

# Technical Memorandum

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<b>From</b>	Mick George	<b>Project No.</b>	12618085
<b>Project Name</b>	Northmead PS - Bushfire		
<b>Subject</b>	Bushfire assessment –Upgrade to Northmead Public School		

## 1. Introduction

This Bushfire Opportunities and Constraints Assessment has been prepared to accompany a Review of Environmental Factors (REF) prepared for the Department of Education (DoE) relating to upgrades to Northmead Public School (the activity) under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (SEPP TI).

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This technical memorandum examines and takes into account the relevant environmental factors in the Guidelines and *Environmental Planning and Assessment Regulations 2021* under Section 170, Section 171 and Section 171A of the EP&A Regulation.

### 1.1 Proposed Activity Description

The proposed activity for upgrades to Northmead Public School includes:

- One (1) new single storey classroom building comprising of four (4) general learning spaces (GLS), two (2) special program spaces, a singular learning commons space and a singular multi-purpose space;
- Minor internal alterations to an existing Admin Building (known as Building A); and
- Removal of existing portable classroom buildings containing six (6) classrooms.

### 1.2 Activity Site

The project site is located at 52A Moxhams Road, Northmead and is legally described as:

- Lot 1 DP 366405;
- Lot 1 DP 176742;
- Lot 1 DP 20061; and
- Lot 1 DP 209810.

Northmead Public School is located on the southern side of Moxhams Road and on the western side of Kleins Road.

## 1.3 Purpose of this Memorandum

The purpose of this memorandum is to provide findings identifying key considerations of bushfire constraints applicable to the design and construction of the upgrade to Northmead Public School (Lot 1 DP 176742, Lot 1 DP 209810, Lot 1 DP 20061 and Lot 1 DP 366405). This Technical Memorandum is provided under our agreement with DoE (contract number: DDWO05130/23).

Further assessment maybe required if there are significant changes to Bush Fire Prone Land (BFPL) mapping, surrounding land management/vegetation cover, to the activity concept, proposed uses and/or in response to NSW Rural Fire Service (RFS) policy or feedback.

## 1.4 Scope and limitations

*This technical memorandum has been prepared by GHD for School Infrastructure NSW. GHD has prepared this memorandum on the basis of information provided by the Client and others who provided information to GHD (which may also include Government authorities), which GHD has not independently verified or checked for the purpose of this memorandum. GHD does not accept liability in connection with such unverified information, including errors and omissions in the memorandum which were caused by errors or omissions in that information.*

*Investigations undertaken in respect of this memorandum are constrained by the particular site conditions, such as the location of buildings, services and vegetation. As a result, not all relevant site features and conditions may have been identified in this memorandum.*

### Accessibility of documents

*If this Technical Memorandum is required to be accessible in any other format this can be provided by GHD upon request and at an additional fee if necessary.*

## 2. Bushfire Assessment

### 2.1 Bushfire Prone Land classification

The Bushfire Prone Land (BFPL) map is a trigger for the consideration of bushfire matters as part of planning for new activity. It is not intended as a detailed measure of risk. The map does not form part of the site assessment process. The project site is depicted on City of Parramatta Council's BFPL map as BFPL due to the presence of Vegetation Buffer on the northwest corner of the site to Vegetation Category 2 mapped as occurring to the north and west on adjacent land (Figure 1). Vegetation Category 2 consists mainly of rainforests and lower risk vegetation parcels, for example due to active management, topography, access and likelihood of fire detection by the community. A vegetation buffer is defined as an area within close proximity to a vegetation category 1, 2 or 3 that may be impacted by the hazard from conditions such as ember attack, radiant heat and/or flame contact.

Section 2.1 of Planning for Bush Fire Protection 2019 (PBP) states that a s100B authorisation under the Rural Fires Act 1997 (bush fire safety authority (BFSA)) is required for a special fire protection purpose (SFPP) (i.e. a school) on BFPL. GHD interprets that BFPL only relates to the physical area mapped and does not extend to the entirety of a legal allotment of land merely because a part of that lot is mapped.

The NSW RFS has stated that if an activity is referred to it through a planning pathway, it will apply bushfire requirements to any activity on a lot if any part of a lot is mapped as BFPL. That would include Construction to BAL-19. For Activity without Consent (REF), DoE would have to determine if referral was required / appropriate.

Whether Part G5 of the NCC (and Specification 43) applies would be up to the Certifier. Part G5 applies to activity on land mapped as BFPL or (in part) where it has been identified through the course of an activity application that the land is likely to be subject to bushfire attack. GHD understands, on other projects, the Certifier has advised that Part G5 doesn't apply if the buildings are not on the part of a site that is mapped as BFPL.

GHD sought Pre-DA advice from RFS on behalf of DoE to confirm the bushfire hazard assessment approach for the proposed activity given the adjacent vegetation. RFS advised that the use of rainforest equivalent vegetation is not justified by the BFPL mapping classifying the hazard as Category 2 vegetation.

Instead, RFS recommends methodology from Appendix 1 of PBP 2019 for the determination of the vegetation formation and corresponding setback distances and determination of potential Bushfire Attack Level (BAL) exposure for the upgrades to Northmead Public School.

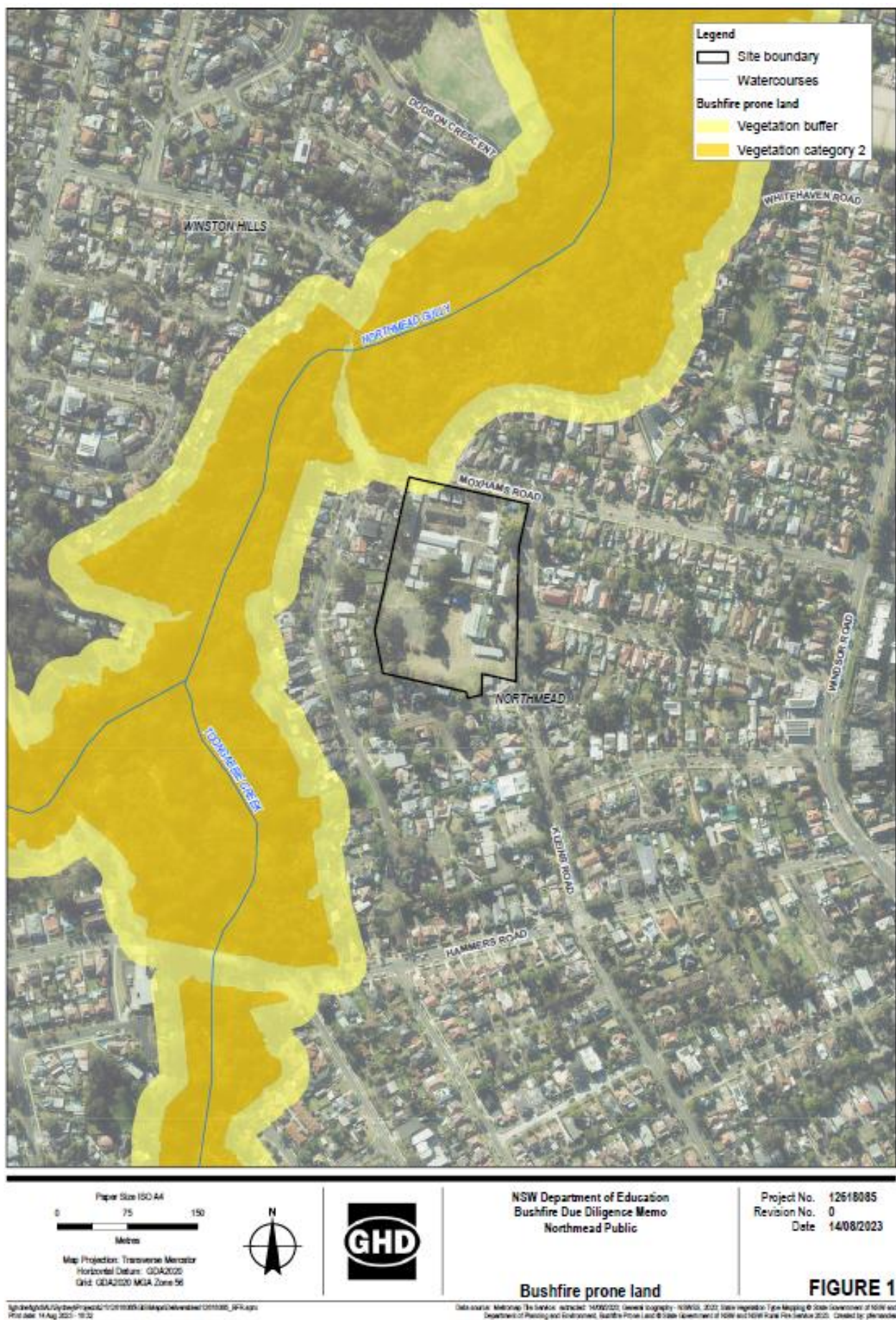


Figure 1 Bushfire Prone Land Classification (ePlanning Spatial Viewer, 2021)

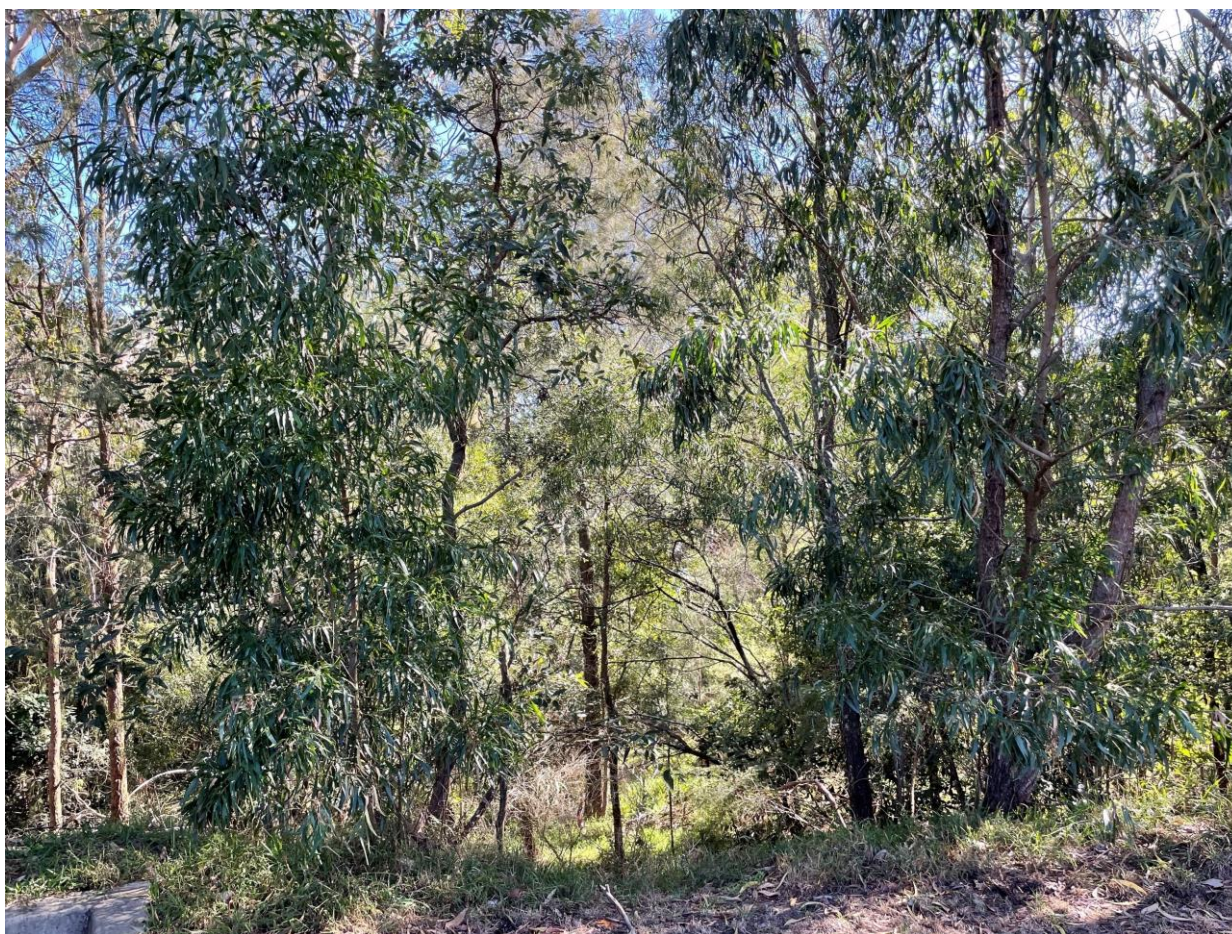


## 2.2 Fire weather

The site is located within the City of Parramatta Local Government Area (LGA), within the Greater Sydney Region for which a Fire Danger Index (FDI) of 100 is applicable for bushfire assessment (NSW RFS, 2019).

## 2.3 Vegetation

The nearest vegetation is classified as Plant Community Type (PCT) 3592: *Sydney Coastal Enriched Sandstone Forest* (Dry Sclerophyll Forest) (Forest under PBP 2019), and PCT 3262: *Sydney Turpentine Ironbark Forest* (Wet Sclerophyll Forest) (Forest under PBP 2019) occurring within the Moxham Park/John Curtin Reserve and Impreesa Reserve area. A site inspection undertaken on 10/08/2023 identified that these riparian reserves are formally protected under the *NSW Threatened Species Conservation Act 1995*, with Moxham Park / John Curtin Reserve a declared a Wildlife Protection Area under Section 30(1)(b) of the *NSW Companion Animals Act 1998*. The vegetation adjacent Moxhams Road in Moxhams Park / John Curtin Reserve is shown in Plate 1.



**Plate 1**      *Photo from site inspection (10/08/2023). View into Moxhams Park from the road reserve showing fuels and vegetation extent*

Typically forest vegetation is mapped as Vegetation Category 1 under BFPL mapping guidelines. However, this vegetation is mapped as Vegetation Category 2 under BFPL. Vegetation Category 2 is a lower bushfire risk than Category 1 and Category 3 but higher than the excluded areas, as per NSW RFS Guide for Bush Fire prone Land Mapping, Version 5b (2015). This vegetation category has lower combustibility and/or limited potential fire size due to the vegetation area shape and size, land geography and management practices. This classification applies to the vegetation on the site as it meets the following criteria as specified in the NSW RFS Guide for Bush Fire prone Land Mapping, Version 5b (2015):

- Land with ongoing land management practices that actively reduces bush fire risk. These areas must be subject to a plan of management or similar that demonstrates that the risk of bush fire is offset by strategies that reduce bush fire risk; AND include:

- Discrete urban reserve/s
- Parcels that are isolated from larger uninterrupted tracts of vegetation and known fire paths
- Shapes and topographies which do not permit significant upslope fire runs towards development
- Suitable access and adequate infrastructure to support suppression by firefighters, and
- Vegetation that represents a lower likelihood of ignitions because the vegetation is surrounded by development in such a way that an ignition in any part of the vegetation has a higher likelihood of detection.

It is noted that the closest vegetation hazard is PCT 3592 which is considered to have a higher degree of flammability and is located closer to the subject site (adjacent Moxhams Road) than indicated in PCT mapping (Plate 1). The application of *rainforest* characteristics to reflect the reduced bushfire risk associated with the vegetation within the adjacent reserves, in line with the classification as Vegetation Category 2, was tested with NSW RFS and was not supported. Therefore, *forest* characteristics should be applied for school planning and design purposes.

Within the boundaries of the site, there are scattered planted and remnant trees with a managed understorey as well as sporting ovals and courts, and managed gardens around the existing buildings. DoE engages an AQF5 arborist for annual inspections of all trees and shrubs onsite. Pruning and tree removal is conducted where required based on the arborist report.





## 2.4 Effective slope

Effective slope was assessed using contour mapping from NSW Spatial Service and confirmed by site assessment. [Note this is describing the slope underneath the vegetation, not between the building and the vegetation]. This site can be characterised as gently sloping from east to west. The surrounding vegetation hazard is downslope of the school site associated with Northmead gully.

## 3. Bushfire protection and mitigation measures

School buildings are generally classified as SFPP under the *Rural Fires Act 1997* (RF Act) and assessed against the Bushfire Protection Measures (BPMs) in Chapter 6 of PBP. PBP requires the assessment of a suite of BPMs that in total afford an adequate level of protection. The measures required to be assessed for SFPP development cover Asset Protection Zones (APZ), access, utilities, construction standards, landscaping, emergency management and environmental issues.

Part G5, Specification 43 of the NCC prescribes additional bushfire protection provisions for certain Class 9 buildings (including schools) on BFPL. An Addendum to PBP (RFS 2022) was released in October 2022 to align PBP with the additional bushfire protection specifications for specific Class 9 buildings (includes schools) under the NCC.

### 3.1 Bushfire Attack Level Assessment

To achieve deemed-to-satisfy acceptable solutions for building construction (BALs) for SFPP development, school buildings are positioned such that the building can achieve a radiant heat exposure not exceeding 10 kW/m<sup>2</sup>. Administration buildings and other non-SFPP buildings can be exposed to up to 29 kW/m<sup>2</sup> radiant heat. The BAL for the site is shown in Figure 3.

The new single story classroom is not located on BFPL and is located in a BAL-Low (no rating) exposure. Therefore there is no further consideration of bushfire protection or mitigation measures are required.

The existing Administration Building (Building A) that will undergo internal alterations and the installation of a new external air vent to be installed within existing window (therefore no new penetration in building fabric) on south façade away from bushfire threat. Building A has some BAL-12.5 affectation on the north-west corner of the building. The intention for any building work occurring within an existing SFPP development is to achieve a better bushfire outcome than if the activity did not proceed. Chapter 6.5 of PBP identifies internal works and minor non-structural building alterations (external) such as the replacement of an external window (however, the opening and/or external glazed area of the window must not be increased in size) as minor activity. This type of activity does not have any influence on potential bushfire impacts and the bushfire protection of a building. Therefore there is no further consideration of bushfire protection or mitigation measures required for Building A.

The mitigation measures for the new single story classroom and Building A are summarised in Table 1 below.

Table 1 – Mitigation Measures			
Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
New single story classroom	Prior to commencement of any works During works Prior to commencement of operation	Location of the building on non BFPL and in BAL-LOW exposure	To afford an adequate level of bushfire protection.
Building A	Prior to commencement of any works During works Prior to commencement of operation	New external air vent to be installed within existing window (therefore no new penetration in building fabric) on south façade away from bushfire threat	To afford an adequate level of bushfire protection.



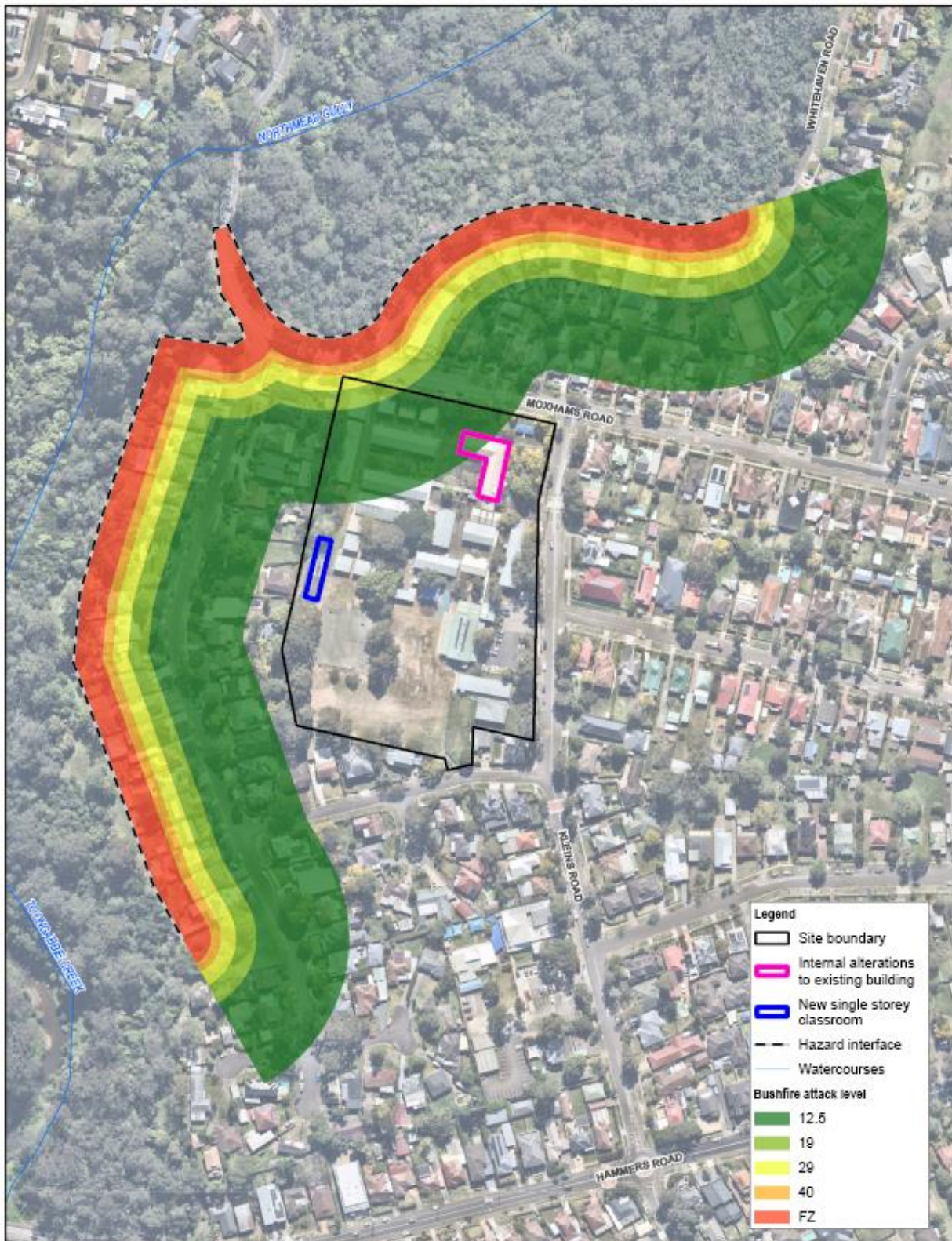


Figure 3 Bushfire Attack Level (BAL)

## 4. Evaluation of Environmental Impacts

In light of the assessment of the BAL exposure on the proposed new classroom and upgrades to the Administration Building (Building A), no further bushfire mitigation measures or considerations are needed for the proposed new building and upgrades to the existing Administration building. As detailed in Table 1, the siting of the proposed new classroom on non BFPL and in BAL-LOW exposure affords an adequate level of bushfire protection as required under PBP. The installation of the new external air vent within an existing window on south façade away from the closest bushfire threat to the north-west also affords an adequate level of bushfire protection as required under PBP.

The impacts of the upgrades to Northmead Public School related to bushfire protection can be adequately mitigated through the identified mitigation measures such that the activity will not have a significant affect on the environment.

Regards



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