

# HYDRAULIC INFRASTRUCTURE SERVICES REPORT

Vincentia High School upgrade

**Prepared for: NSW Department of Education (DoE)**

**Document no: VHS-HY-IWMP-001**

**Issue no: Rev E**

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## Revisions

Revision	Description	Date	Prepared by	Approved by	Signature
A	DRAFT	06/12/2024	RE	Rhys Edwards	
B	Final	12/03/2025	RE	Rhys Edwards	
C	Final	27/03/2025	RE	Rhys Edwards	
D	Final	28/03/2025	RE	Rhys Edwards	
E	Final	31/03/2025	RE	Rhys Edwards	

## Review Panel

Division/ Office	Name
Building Services / St Leonards	Rhys Edwards

Unless otherwise advised, the parties who have undertaken the Review and Endorsement confirm that the information contained in this document adequately describes the conditions of the site located at Vincentia High School, NSW.

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## 1 Introduction

This **Hydraulic Services Infrastructure Report** Factors (REF) for the NSW Department of Education (DoE) for Vincentia High School upgrades (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 outline how the potable (drinking) water and wastewater is to be collected and disposed off for the Vincentia High School upgrade.

## 2 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 P809057 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, 2025

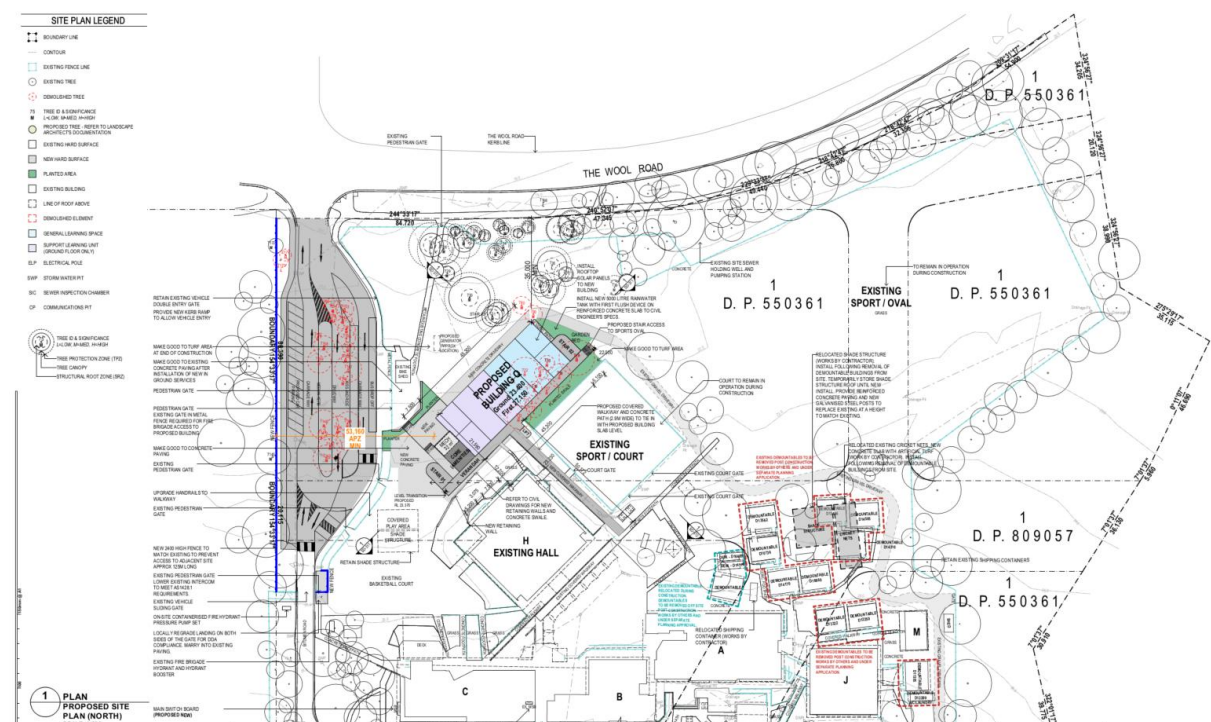
### 3 Proposed Activity Description

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.

Figure 2 Site Plan



### 4 Consultation

In preparing this report, the following stakeholder consultations were undertaken:

**Table 2 – Utility Services Consultation**



Agency / Stakeholder	Date	Form of consultation	Key matters raised	Project Response
Shoalhaven City Council	17/07/2024	Application	Water supply adequacy	Results received from council. As appended to this report
Shoalhaven City Council	Aug 2025	Application	Request for internal drainage network plans	Local council does not have any documentation on file

## 5 Utility Services Assessment

For the Vincentia High School upgrade, the site infrastructure strategy will be designed to be a site wide network with main connections being established wholly within the site boundary. Connection to the Utility Services providers assets is not required.

Authority (utility) services adequacy is summarized within the table below:-

**Table 3 – Utility Services Adequacy summary**

Sewer	Potable / Drinking Water
Authority mains are adequate Sewer Rising main from the school connects local authority sewer at the intersection of The Wool Rd and St George Ave (approx. 900m East-North-East of the school) Augmentation is not required	Existing supply mains in the surrounding streets have suitable flow and pressure Augmentation is not required

Note: more detailed analysis is provided in the sections below.

## 6 Standards and Design Guides

### 6.1 Australian Standards and Codes

The following lists the primary standards and codes our design approaches are reliant upon:

- National Construction Code (NCC) – 2022
- Plumbing Code of Australia (PCA) – 2022
- Building Code 2016
- AS 3500 Plumbing and Drainage Suite of standards – 2021
- AS 1670.4 Emergency Warning and Intercom Systems – 2018 amendment 1
- AS 1668.1-2015 The use of ventilation and air-conditioning in buildings – Fire and smoke control in multi-compartment buildings
- AS 2865-2009 Confined spaces

## 7 Scope of Services

Scope of services covered within this plan include:

- Sewage and sanitary waste discharge

- Roof water plumbing and drainage systems connecting to existing civil trunk stormwater
- Potable / drinking water supply systems

Hydraulic services can be summarised as follows:

- Consultation with relevant utility supply agencies was conducted to verify the condition, capacity, compliance, reliability and efficiency of the existing sewer and water mains.
- Sewer and sanitary waste discharge from the proposed building is to discharge to existing site infrastructure (internal 'house drainage' system) in accordance with AS.3500 Part 2 and local authority requirements
  - Refer to Appendix 'A' of this report for layout of site infrastructure
- Water supply provided will be in accordance with Australian Drinking Water Guidelines (2011, updated 2016, version 3.4) and AS3500 Part 1 and Part 4
  - Refer to Appendix 'A' of this report for layout of site infrastructure
- Water pressure/flow results were obtained from Shoalhaven City Council
  - Refer to Appendix 'B' of this report
    - Dated Jul 2024
- Natural gas supply will not be provided – this is a fully electrified development
- Rainwater from roof areas is not to be collected, stored and re-used
  - Liaison with the Asset Management Unit (AMU) resulted in there being an adequate level of irrigation water currently on site
- Rainwater will drain/discharge through a series of rainwater outlets and eaves gutters systems designed in accordance with AS3500 Part 3
- Ecological Sustainable Development (ESD) principles will be incorporated into the designs and the construction of the development as per the agreed sustainability pathway and targets

## 8 Site Servicing

### 8.1 Wastewater

All wastewater from the school is collected in existing sewer holding wells with a sewer rising main connection to the authority asset in St George Ave.

The existing demountable building(s) which are planned to be removed to allow the siting of the proposed building are provided with a gravity sewer drainage connection, which is adequately sized for the proposed building. This existing service will be connected onto.

The proposed building demand has been based on:

- 20L/day sewer discharge per student
- 25L/day sewer discharge per staff

The current school staff and pupil population will be unchanged, as such does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

Refer to Appendix 'A' of this report for layout of site infrastructure

### 8.2 Potable Water

The proposed site has frontage to a Shoalhaven City Council water supply asset

- 150 mm diameter Authority drinking water supply in The Wool Road

The existing demountable building(s) which are planned to be removed to allow the siting of the proposed building are provided with a potable water supply connection, which is adequately sized for the proposed building. This existing service will be connected onto.

The proposed building demand has been based on:

- 25L/day water use per student
- 30L/day water use per staff

The current school staff and pupil population will be unchanged, as such does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

Refer to Appendix 'A' of this report for layout of site infrastructure

The performance of the authority water supply for drinking purposes is adequate for the proposed development. No authority water supply augmentation is required.

### 8.3 Natural Gas Supply

Natural gas supply is not being provided.

### 8.4 Roof Water Plumbing and Drainage

Roof water plumbing from proposed building roof areas will be designed to convey the roof water down to the lowest level where it will be discharged into the main civil stormwater trunk main system. It is envisaged that there will be multiple connections. The roof drainage system will be based on an Annual Recurrence Interval (ARI) of 1 in 20yr with a 5-minute duration. All roofed areas will have an independent overflow system which has 100 % capacity of the primary downpipe system. This rainfall ARI is compatible for buildings with eaves gutters.

Stormwater is directed to site infrastructure and then to local council / authority drainage pipes which are carrying large volumes of upstream stormwater. (Refer to the Project's Civil Engineers Report).

## 9 Utility Service Provider - Handover

Whilst undertaking the assessment of the existing site infrastructure and the adequacy of the existing utility services provider assets for the Activity, it is determined that all services are contained wholly within the site and will be maintained and operated by The Minister for Education and Early Learning.

Furthermore, the appropriate mitigation measures have been implemented to ensure that there are no significant impacts on the locality, community and/or the environment.

## 10 Mitigation Measures

The Mitigation Measures for Vincentia High School upgrade that are applicable for Hydraulic Services are summarised in Table 1 below:

**Table 4 – Mitigation Measures**

Project Stage	Mitigation Measures	Reason for Mitigation Measure	Relevant Section of Report
D / C	Site infrastructure upgrades to be cognisant of existing tree root exclusion zone(s)	To avoid any new site infrastructure passing through the tree exclusion zones and affecting life span of existing trees	Section 8 Clause 8.1 Clause 8.2



<b>D / C / O</b>	Service provider assets requiring handover	Appropriately inform the service provider of any assets that they are required to operate and maintain following completion of the Activity	Section 9
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\*Note: Project stages include:

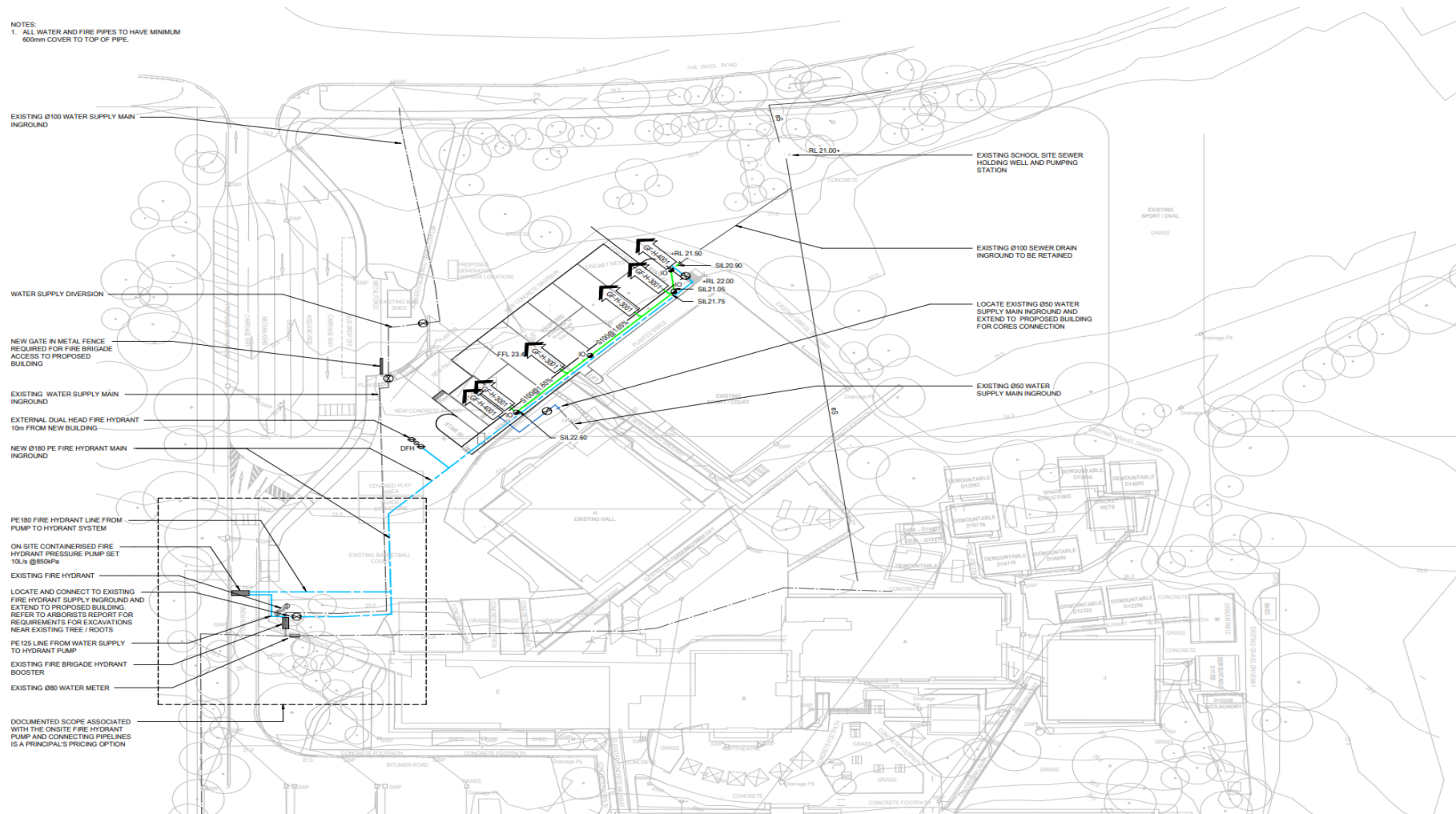
- (D) Design
- (C) Construction
- (O) Operation

## 11 Conclusion

The assessment of the existing site infrastructure concludes that there is no augmentation required. Furthermore, the appropriate mitigation measures have been implemented to ensure that there are no significant impacts on the locality, community and/or the environment.

## Appendix A - Hydraulic Services Site Infrastructure

NOTES:  
1. ALL WATER AND FIRE PIPES TO HAVE MINIMUM 600mm COVER TO TOP OF PIPE.



## Appendix B - Drinking Water – Pressure & Flow Information



Address all correspondence to: The Chief Executive Officer,  
PO Box 42, Nowra NSW 2541 Australia  
[shoalhaven.nsw.gov.au/contact](mailto:shoalhaven.nsw.gov.au/contact) | 1300 293 111

[shoalhaven.nsw.gov.au](http://shoalhaven.nsw.gov.au)     

Council Reference: 2557E/7 (D24/295234)

17/07/2024

ACOR  
33 Herbert St  
ST LEONARDS NSW 2065

By email only: [kadamson@acor.com.au](mailto:kadamson@acor.com.au)

Dear Madam

### Water Pressure Certificate – Lot 2 DP 793394 – 16 George Caley Place Vincentia

In response to your water main pressure inquiry on the above lot for fire-fighting purposes, the following information is provided:-

Watermain under normal conditions			Watermain under normal conditions (Hose Reel Flow)		Watermain pressure under normal conditions & provision of AS2419.1 (Hydrant Flows)				
Pressure (m)			Pressure (m)		Minimum Residual Pressure (m)				
Static		Minimum	0.33 l/sec	0.66 l/sec	5 l/s	10 l/s	20 l/s	30 l/s	40 l/s
Max	Min	Pressure							
52.5	52.5	51.35	51.28	51.20	49.62	46.53	36.32	20.77	-
Minimum Pressure Based on WATSYS Hydraulic Model				Huski-Vin 141122.WDT					
Approximate Ground Level (AHD)				19.5 m					
Watermain serving property (NS)				DN150 UPVC					

These results are not to be construed as an indication of availability of water supply for any proposed development, redevelopment or subdivision.

The above information provided is valid for the next 12 months from the date of this letter. Changes to the operation of the water supply system may take place from time to time.

Council's Level of Customer Service stipulate a minimum pressure of 15m at our water reticulation mains to 95% of all residential connections under normal operating conditions during summer whilst conveying a minimum of 9 litres per minute, except during fire-fighting and in areas designated as low pressure areas by Council.

Although the minimum pressure heads quoted may be higher than 15 metres, these pressures may not always be available. There may also be short term operational events, resulting to changes to pressures, which Council endeavours to minimise.

## Appendix C - Local Council Response to request for internal drainage plans



Bridge Rd, Nowra NSW 2541 02 4429 3111  
Deering St, Ulladulla NSW 2539 02 4429 8999

Address all correspondence to  
The General Manager, PO Box 42, Nowra NSW 2541 Australia  
DX5323 Nowra Fax 02 4422 1816

**Drainage Diagram**  
**CONVEYANCING ACT 1919**  
**Certificate No: 2024/02684**

**Issued to:** Katie Adamson  
Level 1  
33 Herbert Street  
St Leonards

**Receipt No.:** Ext: 186100  
**Date:** 14/08/2024  
**Fee:** \$327.90

**Applicants reference:** ACOR

**Owner(s):**  
Dept Of Education 55 Market Street SYDNEY NSW 2000

**Property:**  
Lot 1 DP 595313, 55 South St, ULLADULLA  
Parish of ULLADULLA, County of ST. VINCENT Area: 6.54 ha

I refer to your recent request for an Internal Drainage Diagram for the above mentioned property.

A search of Council's records has been conducted which indicates that there is insufficient documentation on file to have a drainage diagram drawn and therefore no further information is available.

Please note that as a thorough search was undertaken, with regard to this matter, all application fees paid have been expended and subsequently no refund will be forthcoming.

If you need any further information about this matter, please contact Planning Environment & Development on (02) 4429 3211.

**Planning Environment & Development Group**  
**Shoalhaven City Council**