

Bushfire Assessment Report

Seniors Living Development

At:
**6/21 Vincents Road,
Kurrajong NSW**

Reference Number: 201642

Prepared For:
Environa Studio

11th February 2021



Prepared By:
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Contents

	<u>Page No.</u>
Copyrights and disclaimers	2
List of Abbreviations	3
Executive Summary	4
1.0 Introduction	5
2.0 Purpose of Report	5
3.0 Scope of Report	5
4.0 Referenced Documents and Persons	5
5.0 Aerial Image, BPLM, Zoning & Site Plan	6 - 8
6.0 Bushfire Assessment	9 - 18
7.0 Site and Bushfire Hazard Determination	19
8.0 Recommendations	20 - 21
9.0 Conclusion	22
10.0 Annexure	23
- List of referenced documents and attachments	
- Attachments	

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List of Abbreviations:

APZ	Asset Protection Zone
AS3959	Australian Standard 3959 – 2018 as amended
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Hawkesbury City Council
DA	Development Application
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
ESD	Ecologically Sustainable Development
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
LEP	Local Environmental Plan
NCC	National Construction Code
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2019</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SCC	Site Compatibilities Certificate
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

Executive Summary

Building Code and Bushfire Hazard Solution P/L has been commissioned to prepare an independent Bushfire Assessment Report for the proposed expansion of the existing seniors living development known as 'Tallowood'.

The proposed development involves the following works:

- Demolition works, tree removal and earthworks.
- Construction of a seniors housing development comprising 19 dwellings with car parking on Lot 6 of DP 270827, the construction of a one-way loop road, the provision of services and landscaping works. A men's shed is also proposed for residents. The development will form 'Stage 2' of the existing Tallowood seniors housing development.
- The proposal includes the construction of a columbarium at the private cemetery and a seniors housing dwelling to the north of the existing private cemetery.
- The community title subdivision of the site is also proposed.
- Provision of construction access to Lot 6 over 7 Vincents Road.

The subject site is an existing allotment (Lot 6 DP 270827) known as 6/21 Vincents Road, Kurrajong. The site is zoned 'RU1: Primary Production' and is located within Hawkesbury City Council's local government area.

In this instance the subject site is depicted on Hawkesbury City Council's Bushfire Prone Land Map as containing designated Category 1 and Category 3 Vegetation and their associated buffer zones. The subject site is therefore considered 'bushfire prone'.

Seniors living development is a listed Special Fire Protection Purpose under section 100b of the Rural Fires Act 1997.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act* 1979. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

The proposal has been assessed against the aim and objectives and section 6 'Special Fire Protection Purpose Developments' of *Planning for Bush Fire Protection 2019*.

It is of our opinion that the proposal satisfies all relevant specifications and requirements of *Planning for Bush Fire Protection 2019*.

1.0 Introduction

Building Code and Bushfire Hazard Solution P/L has been commissioned to prepare an independent Bushfire Assessment Report for the proposed expansion of the existing seniors living development known as 'Tallowood'.

The proposed development involves the following works:

- Demolition works, tree removal and earthworks.
- Construction of a seniors housing development comprising 19 dwellings with car parking on Lot 6 of DP 270827, the construction of a one-way loop road, the provision of services and landscaping works. A men's shed is also proposed for residents. The development will form 'Stage 2' of the existing Tallowood seniors housing development.
- The proposal includes the construction of a columbarium at the private cemetery and a seniors housing dwelling to the north of the existing private cemetery.
- The community title subdivision of the site is also proposed.
- Provision of construction access to Lot 6 over 7 Vincents Road.

The subject site is known as 6/21 Vincents Road, Kurrajong (Lot 6 DP 270827) and is within Hawkesbury City Council's local government area.

The development site is located on the northern portion of the property, being bounded by Vincents Road to the west, Old Bells Line of Road to the northwest, St Gregorys Catholic Cemetery to the north, private residential allotments to the northeast, private rural-residential allotments to the east and southeast, and the existing 'Tallowood' development to the south.

Hawkesbury Council's Bushfire Prone Land Map identifies that the subject site contains designated Category 1 Vegetation and Category 3 Vegetation and their associated buffer zones therefore the subject site is considered 'bushfire prone'.

Following a detailed inspection of the subject site and surrounding area it was found that the Bushfire Prone Lands Map (BPLM) incorrectly identifies formed roads, existing buildings, maintained curtilages and managed land as Category 3 Vegetation.

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide Environa Studio, the Rural Fire Service and Council with an independent bushfire determination together with appropriate recommendations for both new building construction and bushfire mitigation measures considered necessary having regard to construction within a designated 'bushfire prone' area.

The recommendations contained within this report may assist in forming the basis of any specific construction conditions and/or bushfire mitigation measures that Council and/or the NSW Rural Fire Service may elect to place within any consent conditions issued for the subject Development Application.

3.0 Scope of this Report

The scope of this report is limited to providing a bushfire assessment for future development within the subject site. Where reference has been made to the surrounding lands, this report does not purport to directly assess those lands; rather it may discuss bushfire impact and/or progression through those lands and possible bushfire impact to the subject site.

4.0 Referenced Documents and Persons

Comments provided are based on the requirements of the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act), the *Rural Fires Act* 1997, the Rural Fires Regulation 2013, the RFS document known as '*Planning for Bush Fire Protection* 2019' and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' 2018 as amended.

Company representatives have made an inspection of the site and the surrounding area.

5.0 Aerial Image, BPLM, Zoning & Site Plan



Figure 01: Aerial view of the subject site

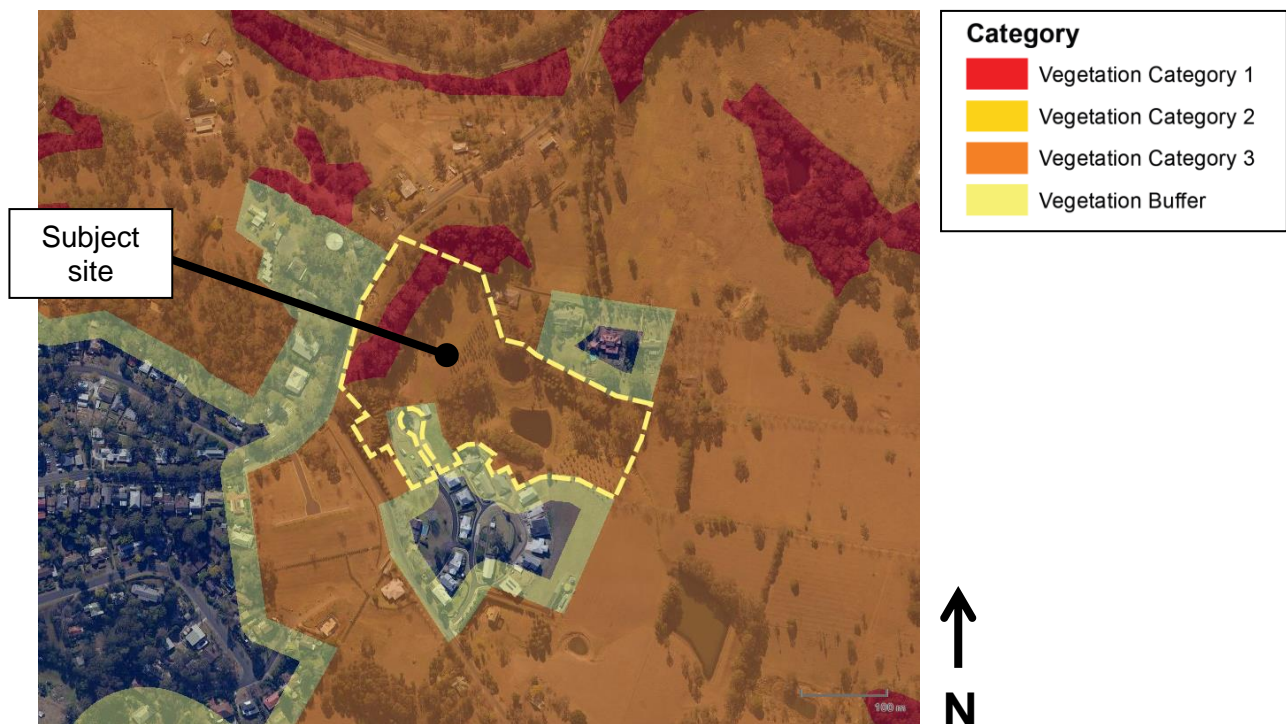


Figure 02: Extract from Hawkesbury City Council's Bushfire Prone Land Map

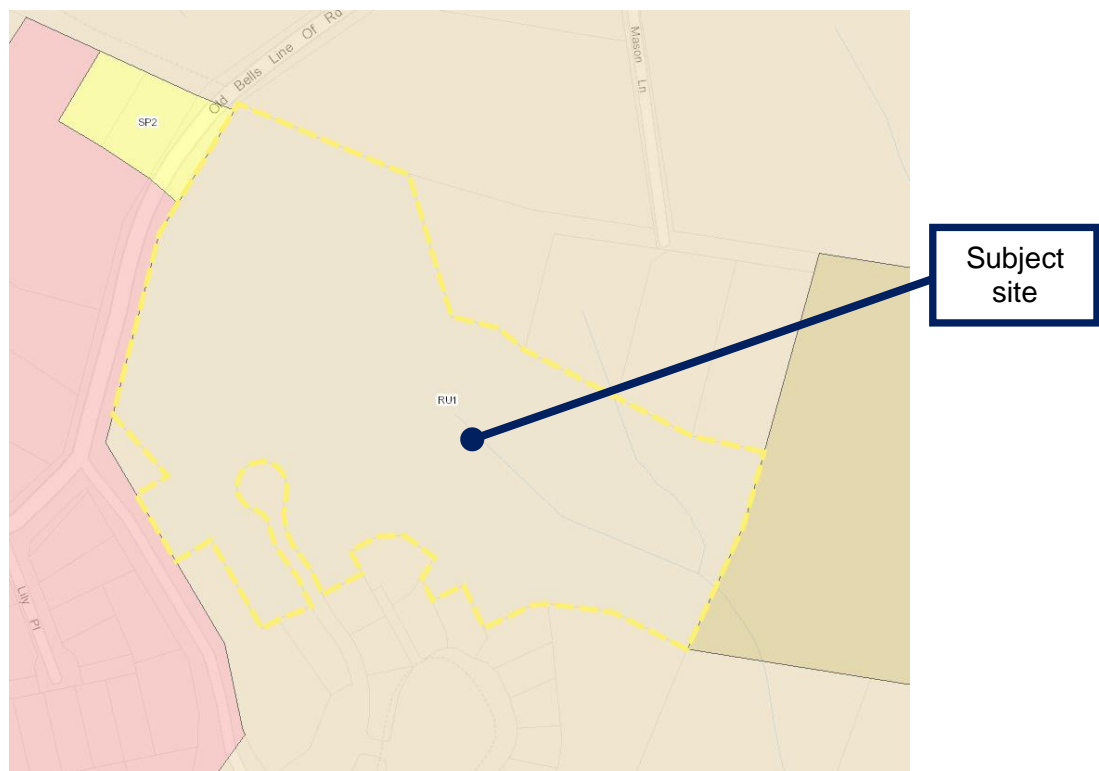


Figure 03: Land zoning of the subject area

Subject site (outlined in yellow) zoned RU1: Primary Production



Figure 04: Site Plan prepared by environa studio

6.0 Bushfire Assessment

6.01 Preface

Properties considered to be affected by possible bushfire impact are determined from the local Bushfire Prone Land Map as prepared by Council and/or the Rural Fire Service. All development within affected areas is subject to the application of the relevant specifications and requirements of 'Planning for Bush Fire Protection - 2019' (PBP).

Set back distances for the purpose of creating Asset Protection Zones (APZ's) must be applied and any buildings must then conform to corresponding regulations detailed in Australian Standard 3959 – 2018 'Construction of buildings in bushfire prone areas'.

PBP formally adopted on the 1st March 2020 provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

PBP is applicable to proposed development on land containing Category 1, 2 or 3 Vegetation and / or their associated buffer zones.

In this instance the subject site is depicted on Hawkesbury City Council's Bushfire Prone Land Map as containing designated Category 1 and 3 Vegetation and their associated buffer zones.

Seniors living development is a listed Special Fire Protection Purpose under section 100b of the Rural Fires Act 1997.

As the proposal involves a listed SFPP development on bushfire prone land it is classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act* 1979. The Development Application subsequently requires a Bushfire Safety Authority from the NSW Rural Fire Service.

The proposal must be assessment against the aim and objectives and section 6 'Special Fire Protection Purpose Developments' of PBP.

6.02 Strategic Bush Fire Study

Planning proposals which relate to bushfire prone properties require the preparation of a Strategic Bush Fire Study (SBFS). The SBFS provides opportunity to assess the broader landscape and ultimately assesses whether the new zone and proceeding development is appropriate in the bushfire hazard context.

While the proposal does not include a rezoning we have adopted the SBFS framework to demonstrate the subject site is suitable in a broader bushfire planning context.

Once the strategic assessment is addressed in the SBFS, an assessment of whether the proposal can comply with PBP must then be carried out. The assessment against PBP is addressed in section 6.03 of this report.

The following assessment details the components in Table 4.2.1 of PBP which are addressed in the SBFS.

Bushfire Landscape Assessment

The Bushfire Landscape Assessment component considers the likelihood of a bushfire and its potential severity and intensity and the potential impact on life and property in the context of the broader surrounding landscape.

Location

The subject site is known as 6/21 Vincents Road, Kurrajong (Lot 6 DP 270827) and is within Hawkesbury City Council's local government area.

The site while having direct street frontage to Old Bells Line of Road and Vincents Road is accessed via a private road through the existing 'Tallowood' development to the south.

The development site is located in the northern portion of the property, being bounded by Old Bells Line of Road to the northwest, St Gregorys Catholic Cemetery to the north, residential allotments to the east and the existing 'Tallowood' development to the south.

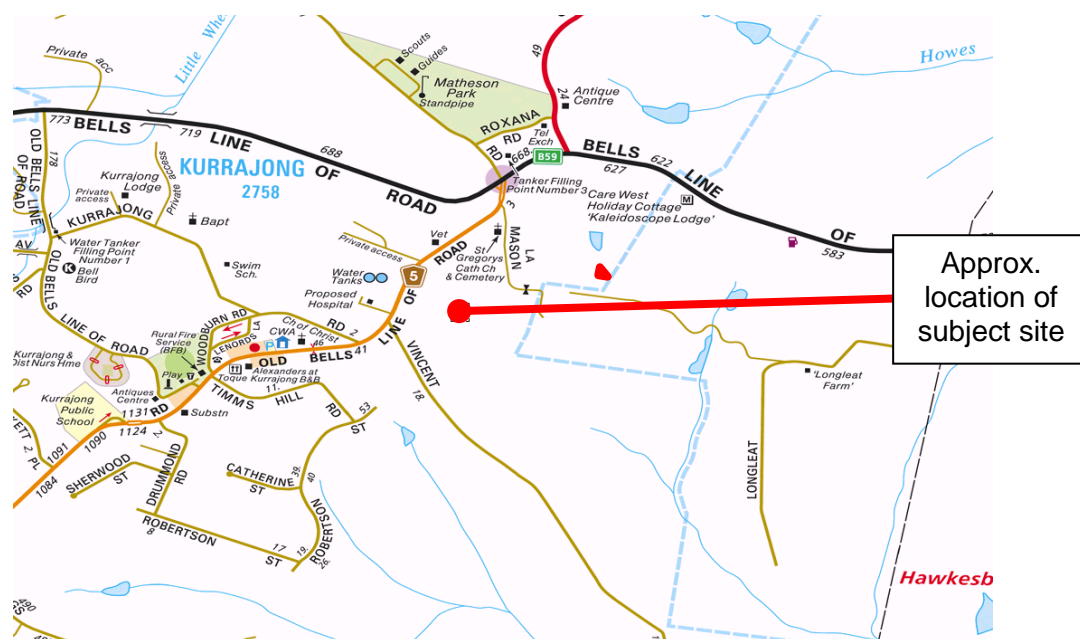


Figure 05: Extract from street-directory.com.au

Vegetation

The predominant vegetation within subject site was found to consist of mown lawns and defined gardens.

The subject site was found to contain areas with planted trees and either a managed or disturbed / exotic understorey.

Specifically the area to the northwest of the development site was found to comprise of trees 10-20 metres in height with an understorey of weeds and grasses. It is understood that this area was previously subject to periodic slashing.

As part of the development the understorey management of this area will be re-established and subsequently this area has not been considered a bushfire hazard. In acknowledging the steeper slopes within this area a management plan has been prepared providing details on how the area will be maintained.

The balance of the planted areas onsite were found to have an understorey of mown / slashed grass which will continue and therefore do not pose a bushfire threat.

The predominate vegetation within the neighbouring private allotments to the east and south was found to consist of maintained pastures, mown grass and gardens.

The only area of unmanaged vegetation within the 140 metres assessment area was found to be a small pocket (0.45ha) to the north of the development area in the southern portion of the St Gregorys Catholic Cemetery site.

The unmanaged vegetation to the north was found to be less than a hectare in size and located greater than 100 metres from any other areas of Category 1 or Category 2 vegetation and therefore in accordance with Appendix 1.10 'Low threat vegetation – exclusions' of PBP is not considered to pose a bushfire hazard.

A1.10 Low threat vegetation – exclusions

Modified landscapes, coastal wetlands and riparian areas vary significantly in structure and composition, but are generally considered as bush fire hazards, with the exception of saline wetlands. The following exclusions of AS 3959 apply, and are not required to be considered for the purposes of PBP, as detailed below:

- *Single areas of vegetation less than 1 hectare in area and greater than 100 metres separation from other areas of Category 1 or 2 vegetation.*

It should be noted that regardless of the declassification of the unmanaged area to the north the development exceeds the minimum required Asset Protection Zone for a Remnant hazard.

There were no bushfire hazard found within 140 metres and no grassland hazard found within 50 metres of the proposed development.



Figure 06: Location of development site showing 140 metre assessment area

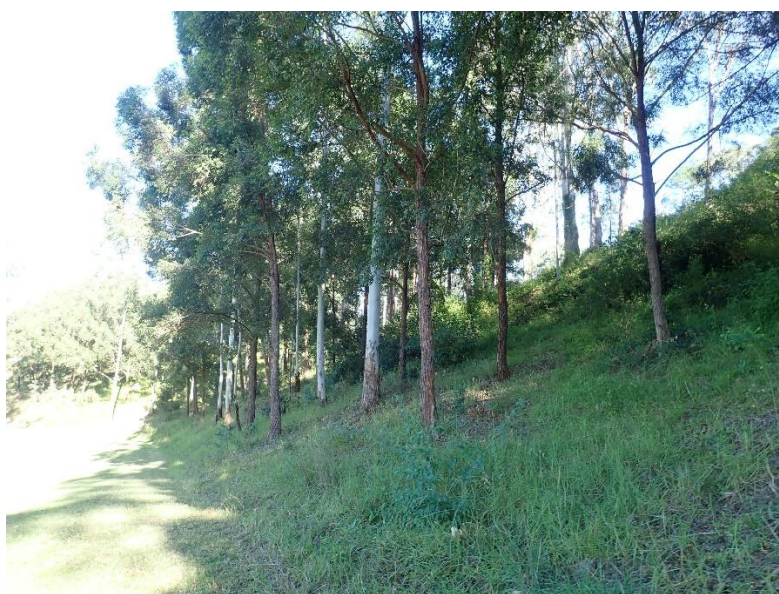


Figure 07: Photograph of the area to the northwest within the subject site



Figure 08: Drone image of the subject area



Figure 09: Drone image of the subject area

Slope and Topography

The slope that would most significantly affect bushfire behaviour must be assessed for at least 100 metres within the hazard to determine the required Asset Protection Zones.

As there was no bushfire hazard was identified within the 140 metre assessment area, no slope assessment is required.



Figure 10: Topographic image utilising 1m Contours courtesy ELVIS – Geoscience Australia

Fire Weather

The subject site is located within the Greater Sydney Region Fire Area which attracts a Fire Danger Index (FDI) of 100 for bushfire planning purposes.

Previous Bushfire History

There are areas within NSW that have significant fire history and are recognised as known fire paths. In a planning context it is important to identify these locations and ensure incompatible development is not proposed.

In this instance there have been no recorded wildfires or hazard reductions within the immediate surrounding area.

There were also no visual indicators of previous fires at the time of our inspection.

The closest recorded wildfires were found to be located >2.8 kilometres to the northwest of the subject site (Graham Creek fire 2002). Large fires have also been recorded to the west >4.5 kilometres from the subject site (Bowen Mountain fire 2012, Grose Valley fire 2020 & Graham Creek fire 2002).

The subject site is therefore not considered to be within a known fire path. Furthermore in consideration of the previous bushfire history the likelihood of a bushfire occurring within the immediate area is considered unlikely.

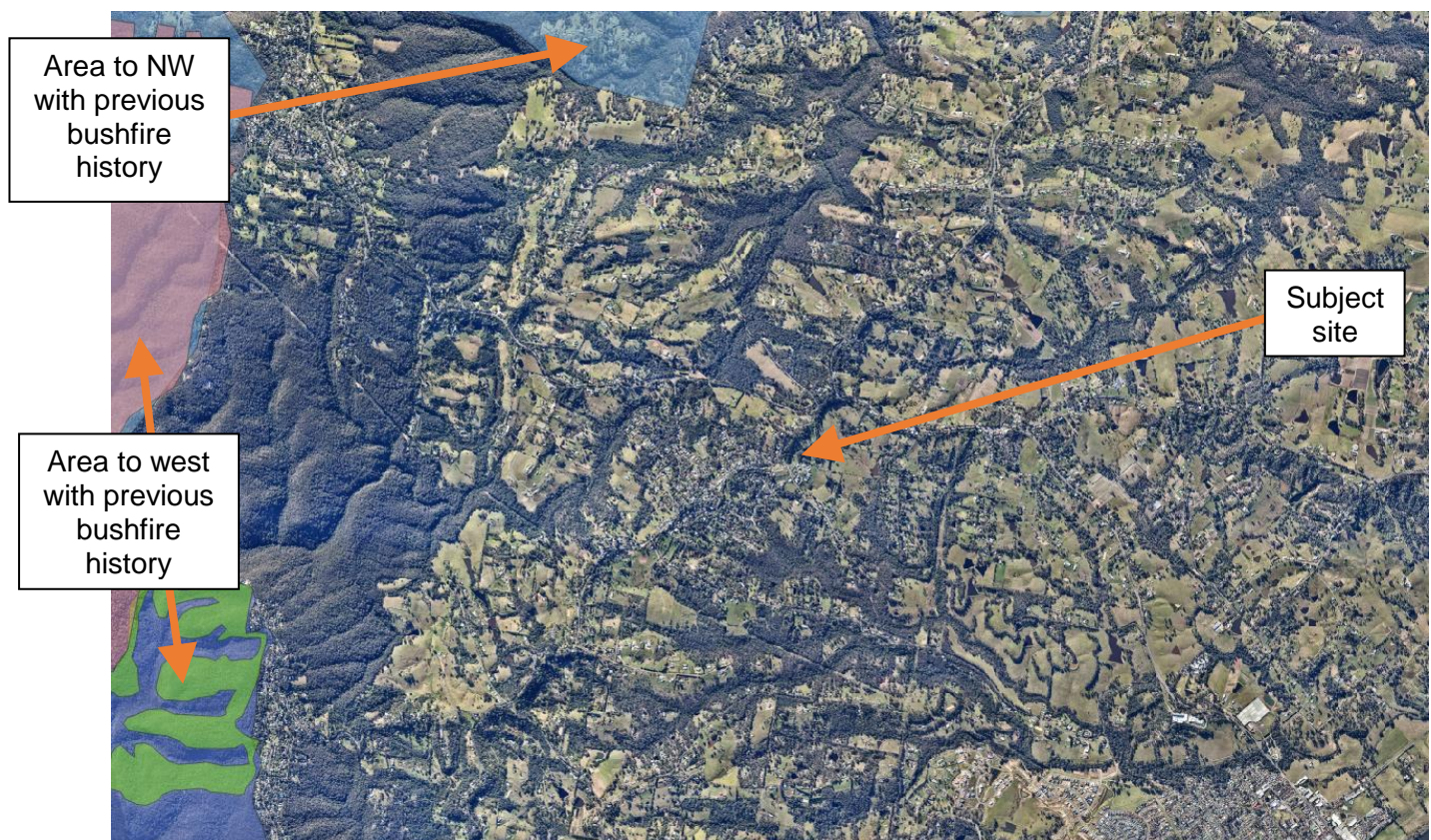


Figure 11: Aerial view of the subject area with previous wildfire history layer (source NPWS Fire History)



Potential Fire Behaviour

The land around the subject site was found to be subject to periodic management or isolated low threat vegetation and subsequently does not pose a bushfire threat.

Access & Suppression

Access for attending fire services to undertake early suppression is a key factor in whether a fire has the opportunity to develop into a quasi-steady state at which point the opportunity to control / extinguish the fire becomes far more challenging.

Where good access is available it provides opportunity to control / extinguish a fire in its growth phase before developing further and consequently becoming more difficult to conduct direct attacks.

In this particular instance there is no bushfire hazard within the immediate area. Direct access is available to the low threat vegetation to the north via Old Bells Line of Road.

Land Use Assessment

The Land Use Assessment identifies the most appropriate locations in the Masterplan area for the proposed land uses.

In this instance the proposal does not include a broad masterplan but rather a site specific expansion of an existing seniors living development.

The development is a listed Special Fire Protection Purpose (SFPP) under section 100B of the Rural Fires Act 1997. SFPP development is one which is occupied by people who are considered to be at-risk members of the community.

The proposed development will be located >260 metres from any identified bushfire hazard. In consideration of the large separation distance we are of the opinion the proposed development is appropriate.

Access and Egress

It is important to assess the capacity of both the existing and proposed road networks both within and external to a proposed development.

The proposal does not include a broad masterplan and will only accommodate moderate numbers of additional persons.

In a bushfire context it is considered extremely unlikely that a mass evacuation of the site would be ordered due to the surrounding managed landscape.

Furthermore the general construction type of the proposed buildings will provide ample protection to occupants seeking refuge, negating the need to evacuate.

Regardless the key evacuation routes from the subject site including the internal private road within Tallowood and Old Bells Line of Road were found to exceed the minimum carriageway requirements for non-perimeter roads as described in section 6.8.2 of PBP.

It is acknowledged that Vincents Road restriction down to a 5 metre carriageway for a short distance which is marginally less than the 5.5 metres required under section 6.8.2 of PBP for non-perimeter roads. This section of road has maintained verges which supplement the 5 metre sealed carriageway.

In consideration of the surrounding road network and risk posed to the subject site the existing access and egress routes are considered acceptable.

Emergency Services

In some circumstances the scale of a planning proposal warrants a need to include provisions for a new fire station.

The subject site is located within the NSW Rural Fire Service area and has a fire station located within 600 metres (measure in line of sight).

The existing fire service coverage is considered acceptable.

Infrastructure

An assessment of the issues associated with infrastructure and utilities must be undertaken. This assessment is to include the ability of the reticulated water system to deal with a major bushfire event in terms of pressures, flows and spacing of hydrants.

The subject site is connected to reticulated towns water which in this locality is serviced by Sydney Water. The capabilities of the existing broader hydrant network is the responsibility of Sydney Water.

The proposed development will satisfy the water supply requirements detailed in section 6.8.3 of PBP by providing a 10,000 litre static water supply for each occupied building (totalling 190,000 litres).

6.03 Planning for Bush Fire Protection

As the strategic issues have been satisfactorily addressed in the SBFS, an assessment of whether the proposal can comply with PBP is required.

The proposed development is a listed SFPP under section 100b of the Rural Fires Act 1997. The development proposal must therefore satisfy section 6 'Special Fire Protection Purpose Developments' of PBP.

This section addresses the developments capacity to comply with section 6 of PBP.

Asset Protection Zones

Asset Protection Zones (APZ's) for Special Fire Protection Purpose development are determined from Table A1.12.1 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10 kW/m² at a building footprint.

As there are no bushfire hazards located within the assessment area, no separation distances apply.

The proposed development layout provides defensible space around building footprints and in conjunction with compliant access/egress. The proposed separation distance from the proposed works are considered to provide adequate space for the safety of emergency services.

The existing and proposed maintained grounds around the subject site will be required to be maintained in accordance with the requirements for an Asset Protection Zone as described in the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.

We have reviewed the proposed Landscape Master Plan prepared by John Lock & Associates (dwg no. 2710-1 LP-00, Rev E, dated 05-02-2021) and Fire and Vegetation Management Plan prepared Kingfisher Urban Ecology and Wetlands (dated December 2020) and are satisfied they can comply with the requirements for an APZ.

Fire Fighting Water Supply

Hydrants are available along Old Bells Line of Road, Vincents Road and surrounding public roads for the replenishment of attending fire services.

The proposed development will satisfy the water supply requirements detailed in section 6.8.3 of PBP by providing a 10,000 litre static water supply for each occupied building (totalling 190,000 litres).

The proposed development will comply with the Water Supply requirements as detailed in section 6.8.3 of PBP.

Property Access – Fire Services & Evacuation

The site while having direct street frontage to Old Bells Line of Road and Vincents Road is accessed via a private road through the existing 'Tallowood' development to the south.

PBP addresses design considerations for internal roads for properties determined to be bushfire prone.

The proposed design includes a one-way loop road from the existing private road to the south. This loop road provides a 5-6 metre carriageway exceeding the requirement for non-perimeter roads as described in section 6.8.2 of PBP.

The proposed loop road has been design to cater for NSW Fire & Rescue appliances (10.1m length) and subsequently is more than sufficient to accommodate a NSW Rural Fire Service Category 1 fire appliance.

We are satisfied that the proposed internal road system has the capacity to comply with the requirements for Access under section 6.8.2 of PBP 2019.

7.0 Site & Bushfire Hazard Determination

7.01 Planning for Bush Fire Protection - 2019

Planning for Bush Fire Protection – 2019 (PBP) is applicable to those lands determined as being within a 'bushfire prone area' in accordance with a local Bushfire Prone Land Map as provided by the Rural Fire Service and Councils.

The most appropriate method of determining site bushfire hazard under the terms of PBP is to consider the site in a singular form.

Bushfire prone areas are defined as those areas;

- containing or within 100m of Category 1 Vegetation; or
- containing or within 30m of Category 2 or 3 Vegetation.

7.02 Australian Standard AS 3959 – 2018 'Construction of buildings in bushfire –prone areas'

Australian Standard 3959 – 2018 'Construction of buildings in bushfire-prone areas' provides for six (6) levels of building construction these being BAL - Low, BAL - 12.5, BAL - 19, BAL - 29, BAL - 40 and BAL - FZ. The Australian Standard 3959 specifies construction standards for buildings within various Bushfire Attack Levels as determined by the Planning for Bush Fire Protection – 2019 document. The NSW Rural Fire Service will not accept deemed to satisfy provisions for BAL Flame Zone and therefore have a NSW variation to the listed standard provisions of BAL FZ under AS3959 - 2018.

7.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2018
Low		No special construction requirements
12.5	≤12.5	BAL - 12.5
19	12.6 to 19.0	BAL - 19
29	19.1 to 29.0	BAL - 29
40	29.1 to 40.0	BAL - 40
Flame Zone	>40.0	BAL FZ No deemed to satisfy provisions

7.04 Viable Construction Method

The objectives of Planning for Bush Fire Protection – 2019 are for the protection of life including fire fighters. Provided these objectives can be met the construction of buildings is feasible and both the Rural Fire Service and Council should be in a position to consider such applications.

The highest Bushfire Attack Level to the proposed buildings was determined from Table A1.12.5 of PBP19 to be 'BAL Low'. There are therefore no specific requirements for construction under AS 3959 – 2018 'Construction of buildings in bushfire prone areas', specifically this is detailed within section 4 of the standard which states "*The Bushfire Attack Level BAL—LOW is based on insufficient risk to warrant specific bushfire construction requirements*".

8.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2019. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. That all grounds within the subject site be maintained in accordance with an Asset Protection Zone as detailed in the NSW Rural Fire Service's document '*Standards for Asset Protection Zones*' and Appendix 4 of Planning for Bush Fire Protection 2019.

Note: We have reviewed the proposed Landscape Master Plan prepared by John Lock & Associates (dwg no. 2710-1 LP-00, Rev E, dated 05-02-2021) and Fire and Vegetation Management Plan prepared Kingfisher Urban Ecology and Wetlands (dated December 2020) and are satisfied they can comply with the requirements for an APZ.

Access

2. The proposed internal road shall comply with the requirements for Access (General Requirements) and Non-Perimeter Roads as described in section 6.8.2 'Access' of Planning for Bush Fire Protection 2019.

Water Supply

3. That a 10,000 litre static water supply be provided for each occupied building and that this supply must comply with section 6.8.3 of Planning for Bush Fire Protection 2019, specifically:
 - a connection for firefighting purposes is located within the IPA or non hazard side and away from the structure; a 65mm Storz outlet with a ball valve is fitted to the outlet;
 - ball valve and pipes are adequate for water flow and are metal;
 - supply pipes from tank to ball valve have the same bore size to ensure flow volume;
 - underground tanks have an access hole of 200mm to allow tankers to refill direct from the tank;
 - a hardened ground surface for truck access is supplied within 4m of the access hole;
 - above-ground tanks are manufactured from concrete or metal;
 - raised tanks have their stands constructed from non-combustible material or bush fire-resisting timber (see Appendix F AS 3959);
 - unobstructed access is provided at all times;
 - tanks on the hazard side of a building are provided with adequate shielding for the protection of firefighters; and
 - underground tanks are clearly marked,
 - all exposed water pipes external to the building are metal, including any fittings;

Services

Electricity:

4. The new electrical services must comply with section 6.8.3 of Planning for Bush Fire Protection 2019, specifically:
 - where practicable, electrical transmission lines are underground.
 - where overhead electrical transmission lines are proposed:
 - lines are installed with short pole spacing (30 metres), unless crossing gullies, gorges or riparian areas; and
 - no part of a tree is closer to a power line than the distance set out in *ISSC3 Guideline for Management Vegetation Near Power Lines*.

Gas:

5. The new gas services must comply with section 6.8.3 of Planning for Bush Fire Protection 2019, specifically:
 - reticulated or bottled gas is installed and maintained in accordance with AS/NZS 1596:2014 - *The storage and handling of LP Gas*, the requirements of relevant authorities, and metal piping is used;
 - all fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
 - connections to and from gas cylinders are metal;
 - polymer-sheathed flexible gas supply lines are not used; and
 - above-ground gas service pipes are metal, including and up to any outlets.

9.0 Conclusion

The subject site is an existing allotment (Lot 6 DP 270827) known as 6/21 Vincents Road, Kurrajong and located within Hawkesbury City Council's local government area.

In this instance the subject site is depicted on Hawkesbury City Council's Bushfire Prone Land Map as containing designated Category 1 and 3 Vegetation and their associated buffer zone. The subject site is therefore considered 'bushfire prone'.

We are satisfied that the subject site and proposed seniors living development will comply with the relevant specifications and requirements of *Planning for Bush Fire Protection 2019*.

Furthermore we are satisfied that the proposed development, in combination with the bushfire protection measures discussed herein will not result in areas that are difficult to evacuate, create control difficulties during a bushfire or adversely affect other bush fire protection strategies or place existing development at increased risk.

We are therefore in support of the proposal.

Should you have any enquiries regarding this project please contact me at our office.

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Certification number – BPAD9400



10.0 Annexure 01

List of Referenced Documents

Australian Building Codes Board (2019). *National Construction Code Volume One - Building Code of Australia*. ABCB

Australian Building Codes Board (2019). *National Construction Code Volume Two - Building Code of Australia*. ABCB

ELVIS -Elevation -Foundation Spatial Data. Elevation.fsdf.org.au. Available at: <http://elevation.fsdf.org.au/>

John Lock & Associates (2020). Landscape Master Plan (dwg no. 2710-1 LP-00, Rev E, dated 05-02-2021)

Keith, D. (2004). "Ocean Shores to Desert Dunes" Department of Environment and Conservation, Sydney

Kingfisher Urban Ecology and Wetlands (2020). Fire and Vegetation Management Plan (dated December 2020)

NSW Department of Planning and Environment (2019). *Planning Portal*. Accessed at: <https://www.planningportal.nsw.gov.au/>

NSW Rural Fire Service (2019). *Planning for Bushfire Protection. A Guide for Councils, Planners, Fire Authorities and Developers*.

NPWS Fire History – Wildfires and Prescribed Burns Fire History dataset, NSW Department of Planning, Industry and Environment (2018)

Proposed Site Plan prepared by Environa Studio (project no 1036, dwg 002, rev X, dated 01/02/21)

Rural Fire Service NSW (2005). *Standards for Asset Protection Zones*

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Acknowledgements to:

NSW Department of Lands – SIXMaps
Street-directory.com.au
Geoscience Australia
Nearmap

Attachments

Attachment 01: Nil