Parramatta over and adjacent station development

Addendum Station Utilities & Infrastructure Servicing Assessment

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sydneymetro.info

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Amendment Record

DATE	REVISION	AMENDMENT DESCRIPTION	AUTHOR
17/5/2024	A	Response to EIS utilities authorities' comments	Adria De Borja

Mott MacDonald Australia Pty Ltd

Glossary

Term	Definition
ASD	Adjacent Station Development
Catchment	The land area draining through the mainstream, as well as tributary streams, to a particular site. It always relates to an area above a specific location.
CBD	Central business district
CoA	Conditions of Approval
Concept and Stage 1 CSSI Approval	SSI-10038, approved 11 March 2021, including all major civil construction works between Westmead and The Bays, including station excavation and tunnelling, associated with the Sydney Metro West railway line
Concept SSDA	A concept development application as defined in Section 4.22 the EP&A Act, as a development application that sets out concept proposals for the development of a site, and for which detailed proposals for the site or for separate parts of the site are to be the subject of a subsequent development application or applications.
CoPC	City of Parramatta Council
CSSI	Critical State Significate Infrastructure
DPHI	Department of Planning, Housing and Infrastructure
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	NSW Environmental Protection Authority
GFA	Gross floor area
OSD	Over Station Development
RFI	Request For Information
SEARs	Secretary's Environmental Assessment Requirements
SSDA	State Significant Development Application
SSI	State Significant Infrastructure
Stage 2 CSSI Approval	SSI-19238057, approved 24 August 2022, including major civil construction works between The Bays and Sydney CBD including station excavation and tunnelling, associated with the Sydney Metro West railway line
Stage 3 CSSI Approval	SSI-22765520, approved 25 January 2023, including rail infrastructure, stations, precincts and operation of the Sydney Metro West line
SMW	Sydney Metro West: Construction and operation of a metro rail line and associated stations between Westmead and the Sydney CBD

Term	Definition
The site	The Parramatta Over and Adjacent Station Development site

Executive summary

This addendum to the Utilities and Infrastructure Servicing Assessment report supports a Concept State Significant Development Application (Concept SSDA) submitted to the Department of Planning and Environment (now Department of Planning, Housing and Infrastructure (DPHI)), pursuant to part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Sydney Metro is seeking to secure approval within the meaning of section 4.22 of the EP&A Act, for an over station development (OSD) and adjacent station development (ASD). The Concept SSDA is seeking consent for maximum building envelopes, proposed land uses, maximum building heights, maximum Gross Floor Area (GFA) and car parking. The proposed development comprises four buildings (Buildings A, B, C and D), consisting of three new commercial office buildings (Buildings A, C and D) and one residential accommodation building (Building B).

The Concept SSDA was lodged with the DPHI on 10 November 2022 and was placed on public exhibition for 28 days between 16 November 2022 and 13 December 2022. In total, advice was received from 11 State and local government agencies and 15 submissions were received from key stakeholders, community organisations and the community.

DPHI issued a letter to Sydney Metro on 16 December 2022 requesting a response to the issues raised during the public exhibition of the application. DPHI also issued a further Request for Further Information (RFI) on 6 February 2023 and the Submissions Report provides a response to these matters.

This addendum report addresses utilities and infrastructure related issues raised in agency advice from Sydney Water and Endeavour Energy. Through this addendum, the wastewater assessment has been undertaken to demonstrate that the current performance of the wastewater system does not deteriorate in both dry and wet weather as the results of the additional demand required from the proposed development.

It is recommended that the Detailed SSDA preparation includes additional consultation with Sydney Water, similarly, outlined in the Parramatta Over and Adjacent Station Development EIS Appendix FF – Utilities and Infrastructure Report (Sydney Metro, 2022).

Given the concept level of design, it is unclear whether there will be adequate capacity available for the time the proposed development would become operational. Once the quantum of development to be constructed is known and it has planning certainty at the Detailed SSDA stage, the Section 73 application can be made and any need for reticulation amplification and/or minor extensions can be determined with more certainty.

1 Introduction

This addendum to the Utilities and Infrastructure Servicing Assessment supports a Concept State Significant Development Application (Concept SSDA) submitted to the Department of Planning, Housing, and Infrastructure (DPHI) pursuant to part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Sydney Metro is seeking to secure approval within the meaning of section 4.22 of the EP&A Act, for an over station development (OSD) and adjacent station development (ASD). The Concept SSDA is seeking consent for maximum building envelopes, proposed land uses, maximum building heights, maximum Gross Floor Area (GFA) and car parking. The proposed development comprises four buildings (Buildings A, B, C and D), consisting of three new commercial office buildings (Buildings A, C and D) and one residential accommodation building (Building B).

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DPHI issued a letter to Sydney Metro on 16 December 2022 requesting a response to the issues raised during the public exhibition of the application. DPHI also issued a further Request for Further Information (RFI) on 6 February 2023 and the Submissions Report provides a response to these matters.

Advice from NSW government agencies have been received in response to the Concept SSDA EIS. This addendum report addresses utilities related issues raised in agency submissions from Sydney Water and Endeavour Energy.

This addendum to the Utilities and Infrastructure Servicing Assessment responds to comments raised in submissions received during the public exhibition of the Concept SSDA submitted to DPHI.

This addendum report is broken down into the following chapters:

- *Chapter 1 – outlines an introduction to the project and this report.*
- *Chapter 2 – outlines the submissions or advice received from public authorities and Sydney Metro's response to the issues raised.*
- *Chapter 3 – outlines an updated wastewater assessment following advice from Sydney Water*
- *Chapter 4 – provides a conclusion to the report, summarising the outcomes within the report.*

This report should be read in conjunction with the Parramatta Station Over and Adjacent Station Development Environmental Impact Statement Appendix FF - Utilities & Infrastructure Report (Sydney Metro, 2022) which details the methodology and the applicable industry guidelines.

2 Response to submissions

During public exhibition, agency advice was received from Sydney Water and Endeavour Energy on the Concept SSDA. The issues raised and proposed responses outlined in this chapter.

Section 2.1 and 2.2 outlines how the agency submission comments from Sydney Water and Endeavour Energy have been addressed.

2.1 Sydney Water advice

2.1.1 Service capacity

Sydney water commented that:

- *the water system should have adequate capacity to service the proposed development.*
- *Amplifications, adjustments, and/or minor extensions may be required.*

Response

Sydney Water's comment is acknowledged. No further information is required to be included in this addendum.

Sydney Water response to feasibility application (Feasibility letter case 204469, dated 24 April 2023) advised the water main on Macquarie Street is available to service the proposed development. Further assessment shall be carried out with the Section 73 application which shall be lodged at Detailed SSDA phase.

2.1.2 Capacity of wastewater system

Sydney water commented that:

- *The proposed development is within Parramatta SCAMP and is a part of the North Head System. The existing wastewater system should have adequate capacity to service the proposed development.*
- *There is a high-risk overflow structure downstream which could be impacted by the additional discharge resulting from the proposed development. In accordance with EPA requirements, the volume and frequency of spills from high-risk structures should not increase from the baseline.*
- *Due to the constraints above, the proponent must engage a hydraulic consultant to demonstrate that the current performance of the wastewater system does not deteriorate in both dry and wet weather because of the additional demand required from the proposed development. We recommend that this process be started as early as feasible to reduce any construction delays.*

Response

A high-level investigation and calculations were made to estimate the pre-development wastewater discharge. The difference between pre-development and post-development wastewater discharge was identified to guide the required capacity of wastewater detention tanks to prevent overwhelming the existing wastewater system.

2.1.3 Recycled Water

Sydney Water commented that:

- *Sydney Water is currently developing an integrated water management plan for the Greater Parramatta and the Olympic Peninsula (GPOP) Growth Area and is working together with Sydney Olympic Park Authority (SOPA) to seek cost-effective recycled water solutions and continued recycled water service to SOPA's customers.*
- *It is advised that dual-pipe provisions are investigated in line with the wider Greater Parramatta to Sydney Olympic Park (GPOP) recycled water initiatives and the CoPC initiatives identifying new developments that could install dual reticulation systems to support the immediate or future connection to a recycled water network. Dual reticulation systems should be of sufficient size to supply all non-potable water uses of the building.*
- *CoPCs measures for high performing buildings and dual piping for alternative water sources will be instrumental in helping market viability for both public and private water providers and ensuring recycled water usage can be fully optimised across the precinct.*

Response

Sydney Water's integrated water management plan is under development, thus, feasibility of the use of recycled water is unknown at this stage. Current design allowed provisions for future connection to external recycled water systems.

Further consultation with Sydney Water to be undertaken during Detailed SSDA phase.

2.2 Endeavour Energy comment

2.2.1 Easements

Endeavour Energy commented that:

- *Electricity infrastructure on the site for which there are no easements are regarded as protected works under Section 53 'Protection of certain electricity works of the Electricity Supply Act 1995 (NSW) and managed as if an easement is in place.*
- *As a guide, please refer to Endeavour Energy's Mains Design Instruction MDI 0044 'Easements and Property Tenure', Table 1 – 'Minimum easement widths'.*
- *The EIS includes the following addressing easements and other encumbrances.*
- *"Easements and other encumbrances exist on land titles. These will be extinguished, and appropriate easements and covenants created to respond to the final Parramatta integrated station development under the CSSI Approval. Further details of all encumbrances are provided on the site survey at Appendix BB."*
- *All encroachments and/or activities (works within or affecting an easement or protected works (other than those approved/certified by Endeavour Energy's Customer Network Solutions Branch as part of an enquiry/application for load or asset relocation project and even if not part of the Development Application) need to be referred to Endeavour Energy's Easement Officer for assessment and possible approval if they meet the minimum safety requirements and controls. However, please note that this does not constitute or imply the granting of*

approvals by Endeavour Energy to any or all the proposed encroachments and/or activities within the easement.

- *For further information please refer to the attached copies of Endeavour Energy's:*
- *General Restrictions for Underground Cables.*
- *Guide to Fencing, Retaining Walls and Maintenance Around Padmount Substations.*
- *Mains Design Instruction MDI 0044 'Easements and Property Tenure Rights' which deals with activities / encroachments within easements.*

Response

Noted. No further information is required to be included in this addendum.

Further consultation with Endeavour Energy to be undertaken during Detailed SSDA phase to determine the easement allocations and any associated matters relating to the easement (e.g., encroachment etc.)

2.2.2 Adequate Available Electricity Services

Endeavour Energy commented on whether the available electricity services are adequate for the proposed development:

- *The Utilities and Infrastructure Servicing Assessment has concluded that servicing is available to the site with indicative connections for each service being:*
- *Preliminary feedback from Endeavour Energy indicated that the proposed development is within the West Parramatta ZS. Existing electrical services within the site to be made redundant and new hub feeder configurations are to be coordinated with Endeavour once development details for buildings are finalised."*
- *Endeavour Energy's Asset Planning & Performance Branch advised that "An enquiry for the over-station development for the Parramatta Metro station has already been assessed under Technical Review Request ENL4160. As mentioned in the Utilities and Infrastructure Report, the specific details will be arranged through the normal connections process managed by Endeavour Energy's Customer Network Solutions Branch."*

Response

Noted. No further information is required to be included in this addendum.

Endeavour Energy has provided preliminary feedback under Technical Review Request ENL4160 and further consultation with Endeavour Energy in Detailed SSDA stage to be undertaken.

2.2.3 Plantings

Endeavour Energy commented that:

- *The planting of large / deep rooted trees near electricity infrastructure is opposed by Endeavour Energy. Existing trees which are of low ecological significance in proximity of electricity infrastructure should be removed and if necessary, replaced by an alternative smaller planting. The landscape designer will need to ensure any planting near electricity infrastructure achieves Endeavour Energy's vegetation management requirements.*

Response

All public domain works including the portion of the Parramatta Civic Link which runs through the proposed development site form part of the CSSI. Public domain works are not subject to approval under this concept SSDA.

3 Wastewater Assessment

This chapter outlines an updated wastewater assessment following advice from Sydney Water.

3.1 Overview

Sydney Water has advised that there is a high-risk overflow structure downstream, which could be impacted by the additional discharge from the proposed development. In accordance with EPA requirements, the volume and frequency of spills from high-risk structures should not increase from the baseline. Due to this constraint, Sydney Water has advised the proponent to demonstrate that the current performance of the wastewater system does not deteriorate in both dry and wet weather because of the additional demand required from the proposed development.

To demonstrate the above requirement, the following analysis has been undertaken:

- *Undertake hydraulic analysis to confirm the change in wastewater outflow (dry & wet) from the current/existing use and develop an on-lot system (e.g., holding tank) to attempt to not increase the post development flows offsite.*
- *Undertake an external wastewater modelling on the Sydney Water network based on the projected wastewater increase to check the system capacity.*

Approach one has been selected as this does not involves modelling of the Sydney Water network where Sydney Metro does not have the whole Sydney Water network information and/or model from Sydney Water. Sections 3.2 to 3.5 below describes the hydraulic analysis and the development of on-lot systems.

3.2 Pre-Development Profile

An assessment of the catchment profile of the existing site condition has been undertaken to determine the current/existing wastewater outflow from the site This assessment confirms the baseline condition for the next step of the hydraulic analysis. Figure 3-1 below shows the existing catchments/buildings where wastewater from these catchments/buildings discharge to the existing Sydney Water wastewater network. An estimate of GFA been calculated based on the topographical survey information and/or aerial photo. With the use of Google Street View, number of floors have been calculated for each of the catchments/buildings to calculate the total GFA for each of the catchments/buildings.

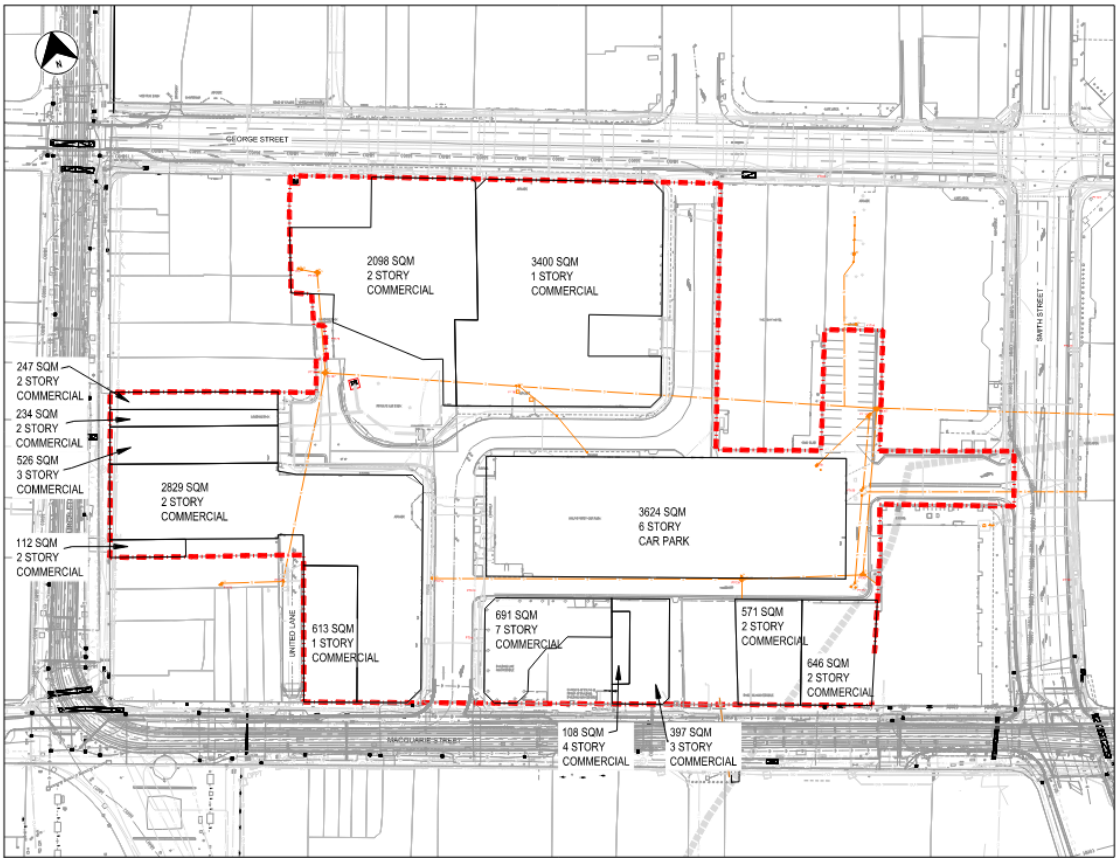

Figure 3-1 Pre-development site plan with building profiles

The estimated pre-development wastewater demand is calculated based on the standard unit rates summarised in Table 3-1 and development yields in Table 3-2**Error! Reference source not found.**. These development yields were calculated with the estimate area taken from survey data and aerial imagery, and virtual visual inspection of the area to evaluate the number of stories and assume building use. This demand assessment is summarised in Table 3-1 and see estimated average day weather flows (ADWF) values in Table 3-3.

Table 3-1 Pre-Development Wastewater Loading Criteria

Land Use	Design Criteria	Unit	Demand Rate	Source
Residential – Single occupancy high density dwelling	ADWF	EP/dwelling	2.5	Gravity Sewerage Code of Australia, WSA 02-2014
Commercial – High density commercial	ADWF	EP/ha (gross)	500	Gravity Sewerage Code of Australia, WSA 02-2014
Retail – Local commercial	ADWF	EP/ha (gross)	75	Gravity Sewerage Code of Australia, WSA 02-2014
BASIX reduction (residential only)	N/A	%	55	Building Sustainability Index

Table 3-2 Demand Assessment Pre-Development Profiles (May 2021)

Investigation Site	Residential Apartments (No.)	Indicative Commercial Space GFA (m2)	Indicative Retail Space GFA (m2)
Parramatta	0	16,717	9,533

Table 3-3 Estimated ADWF for Pre-Development Wastewater including BASIX (L/s)

Location	Residential (incl. BASIX)	Commercial and Retail	Total (L/s)
Estimated ADWF for Pre-Development	0	1.23	1.23

3.3 Post Development Profile

Regarding whether amplification is required post-2026, it is premature to determine whether there will be adequate capacity available for the time the proposed development would become operational. Once the quantum of development to be constructed is known and it has planning certainty at the Detailed SSDA stage, the Section 73 application can be made and any need for reticulation amplification and/or minor extensions can be determined with more certainty. The Sydney Water Growth data form can also be completed at that time.

The indicative development yields based on the architectural targets for the GFA were provided to estimate the future servicing demand. The development profiles for Parramatta, as used for the additional feasibility applications to utility authorities, are shown in Table 3-4 below.

Table 3-4 Demand Assessment Development Profiles (Sydney Metro, 2022)

Residential Apartments (No.)	Indicative Commercial Space GFA (m2)	Indicative Retail Space GFA (m2)	Total GFA (m2)	Development Timeframe (Year)
250	150,000	20,000	195,000	2029-2033*

*Indicative timeframes for this assessment only. Actual timeframes are not confirmed at this stage and are dependent on matters such as timing of statutory approvals and construction program.

The residential, commercial, and retail GFA figures are provided for the purposes of assessing the potential utility infrastructure demands which will formed the basis of the Concept SSDA design. The demands may be subject to change with the design development of the OSD and ASD at the Detailed SSDA stage.

The estimated wastewater demand is calculated based on the standard unit rates summarised in below and the development yields in Table 3-4. This development yield was used for the purposes of utilities infrastructure assessments and feasibility applications only and the final architectural designs should be used to confirm the building details. This demand assessment is summarised in Table 3-5 and the estimated average day weather flows (ADWF) values in Table 3-6.

Table 3-5 Wastewater Design Loading Criteria

Land Use	Design Criteria	Unit	Demand Rate	Source
Residential – Single occupancy high density dwelling	ADWF	EP/dwelling	2.5	Gravity Sewerage Code of Australia, WSA 02-2014
Commercial – High density commercial	ADWF	EP/ha (gross)	500	Gravity Sewerage Code of Australia, WSA 02-2014
Retail – Local commercial	ADWF	EP/ha (gross)	75	Gravity Sewerage Code of Australia, WSA 02-2014
BASIX reduction (residential only)	N/A	%	55	Building Sustainability Index

Table 3-6 Estimated ADWF for Wastewater including BASIX (L/s)

Location	Residential (incl. BASIX)	Commercial and Retail	Total (L/s)
ASD	-0	5.83	5.83
ISD	1.06	6.86	7.50
Total	1.06	12.69	13.33

3.4 Development Wastewater Storage

The development will have to include on-site wastewater storage tank to avoid overwhelming the current/existing wastewater network system. This is to be done with retention tanks holding the difference between pre-development flow and post development flow. These flows are available in Table 3-2,Table 3-3 and Table 3-6. The required capacity of the tanks is calculated using the following equation.

$$Storage\ Volume = (Post\ Development\ flow - Pre\ Development\ flow) \times (86400\ {}^{S}/_{day})$$

$$= (13.33\ {}^{L}/_{S} - 1.23\ {}^{L}/_{S}) \times (86400\ {}^{S}/_{day})$$

$$= 1045400\ L$$

There are four (4) proposed buildings for the proposed development. Thus, each building will have a wastewater storage tank of approximately 261,350 L capacity to provide temporary wastewater retention. The location and size of each of the storage tanks would be designed in the Detailed SSDA stage.

3.5 Annual Wet Weather Flow

Stormwater does not ingress into the wastewater system, and instead discharges into a separate outlet. Therefore, there is no increase to development wastewater for wet weather flows.

4 Conclusion and recommendations

This Addendum to the Utilities and Infrastructure Servicing Assessment has been written to support a Concept SSDA and to respond to agency comments received to the EIS.

Sydney Water and Endeavour Energy submissions have been reviewed and responded to. Sydney Metro will continue the engagement with Sydney Water and Endeavour Energy as the design development continues.

Hydraulic analysis to demonstrate that the current performance of the wastewater system does not deteriorate in both dry and wet weather have been provided in Chapter 3. Other Sydney Water comments have been acknowledged and will be noted through the detailed design process for the Detailed SSDA.

It is premature to determine whether there will be adequate capacity available for the time the proposed development would become operational. Once the quantum of development to be constructed is known and it has planning certainty at the Detailed SSDA stage, the Section 73 application can be made and any need for reticulation amplification and/or minor extensions can be determined with more certainty.

Endeavour Energy comments and/or advice has been acknowledged and will be noted through the detailed design process for the Detailed SSDA.