

INTEGRATED WATER MANAGEMENT PLAN HYDRAULIC SERVICES

Upgrades to Northmead Public School

Prepared for: Department of Education (DoE)

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Revisions

Revision	Description	Date	Prepared by	Approved by	Signature
A	DRAFT REF	12/12/2024	RE	Rhys Edwards	
B	REF	5/02/2025	RE	Rhys Edwards	
C	REF - IWMP	21/02/2025	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 Northmead Public School, NSW.

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Table of Contents

1	Introduction	4
2	Proposed Activity Description	4
	2.1 Activity Site	4
3	Consultation	5
4	Mitigation Measures	5
5	Utility Services Assessment	6
6	Standards and Design Guides	6
	6.1 Australian Standards and Codes	6
7	Scope of Services	6
8	Site Servicing	7
	8.1 Wastewater	7
	8.2 Potable Water	7
	8.3 Natural Gas Supply	8
	8.4 Roof Water Plumbing and Drainage	8
9	Evaluation of Environmental Impacts	8

Appendices

Appendix A - Hydraulic Services Site Infrastructure – Sewer Diversion	9
Appendix B - Hydraulic Services Site Infrastructure – Proposed	10
Appendix C - Drinking Water – Pressure & Flow Information	11

1 Introduction

With regard to Section 170, Section 171 and Section 171A of the *Environmental Planning and Assessment Regulations 2021* EP&A Regulation (attached), each consultant is to satisfy themselves that their respective plans/reports suitably address the statutory requirements.

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

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

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

2 Proposed Activity Description

The proposed activity for upgrades to Northmead Public School includes:

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

2.1 Activity Site

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

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

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

Figure 1 is an aerial photograph of the site.



Figure 1: Aerial Photograph

3 Consultation

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

Agency / Stakeholder	Date	Form of consultation	Key matters raised	Project Response
Sydney Water	01/08/2024	Application	Water supply adequacy	Results received from Sydney Water. As appended to this report

4 Mitigation Measures

The Mitigation Measures for upgrades to Northmead Public School that are applicable for Hydraulic Services are summarised in Table 1 below:

Table 1 – 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

*Note: Project stages include:

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

5 Utility Services Assessment

For the upgrades to Northmead Public School, 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 2 – Utility Services Adequacy summary

Sewer	Potable / Drinking Water
Authority mains are adequate The existing sewer connection for the site is located approx. 110m south of Moxham's Rd, along the western site boundary Augmentation is not required	Existing supply mains in the surrounding streets have suitable flow and pressure The site is served by the water main located in Moxhams Road. 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 is to be 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 and B' of this report for indicative 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 'B' of this report for indicative layout of site infrastructure
- Water pressure/flow results was obtained from Sydney Water
 - Refer to Appendix 'C' of this report
 - Dated Aug 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
- 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 new building will be extended to the south- boundary and make connection to the existing sewer outfall for the site via gravity. (No pumping is required).

The existing site infrastructure is required to be diverted to unencumber the building site and will avoid passing through any of the tree root exclusion zones.

The proposed building demand has been based on:

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

This criterion does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

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

8.2 Potable Water

The proposed site has frontage to a Sydney Water water supply asset

- 100 mm diameter Authority drinking water supply in Moxhams Road

The proposed building is provided with a potable water supply connection, which is adequately sized for the proposed building extending from the existing site infrastructure. The route of the proposed new reticulation will avoid passing through any of the tree root exclusion zones.

No new connections are required to the utility services provider asset.

The proposed building demand has been based on:

- 25L/day sewer discharge per student
- 30L/day sewer discharge per staff

This criterion does not increase the load on the existing site infrastructure nor the Utility Services Provider's Asset.

Refer to Appendix 'B' of this report for indicative 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 20years 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.

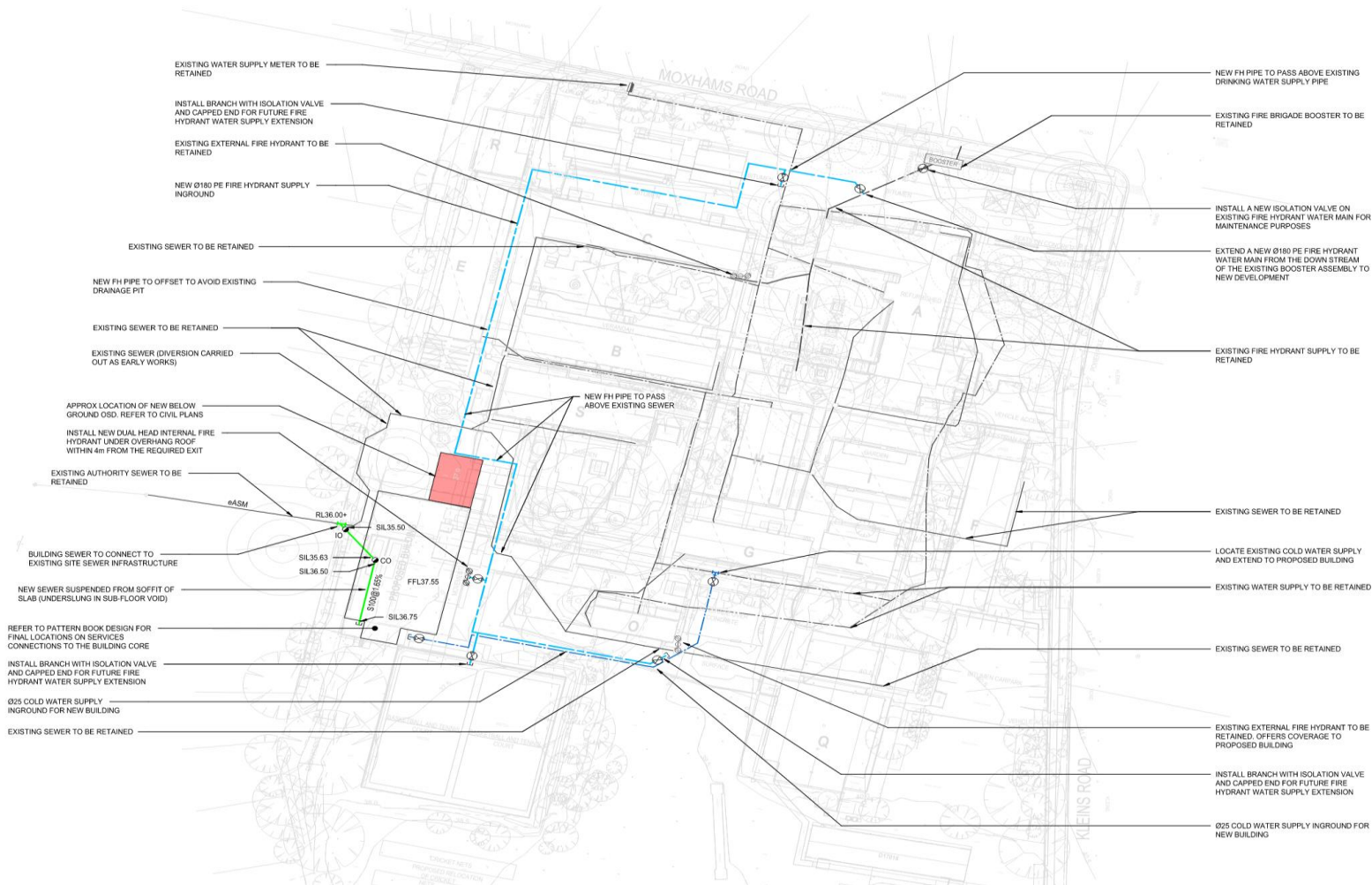
Stormwater is directed to site infrastructure and then to local council / authority drainage pipes which are carrying large volumes of upstream stormwater. (Refer to the Project's Civil Engineers Report).

There is no intent to capture and reuse rainwater.

9 Evaluation of Environmental Impacts

Whist 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 can be adequately mitigated or minimised through the required mitigation measures such that the activity will not have a significant effect on the environment.

Appendix B - Hydraulic Services Site Infrastructure – Proposed



Appendix C - Drinking Water – Pressure & Flow Information



Statement of Available Pressure and Flow

Katie Adamson
33 Herbert Street
St Leonards, 2065

Attention: Katie Adamson

Date: 01/08/2024

Pressure & Flow Application Number: 1929776
Your Pressure Inquiry Dated: 2024-07-12
Property Address: Moxhams Road, Northmead 2152

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

ASSUMED CONNECTION DETAILS

Street Name: Moxhams Road	Side of Street: North
Distance & Direction from Nearest Cross Street	36 metres West from Kliens Road
Approximate Ground Level (AHD):	44 metres
Nominal Size of Water Main (DN):	100 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	101 metre head
Minimum Pressure	49 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	48
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	56
	15	53
	20	50
	23	47
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	43
	15	39
	20	35
Maximum Permissible Flow	23	31

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

hydraulicassessment@sydneywater.com.au