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Bushfire Protection Assessment

Vincentia High School Upgrade

NSW Department of Education (DoE)

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).

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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
DTS	Demountable teaching spaces
DoE	NSW Department of Education
DPHI	Department of Planning, Housing and Infrastructure
EFSG	Educational Facilities Standards and Guidelines
ELA	Eco Logical Australia Pty Ltd
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
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'
PTS	Permanent teaching spaces
REF	Review of Environmental Factors
RFS	NSW Rural Fire Service
SFPP	Special fire protection purpose
SI	School Infrastructure
T&I SEPP	<i>State Environmental Planning Policy (Transport and Infrastructure) 2021</i>

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 Vincentia High School upgrade (the activity) and has been prepared in accordance with current bushfire legislation and policy.

Vincentia High School is located at 142 The Wool Road, Vincentia NSW 2540 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 of the proposed building (all directions, aside east). The bushfire hazard is classified as 'tall heath' and 'forested wetland' 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 (34 – 56 m), construction (BAL-19 and as modified by Section 7.5 of PBP), utilities, vehicular access and emergency and evacuation planning. Further, given 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 Vincentia High 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 142 The Wool Road, Vincentia, NSW, 2540 and has an approximate site area of 8.09 hectares. The site is comprised of two lots, legally referred to as Lot 1 Deposited Plan 809057 and Lot 1 Deposited Plan 550361 and is located within the Shoalhaven Local Government Area (LGA). An aerial photograph of the site is provided at Figure 1.

The site is zoned SP2 Educational Establishment and existing development comprises various buildings, a car park, landscaping, a sports field and sports courts associated with Vincentia High School. Vincentia High School currently comprises 49 permanent teaching spaces (PTS) and 17 demountable teaching spaces (DTS). The eastern portion of the site contains natural bushland.

The site is an irregularly shaped lot. Vehicle access is provided to The Wool Road via a driveway that connects to a signalised intersection. There is a footpath and cycleway along The Wool Road. The surrounding land consists of extensive natural bushland (Jervis Bay National Park).



Figure 1: Aerial Photograph of the Site (Source: Urbis, January 2024)

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:	142 The Wool Road, Vincentia
Postcode:	2540
Lot/DP no:	Lot 1 DP 550361 and Lot 1 DP 809057
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 Proposed Activity Description

The proposed activity relates to upgrades to Vincentia High School. Specifically, the proposed activity comprises the following:

- Construction of a new two-storey home base building.
- Installation of solar panels.
- Construction of new stairs and covered walkways.
- Internal road upgrade which involves providing a new drop off zone, parking spaces and pedestrian pathway.
- Relocation of existing shade structure.
- External landscape works.
- Tree removal.

Any works relating to the existing demountables or associated with substations will be undertaken 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 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 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 NSW (SI);
- Information contained within the site plan from Fulton Trotter (Project No. 7068VI01 Rev 11 dated 25 March 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 16 August 2023.

RFS were consulted in relation to the proposed activity and provided pre-DA advice on 14 January 2025 (Appendix D). No concerns with the proposed activity have been raised and RFS' recommendation in relation to shelter-in-place building signage and fire brigade familiarisation have been incorporated into recommended mitigation measures (Section 6).

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	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.1
Landscaping	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.2
Construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.3
Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.4
Water supply	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.5
Electricity services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.6
Gas services	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.7
Emergency management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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 planning application 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 planning application 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.

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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 2020), 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 and summarised in Table 3, the bushfire prone vegetation within 140 m of the site is located the north-east, north, north-west and west and is a combination of ‘tall heath’ and ‘forested wetland’. Photographs of the vegetation in all directions are provided in Appendix B.

Tall Heath

The vegetation to the north, north-west and west is mapped as Shoalhaven Rockplate Heath (DCCEEW 2020) which falls within the Sydney Coastal Heaths vegetation class (Keith 2004) and classified ‘tall heath’ in accordance with PBP. The effective slope under this hazard falls within the PBP slope categories of ‘all upslopes and flat land and ‘>0-5 downslope’.

The current western bushfire hazard interface is approximately 20 m west of the subject land boundary as the land is currently used as a temporary carpark however, it is understood this area will be returned to National Parks and Wildlife and no longer ‘managed’. As such, this bushfire hazard assessment has assessed that the vegetation to the west will regenerate and the western subject land boundary will be the hazard interface.

Forested Wetland

The bushfire prone vegetation within the north-east of the site is mapped Coastal Alluvial Bangalay Forest (DCCEEW 2022) which falls within the Coastal Floodplain Wetlands vegetation class (Keith 2004) and classified ‘forested wetland’ in accordance with PBP. The effective slope under this vegetation falls within the PBP slope category of ‘all upslopes and flat land’.

Managed Land

In all other directions there are managed lands within the Vincentia High School grounds.

Table 3: Bushfire hazard assessment and APZ requirements

Transect # (Figure 4)	Direction from site	Slope	Vegetation	SFPP APZ	Comment
1	North-east	All upslopes / flat land	Forested Wetland	≥34 m	APZ accommodated within site boundary.
2	North	>0-5° downslope	Tall Heath	≥56 m	APZ accommodated within site boundary and existing public road infrastructure (The Wool Road).
3	North-west	>0-5° downslope	Tall Heath	≥56 m	APZ accommodated within site boundary.
4	West	All upslopes / flat land	Tall Heath	≥50 m	APZ accommodated within site boundary.
All other directions		Managed land within Vincentia High School grounds.			



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/m ² (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	Satisfies Performance Criteria APZ located within development site and existing public road infrastructure (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 located ≥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, any new fencing and gates 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 site is accessed off the Wool Road to the north and the existing internal loop access road will be upgraded to include a bus-bay and drop-off zone (Figure 5) consisting of:

- 8.13 m wide southbound bus carriageway and bus-bay;
- 6 m wide southbound 'kiss and ride' carriageway; and
- 4.25 m northbound lane with parking outside of this.

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 road design meets the acceptable solutions in Table 6.8b of PBP and has been assessed against the PBP general SFPP access (Table 15) and perimeter road requirements (Table 17) under Table 6.8b of PBP.

4.4.1 Access Design Detail

The following details the proposed access design in accordance with PBP Table 6.8b design requirements:

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

Internal access:

- The proposed building is accessible from the existing road loop entry/exit road within the school (to be upgraded) and the proposed gravel maintenance track which connects to the existing gravel maintenance track within the site as shown in Figure 6.
- The upgraded loop road provides:
 - 8.13 m wide southbound bus lane/carriageway;
 - 6 m wide southbound 'kiss and ride' carriageway with parking (drop off zone) outside of this.
 - 4.25 m northbound carriageway with parking outside of this.
 - 15 t capacity which is suitable for a Category 1 tanker. The school is unlikely to be serviced by anything larger than a Cat 1 tanker given these are the largest most used in these urban scenarios, therefore 15 t is considered sufficient.
 - The road is used for bus pick up and drop off therefore demonstrated it can be safely manoeuvred by a Cat 1 vehicle.
- The proposed gravel maintenance track provides:
 - 4 m wide trafficable gravel surface;
 - Runs along the northern elevation of the proposed building and connects to the existing gravel track which traverses managed land in an easterly direction before running in a southerly direction adjacent the eastern APZ and connecting with the sealed road running along the southern and western boundary of the site.
- Additionally, safe pedestrian access/egress for firefighting and emergency personnel during operations is provided by the pathway ($\geq 1.5\text{m}$ non-combustible) around the perimeter of the building connecting to the existing pathway network, carparking and open space areas (Figure 6).

Other site attributes:

- To ensure a safe operational environment for firefighting personnel, new landscaping around the proposed building will be designed and managed in accordance with acceptable solutions of PBP as identified in Table 5;
- The building will be designed to meet the Building Code of Australia (BCA) Volume 1 Part G5 and associated Specification 43 requirements providing a 1.5 m non-combustible pathway around the perimeter of the building and non-combustible access paths to open space areas and carparking; and
- The external (within the site) fire hydrants proposed to the new building will be installed in accordance with AS2419:2021 (SA 2021). The existing hydrant booster is located to the south-west of the proposed building, adjacent existing school infrastructure and a hardstand area suitable for Cat 1 fire tanker (Figure 7).

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

- The bushfire hazard to the north (Transect 1, 2 and 3) is accessible from The Wool Road with no access to the school required;
- The bushfire hazard to the west (Transect 4) is accessible from The Wool Road and the internal loop road. As detailed above under *internal access*, the internal road provides safe-all weather access for firefighting vehicles; and
- Additionally, the bushfire hazard to the north-east (Transect 1) can be accessed within the site via the gravel maintenance track detailed above under *internal access*.

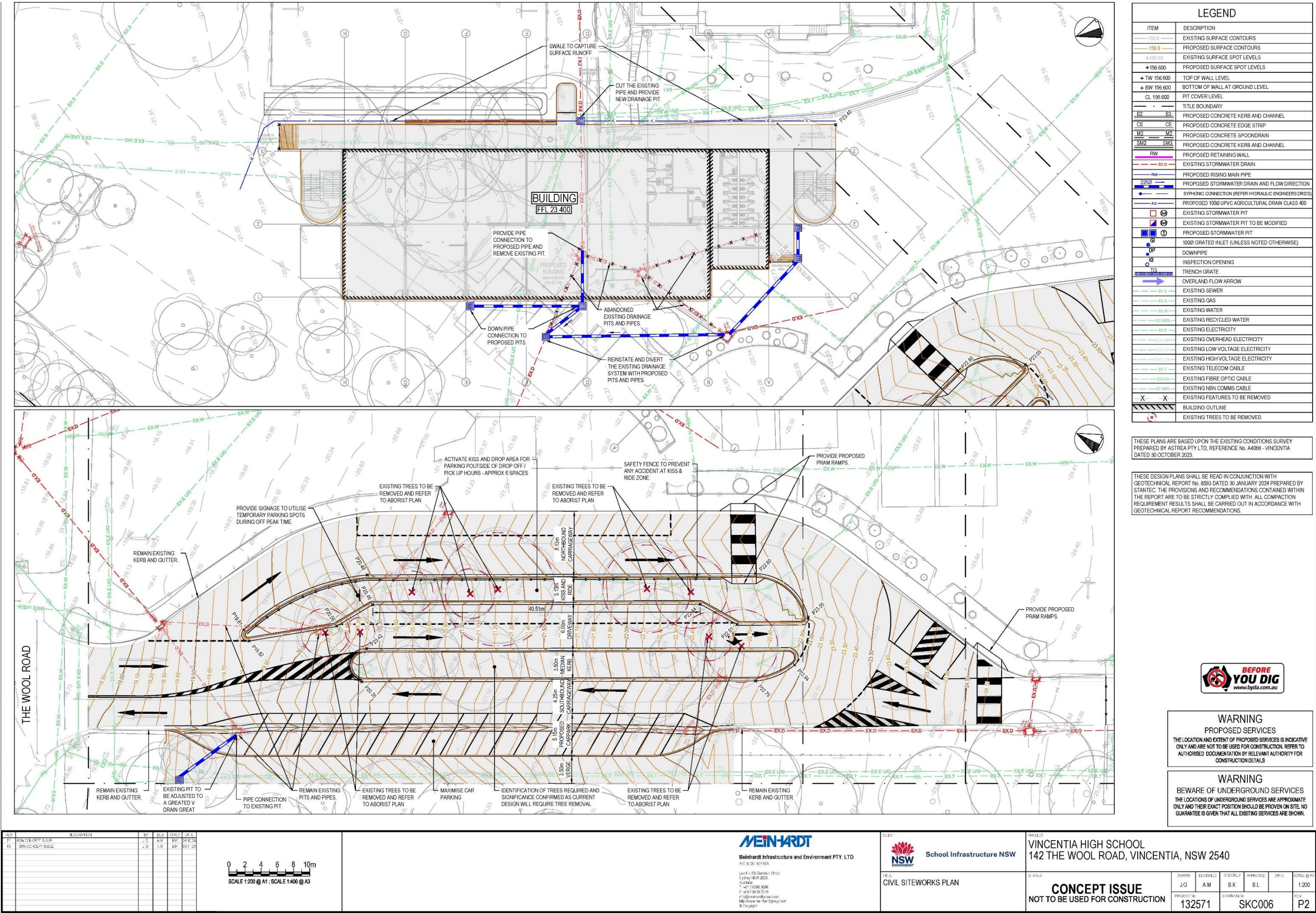


Figure 5: Loop Road Upgrade (Source: Meinhardt 2024)

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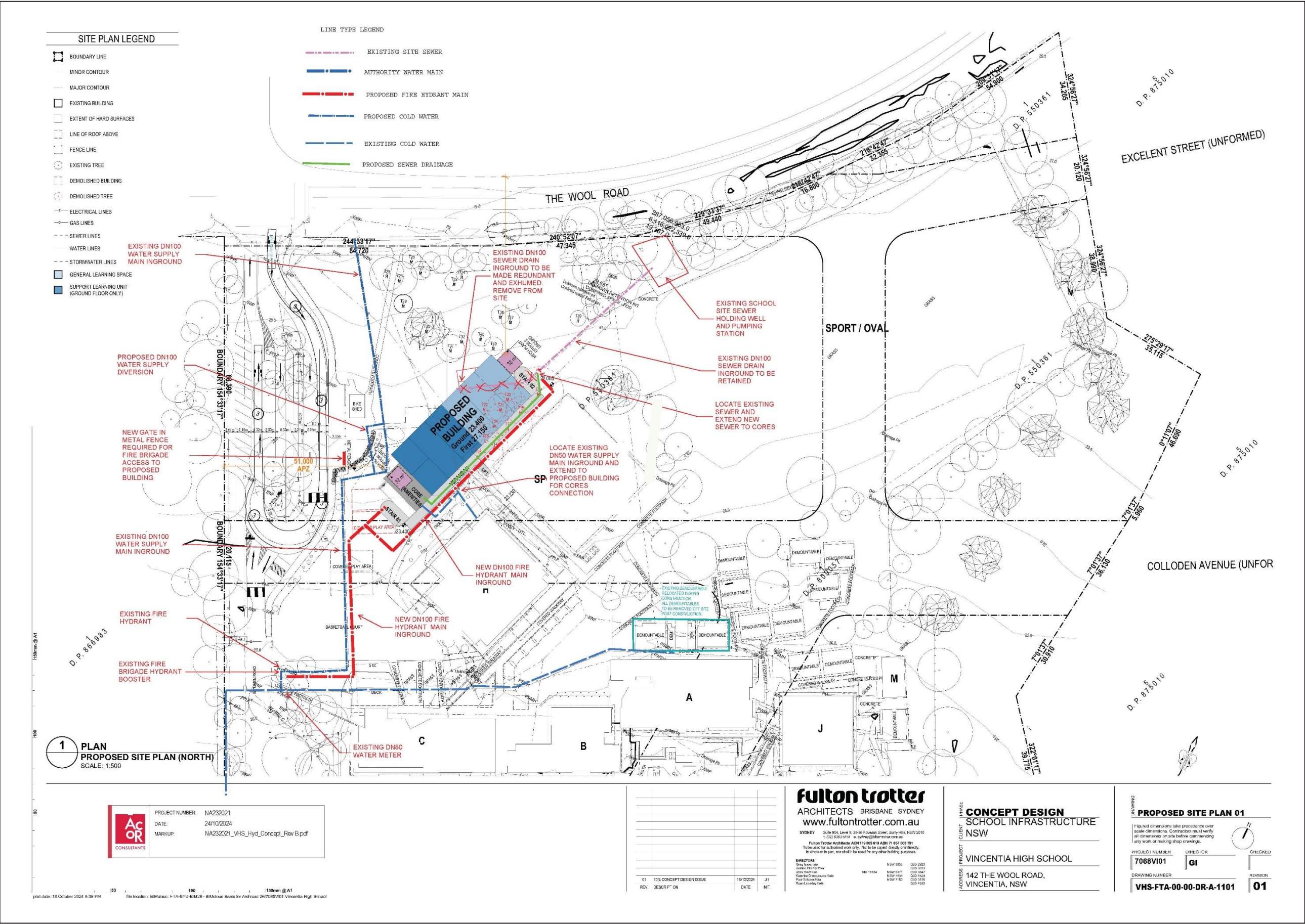


Figure 7: Fire Hydrants (Source: Fulton Trotter 2024)

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: <ul style="list-style-type: none"> • 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 Fire hydrants will be provided in accordance with AS2419:2021 (Figure 7).

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;	Complies Electricity services to the site are located underground.
	Where overhead, electrical transmission lines are proposed as follows: <ul style="list-style-type: none"> • 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). 	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.	<ul style="list-style-type: none"> 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. 	<p>Not applicable</p> <p>No gas services installed.</p>

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 option (Figure 4) 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 (adapted 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
	<p>The bushfire emergency and evacuation management plan should include a mechanism for the early relocation of occupants.</p> <p>Note: A copy of the bush fire emergency management plan should be provided to the Local Emergency Management Committee for</p>	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 Outcomes

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 Vincentia High 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.	<p>APZ: Provides a compliant APZ (34-56 m) to ensure building radiant heat exposure is ≤ 10 kW/m².</p> <p>Occupancy: Accommodates expected students, staff and visitors (up to 1,203 pax) based on the expected 'usable' floor area (1,203 m²), not the overall building floor area (1,503 m²). 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.</p> <p>Construction: BAL-19 under AS 3959 and Section 7.5 of PBP.</p> <p>Access: Easily accessed off the entry/exit loop road within the school.</p> <p>Other:</p> <ol style="list-style-type: none"> 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; 	<p>Currently the Bushfire and Grassfire Response Plan for the school nominates Building H (hall) 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.</p> <p>The new building is therefore a better shelter-in-place option and a better bushfire outcome for the school.</p> <p>Building H 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.</p>
2. Upgraded internal vehicular access	<p>The internal vehicular access upgrades include:</p> <ol style="list-style-type: none"> 1. 8.3 m wide southbound bus carriageway/bus-bay; 2. 6 m wide southbound 'kiss and ride' carriageway with parking (drop off zone) outside of this; and 3. 4.25 m northbound carriageway with parking outside of this. 	<p>Whilst the existing internal vehicular access is considered adequate from a bushfire perspective, the upgrades will provide a better bushfire outcome by minimising congestion (with separate bus and car access) and potential obstruction to firefighting vehicles accessing the school.</p>
3. APZ and Landscape	<p>The bushfire risk assessment prepared for the school (Alphitonia 2019) under the SI bushfire mitigation program recommends improvements to existing APZ (eastern boundary of the site) and landscaping including management of garden beds, pruning of trees within proximity to building etc.</p>	<p>The bushfire mitigation program recommendations provide an overall better bushfire outcome for the school, improving the landscape to minimise potential building ignitions during a bushfire and providing safer defendable areas around</p>

Proposed Bushfire Protection Measure	Detail and Recommendations	Better Bushfire Outcome
		existing buildings. These works appear to have been undertaken in 2022 and are ongoing.

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.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.1
Landscaping	New landscaping within the site to meet the requirements of PBP listed in Appendix A.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.2
Construction	The proposed activity 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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.3
Access	No new public roads proposed. Internal loop road shall be upgraded as per design detail in Section 4.4.1.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.4
Water supply	Reticulated water supply to meet PBP acceptable solution specifications for a SFPP Class 9 development.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.5
Electricity service	No requirements as electricity supply located underground.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.6
Gas service	No requirements as no gas services installed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.7
Emergency Management	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 H 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).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.8
Better Bushfire Outcome	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

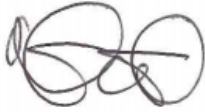
Project Stage Design (D) Construction (C) Operation (O)	Bushfire Protection Measure	Mitigation Response	Reason for Mitigation Measure	Relevant Section of Report
D / C / O	APZ	Prior to construction, DoE must ensure the identified APZ (Table 3 and shown in Figure 3) is maintained to the specifications detailed in Appendix A. During operation, DoE must ensure APZ are managed in perpetuity.	<ol style="list-style-type: none"> 1. To meet the specifications for APZ (10kW/m²) 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.	<ol style="list-style-type: none"> 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	<p>Prior to occupation, DoE are to ensure the proposed building designed and constructed to the relevant NCC requirements including BAL-19 based on the construction specifications detailed in AS 3959-2018 and additional ember provisions detailed in section 7.5 of PBP as required.</p> <p>At commencement of construction and during operation, DoE to ensure fencing within 6 m of the building to be constructed of non-combustible material only.</p>	<ol style="list-style-type: none"> 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
D / C	Access	During design and prior to operation, DoE must ensure the upgrades to the internal loop road meet the specifications detailed in Section 4.4.1 of this report.	<ol style="list-style-type: none"> 1. To meet the performance criteria for access under PBP. 2. Firefighting vehicles are provided with safe, all-weather access to structures and hazard vegetation. 	4.4
D / C / O	Water Supplies	Prior to operation, DoE to ensure fire hydrants are provided in accordance with AS2419:2021.	<ol style="list-style-type: none"> 1. To meet the specifications for water supply under PBP. 2. An adequate water supply for firefighting purposes is installed and maintained. 	4.5
N/A	Electricity Services	No response required as electricity supply located underground.	N/A	4.6
N/A	Gas Services	No response as gas services will not be installed.	N/A	4.7
O	Emergency Management	<p>Prior to operation, DoE to update Bushfire and Grassfire Response Plan including:</p> <ol style="list-style-type: none"> 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 H 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). 	<ol style="list-style-type: none"> 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	<p>Prior to operation, DoE to:</p> <ol style="list-style-type: none"> 1. Install clear signage to the new building and identifying it is the designated 'shelter-in-place'; 2. Ensure external combustible items located away from windows/doors (landscaping, hard landscaping, bins, out buildings etc.); and 	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
		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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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: Tall heath to the north



Photo 2: Tall heath to the north



Photo 3: Tall heath to the north



Photo 4: Tall heath to the north

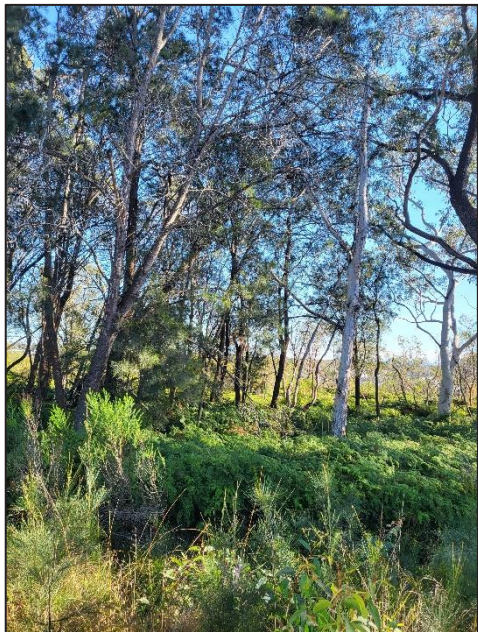


Photo 5: Tall heath to the north-west



Photo 6: Tall heath to the north-west



Photo 7: Vegetation along northern boundary



Photo 8: Vegetation along northern boundary



Photo 9: Vegetation to north-east within site.



Photo 10: Vegetation to north-east within site.



Photo 11: Vegetation to western boundary



Photo 12: Vegetation to western boundary



Photo 13: Vegetation to western boundary



Photo 14: Vegetation to western boundary



Appendix C – Access Standards

Table 15: SFPP Class 9 access requirements (adapted from Table 3 of Addendum 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 detail.
	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 detail.
	Must provide reasonable pedestrian access from the vehicular access to the building; and	To comply The building will be designed to incorporate a 1.5 m non-combustible pedestrian pathway around perimeter of the building and access paths to open space and carpark areas (Figure 2).
	Must have a load bearing capacity and unobstructed height to permit the operation and passage of fire fighting vehicles; and	Complies The existing entry/exit road off The Wool Road provides load bearing capacity and unobstructed height to permit operation of buses which are much heavier/higher than a Category 1 firefighting vehicles. As such, the existing access is considered compliant.
	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 detail.

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

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 Road will be sealed, two-wheel drive and all-weather
	Access is provided to all structures;	Complies Refer Figure 6 and Section 4.4.1 for detail.
	Traffic management devices are constructed to not prohibit access by emergency services vehicles;	To comply Detail not provided at this stage.

Performance Criteria	Acceptable Solutions	Compliance notes
	Access roads must provide suitable turning areas in accordance with Appendix 3; and	Not applicable Refer Figure 6. Access roads are all through/loop roads.
	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 one-way public 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.	Satisfies performance criteria The proposed road capacity will be 15 t as detailed in Section 4.4.1.
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;	Complies Refer Figure 7. Hydrants are not located within the 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 Fire hydrants will be provided in accordance with AS2419:2021 (Figure 7).
	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 serviced by reticulated water supply.

Table 17: Perimeter road requirements (adapted from Table 6.8b of PBP)

Performance Criteria	Acceptable Solutions	Compliance Notes
The intent may be achieved where:		
Access roads are designed to allow safe access and egress for firefighting vehicles while residents are evacuating as well as providing a safe operational environment for emergency service personnel during firefighting and emergency management on the interface.	Are two-way sealed roads;	Complies. Refer Figure 6 and Section 4.4.1 for detail.
	Minimum 8m carriageway width kerb to kerb;	Complies Refer Figure 6 and Section 4.4.1 for detail.
	Parking provided outside of the carriageway width;	Complies Refer Figure 6 and Section 4.4.1 for detail.
	Hydrants are located clear of parking areas;	Complies Refer Figure 7. Hydrants are not located within the road carriageway.
	There are through roads, and these are linked to the internal road system at an interval of no greater than 500m;	Complies Refer Figure 6, proposed loop road connects with The Wool Road at an interval <500 m.
	Curves of roads have a minimum inner radius of 6m;	To comply Detail not provided at this stage.
	The maximum grade road is 15 degrees and average grade is 10 degrees;	
	The road crossfall does not exceed 3 degrees;	
	A minimum vertical cleared of 4m to any overhanging obstructions, including tree branches, is provided.	

Appendix D – RFS Pre-DA Advice

Pre DA application - Vincentia High School upgrades

MW

Martin Webster <Martin.Webster@rfs.nsw.gov.au>

To

South, Natalie

Reply

Reply All

Forward

Tue 14/01/2025 11:24 AM

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You don't often get email from martin.webster@rfs.nsw.gov.au. [Learn why this is important](#)

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Hi Natalie,

From the summary of issues outlined in your Pre-DA application I gather that the key issue is that the proposal cannot meet the acceptable solutions of the 2022 Addendum to PBP regarding access.

When the acceptable solutions in the 2022 Addendum to PBP cannot be met, a bushfire report can propose a performance solution to meet the performance criteria in the addendum. The measures outlined in your Bushfire Design Brief appear to provide the foundation of an appropriate performance based solution.

Given the risk profile of the site I would recommend providing clear signage and incorporating an opportunity for brigade familiarisation as part of the Emergency Management Plan.


While the RFS is prepared to consider varying the requirements for access the other requirements of Specification 43 would remain.

For future reference an expansion of a school, on a site exposed to significant risk, of 381 students is not considered insignificant by the RFS. Any variation from the acceptable solutions will need to be thoroughly justified.

Regards,
Marty.



Marty Webster

Development Assessment and Planning Coordinator | Planning & Environment Services (South)



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