNER.
3. LEVELS SHOWN ARE APPROXIMATE UNLESS ACCOMPANIED BY REDUCED LEVELS BY A REGISTERED SURVEYOR.
4. FIGURED DIMENSIONS ARE TO BE TAKEN IN PREFERENCE TO SCALING.
5. ALL BOUNDARY CLEARANCE MUST BE VERIFIED BY THE SURVEYOR PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.
6. WHERE ENGINEERING OR HYDRAULIC DRAWINGS ARE REQUIRED, SUCH MUST TAKE PREFERENCE TO THIS DRAWING.
7. STORMWATER TO BE CONNECTED AND DISCHARGED TO COUNCIL'S REQUIREMENTS AND TO AS 3500.3
8. ALL SERVICES TO BE LOCATED AND VERIFIED BY THE BUILDER WITH THE RELEVANT AUTHORITIES PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORK.

JOB NUMBER
2405SD

DATE
9 Dec, 2024

FOR OBTAINING APPROVAL ONLY
NOT FOR CONSTRUCTION

DRAWING NUMBER:
DW01

DRAWING TITLE:
SUBDIVISION PLAN

CLIENT
Anjan Padavala

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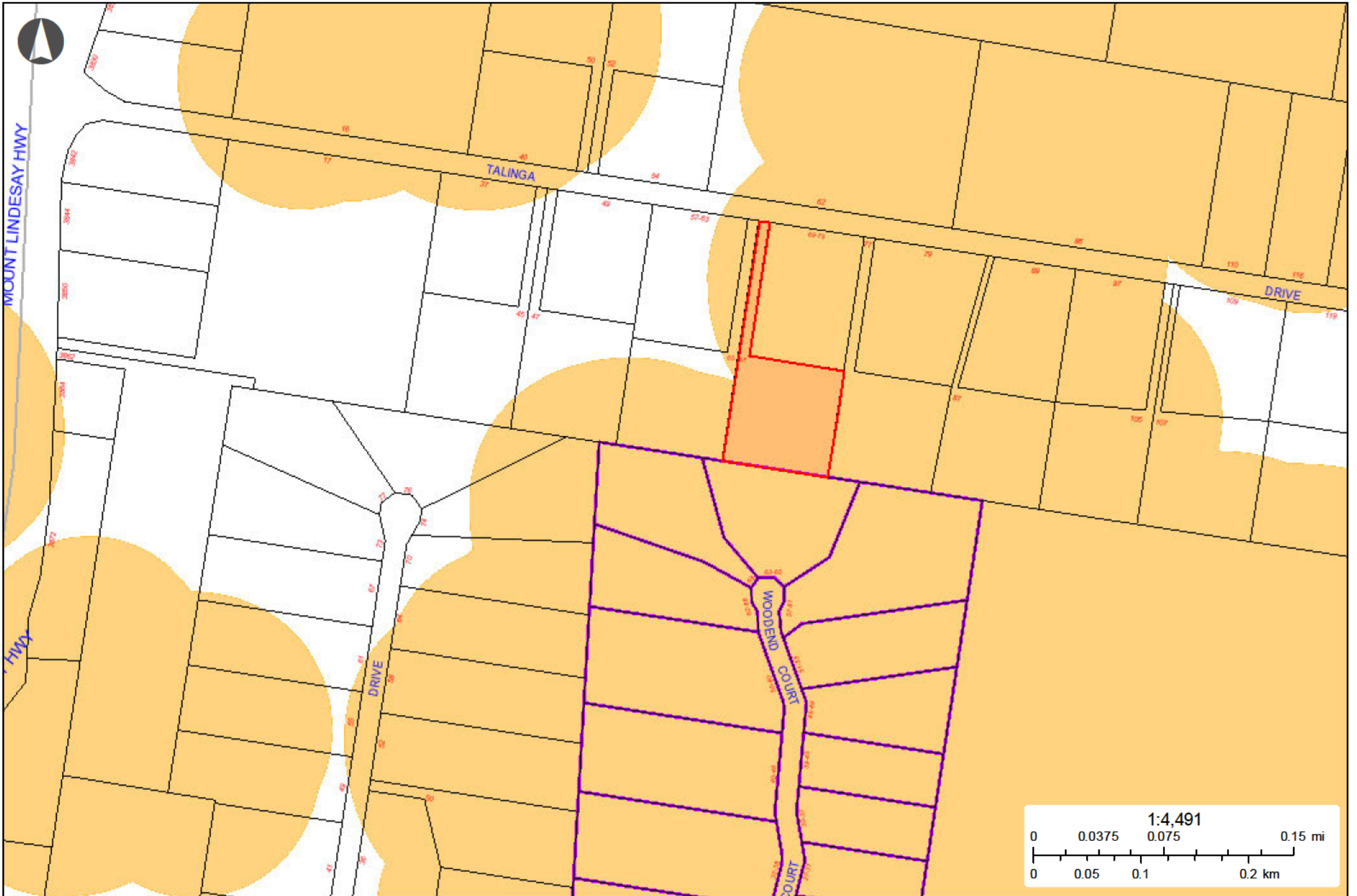
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PROJECT
Proposed Lots TBC
Cancelling Lots 35 &
36 on SP179449, 67
& 69-75 Talinga
Drive, Park Ridge
Subdivision

Appendix 2 Bushfire hazard overlay map



Appendix 3 Radiant heat exposure assessment

Bushfire attack scenario A

- Forest fire danger index - 55
- Vegetation - VHC 9.2 *Moist to dry eucalypt woodland on coastal lowlands and ranges*
- Understorey fuel load – 14.9 tonnes/hectare (t/ha)
- Total fuel load – 17.2 t/ha
- Effective slope – 3° slope
- Site slope – 0° slope
- Flame width – 100 metres
- Flame temperature – 1,090 Kelvin (K)



Calculated April 28, 2024, 1:49 pm (MDc v.4.9)

J24048

Minimum Distance Calculator - AS3959-2018 (Method 2)			
Inputs		Outputs	
Fire Danger Index	55	Rate of spread	1.2 km/h
Vegetation classification	Woodland	Flame length	9.92 m
Understorey fuel load	14.9 t/ha	Flame angle	54 °, 64 °, 72 °, 77 °, 79 ° & 84 °
Total fuel load	17.2 t/ha	Elevation of receiver	4.01 m, 4.46 m, 4.72 m, 4.83 m, 4.87 m & 4.93 m
Vegetation height	n/a	Fire intensity	10,748 kW/m
Effective slope	3 °	Transmissivity	0.881, 0.867, 0.846, 0.822, 0.8090000000000001 & 0.74
Site slope	0 °	Viewfactor	0.5904, 0.438, 0.2938, 0.199, 0.1617 & 0.0443
Flame width	100 m	Minimum distance to < 40 kW/m²	8.300000000000001 m
Windspeed	n/a	Minimum distance to < 29 kW/m²	11.2 m
Heat of combustion	18,600 kJ/kg	Minimum distance to < 19 kW/m²	16.6 m
Flame temperature	1,090 K	Minimum distance to < 12.5 kW/m²	24.1 m
		Minimum distance to < 10 kW/m²	29 m

Rate of Spread - Mcarthur, 1973 & Noble et al., 1980

Flame length - NSW Rural Fire Service, 2001 & Noble et al., 1980

Elevation of receiver - Douglas & Tan, 2005

Flame angle - Douglas & Tan, 2005

Radiant heat flux - Drysdale, 1999, Sullivan et al., 2003, Douglas & Tan, 2005

Appendix 4 Bushfire hazard overlay code assessment

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		
<p>PO1 Development is designed to:</p> <ol style="list-style-type: none"> minimise risk of bushfire hazard; provide safe premises; create efficient emergency access for fire-fighting and other emergency vehicles. <p>Note - Planning scheme policy 6 - Management of bushfire hazard provides guidelines on how to achieve this outcome.</p>	<p>AO1 Development:</p> <ol style="list-style-type: none"> 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 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. 	<p>Complies with AO1 A bushfire management plan (BMP) has been prepared for the proposed development which meets requirements of the Logan Planning Scheme 2015 Policy 6-<i>Management of bushfire hazard</i> and <i>Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire' 2019</i>.</p> <p>The BMP identifies mitigation measures that will reduce the risk of bushfire hazard to a tolerable level, by way of compliance with this overlay code.</p>
<p>PO2 Development is sited and constructed to minimise the bushfire hazard and maximise the protection of life and property from bushfire.</p> <p>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"> where there is no bushfire management plan approved by an existing development approval: <ol style="list-style-type: none"> such that the bushfire attack level is less than or equal to BAL-29; away from the most likely direction of a fire front; so that elements of the development least susceptible to fire are sited closest to the bushfire hazard; 	<p>Complies with AO2 Figure 5.1 in the BMP demonstrates the proposed residential allotments are separated from hazardous vegetation by a distance which achieves a radiant heat flux level ≤ 29 kilowatts/square metre (kW/m²) at the allotment boundaries.</p>

	<ul style="list-style-type: none"> 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>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; 	<p>Complies with AO3 Figure 5.1 in the BMP demonstrates the proposed residential allotments are separated from hazardous vegetation by a distance which achieves a radiant heat flux level $\leq 29 \text{ kW/m}^2$ at the allotment boundaries.</p> <p>No asset protection zones are required to achieve compliance with AO3, ie the required setback from hazardous vegetation is contained within Talinga Drive.</p>

	ii. are located on the same lot.	
Vehicular access and fire maintenance trails		
<p>PO4 Access for fire management and evacuation is provided by access that:</p> <ol style="list-style-type: none"> separates premises from adjoining vegetation; is safely accessible by fire fighting vehicles; has regular vehicular access points for bushfire management, response and evacuation; has regular vehicle passing and turning areas for bushfire management, response and evacuation; allows access at all times for fire fighting vehicles; allows for maintenance, burning off and bushfire response; has vehicular links to an alternative through road; 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> <ol style="list-style-type: none"> with a minimum reserve width of 20 metres; located between the premises and adjoining vegetation; with a maximum gradient of 12.5 percent; constructed to otherwise comply with section 3.4 - Movement infrastructure standards of Planning scheme policy 5 - Infrastructure; that has a layout that does not include a cul-de-sac. 	<p>Complies with AO4 The proposed residential allotments are separated from hazardous vegetation by a distance which achieves a radiant heat flux level $\leq 29 \text{ kW/m}^2$ at the allotment boundaries.</p> <p>The proposed development will have access and egress via Talinga Drive. Provisions have been made for future access and egress through the eastern and western boundaries of the site as adjacent development occurs.</p> <p>New roads will be designed and constructed for an urban fire truck in accordance with <i>Fire hydrant and Vehicle Access Guidelines for Residential, Commercial and Industrial lots 2019 (Fire hydrant and vehicle access guidelines)</i> which defers to the <i>Road Planning and Design Manual – 2nd Edition (DTMR 2013)</i> for load bearing capacity, geometry and turning radii.</p>
Water supply		
<p>PO5 Development has access to adequate water supply for fire fighting purposes.</p>	<p>AO5 Development:</p> <ol style="list-style-type: none"> is connected to a reticulated water supply scheme that has sufficient flow and pressure characteristics for fire fighting purposes at all 	<p>Complies with AO5 The proposed development will be connected to mains water. The mains water supply and connection will be tested (and if required, augmented) to ensure that it has sufficient flow and pressure characteristics for fire-fighting</p>

	<p>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>	<p>purposes at all times, ie minimum flow and pressure of 10 litres/second at 200 kilopascals.</p> <p>The hydrant system will be designed and constructed in accordance with Fire hydrant and vehicle access guidelines which defers to the local water retailer's specifications and the <i>Australian Standard (AS 2419.1-2021) Fire hydrant installations, System design, installation and commissioning.</i></p> <p>Where there are differences between the local water retailer's specifications and AS 2419.1-2021, the higher-level standard should prevail.</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; 	<p>Not applicable The proposed development does not involve community infrastructure uses.</p>

	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.	
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.	Complies with AO7 The proposed development will not involve the manufacture or storage of hazardous chemicals in bulk.

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