Bushfire Protection Assessment

Milton Public School Upgrade

NSW Department of Education (DoE)

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DOCUMENT TRACKING

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LIMITATIONS

The bushfire protection measures recommended in this report do not completely remove the risk to life and property, and they do not guarantee that a development will not be impacted by a bushfire event. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions.

Acknowledgements

This document has been prepared by Eco Logical Australia Pty Ltd with assistance from NSW Department of Education (DoE).

Template 2.8.1

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Abbreviations

Abbreviation	Description
APZ	Asset protection zone
BAL	Bushfire Attack Level
BFPL	bush fire prone land
BFSA	Bush Fire Safety Authority
BPA	Bushfire Protection Assessment
COLA	Covered Outdoor Learning Areas
DoE	NSW Department of Education
EFSG	Educational Facilities Standards and Guidelines
ELA	Eco Logical Australia Pty Ltd
FDI	Fire Danger Index
GIS	Geographic information system
ha	hectares
IPA	Inner Protection Area
LGA	Local Government Area
m	metres
NCC	National Construction Code 2022
PBP	'Planning for Bush Fire Protection 2019', 'Appendix B of Addendum to Planning for Bush Fire Protection 2022' and 'Appendix B of Addendum to Planning for Bush Fire Protection 2025'
REF	Review of Environmental Factors
RFS	NSW Rural Fire Service
SFPP	Special fire protection purpose
SI	School Infrastructure NSW

Executive Summary

Eco Logical Australia Pty Ltd (ELA) was engaged by the NSW Department of Education (DoE) to undertake a Bushfire Protection Assessment for the Milton Public School upgrade (the activity) in accordance with current bushfire legislation and policy.

Milton Public School is located at 9 Thomas Street, Milton NSW 2538 and is hereafter referred to as the 'subject land'. The subject land is mapped as bush fire prone land (BFPL) and this assessment has identified a bushfire hazard within 140 m (north and east). The bushfire hazard is classified as 'rainforest' and 'grassland' under Planning for Bush Fire Protection 2019 (RFS 2019), Addendum 2022 (RFS 2022) and Addendum 2025 (RFS 2025) which are collectively referred to as 'PBP'. The vegetation assessment was based on available vegetation mapping (DCCEEW 2020) and verified from site assessment (15 August 2023).

The proposed activity has been assessed against the relevant bushfire protection measures from PBP as detailed in Section 4 of this report and meets the acceptable solutions for Asset Protection Zone (45 m – 81 m), construction (BAL-19 as modified by Section 7.5 of PBP), utilities, vehicular access and emergency and evacuation planning. As this is an existing school facility, additional bushfire protection measures are proposed (Section 4.9) to achieve a better bushfire outcome for the existing school.

The bushfire mitigation measures detailed in Section 6 are required at either design, construction or operation stages of the project and inform recommendations to be considered in the planning approval conditions.

1. Introduction

This Bushfire Protection Assessment (BPA) has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (DoE) for the Milton Public School upgrade (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

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 (DPHI) as well as the *Addendum Division 5.1 guidelines for schools*. The purpose of this report is to assess the proposed activity against *Planning for Bush Fire Protection* (RFS 2019), specifically Chapter 6, *Appendix B of Addendum to Planning for Bush Fire Protection* (RFS 2022) and *Appendix A of Addendum to Planning for Bush Fire Protection* (RFS 2025), collectively referred herein to as 'PBP'.

1.1 Site Description

The site is located at 9 Thomas Street, Milton, NSW, 2538 (the site) . The site is legally referred to as Lot 1 in Deposited Plan 861814 and is within the Shoalhaven Local Government Area (LGA) and has an approximate area of 4 hectares. An aerial photograph of the site is provided at Figure 1**.**

The site is zoned SP2 Educational Establishment and existing development comprises various buildings, sports facilities and play space associated with Milton Public School. Milton Public School currently comprises 24 permanent teaching spaces (PTS) and 12 demountable teaching spaces (DTS). The site contains two locally heritage listed buildings (Building A and Q).

The site is predominantly cleared; however there is existing vegetation interspersed throughout the site and significant trees are present along the northern and western boundary of the site. There is a gradual slope downwards from the south-east to the north-east. of the site.

The site is an irregularly shaped lot with a narrow frontage along Thomas Street. Pedestrian and vehicular access is provided from Thomas Street and Wason Street. Milton Public School is adjoined by low density residential properties to the south, west and east and Milton Rainforest Reserve is located to the north.

Figure 1: Aerial Photograph (Source: Urbis, April 2025)

2. Property and Proposal

Table 1 identifies the site and outlines the type of development proposed.

Table 1: Site and development proposal summary

Street address:	9 Thomas Street, Milton
Postcode:	2538
Lot/DP no:	Lot 1 DP 861814
Local Government Area:	Shoalhaven City Council
Fire Danger Index (FDI)	100
Current land zoning:	SP2 Educational Establishment
Type of development proposed:	Educational establishment, which is special fire protection purpose (SFPP)

2.1 Description of Proposal

The proposed activity relates to upgrades to Milton Public School. Specifically, the proposed activity comprises the following:

- Construction of a new two-storey home base building.
- Installation of additional solar panels.
- Relocation of existing cricket nets to the eastern boundary of site.
- Construction of new stairs and covered walkways linking the new building to the existing school.
- Construction of new fencing.
- Construction of new hardstand area.
- Minor alterations to the existing staff car park.
- Tree removal.
- External landscape works.

Any works relating to demountables or water tank will proceed via a separate planning pathway.

Figure 2 provides an extract of the proposed site plan.

2.2 Assessment Process

The proposed activity is located on land partially mapped as bush fire prone land (BFPL) as shown in Figure 3.

Being a special fire protection purpose (SFPP) development on BFPL, the proposal was assessed in accordance with Planning for Bush Fire Protection (PBP). This report demonstrates that the proposal, together with the recommendations within this report address the relevant specifications and requirements under PBP.

This assessment is based on the following information sources:

- Background documentation provided by School Infrastructure (SI);

- Information contained within the site plan from Fulton Trotter (Project No. 7068MI01 Rev 11 dated 3 April 2025 [Figure 2]);
- Geographic information system (GIS) analysis including online spatial resources (i.e. Google Earth, SIX Maps, Nearmap and the NSW Government Planning Portal); and
- Site inspection 15 August 2023.

Informal consultation with Jamie Winter of RFS Development Assessment and Planning was undertaken 7 November 2024 to discuss better bushfire outcome for the existing school (refer Section 4.9). RFS informally agreed in principle to the proposed measures subject to reviewing in full detail.

Table 2 identifies the bushfire protection measures assessed and whether an acceptable or performance solution is being proposed.

Table 2: Summary of Bush Fire Protection Measures Assessed

Bushfire Protection Measure	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	☑	☑	4.1
Landscaping	☑	☐	4.2
Construction	☑	☐	4.3
Access	☑	☑	4.4
Water supply	☑	☐	4.5
Electricity services	☑	☐	4.6
Gas services	☑	☐	4.7
Emergency management	☑	☐	4.8

2.3 Significant Environmental Features

An assessment of significant environmental features, threatened species, populations or ecological communities under the *Biodiversity Conservation Act 2016* that may potentially be affected by the proposed bushfire protection measures has been undertaken as part of this development approval process and addressed in a separate report (WT 2025).

The impact footprint of the bushfire protection measures (e.g. Asset Protection Zone [APZ]) is identified within this report and therefore capable of being assessed by a suitably qualified person.

2.4 Aboriginal Cultural Heritage

An assessment of any Aboriginal cultural heritage objects (within the meaning of the *National Parks and Wildlife Act 1974*) that may potentially be affected by the proposed bushfire protection measures has been undertaken as part of this development approval process and addressed in a separate report (AA 2023).

The impact footprint of the bushfire protection measures (e.g. APZ) is identified within this report and therefore capable of being assessed by a suitably qualified person.

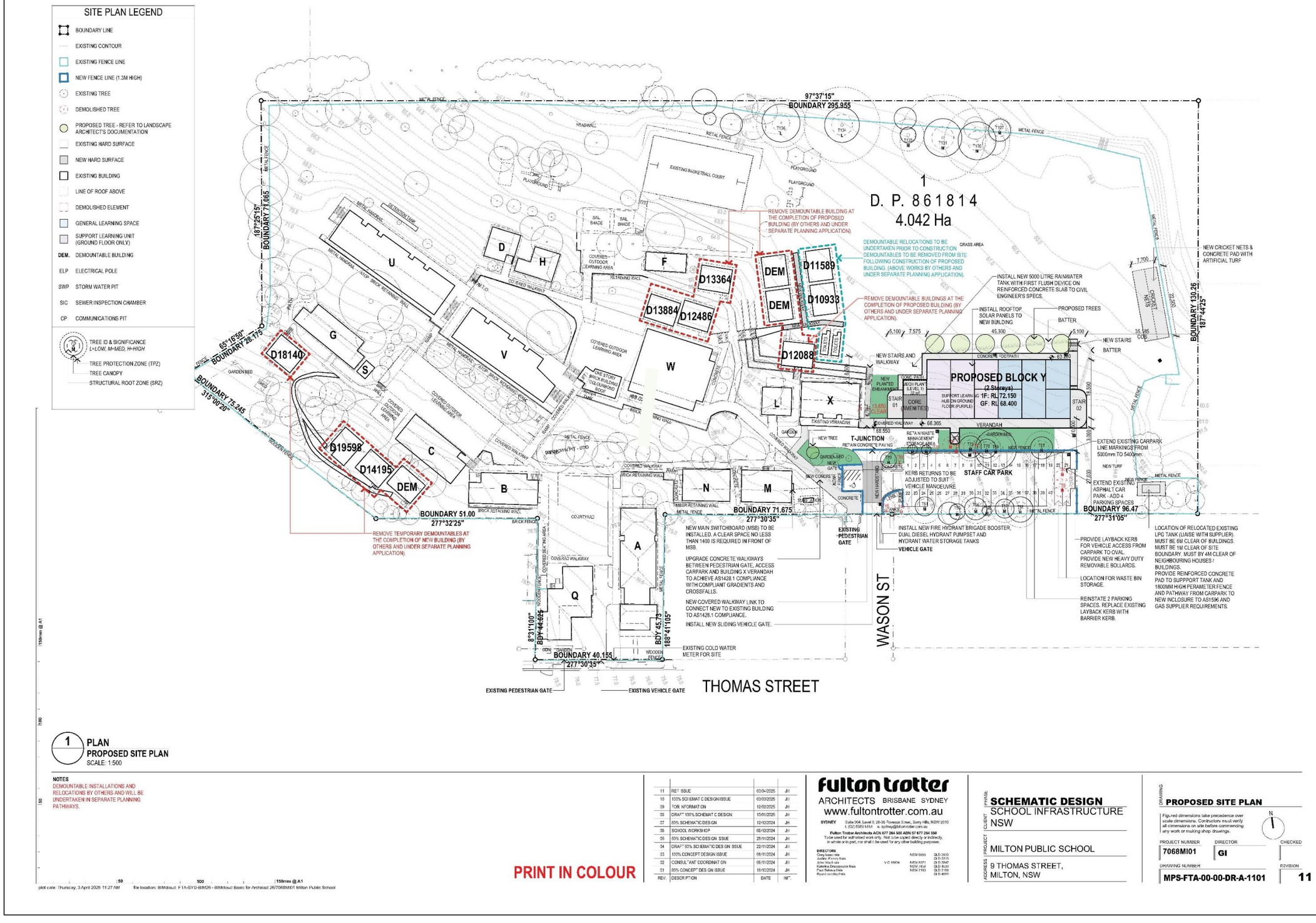


Figure 2: Site Plan (Source: Fulton Trotter 2025)

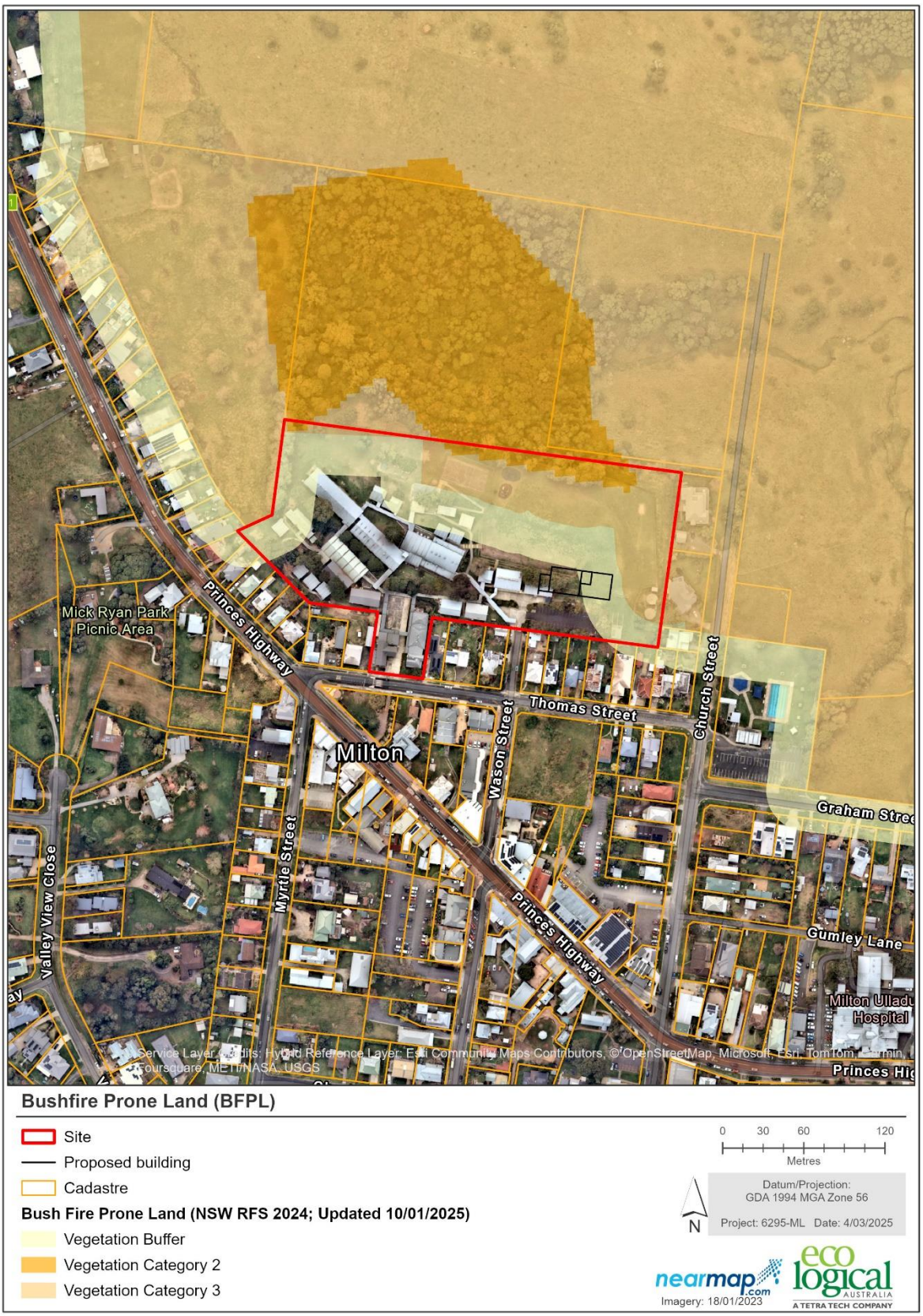


Figure 3: Bush Fire Prone Land (BFPL) (Source: RFS 2024)

3. Bushfire Hazard Assessment

3.1 Process

The site assessment methodology from Appendix 1 of PBP has been used in this assessment to determine the required APZ and construction requirements.

Figure 4 and Table 3 show the effective slope and predominant vegetation representing the highest bushfire threat potentially posed to the development from various directions.

3.2 Vegetation Assessment

In accordance with PBP, the predominant vegetation has been assessed for a distance of at least 140m from the site in all directions.

The predominant vegetation has been determined from statewide vegetation mapping (DCCEEW 2022), Nearmap Imagery (2024) and verified from site assessment.

3.3 Slope Assessment

In accordance with PBP, the slope that would most significantly influence fire behaviour is determined over a distance of 100m from the boundary of the proposed activity under the classified vegetation.

The effective slope has been determined from 2 m contour data.

3.4 Summary of Assessment

As shown in Figure 4, the bushfire prone vegetation within 140 m of the site is to the north, north-east and east and is a combination of 'rainforest' and 'grassland'.

Rainforest (Transect 1)

The bushfire prone vegetation to the north is identified as 'Illawarra Complex Dry Rainforest' (DCCEEW 2022) which falls within Dry Rainforests vegetation class (Keith 2004) and classified as 'rainforest' under PBP. The effective slope under this vegetation falls within the PBP slope category of '>15-20 degrees downslope'.

Grassland (Transect 2 and 3)

There is unmanaged grassland to the north-east, within the subject land, that extends further to the north and east. Unmanaged grassland is considered a 'grassland' hazard under PBP, as such is classified accordingly. The effective slope under this hazard falls within the PBP slope categories of '>5-10 degrees downslope' and '10-15 degrees downslope'.

Managed land

In all other directions there are managed lands within Milton Public School grounds, existing residential development and public road infrastructure.

Table 3: Bushfire hazard assessment and APZ requirements

Transect # (Figure 4)	Direction from site	Slope	Vegetation	SFPP APZ	Comment
1	North	>15-20° downslope	Rainforest	≥81 m	APZ accommodated within site boundary.
2	North-east	>10-15° downslope	Grassland	≥50 m	As above.
3	East	>5-10° downslope	Grassland	≥45 m	As above.
All other directions		Managed land			

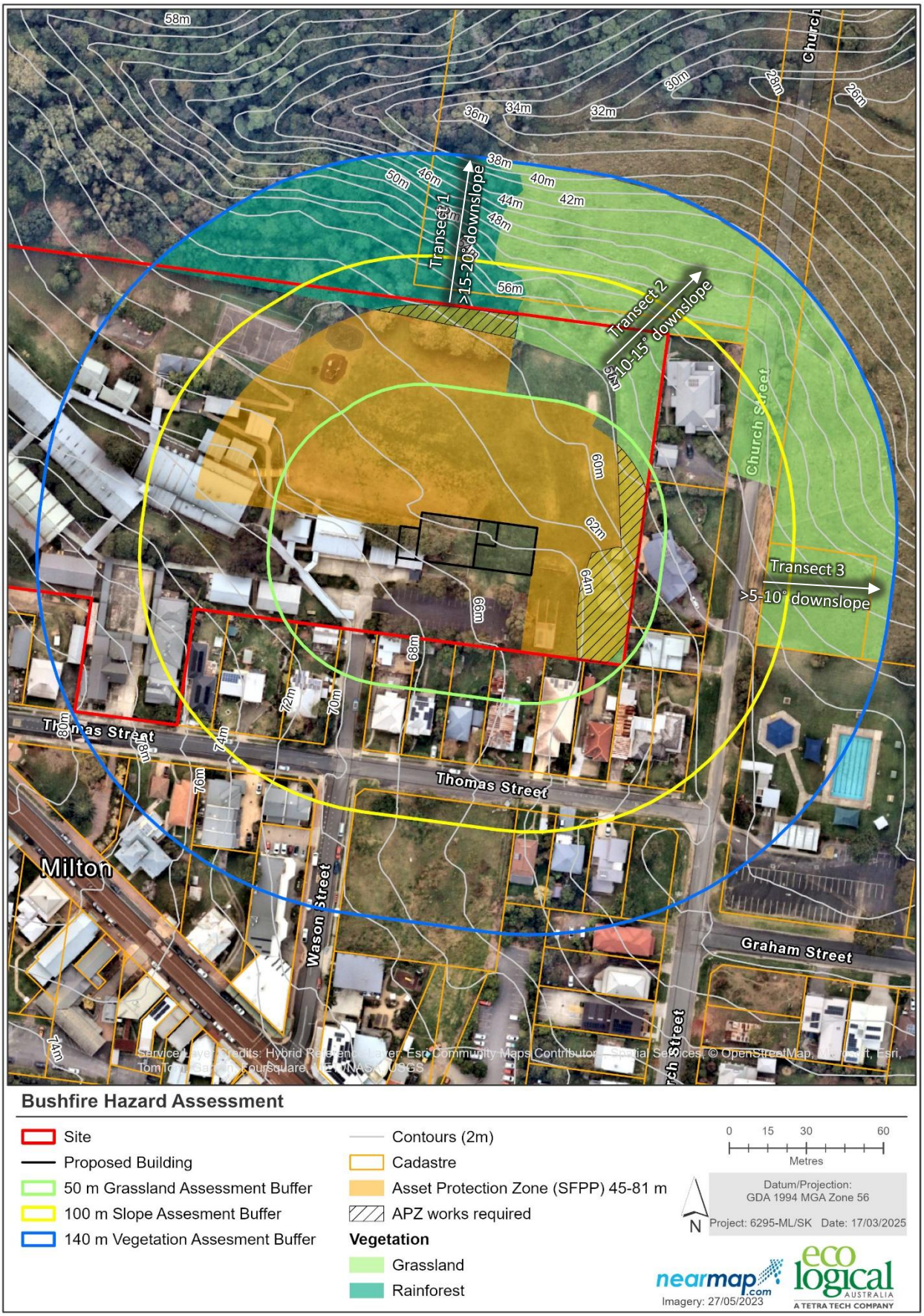


Figure 4: Bushfire hazard assessment (Source: ELA)

4. Bushfire Protection Measures

4.1 Asset Protection Zones

Table 3 shows the dimensions of the required APZ and where relevant, information on how the APZ is to be provided is included. The footprint of the APZ is also shown on Figure 4.

The compliance of the proposed APZ with Section 6.8.1 of PBP is documented in Table 4.

Table 4: APZ requirements and compliance (adapted from Table 6.8a of PBP)

Performance Criteria	Acceptable Solutions	Compliance Notes
The intent may be achieved where:		
Radiant heat levels of greater than 10kW/m² (calculated at 1200K) will not experienced on any part of the building	The building is provided with an APZ in accordance with Table A1.12.1 in Appendix 1 of PBP.	**Complies** APZ determined in accordance with Table A1.12.1 of PBP as shown in **Table 3** and **Figure 4**.
APZ maintenance is practical, soil stability is not compromised and the potential for crown fires is minimised.	The APZ is located on lands with a slope less than 18 degrees.	**Complies** APZ is not located on slopes greater than 18°.
APZs are managed and maintained to prevent the spread of fire to the building.	The APZ is managed in accordance with the requirements of Appendix 4 of PBP;	**To comply** APZ to be managed in accordance with PBP. Fuel management specifications provided in Appendix A.
	APZs are wholly within the boundaries of the development site; and	**Complies** APZ located wholly within development site (refer Figure 4).
The APZ is provided in perpetuity.	Other structures located within the APZ need to be located further than 6 m from the refuge building.	**Complies** The new building will be ≥12 m away from the nearest adjacent buildings.

4.2 Landscaping

The compliance of the proposed landscaping with Section 6.8.1 of PBP is documented in Table 5.

Table 5: Landscaping requirements and compliance (adopted from Table 6.8a of PBP)

Performance Criteria	Acceptable Solutions	Compliance Notes
The intent may be achieved where:		
Landscaping is managed to minimise flame contact and radiant heat to buildings, and the potential for wind-driven embers to cause ignitions.	Landscaping is in accordance with Appendix 4 of PBP; and	**To comply** APZ / new Landscaping is to be designed and managed in accordance with PBP. Landscaping specifications provided in Appendix A.
	Fencing is constructed in accordance with Section 7.6 of PBP.	**To comply** Fencing to be constructed in accordance with Section 7.6 of PBP (see Section 4.3.1 for further details).

4.3 Construction Standards

The compliance of construction with Table 2 of Appendix B of Addendum to PBP (Appendix B) is documented in Table 6.

Table 6: Construction requirements and compliance (adopted from Table 2 of PBP Addendum)

Performance Criteria	Acceptable Solutions	Compliance Notes
The intent may be achieved where:		
The proposed building can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	A construction level of BAL-19 or greater under AS 3959 and Section 7.5 of PBP is applied.	**To comply**

4.3.1 Fences and Gates

To comply with Section 7.6 of PBP, fencing and gates is included as part of this activity are to be constructed of hardwood or non-combustible material. Where fencing is within 6 m of a building, they should be made of non-combustible material only.

4.4 Access

The proposal does not include construction of any public road or internal access infrastructure and is accessed off Green Street to the south. The proposal is for construction of a new building within an existing school and adjacent to the internal carpark.

Assessment of the access is contingent on the Addendum 2025 being enacted however, if not enacted at the date of referral, this assessment can be considered a performance solution on the basis the design meets the performance criteria in Addendum 2022 (Table 3) as detailed in Table 15 and Section 4.4.1.

In accordance with Amendment 2 of Addendum 2025 (RFS 2025), the existing access has been assessed against the PBP general SFPP access (Table 16) under Table 6.8b of PBP and meets the relevant acceptable solutions.

4.4.1 Access Design Detail

The following assesses the existing access infrastructure against the specifications from Table 6.8b of PBP:

Firefighting vehicles are provided with safe, all-weather access to structures:

Internal access:

- The building is accessed via the internal carparking within the south-east of the site off Wason Street. The carparking provides 5.5 m wide aisle which are approximately 8 m from the southern elevation (Figure 5);
- A T turning area is provided west of the school carparking at the Termination of Wason Street. The turning area provides >12 m arms allowing safe manoeuvring by a Cat 1 firefighting vehicle (Figure 5);
- Additionally, safe pedestrian access/egress for firefighting and emergency personnel during operations is provided by the pathway (≥1.5m non-combustible) around the perimeter of the building connecting to the staff carparking in the south and existing school infrastructure in the east (Figure 6).

Other site attributes:

- To ensure a safe operational environment for firefighting personnel, the landscaping within the site will be designed and managed in accordance with acceptable solutions of PBP as identified in Table 5;
- The external (within the site) fire hydrants proposed to the new building will be installed in accordance with AS 2419:2021 (SA 2021) requirements. The hydrant booster is located at the entry off the staff carpark adjacent a hardstand area (Figure 6) suitable for Cat 1 fire tanker.

Firefighting vehicles are provided with safe, all-weather access to hazard vegetation:

- The rainforest bushfire hazard to the north abuts the northern boundary of the site and is accessible via the maintenance track off Church Street (Figure 5);
- The grassland bushfire hazard to the east is accessible from Church Street and the maintenance track (Figure 5);
- The surrounding bushfire hazard is of lower risk consisting mainly of grassland aside from the remnant (4 ha) rainforest to the north. Therefore, the progress of a bushfire would be highly visible and under a worst-case scenario Church Street would only be impacted for a short period of time; and
- Furthermore, evacuation of the school and surrounding properties will be via Wason/Thomas Street with the northern section of Church Street only servicing three (3) residential properties, therefore unlikely to become congested during an emergency evacuation.

Figure 5: Vehicular Access (Source: ELA)

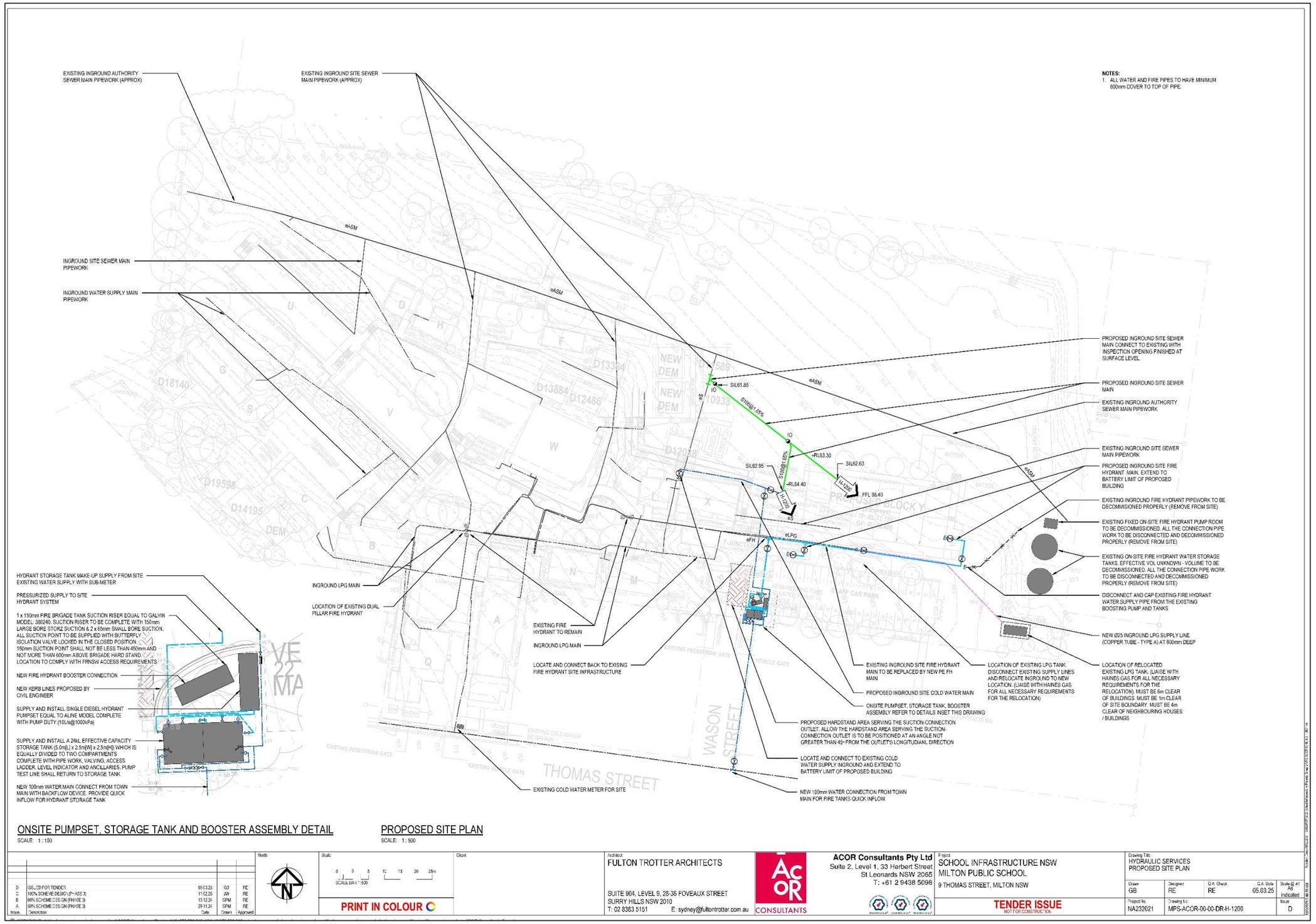


Figure 6: Fire Hydrants (Source: ACOR Consultants 2025)

4.5 Water Supplies

The compliance of the proposed water supply with Table 4 of Appendix B of Addendum to PBP is documented in Table 7.

Table 7: Water supply requirements (adapted from Table 4 of Addendum to PBP)

Performance Criteria	Acceptable Solution	Compliance Notes
An adequate water supply for firefighting purposes is installed and maintained.	Reticulated water is to be provided to the development, where available; and	**Complies** Proposal serviced by a reticulated water supply.
	Water for firefighting purposes must be made available and consist of: • A fire hydrant system installed in accordance with AS2419.1; or • Where no reticulated water is available, a static water supply consisting of tanks, swimming pools, dams or the like, or a combination of these, together with suitable pumps, hoses and fittings, determined in consultation with NSW RFS that; • is capable of providing the required flow rate for a period of not less than 4 hours; or • has a volume of 10,000 litres for each occupied building.	**To comply** New fire hydrant system will be provided in accordance with AS 2419:2021 (Figure 6).

4.6 Electricity Services

The compliance of the proposed supply of electricity services with Section 6.8.3 of PBP is documented in Table 8.

Table 8: Assessment of requirements for the supply of electricity services (adapted from Table 6.8c of PBP)

Performance Criteria	Acceptable Solution	Compliance Notes
Location of electricity services limits the possibility of ignition of surrounding bush land or the fabric of buildings.	Where practicable, electrical transmission lines are underground; Where overhead, electrical transmission lines are proposed as follows: • Lines are installed with short pole spacing (30 m), 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 Guide for the Management of Vegetation in the Vicinity of Electricity Assets (ISSC3 2016).	**Complies** Electricity services to the site are located underground. **Not applicable**

4.7 Gas Services

The compliance of the proposed supply of gas services (reticulated or bottle gas) with Section 6.8.3 of PBP is shown in Table 9.

Table 9: Assessment of requirements for the supply of gas services (adapted from Table 6.8c of PBP)

Performance Criteria	Acceptable Solution	Compliance Notes
Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	• 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 10 m 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.	**To comply (if installed)** The advice of a relevant authority or suitably qualified professional should be sought, for certification of design and installation of new gas services in accordance with relevant legislation, Australian Standards and Table 6.8c of PBP.

4.8 Emergency and Evacuation Planning

The existing Emergency Management Plan and associated Bushfire and Grassfire Response Plan shall be updated to meet requirements in Table 10 including designating the proposed building as the shelter-in-place if offsite evacuation is unsafe.

Assessment of compliance of the proposed emergency and evacuation planning with Section 6.8.4 of PBP is shown in Table 10.

Table 10: Assessment of emergency requirements (adopted from Table 6.8d of PBP)

Performance Criteria	Acceptable Solutions	Compliance Notes
The intent may be achieved where:		
A bushfire emergency and evacuation management plan is prepared	Bush fire emergency management and evacuation plan is prepared consistent with the:	**To comply**
	The NSW RFS document: A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan (RFS 2014);	
	NSW RFS Schools Program guide (RF n.d);	
	Australian Standard AS 3745:2010 Planning for emergencies in facilities (SA 2020); and	
	Australian Standard AS 4083:2010 Planning for emergencies – Health care facilities.	**Not applicable**
	The bushfire emergency and evacuation management plan should include a mechanism for the early relocation of occupants. Note: A copy of the bush fire emergency management plan should be provided to the Local Emergency Management Committee for	**To comply**

Performance Criteria	Acceptable Solutions	Compliance Notes
	its information prior to occupation of the development.	
Appropriate and adequate management arrangements are established for consultation and implementation of the bush fire emergency and evacuation management plan.	An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual; and	**To comply**
	Detailed plans of all emergency assembly areas including 'on-site' and 'off-site' arrangements as stated in AS 3745:2010 are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.	**To comply**

4.9 Better Bushfire Outcome

In accordance with Section 6.4 of PBP *development of existing SFPP facilities*, Table 11 below details the additional proposed bushfire protection measures to achieve a better bushfire outcome for the existing school.

The purpose of the proposed activity is to upgrade the Milton Public School (i.e. construction of a new two-storey home base building) however, does not facilitate an increase in occupancy.

Table 11: Better Bushfire Outcomes for Existing School

Proposed Bushfire Protection Measure	Detail and Recommendations	Better Bushfire Outcome
1. The new building will be the designated shelter-in-place.	**APZ:** Provides a compliant APZ (45-81 m) to ensure building radiant heat exposure is ≤10 kW/m^2. **Occupancy:** Accommodates expected students, staff and visitors (up to 985 pax) based on the expected 'usable' floor area (985 m^2), not the overall building floor area (1,408 m^2). The overall floor area is reduced by 20% to account for parts occupied by furniture etc. and an additional built in 10% capacity safety margin. **Construction:** BAL-19 under AS 3959 and Section 7.5 of PBP. **Access:** Easily accessed off the internal carparking within the school. **Other:** 1. ≥1.5 non-combustible path around the perimeter of the building, PBP compliant water and power supply etc. 2. Signage indicating shelter-in-place;	Currently the Bushfire and Grassfire Response Plan for the school nominates existing Building W as the shelter-in-place if it is unsafe for offsite evacuation (Figure 4). It cannot accommodate all students/staff and is not constructed to any specific BAL construction rating. The new building is therefore a better bushfire outcome for the school. Building W will no longer be utilised as the designated shelter-in-place and the school's emergency management plan should be updated once this activity is completed and operational.
2. APZ and Landscape	To reduce the overall bushfire risk and minimise potential ignitions to existing buildings, the following is recommended: 1. Management of internal vegetation, particularly pruning of trees within 2 m of or overhanging buildings to minimise ignition potential. 2. APZ be extended to the northern and eastern boundaries to remove bushfire hazard (as identified in Figure 4) within site boundary.	Recommendations minimise potential building ignitions during a bushfire and provide safer defendable areas around existing buildings.

5. Conclusion

The proposed activity has been assessed against the specifications and requirements within PBP, as outlined in Table 12 below.

Table 12: Development Bushfire Protection Solutions and Recommendations

Bushfire Protection Measures	Recommendations	Acceptable Solution	Performance Solution	Report Section
Asset Protection Zones	APZ dimensions are detailed in Table 3 and shown in Figure 4. Identified APZ to be maintained in perpetuity to the specifications detailed in Appendix A.	☑	☑	4.1
Landscaping	New landscaping within the site to meet the requirements of PBP listed in Appendix A.	☑	☐	4.2
Construction	The proposed building is to be constructed to **BAL-19** based on the construction specifications detailed in AS 3959-2018, including additional ember provisions detailed in section 7.5 of PBP as required.	☑	☐	4.3
Access	No new public roads proposed. Performance solution addresses PBP requirements.	☑	☑	4.4
Water supply	Reticulated water supply to meet PBP acceptable solution specifications for a SFPP Class 9 development.	☑	☐	4.5
Electricity service	No requirements as electricity supply located underground.	☑	☐	4.6
Gas service	New gas services (if installed) are to be installed and maintained in accordance with AS/NZS 1596:2014 (SA 2014).	☑	☐	4.7
Emergency Management	Emergency Plan and Bushfire and Grassfire Response Plan to be updated in line with recommendations in this report prior to occupation of the building including: 1. Designating the new building as the shelter-in-place; and 2. Clear signage is to be provided to the new building and identifying it is the designated 'shelter-in-place'. 3. Remove Building W as the current shelter-in-place option in the Bushfire and Grassfire Response Plan. 4. Updated Bushfire and Grassfire Response Plan to be provided to local brigade(s).	☑	☐	4.8
Better Bushfire Outcomes	Recommendations detailed in Table 11 to be implemented to achieve a better bushfire outcome for the school.	☐	☑	4.9

5.1 Evaluation of Environmental Impacts

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed activity, it is determined that:

- *The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and/or the environment;*
- *Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community and/or the environment.*

6. Mitigation Measures

Table 13 below details the proposed bushfire mitigation measures required at design, construction and operation stages.

Table 13: Proposed Bushfire Mitigation Measures

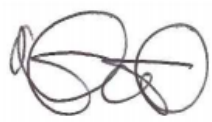
Project Stage Design (D) Construction (C) Operation (O)	Bushfire Protection Measure	Mitigation Response	Reason for Mitigation Measure	Relevant Section of Report
D / C / O	APZ	Prior to construction, DoE must ensure the identified APZ (Table 3 and shown in Figure 3) is maintained to the specifications detailed in Appendix A. During operation, DoE must ensure APZ are managed in perpetuity.	1. To meet the specifications for APZ (10kW/m^2) under PBP. 2. To ensure sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.	4.1
D / O	Landscaping	Prior to occupation, DoE must ensure new landscaping within the site is designed to meet the requirements of PBP listed in Appendix A.	1. To meet the specifications for construction under PBP. 2. To ensure sufficient space to ensure that radiant heat levels do not exceed critical limits for firefighters and other emergency services personnel undertaking operations, including supporting or evacuating occupants.	4.2
D / C / O	Construction Standards	Prior to occupation, DoE are to ensure the proposed building designed and constructed **BAL-19,** and relevant NCC requirements, based on the construction specifications detailed in AS 3959-2018 and additional ember provisions detailed in section 7.5 of PBP as required. At commencement of construction and during operation, DoE to ensure fencing is within 6 m of the building, they will be made of non-combustible material only.	1. To meet the specifications for construction under PBP. 2. The proposed buildings can withstand bush fire attack in the form of wind, embers, radiant heat and flame contact.	4.3

Project Stage Design (D) Construction (C) Operation (O)	Bushfire Protection Measure	Mitigation Response	Reason for Mitigation Measure	Relevant Section of Report
N/A	Access	No response required as provided by existing internal and public road network.	N/A	4.4
D / C / O	Water Supplies	Prior to occupation, DoE to ensure new fire hydrant system is provided in accordance with AS 2419:2021.	1. To meet the specifications for gas services under PBP. 2. Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	4.5
N/A	Electricity Services	No response required as electricity supply located underground.	N/A	4.6
D / C / O	Gas Services	Prior to occupation, DoE to ensure gas services (if installed) are installed and maintained in accordance with AS/NZS 1596:2014.	1. To meet the specifications for gas services under PBP. 2. Location and design of gas services will not lead to ignition of surrounding bushland or the fabric of buildings.	4.7
O	Emergency Management	Prior to operation, DoE to update Bushfire and Grassfire Response Plan including: 1. Designating the new building as the shelter-in-place; and 2. Clear signage is to be provided to the new building and identifying it is the designated 'shelter-in-place'. 3. Remove Building W as the current shelter-in-place option in the Bushfire and Grassfire Response Plan. 4. Updated Bushfire and Grassfire Response Plan to be provided to local brigade(s).	1. To meet the specifications for emergency management under PBP. 2. To provide suitable emergency and evacuation arrangements for occupants.	4.8
D / C / O	Better Bushfire Outcome	Prior to operation, DoE to: 1. Install clear signage to the new building and identifying it is the designated 'shelter-in-place'.	To achieve a better bushfire outcome for the existing school than if the development did not proceed.	4.9

Project Stage Design (D) Construction (C) Operation (O)	Bushfire Protection Measure	Mitigation Response	Reason for Mitigation Measure	Relevant Section of Report
		2. Ensure external combustible items located away from windows/doors (landscaping, hard landscaping, bins, out buildings etc.); and 3. Additional fire extinguishers to be located internally near all entry/exit points for use against combustible materials.		

7. Recommendations

It is recommended that the proposed activity be approved with consent conditions based on the findings in Table 12.



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Appendix A - Asset Protection Zone Standards

The following management specifications apply to the identified APZ in Figure 4 which is to be maintained in perpetuity. The maintenance requirements must be undertaken on an annual basis (as a minimum) and prior to the commencement of the bushfire season.

Further details on APZ implementation and management can be found on the NSW RFS website (https://www.rfs.nsw.gov.au/resources/publications).

Table 14: APZ management specifications

Vegetation Strata	Inner Protection Area (IPA)
Trees	• Tree canopy cover should be less than 15% at maturity; • Trees (at maturity) should not touch or overhang the building; • Lower limbs should be removed up to a height of 2m above ground; • Canopies should be separated by 2 to 5m; and • Preference should be given to smooth barked and evergreen trees.
Shrubs	• Create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; • Shrubs should not be located under trees; • Shrubs should not form more than 10% ground cover; and • Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.
Grass	• Should be kept mown (as a guide grass should be kept to no more than 100mm in height); and • Leaves and vegetation debris should be removed.

Appendix B – Photos

Photo 1: Developed land to NW and bushfire hazard N

Photo 2: Bushfire hazard to N

Photo 3: Bushfire hazard to N

Photo 4: Bushfire hazard to N

Appendix C – Access Standards

Table 15: SFPP Class 9 access requirements (adapted from Table 3 of Addendum 2022 to PBP)

Performance Criteria	Acceptable Solutions	Compliance
The intent may be achieved where:		
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	Vehicular access must be capable of providing continuous access for emergency vehicles to enable travel in a forward direction from a public road around the entire building; and	**Satisfies Performance Criteria.** Refer Section 4.4 for details.
	Must have a minimum unobstructed width of 6 m with no part of its furthest boundary more than 18 m from the building and in no part of the 6 m width be built upon or used for any purpose other than vehicular or pedestrian movement; and	**Satisfies Performance Criteria.** Refer Section 4.4 for details.
	Must provide reasonable pedestrian access from the vehicular access to the building; and	**To comply** The building will include a 1.5 m non-combustible pathway around perimeter of the building and access paths to staff carparking (south), oval (north) and existing school infrastructure (west) (refer Figure 2).
	Must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and	**Not applicable** No new roads proposed.
	Must be wholly within the allotment except that a public road complying with above may serve as the vehicular access or part thereof.	**Satisfies Performance Criteria.** Refer Section 4.4 for details.

Table 16: General SFPP access requirements (adapted from Table 6.8b of PBP 2019)

Performance Criteria	Acceptable Solutions	Compliance notes
The intent may be achieved where:		
Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation.	SFPP access roads are two-wheel drive, all-weather roads;	**Complies** No roads proposed however, existing access to the school and proposed building is via sealed all-weather road.
	Access is provided to all structures;	**Complies** Refer Figure 4 and Section 4.4 for detail.
	Traffic management devices are constructed to not prohibit access by emergency services vehicles;	**Not applicable** No public or internal access roads proposed.
	Access roads must provide suitable turning areas in accordance with Appendix 3; and	**Not applicable** No public or internal access roads proposed.

Performance Criteria	Acceptable Solutions	Compliance notes
	One way only public access roads are no less than 3.5 metres wide and have designated parking bays with hydrants located outside of these to ensure accessibility to reticulated water for fire suppression.	**Not applicable** No public or internal access roads proposed.
The capacity of access roads is adequate for firefighting vehicles.	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.	**Not applicable** No public or internal access roads proposed.
There is appropriate access to water supply	Hydrants are located outside of parking reserves and road carriageways to ensure accessibility to reticulated water for fire suppression;	**To comply** New fire hydrant booster to be located outside of existing access road carriageway.
	Hydrants are provided in accordance with the relevant clauses of AS 2419.1:2021 – Fire hydrant installations system design, installation and commissioning; and	**To comply** New fire hydrant system to be provided in accordance with AS 2419:2021 (Figure 6).
	There is suitable access for a Category 1 fire appliance to within 4m of the static water supply where no reticulated supply is available.	**Not applicable** Development will be services by reticulated water supply.

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