

Bushfire Assessment Report

Proposed:
**Subdivision and
Dwelling Construction**

At:
**16 Chapman Street,
Werrington NSW**

Reference Number: 201359

Prepared For:
GLN Planning

16th April 2020



Prepared By:
**Building Code & Bushfire
Hazard Solutions Pty Limited**

Tel: (02) 9457 6530
Fax: (02) 9457 6532

PO Box 124
Berowra NSW 2081
ABN 19 057 337 774

www.bushfirehazardsolutions.com.au



**SILVER
MEMBER**
Fire Protection
Association Australia



Contents

	<u>Page No.</u>
Copyright and disclaimers	2
List of Abbreviations	3
1.0 Introduction	4
2.0 Purpose of Report	4
3.0 Scope of Report	5
4.0 Referenced Documents and Persons	5
5.0 Compliance Table and Notes	5 - 6
6.0 Aerial view and Plans	7 - 9
7.0 Bushfire Hazard Assessment	10 - 13
8.0 Site and Bushfire Hazard Determination	14 - 15
9.0 Recommendations	15
10.0 Conclusion	16
11.0 Annexure	17
- List of referenced documents and attachments	
- Attachments	

Copyright:

Where agreed to by Building Code and Bushfire Hazard solutions Pty. Ltd, this report may only be copied, distributed or forwarded to other parties in its original format. No part of this document including any wording, images, or graphics can be modified, changed or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. (Copyright Act 1968).

Where this document is found to have been used or altered in any way without the express permission of Building Code and Bushfire Hazard Solutions Pty. Ltd. including any wording, images, or graphics, Building Code and Bushfire Hazard Solutions Pty. Ltd. will not be held liable for any incidental or consequential loss or damages, financial or otherwise resulting from the use of the modified document. Building Code & Bushfire Hazard Solutions Pty. Ltd. will if it considers it necessary, seek to advise third parties including authorities of such illegal use or modifications.

Legal status:

This report has been prepared as a submission document in support of a development application to Council and in instances may rely upon information provided by a number of external sources including Councils, State Government Agencies and it is assumed that the information provided was accurate at the time. This report cannot be relied upon for commencement of works or construction until such time as it has been endorsed or otherwise included within the consent conditions issued by Council as part of the DA determination.

Section 4.14 applications (under the Environmental Planning and Assessment Act 1979) and all infill development applications may be referred by Council to the NSW Rural Fire Service for review and concurrence during the DA process. S100B applications under the Rural Fires Act 1997 (subdivisions and Special Fire Protection Purpose Developments), Flame Zone determinations and Alternate Solutions must be referred by Council to the NSW Rural Fire Service for review and receipt of a Bushfire Safety Authority (BSA) or other such recommended conditions from the NSW Rural Fire Service before the consent can be granted.

The onus is on the applicant to cross reference this document with any conditions of consent issued by Council or any requirements supplied by the NSW Rural Fire Service following development approval. BCBHS can review and cross reference these documents however the onus is on the applicant to provide them to us and request this review – Building Code and Bushfire Hazard Solutions Pty. Ltd. is not in a position to track every DA through Council and we rely upon the applicant to undertake this role as project co-ordinator.

Where any discrepancy between this document and the development approval or the NSW Rural Fire Service requirements is found, the conditions of consent always take precedence until such time as an application to review, amend or vary these conditions is approved.

Disclaimer:

This report has been prepared with due care and diligence by Building Code and Bushfire Hazard Solutions Pty. Ltd and the statements and opinions contained in this report are given in good faith and in the belief on reasonable grounds that such statements and opinions are correct and not misleading bearing in mind the necessary limitations noted in previous paragraphs.

Further, no responsibility is accepted by Building Code and Bushfire Hazard Solutions Pty. Ltd. or any of its officers or employees for any errors, including errors in data which is supplied by a third party, or which Building Code and Bushfire Hazard Solutions Pty. Ltd. is required to estimate, or omissions howsoever arising in the preparation of this report, provided that this will not absolve Building Code and Bushfire Hazard Solutions Pty. Ltd. from liability arising from an opinion expressed recklessly or in bad faith.

Any representation, statement of opinion, or advice expressed or implied in this document is made in good faith on the basis that Building Code and Bushfire Hazard Solutions Pty. Ltd. employees and / or agents are not liable (whether by reason of negligence, lack of care or any other reason) to any person, company or their agents for any damage or loss whatsoever which has occurred or may occur in relation to that person taking or not taking (as the case may be) action in respect of any representation, statement or advice referred to above.

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	Penrith Council
DA	Development Application
EP&A Act	Environmental Planning and Assessment Act - 1979
ESD	Ecologically Sustainable Development
IPA	Inner Protection Area
NCC	National Construction Code
NP	National Park
NSP	Neighbourhood Safer Places
NSWFR	NSW Fire & Rescue
OPA	Outer Protection Area
PBP	Planning for Bush Fire Protection 2019
ROW	Right of Way
RF Act	Rural Fires Act - 1997
RFS	NSW Rural Fire Service
SEPP	State Environmental Planning Policy
SFPP	Special Fire Protection Purpose
SWS	Static Water Supply

1.0 Introduction

The proposed development involves the integrated subdivision and dwelling construction on proposed residue Lots 1252, 1263, 2046, 2048 and 2212 under DA 19/0704 on Lot 1 DP 1226122, 16 Chapman Street, Werrington for twenty six (26) dwellings.

Penrith City Council's Bushfire Prone Land Map identifies that the overall site contains Category 1 Vegetation and Category 2 Vegetation and their associated buffer zones therefore Planning for Bush Fire Protection 2019 (PBP) must apply in this instance. It should be noted that the active development application (DA 19/0704) will remove most of the vegetation posing a hazard.

The NSW Rural Fire Service have issued their General Terms of Approval, under Division 4.8 of the *Environmental Planning and Assessment Act 1979*, and a Bush Fire Safety Authority, under section 100B of the *Rural Fires Act 1997* for DA 19/0704.

The subdivision component of this application is captured under section 100b of the *Rural Fires Act 1997* and must therefore be referred to the Commissioner of the NSW Rural Fire Service for a Bushfire Safety Authority. The dwelling construction component is captured under section 4.14 of the *Environmental Planning and Assessment Act 1979*.

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide Lend Lease and Penrith Council with an independent bushfire hazard 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 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 Referenced Documents and Persons

Comments provided are based on the requirements of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act), the RFS document known as 'Planning for Bush Fire Protection – 2019' for the purposes of bushfire hazard determination and Australian Standard 3959 – 2018 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

Company representatives have undertaken a site inspection of the subject property and the surrounding area.

The Site Plan by Cardno, Project - Chapman Street Werrington, Smart Lots, Subdivision Plan, Stage 01, Drawing No. 80219053-004-SK001, Revision 1, Dated 03/04/2020 has been relied upon for this assessment.

5.0 Compliance Tables & Notes

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

	North	East	South	West
Vegetation Structure	Managed Lands	Managed Lands	Managed Lands	Managed Lands
Slope	N/A	N/A	N/A	N/A
Available Asset Protection Zone	>100 metres	>100 metres	>100 metres	>100 metres
Significant Landscape Features	Future Road	Future neighbouring residential allotments	Future Road	Future neighbouring residential allotments
Bushfire Attack Level	BAL Low	BAL Low	BAL Low	BAL Low

Asset Protection Zones Compliance

The available Asset Protection Zones from any bushfire hazard was measured to be greater than >100 metres from the subject allotments in all directions.

The APZs consist of maintained grounds within the subject property and land 'equivalent to an APZ' within neighbouring allotments (including land conditioned by the NSW RFS to be maintained as an APZ) and future public roads.

Construction Level Compliance

The highest Bushfire Attack Level to the proposed dwellings was determined from Table A1.12.5 of PBP19 to be 'BAL Low'. 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*".

Access and Services

Guideline Ref.	Proposed Development Determinations
Property Access	<p>The subject allotments will have street frontage to a new public road to the north and south as a result of the development application DA-19/0704.</p> <p>The most distant external point of all proposed building envelopes will be located within 70 metres of the future two-way public road and therefore the Property Access requirements detailed in section 7.4 of PBP are not applicable.</p>
Water Supply	<p>Existing hydrants are available along Chapman Street and will be extended along the future roads within subdivision. The hydrant extension along the future roads must comply with the sizing, spacing and pressure requirements detailed in AS2419.1 – 2005.</p> <p>The most distant external point of the proposed dwellings will be within 70 metres of the proposed roads which will support the operational use of fire-fighting vehicles and therefore Static Water Supplies are not required.</p>
Evacuation	<p>Evacuation will be possible by utilising proposed and existing road infrastructure. It is encouraged that the occupants of the dwellings complete a Bush Fire Survival Plan addressing “Prepare, Act, Survive” as advocated by the NSW RFS http://www.rfs.nsw.gov.au/ under publications / bushfire safety.</p>
Electrical & Gas Supply	<p>New supply will be provided.</p>

6.0 Aerial view & Plans

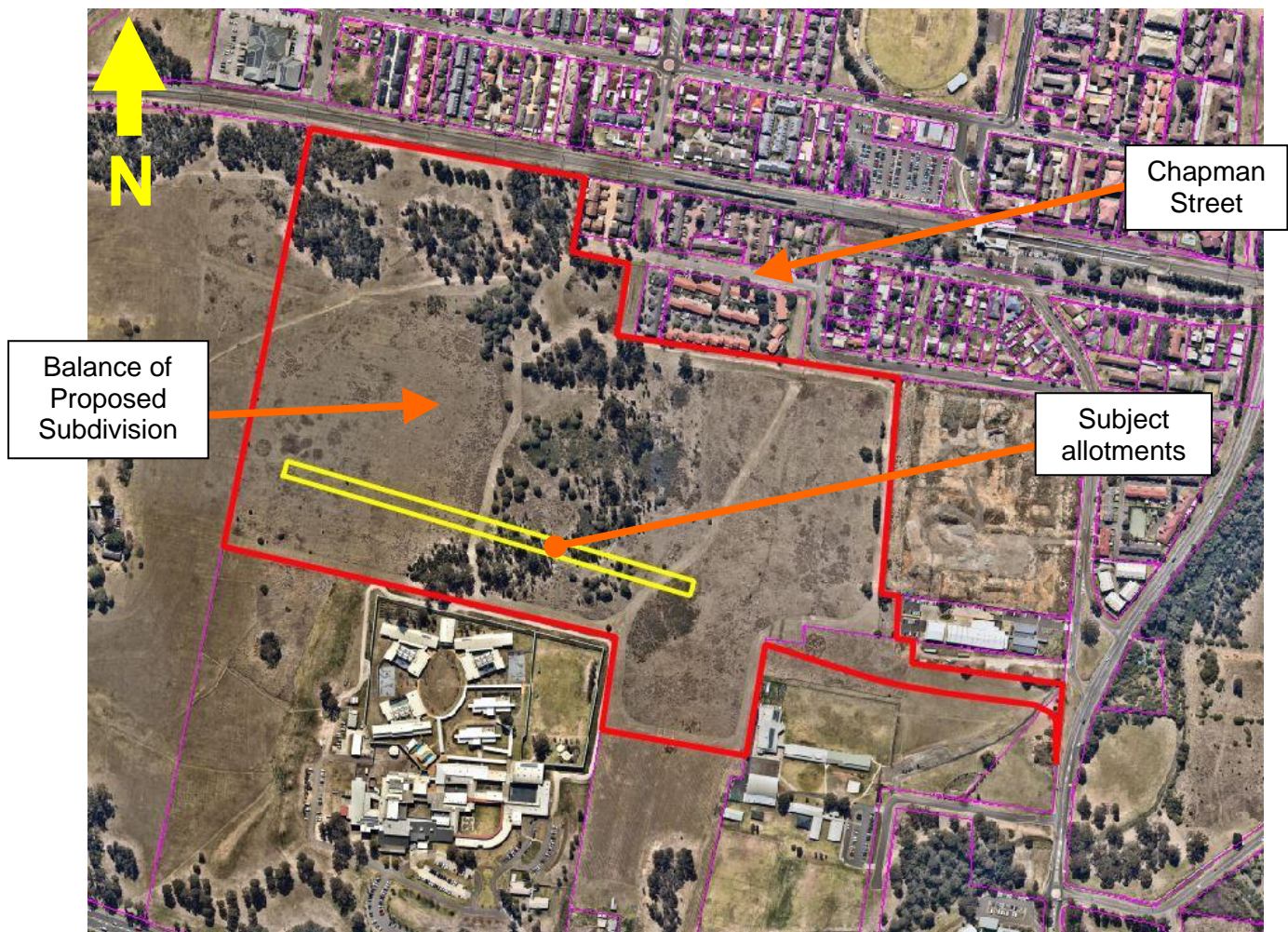


Image 01: Aerial view of the subject area (C/- Nearmap)

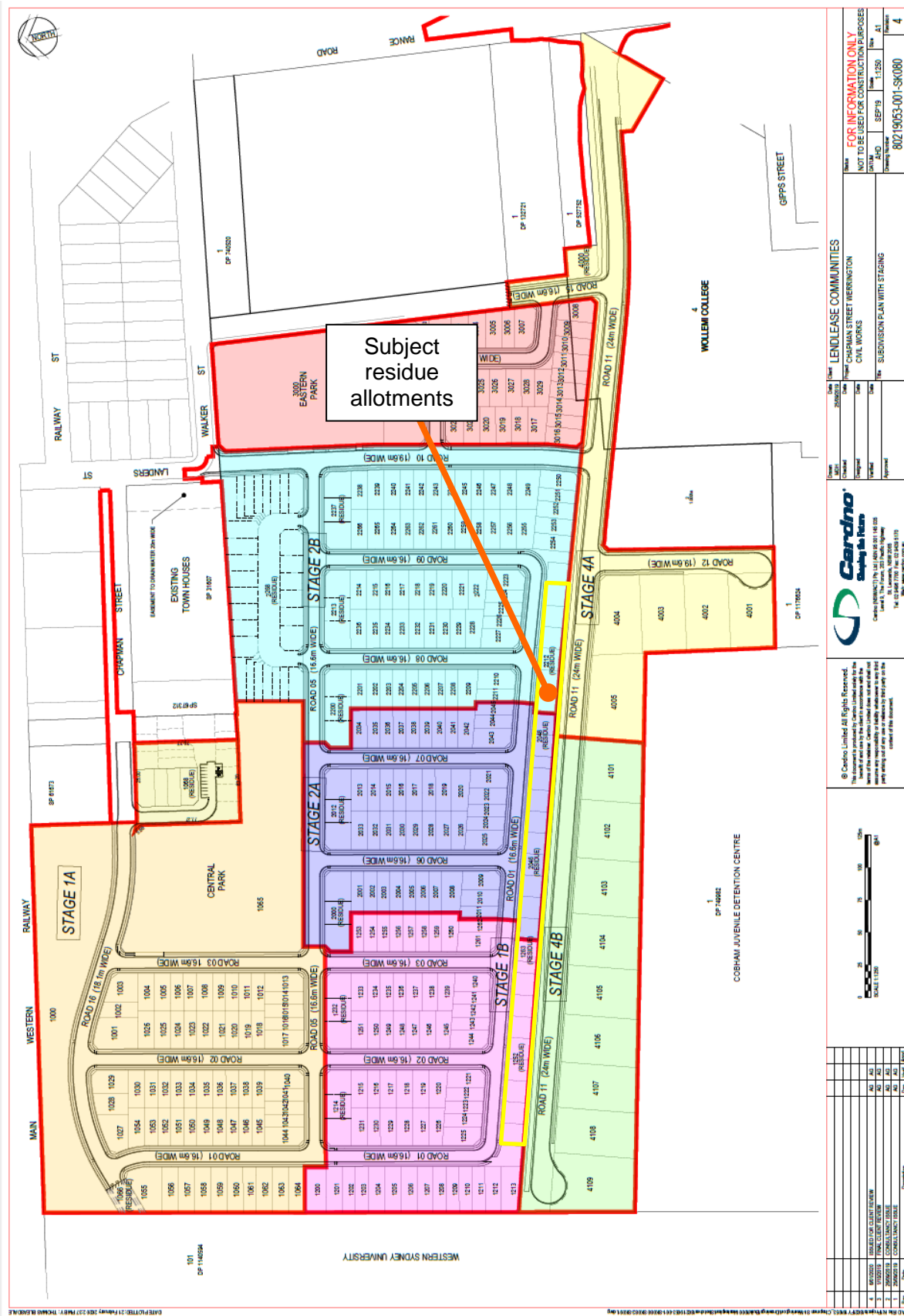


Image 02: Extract from the proposed subdivision plan currently under assessment



Image 03: Site Plan by Cardno, Project - Chapman Street Werrington, Smart Lots, Subdivision Plan, Stage 01, Drawing No. 80219053-004-SK001, Revision 1, Dated 03/04/2020

7.0 Bushfire Hazard Assessment

7.01 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 property development within affected areas is subject to the conditions detailed in the document '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'.

Planning for Bush Fire Protection – 2019, (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.

The thrust of the document is to ensure that developers of new properties or sub-divisions include the constraints associated with the construction of buildings in bushfire prone areas within their proposed development sites. PBP is applicable to proposed development on land that contains Category 1, 2 or 3 Vegetation and / or their associated buffer zones.

The document also acknowledges 'infill' developments associated with re-development of existing properties and allows some higher levels of building safety where the increased 'set backs' (APZ's) may not be achievable.

The subject development relates to the integrated subdivision and dwelling construction on proposed residue Lots 1252, 1263, 2046, 2048 and 2212 under DA 19/0704 for twenty six (26) dwellings. The subdivision component of the application is captured under section 100b of the *Rural Fires Act 1997* and the dwelling construction is captured under section 4.14 of the *Environmental Planning and Assessment Act 1979*.

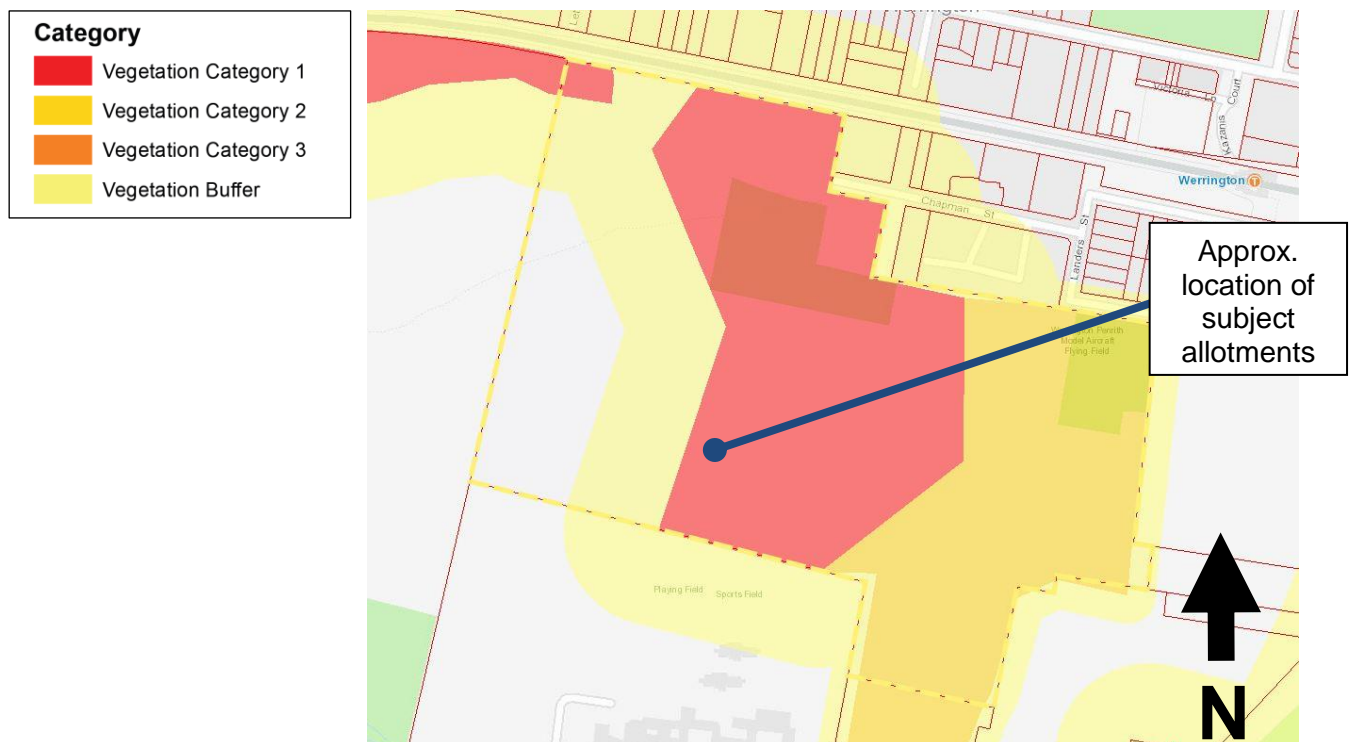


Image 04: Extract from Penrith City Council's Bushfire Prone Land Map

7.02 Location

The subject site comprises of proposed residue Lots 1252, 1263, 2046, 2048 and 2212 under DA 19/0704 on Lot 1 DP 1226122, 16 Chapman Street, Werrington.

Proposed residue Lots 1252, 1263, 2046, 2048 and 2212 are located within Stages 1B, 2A and 2B of the residential development. The subject site is located within Penrith City Councils Local Government Area.

The proposed residential allotments subject to this application occupy 'R1 General Residential' and 'R4 High Density Residential' zoned land.

The subject allotments will have street frontage to a future public roads to the north and south and future residential allotments to the east and west.

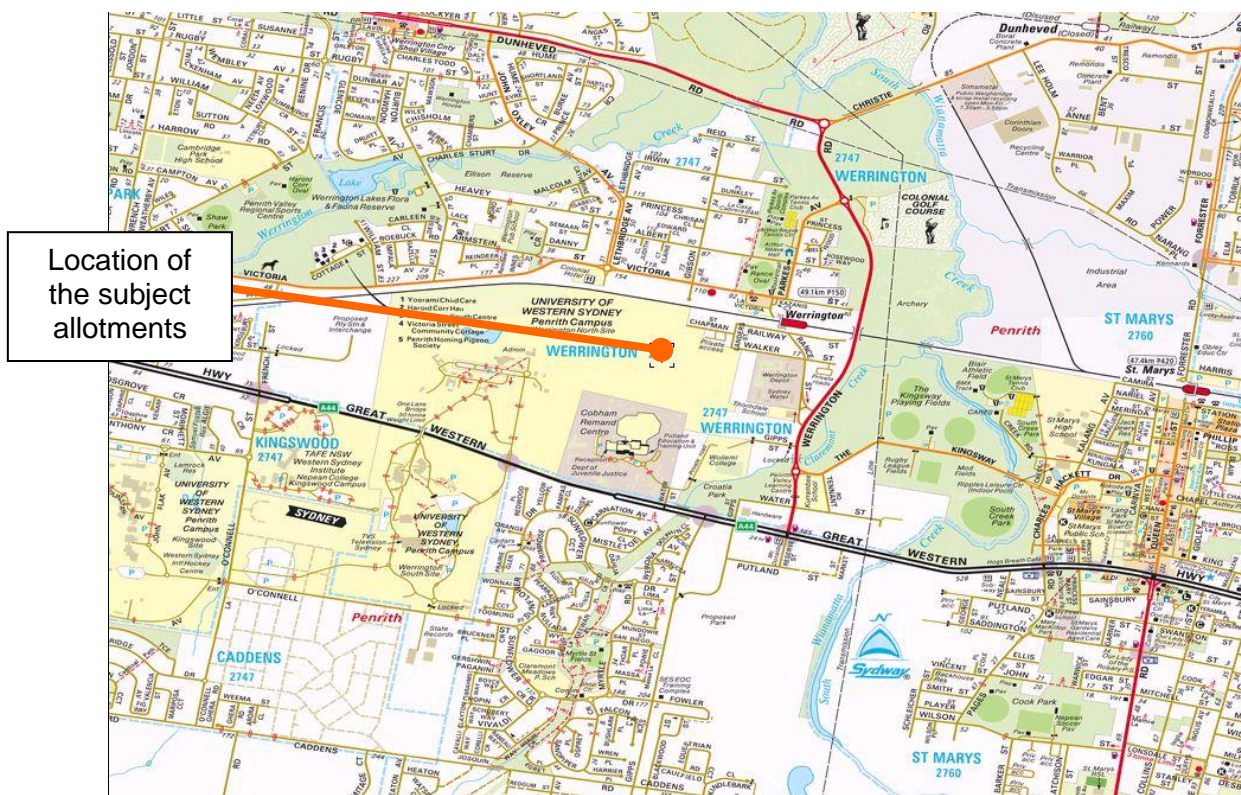


Image 05: Extract from street-directory.com.au

7.03 Vegetation

The subject site was formally apart of the University of Western Sydney with previous management still visible.

A review of historic aerial imagery and onsite observations confirmed that the grassland within the adjacent UWS Penrith Campus, Wollemi College, Cobham Juvenile Justice Centre and private allotment to the south is subject to regular mowing / slashing and consequently not considered to pose a grassfire threat.

There was no bushfire hazard found within 140 metres of the subject allotments following the execution of DA 19/0704.

7.04 Slope and Topography

Planning for Bush Fire Protection 2019 requires that the slope that would most significantly affect bushfire behaviour must be assessed for at least 100 metres.

As no bushfire hazard was found within the 100 metre assessment area no slope analysis is formally required.

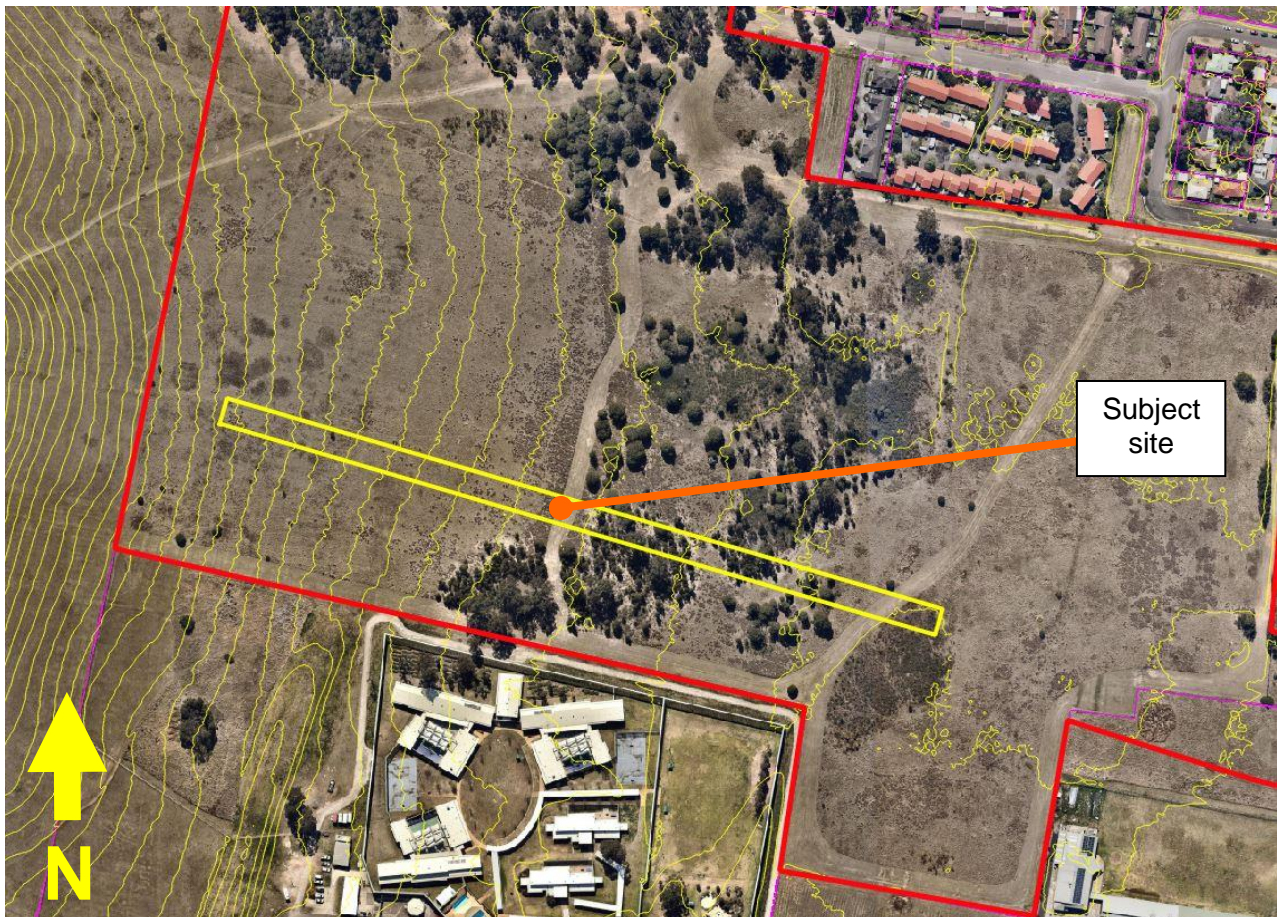


Image 06: Aerial view of the subject area overlaid with 1 metre contours

7.05 Asset Protection Zones

The available Asset Protection Zones (APZs) were measured to be >100 metres to the north, south, east and west of the proposed dwellings.

The APZs consist of maintained grounds within the subject property and land 'equivalent to an APZ' within neighbouring allotments (including land conditioned by the NSW RFS to be maintained as an APZ) and future public roads.

No bushfire hazard was found within the 100 metre assessment area in any direction.

7.06 Fire Fighting Water Supply

Existing hydrants are available along Chapman Road and will be extended along the future roads within the subdivision. The hydrant extension along the future roads must comply with the sizing, spacing and pressure requirements detailed in AS2419.1 – 2005.

The most distant external point of the proposed dwellings will be within 70 metres of the future roads which will support the operational use of fire-fighting vehicles.

The required water supply for the subdivision application (DA-19/0704) is considered adequate for the replenishment of fire service vehicles for this application.

7.07 Property Access

The subject allotments will have street frontage to a new public road to the north and south as a result of the subdivision (DA-19/0704). In accordance with the BDCP the future roads must provide a minimum 16.6 metre road width which exceeds the minimum carriageway requirements for Public Roads under 7.4 of PBP.

The most distant external point of all proposed building envelopes will be located within 70 metres of the proposed two-way public road and therefore the Property Access requirements detailed in section 7.4 of PBP are not applicable.

Access for fire services and opportunities for occupant evacuation are considered adequate for this development.

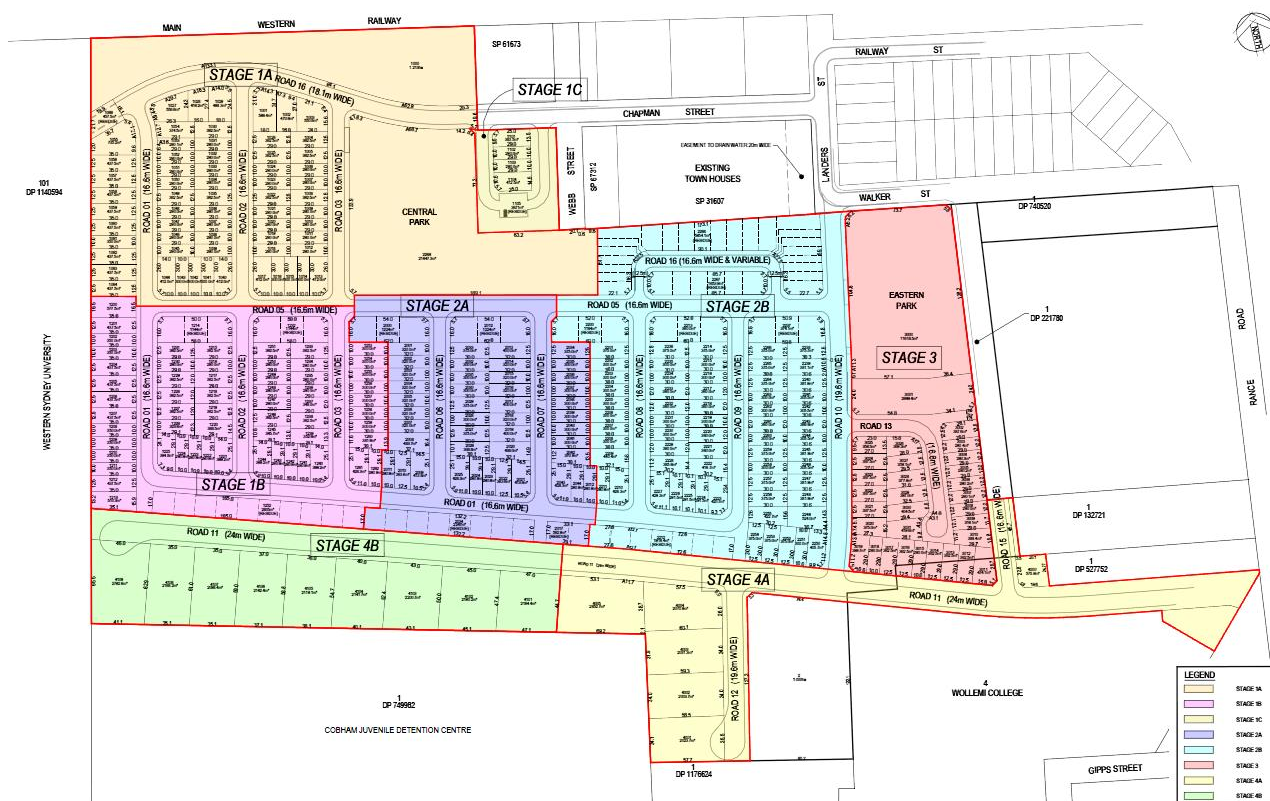


Image 07: Extract from the subdivision plan currently under assessment showing staging of roads

8.0 Site & Bushfire Hazard Determination

8.01 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 Council.

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.*

In this instance the subject property has been identified as being bushfire prone land therefore it is appropriate to apply PBP.

8.02 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 Bushfire 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.

8.03 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

8.04 Site Specific Bushfire Hazard Determination

All property development must be assessed on an individual basis as broad-brush approaches of documents such as PBP may not be applicable in every instance. The proposed development of proposed residue Lots 1252, 1263, 2046, 2048 and 2212 under DA 19/0704 on Lot 1 DP 1226122, 16 Chapman Street, Werrington was assessed against the requirements of Planning for Bush Fire Protection 2019 noting the following:

- a) Access to the subject allotments is available directly from the future public road system.
- b) No bushfire hazard was found within 100 metres of the proposed dwellings in any direction.
- c) The access & water supply for DA 19/0704 is considered satisfactory for this application.
- d) There are no construction requirements necessary for the proposed dwellings.

8.05 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 dwellings was determined from Table A1.12.5 of PBP - 2019 to be 'BAL Low', therefore there are no construction provisions are required under AS 3959 – 2018.

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2019 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas - 2018.

Nil

10.0 Conclusion

The proposed development involves the integrated subdivision and dwelling construction on proposed residue Lots 1252, 1263, 2046, 2048 and 2212 under DA 19/0704 on Lot 1 DP 1226122, 16 Chapman Street, Werrington for twenty six (26) dwellings.

Given that the overall property is deemed bushfire prone under Penrith City Council's Bushfire Prone Land Map any development would need to meet the requirements of Planning for Bush Fire Protection 2019. The determination of any bushfire hazard must be made on a site-specific basis that includes an assessment of the local bushland area and its possible impact to the subject property.

No bushfire hazard was found within 100 metres of the proposed dwellings in any direction following the execution of DA 19/0704.

The highest Bushfire Attack Level to the proposed dwellings was determined to be 'BAL Low' and therefore there are no construction provisions applicable under AS3959 – 2018.

The proposed access provisions and water supply for the subdivision application (DA-19/0704) are considered adequate for this development.

In consideration of the site specific bushfire risk assessment it is our opinion a reasonable and satisfactory level of bushfire protection is provided to the subject development.

We are therefore in support of the development application.

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

Prepared by
Building Code & Bushfire Hazard Solutions



Andrew Muirhead

Bushfire Consultant
Diploma of Engineering

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



Stuart McMonnies

Manager Bushfire Section
G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Certification number – BPAD 9400



11.0 Annexure 01

List of Referenced Documents

- a) Environmental Planning and Assessment Act - 1979
- b) Rural Fires Act 1997 as amended
- c) 'Planning for Bush Fire Protection'- 2019 - NSW Rural Fire Services & Planning NSW
- d) 'Construction of buildings in bushfire-prone areas' - AS 3959 – 2018 (as - amended) – Standards Australia
- e) 'Penrith Council's Bushfire Prone Land Map'
- f) Site Plan by Cardno, Project - Chapman Street Werrington, Smart Lots, Subdivision Plan, Stage 01, Drawing No. 80219053-004-SK001, Revision 1, Dated 03/04/2020
- g) Acknowledgements to:
 - NSW Department of Lands – SIXMaps
 - Street-directory.com.au
 - Nearmap
 - Geoscience Australia

Attachments

Attachment 01: 4.14 Compliance Certificate



Building Code & Bushfire Hazard Solutions

(Pty. Limited) ABN 19 057 337 774
PO Box 124, Berowra NSW 2081
Telephone: (02) 9457 6530 Facsimile: (02) 9457 6532
www.bushfirehazardsolutions.com.au




BUSHFIRE RISK ASSESSMENT CERTIFICATE UNDER PART 4 DIVISION 4.3 SECTION 4.14 OF THE EP&A ACT 1979 NO 203

PROPERTY ADDRESS:	16 Chapman Street, Werrington
DESCRIPTION OF PROPOSAL:	Construction of 26 dwellings only
PLAN REFERENCE: (relied upon in report preparation)	Plans by Cardno, Project - Chapman Street Werrington, Smart Lots, Subdivision Plan, Stage 01, Drawing No. 80219053-004-SK001, Revision 1, Dated 03/04/2020
BAL RATING:	BAL Low <small>(If the BAL rating is FZ the application is to be referred to NSW RFS for assessment)</small>
DOES THE PROPOSAL RELY ON ALTERNATE SOLUTIONS:	YES <input checked="" type="radio"/> NO <input type="radio"/> <small>(Circle the relevant response)</small> <small>(If YES the application is to be referred to NSW RFS for assessment)</small>
BUSHFIRE ASSESSMENT REPORT REFERENCE:	201359
REPORT DATE:	16 th April 2020
CERTIFICATION NO/ACCREDITED SCHEME	BPAD9400

I Stuart McMonnies of Building Code and Bushfire Hazard Solutions Pty Ltd hereby certify, in accordance with Part 4 Division 4.3 Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*:

- That I am a person recognised by the *NSW Rural Fire Service* as a qualified consultant in bushfire risk assessment; and
- That subject to the recommendations contained in the Bushfire Risk Assessment Report the proposed development conforms specifications and requirements of the documents entitled *Planning for Bush Fire Protection* prepared by the NSW Rural Fire Service in co-operation with the Department of Planning and any other documents as prescribed by Part 4 Division 4.3 Section 4.14 of the *Environmental Planning and Assessment Act 1979 No 203*.

I am aware that the Bushfire Assessment Report, prepared for the above mentioned site is to be submitted in support of a development application for this site and will be relied upon by Council as the basis for ensuring that the bushfire risk management aspects of the proposed development have been addressed in accordance with *Planning for Bushfire Protection 2019*.

Signature:  Date: 16th April 2020

