

Bushfire Assessment Report

Proposed:
**State Significant
Development
(SSD 9472)**

At:
**151 - 161 Tallawong Road
Rouse Hill
(Lots 42 & 43 DP 30186)**

Reference Number: 190446

Prepared For:
The Sikh Grammar School
Australia
C/- PMDL

27th June 2019

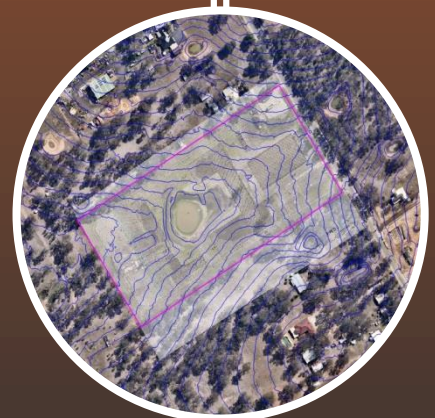
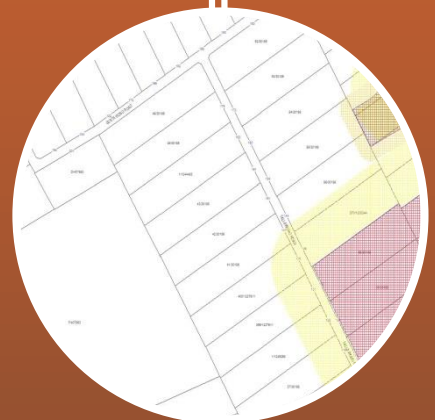


Prepared By:
**Building Code & Bushfire
Hazard Solutions Pty Limited**

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

PO Box 124
Berowra NSW 2081
ABN 19 057 337 774

www.bushfirehazardsolutions.com.au



Contents

	<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 Referenced Documents and Persons	5
5.0 Site Zoning	5
6.0 Aerial view of the subject allotment	6
7.0 Bushfire Hazard Assessment	7 - 13
8.0 Site and Bushfire Hazard Determination	14 - 15
9.0 Recommendations	16
10.0 Conclusion	17
11.0 Annexure	18
- 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 Stat Significant Development 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.

S4.14 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 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 application 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 – 2009 as amended.
BAL	Bushfire Attack Level
BCA	Building Code of Australia
BPMs	Bushfire Protection Measures
BPLM	Bushfire Prone Land Map
Council	Blacktown 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
OPA	Outer Protection Area
PBP	<i>Planning for Bush Fire Protection – 2006</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
SSD	State Significant Development (NSW)
SWS	Static Water Supply

1.0 Introduction

Building Code and Bushfire Hazard Solutions P/L has been commissioned by The Sikh Grammar School Australia to prepare a bushfire assessment for the proposed school at 151 – 161 Tallawong Road, Rouse Hill (Lots 42 - 43 DP 30186). This application is being assessed as a State Significant Development (SSD).

In addition, the site is proposed to be consolidated and subdivided which will be assessed as a DA by Blacktown City Council. The proposed DA creates a Twelve Lot Torrens Title Subdivision, eleven of which will be for residential development and one for the proposed school, which will comprise of the following elements:

- 3 stream Primary School
- 4 stream Secondary School
- Early Learning Centre
- Multi Purpose Hall
- Residential facilities to accommodate student boarders, and 6 teaching staff
- A place of worship, comprising a Sikh Gurdwara & Langar

The subject site has street frontage to Tallawong Road to the northeast and abuts similar allotments to the remaining aspects.

The subject site will also be subdivided to create several residential allotments, however this does not form part of this SSD application and will be subject to a separate Development Application to Council.

Blacktown City Council's Bushfire Prone Land Map does not identify the subject site as being bushfire prone.

As the subject site is not mapped as being bushfire prone land section 100B of the *Rural Fires Act 1997* is not triggered and consequently the proposal is not captured as being Special Fire Protection Purpose development.

Regardless consultation has occurred with the New South Wales Rural Fire Service (NSW RFS) who have reviewed the proposal and acknowledged the site is not on land mapped as being bushfire prone. The RFS have however also advised that their preliminary assessment shows that unmanaged vegetation, which has not been mapped as bush fire prone, is located to the northeast and southwest of the subject site.

This report has subsequently been prepared to address the relevant specifications and requirements of Planning for Bush Fire Protection 2006 (PBP) for Special Fire Protection Purpose Development and item 17 Bushfire of the Planning Secretary's Environmental Assessment Requirements (SEARS).

The subject site is located within the Riverstone East Precinct under the Blacktown City Council Growth Centre Precincts Development Control Plan 2010 (also referred to as BCC Growth Centre DCP).

As the subject site and surrounding properties form part of an active urban release area consideration has been given to the impending development and associated clearing of the adjacent allotments.

2.0 Purpose of Report

The purpose of this Bushfire Assessment Report is to provide an independent bushfire assessment determination of the subject site and surrounding area and to determine if the State Significant Development Application will comply with the relevant specifications and requirements of Planning for Bush Fire Protection 2006.

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 2006*' for the purposes of bushfire hazard determination and Australian Standard 3959 2009 titled 'Construction of buildings in bushfire-prone areas' as amended for building/structural provisions.

Three company representatives have undertaken an inspection of the site and the surrounding area. The masterplan prepared by PMDL, Project No. 2757, Drawing No. DA100, Dated February 2019 has been referenced in the creation of this report.

5.0 Site Zone



Image 01: Zone plan extract from NSW Planning Portal

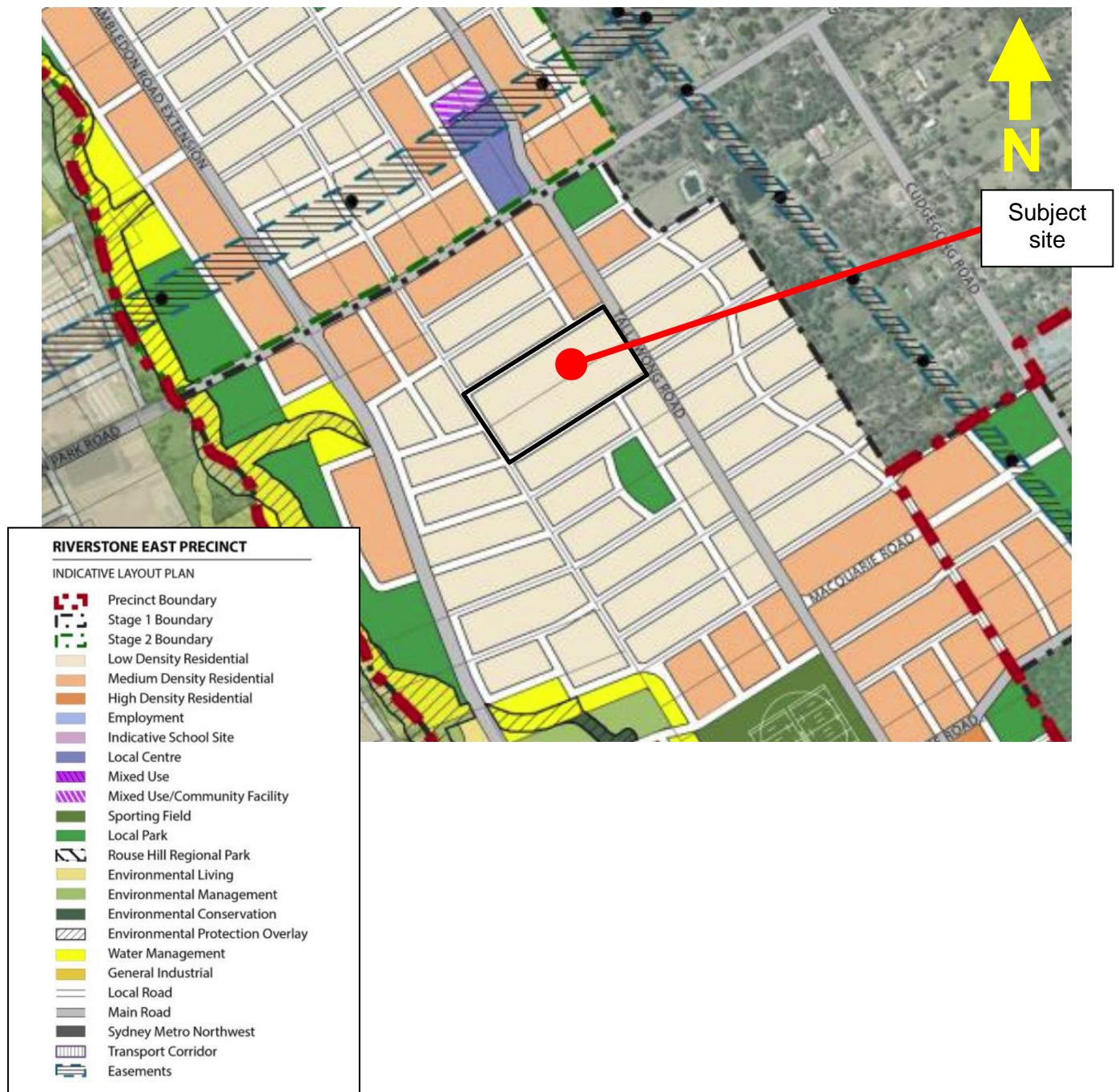


Image 02: Extract from the Riverstone East Precinct Indicative Layout Plan

6.0 Aerial view of the subject allotment



Image 03: Aerial view of the subject area, Nearmap (April 2019).

7.0 Referenced Documents and Persons

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 2006*' (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 'Construction of buildings in bushfire prone areas' 2009.

Planning for Bush Fire Protection 2006, (PBP) formally adopted on the 1st March 2007 and amended May 2010 (Appendix 3) 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 inside determined Category 1 or 2 areas and also inside a buffer zone radius of 100m from a Category 1 bushfire area or 30m from a Category 2 bushfire area.

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 development involves the construction of a Primary School, Secondary School, Early Learning Centre, Residential facilities for 100 student boarders and 6 teaching staff apartments and a place of worship. To accord with PBP the development is classified as Special Fire Protection Purpose, however as the land is not mapped as being bushfire prone section 100b of the Rural Fires Act 1997 is not triggered.

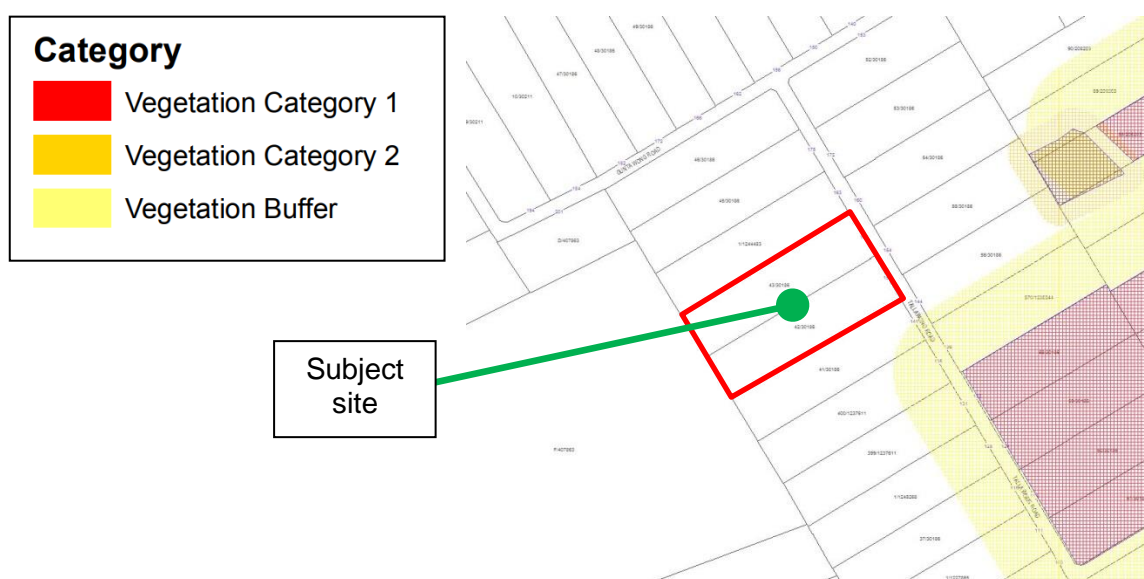


Image 04: Extract from Blacktown Council's Bushfire Prone Land Map

The subject site is located at 151 – 161 Tallawong Road, Rouse Hill (Lots 42 & 43 DP 30186) and is within Blacktown City Council's Local Government Area. The subject site has street frontage to Tallawong Road to the northeast and abuts similar allotments to the remaining aspects.

Subject site

Tallawong Road

[illegible]

Page 9 of 18

7.03 Vegetation

The predominant vegetation within the subject site was found to consist of slashed / grazed paddocks. The vegetation identified by the NSW Rural Fire Service as being a potential bushfire hazard is located within vegetated allotments to the northeast and southwest of the subject site.

A review of aerial imagery suggests that the 'unmanaged vegetation' to the northeast is within 154 and 160 Tallawong Road, Rouse Hill. These allotments are currently zoned R2 Low Density Residential and are also shown on the Riverstone East Priority Precinct Indicative Layout Plan as being Low Density Residential.

It was found that 154 Tallawong Road (Lot 55 DP 30186) has development consent (DA-17-00619) for a Torrens title subdivision which will create thirty-nine (39) new residential allotments and construction of associated infrastructure. It is also noted that a Construction Certificate has also been issued for this application (CC-18-00450 & CC-18-02260).

It was also found that 160 Tallawong Road (Lot 54 DP 30186) has development consent (DA-17-00470) for a Torrens title subdivision which will create forty-five (45) new residential allotments and construction of associated infrastructure. It is also noted that a Construction Certificate has also been issued for this application (CC-18-02068).

At the time of this assessment 136 – 154 Tallawong Road were found to be cleared for development.

There currently remains a group of mature trees with an understorey of grass within the front portion of 160 Tallawong Road. This area was found to be less than a hectare in size and is located greater than 100 metres from any identified bushfire hazard. In accordance with A1.10 Low threat vegetation – Exclusions of the pre-release of Planning for Bush Fire Protection 2018 this area would not warrant consideration as a bushfire hazard. Regardless as demonstrated above the site has development consent, with a Construction Certificate issued, for the creation of forty-five (45) new residential allotments and therefore it is considered highly likely the balance of this vegetation will be removed prior to the occupation of the proposed School.

The vegetation posing a hazard to the southwest was found to consist of individual trees over a grazed / slashed understorey. The allotment (Lot F DP 407863) to the southwest is currently zoned R2 Low Density Residential, R3 Medium Density Residential, RE1 Public Recreation and SP2 Infrastructure which is also consistent with the Riverstone East Priority Precinct Indicative Layout Plan.

In accordance with the current zoning and the Riverstone East Priority Precinct Indicative Layout Plan there will be no hazard located within the 140 metre assessment area from the subject site.

We are of the opinion that the south-western neighbouring property does not present a bushfire threat within the 140 metre assessment area. Regardless even in applying a Grassland or Woodland hazard the proposed buildings are located such that the corresponding minimum required Asset Protection Zones are exceeded.



Photograph 02: View east from Tallawong Road



Photograph 03: View northeast from Tallawong Road



Photograph 04: View from the rear boundary of the subject site into the southwestern neighbouring allotment

7.04 Slope and Topography

The slope that would most significantly affect bushfire behaviour within the hazard must be assessed for at least 100 metres from within the hazard to determine the required Asset Protection Zones. Although we are of the opinion that the south-western neighbouring property does not present a bushfire hazard we have recorded the effective slope for completion.

The effective slope to the southwest was determined onsite using an inclinometer and verified from topographic mapping to be:

- 1 degree down slope to the southwest

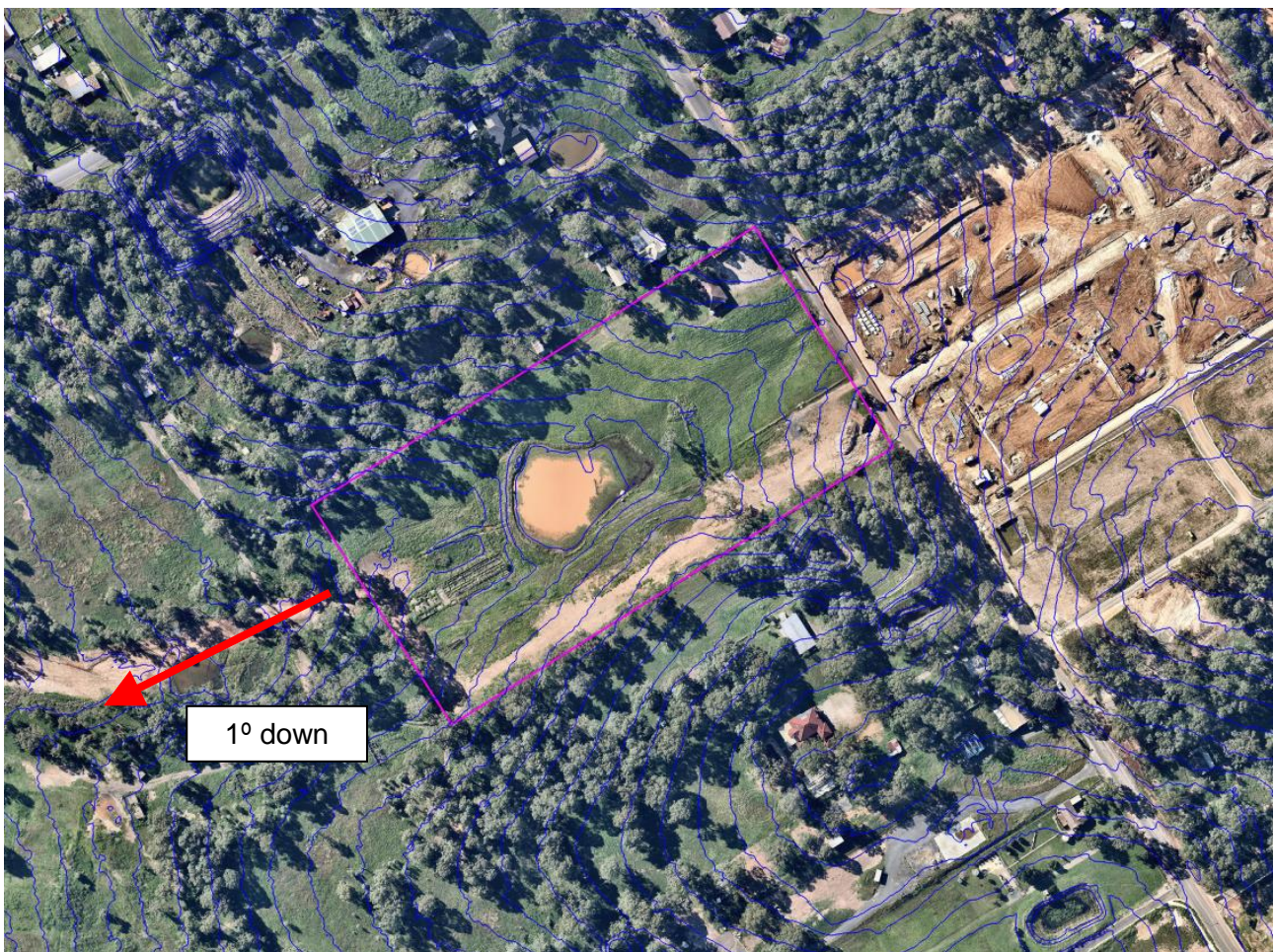


Image 06: 1 metre contours of the subject area

7.05 Asset Protection Zones

Asset Protection Zones for new Special Fire Protection Purpose (SFPP) development are determined from Table A2.6 of PBP or bushfire design modelling achieving a radiant heat impact of no more than 10 kW/m² at the closest point of the available building footprint.

No bushfire hazard was identified within the 140 metre assessment area in any direction and therefore no minimum required APZs are applicable.

It is acknowledged that the NSW Rural Fire Service has made reference to unmanaged vegetation to the southwest of the site, with the referenced vegetation to the northeast being significantly cleared since their assessment.

In applying a conservative assessment and applying a Grassland or Woodland classification to the southwest the minimum APZs would be:

- 10 metres from a Grassland to the southwest (Table A2.3)
- 40 metres from a Woodland to the southwest (bushfire design modelling attached)

The closest proposed building was found to be located 41 metres from the south-western boundary and therefore even in applying a Grassland or Woodland hazard is located such that the corresponding minimum required Asset Protection Zones are exceeded.

The available APZ includes land within the subject site which will be subject to a residential subdivision as part of a separate Development Application to Council.

The proposal therefore exceeds the minimum required Asset Protection Zones for new SFPP development.

7.06 Fire Fighting Water Supply

Hydrants are available along Tallawong Road and surrounding streets for the replenishment of attending fire services.

The fire hydrants to be installed within the subject site must comply with AS2419.1-2005.

The proposed water supply is considered adequate for the replenishment of attending fire services.

7.07 Property Access – Fire Services & Evacuation

The subject site has street access from Tallawong Road to the northeast. Roads are planned along each side of the site and across the rear, with several off street parking areas providing access into the site.

Fire services will have free pedestrian access around the building footprints. Access for fire services and opportunities for occupant evacuation will be considered adequate for this property.

Tallawong Road is a public through road. The proposed surrounding roads will also be public through roads providing egress to main arterial roads and travel along these roads is not affected by any high bushfire hazards.

In consideration of the traditional fire paths, direction of travel, low fire threat along the path of egress the surrounding road network is considered acceptable to cater for the increased development in this area during a bushfire emergency.

8.0 Site & Bushfire Hazard Determination

8.01 Planning for Bush Fire Protection - 2006

Planning for Bush Fire Protection – 2006 (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;

- *within or within 100m of high or medium bushfire hazards; or*
- *within or within 30m of low bushfire hazards.*

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

8.02 Australian Standard AS 3959 – 2009 'Construction of buildings in bushfire –prone areas'

Australian Standard 3959 – 2009 '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 – 2006* 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 - 2009.

8.03 Correlation between bushfire impact and AS3959

Bushfire Attack Level	Maximum radiant heat impact (kW/m ²)	Level of construction under AS3959-2009
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 future development located at 151 - 161 Tallawong Road, Rouse Hill was assessed against the requirements of *Planning for Bush Fire Protection* 2006 noting the following:

- a) The building footprints exceed the minimum required Asset Protection Zones.
- b) Recommendations to maintain the Asset Protection Zones within the subject property can be included in future development consent.
- c) Future water supply can satisfy the requirements for Services as detailed in section 4.1.3 of PBP.

8.05 Viable Construction Method

The objectives of *Planning for Bush Fire Protection* – 2006 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.

No bushfire hazard was identified within the 140 metre assessment area in any direction and therefore no minimum required construction provisions are applicable.

In applying a conservative assessment and applying a Grassland or Woodland classification to the southwest the highest Bushfire Attack Level to the proposed Boarding House and Early Learning Centre would be BAL 12.5.

All other proposed buildings are within a Bushfire Attack Level or Low.

It will be recommended that at the time of construction for the proposed Boarding House and Early Learning Centre if the neighbouring property to the southwest (Lot F DP 407863) is not developed that these buildings be constructed to BAL 12.5 under section 5 of AS3959 – 2009.

9.0 Recommendations

The following recommendations are provided as the minimum necessary for compliance with Planning for Bush Fire Protection – 2006 and Australian Standard 3959 'Construction of buildings in bushfire-prone areas' - 2009. Additional recommendations are provided to supplement these minimum requirements where considered necessary.

Asset Protection Zones

1. All grounds within the subject site not built upon be maintained as an Asset Protection Zone (inner protection area) and in accordance with Appendix 5 'Landscape and Property Maintenance' of PBP. This will allow for gardens (including native trees and shrubs) in the APZ managed as clumps or islands, covering no more than 20% of the area.

Construction

2. That at the time of construction for the proposed Boarding House and Early Learning Centre if the neighbouring property to the southwest (Lot F DP 407863) is not developed that these buildings shall comply with section 5 (BAL 12.5) Australian Standard AS3959-2009 "Construction of buildings in bush fire-prone areas" and section A3.7 Addendum Appendix 3 of "Planning for Bush Fire Protection".

Landscaping

3. That any new landscaping is to comply with Appendix 5 'Landscaping and Property Maintenance' under Planning for Bush Fire Protection 2006.

Emergency Management

4. That a bushfire emergency / evacuation plan be prepared consistent with the NSW Rural Fire Service Guidelines for the *Preparation of Emergency / Evacuation Plan*.

10.0 Conclusion

The State Significant Development (SSD) application involves the construction of a new school within 151 – 161 Tallawong Road, Rouse Hill. The proposed school will comprise of the following elements:

- 3 stream Primary School
- 4 stream Secondary School
- Early Learning Centre
- Multi Purpose Hall
- Residential facilities to accommodate student boarders, and 6 teaching staff
- A place of worship, comprising a Sikh Gurdwara & Langar

The subject site will also be subdivided to create several residential allotments, however this does not form part of this SSD application and will be subject to a separate Development Application to Council.

Blacktown Council's Bushfire Prone Land Map does not identify the subject site as being bushfire prone.

Regardless consultation has occurred with the New South Wales Rural Fire Service (NSW RFS) who have reviewed the proposal and acknowledged the site is not on land mapped as being bushfire prone. The RFS have however also advised that their preliminary assessment shows that unmanaged vegetation, which has not been mapped as bush fire prone, is located to the northeast and southwest of the subject site.

In consideration of the existing management practices, existing development approvals, underlying zoning principles, recent clearing works and the fact the site and neighbouring properties are within a priority growth precinct we are of the opinion that there is no bushfire hazard within the 140 metre assessment area from the subject site.

Regardless even in applying a Grassland or Woodland hazard to the southwest, which could be the only perceived threat, the proposed buildings are located such that the corresponding minimum required Asset Protection Zones are exceeded.

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 the proposal complies with the relevant specifications and requirements of PBP 2006 and will provide a reasonable and satisfactory level of bushfire protection.

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

Prepared by
Building Code & Bushfire Hazard Solutions P/L



Stuart McMonnies

G. D. Design in Bushfire Prone Areas.
Certificate IV Fire Technology
Fire Protection Association of Australia BPAD – L3 Accredited Practitioner
Accreditation 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*' 2006 - NSW Rural Fire Services & Planning NSW
- d) 'Construction of buildings in bushfire prone areas' - AS 3959 – 2009 (as - amended) – Standards Australia
- e) 'Blacktown City Council's Bushfire Prone Land Map'
- f) Masterplan prepared by PMDL, Project No. 2757, Drawing No. DA100, Dated February 2019
- g) Acknowledgements to:
NSW Department of Lands – SixViewer
Street-directory.com.au

Attachments

Attachments: Nil