BUSHFIRE PLANNING AUSTRALIA

BUSHFIRE ASSESSMENT REPORT
MIXED USE DEVELOPMENT

42 Fullerton Cove Road, Fullerton Cove

Prepared for Canaan PD 2 Pty Ltd

Bushfire Planning Australia

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BPA Reference: 2028 Fullerton Cove

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FPA AUSTRALIA BRONZE MEMBER Fire Protection Association Australia

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

Disclaimer and Limitation

This report is prepared solely for Canaan PD 2 Pty Ltd (the 'Client') for the specific purposes of only for which it is supplied (the 'Purpose'). This report is not for the benefit of any other person; either directly or indirectly and is strictly limited to the purpose and the facts and matters stated in it and will not be used for any other application.

This report is based on the site conditions surveyed at the time the document was prepared. The assessment of the bushfire threat made in this report is made in good faith based on the information available to Bushfire Planning Australia at the time.

The recommendations contained in this report are considered to be minimum standards and they do not guarantee that a building or assets will not be damaged in a bushfire. In the making of these comments and recommendations it should be understood that the focus of this document is to minimise the threat and impact of a bushfire.

Finally, the implementation of the adopted measures and recommendations within this report will contribute to the amelioration of the potential impact of any bushfire upon the development, but they do not and cannot guarantee that the area will not be affected by bushfire at some time.

Document Status: 2028 - Mixed Use Development

Version	Status	Purpose	Author	Review Date
1	Draft	Draft for Review	Katrina Mukevski	23 October 2022
2	Draft	Draft for Client Review	Stuart Greville	28 June 2023
3	Final	Final for Submission	Stuart Greville	28 June 2023
4	Final	Final updated with new layout	Stuart Greville	23 October 2023
5	Final	Final updated with new layout	Stuart Greville	4 July 2024

Certification

As the author of this Bushfire Threat Assessment (BAR), I certify this BAR provides the detailed information required by the NSW Rural Fire Service under Clause 45 of the Rural Fires Regulation 2022 and Appendix 2 of Planning for Bushfire Protection 2019 for the purposes of an application for a bush fire safety authority under section 100B(4) of the Rural Fires Act 1997.

Stuart Greville

Accredited Bushfire Practitioner

BPAD-26202

Date: 4 July 2024

BPAD Bushfire Planning & Design Accredited Practitioner Level 2

In signing the above, I declare the report is true and accurate to the best of my knowledge at the time of issue.

Executive Summary

Bushfire Planning Australia (BPA) has been engaged by Canaan PD 2 Pty Ltd (the 'Client') to undertake a Bushfire Assessment Report (BAR) for a proposed retail (mixed use) development at 42 Fullerton Cove Road, Fullerton Cove.

The National Construction Code (NCC) does not provide for any bush fire specific performance requirements for the proposed development; being a development that will facilitate the construction of non-habitable buildings. The general fire safety construction provisions of the NCC are taken as acceptable solutions in this instance.

This BAR found the site is exposed to a moderate to high bushfire hazard being remnant vegetation located to the east and south within the subject site. The predominant vegetation surrounding the site is consistent with a forest vegetation formation, namely *Coastal Swamp Forest* and *Coastal Dune Dry Sclerophyll Forest* as described in the NSW Rural Fire Service document Planning for Bushfire Protection 2019 (PBP 2019). The BAR concludes that the hazard identified can be successfully mitigated by applying the requirements of PBP 2019.

In summary, the following key recommendations have been designed to enable any future proposed development to achieve the aims and objectives of PBP 2019:

1. The entire site shall be managed as an Inner Protection Area (IPA) as outlined within Appendix 4 of PBP 2019 and the RFS document Standards for asset protection zones;
2. Asset Protection Zones shall be established as shown in **Figure 9** and maintained as outlined Appendix 4 of PBP 2019 and the RFS document Standards for asset protection zones;
3. Access shall be provided in accordance with Table 5.3b of PBP 2019;
4. Vegetation within road verges and stormwater basins to be consistent with a grassland vegetation classification with tree canopy less than 10% at maturity (and considered unmanaged);
5. All future buildings are to be constructed on the proposed lots shall have due regard to the specific considerations given in the National Construction Code: Building Code of Australia (BCA) which makes specific reference to Australian Standard AS3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) and the NASH Standard Steel Framed Construction in Bushfire Prone Areas;
6. All new lots are to be connected to a reliable water supply network and that suitable fire hydrants are located throughout the development site that are clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure shall comply with AS2419.1 2005 and section 5.3.3 of PBP 2019;
7. Consideration should be given to landscaping and fuel loads on site to decrease potential fire hazards on site.

This assessment has been made based on the bushfire hazards observed in and around the site at the time of inspection and production (July 2024).

Should the above recommendations be implemented, the existing bushfire risk should be suitably mitigated to offer an acceptable level of protection to life and property for those persons and assets occupying the site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time and that property and life damage/loss will not occur.

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Terms and Abbreviations

Abbreviation	Meaning
APZ	Asset Protection Zone
AS2419-2005	Australian Standard – Fire Hydrant Installations
AS3959-2018	Australian Standard – Construction of Buildings in Bush Fire Prone Areas
BAR	Bushfire Assessment Report
BCA	Building Code of Australia
BC Act	NSW Biodiversity Act 2016
BMP	Bush Fire Management Plan
BPA	Bush Fire Prone Area (Also Bushfire Prone Land)
BPL	Bush Fire Prone Land
BPLM	Bush Fire Prone Land Map
BPM	Bush Fire Protection Measures
DoE	Commonwealth Department of the Environment
DPI Water	NSW Department of Primary Industries – Water
EPA Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FDI	Fire Danger Index
FMP	Fuel Management Plan
ha	hectare
IPA	Inner Protection Area
LGA	Local Government Area
OPA	Outer Protection Area
OEH	NSW Office of Environment and Heritage
PBP 2019	Planning for Bushfire Protection 2019
PSC	Port Stephens Council
RF Act	Rural Fires Act 1997
RF Regulation	Rural Fires Regulation
RFS	NSW Rural Fire Service
TSC Act	NSW Threatened Species Conservation Act 1995 (as repealed)

1. Introduction

Bushfire Planning Australia (BPA) has been appointed by Canaan PD 2 Pty Ltd (the 'Client') to undertake a Bushfire Assessment Report (BAR) for a proposed retail development at 42 Fullerton Cove Road, Fullerton Cove, legally known as Lot 14 DP258848, and hereafter referred to as "the site".

Section 8.3 of PBP 2019 refers to any type of development that are not residential/ rural residential subdivisions, SFPPs or residential infill development as 'Other development'.

The National Construction Code (NCC) does not provide for any bush fire specific performance requirements for other development, such as the proposed industrial development. The general fire safety construction provisions of the NCC are taken as acceptable solutions in this instance.

Nevertheless, in order to demonstrate the proposed industrial development is able to satisfy the aims and objectives of PBP 2019, this BAR was completed to determine the bushfire hazard that has the potential to threaten the proposed development. Based on this assessment, a series of bushfire protection measures that will provide for an increased level of protection on property and life from the threat of bushfire have been recommended; thereby satisfying the aims and objectives of PBP 2019.

1.1. Aims and Objectives

This BAR aims to assess the bushfire threat and recommends a series of bushfire protection measures that aim to minimise the risk of adverse impact of bush fires on life, property and the environment.

This assessment has been undertaken in accordance with Chapter 8 of *Planning for Bushfire Protection 2019* and clause 45 of the *Rural Fires Regulation 2022*. This assessment also addresses the aim and objectives of PBP 2019, being:

- The protection of human life and of impacts on property from the threat of bushfire, while having due regard to development potential, site characteristics and protection of the environment; and
- Afford buildings and their occupants protection from exposure to a bushfire;
- Provide a defendable space to be located around buildings;
- Provide appropriate separation between a hazard and buildings which, in combination with other measures, prevents the likely fire spread to buildings;
- Ensure that appropriate operational access and egress for emergency service personnel and occupants is available;
- Provide for ongoing management and maintenance of bushfire protection measures (BPMs); and
- Ensure that utility services are adequate to meet the needs of firefighters.

2. Site Description

Table 1: Site Description

Address	42 Fullerton Cove Road, Fullerton Cove
Title	Lot 14 DP 258848
LGA	Port Stephens Council
Subject Site/ Study Area	6.7 ha
Development Site	2.5 ha
Land Use Zone	E1 Local Centre and C2 Environmental Conservation (**Figure 1**)
Bushfire Prone Land	Vegetation Category 1, 2 and Vegetation Buffer (**Figure 3**)
Context	The site is located on the southern side of Fullerton Cove Road and the northern side of Nelson Bay Road. A dwelling and multiple sheds currently exist within the northern corner of the site, whilst the remainder of the site is vegetated. Vegetation also surrounds the entire site with exception to the west and north-west of the site which consists of a residential subdivision and cleared lands currently under development.
Topography	Generally low lying and undulating across the site
Fire History	No evidence of recent fire history directly impacting site. The site lies within a Port Stephens local government area with a Fire Danger Index (FDI) rating of 100.

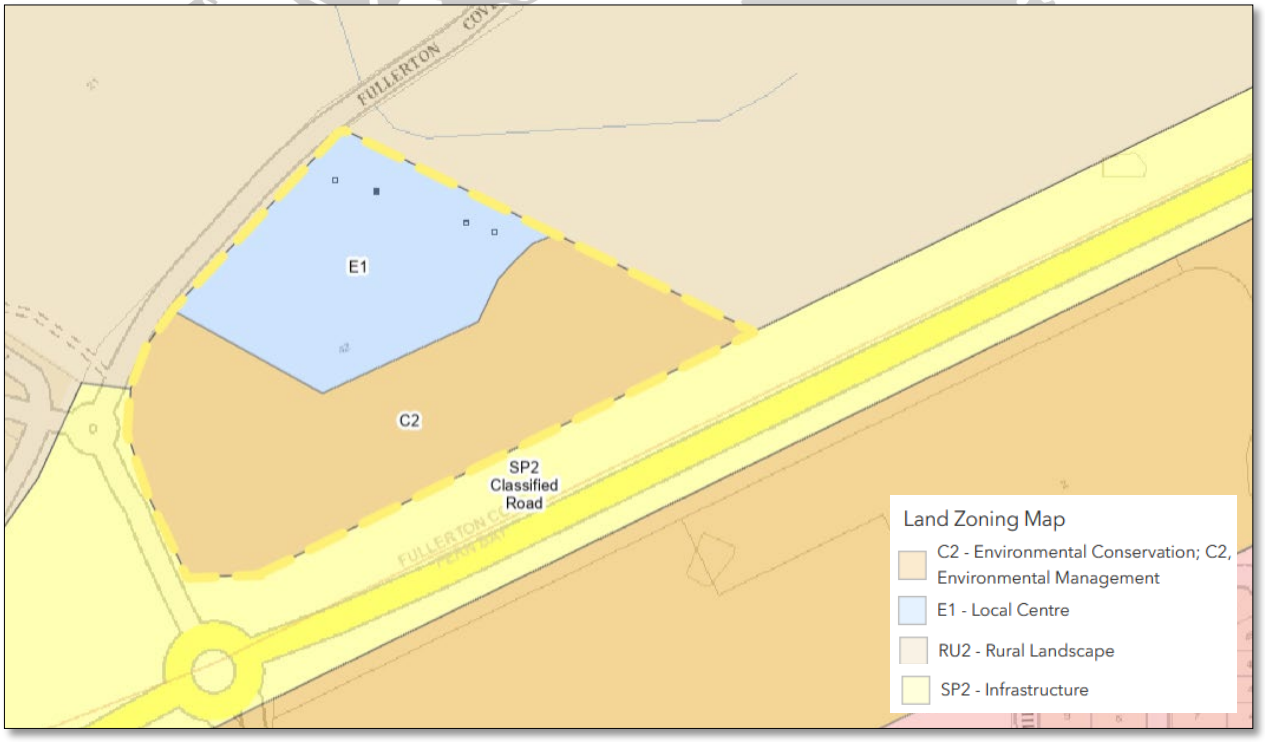

Figure 1: Land Use Zone (Port Stephens LEP 2013)

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 2

Site Location

BUSHFIRE PLANNING AUSTRALIA

Subject Site

SOURCE:
Base Map © Department of Customer Service 2020
© Commonwealth of Australia (Geoscience Australia) 2016. Creative Commons Attribution 4.0 International Licence.

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0 50 100 150 200 250
Meters

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File:FullertonCove_Fig1_Locality_201030 Date: 30/10/2020

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2.1. Bushfire Prone Land

Bushfire activity is prevalent in landscapes that carry fuel and the two predominant bushfire types are grassland and forest fires. Factors such as topographic characteristics and quantity of fuel loads influence the intensity and spread of fire. The scale of a bushfire hazard is tailored to the characteristics of the hazard, the size and characteristics of the affected population, types of land use exposed to bushfire, predicted development growth pressures and other factors affecting bushfire risk.

Figure 3 demonstrates that the site is almost entirely mapped as Vegetation Category 1. A section of the northern corner of the site is mapped as Vegetation Category 3 which extends further north and north-west of the site. To the north-east, east and along the south-eastern boundary Vegetation Category 1 bushfire prone land exists. A narrow corridor of Vegetation Category 3 bushfire prone land exists before transitioning into Vegetation Category 2 bushfire prone land.

The primary bushfire hazard is identified on site to the east and south of the proposed development being Vegetation Category 1 bushfire prone land.

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 3

NSW Bush Fire Prone Land

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer
Watercourse

Bushfire Prone Land

Vegetation Category 1
Vegetation Category 2
Vegetation Category 3
Vegetation Buffer

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Watercourse: GeoScience Australia 2015
NSW Bush Fire Prone Land: NSW Rural Fire Service 2022
Aerial Photo: NearMap 22/05/23

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A3 Scale: 1:2,500

File:FullertonCove_Fig2_BFPL_230628 Date: 28/06/2023

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Lot 2 DP720679
Lot 11 DP258848
Lot 186 DP749482
Lot 19 DP606361
Fullerton Cove Road
Lot 1 DP270695
Whipbird Way
Lot DP86344
Bellbird Court
Lot 14 DP258848
Nelson Bay Road
Lot 46 DP280008
Lot 226 DP270695
The Cove Drive
Lot 27 DP270466
Seaside Boulevard
Lot 27 DP270466
Midden Street

2.2. Proposed Development

The proposed development will include a large retail complex consisting of a supermarket and liquor store, a total of 280 car park and motorbike spaces and associated infrastructure.

The proposed development plan is contained in **Appendix A** and shown in **Figure 4.**

Figure 4: Proposed Development

2.3. Other Development (Non-residential)

Section 8.3 of PBP 2019 provides specific advice for developments that are not residential subdivision, special fire protection purposes (SFPPs) or residential infill. The proposed development is limited to Class 5-8 and 10 buildings of the National Construction Code: Building Code of Australia (NCC). These classes of buildings include factories, warehouses, offices and other industrial facilities. Residential development and habitable buildings are not permissible on the subject site.

The general aims and objectives of PBP 2019 apply in relation to matters such as access, water and services, emergency planning and landscaping/ vegetation management. However, it is prudent that a suitable package of bushfire protection measures be proposed commensurate with the assessed level of risk of the future development. Accordingly, this BAR will recommend areas cleared of vegetation are maintained at the hazard interface to ensure defendable space is provided for firefighting purposes.

Notwithstanding the available bushfire protection measures outlined in PBP 2019, the NCC does not provide for any bushfire specific performance requirements for industrial (non-habitable buildings) and as such Australian Standard *AS3959-2018 Construction of buildings in bushfire prone areas* (AS3959-2018) does not apply as a set of deemed-to-satisfy provisions. However, the following objectives apply in relation to access, water and services, and emergency and evacuation planning:

- To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- To provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
- Consideration of storage and hazardous materials away from the hazard wherever possible.

3. Bushfire Hazard Assessment

The bushfire hazard assessment will involve quantitative and qualitative assessments of the site. The quantitative assessment includes a detailed site inspection to record and review vegetation communities, slope and aspect both within and surrounding the site. The qualitative assessment will be based on the known bushfire behaviour of the subject land.

3.1. Vegetation Assessment

Vegetation classification over the site and surrounding area has been carried out as follows:

- Aerial Photograph Interpretation to map the vegetation classification and extent (NearMap historical series);
- Reference to NSW State Vegetation Type NSW Department of Planning, Industry and Environment 2022 (**Figure 5**); and
- Site inspection completed by Stuart Greville of BPA on 5 November 2020.

In accordance with Appendix 1 of PBP 2019, an assessment of the vegetation over a distance of 140m in all directions from the site was undertaken. Vegetation that may be considered a bushfire hazard was identified in all directions from the development footprint. The vegetation classification is based on Appendix 1 of PBP 2019. The inconsistencies between the mapping sources listed above was quantified during the site inspection and compared to the Keith Vegetation Formations.

3.1.1. Reliability Assessment

Although the bushfire prone land mapping is intended to be regularly updated, land use and vegetation cover that contribute to bushfire hazards are subject to change. A reliability assessment was undertaken for the subject site and all land within 140m. In this instance the bushfire prone land mapping is mostly consistent with existing vegetation, namely the vegetation within 140m surrounding the site.

Plate 1: Approximate zone boundary indicated by the tree line

Plate 2: Typical vegetation formation surrounding the site *(Coastal swamp forest)*

Plate 3: *Coastal swamp forest* on north side of Fullerton Cove Road

Plate 4: *Coastal swamp forest* north of subject site

Plate 5: Property future development site opposite Fullerton Cove Road *(grassland)*

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 5

NSW State Vegetation Type (Class)

BUSHFIRE PLANNING AUSTRALIA

Subject Site
100m Buffer
140m Buffer

Vegetation Class

Coastal Floodplain Wetlands
Mangrove Swamps
Coastal Swamp Forests
Coastal Dune Dry Sclerophyll Forests
Not native vegetation

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2022
Aerial Photo: NearMap 22/05/2023
NSW Vegetation Type: NSW Department of Planning, Industry and Environment 2022

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0 25 50 75 100
Meters

A3 Scale: 1:2,000

File:FullertonCove-Fig3a-Vegetation-NSW-SVT-230628 Date: 28/06/2023

3.2. Slope Assessment

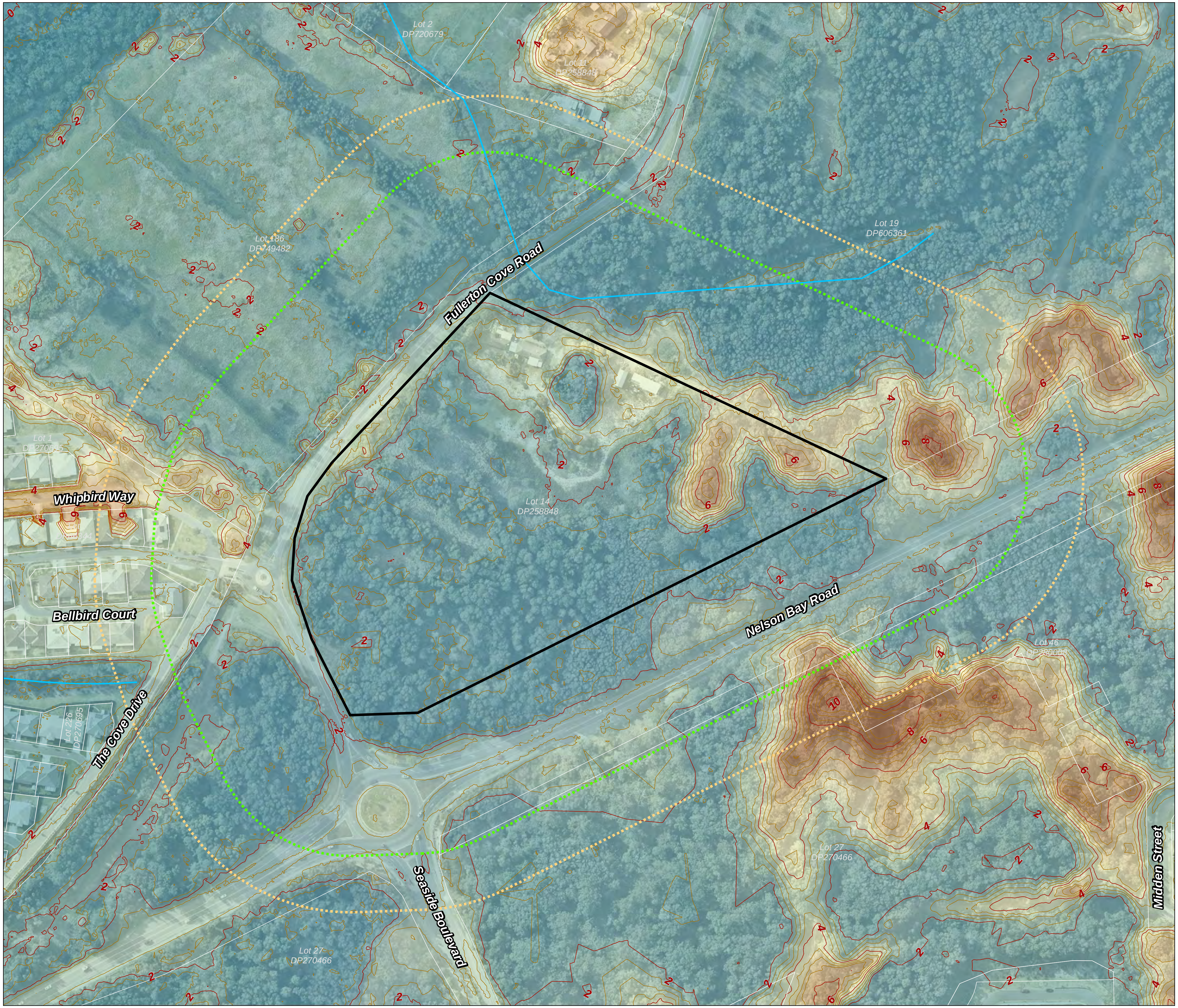
The slope assessment was undertaken as follows:

- Review of LiDAR point cloud data – including DEM (NSW LPI) and
- Detail survey of existing contours.

An assessment of the slope over a distance of 140m in the hazard direction from the site boundary was undertaken. The effective slope was then calculated under the classified vegetation where there was a fire run greater than 50m. The topography of the site has been evaluated to identify both the average slope and by identifying the maximum slope present. These values help determine the level of gradient which will most significantly influence the fire behaviour of the site.

The effective slope in all directions is shown in **Figure 6** and **Figure 7** and **Table 2.**

The final bushfire hazard assessment defining vegetation classifications and effective slope is shown in **Figure 8.**



Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 6

Elevation

BUSHFIRE PLANNING AUSTRALIA

- Subject Site
- 100m Buffer
- 140m Buffer
- Contour (2m)
- Contour (0.5m)
- Watercourse

Elevation
High : 10m
Low : 0m

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Watercourse: GeoScience Australia 2015
Aerial Photo: NearMap 02/09/20
Surface analysis: Derived from Newcastle201409-LID1-AHD_3866362_56_0002_0002_1m © Department Finance, Services and Innovation 2014

N W E S

0 25 50 75 100 125
Meters

A3 Scale: 1:2,500

File:FullertonCove-Fig5-Elevation-201030 Date: 30/10/2020

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Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 7

Slope Analysis: LiDAR

BUSHFIRE PLANNING AUSTRALIA

Fullerton Cove Road
Whipbird Way
Bellbird Court
The Cove Drive
Seashell Boulevard
Nelson Bay Road
Midden Street

Subject Site
100m Buffer
140m Buffer
Contour (2m)
Contour (0.5m)
Watercourse

Slope

0° - 5°
5° - 10°
10° - 15°
15° - 20°
>20°

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Watercourse: GeoScience Australia 2015
Aerial Photo: NearMap 02/09/20
Surface analysis: Derived from Newcastle201409-LID1-AHD_3866362_56_0002_0002_1m © Department Finance, Services and Innovation 2014

N W E S

0 25 50 75 100 125
Meters

A3 Scale: 1:2,500

File:FullertonCove-Fig6-SlopeLiDAR-201030 Date: 30/10/2020

3.3. Vegetation Results

All vegetation identified within the current Bush Fire Prone Land map was inspected during the site inspection.

The ground truthing survey confirmed the majority of the vegetation is *Coastal Swamp Forest* which is very typical of the east coast location of the development site. The *Coastal Swamp Forest* has such a dense canopy that the shrub understorey beneath the canopy is limited in its development (Keith, 2004), meaning that its fuel load is lower than the overall fuel load for the forest category it sits in within PBP 2019.

The unmanaged and greatest bushfire hazard is situated to the east and south within the subject site where vegetation will remain as part of the proposed development. This vegetation is identified as a forest, namely *Coastal Dune Dry Sclerophyll Forests* (to the east) and *Coastal Swamp Forests* (to the south).

The fuel loads to the south within and beyond 140m of the site are also relatively high however is punctuated by Nelson Bay Road and Fullerton Cove Road (to the south). The lowest fuel loads are to the north and west of the site where much of the land cleared for future development or is occupied by large residential land holdings respectively.

Overall, the findings of the bushfire assessment concluded that the subject site is exposed to a moderate to high bushfire hazard. The results of the Bushfire Hazard Assessment are presented in **Table 2** and **Figure 8**.

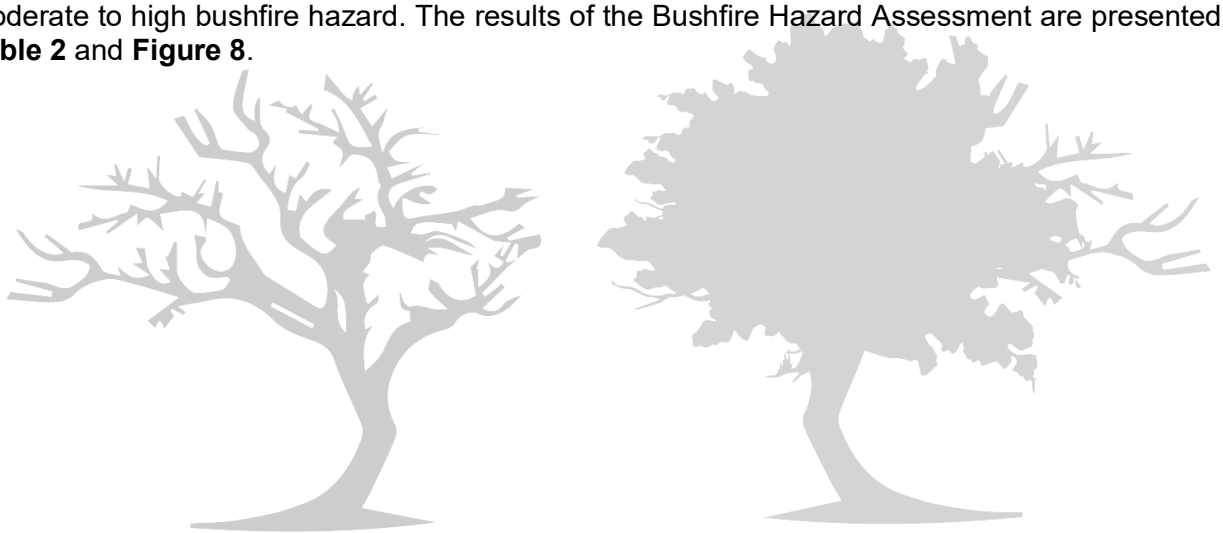

Table 2: Slope and Vegetation Assessment Results

Transect	Vegetation Description	Vegetation Classification (PBP 2019)	Slope
T1	Low threat vegetation	Grassland	0.7° Upslope
T2	Cleared / low threat vegetation for proposed future development	Grassland	0.9° Downslope
T3	Remnant vegetation of future development site currently identified as Forested Wetlands	Forested Wetlands *(Coastal Floodplain Wetlands)*	0.1° Downslope
T4	Unmanaged forest vegetation located from the subject sites northern boundary to Fullerton Cove Road	Forest *(Coastal Swamp Forest)*	0.9° Downslope
T5	Unmanaged forest vegetation located from the subject sites north-eastern boundary to Fullerton Cove Road	Forest *(Coastal Dune Dry Sclerophyll Forest)*	1.7° Downslope
T6	Unmanaged forest vegetation located from the subject sites north-eastern boundary to Fullerton Cove Road	Forest *(Coastal Dune Dry Sclerophyll Forest)*	0.7° Downslope
T7	Unmanaged remnant forest vegetation located south-east of the proposed development site to beyond the subject sites boundary	Forest *(Coastal Dune Dry Sclerophyll Forest)*	0.1° Upslope
T8	Unmanaged remnant forest vegetation located south of the proposed development site to the subject sites southern boundary	Forest *(Coastal Swamp Forest)*	0.0° Flat
T9	Unmanaged remnant forest vegetation located south-west of the proposed development site to the subject sites south-western boundary	Forest *(Coastal Swamp Forest)*	0.1° Downslope

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 8

Slope & Vegetation Assessment

BUSHFIRE PLANNING AUSTRALIA

- Subject Site
- 100m Buffer
- 140m Buffer
- RL
- Transect
- Contour (2m)
- Contour (0.5m)
- Zone boundary

Vegetation Class

- Coastal Floodplain Wetlands
- Mangrove Swamps
- Coastal Swamp Forests
- Coastal Dune Dry Sclerophyll Forests
- Not native vegetation

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Aerial Photo: NearMap 22/05/2023
Surface analysis: Derived from Newcastle201409-LID1-AHD_3866362_56_0002_0002_1m © Department Finance, Services and Innovation 2014
Vegetation: BPA 2022
Zoning: Department of Planning, Industry and Environment 2020 (with subject lot zoning modified by BPA 22/11/22)

N W E S

0 25 50 75 100
Meters

A3 Scale: 1:2,000

File:FullertonCove-Fig7-SlopeVeg-240702 Date: 2/07/2024

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3.4. Significant Environmental Features

It is expected further biodiversity investigations will be undertaken to identify and assess the potential impacts on any significant environmental features. Should any of the recommended bushfire protection measures have an unacceptable impact on a significant environmental feature, consultation with the project ecologist and the relevant stakeholders will be carried out to negotiate an acceptable outcome.

3.5. Threatened Species, populations or ecological communities

The area of the site to be affected by the proposed development has been identified to minimise impacts on any threatened species, population or EEC. All bushfire mitigation measures; including APZs will consider the existing and potential biodiversity values to minimise impact where possible.

3.6. Aboriginal Objects

A search of the AHIMS database (results contained in **Appendix B**) revealed there is no recorded Aboriginal sites or places within 50m of the development site.

4. Bushfire Risk and Mitigation

Planning for Bushfie Protection (PBP 2019) refers to the proposed development as 'Other development'. In order to comply with PBP, the development should:

- ❑ Note the range of available Bush Fire Protection Measures (BFPMs);
- ❑ Satsify the aims and objectives of PBP 2019;
- ❑ Consider any matters listed for the specific purpose; and
- ❑ Propose an appropriate combination of BPMs.

Additional provisions relevant to 'other development' detailed in PBP 2019 state that in order to comply with PBP 2019, the following conditions must be met:

- ❑ Satisify the aims and objectives of PBP outlined in Chapter 1;
- ❑ Consider any issues listed for the specific purpose for the development; and
- ❑ Propose an appropriate combination of BFPMs.

This BAR has adopted the methodology to determine the appropriate BFPMs detailed in PBP 2019. As part of the BAR, the recommended BFPMs demonstrate the aims and objectives of PBP 2019 are able to be satisified; including the matters considered by the RFS necessary to protect persons, property and the environment from the danger that may arise from a bushfire.

4.1. Asset Protection Zones - Acceptable Solution

An Asset Protection Zone (APZ) is an area surrounding a development that is managed to reduce the bushfire hazard to an acceptable level to mitigate the risk to life and property. The required width of the APZ varies with slope and the type of hazard. An APZ can consist of both an inner protection area (IPA) and an outer protection area (OPA). In this instance the entire APZ and the balance of the development site shall be managed as an IPA.

4.1.1. Determining the Appropriate Setbacks

PBP 2019 does not explicitly require the proposed development to provide an APZ in accordance with Appendix 1 of PBP 2019. Notwithstanding, the provision of access and defendable space is provided by the service roads. As the site lies within the Port Macquarie LGA, it is assessed under a FDI rating of 100, consideration has been given to the type of hazard including the average slope and also the steepest slope.

Refer to **Table 3** and **Figure 9** for the required APZs.

Table 3: Required and Recommended Asset Protection Zones

Transect	Vegetation Classification (PBP 2019)	Slope Class	PBP 2019 FDI 100 Table A1.12.2
T1	Grassland	0.7° Upslope	10m
T2	Grassland	Flat* (0.9° Downslope)	10m
T3	Forested Wetlands *(Coastal Floodplain Wetlands)*	Flat* (0.1° Downslope)	10m
T4	Forest *(Coastal Swamp Forest)*	Flat* (0.9° Downslope)	24m
T5	Forest *(Coastal Dune Dry Sclerophyll Forest)*	1.7° Downslope	29m
T6	Forest *(Coastal Dune Dry Sclerophyll Forest)*	Flat* (0.7° Downslope)	24m
T7	Forest *(Coastal Dune Dry Sclerophyll Forest)*	0.1° Upslope	24m
T8	Forest *(Coastal Swamp Forest)*	Flat	24m
T9	Forest *(Coastal Swamp Forest)*	Flat* (0.1° Downslope)	24m

* Any slope that is less than 1 degree is considered insignificant and therefore has been assessed as 'flat'.

Any new developments shall be provided with sufficient separation distance to minimise the bushfire risk to an acceptable level.

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 9

Asset Protection Zone

BUSHFIRE PLANNING AUSTRALIA

Subject Site
Watercourse
Zone boundary
Asset Protection Zone

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Watercourse: GeoScience Australia 2015
Aerial Photo: NearMap 22/05/2023
Zoning: Department of Planning, Industry and Environment 2020 (with subject lot zoning modified by BPA 30/10/20)

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A3 Scale: 1:1,000

File:FullertonCove-Fig10-APZ-240702 Date: 2/07/2024

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4.3. Landscaping and Vegetation Management

In APZs and IPAs, the design and management of the landscaped areas in the vicinity of buildings have the potential to improve the chances of survival of people and buildings. Reduction of fuel does not require the removal of all vegetation. Trees and plants can provide some bushfire protection from strong winds, intense heat and flying embers (by filtering embers) and changing wind patterns.

Generally landscaping in and around a bushfire hazard should consider the following:

- Priority given to retaining species that have a low flammability;
- Priority given to retaining species which do not drop much litter in the bushfire season and which do not drop litter that persists as ground fuel in the bush fire season;
- Priority given to retaining smooth barked species over stringy bark; and
- Create discontinuous or gaps in the vegetation to slow down or break the progress of fire towards the dwellings.

Landscaping within APZs and IPAs should give due regard to fire retardant plants and ensure that fuel loads do not accumulate as a result of the selected plant varieties.

The principles of landscaping for bushfire protection aim to:

- Prevent flame impingement on dwellings;
- Provide a defendable space for property protection;
- Reduce fire spread;
- Deflect and filter embers;
- Provide shelter from radiant heat; and
- Reduce wind speed.

Avoiding understorey planting and regular trimming of the lower limbs of trees also assists in reducing fire penetration into the canopy. Rainforests species such as Syzygium and figs are preferred to species with high fine fuel and/or oil content.

Trees with loose, fibrous or stringy bark should be avoided. These trees can easily ignite and encourage ground fire to spread up to, and then through the crown of trees.

Consideration should be given to vegetation fuel loads present on site with particular attention to APZs.

Careful thought must be given to the type and physical location of any proposed site landscaping. Inappropriately selected and positioned vegetation has the potential to ‘replace’ any previously removed fuel load.

Bearing in mind the desired aesthetic and environment sought by site landscaping, some basic principles have been recommended to help minimise the chance of such works contributing to the potential hazard on site.

Specific requirements for the management of vegetation and landscaping around vulnerable developments and within the APZ the following conditions apply:

- Within 10m of a building, flammable objects such as plants, mulches and fences must not be located close to vulnerable parts of the building such as windows, decks and eaves;
- Trees must not overhang the roofline of the building, touch walls or any other elements of a building;
- Grass should be no more than 100mm in height. All leaves and vegetation debris are to be removed at regular intervals (rake leaves and twigs from grass every week during the fire season);

- Establish lawn substitutes including non-flammable ground covers such as decorative stone or gravel;
- Plants greater than 100m in height at maturity must not be placed directly in front of a window or other glass features;
- Tree canopy separation of 2 metres and overall canopy cover no more than 15% at maturity;
- Preference should be given to smooth barked and evergreen trees;
- Shrubs should not be located under trees;
- Shrubs should not form more than 10% ground cover; and
- Provide a reliable and sufficient water supply and installation of sprinkler systems to create a well-watered landscape.

Whilst it is recognised that fire-retardant plant species are not always the most aesthetically pleasing choice for site landscaping, the need for adequate protection of life and property requires that a suitable balance between visual and safety concerns be considered.

It is reiterated again that it is essential that any landscaped areas and surrounds are subject to ongoing fuel management and reduction to ensure that fine fuels do not build up.

4.4. Access

In the unlikely event of a serious bushfire, it will be essential to ensure that adequate ingress / egress and the provision of defendable space are afforded in the subdivision layout. All buildings must have direct access to a public road. Section 5.3.2 of PBP 2019 requires a development to provide safe operational access to structures and water supply for emergency services while occupants are seeking to evacuate.

The following design specifications detailed in PBP 2019 are relevant to the proposed development:

- be two-wheel drive all weather roads;
- be through roads, but if unavoidable then dead ends should be not more than 200 metres in length, incorporate a minimum 12 metres turning circle (either in cul-de-sac or T-head formation) and should be clearly sign posted as dead ends;
- the capacity of road surfaces is sufficient to carry fully loaded fire fighting vehicles (approximately 15 tonnes for areas with reticulated water, 28 tonnes for all other areas);
- non perimeter roads comply with table – Road widths for Category 1 Tanker;
- curves of roads (other than perimeter roads) are a minimum inner radius of 6 metres and minimal in number, to allow for rapid access and egress;
- maximum grade for sealed roads do not exceed 12.5^{o};
- have a minimum vertical clearance to a height of four metres at all times;
- parking bays are a minimum of 2.6 metres wide from kerb edge to road pavement. No services or hydrants are located within the parking bays.

The proposed development provides two main access points, one to the south of the development site and the other to the north of the development dedicated to service vehicles both accessed from Fullerton Cove Road. However, in an emergency the service entry would also be available for emergency access and egress.

The proposed carpark that surrounds the proposed development boundary acts as a perimeter road and APZ from any bushfire hazards.

Overall, it is considered the existing and proposed road network provides safe operational access for emergency service personnel and is also appropriate for evacuation purposes.

4.5. Services - water, electricity and gas

4.5.1. Water

Fire hydrant spacing, sizing and pressure should comply with AS 2419.1 – 2005. Hydrants are not to be located within any road carriageway.

All sites within the proposed development shall be connected to a reticulated water supply.

4.5.2. Electricity

All electricity services will be located underground.

4.5.3. Gas

Any reticulated or bottled gas should be installed and maintained according to the requirements of the relevant authorities and AS 1592-2002. It is expected that the location of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.

4.6. Construction Standards: Bushfire Attack Level

All buildings must satisfy the Performance Requirements of the National Construction Code: Building Code of Australia (BCA). Part 2.3 of Volume 2 of the BCA applies to dwellings located within designated bushfire areas, which are defined as:

> *Land which has been designated under a power in legislation as being subject, or likely to be subject to, bushfires.*

Accordingly, all forthcoming habitable buildings must satisfy the requirements of Part 3.7.4 of the BCA. The *Deemed-to-Satisfy* (DTS) provision of the BCA can only be achieved if dwellings in bushfire prone areas are constructed in accordance with Australian Standard *AS3959-2018 Construction of buildings in bushfire prone areas*. Alternatively, the DTS provisions can also be achieved if the habitable building is constructed in accordance with the NASH Standard 'Steel Framed Construction in Bushfire Areas'.

Building design and the materials used for construction of future dwellings should be chosen based on the information contained within AS3959-2018, and accordingly the designer/architect should be made aware of this recommendation.

The determinations of the appropriate bushfire attack level (BAL) is based on the maximum potential radiant heat exposure. BALs are based upon parameters such as weather modelling, fire-line intensity, flame length calculations, as well as vegetation and fuel load analysis. The determination of the BAL is derived by assessing the:

- Relevant FDI = 100;
- Flame temperature = 1090K;
- Slope = mostly flat;
- Vegetation classification = *forest*; and
- Building location.

The BALs for each transect have been calculated and provided in **Table 4** and represented in **Figure 11**.

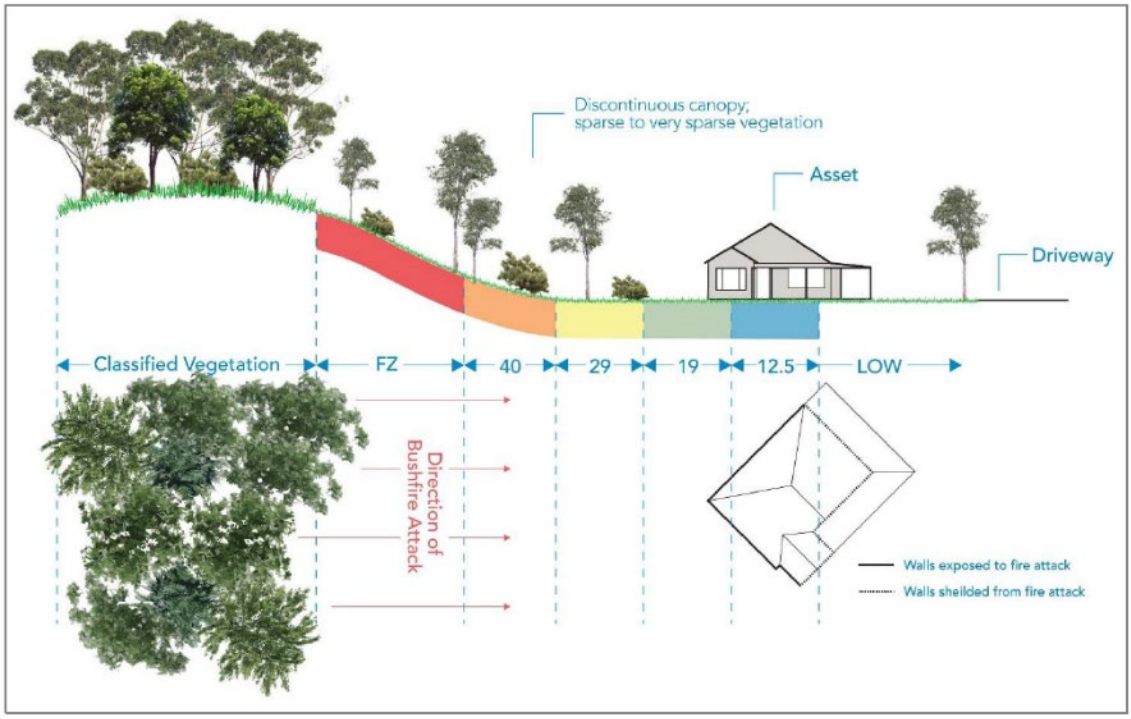


Figure 10: Bushfire Attack Level

Table 4: Required BALs

Transect/ Aspect	Vegetation Classification (PBP 2019)	Slope	APZ (Table A1.12.2)	Distance from Hazard (Table A1.12.5)	Bushfire Attack Level (BAL)
T1 & T2	Grassland	Flat & Upslope	**10m**	0m-<8m	BAL-FZ
				8m-<10m	BAL-40
				10m-<15m	BAL-29
				15m-<22m	BAL-19
				22m<50m	BAL-12.5
T3	Forested Wetland *(Coastal Floodplain Wetlands)*	Flat*	**10m**	0m-<7m	BAL-FZ
				7m-<10m	BAL-40
				10m-<14m	BAL-29
				14m-<21m	BAL-19
				21m<100m	BAL-12.5
T4, T8 & T9	Forest *(Coastal Swamp Forest)*	Flat* & Upslope	**24m**	0m-<18m	BAL-FZ
				18m-<24m	BAL-40
				24m-<33m	BAL-29
				33m-<45m	BAL-19
				45m<100m	BAL-12.5
T5	Forest *(Coastal Dune Dry Sclerophyll Forest)*	1.7° Downslope	**29m**	0m-<22m	BAL-FZ
				22m-<29m	BAL-40
				29m-<40m	BAL-29
				40m-<54m	BAL-19
				54m<100m	BAL-12.5
T6 & T7	Forest *(Coastal Dune Dry Sclerophyll Forest)*	Flat* & Upslope	**24m**	0m-<18m	BAL-FZ
				18m-<24m	BAL-40
				24m-<33m	BAL-29
				33m-<45m	BAL-19
				45m<100m	BAL-12.5

* Any slope that is less than 1 degree is considered insignificant and therefore has been assessed as 'flat'.

RU2

RU2

Fullerton Cove Road

24 m

B1

24 m

24 m

E2

SP2

E2

SP2

Lot 14 DP 258848
42 Fullerton Cove Road,
Fullerton Cove

Figure 11

BAL Contour Plan

BUSHFIRE PLANNING AUSTRALIA

Subject Site

Watercourse

Zone boundary

Asset Protection Zone

Required Bushfire Attack Levels (AS3959-2018)

BAL - FZ

BAL - 40

BAL - 29

BAL - 19

BAL - 12.5

SOURCE:
Cadastral Boundary: NSW Department of Finance, Services and Innovation 2020
Aerial Photo: NearMap 22/05/2023
Zoning: Department of Planning, Industry and Environment 2020 (with subject lot zoning modified by BPA 30/10/20)

N
W E
S

0 25 50
Meters

A3 Scale: 1:1,000

File:FullertonCove-Fig9-BALs-240702 Date: 2/07/2024

GEOVIEW
GIS & mapping solutions for infrastructure, town planning & environmental management

4.7. Emergency Services

There is a NSW Fire & Rescue Station at Hereford Street, Stockton approximately 7.2km or 8 minutes drive away from the site (**Figure 12**). Any local bushfire events would be controlled by the NSW RFS Lower Hunter Fire Control Centre at Metford. Fire suppression would be undertaken by local NSW RFS brigades, supported by NSW Fire & Rescue.

There would be an increase in demand for emergency services in responding to the proposed development, so it is recommended that liaison takes place with the Local Emergency Management Committee (LEMC) to ensure that they have an understanding of the proposed additional community and its emergency response requirements.

Figure 12: Fire and Rescue NSW - Stockton Fire Station

There is a Neighbourhood Safer Place (NSP) to the east of the site in the Seaside Fern Bay Residential Estate, which is approximately 2km or a 3 minute drive north of the site. A NSP is a place of last resort so cannot be relied on in the event of a bushfire but if there is a need for a place of shelter, having a NSP within driving distance is positive.

Figure 13: NSW RFS Neighbourhood Safer Place - Fern Bay

5. Conclusion and Recommendations

Bushfire Planning Australia (BPA) has been engaged by Canaan PD 2 Pty Ltd (the 'Client') to undertake a Bushfire Assessment Report (BAR) for the proposed retail development located at 42 Fullerton Cove Road, Fullerton Cove.

The National Construction Code (NCC) does not provide for any bush fire specific performance requirements for the proposed development; being a development that will facilitate the construction of non-habitable buildings. The general fire safety construction provisions of the NCC are taken as acceptable solutions in this instance.

This BAR found the site is exposed to a moderate to high bushfire hazard being remnant vegetation located to the east and south within the subject site. The predominant vegetation surrounding the site is consistent with a forest vegetation formation, namely *Coastal Swamp Forest* and *Coastal Dune Dry Sclerophyll Forest* as described in the NSW Rural Fire Service document Planning for Bushfire Protection 2019 (PBP 2019). The BAR concludes that the hazard identified can be successfully mitigated by applying the requirements of PBP 2019.

In summary, the following key recommendations have been designed to enable any future proposed development to achieve the aims and objectives of PBP 2019:

1. The entire site shall be managed as an Inner Protection Area (IPA) as outlined within Appendix 4 of PBP 2019 and the RFS document Standards for asset protection zones;
2. Asset Protection Zones shall be established as shown in **Figure 9** and maintained as outlined Appendix 4 of PBP 2019 and the RFS document Standards for asset protection zones;
3. Access shall be provided in accordance with Table 5.3b of PBP 2019;
4. Vegetation within road verges and stormwater basins to be consistent with a grassland vegetation classification with tree canopy less than 10% at maturity (and considered unmanaged);
5. All future buildings are to be constructed on the proposed lots shall have due regard to the specific considerations given in the National Construction Code: Building Code of Australia (BCA) which makes specific reference to Australian Standard AS3959-2018 Construction of buildings in bushfire prone areas (AS3959-2018) and the NASH Standard Steel Framed Construction in Bushfire Prone Areas;
6. All new lots are to be connected to a reliable water supply network and that suitable fire hydrants are located throughout the development site that are clearly marked and provided for the purposes of bushfire protection. Fire hydrant spacing, sizing and pressure shall comply with AS2419.1 2005 and section 5.3.3 of PBP 2019;
7. Consideration should be given to landscaping and fuel loads on site to decrease potential fire hazards on site.

This assessment has been made based on the bushfire hazards observed in and around the site at the time of inspection and production (July 2024).

Should the above recommendations be implemented, the existing bushfire risk should be suitably mitigated to offer an acceptable level of protection to life and property for those persons and assets occupying the site, but they do not and cannot guarantee that the area will not be affected by bushfire at some time and that property and life damage/loss will not occur.

6. References

- Douglas, G 2017. Property Protection from Extreme Bushfire Events under the Influence of Climate Change. Submitted for the degree of Doctor of Philosophy at Western Sydney University.
- Dunlop, M., & Brown, P.R. 2008. Implications of climate change for Australia's National Reserve System: A preliminary assessment. Report to the Department of Climate Change, February 2008. Department of Climate Change, Canberra, Australia.
- NSW Rural Fire Service (2005). *Standards for Asset Protection Zones*. NSW Rural Fire Service.
- NSW Rural Fire Service (2019). Planning for Bushfire Protection – A Guide for Councils, Planners, Fire Authorities, Developers and Home Owners.
- Ramsay, GC and Dawkins, D (1993). *Building in Bushfire-prone Areas – Information and Advice*. CSIRO and Standards Australia.
- Rural Fires and Environmental Assessment Legislation Amendment Act 2002.
- Standards Australia (2018). AS 3959 – 2018: Construction of Buildings in Bushfire-prone Areas.

Appendix A: Proposed Development

DEVELOPMENT APPLICATION

N

OVERALL SITE PLAN

1:1000 @ A1

14311 - DA - A03 - 27/06/2024 - rev. C

PROPOSED RETAIL DEVELOPMENT

42 FULLERTON COVE RD., FULLERTON COVE

EJE Integrity Innovation Inspiration

200mm ON ORIGINAL A1
100mm
25mm
0

REVISIONS LEGEND

- 01 NEW TREES & LANDSCAPING REMOVED FRO FLOOD ZONE
- 02 CAR PARKING SPACES REMOVED
- 03 CAR PARKING SPACES ADDED
- 04 KERB & RETAINING WALL ALIGNMENT REVISED
- 05 ACCESS GATES TO TELSTRA TOWER ADDED
- 06 FUTURE EV PARKING ADDED
- 07 KIOSK SUBSTATION RELOCATED & CAR SPACE REMOVED
- 08 TROLLEY BAY RELOCATED & CAR SPACE ADDED

DEVELOPMENT SCHEDULE

BUILT FLOOR AREA (BFA)
6,992m²

LETTABLE / NET FLOOR AREA (NFA)
SUPERMARKET + LIQUOR STORE = 2,655m²
TENANCIES 01-05 = 2,343m²

TOTAL = 4,998m² (*REFER TO DRWG. A05)

GROSS FLOOR AREA (GFA)
TOTAL = 6,304m² (*REFER TO DRWG. A21)

CAR PARKING
12 x ACCESSIBLE SPACES (5.5 x 2.6m each)
5 x DIRECT to BOOT SPACES (5.5 x 3.0m each)
263 x STANDARD SPACES (5.5 x 2.6m each)

OVERALL TOTAL = 280 SPACES

16 x MOTORBIKE SPACES
10 x BICYCLES

DEVELOPMENT APPLICATION

N

DEVELOPMENT SITE PLAN

1:500 @ A1

14311 - DA - A04 - 27/06/2024 - rev. C

PROPOSED RETAIL DEVELOPMENT

42 FULLERTON COVE RD., FULLERTON COVE

EJE Integrity Innovation Inspiration

24m BUSHFIRE APZ

SUPERMARKET
NON-TRADING AREA
1,085 m²

PLANT DECK OVER

CONDENSER DECK OVER

SUPERMARKET
TRADING AREA
2,485 m²

DIRECT TO BOOT
130 m²

DIRECT TO BOOT

COMMS
9 m²

MSR
18 m²

TROLLEY STORE

TENANCY BIN STORE

R/WATER TANK

LOADING DOCK

TENANCY 01
NFA = 413 m²

TENANCY 05
NFA = 70 m²

TENANCY 02
NFA = 459 m²

MALL
NFA = 367 m²

TENANCY 03
NFA = 553 m²

LIQUOR STORE
170 m²

AMENITIES
91 m²

TENANCY 04
NFA = 848 m²

24m BUSHFIRE APZ

FORECOURT
1,703 m²

N

GROUND FLOOR PLAN

1:200 @ A1

14311 - DA - A05 - 27/06/2024 - rev. C

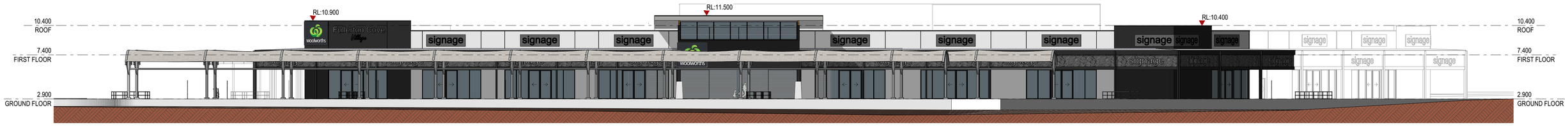
PROPOSED RETAIL DEVELOPMENT

42 FULLERTON COVE RD., FULLERTON COVE

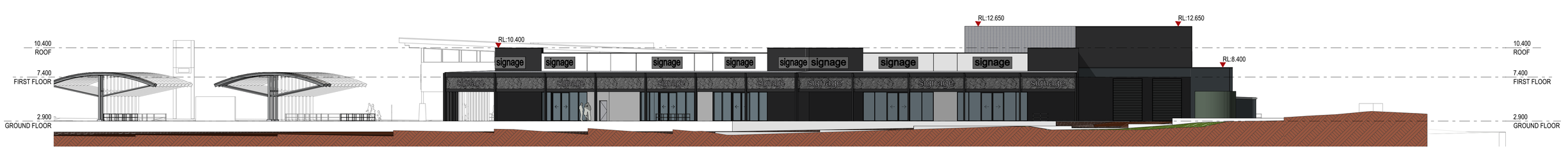
EJE Integrity Innovation Inspiration

DEVELOPMENT APPLICATION

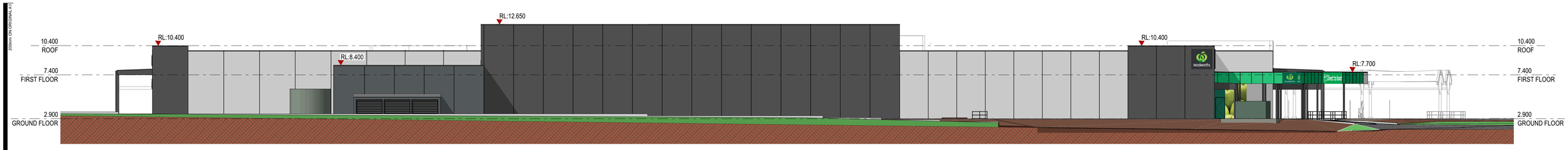
WEST / FULLERTON COVE ROAD ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION

SITE ELEVATIONS

1:200 @ A1

DEVELOPMENT APPLICATION

14311 - DA - A08 - 27/06/2024 - rev. C

PROPOSED RETAIL DEVELOPMENT

42 FULLERTON COVE RD., FULLERTON COVE

EJE Integrity Innovation Inspiration

Appendix B: AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 2028 Fullerton Cove

Client Service ID : 793847

Katrina Greville

21 Costata Crescent
Adamstown New South Wales 2289

Attention: Katrina Greville

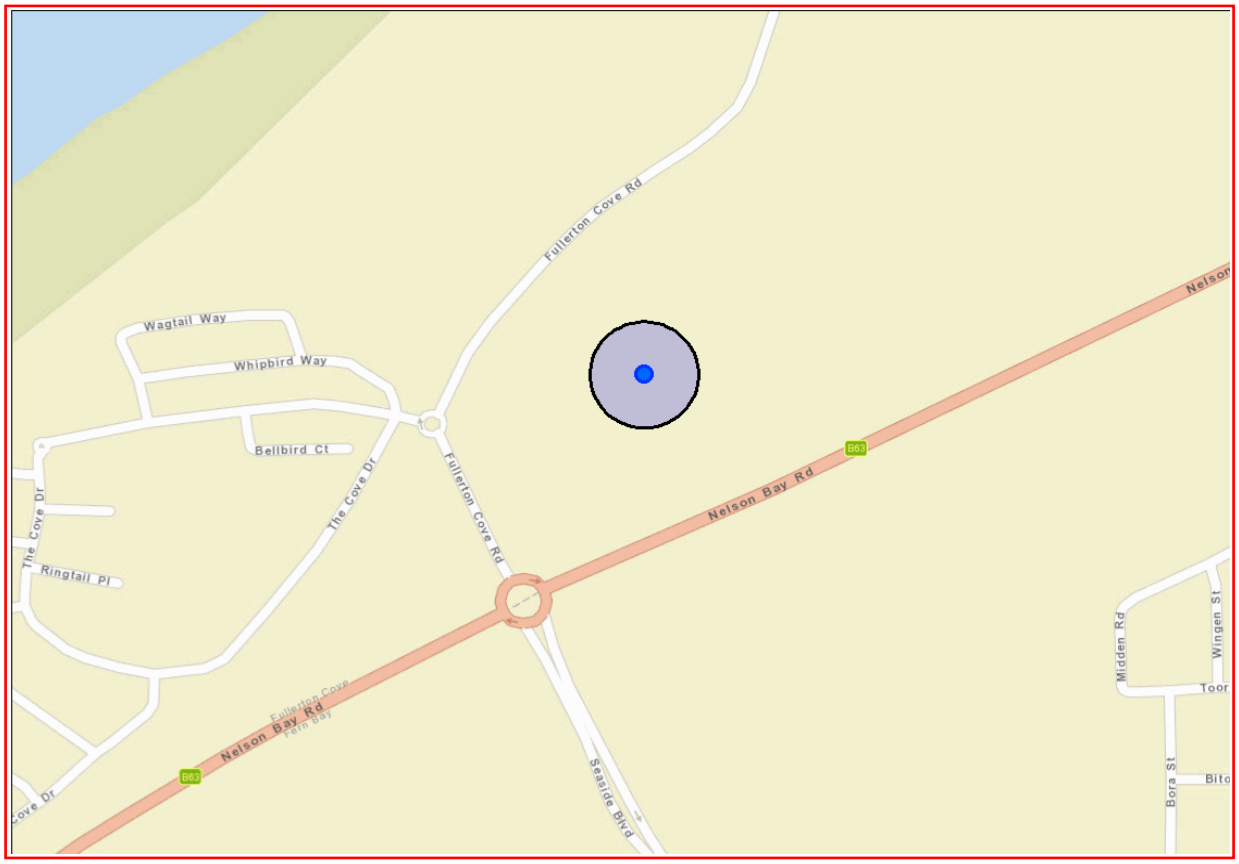
Email: klmukevski@bigpond.com

Date: 22 June 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Address : 42 FULLERTON COVE ROAD FULLERTON COVE 2318 with a Buffer of 50 meters, conducted by Katrina Greville on 22 June 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

BUSHFIRE PLANNING AUSTRALIA

BRONZE MEMBER FPA AUSTRALIA Fire Protection Association Australia

Ref: 2028 Fullerton Cove
Date: 19 March 2024

Attn: Jamie Graham
Monteath & Powys
13/ 125 Bull Street
NEWCASTLE WEST NSW 2302

Via: J.Graham@monteathpowys.com.au

Dear Jamie,

42 FULLERTON COVE ROAD, FULLERTON COVE
UPDATED LANDSCAPE PLANS

Bushfire Planning Australia have been engaged by the owner of 42 Fullerton Cove Road, Fullerton Cove to review recently updated landscape plans and confirm compliance in accordance with Planning for Bushfire Protection 2019 (PBP 2019) – Inner Protection Areas (Appendix 4.1.1).

In combination with other Bushfire Mitigation Measures (BPMs), a bushfire hazard can be reduced by implementing simple steps to reduce vegetation levels. This can be achieved by designing and managing landscaping to implement an Asset Protection Zone (APZ) around the property. The APZ can comprise of an Inner Protection Area (IPA) and an Outer Protection Area (OPA). The proposed development has established an IPA by designing an appropriate landscape scheme for the land at the edge of the development.

Landscape Plans

The Landscape Documentation dated 19 March 2024 prepared by Terras Landscape Architects has been reviewed, including the following drawings:

- ❑ 14311.5 DA L100 Site Plan
- ❑ 14311.5 DA L101 Landscape Plan
- ❑ 14311.5 DA L104 Indicative Section B
- ❑ 14311.5 DA L106 Planting Palette

The landscape design has considered the principles of landscaping for bushfire affected properties resulting in a design and planting schedule that will prevent flame impingement on the proposed development. The selected species associated with the structural composition result in a reduction in the amount and continuity of surface and near-surface fuels that will disrupt an advancing fire front and prevent isolated fires from developing to a size that could threaten the proposed development.

Bushfire Landscaping

In accordance with Planning for Bushfire Planning 2019 (PBP 2019) the intent of the bushfire protection measures are to minimise the risk of bushfire attack and provide protection for emergency services personnel, occupants and others assisting firefighting activities.

The intent of landscaping is designed and managed to minimise flame contact and radiant heat to buildings and the potential for wind-driven embers to cause ignitions.

The acceptable solutions for landscaping for bushfire protection outlined in PBP 2019 are:

- Compliance with the NSW RFS Asset Protection Zone Standards - Appendix 4;
- A clear area of low-cut lawn or pavement is maintained adjacent to the building;
- Fencing is constructed in accordance with section 7.6 PBP 2019;
- Trees and shrubs are located so that:
    - The branches will not overhang the roof;
    - The tree canopy is not continuous; and
    - Any proposed windbreak is located on the elevation from which fires are likely to approach.

Conclusion

The landscape documentation prepared by Terras Landscape Architects dated 19 March 2024 ensure the layout of trees, mass planting and car parking areas have been configured to avert the continuity of fuel loads within APZs. The overall Landscape Plan (Drawing L101) is deemed to comply with the principles for landscaping contained in PBP 2019 Appendix 4.

In summary, upon review of the aforementioned documents and previously completed site inspections where the existing vegetation (including trees to be retained) were observed, I am satisfied the proposed landscape design is able to comply with Planning for Bushfire Protection 2019. This is demonstrated in the following **Table 1**.

Table 1: Performance Criteria and Acceptable Solutions bush fire protection measures for Infill Development (Chapter 7 PBP 2019)

Performance Criteria	Acceptable Solutions	Complies	Comment
Asset Protection Zones: ❑ APZs are provided commensurate with the construction of the building. ❑ A defendable space is provided. ❑ APZs are managed and maintained to prevent the spread of a fire towards the building. ❑ The APZ is provided in perpetuity. ❑ APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	➢ An APZ is provided in accordance with Table A1.12.2 or A.12.3 in Appendix 1. ➢ APZs are managed in accordance with the requirements of Appendix 4 of PBP. ➢ APZs are wholly within the boundaries of the development site. ➢ APZs are located on lands with a slope less than 18 degrees.	✓	The APZs have been determined to satisfy the Performance Criteria requiring no part of the building is to be exposed to radiant heat levels >29kW/m^2. The Bushfire Assessment Report recommended APZs up to 24m surrounding the proposed development.
			Defendable space is provided around the entire development by a combination of APZs and trafficable pathways – suitable for use by emergency services.
			All vegetation within the site will be managed in accordance with the requirements of an Inner Protection Area; per Appendix 4 of PBP 2019.
			Ongoing maintenance of the APZs is the responsibility of the landowner and will be undertaken in accordance with the relevant RFS documents. This will require pruning of tree branches to ensure they do not overhang the development.
			The site and land to be managed as an APZ is generally flat.

We trust this response is sufficient for your purposes, however, should any further information be required, please do not hesitate to contact the undersigned via phone on 0400 917 792 or email at stuart@bfpa.com.au.

Yours sincerely

Stuart Greville
Director
Accredited Bushfire Practitioner
BPAD-26202

BPAD Bushfire Planning & Design Accredited Practitioner Level 2