

REVIEW OF ENVIRONMENTAL FACTORS (REF) HYDRAULIC SERVICES

New primary school at Wilton Junction

Prepared for: NSW Department of Education (DoE)





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Revisions

Revision	Description	Date	Prepared by	Approved by	Signature
A	DRAFT REF	23/01/2025	RE	Rhys Edwards	
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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 Wilton Junction, NSW.

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1 Introduction

This hydraulic services report has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the construction and operation of the new primary school at Wilton Junction (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 3.37A 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 of for the new primary school at Wilton Junction.

2 Site Description

The current street address is 200 Fairway Drive, Wilton, 2571, NSW. The site forms part of the northern portion of Lot 1063 in Deposited Plan 1289197) that was previously subdivided by Landcom. The site is approximately 3.4ha hectares in size and is located within Wilton Junction which is part of the North Wilton Precinct.

As a result of precinct wide rezonings, the surrounding locality is transitioning from a semi-rural residential area to a highly urbanised area with new low to medium density residential development with supporting services. North Wilton Precinct is approximately 85km south-west of the Sydney CBD, 30km north-west of Wollongong and 30km southwest of Campbelltown-Macarthur Strategic Centre. The precinct is located on the interchange with the Hume Highway, which connects the Southern Highlands with the Sydney metropolitan region to the northeast and Canberra to the south-west.

The proposed school site does not currently have road access, however Landcom is expected to deliver the road network and surrounding public domain network in accordance with DA/2022/1279/1. Proposed Road 14 located on the eastern boundary of the site will ultimately provide future access to the site. The site contains several patches of remnant native vegetation particularly within the northern portion of the site. The central part of the site has been predominantly cleared and consists of grassland. An aerial photograph of the site is provided at **Figure 1**.

Figure 1 Aerial Photograph of the Site



Source: Source: Urbis, 2024

Proposed Activity Description

The proposed activity is for the construction and operation of a new primary school at Wilton Junction which will accommodate up to 552 students and 35 staff. Additionally, the proposal includes an integrated pre-school which will capacity for up to 60 students and 7 staff. In total, the new school will support up to 612 students and 42 staff.

The new school includes general and support learning spaces, a library, administrative areas and a staff hub. Core facilities include a standalone school hall and canteen, two carparks and a sports court.

Specifically, this proposal includes the following:

- Construction of a 3-storey learning hub which includes:
 - 24x General Learning Spaces
 - 3 x Support Learning Spaces
 - Staff hub including administrative areas and library.
 - Integrated public pre-school.
- Standalone hall and COLA with outside of school hours care (OSHC).
- Associated landscaping including sports court and separate outdoor play space for the preschool.

- Associated site utilities and services including installation of new 1500 kVA padmount substation and a new main switchboard.
- Main car park to the south of the site with 33 car spaces (including one accessible space).
- Separate car park for pre-school located to the north of the school with 18 spaces (including one accessible space).
- Main school pedestrian entrance proposed off Road 14.
- Earthworks.

Figure 2 Proposed Site Plan



Source: PTW, 2025

3 Mitigation Measures

The Mitigation Measures for the new primary school at Wilton Junction, 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
D / C / O	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

*Note: Project stages include:

(D) Design

(C) Construction

(O) Operation

4 Consultation

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

Agency / Stakeholder	Date	Form of consultation	Key matters raised	Project Response
Landcom	03/12/2024	Enquiry	adequacy of assets to meet the estimated demands	Nil

5 Utility Services Assessment

For the new primary school at Wilton Junction, 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 required.

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

Table 2 – Utility Services Adequacy summary

Sewer	Potable / Drinking Water	Recycled Water	Fire Water Supply
Authority mains are deemed to be adequate	Authority mains are deemed to be adequate	Authority mains are deemed to be adequate	Authority mains are deemed to be adequate
Augmentation is not envisaged	Augmentation is not envisaged	Augmentation is not envisaged	Augmentation is not envisaged

Note 1: more detailed analysis is provided in the sections below.

Note 2: information from Landcom is pending to enable confirmation of utility services providers asset performance

The following demands for each utility asset have been provided to Landcom for their confirmation:

Table 3 – Utility Services Performance Criteria

Sewer	Potable / Drinking Water	Recycled Water	Fire Water Supply
22.4 kL/day (students)	28 kL/day (students)	2 L/s @ 350 kPa (min)	30 L/s @ 500 kPa
8.4 kL/day (Staff)	10.8 kL/day (staff)		
	2.5 L/s @ 350 kPa (min) for peak demand		

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 2419.1 Fire hydrant installations - 2021
- AS 3500 Plumbing and Drainage Suite of standards – 2021

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
- Recycled water supply systems

- Fire hydrant 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 buildings are to discharge to all new 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 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 'A' of this report for indicative layout of site infrastructure
- Water pressure/flow criteria provided to Landcom
- Natural gas supply will not be provided – this is a fully electrified site
- Rainwater from roof areas is 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 activity as per the agreed sustainability pathway and targets

8 Site Servicing

8.1 Wastewater

All wastewater from the new buildings will be extended to the south-east boundary and make connection to the sewer outfall for the site via gravity. (No pumping is required).

The proposed building demand has been based on:

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

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

The performance of the authority drainage is deemed to be adequate for the proposed activity.

8.2 Potable Water

The proposed site is to be provided with a potable water supply connection, which is adequately sized for the proposed site extending from an authority supply connection in the south-east corner of the site.

The proposed building demand has been based on:

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

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

The performance of the authority water supply for drinking purposes is deemed to be adequate for the proposed activity.

8.3 Natural Gas Supply

Natural gas supply is not being provided.

8.4 Fire Protection Water

The proposed site is to be provided with a fire water supply, which is to be adequately sized for the proposed site extending from an authority recycled water supply connection in the south-east corner of the site.

The proposed building demand has been based on:

- 30L/s
- 500 kPa

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

The performance of the authority recycled water supply for fire-fighting purposes is deemed to be adequate for the proposed activity.

8.5 Recycled Water

The proposed site is to be provided with a recycled water supply, which is to be adequately sized for the proposed site extending from an authority recycled water supply connection in the south-east corner of the site.

The proposed landscape irrigation demand and rainwater tank top-up has been based on:

- 2L/s
- 350 kPa

The performance of the authority recycled water supply for irrigation purposes is deemed to be adequate for the proposed activity.

8.6 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.

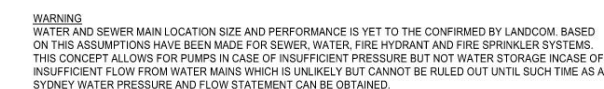
Stormwater is directed to site infrastructure and then to local council / authority drainage pipes which are carrying large volumes of upstream stormwater. (Refer to the Project's Civil Engineers Report).

Some areas of the building roofs will have their rainwater harvested and reused. The intent is for a centralised inground rainwater storage tank (approx. 10 kL) to distribute recycled water for sanitary fixture flushing (Water closets and urinals) and landscape irrigation.

9 Evaluation of Environmental Impacts

Whilst undertaking the assessment of the proposed activity's site infrastructure and the adequacy of the planned 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, with the exception of the incoming water supplies (Potable and Recycled). The project has an undertaking to install the water supplies below Road 14, however these pipelines will be owned and operated by the services provider at the time of project handover to Ministry of Education.

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



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