

# Bush Fire Assessment Report

## *Proposed:* Residential Subdivision

**At:**  
**89-115 O'Connell Street,  
Caddens NSW**

*Reference Number: 220078*

**2<sup>nd</sup> November 2021**



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## Contents

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	<u>Page No.</u>
Copyright and Disclaimer	2
List of Abbreviations	3
1.0 Introduction	4
2.0 Purpose of Report	5
3.0 Scope of Report	5
4.0 Compliance Table and Notes	5 - 6
5.0 Aerial view & Indicative Layout Plan	7 - 8
6.0 Site Assessment	9 - 12
7.0 Bushfire Assessment	13 - 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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Version Control				
Version	Date	Author	Reviewed by	Details
1	28/09/2021	Andrew Muirhead	Stuart McMonnies BPAD Accreditation No. 9400	Draft Report
2	2/11/2021	Stuart McMonnies BPAD Accreditation No. 9400		Final Report

## List of Abbreviations:

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APZ	Asset Protection Zone
AS3959	Australian Standard 3959: 2018 'Construction of buildings in bushfire-prone areas'
BAL	Bushfire Attack Level
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Penrith City Council
DA	Development Application
DCP	Penrith Development Control Plan 2014 – Volume 2
ELVIS	Elevation and Depth Foundation Spatial Data
EP&A Act	<i>Environmental Planning and Assessment Act - 1979</i>
FRNSW	Fire and Rescue NSW
IPA	Inner Protection Area
NASH	National Association of Steel-framed Housing
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Place
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – November 2019</i>
ROW	Right of Way
RF Act	<i>Rural Fires Act - 1997</i>
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

## 1.0 Introduction

Building Code and Bushfire Hazard Solutions P/L has been commissioned Legacy Property to prepare an independent Bushfire Assessment Report to accompany a Development Application seeking approval for a staged residential subdivision at 89-115 O'Connell Street, Caddens (Lot 37 DP 1044732).

The proposed subdivision will result in the creation of one hundred and twenty-one (121) new residential allotments, one (1) basin allotment, one (1) residue allotment and construction of associated infrastructure. The subject site currently contains existing buildings, which will not be retained.

The subject property has a street frontage O'Connell Street to the north and O'Connell Lane to the west and abuts similar newly developed urban release areas to the east and south.

The subject site is located within the Caddens Precinct of the Penrith Development Control Plan 2014 – Volume 2 (DCP).

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. Penrith City Council's Bushfire Prone Land Map identifies the subject property as containing the 100 metre buffer zone from designated Category 1 Vegetation, therefore the site is considered 'bushfire prone'.

The subject development relates to the subdivision of bushfire prone land which can be lawfully used for residential purposes and is therefore classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act* 1979. The development is captured under section 100B of the *Rural Fires Act* 1997 and must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service.

All property development within bushfire affected areas is subject to the relevant specifications and requirements detailed in Planning for Bush Fire Protection - 2019 (PBP). PBP, formally adopted on the 1<sup>st</sup> March 2020, provides for the protection of property and life (including fire-fighters and emergency service personnel) from bushfire impact.

This report has assessed the subject site and proposal against the aim and objectives detailed in Chapter 1 'Introduction' and specific objectives, bushfire protection measures detailed in Chapter 5 'Residential and Rural Residential Subdivisions' of PBP.

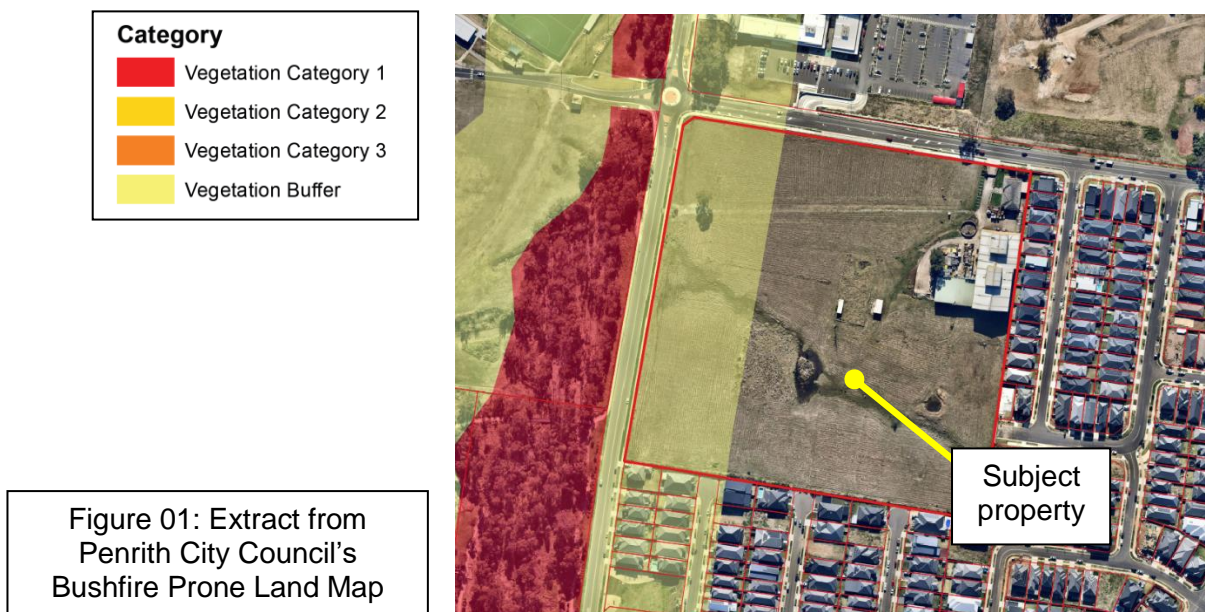


Figure 01: Extract from Penrith City Council's Bushfire Prone Land Map

## 2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide Legacy Property, the NSW Rural Fire Service and Penrith City Council with an independent bushfire assessment together with appropriate recommended bushfire mitigation measures.

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 and recommendations for the subject property. 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 property.

## 4.0 Compliance Tables & Notes

The following table sets out the projects compliance with *Planning for Bush Fire Protection – 2019*.

	North	East	South	West
<b>Vegetation Structure</b>	Managed land	Managed land	Managed land	Woodland
<b>Slope</b>	N/A	N/A	N/A	0 - 5 degrees
<b>Required Asset Protection Zone</b>	N/A	N/A	N/A	16 metres
<b>Available Asset Protection Zone</b>	N/A	N/A	N/A	≥20 metres
<b>Significant Landscape Features</b>	O'Connell Street	Maintained Neighbouring private allotments	Maintained neighbouring private allotments	O'Connell Lane
<b>Bushfire Attack Level</b>	N/A	N/A	N/A	BAL 29

Compliance Summary of Bushfire Protection Measures			
Bushfire Protection Measure (s5 PBP)	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Landscape	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03
Services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7.03

## Asset Protection Zones

The minimum required Asset Protection Zone (APZ) was determined from Table A1.12.2 of PBP to be 16 metres to the west.

There were no hazards identified to the north, south and east of the subject site within the assessment area.

The closest available building envelope will be located  $\geq 20$  metres from the hazard to the west, exceeding the minimum required APZ.

In this instance the minimum required APZ is achieved completely external to the subject site, comprising of the formed O'Connell Lane and adjacent walking paths.

## Construction Level

No new dwellings are proposed as part of this application.

An independent assessment will be required under s4.14 of the *Environmental Planning and Assessment Act 1997* at the time of any future application for the construction of a new dwelling within the proposed new allotments.

## 5.0 Aerial view & Indicative Layout Plan



Figure 02: Aerial view of the subject area C/- Nearnmap Subject site (thick red outline)





Figure 03: Extract from Caddens Precinct Indicative Layout Plan

## 6.0 Site Assessment

### 6.01 Location

The subject property is known as 89-115 O'Connell Street, Caddens (Lot 37 DP 1044732) and is an existing allotment (zoned R1: General Residential) located within Penrith City Councils local government area.

The subject property has a street frontage O'Connell Street to the north and O'Connell Lane to the west and abuts similar newly developed urban release areas to the east and south.

The vegetation identified as posing a hazard is the vegetation along Werrington Creek to the west of the subject site.

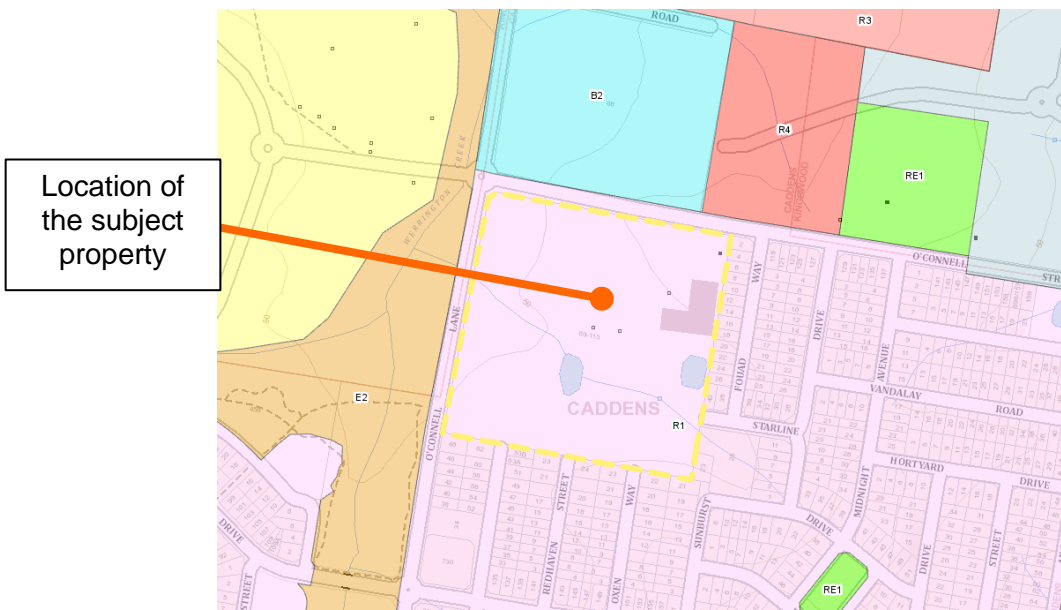


Figure 04: Land Zoning curtesy of Planning NSW

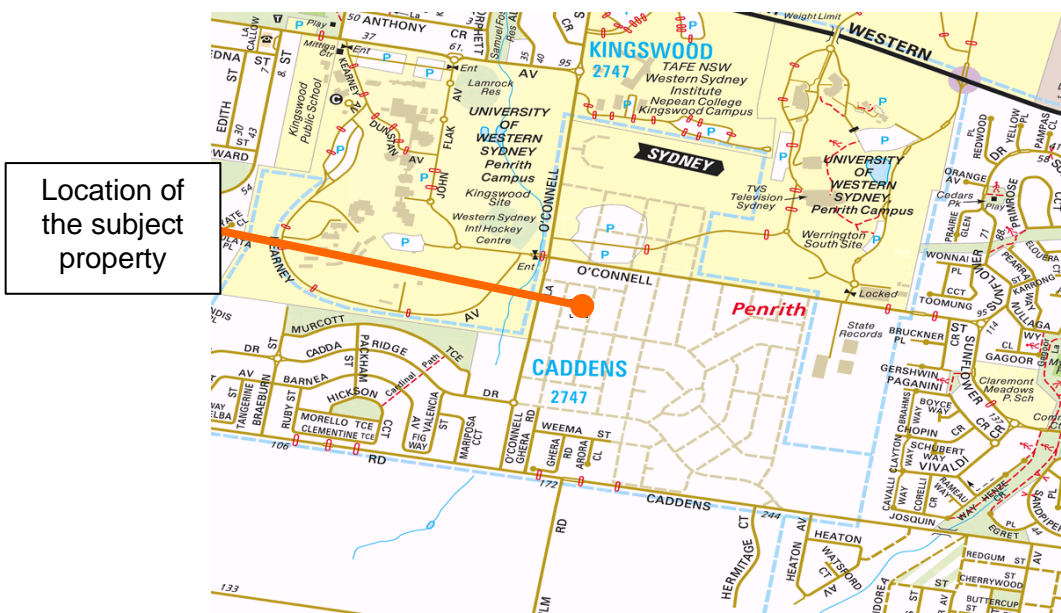


Figure 05: Extract from street-directory.com.au

## 6.02 Vegetation

The grounds within the subject site were found to comprise of landscaped gardens and mown lawns around the existing dwellings and slashed pastures for the balance of the property.

In accordance with Appendix 1 'Site Assessment Methodology' of PBP we have undertaken an assessment of all vegetation formations within 140 metres of the subject site for each aspect as per Keith (2004).

The subject site is located within the Caddens Precinct of the Penrith Development Control Plan 2014 – Volume 2 (Penrith DCP).

In this regard we have also considered any future planting consistent with the Penrith DCP. It was identified that the only hazard is the assessed vegetation to the west and is noted to be a Conservation/ Riparian Corridor.

The neighbouring private allotments to the north, east and south were all found to be managed, noting the neighbouring allotments to the south and east were created as part of earlier stages of the urban release.

The vegetation assessment (Ecological 2021) has identified the hazard to the west as being PCT 849: Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion and therefore for the purpose of assessment under PBP the vegetation posing a hazard to the west has been assessed as Woodland.



Figure 06: Extract from the vegetation assessment (Ecological 2021)

### 6.03 Slope and Topography

The slope of the land under the classified vegetation has a direct influence on the forward rate of spread, fire intensity and radiant heat exposure. The effective slope is considered to be the slope under the classified vegetation which will most significantly influence bushfire behaviour toward the development site.

In accordance with A1.4 'Determine slope' of PBP the slope assessment is to be derived from the most detailed contour data available.

The slope that would **most significantly** influence bushfire behaviour was determined from topographic imagery (1 metre contours sourced from ELVIS - Geoscience Australia) in conjunction with site observations to be:

- 0 - 5 degrees and up slope within the hazard to the west



Figure 07: Extract from ELVIS – Geoscience Australia (1m contours)

## 6.04 Fire Weather

All development which attracts an Asset Protection Zone under PBP requires the identification of the relevant Fire Danger Index (FDI). The FDI required to be used for development assessment purposes is based on the local government boundaries, being Penrith City Council in this instance.

In accordance with the NSW Rural Fire Service publication 'NSW Local Government Areas FDI' (2017) Penrith City Council forms part of the Greater Sydney Region Fire Weather District and attracts an FFDI of 100.

## 6.05 Fire History

Some specific locations have significant fire history and are recognised as known fire paths. While the fire history is more commonly considered as part of strategic planning (to ensure future development is not exposed to an unacceptable risk), it is useful to consider at a Development Application phase to ensure the land is suitable for development in the context of bushfire risk.

In this instance there have been no recorded wildfires within the immediate surrounding area (source NPWS Fire History dataset).

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

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.

## 7.0 Bushfire Assessment

### 7.01 Planning for Bush Fire Protection - 2019

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.

Penrith City Council's Bushfire Prone Land Map identifies the subject property as containing the designated 100 metre buffer zone from Category 1 Vegetation, therefore the site is considered 'bushfire prone'.

The subject development relates to the subdivision of bushfire prone land which can be lawfully used for residential purposes and is therefore classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act* 1979. The development is captured under section 100B of the *Rural Fires Act* 1997 and must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service.

In accordance with the submission requirements for a Bush Fire Safety Authority as detailed in clause 44 of the *Rural Fires Regulation* 2013 an assessment of the extent to which the proposed development conforms with or deviates from *Planning for Bush Fire Protection* (PBP) is required.

The application of PBP requires satisfactory demonstration of the aim and objectives and the specific objectives and bushfire protection measures relevant to the type of development.

In this instance the proposal relates to a residential subdivision and therefore in addition to the aim and objectives detailed in Chapter 1 'Introduction' the proposal must satisfy the specific objectives, bushfire protection measures detailed in Chapter 5 'Residential and Rural Residential Subdivisions' of PBP.

### 7.02 Specific Objectives

The following table lists the specific objectives for residential and rural residential subdivisions with a dwelling entitlement in accordance with section 5.2 of PBP and our comments of the proposal compliance or otherwise.

Specific Objective	Comment
<i>minimise perimeters of the subdivision exposed to the bush fire hazard (hourglass shapes, which maximise perimeters and create bottlenecks should be avoided);</i>	The proposal has no direct interface with a bushfire hazard due to the presence of existing managed properties and public roads. The proposal subsequently does not result in any increased perimeter of the subdivision to a bushfire hazard.
<i>minimise vegetated corridors that permit the passage of bush fire towards buildings;</i>	The subject site does not contain a bushfire hazard and there are no conservation areas or vegetated corridors proposed as part of this application.
<i>provide for the siting of future dwellings away from ridge-tops and steep slopes, within saddles and narrow ridge crests;</i>	The future building envelopes will not be located on a ridge-top or on steep slopes.

Specific Objective	Comment
<i>ensure that APZs between a bush fire hazard and future dwellings are effectively designed to address the relevant bush fire attack mechanisms;</i>	<p>The closest available building envelope was found to be located <math>\geq 20</math> metres from the identified hazard to the west, exceeding the minimum required APZs.</p> <p>In this instance the minimum required APZ is achieved completely external to the subject site, comprising of the formed O'Connell Lane and adjacent walking paths.</p>
<i>ensure the ongoing maintenance of APZs;</i>	<p>It is expected that the property management within the proposed allotments will be enforced by way of a condition of consent, similar to recommendation 2 of this report, as part of this development process.</p> <p>This will ensure ongoing management of the APZs within the site.</p>
<i>provide adequate access from all properties to the wider road network for residents and emergency services;</i>	<p>The proposed subdivision will provide a connection from O'Connell Street to the north, Ghera Road, Redhaven Street and Oxen Way to the south and Starline Road to the east.</p> <p>The proposed allotments will be serviced by the new internal roads, O'Connell Street and O'Connell Lane.</p>
<i>provide access to hazard vegetation to facilitate bush fire mitigation works and fire suppression;</i>	<p>Attending fire services have comprehensive access to the identified hazards via the subject property, neighbouring allotments and O'Connell Street for hazard reduction and / or fire suppression activities.</p>
<i>ensure the provision of an adequate supply of water and other services to facilitate effective firefighting.</i>	<p>Existing in-ground hydrants are available along O'Connell Street and surrounding roads for the replenishment of attending fire services.</p> <p>Hydrants will be extended along the proposed new roads in accordance with AS2419.</p> <p>These hydrants are considered to be the logical water supply for fire services undertaking hazard reduction and / or fire suppression activities.</p>

## 7.03 Bushfire Protection Measures

Section 5.3 'Bush fire protection measures' of PBP outlines the specific Bushfire Protection Measures (BPMs) applicable to residential and rural residential subdivisions, including APZs, Access and Services.

The following section addresses each BPM and the proposals compliance or otherwise.

### Asset Protection Zones & Landscaping

An Asset Protection Zone (APZ) is an area between the development (in this instance the future building envelopes) and the identified bushfire hazards where the fuels are maintained to a minimum to prevent the spread of fire between a hazard and an asset.

The width of the APZs is determined by the vegetation structure of the identified hazard, FDI, effective slope and the type of development (residential development or Special Fire Protection Purpose).

APZs for new residential subdivisions are determined from Table A1.12.2 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 29kW/m<sup>2</sup> at the closest point of the indicative building envelope.

The minimum required Asset Protection Zone (APZ) was determined from Table A1.12.2 of PBP to be 16 metres to the west.

There were no hazards identified to the north, south and east of the subject site within the assessment area.

The closest available building envelope will be located ≥20 metres from the hazard to the west, exceeding the minimum required APZ.

In this instance the minimum required APZ is achieved completely external to the subject site, comprising of the formed O'Connell Lane and adjacent walking paths.

We have reviewed the proposed Landscape Development Application prepared by Place Design Group for the basin allotment and in consideration of the broader landscape features, including the presence of O'Connell Lane and adjacent walking paths, consider it acceptable from a bushfire planning perspective.

### Access

The subject site has street frontage to O'Connell Street to the north and O'Connell Lane to the west and to several existing roads from the earlier urban released to the south and east.

Attending fire services have comprehensive access to the identified hazards via O'Connell Lane for hazard reduction and / or fire suppression activities. These roads will have hydrant points available at regular intervals and subsequently would be the logical fire-fighting platform for attending fire services.

The proposed subdivision will provide a connection from O'Connell Street to the north, Ghera Road, Redhaven Street and Oxen Way to the south and Starline Road to the east.

The proposed allotments will be serviced by the new internal roads, O'Connell Street and O'Connell Lane. The proposed internal roads will comply with the Access requirements detail in section 5.3.2 of PBP.



## Services – Water, electricity & gas

Existing in-ground hydrants are available along O'Connell Street and surrounding roads for the replenishment of attending fire services. Hydrants will be extended along the proposed new roads in accordance with AS2419.

The most distant external point of any future dwellings will be within 90 metres of O'Connell Street, O'Connell Lane or the proposed internal roads which will support a hydrant network and therefore satisfies the relevant acceptable solutions detailed in Table 5.3c. All hydrants will be located outside the carriageway.

Recommendations will be included to ensure compliance with the electricity and gas services requirements.

## Building Construction

No new dwellings are proposed as part of this application.

An independent assessment will be required under s4.14 of the *Environmental Planning and Assessment Act 1997* at the time of any future application for the construction of a new dwelling within the proposed new allotments.

### 7.04 Aim & Objectives

The following table details the aim and objectives of *Planning for Bush Fire Protection 2019* and the proposals ability to comply.

Aim / Objective	Comment
<i>The aim of PBP is to provide for the protection of human life and minimise impacts on property from the threat of bush fire, while having due regard to development potential, site characteristics and protection of the environment.</i>	With the inclusion of the recommendations made herein it is of our opinion that the aim of PBP has been satisfied.
<i>(i) afford buildings and their occupants protection from exposure to a bush fire;</i>	The closest available building envelope was found to be located $\geq 20$ metres from the identified hazard to the west, exceeding the minimum required APZs.
<i>(ii) provide for a defensible space to be located around buildings;</i>	The available APZs (O'Connell Lane) provides a fuel reduced area and logical fire-fighting platform for attending fire services.

Aim / Objective	Comment
<p>(iii) provide appropriate separation between a hazard and buildings which, in combination with other measures, prevent the likely fire spread to buildings;</p>	<p>The available APZs in conjunction with the application of the relevant Bushfire Attack Level for the future dwellings will prevent the likely fire spread to buildings.</p>
<p>(iv) ensure that appropriate operational access and egress for emergency service personnel and occupants is available;</p>	<p>The subject site has street frontage to O'Connell Street to the north, O'Connell Lane to the west and the existing new roads from the earlier urban released to the south and east.</p> <p>Attending fire services have comprehensive access to the identified bushfire hazard via O'Connell Lane for hazard reduction and / or fire suppression activities.</p>
<p>(v) provide for ongoing management and maintenance of bush fire protection measures, (BPMs); and</p>	<p>The internal grounds are to be maintained in accordance with the NSW Rural Fire Service's document 'Standards for Asset Protection Zones' and Appendix 4 of <i>Planning for Bush Fire Protection 2019</i>.</p> <p>Any new landscaping is to comply with the provisions of Table 7.4a and Appendix 4 of PBP.</p>
<p>(vi) ensure that utility services are adequate to meet the needs of firefighters.</p>	<p>Existing in-ground hydrants are available along O'Connell Street and surrounding public roads for the replenishment of attending fire services.</p> <p>Hydrants will also be extended along the new roads.</p> <p>These hydrants are considered to be the logical water supply for fire services undertaking hazard reduction and / or fire suppression activities.</p>

It is therefore of our opinion that the proposal can satisfactorily comply with the aim and objectives of *Planning for Bush Fire Protection 2019*.

## 7.05 Submission Detail

Clause 44 of the *Rural Fires Regulation 2013* identifies various items which must be addressed and included within an application for a Bush Fire Safety Authority. The following table outlines these items and includes a corresponding response.

Submission Detail	Response
<i>(a) a description (including the address) of the property on which the development the subject of the application is proposed to be carried out,</i>	See section 6.01
<i>(b) a classification of the vegetation on and surrounding the property (out to a distance of 140 metres from the boundaries of the property) in accordance with the system for classification of vegetation contained in Planning for Bush Fire Protection,</i>	See section 6.02
<i>(c) an assessment of the slope of the land on and surrounding the property (out to a distance of 100 metres from the boundaries of the property),</i>	See section 6.03
<i>(d) identification of any significant environmental features on the property,</i>	None known within site
<i>(e) the details of any threatened species or threatened ecological community under the Biodiversity Conservation Act 2016 that is known to the applicant to exist on the property,</i>	None known within site
<i>(f) the details and location of any Aboriginal object (within the meaning of the National Parks and Wildlife Act 1974) or Aboriginal place (within the meaning of that Act) that is known to the applicant to be situated on the property,</i>	None known within site
<i>(g) a bush fire assessment for the proposed development (including the methodology used in the assessment) that addresses the following matters—</i>	See section 7.0
<i>(i) the extent to which the development is to provide for setbacks, including asset protection zones,</i>	See section 7.03
<i>(ii) the siting and adequacy of water supplies for fire fighting,</i>	See section 7.03
<i>(iii) the capacity of public roads in the vicinity to handle increased volumes of traffic in the event of a bush fire emergency,</i>	<p>O'Connell Lane was found to generally have a carriageway of &gt;8 metres exceeding the perimeter road requirements detailed in PBP.</p> <p>The new roads provide a 16 metre wide road easement and therefore have the ability to exceed the requirement for Non-Perimeter roads under section 5.3.2 of PBP.</p>

Submission Detail	Response
<i>(iv) whether or not public roads in the vicinity that link with the fire trail network have two-way access,</i>	The immediate surrounding public roads do not link with a registered fire trail network.
<i>(v) the adequacy of arrangements for access to and egress from the development site for the purposes of an emergency response,</i>	See section 7.03
<i>(vi) the adequacy of bush fire maintenance plans and fire emergency procedures for the development site,</i>	There are currently no bush fire maintenance plans or emergency procedures for the development site. It is encouraged that the future residents complete a Bushfire Survival Plan.
<i>(vii) the construction standards to be used for building elements in the development,</i>	See section 7.03
<i>(viii) the adequacy of sprinkler systems and other fire protection measures to be incorporated into the development,</i>	There is no existing bushfire sprinkler system, nor is one proposed. See section 7.03 for all bushfire protection measures
<i>(ix) any registered fire trails on the property,</i>	There are no registered fire trails within the subject site.

## 7.06 Local Planning Controls

The subject site is captured by the Penrith Development Control Plan 2014 Volume 2 and the following controls relate to bushfire planning:

### 1.3.8 Bushfire Hazard Management

#### A. Objectives

a) *To encourage sound management of areas potentially prone to bushfire.*

#### B. Controls

1) *Subject to detailed design at subdivision stage, a 20m precautionary bushfire setback is to be provided from the vegetation in the core riparian zone (see Figure E1.17). The setback:*

- a) *may incorporate roads;*
- b) *is to be located wholly outside of a core riparian zone; and*
- c) *may be used for open space and recreation subject to appropriate fuel management.*

2) *Vegetation within the area of public open space in the south eastern corner of Caddens is to be managed as a 'fuel reduced area'.*

We are of the opinion that the proposal satisfies the relevant bushfire planning controls detailed in the Penrith Development Control Plan 2014 Volume 2.

## 8.0 Recommendations

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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 were considered necessary.

### General

1. That the proposed development is to comply with the Concept Layout Plan prepared by J. Wyndham Prince, Plan no 110358/SK26, Revision 11, Date 07/10/21.

### Asset Protection Zones

2. The all grounds within proposed residential allotments and residue allotment which are not built upon are to be maintained in accordance with an Asset Protection Zone (Inner Protection Area) 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.
3. That the landscaping within the proposed basin allotment is to comply with the Landscape Development Application prepared by Place Design Group (project no. 2521058, rev 02, dated 01 November 2021).

### Services (where applicable)

#### Water:

4. That the new hydrant system is to comply with the requirements detailed in Table 5.3c of Planning for Bush Fire Protection 2019, specifically:
  - fire hydrant spacing, design and sizing comply with the relevant clauses of AS 2419.1:2005;
  - hydrants are not located within any road carriageway;
  - fire hydrant flows and pressures comply with the relevant clauses of AS 2419.1:2005.
  - all above-ground water service pipes external to the building are metal, including and up to any taps.
  - fire hose reels are constructed in accordance with AS/NZS 1221:1997 Fire hose reels, and installed in accordance with the relevant clauses of AS 2441:2005 Installation of fire hose reels.

#### Electricity:

5. Any new electrical services must comply with section 5.3.3 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:

6. Any new gas services must comply with section 5.3.3 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.

## Access

7. That the new internal roads shall comply with the requirements for Non-Perimeter Roads as detailed in Table 5.3b of PBP, specifically:
  - property access roads are two-wheel drive, all-weather roads;
  - traffic management devices are constructed to not prohibit access by emergency services vehicles;
  - maximum grades for sealed roads do not exceed 15 degrees and an average grade of not more than 10 degrees or other gradient specified by road design standards, whichever is the lesser gradient;
  - the capacity of perimeter and non-perimeter road surfaces and any bridges/causeways is sufficient to carry fully loaded firefighting vehicles (up to 23 tonnes); bridges/ causeways are to clearly indicate load rating.
  - hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;
  - hydrants are provided in accordance with the relevant clauses of AS 2419.1:2005 - Fire hydrant installations System design, installation and commissioning;
  - minimum 5.5m carriageway width kerb to kerb;
  - parking is provided outside of the carriageway width;
  - curves of roads have a minimum inner radius of 6m;
  - the road crossfall does not exceed 3 degrees; and
  - a minimum vertical clearance of 4m to any overhanging obstructions, including tree branches, is provided.

## 9.0 Conclusion

The development proposal relates to the subdivision of an existing allotment known as 89-115 O'Connell Street, Caddens.

Penrith City Council's Bushfire Prone Land Map identifies the subject property as containing the designated 100 metre buffer zone from Category 1 Vegetation, therefore the site is considered 'bushfire prone'.

The subject development relates to the subdivision of bushfire prone land which can be lawfully used for residential purposes and is therefore classified as integrated development under section 4.46 of the *Environmental Planning and Assessment Act 1979*. The development is captured under section 100B of the *Rural Fires Act 1997* and must obtain a Bush Fire Safety Authority from the Commissioner of the NSW Rural Fire Service.

All property development within bushfire affected areas is subject to the relevant specifications and requirements detailed in the document 'Planning for Bush Fire Protection - 2019' (PBP).

In accordance with the bushfire safety measures contained in this report, and consideration of the site specific bushfire risk assessment it is our opinion that when combined, they will provide a reasonable and satisfactory level of bushfire protection to the subject development.

We are therefore in support of the application.

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

Prepared by  
Building Code & Bushfire Hazard Solutions

Reviewed and endorsed by  
Building Code & Bushfire Hazard Solutions P/L

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## 10.0 Annexure 01

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### List of Referenced Documents

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

Ecological Australia (2021). *89-116 O'Connell Street, Caddens -Vegetation Assessment and Mapping*.

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

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

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

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Standards Australia (2014). *AS/NZS 1596 The storage and handling of LP Gas*

Concept Layout Plan prepared by J. Wyndham Prince, Plan no 110358/SK26, Revision 6, Date 10/09/21

Penrith City Council (2014). *Penrith Development Control Plan 2014 Volume 2*

Acknowledgements to:

Geoscience Australia  
Nearmap  
[Street-directory.com.au](http://Street-directory.com.au)

### Attachments

Attachment 01: Nil