Sydney Metro West Eastern Creek Precast Facilities

Review of Environmental Factors Addendum (No.2)

October 2025

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1. Introduction

Background

Sydney Metro West

The NSW Government is delivering Sydney Metro West – a new 24-kilometre underground metro railway which will double rail capacity between Parramatta and the Sydney CBD, transforming Sydney for generations to come.

This once-in-a-century infrastructure investment will provide fast, reliable turn-up-and-go metro services with fully accessible stations, link new communities to rail services and support employment growth and housing supply.

Stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

Sydney Metro West will target an opening date of 2032.

Eastern Creek Precast Facilities

Sydney Metro prepared a Review of Environmental Factors Determination Report in March 2021 to construct and operate concrete precast facilities (the project) to support the construction of Sydney Metro West (referred to as the Eastern Creek Precast Facilities). The precast facilities have been manufacturing precast concrete segments for the purpose of lining the Sydney Metro West tunnels (construction of which is approved under the Critical State Significant Infrastructure approval for Sydney Metro West - major civil construction between Westmead and The Bays (CSSI Stage 1) and Sydney Metro West - major civil construction between The Bays and Sydney CBD (CSSI Stage 2). The Eastern Creek Precast Facilities are located on Lenore Drive, Eastern Creek, within the Blacktown City Council local government area (the site).

Determination of the Eastern Creek Precast Facility

A Review of Environmental Factors (REF) was prepared to describe the project, document potential impacts of the project on the environment and detail the mitigation measures to be implemented. The REF was publicly exhibited from 16 November 2020 to 4 December 2020 to allow stakeholders, including members of the community, to provide feedback on the project for consideration in the assessment and determination process.

An Addendum Report to the REF (Addendum REF 1) was prepared in March 2021 due to design changes (for water management infrastructure) and an associated increase to the construction footprint (which has been extended to the north of the site).

Sydney Metro, a NSW Government agency, was the proponent and determining authority for the project under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The project constitutes an 'activity' for the purposes of Division 5.1 of the EP&A Act because it is a land use for the purpose of rail infrastructure facilities by a public authority that is permissible without consent under section 2.92 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (previously clause 79 of *State Environmental Planning Policy (Infrastructure) 2007* (now repealed)). The project was determined in March 2021 (*Eastern Creek Precast Facilities Review of Environmental Factors Determination Report, 2021*). Construction at the site commenced in 2021 and operation of the precast facilities commenced in late 2022.

Sydney Metro West planning approvals

The precast facilities do not form part of the Sydney Metro West Critical State Significant Infrastructure (CSSI) planning approvals, which have been assessed and determined separately under section 5.20 of the EP&A Act. The REF for the Eastern Creek Precast Facilities was prepared and exhibited prior to approval of the CSSI planning approvals, to enable the site to be established to support the delivery of Sydney Metro West. The Sydney Metro West CSSI approvals include:

- the application for the concept and major civil construction work for Sydney Metro West between Westmead and The Bays, including station excavation and tunnelling (Concept and Stage 1 CSSI Approval) was approved on 11 March 2021.
- the application for all major civil construction and enabling works between The Bays and the Sydney CBD, including demolition, tunnelling, and station excavation for new metro stations associated with the Sydney Metro West railway line (Stage 2 CSSI Approval) was approved on 24 August 2022.
- the application for rail infrastructure, including fit-out of tunnels, construction, fit-out, and operation of metro stations and surrounding precincts and operation of the Sydney Metro West line (Stage 3 CSSI Approval) was approved on 26 January 2023.

Chapter 7 of the REF included an overview of the Sydney Metro West project and a summary of the potential environmental impacts associated with carrying out the project (in particular, Sydney Metro West CSSI Stage 1 as this was the only planning application for Sydney Metro West at the time of REF determination).

The ongoing use of the Eastern Creek Precast Facilities, subject of the proposed change, would be used by the stations and linewide contractors, under the planning approval for Sydney Metro West CSSI Stage 3 – Rail infrastructure, stations, precincts and operations (which was determined in January, 2023).

Given that the location of the site is about 15 kilometres away, Sydney Metro West is not expected to result in cumulative impacts to the same receivers.

Purpose of this report

The purpose of this Addendum REF (Addendum REF 2) is to outline the proposed change to the Project and present the associated environmental impact assessment of these changes.

This Addendum REF describes the proposed change, documents its likely environmental impacts and details the measures that would be implemented to mitigate and manage against any potential environmental impacts. Sydney Metro, a NSW Government agency and public authority on whose behalf the activity is being undertaken, is the proponent and a determining authority for this proposed activity under Part 5, Division 5.1 of the EP&A Act. The REF Addendum has been prepared to meet the environmental assessment requirements of Division 5.1 of the EP&A Act (refer to Appendix A – Consideration of Environmental Factors and Matters).

The likely effect on the environment of the proposed change has been assessed in accordance with clause 171 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation), the *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

This REF assists Sydney Metro in fulfilling the requirements of section 5.5 of the EP&A Act; namely that Sydney Metro examines and takes into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the proposed change.

The findings of the REF Addendum will be considered when assessing:

- whether the proposed change is likely to significantly affect the environment and therefore require an environmental impact statement to be prepared and approval sought under Part 5, Division 5.2 of the EP&A Act
- whether the proposed change is "likely to significantly affect threatened species" (as defined in section 7.2 of the BC Act), and therefore require a species impact statement or, if Sydney Metro elects, a biodiversity development assessment report to be prepared under Part 7 of the BC Act
- the potential for the proposed change to significantly impact a Matter of National Environmental Significance or Commonwealth land and the need to make a referral to the Commonwealth Minister for the Environment for a decision by the Minister for the Environment on whether assessment and approval is required under the EPBC Act (refer to Section 4).

This Addendum REF has been informed by key technical reports, which provide detailed assessment of specific environmental issues relevant to the proposed activity. These technical reports form appendices to this Addendum REF.

2 Need and options considered

Strategic need for the proposed change

Chapter 2 of the REF addresses the strategic need for the project and its objectives, and Chapter 3 discusses options that were considered. The project (as changed) described and assessed in this Addendum REF is consistent with the strategic need for the activity.

As identified in the REF, the Eastern Creek Precast Facilities would operate for an approximate timeframe of four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

The use of the site is proposed to be extended to continue to support the ongoing construction of Sydney Metro West.

Further, the project considers the provision of water management infrastructure such as appropriate onsite stormwater and flood detention facilities to mitigate potential environmental impacts. As a result of further hydraulic assessment and drainage modelling carried out after the exhibition of the REF, an Addendum to the REF (REF Addendum 1) was prepared to include the reconstruction of a farm dam to the north of the site, to capture surface water and stormwater runoff (referred to as the northern basins). The northern basins are situated on land owned by the Planning Ministerial Corporation, administered by the NSW Government Office of Strategic Lands. Sydney Metro undertook the construction works to upgrade the northern basin in accordance with a Construction License between Sydney Metro and the Office of Strategic Lands. It was anticipated that the northern basins would be required to be utilised for water management for the duration of tunnelling works for the Sydney Metro West project.

Sydney Metro has been consulting with the Office of Strategic Lands as operation of the site for the purposes of the tunnelling works nears completion, and it has been identified that there is an opportunity to upgrade the water management infrastructure on the land owned by Sydney Metro (the Eastern Creek Precast Facilities site), and Sydney Metro would no longer require the use of the northern basin area for water management. The proposed change also involves the upgrade of water management infrastructure, to support the ongoing use of the facilities to support the construction of Sydney Metro West.

Project objectives

Section 2.3 of the REF identifies the objectives for the project. The proposed change would assist in meeting these objectives as it:

- enables the extended use of the Eastern Creek Precast Facilities to produce concrete segments and other structural components for the Sydney Metro West stations and ancillary infrastructure
- provides operational efficiencies as the facilities have already been constructed and established
- aligns with the delivery strategy for Sydney Metro West as the precast facilities would no longer be required for tunnelling works.

Alternatives and options considered

Precast facility requirements for Sydney Metro West stations and linewide construction

Three options have been considered to support the production and/ or prefabrication of components for the Sydney Metro West stations and linewide construction activities:

- **Option 1 – 'do nothing':** this option would no longer require the use of the Eastern Creek Precast Facilities once the tunnelling works have been completed. Alternate facilities would be required to be constructed elsewhere or leased for the purposes of construction of Sydney Metro West stations and ancillary infrastructure. This option may therefore pose potential additional land acquisition and environmental impacts.
- **Option 2 – establish capacity within or adjacent to proposed Sydney Metro West construction sites:** this option would likely require additional property acquisition adjacent to the construction sites to allow for sufficient size / capacity the production and/or

prefabrication of components for the Sydney Metro West stations and linewide facilities (as the remainder of the sites including the Clyde stabling and maintenance facility would be required for other construction activities)

- **Option 3 – extend the operation of the Eastern Creek Precast Facilities:** this option would involve the utilisation of the Eastern Creek Precast Facilities to support the construction of the stations and linewide ancillary infrastructure for Sydney Metro West. This would provide operational efficiencies as the site is already established, and would have a positive environmental outcome by utilising existing facilities for the purposes of producing precast concrete and other structural components for Sydney Metro West.

Based on the above evaluation, Option 3 best meets the objectives of the project and was selected as the preferred option.

Water management infrastructure upgrades

Three options were explored to manage the stormwater of the northern precast facility within the Eastern Creek Precast Facilities site. Two onsite detention solutions were explored to allow flows from the site to be detained, minimising potential flood and stormwater impacts to the surrounding environment:

- **Option 1 – 'do nothing':** as the northern basins are no longer able to be utilised for water management, this option would not provide the appropriate flood and stormwater mitigation in line with the REF. Additional flood and stormwater impacts would be anticipated as the run off from the site would not be appropriately managed in line with the environmental mitigation measures identified for the project.
- **Option 2 – repurposing the existing sediment basin:** this option includes repurposing an existing sediment basin onsite by excavating to achieve the required volume required for flood and stormwater detention, to capture stormwater northern precast facility. Approximately 650 metres^3 of storage capacity would be required. Currently, the sediment basin is approximately 0.75 metres deep with a volume of 400 metres^3 (blue hatch shown in Figure 1 below). To achieve the 650 metres^3 volume required, the basin would need to be excavated to around one metre deep, and the area of the basin would also need to be increased (however all work would be within the approved construction footprint). The detention basin would include an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek.
- **Option 3 – underground detention tank:** this option was developed for a scenario where the existing sediment basin on the site was unable to be repurposed. Option 3 utilises an underground detention tank with a volume of around 650 metres^3, and assumes that the existing sediment basin is to either remain as is or be filled and therefore cannot be used for detention purposes. The tank would include an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek.

For both Options 2 and 3, the proposed stormwater outlet will be downstream of the existing Water Sensitive Urban Design (WSUD) device (a gross pollutant trap).

Based on the above evaluation, Option 2 best meets the objectives of the project as the sediment basin is able to be repurposed and the relevant flood and stormwater requirements of the planning approval can be met. Option 2 was selected as the preferred option.

3 Description of the proposed change

The project

The project includes the establishment and operation of concrete precast facilities at Lenore Drive, Eastern Creek (Figure 1) and includes:

- site establishment at the Eastern Creek Precast Facilities site including vegetation clearing, remediation, and earthworks
- the establishment and operation of precast facilities including:
    - precast yards including a shed for construction of precast concrete segments and storage laydown areas
    - boiler, aggregate bins and consumables
    - office facilities
    - onsite parking
- internal roads (one lane in each direction) with entrances to each facility from the Western Access Road located between the northern and southern precast
- ancillary supporting infrastructure, including utilities installation (power, water, sewerage, gas and communications), lighting, signage and landscaping.

The REF considered that the precast facilities would operate for four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

Construction of the Eastern Creek Precast Facilities began in 2022. The southern precast facility has operated since late 2022 and the northern precast facility since April 2023, producing precast concrete segments for the Sydney Metro West tunnels. Decommissioning works by the tunnelling contractors currently operating at the facilities commenced in 2025. The site has been designed so that the northern precast facility and the southern precast facility can operate independently of one another, to be used by different construction contractors.

The REF also considers the provision of water management infrastructure such as appropriate onsite stormwater and flood detention facilities. The northern facility includes the following water management infrastructure:

- basins for stormwater and flood detention to the north of the site
- Water Sensitive Urban Design (WSUD) including a gross pollutant trap to manage water quality
- a sediment basin to manage the water quality of stormwater runoff from the existing stockpile.

Stormwater runoff for the southern precast facility is separately managed onsite within the southern precast facility. The proposed change does not affect the management of stormwater for the southern precast facility.

The proposed change

Sydney Metro proposes to:

- extend the operation of the facilities for continued construction support for the Sydney Metro West project. This includes the operational processes to produce and transport precast concrete elements and other structural components required for the construction of Sydney Metro West stations and ancillary facilities. The use of the site is proposed until Sydney Metro West becomes operational.
- increase the capacity of the existing sediment basin on site to provide stormwater detention for the northern facility. This includes an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek. All work would be within the approved construction footprint.

Operation of the facilities

Sydney Metro has identified the opportunity to continue the use of the Eastern Creek Precast Facilities, for the purposes of the next phase of construction of Sydney Metro West, being rail infrastructure, stations and precincts (approved under CSSI Stage 3).

The site layout and operational activities to be undertaken at the Eastern Creek Precast Facilities would remain generally consistent with those already being undertaken at the site (and discussed in Section 5.3.1 and 5.3.2 of the REF).

The site would continue to be required for the storage, assembly and delivery of structural components required for the construction of the Sydney Metro West stations and ancillary infrastructure. The key operational processes include:

- deliveries of raw materials, including for concrete production
- loading and storage of materials
- concrete batching
- concrete casting / moulding (including curing processes)
- storage of structural components
- loading of structural components onto heavy vehicles via gantry cranes to be delivered to the Sydney Metro West sites.

It is anticipated that the following key operational aspects for the project would not change, including:

- **property:** the Eastern Creek Precast Facilities are situated on land owned by Sydney Metro and no additional land would be required for the proposed change
- **capacity:** the REF considered that the precast facilities would have a capacity to produce on average 730 tonnes of concrete per day (around 266,450 tonnes per annum). The requirements for the stations and linewide activities would not require additional capacity
- **workforce:** a maximum operational workforce of around 120 personnel would continue to be required
- **work hours:** the working hours would continue to be required on a 24 hour basis (with workers shifts in both the day time and night time)

- **heavy vehicle volumes:** around 24 heavy vehicle movements may be required per hour in the day (7am-6pm), and 12 vehicle movements per hour in the evening (6pm-7am), consistent with the maximum amount currently required at the site
- **light vehicles for staff:** around 120 light vehicles would arrive and depart from the site each shift
- **maintenance:** cleaning, inspections and maintenance would still be required periodically throughout continued operation.
- **decommissioning:** any future use of the site beyond the operation of the site for Sydney Metro West would be determined by Sydney Metro . If no future use of the site is proposed at that time, the site would be placed into care and maintenance after the carrying out of any required decommissioning activities, which would be subject of further assessment if undertaken on behalf of Sydney Metro.

Water management infrastructure

The existing sediment basin would be repurposed to provide sediment control, and to manage stormwater runoff from the northern precast facilities site. No changes to the water management for the southern precast facilities site would be required as a result of the proposed change.

Excess spoil from construction has been used to form a batter around the sediment basin to the south and west. The spoil to the west is to be removed and the existing batter to the south would need to be recut to accommodate the required volume. Opportunities for reuse of some of the material generated by the additional earthworks on site will be identified and implemented where possible. Any residual material would be disposed of at a licensed waste management facility.

The estimated earthwork volumes calculated are detailed in Table 1:

Table 1 Cut and fill volumes

	Cut (m^3)	Fill (m^3)	Net (m^3)
Basin earthworks	5,400	1,746	3,654

Construction program

Section 5.2.4 of the REF anticipated that major construction works to establish the precast facilities would be completed by the end of 2022 however that the construction would depend on the final delivery strategy of Sydney Metro West. The delivery strategy of Sydney Metro West has been confirmed , and some minor additional construction works would be required for the ongoing use of the site, including for the upgraded detention basin.

The construction of the detention basin is anticipated to commence in late 2025 and be completed in the beginning of 2026.

Construction activities

The construction works required in order to facilitate the proposed change would remain consistent with those identified in the REF for the project. The construction works required to upgrade the water management infrastructure include:

- earthworks to expand the existing sediment basin to create a detention basin
- diversion of the existing stormwater outlet pipe into the new detention basin

- construction of a new drainage outlet from the basin with scour protection, with flows eventually leading to the watercourse of Ropes Creek.

Construction requirements

It is anticipated that the following key construction aspects for the project would not change, including:

- **hours of work:** as per section 5.2.12 of the REF, works would be undertaken in accordance with the *NSW Interim Construction Noise Guideline 2009* (ICNG) (NSW EPA, 2009) 'recommended standard hours for construction work', being:
    - 7.00 am to 6.00 pm Monday to Friday
    - 8.00 am to 1.00 pm Saturday
    - No work on Sundays or during public holidays

  However, the REF does specify some activities that may be required to be carried out outside of these hours i.e. for safety reasons.
- **construction workforce:** as per section 5.2.5, the REF anticipates a peak workforce of 120 workers. It is anticipated that approximately 20 of the 120 workers would be required to facilitate the water management upgrades
- **construction plant and equipment:** the indicative construction plant and equipment outlined in section 5.2.6 of the REF would remain applicable to the proposed water management upgrades
- **waste:** as per section 5.2.8 of the REF, all generated waste would be stored and separated to maximise recycling. The approach to waste management is further detailed in Section 8.12 (Resource use and waste management) of the REF
- **traffic management:** as per section 5.2.9 of the REF, traffic management and access measures would be developed during detailed design and implemented in accordance with the Sydney Metro Construction Traffic Management Framework. The REF anticipated a maximum of 20 heavy vehicles per hour for the site being required during standard construction hours, utilising the haulage route to the east of the construction site. No additional heavy vehicles would be required for the proposed change and the haulage route would remain consistent with that identified in the REF
- **water management during construction:** the REF included that sediment basins and diversion drains would be required throughout the site. The proposed water management upgrades would be designed to ensure the existing sediment basin retains its use to treat any runoff from the site.

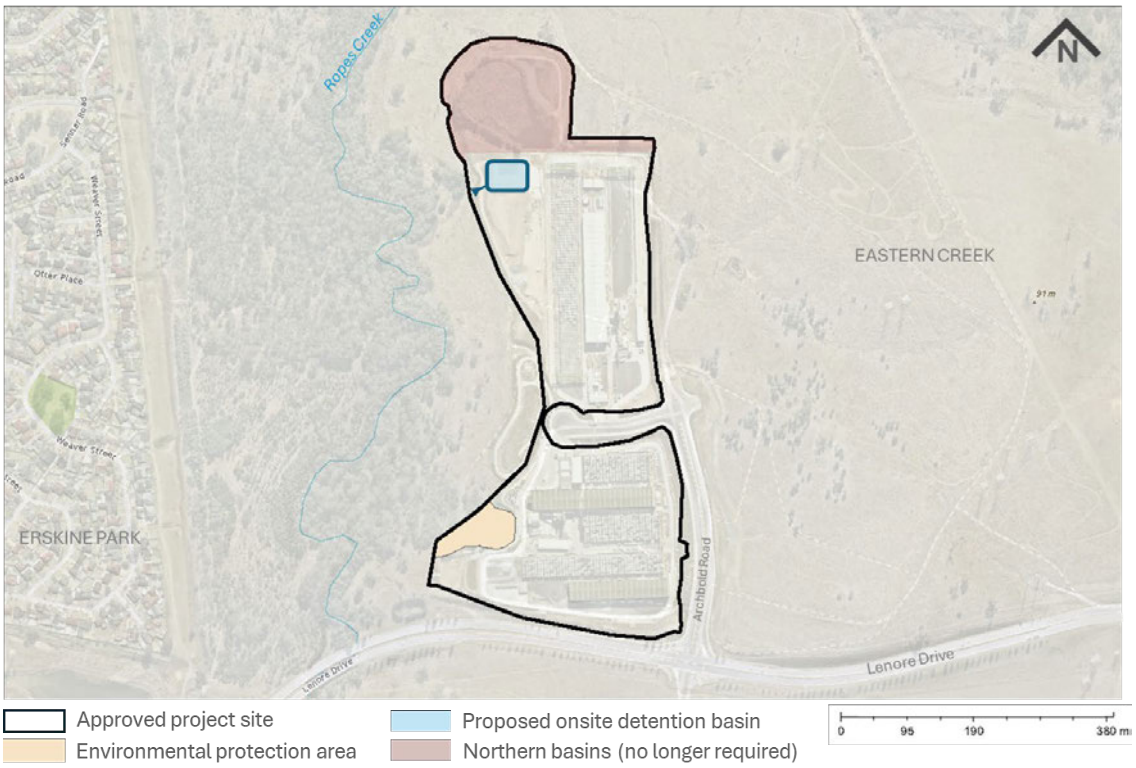

Figure 1 Indicative site layout of the proposed change subject to this Addendum REF

4 Statutory and planning framework

NSW Legislation and regulations

Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2021

The *Environmental Planning and Assessment Act 1979* (EP&A Act) regulates land use planning and development in NSW. As identified in the Eastern Creek Precast Facilities Determination Report (2021), the project constitutes an 'activity' for the purposes of Division 5.1 of the EP&A Act, because it is a land use for the purpose of rail infrastructure facilities by a public authority that is permissible without consent under section 2.92 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) (note that this was previously clause 79 of *State Environmental Planning Policy (Infrastructure) 2007* (now repealed)).

The activity is carried out on behalf of Sydney Metro, a public authority, and therefore Sydney Metro is the determining authority for the activity for the purposes of Division 5.1 of the EP&A Act.

Section 5.5 of the EP&A Act requires Sydney Metro to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.

Section 6 of the REF Addendum assesses the likely effect of the proposed change on the environment. The proposed change is not likely to significantly affect the environment or threatened species and therefore neither an Environmental Impact Statement, Biodiversity Development Assessment Report, nor a Species Impact Statement is required as part of the proposed change.

This Addendum REF helps fulfil the requirements of Section 5.5 of the EP&A Act. Part 8 Division 1 of the EP&A Regulation contains a detailed list of factors that must be taken into account when assessing the impact of an activity on the environment, including the consideration of the *Guidelines for Division 5.1 assessments* (Department of Planning and Environment, 2022).

Part 7 of the Biodiversity Conservation Act 2016 (BC Act)

Section 7.8 of the *Biodiversity Conservation Act 2016* (BC Act) states that a proposal that is regarded as an activity that significantly affects threatened species and ecological communities, or their habitats, is taken to also significantly affect the environment.

Significance is assessed via the test of significance in Section 7.3 of the BC Act, which may then lead to a SIS (or BDAR if the proponent elects to provide a BDAR in place of the Species Impact Statement (SIS)).

Section 6 of the REF Addendum assesses the likely effect of the proposed change on the environment. The proposed change is not likely to significantly affect the environment or threatened species and therefore neither an Environmental Impact Statement, Biodiversity Development Assessment Report, nor a Species Impact Statement is required as part of the proposed change.

State Environmental Planning (Transport and Infrastructure) 2021

Section 2.92 of the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (previously clause 79 of *State Environmental Planning Policy (Infrastructure) 2007* (now repealed) provides that development by a public authority for the purpose of railway infrastructure facilities on any land is permissible without the need for development consent under Part 4 of the EP&A Act. The activity is for the purpose of rail infrastructure facilities (to support the construction of Sydney Metro West), and is carried out on behalf of Sydney Metro, a public authority. It is therefore permissible without consent.

Part 2.2 Division 1 of the Transport and Infrastructure SEPP also contains provisions for public authorities to consult with local councils and other agencies prior to the commencement of certain types of development and in certain circumstances. Consultation as required by the Transport and Infrastructure SEPP (where applicable), is discussed in Section 5.0 of the REF.

Other NSW Environmental Planning Instruments

Other environmental planning instruments, including State Environmental Planning Policies (SEPP) and Local Environmental Plans (as well as the accompanying Development Control Plans) that have been considered are provided in Table 2. This provides an updated discussion to that provided in Chapter 4 Statutory and planning considerations of the REF, as a number of policies and plans have since been repealed, amalgamated or finalised.

Table 2 Other NSW Environmental Planning Instruments

Environmental Planning Instrument	Applicability
State Environmental Planning Policy (Industry and Employment) 2021 **(note: this SEPP supersedes *the State Environmental Planning Policy (Western Sydney Employment Area) 2009* which was considered in the REF and Determination).**	The project site is located within the subject land of the Industry and Employment SEPP and is zoned IN1 General Industrial. The project and proposed change are consistent with the land use objectives of the zone as it would encourage temporary employment opportunities during continued operation of the precast facilities.

State Environmental Planning Policy (Biodiversity and Conservation) 2021	Chapter 6 (Water Catchments) of the Biodiversity and Conservation SEPP is to manage development and activities in four water catchment areas, including the Hawkesbury-Nepean Catchment where the project is located. This REF Addendum has considered the likely impact of the proposed change on water quality and quantity, aquatic ecology and flooding (refer to section 6). In summary: • the change would not increase the amount of run off (water quantity) from the site • the proposed onsite detention basin has been designed so that the flow rates would not impact nearby native vegetation and aquatic ecology in Ropes Creek (by incorporating appropriate scour protection in accordance with mitigation measure F5) • the proposed change would not impact the water quality of flows entering Ropes Creek (water quality would be managed in accordance with mitigation measure SW2) • no clearing of riparian vegetation is required, and appropriate safeguards would be incorporated during construction to minimise any potential erosion or sedimentation impacts (in accordance with mitigation measure SW2) • the proposed change would not impact recreational land uses or public access to watercourses.
State Environmental Planning Policy (Resilience and Hazards) 2021 **(note: this SEPP supersedes the following which were considered in the REF and Determination:** • ***State Environmental Planning Policy – 33 Hazardous and Offensive Development*** • ***State Environmental Planning Policy No. 55 – Remediation of Land*)**	The project includes the importation of aggregate and concrete batching for the construction of precast concrete segments. Based on the nature of the project and the mitigation measures to be implemented it is not considered to be a 'potentially hazardous industry' or 'potentially offensive industry' under the SEPP. Some dangerous goods would be stored on site including chemicals used in the manufacture of concrete, oils for lubrication of moulds and maintenance chemicals, oils, and lubricants for the plant. The quantities of all dangerous goods stored onsite would however be well below the SEPP thresholds. Further, Chapter 4 of the SEPP requires the consideration of contaminated land and remediation requirements. A range of mitigation measures have been included to manage potential contamination during construction and operation of the project, which would be further implemented

	during the construction of the proposed detention basin and during operations.
Blacktown Local Environmental Plan (LEP) 2015	As identified in the REF, the site is located within the Blacktown City Council LGA. The operation of the Transport and Infrastructure SEPP however means that LEPs would not apply to the extent that they impose controls which are inconsistent with the Transport and Infrastructure SEPP. Notwithstanding, during the preparation of the REF, the provisions of the Blacktown LEP were considered. In addition, the provisions of the Blacktown LEP 2015 do not apply as the land is not included in the land application map.
Ropes Creek Development Control Plan (DCP)	The REF considered the *Draft Ropes Creek Precinct Draft Development Control Plan* (Eastern Creek Precast Facilities REF, 2020). The Ropes Creek Precinct DCP was finalised in July 2022 and applies to the northern portion of the Ropes Creek Precinct within the Industry and Employment SEPP. The DCP also states that certain parts of the *Blacktown Development Control Plan 2015* would also apply, including Part J Water Sensitive Urban Design which has been considered in the design of the water management infrastructure. The discussion in Section 4.1.7 of the REF remains relevant to the proposed change.

Relevant NSW legislation

NSW legislation under which activity was assessed is set out in Table 4-1 of the REF. Table 3 assesses the proposed change under this legislation.

Table 3 Other NSW Legislation

Legislation	Applicability and changes from the REF
Aboriginal Land Rights Act 1983 No. 42	No change. Refer to Table 4.1 of the REF.
Biodiversity Conservation Act 2016 No. 63	No change. Refer to Table 4.1 of the REF. No additional impacts on biodiversity are anticipated (refer to Section 6). The site is located within the Hawkesbury-Nepean Catchment, a regulated catchment under the *Biodiversity Conservation Act 2016*. Under cl 171A of the EP&A Regulations, the determining authority is to take into account the matters set out in 171A(1) and (2) of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (refer to Table 2 above).
Biosecurity Act 2015 No. 24	No change. Refer to Table 4.1 of the REF. Biosecurity risks are discussed further in Section 8.11 (Biodiversity) of the REF.

Contaminated Land Management Act 1997 No. 140	No change. Refer to Table 4.1 of the REF.
Crown Land Management Act 2016 No. 58	No change. Refer to Table 4.1 of the REF.
Heritage Act 1977 No. 136	No change. Refer to Table 4.1 of the REF. Section 6 discusses the potential heritage impacts associated with the proposed change.
National Parks and Wildlife Act 1974 No. 80	No change. Refer to Table 4.1 of the REF. Section 6 discusses the relevant Aboriginal Heritage Impact Permit for the project site and potential Aboriginal heritage impacts associated with the proposed change
Native Title (New South Wales) Act 1994 No. 45	No change. Refer to Table 4.1 of the REF.
Protection of the Environment Operations Act 1997 No. 156 **(POEO Act)**	Refer to Table 4.1 of the REF. Development activities require an environment protection licence (EPL) under the POEO Act if those activities meet the assessment criteria outlined in Schedule 1 of the Act. As per Schedule 1 of the POEO Act, an EPL would be required if the annual production of concrete products exceeds 30,000 tonnes per annum threshold. As the processing capacity of the site during operation would be about 266,450 tonnes per annum (consistent with the REF for the project), the proposed change would meet the definition of a scheduled activity under Schedule 1 and an environment protection licence(s) for the contractors utilising the site would be required.
Roads Act 1993 No. 33	No change. Refer to Table 4.1 of the REF.
Waste Avoidance and Resource Recovery Act 2001 No. 58	No change. Refer to Table 4.1 of the REF.
Water Act 1912 No. 44 and Water Management Act 2000 No. 92	No change. Refer to Table 4.1 of the REF.
Fisheries Management Act 1994 No. 38	No change. Refer to Table 4.1 of the REF.
Rural Fires Act 1997 No. 65	No change. Refer to Table 4.1 of the REF.

Commonwealth Legislation

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conversation Act 1999* (EPBC Act) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places — defined in the EPBC Act as 'matters of national environmental significance'.

Under the EPBC Act, a referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) is required for proposed actions that have the potential to significantly impact on any Matter of National Environmental Significance, or the environment of Commonwealth land (including leased land). As outlined in the *Eastern Creek Precast Facilities*

Determination Report (2021) the project does not trigger the need for referral or approval under the Commonwealth EPBC Act. Refer to Section 8.2 of the *Eastern Creek Precast Facilities Determination Report (2021*) for further information.

In accordance with the EPBC Act, the proposed change would not have further impact on any matter of national environmental significance and therefore an EPBC Act referral is not required.

5 Community and Stakeholder consultation

Consultation strategy

Community and stakeholder consultation for the project is documented in Chapter 6 of the REF and Sydney Metro has continued to consult with the community and stakeholders during construction and operation of the project. The consultation strategy relevant to the proposed change would remain consistent with Chapter 6 of the REF.

Consultation for the REF

Section 6 of the REF Determination Report details the consultation activities undertaken with the community and stakeholders during public exhibition. Table 4 includes a summary of consultation activities undertaken for the REF.

Table 4 Consultation activities undertaken for the REF

Engagement tool	Activity
REF display	Copies of the REF were distributed to St Claire Library and Blacktown City Council.
REF newsletter	A REF newsletter providing an overview of the project was distributed via letterbox drop to about 1,200 residential properties and 360 businesses within about 1 to 3 km of the site.
Place Manager	A dedicated Sydney Metro Place Manager personally contacted nearby community members and businesses to share details of the REF and provided details of how they could comment and make a submission.
Stakeholder briefings	A briefing was provided to Local Member of Parliament and the NSW Office of Strategic Lands. Information was emailed to Blacktown City Council and Penrith City Council, and briefings were offered.
Electronic direct mail	An email was sent to a targeted email distribution list.
Project website and interactive portal	Project information and the REF are available on the Sydney Metro website and the Sydney Metro West interactive portal.

Consultation for the proposed change

Blacktown City Council

Sydney Metro has been meeting with Blacktown City Council and has confirmed the preferred approach for stormwater and onsite detention sizing to ensure that the amount of stormwater runoff does not increase as a result of the proposed change. During correspondence with Sydney Metro, Blacktown City Council raised the following recommendations:

- Councils onsite detention (OSD) maps considers the site to be situated within a 'Special Permanent OSD required zone'
- onsite stormwater detention configuration should consider provisions in Part J of the Blacktown Development Control Plan 2015 (in accordance with the Ropes Creek Precinct DCP 2022)
- the Blacktown City Council – onsite stormwater detention deemed to comply tool provides the necessary detention volumes to ensure a reduction in flow rates.

Ongoing consultation during operation will continue to ensure the basin is functioning safely and efficiently.

Engagement with Council has also occurred in regard to subdivision and stormwater management of the southern precast facility (and its relationship with the Transport for NSW Archbold Road upgrade project).

Office of Strategic Lands

Sydney Metro previously undertook construction works to upgrade the northern basin in accordance with a Construction License between Sydney Metro and the Office of Strategic Lands. It was anticipated that the northern basins would be required to be utilised for water management for the duration of tunnelling works for the Sydney Metro West project.

Sydney Metro has been in consultation with the Office of Strategic Lands as operations of the site for the purposes of the tunnelling works nears completion, and it has been identified that there is an opportunity to upgrade the water management infrastructure on the land owned by Sydney Metro (the Eastern Creek Precast Facilities site), and Sydney Metro would no longer require the use of the northern basin area for water management.

Sydney Metro would continue to engage with Office of Strategic Lands to ensure that the transition of water management from the northern basins to the proposed upgraded basin does not adversely impact the land administered by the Office of Strategic Lands. Sydney Metro would also continue to consult with Office of Strategic Lands for any future development of that land.

Ongoing consultation

Ongoing consultation with the community and stakeholders is identified in Section 6.6 of the REF. Ongoing consultation for the proposed change would be consistent with this approach.

6 Environmental impact assessment

Environmental screening assessment

This section considers relevant environmental impact issues in light of the changes proposed.

Table 5 Environmental screening assessment – the proposed change

Issue	Potential change in impact during construction	Potential change in impact during operation	Description
Noise and vibration	No	Yes	Sensitive receivers are generally located some distance from the site, including the residential area of Erskine Park about 375 metres to the west and the commercial/ industrial area of Eastern Creek about 800 metres to the south and east. The noise generated during continued operations of the facilities would be consistent with the assessment provided in the REF. This REF Addendum considers recent background level data to confirm the assumptions in the REF. An assessment of potential changes to operation noise impacts associated with the proposed change and extended use of the site is provided in Section 6. There would be no change to the number of construction or operational vehicles required during construction and operation and therefore there is no potential for changes to traffic noise to the surrounding sensitive receivers.
Traffic, transport and access	No	Yes	The proposed change would not change the maximum number of vehicle movements to and from the site during construction and operation, as assessed in the REF. The proposed change would also not change haulage routes with vehicles travelling from the site in an eastern direction consistent with the exhibited REF. The proposed change would not result in any changes in terms of workforce, parking arrangements, and access and egress to the site during both construction and operation. Further assessment of potential changes to operation traffic impacts associated with the

			proposed change and extended use of the site is provided in Section 6. This includes an assessment of potential traffic impacts against the recent background traffic data to confirm the assessment in the REF.
Landscape and visual character	No	No	Landscape and visual character impacts from the proposed change would be consistent with the REF for the project. There is a relatively limited visual catchment to the Eastern Creek Precast Facilities due to the local landform and existing vegetation. The location of the construction works for the onsite detention basin would not visible from the industrial areas to the east and to the north-east, and views from the residential areas of Erskine Park, west of the site, would also be screened by the vegetation along Ropes Creek. An additional assessment of potential landscape and visual impacts as a result of the proposed change is not considered necessary.
Historic heritage	No	No	The Eastern Creek Precast Facilities are partially located within the development of the Chatsworth Estate (mid-19th century and mid-20th century), which has been assessed as having moderate potential to contain intact archaeological remains. Section 8.4.2 of the REF identified areas of potential archaeological sensitivity within the site and no archaeological potential has been identified within the north-western quadrant, where the proposed onsite detention basin is to be located. Historic heritage impacts from the proposed change would be consistent with the REF and Addendum 1. An additional assessment of potential changes to historic heritage as a result of the proposed change is not considered necessary.
Aboriginal Heritage	Yes	No	Since determination of the project, archaeological salvage under an Aboriginal Heritage Impact Permit (AHIP), supported by comprehensive Aboriginal stakeholder consultation, has been undertaken within the project area. A summary of the previous archaeological assessments and salvage work carried out in accordance with an Aboriginal Heritage Impact Permit is provided in Appendix C – Aboriginal Heritage Summary Report and summarised in Section 6.

Land use, property and socio-economic	No	No	The project area is zoned IN1 General Industrial under the *State Environmental Planning Policy (Industry and Employment) 2021*. The proposed detention basin will be constructed and operated within land owned by Sydney Metro. Therefore, there would be no additional impact on any developed or privately owned land. There would be no change to the workforce required for both construction and operation of the proposed change and therefore the positive economic impact identified within the REF would remain (see Section 3). The environmental impacts identified in the REF would not considerably change, and management and mitigation measures would be further implemented to reduce any impacts on the surrounding community. An additional assessment of potential changes to land use, property and socio-economic impacts associated with the proposed change is not considered necessary.
Flooding and hydrology	No	Yes	The project area is not located within the probable maximum flood (PMF) of Ropes Creek to the west. The proposed change would involve excavation to install a new detention basin onsite with an outlet with flows leading to Ropes Creek. An additional assessment of potential changes to flooding or hydrology impacts and mitigation measures associated with the proposed change are provided in Section 6.
Soils and surface water quality	No	No	The proposed change would involve excavation to repurpose the existing basin on site with an outlet with flows eventually leading to Ropes Creek. The earthworks would be undertaken within the project site and would be managed through the implementation of the management and mitigation measures identified for the REF. During construction, erosion and sediment measures would be implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. The design of the onsite drainage has been based on the objectives and principles of WSUD, to meet stringent pollutant reduction targets in accordance with the REF (refer to Section 6). No

			additional impacts to soils and surface water quality are anticipated.
Groundwater	No	No	The amended proposal would involve excavation to repurpose the existing onsite basin with an outlet that flows eventually leading to Ropes Creek. These excavation works would involve a maximum depth of about one metre which is consistent with the REF. Excavation would generally occur in areas of relatively higher elevation with deeper depths to groundwater. An additional assessment of potential changes to groundwater impacts associated with the proposed change is therefore not considered necessary.
Contamination	Yes	No	The proposed change would involve excavation within the north-western section of the project area to repurpose the onsite basin. The area consists of stockpile from the surplus materials from the earthworks for the Eastern Creek Precast Facilities site establishment work. As the proposed change involves additional earthworks, an additional assessment of potential contamination impacts associated with the proposed change is provided in Section 6.
Biodiversity	Yes	Yes	The proposed change would involve excavation at the existing onsite basin with outlet with appropriate scour protection, with flows eventually leading to Ropes Creek. The REF identified that within the site there are three Plant Community Types (PCTs) and two Threatened Ecological Communities (TECs) listed under the *Biodiversity Conservation Act 2016* (BC Act) and the *Environmental Protection of Biodiversity Conservation Act 1999* and no further impact to these PCTs and TECs is anticipated. Ropes Creek is mapped as 'Key Fish Habitat' by the NSW Department of Primary Industries. This REF Addendum has been supported by a Biodiversity Inspection Memorandum (Appendix B – Biodiversity Inspection Memorandum) to confirm that the additional excavation works and drainage outlet would not have any further biodiversity impact during construction and operation than what was anticipated for the REF. This is summarised in Section 6.

Resource use and waste management	No	No	The proposed change would not introduce any new waste streams, although it would result in a minor increase to the volume of waste (including excavated material, spoil and potential contaminated waste) generated during construction of the onsite detention basin. In accordance with Condition WR3 of the REF Determination Report, 100 per cent of usable spoil from construction would be reused, in accordance with the Sydney Metro spoil management hierarchy. During operation, all generated waste would be stored and separated to maximise recycling. The mitigation measures identified in the REF would be applied to the proposed change and would be sufficient to manage the increase in waste volumes. An additional assessment of potential changes to waste management impacts associated with the proposed change is not considered necessary.
Air quality	No	No	The construction activities and ongoing operations for the proposed change are generally consistent to those assessed in the REF. Therefore, with the implementation of the management and mitigation measures, the construction impacts of the proposed change are not considered to change from the REF. An additional assessment of potential changes to air quality impacts associated with the proposed change is not considered necessary.
Bushfire	No	No	Approximately 0.12 hectares of the north western quadrant of the project area is bushfire-prone land, classified as 'vegetation buffer'. This buffer is a designated buffer area for bushfire-prone land, with setback distances of 100 metres for Category 1 vegetation and 30 metres for Categories 2 and 3. This land would be used for the construction and operation of water management infrastructure comprising of the onsite detention basin. No vulnerable buildings and/or critical assets would be constructed as part of the proposed change. As a result, specific asset protection zones (APZs) for the detention basin are not required. In addition, the proposed change would not result in any changes to the established APZs for the site and therefore, no additional bushfire protection measures would be required.

			The remainder of the project area is not located within bushfire prone land and the existing environmental conditions would be consistent with the proposed change and ongoing use of the site for operations. An additional assessment of potential changes to bushfire impacts associated with the proposed change is not considered necessary.
Sustainability, climate change and greenhouse gases	No	No	The construction of the proposed onsite detention basin would not introduce any new sustainability impacts, although there could be some minor increases in the volumes of excavated materials and the associated greenhouse gas emissions. Further to this, no additional risks associated with climate change impacts are anticipated as a result of the proposed change. This increase is not considered to result in a material change to the assessment undertaken in the REF. The extension of operation of the precast facility would result in minor increases to greenhouse gas emissions. However, the impacts are considered to be similar to what was considered in the REF, and mitigation measures identified for the project would be applied to manage any potential impacts. In addition, the proposed change would be delivered under Sydney Metro's Construction Environmental Management Framework and the Sydney Metro West Sustainability Plan as noted in the Section 8.15 of the REF. These would also apply to the proposed change including the ongoing use of the site. An additional assessment of potential changes to sustainability impacts associated with the proposed change is not considered necessary.
Cumulative impacts	No	No	The following adjacent projects were considered in the cumulative impact assessment of the REF (Section 8.16.2 of the REF). Their status has since changed, as follows: • Archbold Road Upgrade and Extension – Works between the Great Western Highway, Minchinbury and Old Wallgrove Road, Eastern Creek. The REF for the project was determined 2017, with an Addendum completed in 2021 to facilitate the access off Lenore Drive to the Eastern Creek Precast Facilities. This portion of the road upgrade has since been completed.

			• Eastern Creek Resource Recovery Facility – State Significant Development application (SSD-9774) was approved on 13 October 2022 and includes the construction and operation of a resource recovery facility on Hanson Place (which connects to Honeycomb Drive) at Lots 3 to 5 of DP 1225803. A construction program has not been made publicly available, however cumulative amenity related impacts such as noise and air quality would be unlikely as the proposal would have negligible impacts to receivers to the east where the resource recovery facility is to be located. The haulage routes for this project (as identified in the Environmental Impact Statement) utilise the road network to the north of the Eastern Creek Precast Facilities site, and therefore cumulative impacts on the road network are unlikely. • Honeycomb Drive Extension – Development Application (DA-19-01184) was approved on 28 August 2021 and includes the westward extension of Honeycomb Drive and subdivision of Lots 1 and 2 of DP 1145808 into four industrial Torrens title lots. Construction of the new road reservation since has been completed. The proposed change will take place within the existing project area and is not expected to have any additional cumulative impacts to those identified in the REF.

Aboriginal Heritage

An Aboriginal Archaeological Survey Report (ASR) was prepared by Artefact (2020) to support the exhibited REF. An Addendum ASR was prepared by Artefact (2021) to support the Addendum REF 1 and determination.

A summary of the previous archaeological assessments and salvage work carried out in accordance with an Aboriginal Heritage Impact Permit (AHIP) is provided in Appendix C – Aboriginal Heritage Summary Report and summarised in this section. This section provides an overview of the potential heritage impacts during construction of the proposed onsite detention basin.

Existing Environment

The REF and Addendum REF 1 identified that the construction earthworks for the Eastern Creek Precast Facilities would result in partial to total removal of Aboriginal sites. Prior to the construction of the Eastern Creek Precast Facilities, archaeological test excavation was undertaken accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a), to confirm the site extents and potential impact. The findings of the test excavation determined that nine sites (comprising 14 registrations under the Aboriginal Heritage Information Management System (AHIMS)) would at least be partially impacted by construction for the project (Kelleher Nightingale Consulting Pty Ltd, 2021). The archaeological sites were a mix of low and moderate significance sites, and each required an AHIP prior to impact.

Heritage NSW issued AHIP 4769 for the Eastern Creek Precast Facilities project in 2021, under section 90A of the *National Parks and Wildlife Act 1974*.

All archaeological work including surface collections, testing and salvage were completed within the AHIP 4769 boundary in June 2021, and it was concluded that no further mitigation measures are needed for the project area (Kelleher Nightingale Consulting Pty Ltd, 2021).

Potential impacts

The proposed change includes enlargement of the existing onsite basin which involves additional earthworks within the project site. The detention basin area has been previously disturbed by construction activities associated with the project.

The Aboriginal Heritage Summary Report (Appendix C) indicated that the proposed construction of the basin would not affect Aboriginal heritage, as work would be carried out within an area already subject to archaeological assessment, testing and salvage under AHIP 4769 (Figure 2).

An updated AHIMS search was conducted on 28 August 2025 for the area bounded by the coordinates from Latitude -33.8138, Longitude 150.8111 to Latitude -33.7983, Longitude 150.8420, which includes the project site. A total of 47 Aboriginal sites and objects were identified within this area. Following a review of the site cards and an extensive AHIMS search, it was further confirmed that all sites located within the area subject to AHIP 4769 are destroyed. However, site 45-5-0559 is considered only partially destroyed, as part of its extent lies outside the AHIP 4769 boundary. No further impacts to this site are anticipated.

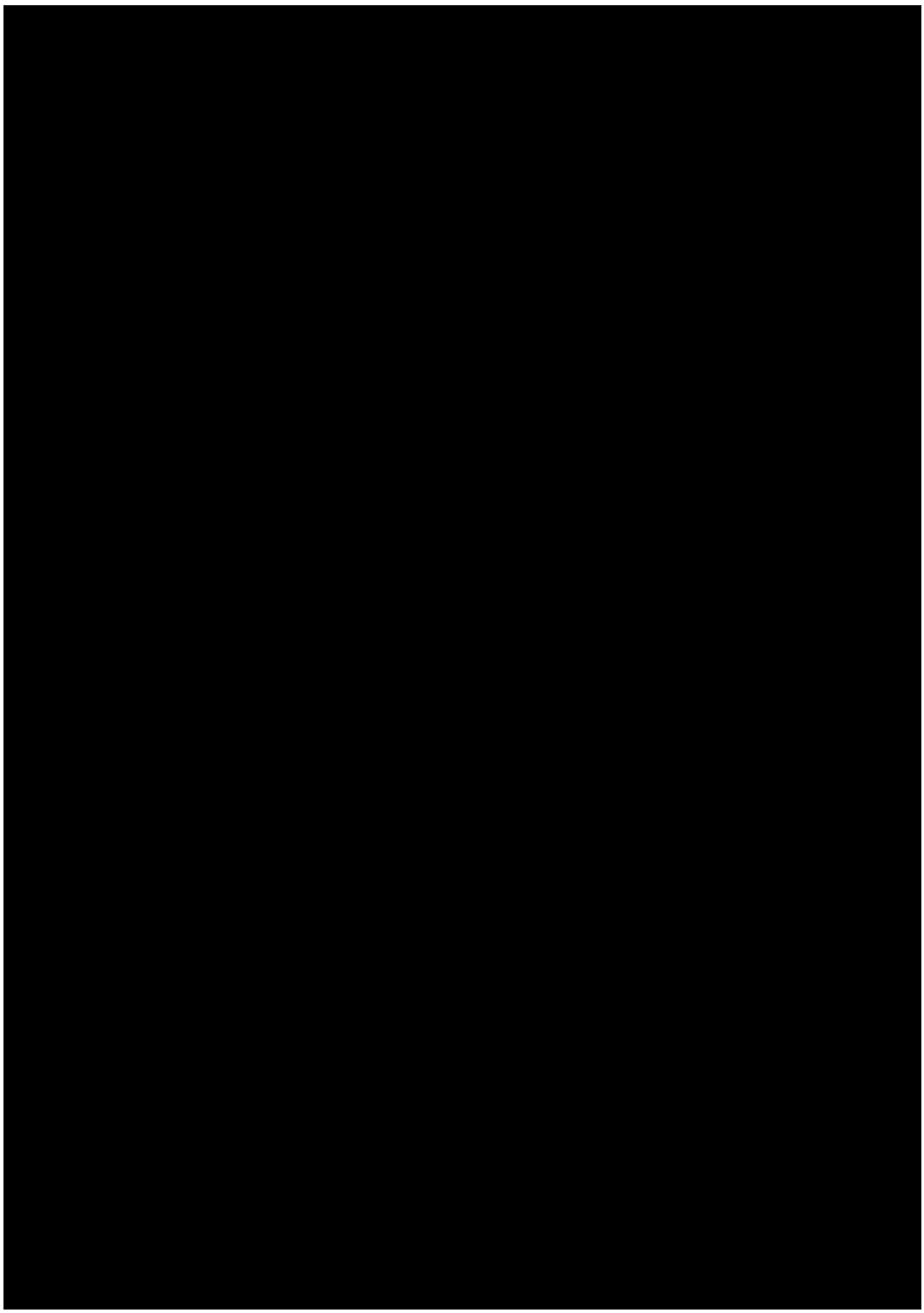

Figure 2 Area of clearance of archaeological sites and areas of AHIP 4769 (REDACTED)

Management and mitigation measures

All work for the proposed onsite detention basin (including the outlet and scour protection) would be within the project site, and area cleared under AHIP 4769. The management and mitigation measures for Aboriginal heritage are described in Chapter 4 of Addendum Report 1 and are reproduced in Section 7 of this Addendum Report. As work would be carried out within an area subject to archaeological assessment, testing and salvage under AHIP 4769 and the sites identified are no longer present, work would be carried out in accordance with the *Sydney Metro Unexpected Heritage Finds Procedure*.

An additional management and mitigation measure outlined in Table 6 has therefore been proposed.

Table 6 Management and mitigation measures – Aboriginal heritage

No.	Impact	Management and mitigation measure
AH6	Unexpected finds	The *Sydney Metro Unexpected Heritage Finds Procedure* must be implemented for the duration of construction.

Contamination

This section provides an overview of the potential contamination impacts during construction of the proposed onsite detention basin. The methodology described in Section 8.10.1 of the REF remains applicable.

Existing Environment

Section 8.10.3 of the REF and Section 3.6 of Addendum Report 1 identified the following sources of potential contamination within the project boundary:

- isolated occurrences of fly tipped (illegal dumping) waste materials
- historical land use including inappropriate chemical storage and use, and miscellaneous waste disposal
- filling (material of unknown quality) used for the bund of the existing farm dam located within the amended proposal site and within the embankment along Lenore Drive
- sediments within the existing dams located within the amended site.

The locations of the potential contamination sources are shown in Figure 3-5 of Addendum Report 1 and replicated in Figure 3 below.

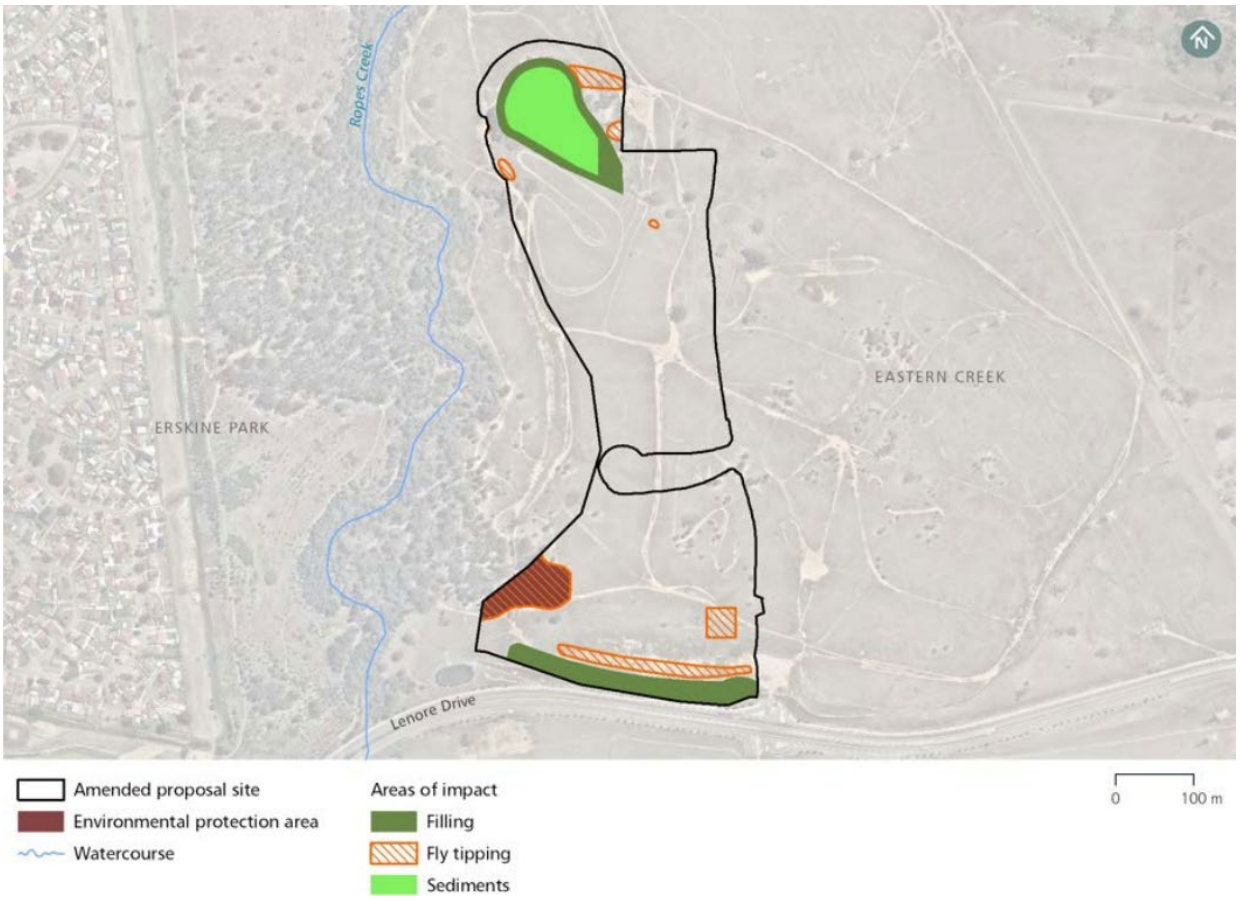

Figure 3 Key areas of potential contamination within the amended site (REF Addendum Report, 2020)

The design of the onsite detention basin includes upgrade to the existing temporary construction sediment basin that has been constructed within the northern precast facility. The design of the onsite detention basin would also require the alteration of a stockpile that has been established in the northwestern portion of the approved site.

A Materials Analysis and Classification Report prepared by ADE Consulting (2024) classified the stockpile materials in accordance with the Resource Recovery Framework under the Protection of the Environment (Waste) Regulation 2014. Material of the stockpile is classified as Excavated Natural Material, sourced from topsoil stripping activities from the site.

A further geotechnical and contamination investigation was undertaken by WSP in August 2025 to confirm the nature of the spoil that will need to be excavated (Figure 4). The material comprised heterogeneous reworked natural soil (fill) material captured from the onsite excavation works, then residual clay soil (below the re-worked fill material). No suspected asbestos containing material fragments, bitumen or other evidence of contamination was observed. The results confirmed that waste classification of the excavated area would comprise general solid waste (non-putrescible) in accordance with *Waste Classification Guidelines: Part 1 Classifying Waste* (EPA, 2014).

Since the project has been constructed and in operation, there have been no known major spills in the area that could have potentially impacted the quality and chemistry of the soil landscape or geology.

Figure 4 Test pit investigation locations (WSP, 2025)

Potential impacts

The expansion of the existing sediment basin extends into the existing compound and generates earthworks including 5,400 metres^3 of cut material. The spoil to the west is to be removed and the existing batter to the south will need to be recut to accommodate the required volume within the proposed basin. The estimated earthwork volumes calculated are detailed in Table 1.

There is no further change to the overall level of potential contamination risk identified in Section 8.10.3 of the REF.

The unexpected exposure of any contaminated materials during construction of the proposed detention basin may increase the potential for contaminant mobilisation and may create additional exposure pathways to sensitive receivers (including environmental receptors), surface water bodies and groundwater bodies. If earthworks for the proposed detention basin intersect identified areas of potential contamination without appropriate management and/or remediation, similar impacts (in relation to human and ecological health, contamination of spoil and contaminated groundwater discharge) have the potential to occur (refer to Section 8.10.3 of the REF).

However, with appropriate mitigation as identified below, the level of potential contamination risk is minimised.

Management and mitigation measures

The Sydney Metro Construction Environmental Management Framework (CEMF) includes a requirement to prepare a Soil and Water Management Plan which would include management measures for contaminated material (soils, water and building materials) and a contingency plan in the case of unanticipated discovery of contaminated material. This would be implemented during the construction of the proposed onsite detention basin.

The proposed management and mitigation measures for potential contamination impacts associated with the proposed change remain as described in Chapter 4 of Addendum Report 1 and are reproduced in Section 7 of this Addendum Report.

Biodiversity

This section provides an overview of the potential biodiversity impacts during construction of the proposed onsite detention basin and ongoing operation of the facilities.

A biodiversity site inspection of the proposed onsite detention basin area (study area) was undertaken on 28 July 2025. This section provides a summary of the Biodiversity Inspection Memorandum 'the Memo' (Appendix B – Biodiversity Inspection Memorandum) which describes the potential biodiversity impacts as a result of the proposed change (AECOM, 2025). The study area for the Memo is included in Figure 5. The methodology described in Section 8.11.1 of the REF remains applicable to and has been used in the following assessment. The assessment also considers the *Biodiversity Assessment Report* (Jacobs, 2020) which supported the REF, and *Biodiversity Assessment Report Addendum* (Jacobs, 2021) which supported REF Addendum 1.

Existing environment

All works for the proposed change would be within the existing project site. There have been direct impacts to the vegetation within the project site as a result of the site establishment and clearance carried out under the REF. The impacts have been detailed in Table 3-11 in the Addendum Report 1.

The area for the onsite detention basin (within the project site) is generally characterised by the industrial nature of the site, including established detention basins, cleared areas, spoil storage areas and heavily disturbed open grassland. Most of the vegetation in and around the area appears to have re-established after significant disturbance, such as the construction of the precast facilities and other historic land uses (AECOM, 2025). The existing sediment basin (to be converted for the onsite detention basin) is likely to provide habitat for some native species, noting that Common Eastern Froglet *(Crinia signifera)* was heard calling from within (AECOM, 2025).

To the north of the study area, vegetation consists of native and exotic grasses and ground covers. To the east and south of the study area are cleared lands within the project site. Vegetation is limited to small patches of regenerating common opportunistic weeds on disturbed land within western Sydney, such as Castor Oil Plant.

The nearest substantial area of remnant bushland is the Ropes Creek corridor, approximately 75 metres to the southwest. The Ropes Creek corridor runs in a generally north-south direction adjacent to the site. Vegetation along the Ropes Creek embankment was observed to be relatively dense and largely comprised of *Casuarina glauca*, *Typha orientalis,* Blackberry and a mix of native and exotic grasses and ground covers. Several small areas of midstorey vegetation were present, scattered along the embankment (AECOM, 2025).

Threatened Ecological Communities

The Memo identified the following Plant Community Types (PCTs) and associated Threatened Ecological Communities (TECs) listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or the *NSW Biodiversity Conservation Act 2016* (BC Act), mapped within and in proximity to the project site (refer to Figure 5):

- **PCT 3320: Cumberland Shale Plains Woodland** (mapped within the project site). The associated TECs include:

    - Cumberland Plain Woodland in the Sydney Basin Bioregion (critically endangered under the BC Act)
    - Shale Gravel Transition Forest in the Sydney Basin Bioregion (endangered under the BC Act)
    - Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (critically endangered under the EPBC Act)
- **PCT 4025: Cumberland Red Gum Riverflat Forest** (mapped in proximity to the project site along Ropes Creek). The associated TECs include:
    - River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered under the BC Act)
    - River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria (critically endangered under the EPBC Act)
- **PCT 4023: Coastal Valleys Swamp Oak Riparian Forest** (mapped in proximity to the project site along Ropes Creek). The associated TECs include:
    - Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered under the BC Act)
    - Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (endangered under the EPBC Act)

The vegetation mapping was undertaken based on desktop review of the State Vegetation Type Map. The site inspection undertaken for the Memo confirmed that the area for the proposed basin and outlet is heavily dominated by exotic flora and lacks any mature or remnant native flora representative of local PCTs (AECOM, 2025).

The vegetation in proximity to the proposed outlet (outside the project area) is mapped as Cumberland Plain Woodland in the Sydney Basin Bioregion (PCT 3320) (refer to Figure 5). However, the Memo identified that the vegetation is likely better to fit the PCT of Coastal Valleys Swamp Oak Riparian Forest (PCT 4023, endangered under both the BC and EPBC Act), given the dominance of *Casuarina glauca* and *Melaleuca styphelioides* identified during the site inspection (AECOM, 2025).

Potential impacts

Potential impacts to threatened ecological communities

No additional clearing of PCTs or TECs is required as a result of the proposed change. The outlet for the onsite detention basin would flow into an area considered to consist of PCT of Coastal Valleys Swamp Oak Riparian Forest (PCT 4023, listed as endangered under the BC Act and EPBC Act) (AECOM, 2025). This area already receives a degree of overland flow stormwater from the surrounding land, though flow from the drainage channel (outlet) would be more concentrated. The outlet would be unlikely to flow most of the time, noting its function as an overflow relief for the onsite detention basin.

Given the proposed design of the basin, and the intermittent nature of the overflows, the effect on this TEC is not considered to be significant, providing suitable scour protection is provided (in accordance with mitigation measure F5) (AECOM, 2025). The implementation of appropriate scour protection would also minimise any potential broader impacts to riparian vegetation and aquatic habitat.

The proposed change is therefore unlikely to result in additional impacts to TECs identified in the REF and REF Addendum 1.

Figure 5 Vegetation mapping - Plant Community Types

Threatened flora

Construction for the project resulted in direct impacts to *Grevillea juniperina* subsp. *juniperina* (listed as vulnerable species under the BC Act) which were identified in four clusters within the northern basin area (to the north of the northern precast facility) (Jacobs, 2021). This species was not observed within the study area inspected for the proposed onsite detention basin (AECOM, 2025). No other threatened flora was identified in the proposed onsite detention basin area, and therefore further direct impacts to threatened flora are not anticipated (AECOM, 2025).

Threatened species and loss of fauna habitat

The REF and Addendum 1 identified the following potential impacts to threatened fauna species and habitat:

- **Green and Golden Bell Frog:** REF Addendum 1 identified that the existing northern dam and grassy edges contain suitable foraging and dispersal habitat for the Green and Golden Bell Frog (listed as endangered under the EPBC Act and BC Act) (Jacobs, 2021). The area for the proposed onsite detention basin and outlet is not considered to be suitable habitat for the Green and Golden Bell Frog, and therefore no additional impacts are anticipated (AECOM, 2025). However, the pre-clearance mitigation measures for the project should be implemented during any dewatering of the existing sediment basin.
- **Cumberland Plain Land Snail:** REF Addendum 1 identified rubbish piles within the northern basin area (from fly tipping), which represent suitable habitat for the Cumberland Plain

Land Snail (listed as endangered under the BC Act) (Jacobs, 2021). As described in the REF Addendum 1, these rubbish piles are located within low condition woodland, which is unlikely to provide suitable habitat for this species. The area for the proposed onsite detention basin and outlet is not considered to be suitable habitat for the Cumberland Plain Land Snail, and therefore no additional impacts are anticipated (AECOM, 2025). However, the pre-clearance mitigation measures for the project should be implemented during site clearance works for the proposed change.

In addition, the area for the proposed detention basin may be used by mobile fauna species for shelter or breeding, however such usage is not expected to be extensive nor to the degree that threatened species are likely to solely rely on vegetation or other habitat features proposed to be removed (AECOM, 2025). It is unlikely that it would represent important habitat considering its highly disturbed nature and the presence of the adjacent industrial activities. Further impacts to threatened fauna and breeding habitat are therefore not anticipated.

Aquatic environment

The *Biodiversity Assessment Report* (Jacobs, 2020) prepared for the REF, included an overview of the existing aquatic environment. Survey of the habitat quality in proximity to the proposed outlet was also undertaken (refer to the survey location in Figure 6). A summary of the existing fish habitat as identified in the *Biodiversity Assessment Report* (Jacobs, 2020) is as follows:

- Ropes Creek to the west of the study area is classified as a Class 2 waterway (in accordance with the basic 'Class' system by Fairfull and Witheridge et al. 2003). It is a third-order stream that flows generally north before reaching its confluence with South Creek in Ropes Crossing, which then flows into the Hawkesbury River. Ropes Creek is mapped as 'Key Fish Habitat' by the NSW Department of Primary Industries and Regional Development
- there was found to be a lack of permanent flow, weed proliferation, and evidence of physical disturbance within the ecological study area (Figure 6). As such, the aquatic habitats were considered moderately to highly degraded. The assessment found that the drainage lines and dams do not have characteristics suitable for any of the threatened aquatic species known or predicted to occur in the locality.

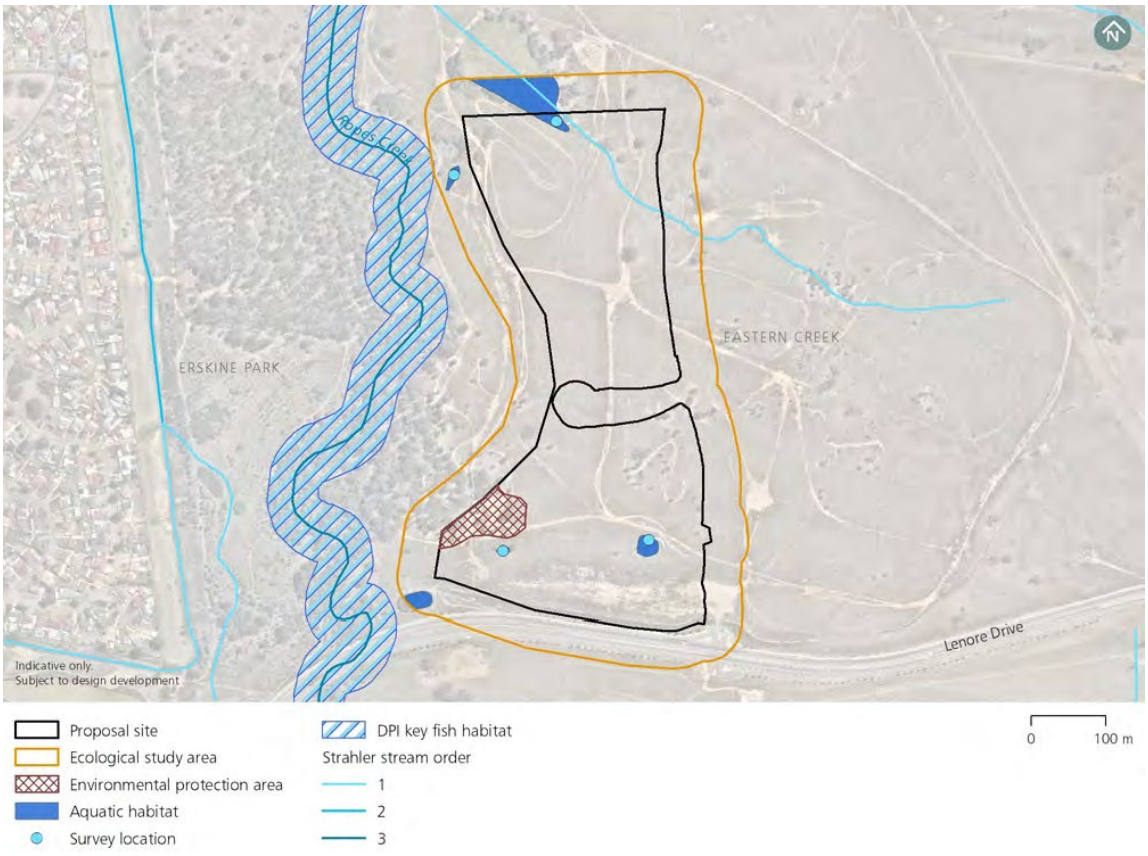

Figure 6 Aquatic survey locations and Key Fish Habitat (Jacobs, 2020)

The proposed change would not increase the amount of run-off from the site, nor the quality of water leading to Ropes Creek. There would be no additional impacts to sensitive or key fish habitat as a result of the proposed change.

Matters of National Environmental Significance

A summary of the EPBC Assessments of Significance undertaken for the REF and REF Addendum 1 is as follows:

- the project involved the direct clearing of about <0.001 hectares of the critically endangered Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest ecological community
- the site establishment work for the project was considered to result in a minor reduction in extent of suitable habitat for the Grey-headed Flyingfox (*Pteropus poliocephalus*), Swift Parrot (*Lathamus discolour*) and Green and Golden Bell Frog
- two migratory bird species listed under the EPBC Act (the Fork-tailed Swift and White-throated Needletail) are considered moderately likely to fly over the site but it would not be classed as 'important habitat' for migratory species.

The EPBC Act Assessments of Significance for the REF and REF Addendum 1 indicate that there is a high level of certainty that the impacts to threatened biodiversity for any Matter of National Environmental Significance are unlikely to be significant and an EPBC Act referral is not required. Refer to Section 8.11 of the REF, and Appendix C of the Addendum Report for further information.

No additional clearing of any TEC for the proposed change is required, and no additional impacts to suitable habitat for endangered species is anticipated (AECOM, 2025). As such, the assessments of

significance against both the BC Act and EPBC Act undertaken for the REF and REF Addendum 1 would remain applicable, and an EPBC Act referral is not required.

Management and mitigation measures

The proposed management and mitigation measures for potential biodiversity impacts as a result of the proposed change remain as described in Chapter 4 of Addendum Report 1 and are reproduced in Section 7 of this Addendum Report. The provision of appropriate scour protection (Mitigation measure F5) will be key to minimising any potential impacts to the TEC at this location, and the geomorphology of the stream bed more generally which, if altered substantially, may result in broader impacts to riparian vegetation and aquatic habitat. In addition,

This also includes the requirement for pre-clearing surveys for the Green and Golden Bell Frog and Cumberland Plain Land Snail.

Noise and vibration

The methodology described in Section 8.1 of the REF remains applicable to the proposed change and has been used in the following assessment. Operational noise has been assessed in accordance with the *Noise Policy for Industry*, which describes 'trigger levels' to inform the noise level at which feasible and reasonable noise management measures should be considered (NSW EPA, 2017).

This section provides an overview of the potential noise and vibration impacts during ongoing operation of the facilities.

Existing Environment

The existing environment of the site, including noise catchment areas (NCAs) and locations of sensitive receivers is as described in Section 8.1.2 of the REF. The proposed change would remain within the approved construction boundary project and as a result there are no additional receivers that were not already considered in the noise and vibration assessment presented in the REF. The nearest receivers to the site are the residential receivers around 375 metres to the west (Erskine Park). Another residential area is located about 2 kilometres north east of the site, north of the M4 Western Motorway and to the east of Archbold Road, Minchinbury.

Potential impacts

Extended operation of the site

The proposed change would extend the operation of the precast yard for any potential use by future stations and by other contractors for the purposes of construction support of Sydney Metro West. As per the REF, operation of the precast facilities would be required 24 hours a day, seven days a week.

The extension of operations has the potential to introduce extended noise and vibration impacts to residential and other sensitive receivers through use of the site until 2032, when the Sydney Metro West line is anticipated to become operational. Noise generating areas within the Eastern Creek Precast Facilities would likely include:

- precast factory with concrete batching
- storage and loading of materials and structural elements
- external equipment.

The proposed change includes production and transportation of precast concrete and other structural elements required for the construction of Sydney Metro West, which are anticipated to require the same noise generating activities than those required currently for tunnel segment production (as identified in the REF).

The operational noise assessment is provided in Section 8.1.4 of the REF. The assessment shows that the concurrent operation of both the northern and southern precast facilities would comply with all relevant objectives at all receivers under neutral weather conditions during day, evening and night periods. Compliance is also predicted during noise-enhancing weather conditions, such as strong wind or rain (including wind conditions from the site towards receivers) (refer to Table 8-8 of the REF). The REF also concluded that no operational mitigation measures for the precast facilities were required as operational noise levels were expected to comply with the NPfI requirements.

In addition, on 16 October 2023 and 1 November 2023, attended noise monitoring was undertaken at the nearest residential receivers for the project at night-time, to verify the noise outputs of the two precast facilities within the Eastern Creek Precast Facilities, operating simultaneously. The

monitoring results indicated that the operational works at the precast facilities were not audible, with the noise monitoring results observing key noise inputs only from distant traffic, wind, dog barks etc.

Management and mitigation measures

The *Sydney Metro Construction Noise and Vibration Standard* would be applied to the construction and operation of the proposed activity as changed. The Standard aims to manage noise and vibration levels where feasible and reasonable using a variety of mitigation measures.

A Detailed Noise and Vibration Impact Statement would be prepared by a suitably experienced noise specialist in accordance with the Construction Noise and Vibration Standard, before the operation of the site by the future contractor(s). The Detailed Noise and Vibration Impact Statement would consider the site layout, plant and equipment required during operations, to confirm the assumptions in the REF and to ensure compliance with the project noise trigger levels and *Noise Policy for Industry* (EPA, 2017). It would also detail any feasible and reasonable noise mitigation required to manage impacts.

An additional management and mitigation measure outlined in Table 7 has been proposed to minimise potential noise impacts during the ongoing operations of the Eastern Creek Precast Facility.

Table 7: Management and mitigation measures – Operational noise and vibration

No.	Impact	Management and mitigation measure
NV3	Operational noise	A Detailed Noise and Vibration Impact Statement would be prepared in accordance with the Sydney Metro Construction Noise and Vibration Standard (CNVS), to verify compliance with the project noise trigger levels and *Noise Policy for Industry* (EPA, 2017). The Detailed Noise and Vibration Impact Statement would also detail the requirements for operational noise monitoring, in accordance with the CNVS.

Traffic, transport and access

The methodology described in Section 8.2 of the REF remains applicable to the proposed change and has been used in the following assessment.

This section provides an overview of the potential traffic, transport and access impacts during ongoing operation of the facilities. As identified in the screening assessment in Section 6, the construction of the proposed onsite detention basin would not change the maximum number of vehicle movements to and from the site, nor the haulage routes with vehicles travelling from the site. Therefore, the REF assessment during the construction phase of the project remains applicable for the construction of the onsite detention basin works.

Existing Environment

The existing road network in the vicinity of the project site is shown in Figure 7. Access to the Eastern Creek Precast Facilities is via the signalised Archbold Road and Lenore Drive intersection, the first stage of the Archbold Road project, and Western Access Road located between the northern and southern facilities.

The REF identified that existing traffic volumes are the highest on Wallgrove Road, and Old Wallgrove Road / Lenore Drive with all other traffic volumes on other roads near the site are substantially lower (see Figure 7).

The REF modelled intersection performance during the morning and evening peak hours for key intersections in the vicinity of the site prior to operation of the prior and identified that all intersections surrounding the site performed satisfactorily at or above level of service C.

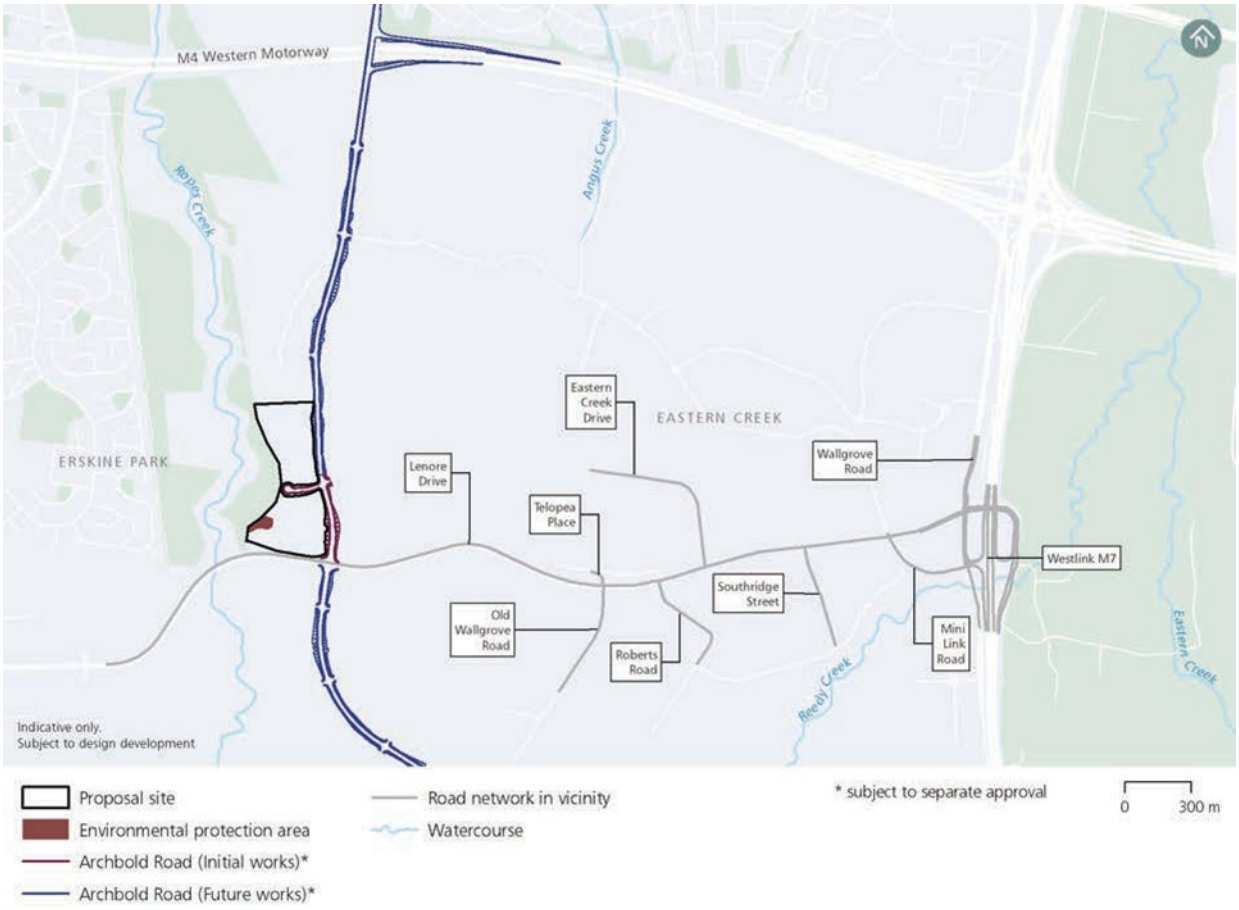

Figure 7 Existing road network in the vicinity of the site (from the REF)

Refer to Chapter 8.2 of the REF for a description of the public transport and active transport network in vicinity to the site. No changes to public transport or active transport are anticipated as a result of the proposed change.

Potential impacts

The REF identified that operational traffic is anticipated to have a negligible impact on the operation of the surrounding road network.

The proposed change would not change the haulage routes, with vehicles travelling from the site in an eastern direction. The designated haulage routes includes M7 Motorway/ Wallgrove Road, Old Wallgrove Road, Lenore Drive, Archbold Road and Western Access Road (refer to Figure 8).

The forecast maximum number of operation vehicles to and from the site would be consistent with the REF to continue to support ongoing operations of the facilities:

- light vehicles: around 120 light vehicles in the AM peak hour, and 120 in the PM peak hours.
- heavy vehicles: 24 heavy vehicles per hour between 7.00am to 6.00pm, and 12 vehicle movements per hour in the evening (6:00pm and 7:00am)

The proposed change would not result in any changes in terms of workforce, vehicle numbers, parking arrangements, and access and egress to the site during both construction and operation.

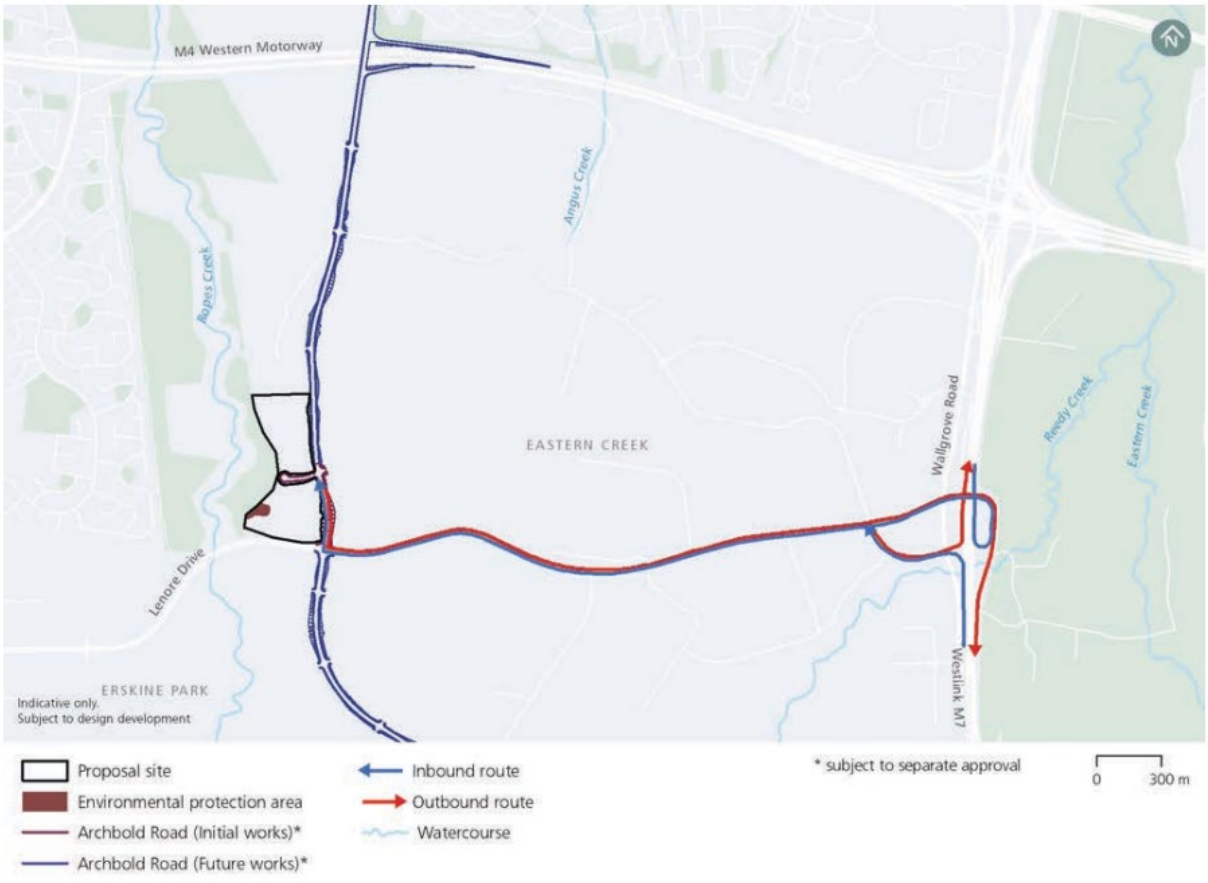

Figure 8 Haulage routes for the project (from the REF)

A Traffic and Transport Report (Appendix D – Traffic and Transport has been prepared to support the proposed change to the extended use of the site to support construction of Sydney Metro West stations and linewide facilities. A comparison between the 2025 traffic volume data (extracted from Sydney Coordinated Adaptive Traffic System (SCATS)) and the forecasted 2026 'with operation of the proposal' volumes from the REF was undertaken, to assess the potential impact of the ongoing use of the site until operation of Sydney Metro West.

As per Table 2 of the Traffic and Transport Report and 8-14 of the REF, the forecasted peak hour intersection performance in 2026 indicated that the following intersections generally would have a level of service C or D (with the other intersections operating well, with capacity):

- Old Wallgrove Road / Lenore Drive / Telopea Place
- Old Wallgrove Road / Mini Link Road
- M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road
- M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road.

The indicative construction program for construction of the Sydney Metro West stations (as part of Sydney Metro West CSSI Stage 3) indicates that peak construction and use of the Eastern Creek facilities is expected to occur in around 2028. The Traffic and Transport Report includes forecast traffic volumes for 2028, indicating a minor increase in traffic volumes (approximately 4%) in 2028 during the AM peak hour, when compared to the predictions in the REF (although there was decrease of approximately 2% in the PM peak). As the number of light and heavy vehicles attribute to the project remains consistent with the 2026 data, this increase is attributed to the default population and employment density increment in the surrounding land use.

The Traffic and Transport Report indicates that the intersections still have sufficient capacity for increased traffic volumes without exceeding their reported levels of service. The intersection at Old Wallgrove Road/Lenore Drive/Telopea Place is predicted to experience a delay of around 43 seconds; however, it is likely to have only an increase of 90 vehicles, which can be absorbed and not increase the operational delay experienced at the intersection (i.e. the level of service will not exceed D).

A maximum of 24 heavy vehicle movements per hour is required for the ongoing operation of the project, which constitutes around 1% of the peak hour traffic volumes at these four intersections along the approved haulage route. These additional vehicles are equivalent to less than one heavy vehicle movement for each two-minute period, which would likely be equivalent to less than one additional heavy vehicle movement per signal phase and such variability in additional traffic volume would not alter the current intersection operation. Additional light vehicle traffic through the intersections in the network peak hours would be negligible, having regard to the operational shift times.

Overall, there are not anticipated to be additional traffic, transport or access impacts (which would warrant the implementation of additional mitigation measures), resulting from the proposed change to continue operation of the Eastern Creek Precast Facility to support the ongoing construction of Sydney Metro West.

Parking and property access

There would be no impact on existing parking as a result of the proposed change. Provision for staff and visitor parking during operation would be provided within the site.

There would also be no impact on property access during operation.

Management and mitigation measures

The Sydney Metro Construction Traffic Management Framework would continue to be implemented for the operational phase of the precast facilities. The proposed management and mitigation measures for potential traffic, transport and access impacts associated with the proposed change remain as described in Chapter 4 of Addendum Report 1 and are reproduced in Section 7 of this Addendum Report.

Flooding and hydrology

This section provides an overview of the potential flooding and hydrology impacts during ongoing operation of the facilities.

The proposed change relates to the water management infrastructure for the northern precast facility only. No changes to the water management system for the southern precast facility are proposed.

Existing environment

Hydraulic context

As identified in the REF, Ropes Creek flows from south to north to the west of the project site. Two main overland flow paths (northern and southern flow paths) originate from the area to the east of the site on land which is gently to moderately sloping. Prior to site establishment, a minor, shallow flow path was also present in the middle section of the site (Jacobs, 2020).

The REF identified that the project site is not flood affected by Ropes Creek flooding in the probable maximum flood, except for in the south-western corner (which is not in proximity to the proposed detention basin area). The proposed onsite detention basin area approaches the fringe of the 1% AEP flood extent. However, it does not encroach on the Ropes Creek floodway area (Jacobs, 2020).

Existing drainage design for the northern precast facility

Currently surface water runoff and stormwater from the northern precast facility flow north along the boundary of the site. A mix of perimeter swales and pit and pipe systems direct flows into the northern basins. Stormwater from the southern facility is detained in a southern onsite detention basin, however there are no changes proposed to the onsite detention for the southern facility.

The northern basins are situated to the north of the precast facility, and have been required to be utilised for water management for the northern precast facility for the duration of tunnelling works for the Sydney Metro West project. The basins have been designed to overflow in a controlled manner that would eventually drain to Ropes Creek. The northern basins mitigate the potential negative impact on peak flood flows discharged to Ropes Creek, from the project site.

In addition, a temporary construction sediment basin has been constructed within the northern precast facility to manage erosion and sediment impacts of construction stockpiling works within the facilities.

Potential impacts

Flood levels

The proposed change to the project would not impact the potential for flooding within the site, as the site is above the PMF and outside the flood extent. There would also not be any flood impacts in the 1% AEP flood event as the site would remain above the 1% AEP flood level (Jacobs, 2020).

As the proposed water management works do not change the current ground level above Ropes Creek, no further potential impacts on the Eastern Creek Precast Facilities project resulting from flooding are anticipated.

Overland flooding and drainage

As identified in the REF, development of the site would fill in existing overland flow paths and there may be potential impacts associated with the obstruction of overland flows and drainage (Jacobs, 2020). The Technical Paper (Jacobs, 2020) also identified that design coordination with the drainage arrangements for Archbold Road would be undertaken. The proposed change would not include changes to the sites drainage design, with all flows from the northern precast yard leading to the proposed onsite detention basin as opposed to the northern detention basins. Therefore, no changes to overland flows are anticipated.

Peak flows in Ropes Creek

The proposed change would not result in increased impervious areas (i.e. hardstand, building roofs etc). Therefore, changes in runoff rates and volumes in Ropes Creek during flood events (which could impact on downstream properties due to associated increased flood levels) are not anticipated. The proposed change is designed to further mitigate impact on the peak flows in Ropes Creek as a result of increased impervious areas from the Eastern Creek Precast Facilities, which have been constructed for the project. The REF requires:

- provision of appropriate onsite stormwater detention/ flood detention facilities to mitigate the impact
- the design of the outlet to satisfactorily mitigate potential increases in peak flows in frequent events (refer to mitigation measure F2).

The proposed change is to construct and use an alternate detention basin for the northern precast facility (as opposed to utilising the existing basins to the north of the site). The detention basin has been designed to minimise potential flooding and hydrology impacts, as:

- the minor storm (50% Annual Exceedance Probability (AEP)) and the major storm (1% AEP) have been analysed for the design capacity of the stormwater system as per Blacktown City Councils *Engineering Guide for Development – 2021*. In addition, mitigation measure F1 requires the detention facilities to carer for events up to the 1% AEP event
- scour protection has been sized at both the inlet to the onsite detention basin as well as the outlet, to ensure flows that eventually discharge to Ropes Creek are controlled (refer to Appendix E).

Creek geomorphology

As identified in the REF, without mitigation, increased site runoff peak rates, volumes and durations of flow may result in changes to flow regimes in Ropes Creek in low flows and frequent flood events (such as erosion or habitat impacts) (Jacobs, 2020). The proposed change would mitigate the potential for this impact by providing appropriate onsite detention facilities, with an appropriately sized outlet with scour protection. Outflows from the basin are intended to eventually flow into Ropes Creek.

As identified above, Appendix E –Hydrology demonstrates that the proposed design of the onsite detention basin is adequately sized to ensure impervious runoff from the site is mitigated, and therefore is not expected to have an impact on Ropes Creek peak flows.

Management and mitigation measures

The proposed management and mitigation measures for potential flooding and hydrology impacts associated with the proposed change remain as described in Chapter 4 of Addendum Report 1 and are reproduced in Section 7 of this Addendum Report, specifically mitigation measures F1-F6.

In addition, it is emphasised that REF measure F2 requires:

- *Detailed design of the proposal site would include the provision of appropriate on-site stormwater detention/flood detention facilities. Outlet sizing would be designed to satisfactorily mitigate potential increases in peak flows in frequent events.*

7 Environmental management

Environmental management systems and plans

Environmental issues associated with the construction and operation of the amended proposal would be managed using the Sydney Metro environmental management system, as described in Section 9.1 of the REF. Sydney Metro has developed and successfully implemented a range of documents to set out the management approach during construction of its projects.

Although these documents are typically outlined during the construction phase of projects, they were adopted and applied, as relevant, for the operational phase as identified in Section 9.2 of the REF.

These management documents include:

- Construction Environmental Management Framework
- Construction Noise and Vibration Standard
- Construction Traffic Management Framework

Revised management and mitigation measures

The list of management and mitigation measures presented in Section 9.3 of the REF has been updated with consideration given to the environmental impacts identified within Section 4.2 of previous Addendum REF 1.

The full set of revised environmental management measures to be implemented during the construction and operation of the project (as changed) are listed in Table 8. This table supersedes the measures presented in the previous Addendum REF 1. New management and mitigation measures or additions to existing measures are shown in **bold, underlined text**.

Table 8 Compiled management and mitigation measures

No.	Impact	Management and mitigation measures
Noise and vibration		
NV1	Construction noise and vibration	During construction, receivers that would potentially be affected by noise and/or vibration from the works would be appropriately notified before the relevant works start.
NV2	Construction airborne noise	Noise monitoring at the most affected receiver(s) would be undertaken at the start of construction works to check the levels are as predicted and to confirm that the standard mitigation measures are adequate, further mitigation measures would be considered and implemented where feasible and reasonable.
NV3	**Operational noise**	**A Detailed Noise and Vibration Impact Statement would be prepared in accordance with the Sydney Metro Construction Noise and Vibration Standard (CNVS), to**

		verify compliance with the project noise trigger levels and *Noise Policy for Industry* (EPA, 2017). The Detailed Noise and Vibration Impact Statement would also detail the requirements for operational noise monitoring, in accordance with the CNVS.
Traffic and Transport		
T1	Traffic incidents	In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or other parts of Transport for NSW.
T2	Emergency vehicles access	Access to properties for emergency vehicles would be provided at all times.
T3	Road safety	All trucks would enter and exit the proposal site in a forward direction, where feasible and reasonable.
T4	Staff parking	All staff parking would be provided on-site and not on surrounding local streets.
T5	Road safety	The driver induction process would include safety awareness in relation to all road users, particularly pedestrians and cyclists at the proposal site access point at Archbold Road/Lenore Drive during construction.
Landscape and visual character		
LV1	Visual impacts - construction	Where feasible and reasonable, the elements within the construction site would be located to minimise visual impacts (for example storing materials and machinery behind fencing)
LV2	Landscape and visual impact – operation	Sheds would be finished in a colour which aims to minimise visual impacts, if visible from areas external to the site.
LV3	Lighting impacts during operation	Lighting of the sites would be orientated to minimise glare and light spill impacts on adjacent receivers in accordance with AS4282:2019.
Aboriginal heritage		
AH1	Test excavation	Archaeological test excavation would be limited to the amended proposal site and undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010a) to confirm the geographic extent of RCIF 2 (AHIMS ID 45-5-3159), Blacktown Southwest 11 (AHIMS ID 45-5-0559), area of

		PAD identified within Ropes Creek Artefact Scatter 09 (AHIMS 45-5-5355), Blacktown Southwest 7 (AHIMS ID 45-5-0559) and RCAS 13 (AHIMS ID 45-5-5441). Test excavation would be limited to areas subject to potential impacts by the proposal, and outside the area already salvaged and subject to impacts by the St Mary's Wastewater System Augmentation project. Archaeological test excavation would be undertaken in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW, 2010a).
AH2	Consultation	As part of the preparation of the test excavation methodology and ACHAR, comprehensive Aboriginal stakeholder consultation would be carried out in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010b) and the National Parks and Wildlife Regulation 2019.
AH3	Aboriginal heritage	An AHIP would be submitted to the NSW DPC for those portions of the proposal site subject to impacts once test excavation is completed. The AHIP application would be supported by an ACHAR and test excavation report.
AH4	Overlapping impact	Sydney Metro would liaise with Transport for NSW regarding overlapping impacts to Aboriginal site AIF-06 (AHIMS ID 45-5-4599) and coordinating further assessment and management.
AH5	Unexpected finds	In the event that suspected Aboriginal ancestral remains are exposed during construction, the requirements of Section 3.6 of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010) would be implemented.
AH6	**Unexpected finds**	**The Sydney Metro Unexpected Heritage Finds Procedure must be implemented for the duration of construction.**
Non-Aboriginal heritage		
NAH1	Unexpected finds	An Unexpected Finds Procedure, to be implemented in the event that potential non-Aboriginal heritage objects are exposed during construction, would be prepared that complies with the *Heritage Act 1977*.
NAH2	Archaeological monitoring and s140 Excavation Permit	Excavation works would aim to avoid the area of moderate potential for locally significant archaeological relics associated with the Chatsworth Estate homestead where possible. Should excavation works in this area be unavoidable, a program of archaeological monitoring would be

		implemented. If necessary, a s140 Excavation Permit granted under section 141 of the *Heritage Act 1977* would be obtained from Heritage NSW prior to the commencement of excavation works.
NAH3	Archaeological Methodology and Research Design	Any application for an Excavation Permit under the *Heritage Act 1977* would be accompanied by an Archaeological Methodology and Research Design (AMRD). The AMRD would outline the archaeological potential and significance of the area to be impacted and assess the impact of the proposed excavation works on those resources. The AMRD would provide appropriate methodologies for investigation, protection and/or avoidance of archaeological remains.
Flooding		
F1	Potential increase in mainstream peak flood flows	Detailed design of the proposal site would include provision of appropriate on-site stormwater detention/flood detention facilities to cater for events up to and including the 1% AEP event.
F2	Potential geomorphic impacts due to changed flow regime in low flows and frequent flood event	Detailed design of the proposal site would include the provision of appropriate on-site stormwater detention/flood detention facilities. Outlet sizing would be designed to satisfactorily mitigate potential increases in peak flows in frequent events.
F3	Potential impacts on overland flooding and drainage conditions	Detailed design of the proposal site would include the provision of appropriate flow diversion channels or culverts for management of external flows.
F4	Potential impacts on overland flooding and drainage conditions	Detailed design would integrate with the planned Archbold Road upgrade and extension cross drainage and road drainage outlets.
F5	Potential impacts on overland flooding and drainage conditions	Detailed design would provide appropriate scour protection works at channel/culvert discharge points to Ropes Creek.
F6	Potential impacts on the proposal resulting from flooding	Detailed design would provide filling to a height of at least 0.5m above Ropes Creek 1% AEP flood level.
Soils and surface water		
SW1	Soils and salinity	Prior to ground disturbance in high probability salinity areas, testing would be carried out to determine the presence of saline soils. If salinity is encountered, excavated soils would not be reused or it would be

		managed in accordance with Book 4 Dryland Salinity: Productive Use of Saline Land and Water (NSW DECC, 2008). Erosion controls would be implemented in accordance with Blue Book (Landcom, 2004)
SW2	Potential erosion and sedimentation	Erosion and sediment measures would be implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004) and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from the proposal site would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts. Temporary sediment basins would be designed in accordance with Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction (DECC, 2008)
SW3	Wastewater discharge	Prior to discharge, wastewater would be treated to a level that is compliant with the ANZECC/ARMCANZ (2000) and ANZG (2018) default guidelines for 95 per cent species protection. For the purposes of this management measure, during operation wastewater is defined as process water from operation of the precast facility and does not include surface runoff or stormwater.
Contamination		
C1	Management of low risk contamination	For areas that have been identified as having moderate contamination impact potential, a further review of data would be performed. Should the additional data review confirm that contamination is likely to have a very low or low impact potential, the areas would then be managed in accordance with the Soil and Water Management Plan for the proposal. This would typically occur where there is minor, isolated contamination that can be readily remediated through standard construction practices such as excavation and off-site disposal.
C2	Detailed Site Investigation	Where data from the additional data review (mitigation measure C1) is insufficient to understand the impact of contamination, a Detailed Site Investigation would be carried out in accordance with the NEPM (2013) and other guidelines made or endorsed by the NSW EPA. The areas requiring Detailed Site Investigation would be confirmed following the additional data review (C1), however on the basis of the PSCI, it is anticipated that a Detailed Site Investigation would be required to

		characterise fill materials, and sediment from dam / retention pond for on-site reuse and/or off-site disposal. Fly tipped wastes and deposited wastes (from former land use) would need to be characterised for off-site disposal.
C3	Remediation	Where data from additional data review (mitigation measure C1) or the Detailed Site Investigation (mitigation measure C2) confirms that contamination would have a moderate to very high risk, a Remedial Action Plan (RAP) would be developed for the area of the construction footprint. The RAP would detail the remediation works required to mitigate impacts from contamination throughout and following completion of construction. The RAP would be prepared in accordance with relevant NSW EPA guidelines and where applicable, detail remediation methodologies in accordance with Australian Standards and other relevant government guidelines and codes of practice. Remediation would be performed as an integrated component of construction and to a standard commensurate with the proposed end use of the land. The requirements for a RAP and remediation would be confirmed following the additional data review (mitigation measure C1) and Detailed Site Investigation (mitigation measure C2).
C4	Site audit statement	Where contamination is highly complex, such as significant groundwater contamination; contamination associated with vapour; contamination that requires specialised remediation techniques; or contamination that requires ongoing active management during and beyond construction, an accredited Site Auditor would review and approve the RAP and would develop a Site Audit Statement and Site Audit Report upon completion of remediation. The requirement for a Site Audit Statement would be confirmed following preparation of the RAP (mitigation measure C3).
C5	Residual contamination following construction	Ongoing management and monitoring measures would be documented in an appropriate form and implemented for any areas where minor, residual contamination remains following construction.
C6	Accidental leaks or spills – operation	The operational environmental management plan (OEMP) for the proposal would include an Emergency Response Plan (or equivalent) which would specify the procedure to be followed in the event of a spill, including the notification requirements and use of absorbent material to contain the spill

C7	Contaminated soil - operation	Where contaminated soils are to remain on-site, an appropriate OEMP would be prepared and implemented. The OEMP would include relevant ongoing management requirements developed in accordance with the NEPM (2013) and relevant guidelines made or approved by the NSW EPA. Measures may include but are not limited to, including procedures for excavation works, inspections and audits.
C8	Contaminated groundwater	Potential impacts from existing groundwater contamination (if present) during operation of the proposal would be managed through management and mitigation measures such as: • Emplacement of appropriate topographic / drainage controls to minimise seepage and ponding of water across the site • Drainage from sealed areas would be directed to stormwater drains (e.g. pipes, swales) via gross pollutant traps and sediment basins (if necessary) to mitigate potential impacts from sediments or wastes on receiving environments.
Biodiversity		
B1	Potential impact to surrounding vegetation and threatened ecological communities	Prior to construction, the limits of the work zone, areas for parking and turning of vehicles and plant equipment would be clearly and accurately marked out. These areas would be located so that vegetation disturbance is minimised as much as possible and the drip-line of trees avoided.
B2	Potential impact to surrounding vegetation and threatened ecological communities	Prior to construction, exclusion zones would be identified and established around all vegetation to be retained, such as the environmental protection area in the west of the proposal site. Periodic monitoring would be undertaken to ensure all controls are in place and no inadvertent impacts are occurring.
B3	Potential impact to surrounding vegetation and threatened ecological communities	Materials, plant, equipment, work vehicles and stockpiles would be placed to avoid damage to surrounding vegetation and outside tree driplines.
B4	Potential impact to surrounding vegetation and threatened ecological communities	Prior to construction, personnel would be informed of the environmentally sensitive aspects of the proposal site, including plans for impacted and adjoining areas showing vegetation communities, important flora and fauna habitat areas, and locations where threatened species, populations or ecological communities have been recorded. Construction personnel would be made aware

		that any native fauna species encountered must be allowed to safely leave the proposal site where possible and a local wildlife rescue organisation or appropriately experienced ecologist must be called for assistance where necessary.
B5	Potential impact to surrounding vegetation and threatened ecological communities	Where possible, hollows would be cut out of hollow-bearing trees and re-established in large trees to the west of the proposal site to mitigate the loss of hollow habitat on fauna.
B6	Potential impacts to the Cumberland Plain Land Snail	Pre-clearing surveys for the Cumberland Plain Land Snail would be undertaken by a suitably qualified ecologist within 48 hours prior to the commencement of clearing to translocate any individuals that may be inhabiting areas that would be cleared or disturbed. This includes all areas of dumped rubbish across the proposal site.
B7	Potential impacts to the Cumberland Plain Land Snail	Prior to construction, exclusion zones would be established around Cumberland Plain Land Snails habitat in the environmental protection area. All personnel would be inducted to understand the exclusion zone to limit the potential of trampling snails.
B8	Potential impacts to the Cumberland Plain Land Snail	Large woody debris cleared within the proposal site would be relocated into habitat to the west of the proposal site.
B9	Potential impacts to the Green and Golden Bell Frog	Pre-clearing surveys for the Green and Golden Bell Frog would be undertaken by a suitably qualified ecologist within 48 hours prior to the commencement of clearing and dewatering of potential habitat to ensure that individuals have not inhabited the site. A suitably qualified ecologist would also be present during the dewatering of the habitat. A stop work in the immediate vicinity would be implemented if this species is identified on the proposal site, and then further consideration of approach to management of individuals on proposal site through consultation with a Green and Golden Bell Frog expert.
B10	Potential impacts to the Green and Golden Bell Frog	Any work in and around the suitable habitat during clearing would follow the Hygiene Protocol for the Control of Disease in Frogs (Department of Environment and Climate Change 2008b) to reduce the potential for introduction and spread of Chytrid fungus.
B11	Potential impacts from introduction and spread of weeds	Weed control would be undertaken by suitably qualified and/or experienced personnel. This may include: • Manual weed removal in preference to herbicides

		• Replacing non-target species removed/killed as a result of weed control activities • Protecting non-target species from spray drift • Using only herbicides registered for use within or near waterways for the specific target weed • Applying herbicides during drier times when the waterway level is below the high-water mark • Not applying herbicide if it is raining or if rain is expected • Mixing and loading herbicides, and cleaning equipment away from waterways and drains.
B12	Potential impacts from introduction and spread of weeds	During construction, weed management would be undertaken in areas affected by construction prior to any clearing works in accordance with the *Biosecurity Act 2015* to ensure they are not spread to the surrounding environment; including during transport disposal off-site to a licenced waste disposal facility.
B13	Potential impacts from introduction and spread of weeds	All weeds, propagules, other plant parts and/or excavated topsoil material that is likely to be infested with weed propagules that are likely to regenerate would be treated on site or bagged, removed from site and disposed of at a licensed waste disposal facility.
B14	Potential impacts from introduction and spread of plant pathogens	During construction, all vehicles driving to and from the proposal site would follow a protocol to prevent the spread or introduction of phytophthora, namely vehicles would be clean, including the tyres and any equipment.
B15	Potential impact to surrounding vegetation and threatened ecological communities	The opportunity to translocate the forty-nine individuals of *Grevillea juniperina* subsp. *Juniperina* around Ropes Creek would be investigated and implemented if feasible and reasonable.
B16	Potential impacts related to fauna injury and mortality	A suitably qualified aquatic ecologist would be present during the dewatering of the northern dam. If native fish, turtle and/or frog species are found, they would be relocated into a similar aquatic environment by a trained aquatic ecologist under a Fisheries Permit issued by the Department of Primary Industries. Sydney Metro would apply for a Fisheries Permit, if required.
B17	Potential impacts from the spread of exotic species	Water removed from the existing dam during dewatering would be filtered for *Salvinia molesta* and *Gambusia holbrooki* before releasing into surrounding environments to minimise the potential for spreading of these exotic species.

Resource use and water management		
WR1	Compliance with legislative and policy requirements	All waste would be assessed, classified, managed, transported and disposed of in accordance with the *Waste Classification Guidelines and the Protection of the Environment Operations (Waste) Regulation 2014*.
WR2	Waste minimisation	Waste would be minimised by accurately calculating materials brought to the proposal site and limiting materials packaging.
WR3	Waste management	100 per cent of usable spoil from construction would be reused, in accordance with the Sydney Metro spoil management hierarchy.
WR4	Reuse and recycling	Waste streams would be segregated to avoid cross-contamination of materials and maximise reuse and recycling opportunities.
WR5	Waste tracking	A materials tracking system would be implemented for material transferred to offsite locations such as licensed waste management facilities.
WR6	Reuse and recycling	At least 95 per cent of inert and non-hazardous construction waste, excluding spoil, and at least 50 per cent of office waste would be recycled or alternatively beneficially reused.
Air quality		
AQ1	Dust impacts during construction	The following best-practice dust management measures would be implemented during construction works: • Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather • Adjust the intensity of activities based on measures and observed dust levels and weather forecasts • Minimise the amount of materials stockpiled and position stockpiles away from surrounding receivers • Regularly inspect dust emissions and apply additional controls as required.
AQ2	Dust impacts during operation	The following best-practice dust management measures would be implemented during operation: • Ensure that loads are covered and that haulage vehicles are cleaned to remove any loose debris before leaving the site.

		• Regularly wet-down exposed and disturbed areas including stockpiles, especially during dry weather. • Position long-term stockpiles away from surrounding receivers. • Regularly inspect and where necessary clean sealed haulage roads to remove tracked materials.
AQ3	Exhaust emissions during construction and operation	Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant would be carried out as part of pre-acceptance checks.
AQ4	Airborne hazardous materials uncovered during construction	The following best-practice measures would be implemented to manage airborne hazardous materials during construction: • Temporary coverings or odour suppressing agents would be applied to excavated areas where appropriate • Removal and disposal of hazardous materials would be undertaken in accordance with the relevant requirements in the *Work Health and Safety Act 2011, Work Health and Safety Regulation 2017* and any applicable guidelines.
Bushfire		
BF1	Bushfire protection measures	The proposal site would be managed as an Asset Protection Zone (APZ). The entire proposal site would be managed as an APZ as outlined within Appendix 4 of 'Planning for Bush Fire Protection 2019' and the NSW Rural Fire Service's document 'Standards for asset protection zones'. The APZ would not extend into the environmental protection area in the south-west of the site.
BF2	Bushfire protection measures	Vulnerable buildings and/or critical assets would be constructed to appropriate BAL in accordance with the Australian Standard for the Construction of Buildings in Bushfire Prone Areas (AS3959).
BF3	Bushfire protection measures	The following measures would be implemented for access roads within the proposal site: • Access roads would be two-wheel drive, all weather roads • Minimum 5.5 metre carriageway width kerb to kerb

		• Maximum grades for sealed roads would not exceed 15 degrees and an average grade of not more than 10 degrees, or other gradient specified by road design standards, whichever is the lesser gradient • Curves of roads would have a minimum inner radius of 6 metres • Dead end roads would incorporate a minimum 12 metre outer radius turning circle, and would be clearly sign posted as a dead end • A minimum vertical clearance of 4 metres would be provided to any overhanging obstructions, including tree branches.
BF4	Bushfire protection measures	The following water supply and utilities would be installed during construction and maintained during operation of the proposal: • A minimum static water supply of 20,000 litres for firefighting purposes. The firefighting water can be available in a single tank or a number of tanks around the proposal site • A hardened ground surface for truck access up to and within 4 metres of the water source • A 65 millimetre metal Storz outlet with a gate or ball valve would be provided as an outlet on each of the tanks • If the water tank is located above ground it would be of a non-combustible material • If the water tank is located underground, it would have an access hole of 200 millimetres to allow tankers to refill direct from the tank. • All associated fittings to the tank would be non-combustible.
BF5	Bushfire protection measures	Bushfire Emergency Management and Evacuation Plans would be developed for the construction and operation of the proposal. The bushfire evacuation procedures would be completed in accordance with NSW Rural Fire Service Guide to Developing A Bushfire Emergency Management Plan and meet the requirements of Australian Standard AS 3745-2010 – Planning for Emergencies in facilities.
BF6	Bushfire protection measures	Activities that generate sparks or excessive heat would be minimised when a total fire ban is declared by Rural Fire Service.
Sustainability, climate change and greenhouse gas		

SCC1	Sustainability implementation	Sustainability initiatives would be incorporated into the detailed design and construction to support the achievement of the Sydney Metro West sustainability objectives.
SCC2	Sustainability implementation	Best practice level of performance would be achieved using market leading sustainability rating tools during construction and operation.
SCC3	Greenhouse gas emissions	25 % per cent of the greenhouse gas emissions associated with consumption of electricity during construction and operation of the proposal would be offset.
SCC4	Greenhouse gas emissions	An iterative process of greenhouse gas assessments and design refinements would be carried out during detailed design and construction to identify opportunities to minimise greenhouse gas emissions. Performance would be measured in terms of a percentage reduction in greenhouse gas emissions from a baseline inventory calculated at the detailed design stage.
SCC5	Climate change risks	Climate change risk treatments would be confirmed and incorporated into the detailed design.
Cumulative impacts		
CI1	Cumulative impacts	Coordination and consultation with the following stakeholders would occur where required to manage the interface of projects under construction at the same time: • Other parts of Transport for NSW • Department of Planning, Housing and Infrastructure • Utility providers • Construction contractors. • Co-ordination and consultation with these stakeholders would include: • Provision of regular updates to the detailed construction program, construction sites and haul routes • Identification of key potential conflict points with other construction projects • Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict, this could involve: o Adjustments to the Sydney Metro construction program, work activities or haul routes; or adjustments to the program, activities or haul routes of other construction projects

		○ Co-ordination of traffic management arrangements between projects.

8 Justification and conclusion

The proposed change to the Eastern Creek Precast Facilities project is subject to assessment under Division 5.1 of the EP&A Act. The Addendum REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

The proposed change has been subject to assessment under Part 5, Division 5.1 of the EP&A Act. The REF Addendum has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity. This has included consideration of other environmental planning instruments as well as other NSW and Commonwealth legislation.

The proposed change as described in the REF Addendum best meets the objectives of the project, with a consistent level of impact to what was assessed in the REF and Addendum 1. Mitigation measures as detailed in this REF Addendum would ameliorate or minimise these expected impacts.

This REF Addendum has considered and assessed these impacts in accordance with Clause 171 of the EP&A Regulation and the requirements of the EPBC Act (refer to Section 6, Appendix A (Consideration of Environmental Factors and Matters of National Environmental Significance)). Based on the assessment contained in this REF Addendum, it is considered that the proposed change is not likely to have a significant impact upon the environment or any threatened species, populations or communities. Accordingly, an EIS or species impact statement (or biodiversity development assessment report) is not required, nor is the approval of the Minister for Planning. It is also considered that the proposed change does not trigger the need for referral or approval under the Commonwealth EPBC Act.

The proposed change has also taken into account the principles of ecologically sustainable development and the objects of the EP&A Act. The proposed change would be delivered to maximise the benefit for the community, be cost effective and minimise any adverse impacts on the environment. On balance, the proposed change is considered justified and in the public interest.

9 Determination

I, Ashe Earl-Peacock, Director Environment, Sustainability and Planning – Sydney Metro West, Sydney Metro, state as follows:

- I certify that I have reviewed and endorsed the contents of the Eastern Creek Precast Facilities Review of Environmental Factors Addendum 2 and, to the best of my knowledge, it is in accordance with the *Environmental Planning and Assessment Act 1979* (NSW), Environmental Planning and Assessment Regulation 2021 (NSW) and the Guidelines approved under clause 170 of the Environmental Planning and Assessment Regulation 2021 (NSW), and the information it contains is neither false nor misleading.
- I have examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the change assessed in Eastern Creek Precast Facilities Review of Environmental Factors Addendum 2 in accordance with section 5.5 of the *Environmental Planning and Assessment Act 1979* (NSW).
- I have formed a view that the change is not likely to significantly affect the environment, having regard to the factors described in clause 171 (2) of the Environmental Planning and Assessment Regulation 2021 (NSW).
- I have formed a view that the change is not likely to significantly affect threatened species, being a term defined in section 7.2 of the *Biodiversity Conservation Act 2016* (NSW).
- I have formed a view that the change does not trigger the need for referral or approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

I determine, on behalf of Sydney Metro, that the Eastern Creek Precast Facilities Project (as changed) may be carried out in accordance with the Conditions of Approval and environmental management measures, as described in this REF Addendum.

Signature: 

Name: Ashe Earl-Peacock

Title: A/ Director Environment, Sustainability and Planning – Sydney Metro West

Date: 21/10/2025

Appendix A – Consideration of Environmental Factors and Matters

Consideration of clause 171(2) factors and matters of national environmental significance

In addition to the requirements of the environmental factors guidelines that apply to the activity, the following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposed change on the natural and built environment.

Clause 171 considerations	Impact
a) The environmental impact on the community.	
Sensitive receivers are generally located some distance from the site, including the residential area of Erskine Park about 375 metres to the west and the commercial/ industrial area of Eastern Creek about 800 metres to the south and east. There is low potential for noise associated with the project that could impact on the community. Safeguards have been proposed (section 9) to address these potential impacts. Traffic, transport and amenity impacts associated with the proposed change that could impact on the community are considered unlikely due to the locality of the site.	Potential short-term negative
b) The transformation of the locality.	
The proposed change would extend the operation of the existing facilities for the purposes of construction support of Sydney Metro West stations and linewide ancillary facilities. The facilities are operated within land owned by Sydney Metro, and the use is consistent with the industrial land use zone (IN1 General Industrial) under the *State Environmental Planning Policy (Industry and Employment) 2021*.	Nil
c) The environmental impact on the ecosystems of the locality.	
The expansion of the existing basin and new discharge route would be within the approved construction footprint. Further impacts to biodiversity are not anticipated than what was anticipated in the REF. No additional direct impact to threatened ecological communities or species is proposed. There would be no new impacts to sensitive or key fish habitats as a result of the proposed change. The proposed change would mitigate the impacts of run off from the facilities by providing appropriate onsite detention facilities, with an appropriately sized outlet (with flows eventually leading to Ropes Creek). Scour protection has been sized at both the inlet to the onsite detention basin as well as the outlet, to ensure flows that eventually discharge to Ropes Creek are controlled.	Nil
d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality.	
The proposed detention basin would be constructed within land owned by Sydney Metro. Therefore, there would be no impact on any developed or privately owned land. The location of the onsite detention basin would not visible from the industrial areas to the east and to the north-east, and views from the	Nil

residential areas of Erskine Park, west of the site, would also be screened by the vegetation along Ropes Creek. The ongoing use of the site is consistent with the industrial land use zone (IN1 General Industrial) under the *State Environmental Planning Policy (Industry and Employment) 2021*.	
e) The effects on any locality, place or building that has aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations	
The Aboriginal Heritage Summary Report provided at Appendix C – Aboriginal Heritage Summary Reportindicates that the proposed construction of water management infrastructure would not affect Aboriginal heritage. Work would be carried out within an area subject to archaeological assessment, testing and salvage under AHIP 4769 and the sites identified within the Eastern Creek Precast Facilities are no longer present.	Nil
f) The impact on the habitat of protected animals (within the meaning of the *Biodiversity Conservation Act 2016*).	
Given the proposed design of the basin, and the intermittent nature of the overflows, the effect on the adjacent TEC is not considered to be significant, providing suitable scour protection is provided (in accordance with mitigation measure F5).	Nil
g) The endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air.	
The proposed change would be within the approved construction footprint. Further impacts to fauna and breeding habitat are not anticipated (refer to Appendix B).	Nil
h) long-term effects on the environment.	
Long-term negative effects on the environment are not expected.	Nil
i) degradation of the quality of the environment.	
Without mitigation, increased site runoff peak rates, volumes and durations of flow may result in changes to flow regimes in Ropes Creek in low flows and frequent flood events (such as erosion or habitat impacts) (Jacobs, 2020). The proposed change would mitigate the potential for site run off into Ropes Creek by providing appropriate onsite detention facilities, with an appropriately sized outlet with scour protection. Refer to Chapter 7 which includes the required management and mitigation measures to address these potential impacts.	Potential short-term negative
j) risk to the safety of the environment.	
There is a potential risk to the safety of the environment associated with further earthworks for the onsite detention basin. The exposure of any contaminated materials during construction may increase the potential for contaminant mobilisation and may create additional exposure pathways to sensitive receivers (including environmental receptors), surface water bodies and groundwater bodies. A geotechnical and contamination investigation was undertaken in August 2025 and this confirms that the excavated area would comprise general solid waste, and would be managed in accordance with mitigation measures C1-C8 detailed in Section 7 of this Addendum REF.	Potential short-term negative
k) reduction in the range of beneficial uses of the environment.	

The proposed change would not reduce the range of beneficial uses of the environment.	Nil
l) pollution of the environment.	
As mentioned in (j) above, there is potential risk of contamination associated with the earthworks required for the detention basin. A geotechnical and contamination investigation was undertaken in August 2025 and this confirms that the excavated area would comprise general solid waste, and will be managed in accordance with mitigation measures C1-C8 detailed in Section 7 of this Addendum REF.	Potential short-term negative
m) environmental problems associated with the disposal of waste.	
Works would result in a minor increase to the volume of waste (including excavated material, spoil and potential contaminated waste) generated during construction to construct the new onsite detention basin. Safeguards have been proposed (section 7) to address these potential impacts.	Nil
n) Increased demands on natural or other resources that are, or are likely to become, in short supply.	
Nil	Nil
o) The cumulative environmental effect with other existing or likely future activities.	
The proposed change is not expected to have cumulative impacts given the limited scope of the changes and the minimal incremental impacts identified.	Nil
p) The impact on coastal processes and coastal hazards, including those under projected climate change conditions.	
Nil	Nil
q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,	
Ropes Creek Development Control Plan (DCP)	Consistent The minor nature of the proposed change would not affect the priorities and action outlined in the plans referred to in Section 4 of this Addendum Report.
r) other relevant environmental factors	
In considering the potential impacts of the proposed change all relevant environmental factors have been considered, refer to Chapter 7 of this assessment	Nil

Consideration of Matters of National Environmental Significance

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposed change should be referred to the Australian Government's Department of Climate Change, Energy, the Environment and Water.

A referral is not required for proposed actions that may affect nationally listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the addendum REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Matters of national environmental significance	Impact
(a) World heritage properties.	
There are no items within the project site listed on the World Heritage List.	Nil
(b) National heritage places.	
There are no items within the project site listed on the National Heritage List.	Nil
(c) Wetlands of international importance.	
There are no wetlands of international importance in the project area or likely to be affected by the proposed change.	Nil
(d) Nationally threatened species and ecological communities.	
The proposed change would be within the approved construction footprint, further impacts to fauna and breeding habitat are not anticipated. With the implementation of management and mitigation measures identified in Chapter 7, no additional impact to TECs are anticipated.	Nil
(e) Migratory species	
Of the migratory species identified from database searches, only the Fork-tailed Swift and White-throated Needletail are considered moderately likely to fly over the site but would not use it as habitat.	Nil
(f) Commonwealth marine areas.	
The proposed change would have no impact on a Commonwealth marine area.	Nil
(g) The Great Barrier Reef Marine Park	
The proposed change would have no impact on a The Great Barrier Reef Marine Park.	Nil
(h) Protection of water resources from coal seam gas development and large coal mining development	
The proposed change would have no impact on water resources from coal seam gas development and large coal mining development.	Nil
(i) Nuclear actions (including uranium mining).	
The proposed change does not involve a nuclear action.	Nil

(j) Any impact (direct or indirect) on Commonwealth land?	(k)
The proposed change would have no impact (direct or indirect) on Commonwealth land.	Nil

Appendix B – Biodiversity Inspection Memorandum

Sydney Metro West

Eastern Creek Precast Facilities Addendum 2: Biodiversity Inspection Memorandum

October 2025

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1. Introduction

1.1 Sydney Metro West Eastern Creek Precast Facilities

Sydney Metro prepared a Review of Environmental Factors Determination Report in March 2021 to construct and operate two precast concrete structure manufacturing facilities within the same land (the project) to support the construction of Sydney Metro West (referred to as the Eastern Creek Precast Facilities).

The Eastern Creek Precast Facilities are located on Lenore Drive, Eastern Creek, within the Blacktown City Council local government area (LGA) (the site). The facilities have been manufacturing precast concrete segments for the purpose of lining the Sydney Metro West tunnels, construction of which is approved under the Critical State Significant Infrastructure approval for Sydney Metro West - major civil construction between Westmead and The Bays (CSSI Stage 1) and Sydney Metro West - major civil construction between The Bays and Sydney CBD (CSSI Stage 2).

A Review of Environmental Factors (REF) was prepared in 2020 to describe and document potential impacts of the Eastern Creek Precast Facilities on the environment and detail the management and mitigation measures to be implemented. Subsequently, an Addendum Report was prepared in March 2021 to assess the impact of design changes related to water management infrastructure, as well as an associated increase to the construction footprint, which was extended to the north of that considered in the original REF.

Sydney Metro, a NSW Government agency, was the proponent and determining authority for both REFs under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The REF and REF Addendum were determined in March 2021 (*Eastern Creek Precast Facilities Review of Environmental Factors Determination Report, 2021*). Construction at the site commenced in 2021, with production of the first precast concrete elements produced in late 2022.

1.2 The Eastern Creek Precast Facilities project

The project includes the establishment and operation of the precast facilities, and generally included the following scope:

- Site establishment, including vegetation clearing, remediation and earthworks
- Construction of internal roads
- The construction and operation of the precast manufacturing facilities
- Ancillary supporting infrastructure such as utilities and water management infrastructure.

The REF considered that the precast facilities would operate for four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

The indicative layout of the Eastern Creek Precast Facilities from the REF is shown in Figure 1-1.

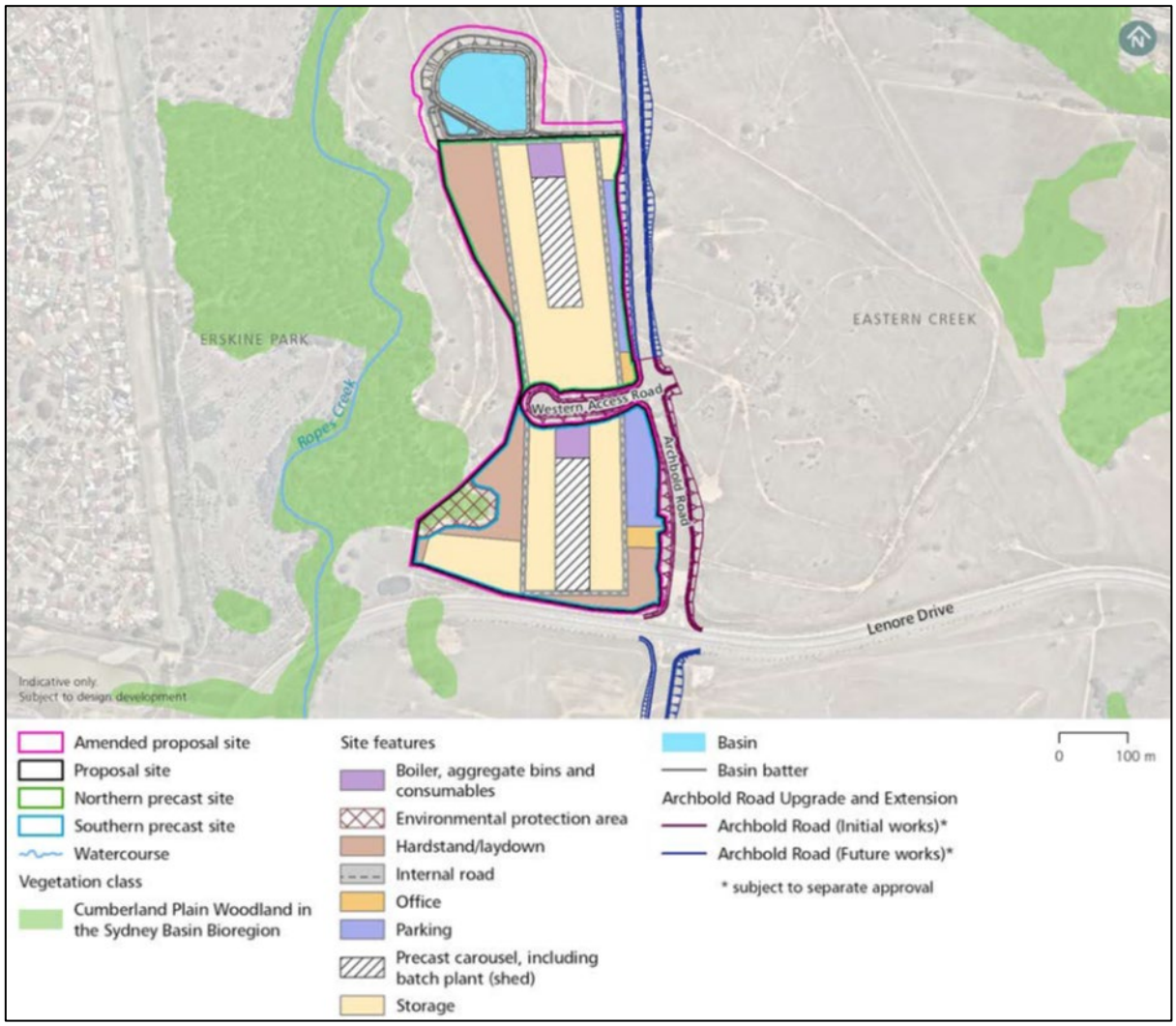

Figure 1-1 Indicative site layout of the project (as per the REF Determination Report 2021)

1.3 Background of the proposed change

Sydney Metro has identified the opportunity for the Site to support the next phase of Sydney Metro West's construction, being the rail infrastructure, stations and precincts. This was approved under the Critical State Significant Infrastructure approval for Sydney Metro West - Rail infrastructure, stations, precincts and operations (CSSI Stage 3).

As outlined above, a REF Addendum was prepared in 2021 to consider the provision of water management infrastructure such as onsite stormwater and flood detention. This included the reconstruction of a farm dam to the north of the site to capture surface water and stormwater runoff (referred to as the northern basin). The northern basin is situated on land owned by the Planning Ministerial Corporation, administered by the NSW Government Office of Strategic Lands.

Sydney Metro undertook the construction works to upgrade the northern basin in accordance with a Construction License between Sydney Metro and the Office of Strategic Lands (located on Lot 2 DP1266682 (Lot 2)). It was anticipated that the northern basin would be required to be utilised for water management for the precast facility for the duration of Sydney Metro West's tunnelling works.

The southern precast facility utilises a separate water management system.

1.4 The proposed change

Sydney Metro proposes to:

- extend the operation of the facilities for continued construction support for the Sydney Metro West project. This includes the operational processes to produce and transport precast concrete elements and other structural components required for the construction of Sydney Metro West stations and ancillary facilities. The use of the site is proposed until Sydney Metro West becomes operational
- increase the capacity of the existing sediment basin on site to provide stormwater detention for the northern facility. This includes an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek (as shown in Figure 1-2). All work would be within the approved construction footprint for the project (as shown in Figure 1-1).

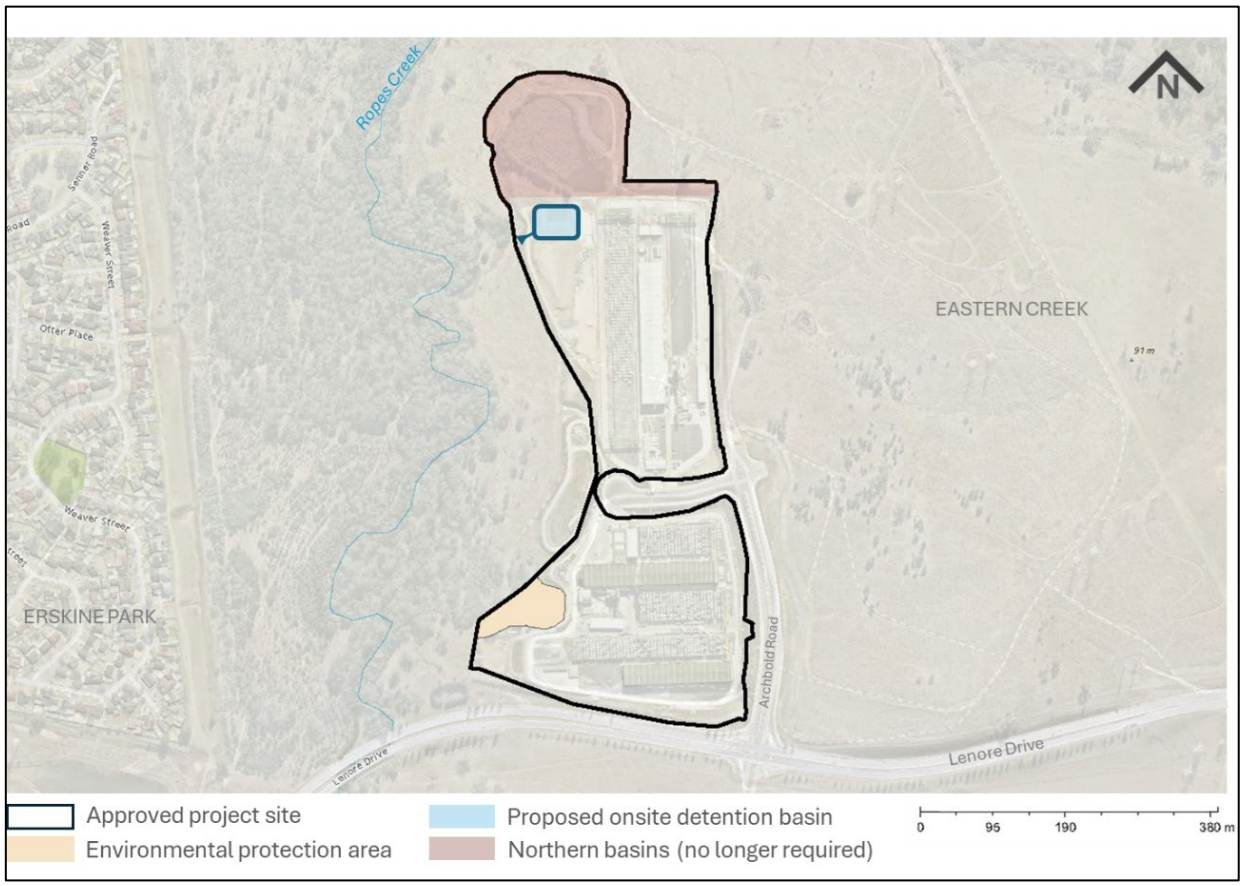

Figure 1-2: Proposed detention basin within context of full site

This preconstruction biodiversity memorandum relates to construction works proposed for the water management infrastructure for the northern precast facility only. No change to the water management system for the southern precast facility is proposed.

1.5 Proposal and study area

The proposal area considered in this preconstruction biodiversity memorandum is the northern basin, within the precast facilities boundary, as well as the proposed new drain towards Ropes Creek. The proposed drain is located fully within the property boundary of the existing precast facilities.

The study area for this memorandum is the proposal area plus a buffer of 50 m. This is the area in which desktop surveys were focused and the extent of the field inspection undertaken.

The location of the proposal area and other relevant design details are shown in Figure 1-3.

1.6 Purpose and scope of this memorandum

It should be noted that drainage upgrades form part of the Eastern Creek Precast Facilities project. However, given the REF and Addendum 1 was determined in 2021 (with most of the site establishment and civil work completed in 2022), this REF Addendum (Addendum 2) assesses the proposed change against the determined REF to confirm the environmental assessment and outcomes for the project remain consistent. This memorandum has therefore been prepared to reconfirm the absence of important environmental sensitivities within the footprint of the proposed drainage upgrades only.

Within the context of the above, the purpose of this preconstruction biodiversity memorandum is to:

- Undertake a review of published documentation, including the original REF, Addendum REF and the determination report to understand the context of the proposed activity
- Undertake a desktop study of flora and fauna relevant to the study area, identifying species and communities that may be present
- Conduct a field inspection of the proposal area, with particular attention to species, populations and ecological communities listed under the BC Act and the EPBC Act
- Consider likely direct or indirect impacts to flora and fauna occurring within the proposal area
- Identify mitigation measures for managing impacts on threatened biota during design, construction and operation of the proposal, with reference to the mitigation measures already provided within the *Eastern Creek Precast Facilities – Determination Report for Review of Environmental Factors*.

The physical scope of this preconstruction biodiversity memorandum is limited to the study area outlined in section 1.5 above.

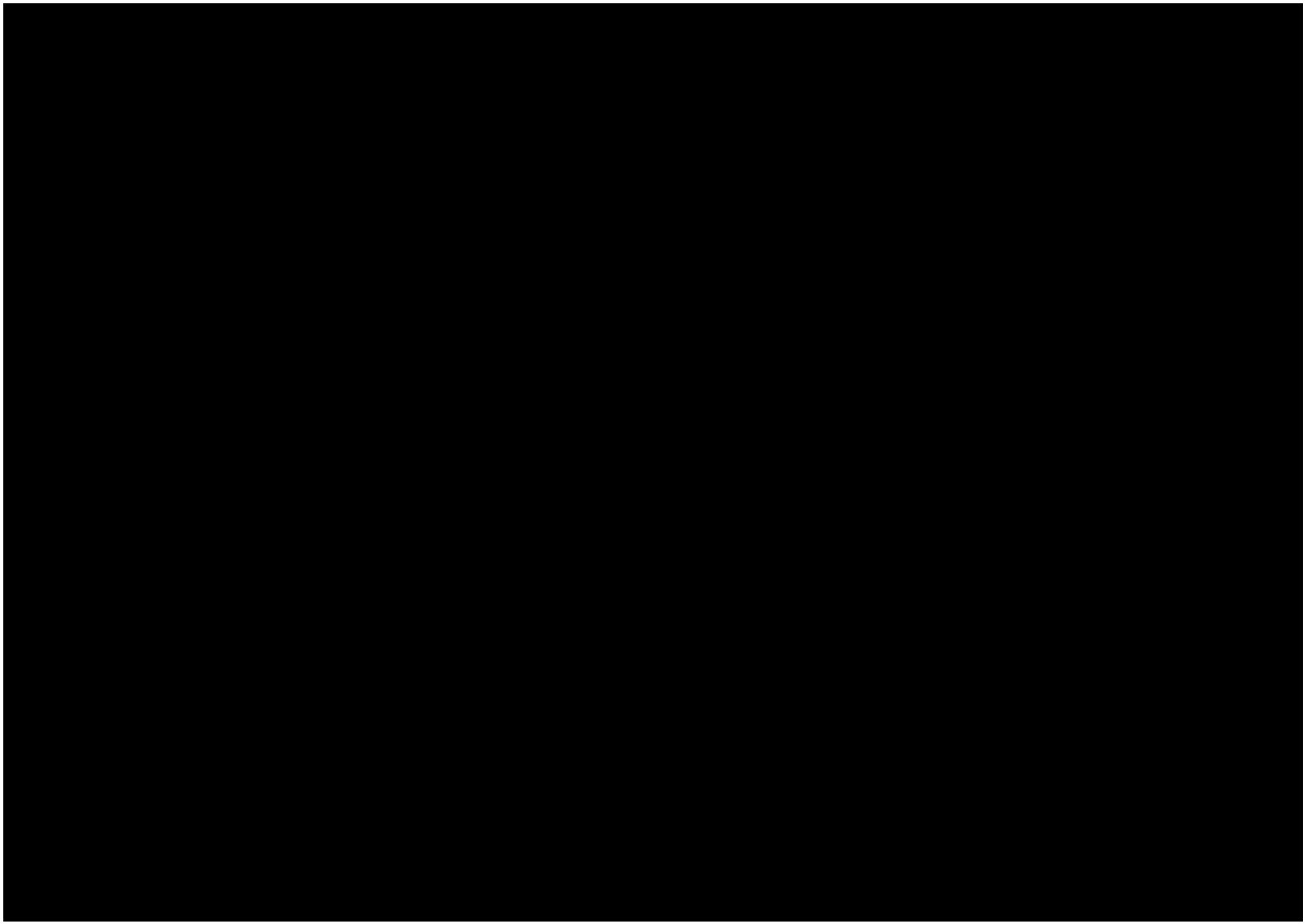

Figure 1-3 Works area and drainage plan (indicative only)

2. Methodology

This assessment has been prepared on the basis of desktop analysis and site inspection undertaken by Jamie McMahon, a qualified and experienced ecologist from AECOM Australia.

The aim of the site inspection was to:

- confirm the status of vegetation communities present
- confirm the presence or absence of any threatened species or threatened ecological communities within or near the study area
- provide any further advice relevant to the maintenance of biodiversity values as part of the proposal.

The full extent of the study area was inspected directly on foot, with all potential impact areas able to be inspected directly. The terrain was generally flat within the precast facilities boundary, becoming steeper to the east, towards the creek.

The site inspection was undertaken as a ground truthing exercise to confirm desktop research. Detailed surveys such as biometrics or fauna trapping were not undertaken, though targeted threatened species searches were carried out. Survey effort and coverage was of a level to provide a suitable level of confidence in the results and assessment.

3. Site and layout

The precast facilities site is located at Eastern Creek, NSW, approximately 37 kilometres west-northwest of the Sydney CBD (as the crow flies). The area is located within the Blacktown City Council LGA and is located on the northern side of Lenore Drive, extending approximately 700 metres north to south and 340 metres east to west.

The proposal area is located in the northwest section of the precast facilities site and is around 0.44 hectares in size. The nearest substantial area of remnant bushland is the Ropes Creek corridor, approximately 75 metres to the southwest. The Ropes Creek corridor runs in a generally north-south direction adjacent to the proposal area.

The land surrounding the proposal area is occupied by a mixture of industrial properties, remnant farmland, residential development and urban open space. Generally, the land immediately around the precast facilities site is undeveloped and generally unoccupied remnant farmland. Suburban residential development is present around 530 metres to the west, with industrial properties present around 740 metres to the east.

4. Relevant legislation

As directed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (the Transport and Infrastructure SEPP) the proposal is permissible without development consent under Part 5 of the *Environmental Planning and Assessment Act 1979*. As such, development consent would not be required from Blacktown City Council, nor would local council vegetation protection measures such as tree protection orders apply.

In addition, the following legislation has been considered when carrying out the field inspection and preparing this memorandum:

- The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) requires that Commonwealth approval be obtained for certain actions, and establishes an assessment and approvals system for actions that have, or are likely to have, a significant impact on Matters of National Environmental Significance (MNES)

- The *Biodiversity Conservation Act 2016* (BC Act) protects threatened flora and fauna species and ecological communities and their habitats within NSW
- The *Fisheries Management Act 1994* (FM Act) protects threatened species, populations and ecological communities of fish and marine vegetation, and other living resources of NSW waters. Species listed under this act are considered alongside those of the BC and EPBC Acts
- The *Biosecurity Act 2016* manages threats including invasive species such as weeds and fauna pests.

These policies have been considered as part of the development of the REF and Addendum REF. Compliance with these policies is not considered further within this memorandum, outside of confirmation that the proposed activity would remain compliant, as per the determination of both documents.

5. Desktop searches

A search of the NSW BioNet Atlas and the Commonwealth Protected Matters Search Tool on 25 July 2025 indicated the potential for 57 threatened and migratory species to be present within a 5 kilometre radius of the proposal area. This included highly mobile fauna species such as Grey-headed flying fox, Little Lorikeet and Powerful owl, as well as less mobile species such as Green and Golden Bell Frog and Cumberland Plain Land Snail.

Threatened flora recorded in the study area included *Grevillea juniperina* subsp. *juniperina* and *Marsdenia viridiflora* subsp *viridiflora*.

Whilst none of these species were recorded within the proposal area during the site inspection there remains the potential that this area may be used by one or more of the above mobile fauna species for shelter or breeding. Such usage is not expected to be extensive nor to the degree that threatened species are likely to solely rely on vegetation or other habitat features subject to removal as part of the proposal.

Based on the desktop review of the State Vegetation Type Map (SVTM), three Plant Community Types (PCTs) were identified as having the potential to occur within the study area, including:

- **PCT 3320:** Cumberland Shale Plains Woodland (within the project site)
- **PCT 4025:** Cumberland Red Gum Riverflat Forest (in proximity to the project site)
- **PCT 4023:** Coastal Valleys Swamp Oak Riparian Forest (in proximity to the project site).

Note that the boundaries of the above PCTs (and associated Threatened Ecological Communities (TECs)) below (Figure 5-1) are based on the SVTM only. These boundaries differ from that outlined in the REF Addendum Report and the associated Biodiversity Assessment Addendum Report, as the boundaries outlined in that report have been modified to reflect the results of field survey undertaken by Jacobs. The PCT names and numbers outlined here also differ, as this assessment has been prepared based upon the current SVTM, whereas the assessment by Jacobs utilised the (now outdated) Southeast NSW Native Vegetation Classification and Mapping (2010) (VIS ID 2230) and Remnant Vegetation of the western Cumberland subregion (2013) (VIS ID 4207). Despite this the PCT definitions are generally compatible between the Jacobs report and this assessment.

The following Threatened Ecological Communities (TECs), as listed under the BC Act and/or the EPBC Act, are associated with the above PCTs:

- PCT 3320:
    - Cumberland Plain Woodland in the Sydney Basin Bioregion (critically endangered under the BC Act)

- Shale Gravel Transition Forest in the Sydney Basin Bioregion (endangered under the BC Act)
- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest (critically endangered under the EPBC Act)

- PCT 4025:
  - River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered under the BC Act)
  - River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria (critically endangered under the EPBC Act)
- PCT 4023:
  - Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered under the BC Act)
  - Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (endangered under the EPBC Act)

These PCTs were targeted for as part of the field inspection, as outlined below. An extract from the State Vegetation Type Map (Version 2) is provided in Figure 5-1. Threatened species records are mapped in Figure 5-2.

Figure 5-1 Vegetation mapping

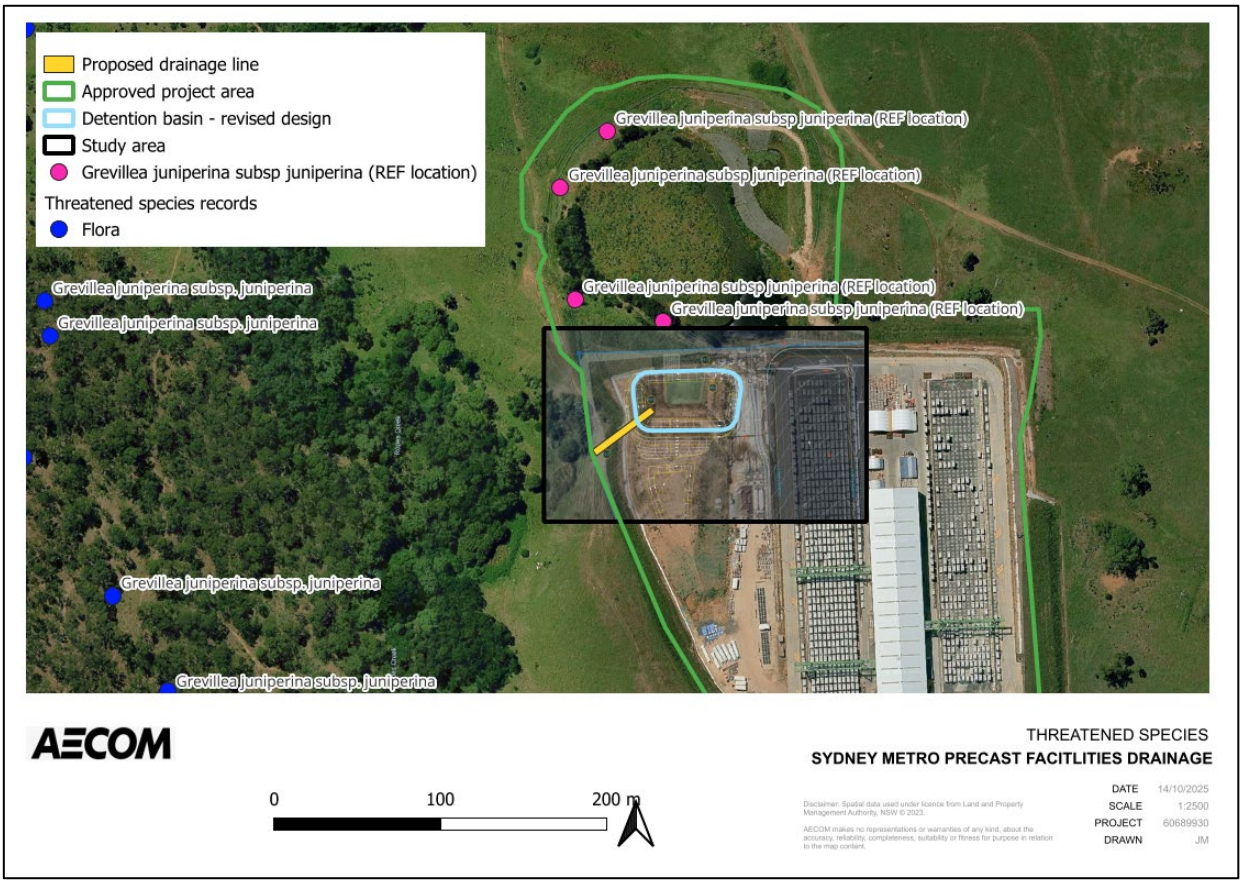

Figure 5-2 Threatened species records and species identified in the REF Addendum 1 for the Project

6. Inspection results

The proposal area was inspected on the morning 28 July 2025. Conditions during the inspection were cool, approximately 18 degrees, and clear with scattered clouds. The site inspection was carried out on foot by Jamie McMahon, a qualified and experienced ecologist from AECOM Australia. There had been 15 mm of rain in the two days prior to the inspection and before this, no rain had been recorded for 16 consecutive days.

As outlined above, the proposal area is generally characterised by the industrial nature of the project site, including established detention basins, cleared areas, spoil storage areas and heavily disturbed open grassland. Most of the vegetation in and around the proposal area appears to have re-established after significant disturbance, such as the construction of the project and other historic land uses predating the project.

None of the vegetation present within the footprint of the proposal area appears to be remnant, with all vegetation seemingly regenerated or revegetated (in the case of hydromulched areas). Native vegetation observed in the vicinity of the proposal area included:

- *Casuarina glauca*
- *Bursaria spinosa*
- *Einadia nutans*
- *Typha orientalis*
- *Juncus usitatus*
- *Microlaena stipoides*
- *Acacia parramattensis*
- *Acacia falcata*
- *Angophora floribunda*
- *Melaleuca styphelioides*

Exotic vegetation observed in the vicinity of the proposal area included:

- Sweet clover (Melilotus)
- Fireweed (*Senecio madagascariensis*)

- Scotch thistle (*Onopordum acanthium*)
- *Solanum spp.*
- Common couch (*Elymus repens*)
- Fleabane (*Conyza bonariensis*)
- Sow thistle (*Sonchus spp.*)
- Purple top (*Verbena bonariensis*)
- Kikuyu grass (*Cenchrus clandestinus*)
- Field bindweed *(Convolvulus arvensis)*
- Paddy's Lucerne (*Sida rhombifolia*)
- Mallow (*Malva neglecta*)
- Castor oil (*Ricinus communis*)
- Bridal creeper (*Asparagus asparagoides*)
- African boxthorn (*Lycium ferocissimum*)
- Narrow leaf privet (*Ligustrum sinense*)
- Asparagus fern (*Asparagus setaceus*)
- Blackberry (*Rubus fruticosus agg*)
- Jerusalem cherry (*Solanum pseudocapsicum*)
- Pampas grass (*Cortaderia selloana*)
- Rhodes grass (*Chloris gayana*).

Given the vegetation observed within the proposal area is heavily dominated by exotic flora and lacks any mature or remnant native flora representative of local PCTs, the proposal area is not considered to contain any PCTs.

To the west of the proposal area, vegetation along the Ropes Creek embankment was observed to be relatively dense and largely comprised of *Casuarina glauca*, *Typha orientalis*, Blackberry and a mix of native and exotic grasses and ground covers. Several small areas of midstorey vegetation were present, scattered along the embankment. This included Hawthorn, Casuarina, African Boxthorn and *Bursaria spinosa*.

To the north of the proposal area, vegetation consisted of native and exotic grasses and ground covers. Records of the threatened *Grevillea juniperina* subsp*. juniperina* are known to the north, though this area was not inspected and hence these were not observed. To the east and south of the proposal area are cleared lands within the operational precast facilities footprint. Vegetation within this area is limited to small patches of regenerating common opportunistic weeds on disturbed land within Western Sydney, such as Castor Oil Plant.

Fauna recorded adjacent to the site include the Common Eastern Froglet (*Crinia signifera*), as well as Australian Raven (*Corvus coronoides*) and Australian Magpie (*Gymnorhina tibicen*). There were signs within the proposal area of goats, in the form of scats.

While the proposal area may provide some foraging habitat for mobile native fauna such as birds or reptiles, it is unlikely that it would represent important habitat considering its highly disturbed nature and the presence of the adjacent industrial activities.

The existing drainage basin to be removed is not considered likely to provide any substantive habitat for green and golden bell frog on the basis that it lacks fringing aquatic vegetation such as *Phragmites australia* and *Typha orientalis*. Despite this the management measures proposed in the original and addendum biodiversity assessments for this species are recommended to be retained and implemented during construction.

No habitat for Cumberland Plain land snail was identified across the study area, based on the lack of semi-dense, predominantly native understory, as well as the lack of other shelter features such as leaf litter, logs or rubbish.

The aquatic habitat of Ropes Creek near the proposed discharge location was considered from the banks of the waterway. Ropes Creek at this location is mapped as key fish habitat. The discharge location is considered to be Class 3 habitat in this location i.e. 'minimal fish habitat' This is based on the definition provided by Fairfull and Witheridge et al. (2003), as considered in the original biodiversity assessment.

As per the waterway classification system, this is defined as a '*Named or unnamed waterway with intermittent flow and potential refuge, breeding or feeding areas for some aquatic fauna (e.g. fish, yabbies). Semi- permanent pools form within the waterway or adjacent wetlands after a rain event. Otherwise, any minor waterway that interconnects with wetlands or recognised aquatic habitats.'* Fairfull and Witheridge et al (2003).

Photos from the site visit are included below as Figure 6-1 to Figure 6-6.

Figure 6-1 Existing basin to be modified surrounded by juvenile *Casuarina glauca*

Figure 6-2 Area north north-west adjacent to the proposal area

Figure 6-3 Area west of the existing sediment basin, where the discharge route would be constructed.

Figure 6-4Area west of the existing sediment basin, where the discharge route would be constructed

Figure 6-5 Area west of the existing basin looking south to where the discharge route would be constructed

Figure 6-6 Looking east along the southern boundary of the existing basin with the northern precast facility in the background

7. Discussion

The proposal area has very little native vegetation present. Similarly, native fauna habitat within this area is limited to open foraging areas and the constructed basin. Whilst not inspected directly, the basin is likely to provide habitat for some native species, noting that Common Eastern Froglet (*Crinia signifera*) was heard calling from within. The reconstruction of the basin will inevitably affect this and potentially other common native species. It is recommended that this and other native species present within the basis are captured and relocated as part of the dewatering process outlined in the management measures for the original biodiversity assessment.

Habitat assessment for green and golden bell frog indicated a low probability of inhabiting the main drainage basin, based on lack of functional habitat elements. Despite this the management measures proposed in the original and addendum biodiversity assessments for this species are recommended to be retained and implemented during construction.

No habitat for Cumberland Plain land snail was identified across the study area. Despite this the management measures proposed in the original and addendum biodiversity assessments for this species are recommended to be retained and implemented during construction.

No threatened flora was observed within the footprint of the proposal area, despite targeted searches. A specific focus of the searches was *Grevillea juniperina*, subsp, *juniperina*, which was recorded as part of the investigations supporting the REF and Addendum REF, in addition to numerous records to the north and south along the Ropes Creek corridor.

The proposed drainage line would deposit stormwater that overflows the basin directly into an area mapped as Cumberland Plain Woodland in the Sydney Basin Bioregion (critically endangered ecological community under the BC Act). Based upon the inspection, this vegetation is likely to better fit the Swamp Oak Floodplain Forest TEC[1], given the dominance of *Casuarina glauca* and *Melaleuca styphelioides*. This community is listed as Endangered at both the State and Federal levels.

The aquatic habitat of the Creek at this location is considered to be class 3 aquatic habitat i.e. 'minimal fish habitat'. Providing suitable erosion and sediment control measures are implemented during construction the quality of this habitat, which is already substantially degraded, is not expected to be significantly affected.

This area already receives a degree of overland flow stormwater form the surrounding land, though it is noted that the operational flow from the drainage channel would be more concentrated. It is also noted that the drain would be unlikely to flow most of the time, noting its function as an overflow relief for the on site detention basin. Given the effect of the treatment offered by the basin, and the intermittent nature of the overflows, the effect on the adjacent TEC and aquatic habitat generally is not considered to be significant, providing suitable scour protection is placed at the end of the pipe, as per the design. The need for this is further emphasised by the expected steep grade of the drainage pipe, noting the vertical height difference between the basin level and the discharge location at the creek level.

As identified in the Biodiversity Assessment Report (Jacobs, 2020), two migratory bird species listed under the EPBC Act (the Fork-tailed Swift and White-throated Needletail) are considered moderately likely to fly over the site but would not use it as habitat. The Biodiversity Assessment Report (Jacobs, 2020) considered that the ecological study area would not be classed as 'important habitat' for migratory species.

[1] Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (endangered under the BC Act) and Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community (endangered under the EPBC Act)

8.Mitigation measures

The management measures proposed in the REF and Addendum REF are deemed to be suitable to mitigate any potential environmental impacts as a result of the proposed drainage construction and operation. This includes the implementation of the existing management measures requiring pre-clearing surveys for Green and Golden Bell Frog, and Cumberland Plains Land Snail, and supervision of dam dewatering by a suitable qualified aquatic ecologist. This latter requirement should be applied to the subject basin, despite this management measure originally being proposed for the dams to the north.

In addition, it is emphasised that REF mitigation measure F5 be fully implemented, which states:

- *Detailed design would provide appropriate scour protection works at channel/culvert discharge points to Ropes Creek*

This measure will be key to minimising long-term damage to the TEC at this location, and the geomorphology of the stream bed more generally which, if altered substantially, may result in broader impacts to riparian vegetation and aquatic habitat.

9.Conclusion

The location of the proposed repurposing of drainage infrastructure at the Eastern Creek Precast Facilities was inspected to confirm the presence of threatened species and threatened ecological communities that may be affected. No threatened flora species were identified during the inspection, though threatened ecological communities were identified adjacent. Detailed fauna surveys were not undertaken, though habitat for threatened fauna species within the footprint of the proposal area is deemed to be poor.

The proposal has the potential to result in offsite impacts to biodiversity values, though providing the measures described in the REF and Addendum REF are fully implemented, these impacts would be suitably managed.

The assessments of significance under both the BC Act and EPBC Act undertaken for the project (refer to the Biodiversity Assessment Report (Jacobs, 2020) and the Biodiversity Assessment Report Addendum (Jacobs, 2021) would remain applicable to the proposed change as the impact profile of the proposed change to threatened ecological communities and species is considered to be comparable to that which was originally assessed.

Appendix A: Bionet search results

A Bionet search was undertaken on 25 July 2025 for an area of 10 km x 10 km centred on the proposal area. The species returned by this search are provided below.

Kingdom	Class	Scientific name	Common Name
Fauna	Amphibia	*Litoria aurea*	Green and Golden Bell Frog
Fauna	Aves	*Oxyura australis*	Blue-billed Duck
Fauna	Aves	*Apus pacificus*	Fork-tailed Swift
Fauna	Aves	*Ephippiorhynchus asiaticus*	Black-necked Stork
Fauna	Aves	*Ixobrychus flavicollis*	Black Bittern
Fauna	Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle
Fauna	Aves	*Hieraaetus morphnoides*	Little Eagle
Fauna	Aves	*Lophoictinia isura*	Square-tailed Kite
Fauna	Aves	*Burhinus grallarius*	Bush Stone-curlew
Fauna	Aves	*Rostratula australis*	Australian Painted Snipe
Fauna	Aves	*Gallinago hardwickii*	Latham's Snipe
Fauna	Aves	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo
Fauna	Aves	*Lathamus discolor*	Swift Parrot
Fauna	Aves	*Parvipsitta pusilla*	Little Lorikeet
Fauna	Aves	*Ninox strenua*	Powerful Owl
Fauna	Aves	*Tyto novaehollandiae*	Masked Owl
Fauna	Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)
Fauna	Aves	*Anthochaera phrygia*	Regent Honeyeater
Fauna	Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)
Fauna	Aves	*Daphoenositta chrysoptera*	Varied Sittella
Fauna	Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow
Fauna	Mammalia	*Phascolarctos cinereus*	Koala
Fauna	Mammalia	*Petaurus australis*	Yellow-bellied Glider
Fauna	Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox
Fauna	Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat
Fauna	Mammalia	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat
Fauna	Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle
Fauna	Mammalia	*Myotis macropus*	Southern Myotis
Fauna	Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat
Fauna	Mammalia	*Miniopterus australis*	Little Bent-winged Bat
Fauna	Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat
Fauna	Gastropoda	*Meridolum corneovirens*	Cumberland Plain Land Snail
Flora	Flora	*Marsdenia viridiflora subsp. viridiflora*	Population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and Penrith LGAs
Flora	Flora	*Isotoma fluviatilis subsp. fluviatilis*	
Flora	Flora	*Allocasuarina glareicola*	
Flora	Flora	*Senna acclinis*	Rainforest Cassia
Flora	Flora	*Dillwynia tenuifolia*	
Flora	Flora	*Pultenaea parviflora*	
Flora	Flora	*Acacia pubescens*	Downy Wattle
Flora	Flora	*Eucalyptus scoparia*	Wallangarra White Gum
Flora	Flora	*Grevillea juniperina subsp. juniperina*	Juniper-leaved Grevillea
Flora	Flora	*Grevillea parviflora subsp. parviflora*	Small-flower Grevillea
Flora	Flora	*Persoonia nutans*	Nodding Geebung

Flora	Flora	*Pimelea spicata*	Spiked Rice-flower

Appendix B: Protected Matters Search Tool results

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 25-Jul-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	57
Listed Migratory Species:	12

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	31
Commonwealth Heritage Places:	None
Listed Marine Species:	23
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	57
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area	In feature area
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically Endangered	Community likely to occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Aphelocephala leucopsis](#) Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In feature area
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Callocephalon fimbriatum](#) Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area	In feature area
[Calyptorhynchus lathami lathami](#) South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Climacteris picumnus victoriae](#) Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Erythrotriorchis radiatus](#) Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
[Falco hypoleucos](#) Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Grantiella picta](#) Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat may occur within area	In feature area
FROG			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heleioporus australiacus australiacus			
Giant Burrowing Frog, Eastern Owl Frog [92013]	Endangered	Species or species habitat likely to occur within area	In feature area
Litoria aurea			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area	In feature area
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area	In feature area
Acacia pubescens Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat known to occur within area	In feature area
Allocasuarina glareicola [21932]	Endangered	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Eucalyptus benthamii Camden White Gum, Nepean River Gum [2821]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area	In feature area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Haloragis exalata subsp. exalata Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat may occur within area	In feature area
Micromyrtus minutiflora [11485]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Persoonia nutans Nodding Geebung [18119]	Endangered	Species or species habitat known to occur within area	In feature area
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat may occur within area	In feature area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat known to occur within area	In feature area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterostylis saxicola Sydney Plains Greenhood [64537]	Endangered	Species or species habitat may occur within area	In feature area
Pultenaea parviflora [19380]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat may occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat may occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
REPTILE			

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Aprasia parapulchella](#) Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
[Apus pacificus](#) Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat known to occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis			
Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus			
Osprey [952]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [14555]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [16429]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [14562]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14546]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [14561]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Deputy Director of War Service Homes [14566]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14558]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14550]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14559]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14560]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14551]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14552]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Director of War Service Homes [14553]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14554]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14556]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14557]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14549]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14543]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14548]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14564]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14567]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14545]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14565]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14544]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14541]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14542]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14547]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14540]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [14563]	NSW	In buffer area only
Unknown		
Commonwealth Land - [14625]	NSW	In buffer area only
Commonwealth Land - [15422]	NSW	In buffer area only

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos			
Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Migration route may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Extra Information

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
1-51 Aldington Road Estate Industrial Warehouse and Distribution Facility	2023/09574		Assessment	In buffer area only
Eastern Creek Business Hub Stage 3	2020/8715		Post-Approval	In buffer area only
Multipurpose development	2002/751		Completed	In buffer area only
Senior Campus, Chifley Multi Campus College	2000/118		Completed	In buffer area only
Warragamba Dam Raising Project	2017/7940		Completed	In buffer area only
Controlled action				
Eastern Creek Business Hub, NSW	2012/6617	Controlled Action	Post-Approval	In buffer area only
Industrial development on Lot 141 DP843899 and Lot 5 DP1094504, Erskine Park Emp	2006/3156	Controlled Action	Post-Approval	In buffer area only
Kemps Creek Warehouse, Logistics and Industrial Facilities Hub	2021/8926	Controlled Action	Post-Approval	In buffer area only
Light Horse Interchange Business Hub, Eastern Creek, NSW	2019/8395	Controlled Action	Post-Approval	In buffer area only
Lyn Parade Extension	2004/1392	Controlled Action	Post-Approval	In buffer area only
Multipurpose Development-rural residential, a motel and a golf course	2002/585	Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Oakdale West Estate commercial development, NSW	2017/7952	Controlled Action	Post-Approval	In buffer area only
Rooty Hill Concrete Batching Plant and associated facilities	2003/949	Controlled Action	Completed	In buffer area only
Subdivision of Lot 1 DP106143, 327-335 Burley Road, Horsley Park, NSW	2016/7744	Controlled Action	Post-Approval	In buffer area only
Sydney Metro, Western Sydney Airport - St Marys to Elizabeth Drive	2020/8687	Controlled Action	Post-Approval	In buffer area only
Twin Creeks Estate - stage 4 - 26 rural residentia	2004/1495	Controlled Action	Post-Approval	In buffer area only
Western Sydney International Dragway	2002/720	Controlled Action	Completed	In buffer area only
Not controlled action				
132kV electricity transmission lines	2002/865	Not Controlled Action	Completed	In buffer area only
18-hole, golf course development, west of Eastern Creek	2004/1757	Not Controlled Action	Completed	In feature area
Aldington Road Estate Industrial Development	2021/8982	Not Controlled Action	Completed	In buffer area only
Christ Catholic College - Loyola Campus - Building Construction and Redevelopment	2002/642	Not Controlled Action	Completed	In buffer area only
Clearance of 6.3ha of Cumberland Plain Woodland for industrial subdivision cnr of Old Walgrove and W	2004/1445	Not Controlled Action	Completed	In feature area
Clearance of 6ha Shale Plains Woodland	2004/1346	Not Controlled Action	Completed	In buffer area only
Clearance of vegetation for Warehouse Units	2003/994	Not Controlled Action	Completed	In buffer area only
Concrete Batching Plant and Associated Facilities	2005/2067	Not Controlled Action	Completed	In feature area
Conrad Road Residential Subdivision	2001/320	Not Controlled Action	Completed	In buffer area only
Electricty Substation at Old Wallgrove Road	2005/2220	Not Controlled Action	Completed	In feature area
Erection of a dwelling and associated access and infrastructure, 19 Tidswell Str	2003/1078	Not Controlled Action	Completed	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
gas main installation from Eastern Creek to Erskine Park	2005/2235	Not Controlled Action	Completed	In feature area
Green Valley NSW residential developmemt	2003/1236	Not Controlled Action	Completed	In buffer area only
Greenway Park Stage 3 residential subdivision	2004/1622	Not Controlled Action	Completed	In buffer area only
hazard reduction burn	2003/1181	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Industrial development of 24.8ha, including access road from Lenore Lane	2005/2326	Not Controlled Action	Completed	In buffer area only
Mountain View Classrooms Construction	2001/306	Not Controlled Action	Completed	In feature area
Proposed industrial Developments Bragham Drive, Eastern Creek	2012/6383	Not Controlled Action	Completed	In buffer area only
Proposed Rezoning of land at 60 Wallgrove Rd, Minchinbury, NSW	2009/5012	Not Controlled Action	Completed	In buffer area only
Residential development at Doonside Crescent Woodcroft, Blacktown LGA	2004/1378	Not Controlled Action	Completed	In feature area
Residential development within 2.08ha, Fyfe Road	2005/1966	Not Controlled Action	Completed	In buffer area only
Residential Subdivision	2001/304	Not Controlled Action	Completed	In buffer area only
Residential subdivision Lot 1005 Conrad Road	2003/1054	Not Controlled Action	Completed	In buffer area only
Rezoning & Disposal of Quakers Hill property	2001/281	Not Controlled Action	Completed	In feature area
Riverstone Integrated Water Services Proposal	2007/3216	Not Controlled Action	Completed	In buffer area only
Rooty Hill Residential Subdivision	2002/651	Not Controlled Action	Completed	In buffer area only
Rural residential subdivision	2002/594	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Second Ponds Creek urban development	2004/1905	Not Controlled Action	Completed	In buffer area only
Second Ponds Creek Urban Development of Precinct 1b	2005/1991	Not Controlled Action	Completed	In buffer area only
TransGrid Sydney West 330kV Substation Augmentation	2002/677	Not Controlled Action	Completed	In buffer area only
Waste Management Centre	2002/607	Not Controlled Action	Completed	In buffer area only
Western Sydney Parklands Bungarribbee Precinct and Doonside residential developm	2007/3718	Not Controlled Action	Completed	In buffer area only
Wonderland Business Park Precinct, industrial development, Lot B1	2004/1627	Not Controlled Action	Completed	In buffer area only
Wonderland Business Park Precinct, Stage 1, Lot D1	2004/1626	Not Controlled Action	Completed	In feature area
Wonderland Business Park - Stage 3	2006/2817	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Replacement of flows with recycled water	2006/3050	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Keyhole Site Horsley Park	2021/9000	Referral Decision	Referral Publication	In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix C – Aboriginal Heritage Summary Report

Appendix D – Traffic and Transport

Eastern Creek Precast Facilities

Traffic and Transport Report

Review of Environmental Factors Addendum (No.2)

October 2025

sydneymetro.info

NSW GOVERNMENT

sydney METRO

Table of Contents

1. Introduction

1.1 Sydney Metro West Eastern Creek Precast Facilities

Sydney Metro prepared a Review of Environmental Factors Determination Report in March 2021 to construct and operate precast facilities (the project) to support the construction of Sydney Metro West (referred to as the Eastern Creek Precast Facilities). The Eastern Creek Precast Facilities are located in Eastern Creek within the Blacktown City Council local government area. The Eastern Creek Precast Facilities are located on Lenore Drive, Eastern Creek (the site). The precast facilities have been manufacturing precast concrete segments for the purpose of lining the Sydney Metro West tunnels (construction of which is approved under the Critical State Significant Infrastructure approval for Sydney Metro West - major civil construction between Westmead and The Bays (CSSI Stage 1) and Sydney Metro West - major civil construction between The Bays and Sydney CBD (CSSI Stage 2).

A Review of Environmental Factors (REF) was prepared in 2020 to describe the project, document potential impacts of the proposal on the environment and detail the management and mitigation measures to be implemented.

An Addendum Report to the REF was prepared in March 2021 due to design changes (for water management infrastructure) and an associated increase to the construction footprint (which has been extended to the north of the site).

Sydney Metro, a NSW Government agency, was the proponent and determining authority for the project under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The project was determined in March 2021 (*Eastern Creek Precast Facilities Review of Environmental Factors Determination Report, 2021*). Construction at the site commenced in 2021 and operation of the precast facilities commenced in late 2022.

1.2 The Eastern Creek Precast Facilities project

The REF included the establishment and operation of precast facilities, and generally includes the following scope:

- Site establishment such as vegetation clearing, remediation and earthworks
- The establishment and operation of precast facilities
- Construction of internal roads
- Ancillary supporting infrastructure such as utilities and water management infrastructure.

The REF considered that the precast facilities would operate for four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

The indicative layout of the project is shown in Figure 1.

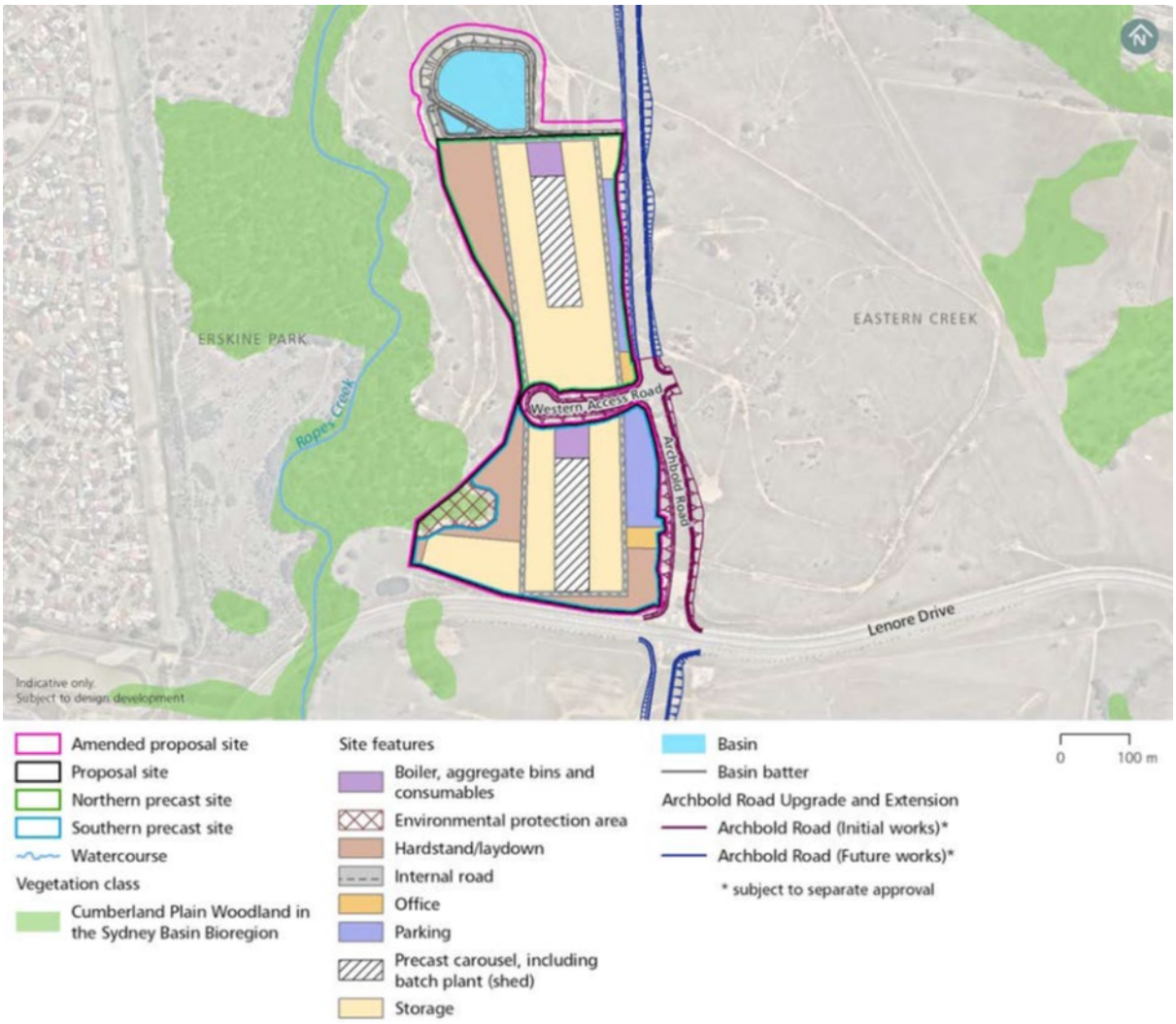


Figure 1 Indicative site layout of the project (as per the REF Determination Report 2021)

1.3 Background of the proposed change

Sydney Metro has identified the opportunity to continue the use of the Eastern Creek Precast Facilities, for the purposes of the next phase of construction of Sydney Metro West, being the rail infrastructure, stations and precincts (approved under the Critical State Significant Infrastructure approval for Sydney Metro West - Rail infrastructure, stations, precincts and operations (CSSI Stage 3)).

Sydney Metro has been consulting with the Office of Strategic Lands as operations of the site for the purposes of the tunnelling works nears completion, and it has been identified that there is an opportunity to upgrade the water management infrastructure on the land owned by Sydney Metro (the Eastern Creek Precast Facilities site), and Sydney Metro would no longer require the use of the northern basin area on the adjacent lot for water management. The REF Addendum therefore also relates to water management infrastructure upgrades for the northern precast facility.

1.4 REF Addendum for the proposed change

Sydney Metro proposes to:

- extend the operation of the facilities for continued construction support for the Sydney Metro West project. This includes the operational processes to produce and transport precast concrete elements and other structural components required for the construction of

Sydney Metro West stations and ancillary facilities. The use of the site is proposed until Sydney Metro West becomes operational

- increase the capacity of the existing sediment basin on site to provide stormwater detention for the northern facility. This includes an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek. All work would be within the approved construction footprint for the project (as shown in Figure 2).

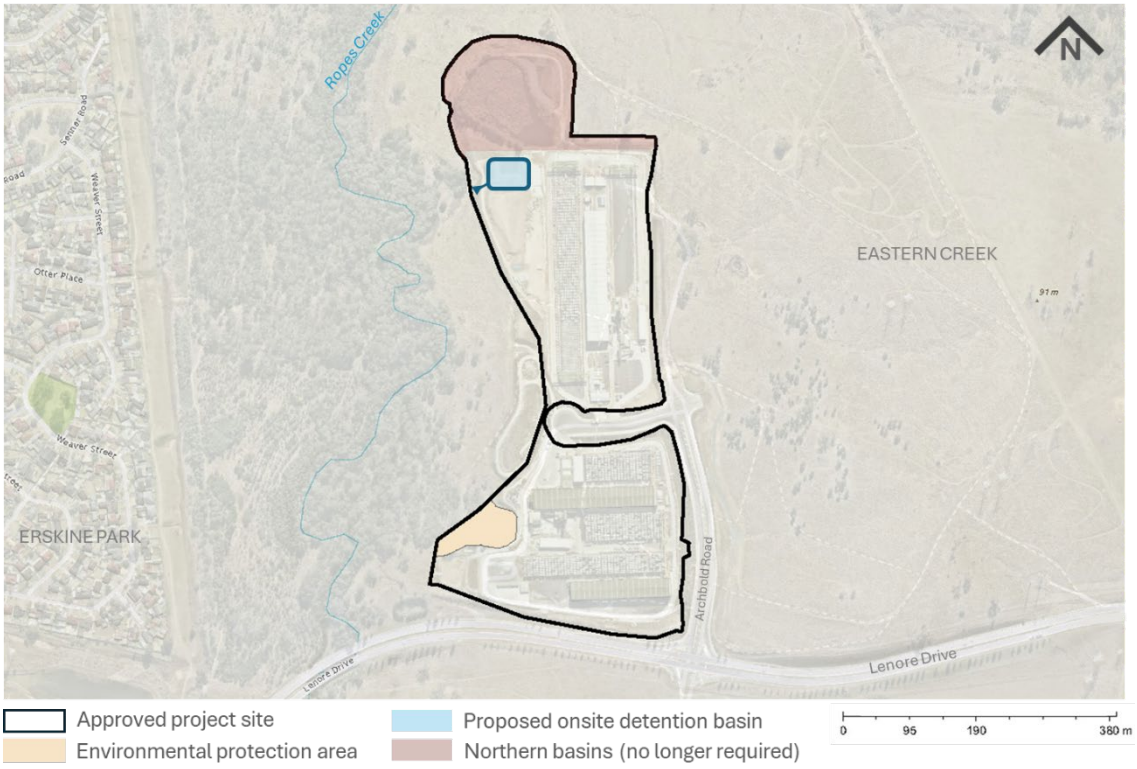


Figure 2 Indicative site layout of the proposed change subject to this Addendum REF

1.5 Purpose and scope of this report

This memo provides an update to the Traffic and Transport Assessment of the *Eastern Creek Precast Facilities REF* (Jacobs, 2020) and assesses the impact of the extension of the facilities to support construction of Sydney Metro West stations and linewide facilities.

2. Assessment

2.1 Assessment methodology

The REF anticipated that the peak year for operational activity would be 2026. The Traffic and Transport Assessment prepared to support the REF (Jacobs, 2020) therefore assessed the impacts of heavy vehicles associated with the operation of the Eastern Creek Precast Facilities during the year 2026.

This assessment considers if the heavy vehicles associated with the ongoing operation of the Eastern Creek Precast Facilities would further impact intersection and traffic performance during peak hours than those identified in the REF. The peak traffic periods represent a worst-case scenario as during these periods the road network experiences the maximum background traffic demand and the available spare capacity of the road network is at its most limited.

To assess the impact of the extension of operation of the facilities, a qualitative assessment has been undertaken to compare the REF traffic movements for the intersections in the vicinity of the Eastern Creek Precast Facilities, to 'approach traffic movements' extracted from Sydney Coordinated Adaptive Traffic System (SCATS), which utilises traffic signal sensors to provide an estimate of traffic volumes. The compared traffic volumes include:

- **Forecasted 2026 volumes:** The traffic surveys for the REF were undertaken in 2019 along the M7 and surrounding roads, including Wallgrove Road and Old Wallgrove Road. An analysis of the future year 2026 'without operation of proposal' and 2026 'with operation of proposal', which includes vehicles associated with the precast facility, was undertaken in the Traffic and Transport assessment.
- **Extracted 2025 volumes from SCATS:** Traffic volumes from SCATS were extracted for the year 2025 for a weekday average (Tuesday, Wednesday, and Thursday) during non-school-holiday durations. As the Sydney Metro West tunnelling packages are currently in construction and are utilizing the Eastern Creek facility, these traffic volumes are inclusive of the average truck volumes associated with the project.

As such, a comparison between the 2026 'with operation of the proposal' volumes from the REF and the 2025 SCATS volumes was undertaken to determine whether the forecast traffic volumes from the REF are similar to recent traffic volumes.

2.2 Heavy vehicles during ongoing operations

It is anticipated that the following key operational aspects for the project would not change, including:

- **work hours:** the working hours would continue to be required on a 24 hour basis (with workers shifts in both the day time and night time)
- **heavy vehicle volumes:** around 24 heavy vehicle movements may be required per hour in the day (7am-6pm), and 12 vehicle movements per hour in the evening (6pm-7am), consistent with the maximum amount currently required at the site
- **light vehicles for staff:** around 120 light vehicles would arrive and depart from the site during each shift
- **access to the site:** access to the facilities is via the signalised Archbold Road and Lenore Drive intersection, the first stage of the Archbold Road, and Western Access Road located between the northern and southern facility.
- **haulage routes**: the designated haulage routes to be used by heavy vehicles for the ongoing operation is consistent with those as shown in the REF, being M7 Motorway/ Wallgrove Road, Old Wallgrove Road, Lenore Drive, Archbold Road and Western Access Road (refer to Figure 3).

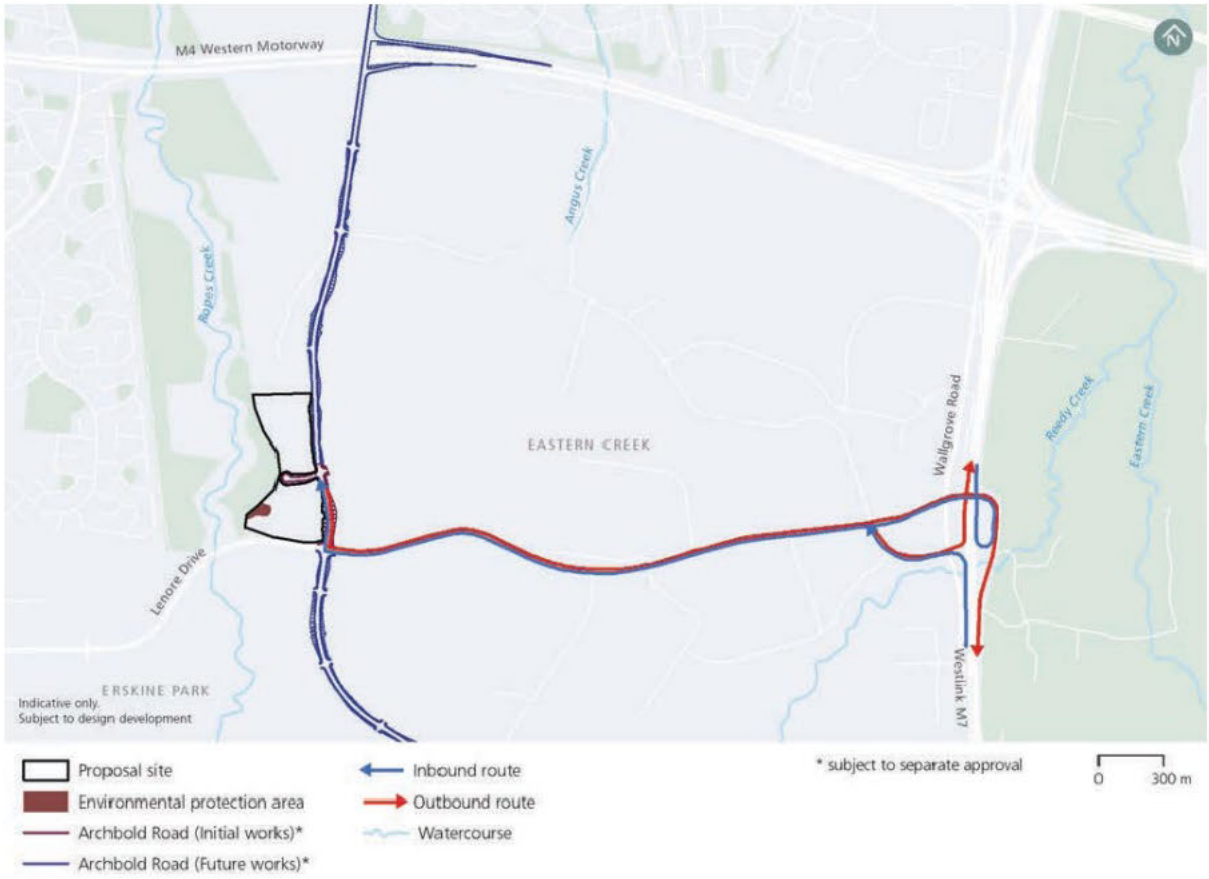


Figure 3 Haulage routes as per the REF (Jacobs, 2020)

2.3 Volumes comparison

Table 1 highlights the comparison in traffic volumes (veh/hr) between the 2025 extracted SCATS outputs and the forecasted 2026 'with proposal' data from the REF (Jacobs, 2020).

Table 1 2026 REF 'with proposal' vs 2025 SCATS volumes comparison

Intersection	2026 Forecast + Proposal (REF)		2025 SCATS Data		Difference		% change	
	AM	PM	AM	PM	AM	PM	AM	PM
Old Wallgrove Road / Lenore Drive / Telopea Place	2,500	2,530	2,429	2,236	-71	-294	-2.8%	-11.6%
Old Wallgrove Road / Roberts Road	2,280	1,930	2,282	2,105	2	175	0.1%	9.1%
Old Wallgrove Road / Eastern Creek Drive	2,290	1,870	2,401	2,210	111	340	4.9%	18.2%
Old Wallgrove Road / Mini Link Road	2,480	2210	2,529	2,340	49	130	2.0%	5.9%
M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road	3,530	3,470	3,308	2,964	-222	-506	-6.3%	-14.6%
M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road	2,940	3,990	2,668	2,878	-272	-1,112	-9.3%	-27.9%
Total	**16,020**	**16,000**	**15,617**	**14,732**	**-403**	**-1268**	**-2.5%**	**-7.9%**

The percentage change highlighted in Table 1 indicates that overall road network volumes in 2025 are lower than the 2026 forecast volumes in the REF. However, at an intersection-by-intersection

basis, there was no clear trend with some intersections accommodating higher volumes, while others carried lower volumes.

For the AM peak hour, this approximates a reduction of 400 vehicles per hour for the road corridor, with a maximum increase of 110 for a single intersection (Old Wallgrove Road / Eastern Creek Drive). The overall reduction in traffic could be attributed to the fact that the forecasted 2026 data is based on pre-COVID traffic patterns, which were significantly higher than current observed traffic volumes and post-COVID work from home arrangements which impact overall mobility patterns.

2.4 Future assessment

Forecast traffic volumes for year 2028

The indicative construction program for construction of the Sydney Metro West stations (as part of Sydney Metro West CSSI Stage 3) indicates that peak construction and use of the Eastern Creek facilities is expected to occur around **2028**. The hours that were assessed for the operation scenario reflect the modelled peak hours as reported in the Determination Report for the project. The forecast maximum number of operation vehicles to and from the site would be consistent with those anticipated in the REF, comprising:

- Light vehicles: 120 light vehicles in the AM peak hour, and 120 in the PM peak hours.
- Heavy vehicles: 24 heavy vehicles per hour between 7.00 am to 6.00 pm.

Utilising SCATS data from 2024 and 2025, a growth rate can be extrapolated based on the traffic volumes surveyed in 2019. Based on these assumptions, a 2.25% and 2.08% growth rates are calculated for the AM and PM peak hour volumes respectively. These rates are then utilised for the 2028 volume projections. Table 2 highlights the difference between 2026 'with operation of proposal' volumes and forecasted 2028 volumes.

Table 2 2026 REF 'with proposal' vs projected 2028 volumes comparison

Intersection	2026 Forecast + Proposal		2028 Projected Data		Difference		% change	
	AM	PM	AM	PM	AM	PM	AM	PM
Old Wallgrove Road / Lenore Drive / Telopea Place	2,500	2,530	2,586	2,368	86	-162	3.5%	-6.4%
Old Wallgrove Road / Roberts Road	2,280	1,930	2,429	2,228	149	298	6.5%	15.5%
Old Wallgrove Road / Eastern Creek Drive	2,290	1,870	2,557	2,340	267	470	11.6%	25.1%
Old Wallgrove Road / Mini Link Road	2,480	2210	2,693	2,478	213	268	8.6%	12.1%
M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road	3,530	3,470	3,532	3,147	2	-323	0.0%	-9.3%
M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road	2,940	3,990	2,847	3,056	-93	-934	-3.2%	-23.4%
Total	**16,020**	**16,000**	**16,643**	**15,617**	**623**	**-383**	**3.9%**	**-2.4%**

The results indicate a minor increase in traffic volumes (approximately 4%) in 2028 during the AM peak hour, when compared to the predictions in the REF. As the number of light and heavy vehicles attributed to the project remains consistent with the 2026 data, this increase is attributed to the default population and employment density increment in the surrounding land use.

Intersection delay and level of service

Table 3 provides an overview of the level of service and average delay categories from the REF. Table 4 provides a summary of the intersections' delays and levels of service as reported in the Eastern Creek Precast Facilities REF.

Table 3 Intersection level of service criteria

Level of service	Average delay per vehicle (seconds/vehicle)	Traffic signals and roundabouts
A	Less than 15	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Operating near capacity
E	57 to 70	At capacity; at signals, incidents will cause delays
F	Over 70	Extra capacity required

Table 4 REF 2026 (with operation of proposal) – Intersection delays and levels of service (Jacobs, 2020)

Intersection	AM Peak Hour		PM Peak Hour	
	Delay	LOS	Delay	LOS
Old Wallgrove Road / Lenore Drive / Telopea Place	43	D	47	D
Old Wallgrove Road / Roberts Road	14	A	19	B
Old Wallgrove Road / Eastern Creek Drive	8	A	10	A
Old Wallgrove Road / Mini Link Road	25	B	30	C
M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road	38	C	31	C
M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road	38	C	49	D

In general, the lower the traffic volume through an intersection, the better the intersections along the haulage routes would perform. Modelling indicates that the majority of intersections would continue to perform at the same level of service with or without operational vehicles associated with the operation of the facilities. All intersections would perform at a level of service D (meaning the intersection is operating near capacity), or better. The Old Wallgrove Road / Lenore Drive / Telopea Place intersection would experience a decrease in level of service in the morning peak hour from C to D, however this is associated with a two second increase in average delay, which is considered negligible (Jacobs, 2020).

It can be surmised from the data in Tables 2 and 4 that the intersections still have sufficient capacity for increased traffic volumes without exceeding their reported levels of service. The intersection at Old Wallgrove Road/Lenore Drive/Telopea Place experience a delay of 43 seconds; however, it is likely to have only an increase of 90 vehicles, which can be absorbed and will not increase the operational delay experienced at the intersection (i.e. the level of service will not exceed D).

3. Discussion

As per Table 2 of this report and 8-14 of the REF, the modelling of peak hour intersection performance in 2026 indicated that the following intersections would have a level of service C or D (with the other intersections operating well, with capacity):

- Old Wallgrove Road / Lenore Drive / Telopea Place
- Old Wallgrove Road / Mini Link Road
- M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road
- M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road

Based on the comparative assessment, there is no evident increase in overall traffic volumes on the road network in the vicinity of the Eastern Creek Precast Facilities. The volume comparisons highlighted in Table 2, which compares recent traffic data, indicate that the following intersections generally have a lower traffic volume than what was predicted in the REF:

- Old Wallgrove Road / Lenore Drive / Telopea Place
- M7 Motorway southbound ramps / Wallgrove Road / Old Wallgrove Road
- M7 Motorway northbound ramps / Wallgrove Road / Mini Link Road

Therefore, it can be assumed that during continued operations of the site, the intersections would generally operate with similar (or better) performance than what was modelled in the REF. This trend is also expected to continue for the peak operation year of 2028, as it is anticipated that even with the forecast growth to the year 2028, there would likely still be sufficient capacity at the intersection to not reach level of service E.

The Old Wallgrove Road / Mini Link Road intersection currently has a slight increase (6%) in traffic throughput than what was predicted in 2026 in the REF. However, the REF predicted this would only have a 30-second delay, and therefore, there is still capacity for this intersection to perform satisfactorily at a level of service C. This would continue to apply even with the forecast growth year to 2028.

A total of 24 heavy vehicle movements per hour is required for the operation of the project, which constitutes around 1% of the peak hour traffic volumes at these four intersections along the approved haulage route. These additional vehicles are equivalent to less than one heavy vehicle movement for each two-minute period, which would likely be equivalent to less than one additional heavy vehicle movement per signal phase and such variability in additional traffic volume would not alter the current intersection operation. Additional light vehicle traffic through the intersections in the network peak hours would be negligible, having regard to the operational shift times.

Therefore, the impacts on nearby intersections would remain generally consistent with those identified in the REF. All intersections are therefore predicted to operate at a level of service better than D, consistent with the assessment in the REF.

Moreover, the Construction Traffic Management Framework (CTMF) for Sydney Metro West is still applicable to manage the operation of the facilities. This framework provides an overall strategy and approach for construction traffic management, and an outline of the traffic management requirements and processes that would be applied. It establishes the traffic management processes and acceptable criteria to be considered and followed in managing impacts to the road network. Contractors would also prepare detailed site-specific Construction Traffic Management Plans (CTMPs) in line with the CTMF.

As such, there is no evidence of substantive environmental impacts attributed as a result of the proposed changes to continue operations of the Eastern Creek Precast Facility to support the ongoing construction of Sydney Metro West.

Appendix E – Hydrology Memorandum

Technical Memo

Subject: REF Addendum Memo – Hydrology Design	
EDA Reference: SMWSTEDS-SMD-1NL-NL000-CV-MEM-103001	SM Reference: REF Addendum – Hydrology Design Memo
Prepared by: Fariha Hassan	Date: C / 20.10.2025
Checked by: Boon Soo	Approved by: Stephen Spacey

1. Introduction

1.1. Sydney Metro West Eastern Creek Precast Facilities

Sydney Metro prepared a Review of Environmental Factors Determination Report in March 2021 to construct and operate precast facilities (the project) to support the construction of Sydney Metro West (referred to as the Eastern Creek Precast Facilities). The Eastern Creek Precast Facilities are located in Eastern Creek within the Blacktown City Council local government area. The Eastern Creek Precast Facilities are located on Lenore Drive, Eastern Creek (the site). The precast facilities have been manufacturing precast concrete segments for the purpose of lining the Sydney Metro West tunnels (construction of which is approved under the Critical State Significant Infrastructure approval for Sydney Metro West - major civil construction between Westmead and The Bays (CSSI Stage 1) and Sydney Metro West - major civil construction between The Bays and Sydney CBD (CSSI Stage 2).

A Review of Environmental Factors (REF) was prepared in 2020 to describe the project, document potential impacts of the proposal on the environment and detail the management and mitigation measures to be implemented.

An Addendum Report to the REF was prepared in March 2021 due to design changes (for water management infrastructure) and an associated increase to the construction footprint (which has been extended to the north of the site).

Sydney Metro, an NSW Government agency, was the proponent and determining authority for the 'activity' under Part 5, Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The project was determined in March 2021 (Eastern Creek Precast Facilities Review of Environmental Factors Determination Report, 2021). Construction at the site commenced in 2021 and operation of the precast facilities commenced in late 2022.

1.2. The Eastern Creek Precast Facilities project

The project REF includes the establishment and operation of precast facilities, and generally includes the following scope:

- Site establishment such as vegetation clearing, remediation and earthworks.
- The establishment and operation of precast facilities
- Construction of internal roads
- Ancillary supporting infrastructure such as utilities and water management infrastructure.

The REF considers that the precast facilities would operate for four to five years, subject to the delivery strategy and construction program for Sydney Metro West.

The approved site boundary and the proposed change is shown in Figure 1.

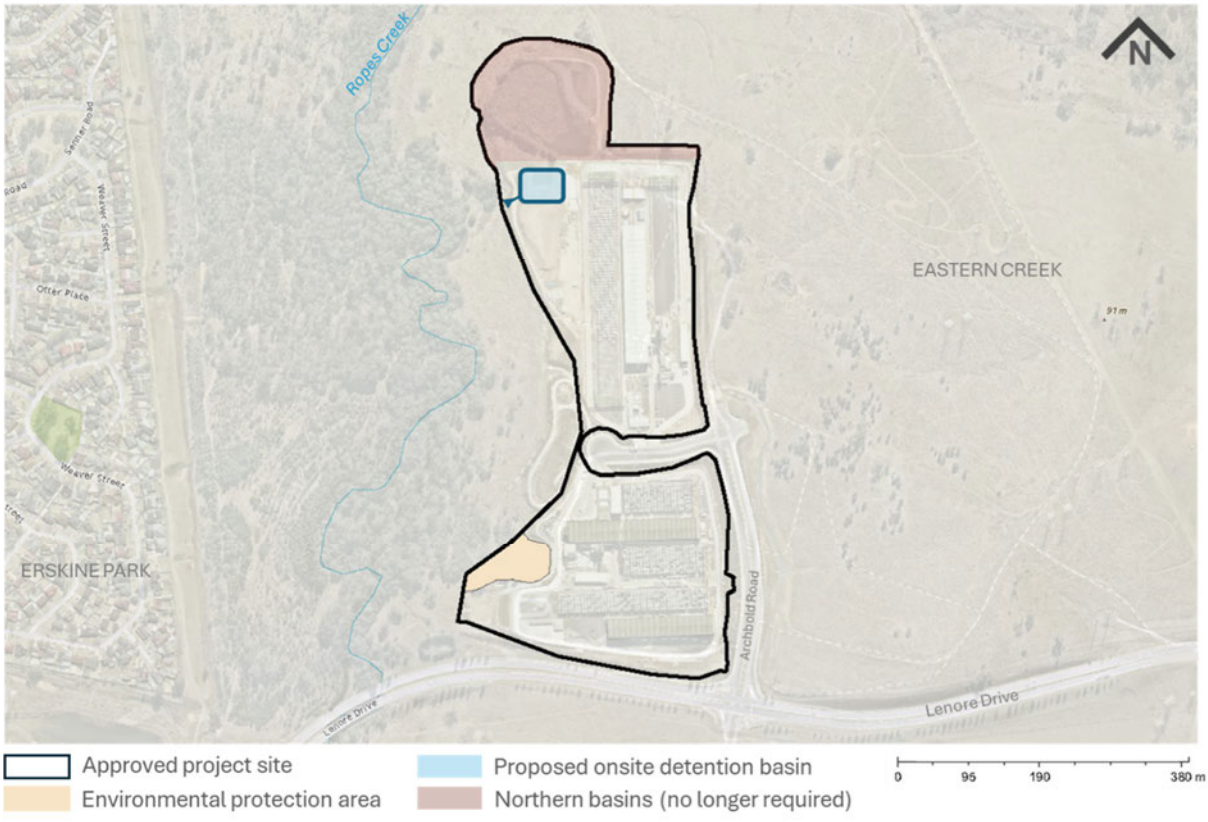


Figure 1 Site boundary and proposed change

1.3. Background of the proposed change

Sydney Metro have identified the opportunity to continue the use of the Eastern Creek Precast Facilities, for the purposes of the next phase of construction of Sydney Metro West, being the rail infrastructure, stations and precincts (approved under the Critical State Significant Infrastructure approval for Sydney Metro West - Rail infrastructure, stations, precincts and operations (CSSI Stage 3)).

Sydney Metro have been in consultation with the Office of Strategic Lands as operations of the site for the purposes of the tunnelling works nears completion, and it has been identified that there is an opportunity to upgrade the water management infrastructure on the land owned by Sydney Metro (the Eastern Creek Precast Facilities site), and subsequently, Sydney Metro no longer require the northern basin area to be leased from the Office of Strategic Lands.

Sydney Metro proposes to:

- Extend the operation of the precast facilities for any potential use by the future contractors for the purposes of construction support for the Sydney Metro West project. This includes the operational processes to produce and transport precast concrete segments required for the construction of Sydney Metro West stations. It is anticipated that the site may be required for construction of Sydney Metro West until 2032, when the line is anticipated to become operational.
- Increase the capacity of the existing sediment basin on site to provide stormwater detention for the northern facility. This includes an outlet with appropriate scour protection, with flows eventually leading to Ropes Creek. All work would be within the approved construction footprint (refer Figure 1)

The proposed change to the Eastern Creek Precast Facilities project is subject to assessment under Division 5.1 of the *Environmental Planning and Assessment Act 1979*. This Memo supports Addendum REF 2, to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

1.4. Purpose and scope of this report

This Addendum Hydrology Design Report forms part of the REF Addendum. The purpose of this Report is to document how the detailed design of the proposed on-site detention meets the mitigation measures required to manage flooding and hydrology impacts for the project.

Refer to Appendix L – Hydrology and Flooding of the Eastern Creek Precast Facilities REF (Jacobs, 2020) for a detailed description of the hydraulic environment, as well as a detailed analysis of predicted impact on flood levels, mainstream peak flows, creek geomorphology, and overland flooding and drainage.

Note that the proposed works do not change the current ground level above Ropes Creek, and no further potential impacts on the Eastern Creek Precast Facilities project resulting from flooding are anticipated.

2. Legislative and policy framework and design requirements

The design of the on-site detention has been undertaken generally in accordance with the following key guidelines and design references as applicable:

- Australian Rainfall and Runoff (ARR)
- NSW Floodplain Development Manual (NSW Government, 2005)
- Blacktown City Council policies planning instruments.
- Managing Urban Stormwater – Soils and Construction Manual

The project requires Onsite Detention (OSD) to temporarily store stormwater during rainfall events. Without OSD or other compensatory flood storage, the impacts of additional stormwater runoff from a new development is inadvertently passed onto downstream residents in the form of increased flood damage and distress, or onto the local authorities that must upgrade the drainage system or construct additional flood mitigation works.

This Memo primary focuses on two flood events, the 50% Annual Exceedance Probability (AEP) and the 1% AEP to size the OSD and associated outlet discharge control pits.

2.1. Australian Rainfall and Runoff 2019

Prepared by the Institution of Engineers, Australia Rainfall, and Runoff (AR&R) – A guide to Flood Estimation was written to provide "Australia designers with the best available information on design flood estimation." It contains procedures for estimating stormwater runoff for a range of catchments and rainfall events as well as design methods for urban stormwater drainage systems. The 2019 AR&R has been updated numerous times with new understandings of more refined methodology for hydrological analysis based on the latest hydrological data gathered, regional assessments of climate change and the evolution of modelling tools.

Although a newer version has been released (2024), to ensure consistency in design in line with the previous (Sydney Metro Enabling Works – Eastern Creek Roadworks Stormwater Management Basins) as well as aligning with Blacktown City Councils guidance the 2019 AR&R has been adopted. As mentioned in section 2, the primary focus of the design is 50% & 1% AEP for the OSD sizing.

2.2. Blacktown City Council Policies and Guidelines

Relevant design standards

The design has been undertaken in compliance with Blacktown Council standards and key documents used as guidance for the design are summarised below in Table 1.

Table 1 Design Standards

Document Name	Version or Date
OSD Deemed to comply tool	v2.4
UPRCT On-site Stormwater Detention Handbook	December 2005
Environment Protection Licence	December 2024

Document Name	Version or Date
Managing Urban Stormwater – Soils and Construction – Volume 1	March 2004
Part J – Water Sensitive Urban Design and Integrated Water Cycle Management	2015
Department of Planning and Environment – Controlled Activities	2012

Design criteria for the proposed works

The minor storm (50% AEP) and the major storm (1% AEP) have been analysed for the design capacity of the stormwater system as per Councils *Engineering Guide for Development – 2021*. The on-site detention basin has been sized for the 1% AEP peak volume as per the OSD deemed to comply tool with staged orifice plates within a basin discharge control pit being designed for low flows (first orifice) and the major 1% AEP storm (second orifice).

Stormwater quantity assumptions

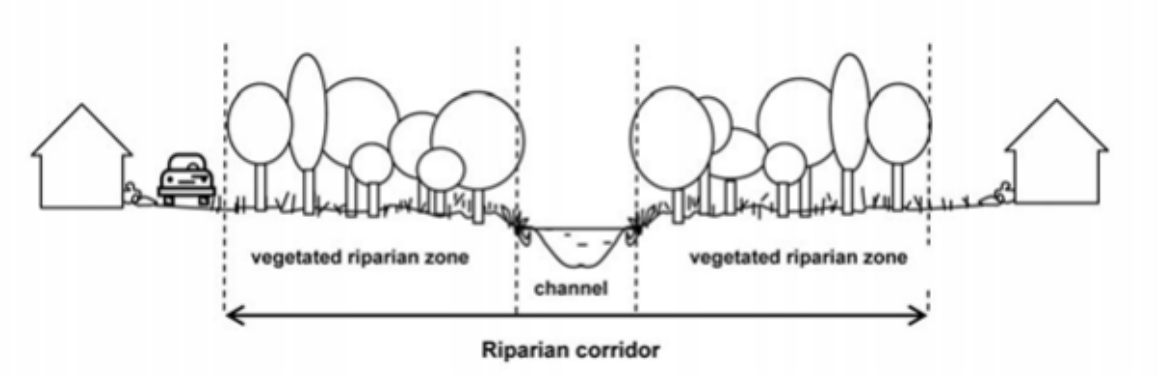
Key assumptions:

- The existing survey has adequately picked up levels such that the proposed outlet pipe will have sufficient cover from the ground level to the top of pipe.
- The existing Northern Precast yard overland flow path remains unchanged where the overland flow path for flows in excess of the piped system continues toward the north of the site into OSL land.
- The existing pit 04-09 has an internal weir or flow splitter that allows flows to be diverted to the GPT. If this is the case, moving the 900mm diameter outlet from the northern face of the pit to a new 900mm diameter pipe on western face should have minimal impacts on the flows.

Discharge and outlet design standards

Flows at the inlet and outlet of the basin will be controlled using scour protection with a riprap size of 300mm D50 for the inlet and 150mm D50 at the outlet.

Flows/outlet controls are all discharged within the site boundary. Outflows from the basin are intended to eventually flow into Ropes Creek running south to north at the western border of the site. In order to do this the riparian constraints of Ropes Creek were assessed in accordance with the Department of Planning and Environment Controlled activities – Guidelines for riparian corridors on waterfront land. The Riparian corridor as defined by the DPIE guidance document is the transition zone between the land and the river or watercourse.



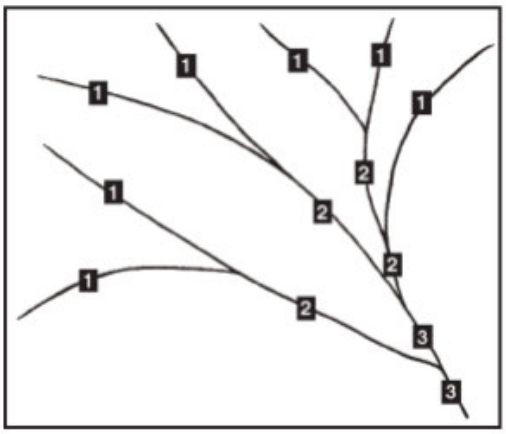


Table 1. Recommended riparian corridor widths

Watercourse type	VRZ width (each side of watercourse)	Total RC width
1st order	10 metres	20 m + channel width
2nd order	20 metres	40 m + channel width
3rd order	30 metres	60 m + channel width
4th order and greater (includes estuaries, wetlands and any parts of rivers influenced by tidal waters)	40 metres	80 m + channel width

Figure 2 Riparian Corridor Definition

Ropes Creek is defined as a third order stream as shown in Figure 3 below, as such anything impacting the stream realignment needs to be avoided. This should be achievable with the current design where the outlet and scour protection have been designed and located within the site boundary and away from the banks of the vegetated riparian zone.

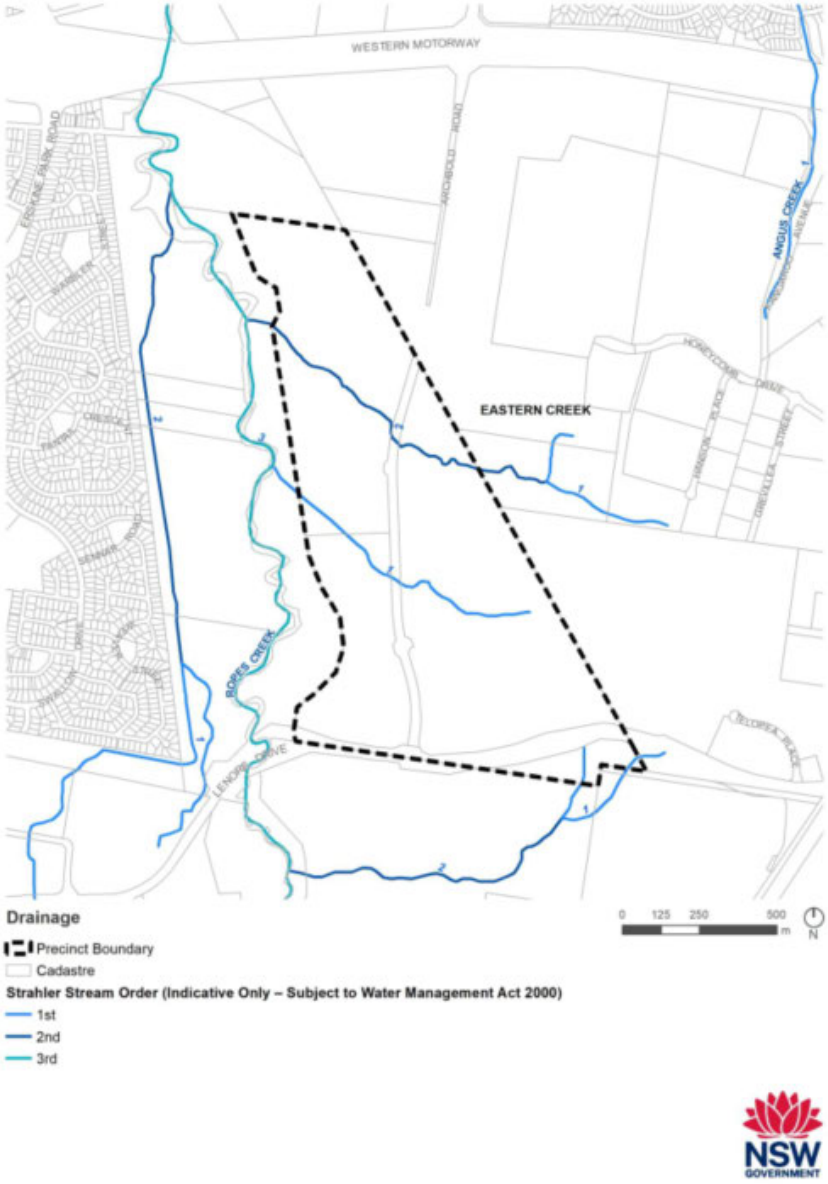


Figure 5 | Strahler stream order

Figure 3 Strahler Stream Order

3. Legislative and policy framework and design requirements

3.1. Catchment and topography

No changes to the southern catchments for the southern precast facility, and no changes to the existing southern basin are proposed.

The catchment breakdown has been dictated by the Eastern Creek Northern Precast Facility as part of Sydney Metro Enabling Works – Eastern Creek Roadworks Stormwater Management Basins. The catchments that were previously proposed to outlet into the Northern basin are now being redirected by the new pit and pipe network that outlets directly into the proposed basin.

The northern basins are situated on land owned by the Planning Ministerial Corporation, administered by the NSW Government Office of Strategic Lands. Sydney Metro undertook the construction works to upgrade the northern basin in accordance with a Construction license between Sydney Metro and the Office of Strategic Lands (located on Lot 2 DP1266682 (Lot 2)). It was anticipated that the northern basins would be required to be utilised for water management for the northern precast facility for the duration of tunnelling works for the Sydney Metro West project.

3.2. Options considered

Two onsite detention solutions for the northern precast facility were investigated to allow flows from northern precast facility to be detained:

- Option 1 includes repurposing the existing sediment basin onsite by excavating to achieve the required volume
- Option 2 includes an underground detention tank that is to be placed in a non-invasive portion of the site where there are minimal underground utilities.

Option 1 was preferred as this option is retaining the sediments within the natural system which will require less maintenance i.e. less frequent requirement of sediment removal using vacuum trucks. The exposed nature of the Option 1 basin also allows for easier maintenance and access when required.

3.3. Proposed works

The proposed water management infrastructure works; subject of this REF Addendum include:

- Conversion of the existing construction sediment basin in the northern precast facility to a new stormwater retention system, to manage water quantity. This would include earthworks to enlarge the existing basin
- Diversion of the existing stormwater outlet pipe into the new water quantity basin (as opposed to the existing northern basins to the north of the precast facility which will no longer be utilised)
- Installation of a new drainage outlet (with scour projection) from the new basin, with the flows eventually leading to Ropes Creek.

Figure 4 Proposed design and project site boundary (in red)

4. Impact Assessment

4.1. Erosion and sediment impacts during construction

In accordance with mitigation measure SM2 for the project:

- Erosion and sediment measures would be implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004), and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from the site would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts
- Temporary sediment basins would be designed in accordance with Managing Urban Stormwater: Soils and Construction and Managing Urban Stormwater, Volume 2D: Main Road Construction (DECC, 2008).

The proposed works

The sediment basin (part of the combined retention system) has been designed in accordance with the Managing Urban Stormwater – Soils and Construction – Volume 1 and associated excel spreadsheet. With the basin type being defined as Type C, as per Table 6.1 in the documentation. Type C best describes the sediments that will be captured by the basin i.e. runoff from hardstand and gravel areas.

Soil Type	Soil characteristics	Treatment process	Basin design capacity	
			Settling zone	Sediment storage zone
Type D (dispersible)	10 percent or more of the soil materials are dispersible. Particle size is irrelevant	Aided flocculation in wet basins	Capacity to contain all runoff expected from the y percentile, x-day rainfall depth where, depending on the sensitivity of the receiving waters and/or the duration that the structure is in use: x is 2, 5, 10 or 20-days y is the 75th, 80th, 85th or 90th percentile	Normally taken as 50 percent of the capacity of the settling zone. However, it can be taken as two months soil loss as calculated by the RUSLE
Type C (coarse)	Less than 33 percent finer than 0.02 mm and less than 10 percent of the soil materials are dispersible	Rapid settling in wet or dry basins	Surface area of 4,100 $m^2/m^3/sec$ in the 3-month ARI flow, minimum depth of 0.6m, and length:width ratio of >3:1	Normally taken as 100 percent of the capacity of the settling zone. However, it can be taken as two months soil loss as calculated by the RUSLE
Type F (fine)	33 percent or more of the particles are finer than 0.02 mm and less than 10 percent of the soil materials are dispersible	Slow settling in wet basins	Capacity to contain all runoff expected from the y percentile, x-day rainfall depth where, depending on the sensitivity of the receiving waters and/or the duration that the structure is in use: x varies between 2 and 20 days y is the 75th, 80th, 85th or 90th percentile	Normally taken as 50 percent of the capacity of the settling zone. However, it can be taken as two months soil loss as calculated by the RUSLE

Table 6.1 Summary of selected sediment basin types and design criteria

Figure 5 Sediment basin criteria

It should be noted that only catchment 2 is to be accounted for in the sedimentation calculations as sediments from catchment 1 are captured by an existing Gross Pollutant Trap.

The sediment volume was determined using the RUSLE calculation spreadsheet for the type C basin. The main inputs to this spreadsheet were total catchment area (Catchment 2) and rainfall data relevant to the site which resulted in an approximate volume requirement of 215m3 over a 0.6m depth as per the Managing Urban Stormwater – Soils and Construction – Volume 1 Manual as well as Blacktown City Council WSUD guidelines, see Calculation below.

Total Basin Volume

Site	$Q_{tc, 0.25}$ (m^3/s)	Area factor	Basin surface area (m^2)	Depth of settling zone (m)	Settling zone volume (m^3)	Sediment storage volume (m^3)	Total basin volume (m^3)	Basin shape		
								L:W Ratio	Length (m)	Width (m)
B1	0.044	4100	179	0.6	107	107	215	3	21.2	8.5

Figure 4-6 Sediment Volume Calculation

4.2. Stormwater quality

A Gross Pollutant Trap has been constructed at the north of the site to treat the stormwater runoff as part of the *Eastern Creek Northern Precast Facility* as part of *Sydney Metro Enabling Works – Eastern Creek Roadworks Stormwater Management Basins* works. This existing stormwater quality device will be retained and therefore no further stormwater quality mitigation measures are required.

4.3. Increase in mainstream peak flows

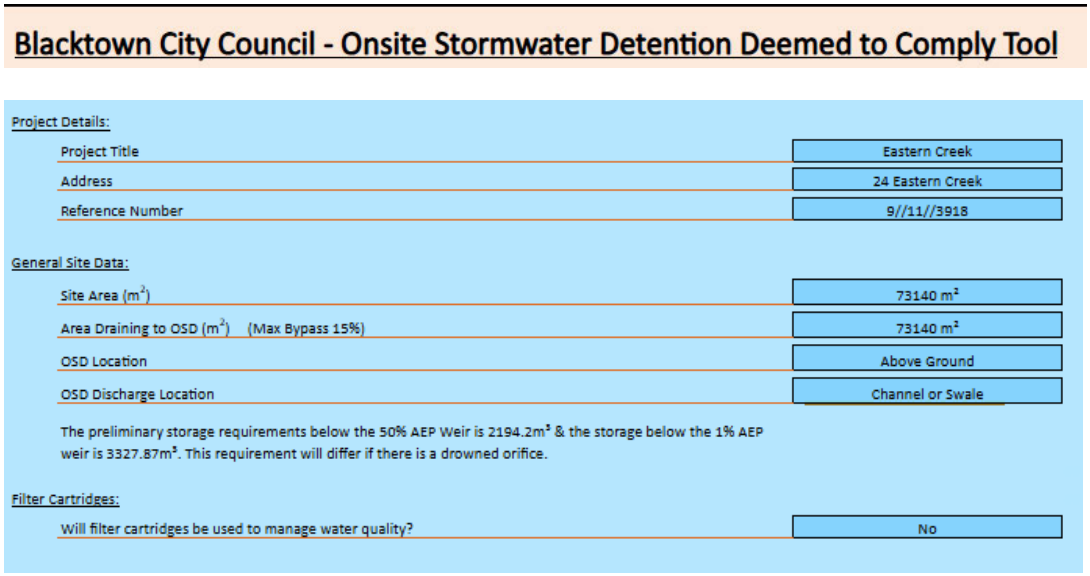
As identified in the REF, the development of the site for the Eastern Creek Precast Facilities would increase the site runoff peak flow rates and volumes into Ropes Creek (Jacobs, 2020). It identified that while the increment in flow compared to existing Ropes Creek flows is small, the potential impacts of the proposal combined with other external developments, without mitigation, may increase downstream flooding. As such, the REF requires that:

- Detailed design of the proposal site would include provision of appropriate on-site stormwater detention/flood detention facilities to cater for events up to and including the 1% AEP event (mitigation measure F1).

The proposed works

Consultation with Blacktown Council suggests the on-site detention tool is sufficient in sizing the flows rather than a comparison of pre to post development flows. Having said that the proposed basin also ensures there is a reduction in post development flow rates

compared to predevelopment in both the minor and major storms. As per the spreadsheet a basin detention volume of approximately 3328m3 is required to detain flows from the catchment.



Blacktown City Council - Onsite Stormwater Detention Deemed to Comply Tool

Project Details:

Project Title	Eastern Creek
Address	24 Eastern Creek
Reference Number	9//11//3918

General Site Data:

Site Area (m^2)	73140 m^2
Area Draining to OSD (m^2) (Max Bypass 15%)	73140 m^2
OSD Location	Above Ground
OSD Discharge Location	Channel or Swale

The preliminary storage requirements below the 50% AEP Weir is 2194.2m^3 & the storage below the 1% AEP weir is 3327.87m^3. This requirement will differ if there is a drowned orifice.

Filter Cartridges:

Will filter cartridges be used to manage water quality?	No

Figure 4-7 OSD deemed to comply spreadsheet

4.4. Potential geomorphic impacts due to changed flow regime in Ropes Creek

As identified in the REF without mitigation, increased site runoff peak rates, volumes and durations of flow may result in changes to flow regimes in Ropes Creek in low flows and frequent flood events (such as erosion or habitat impacts) (Jacobs, 2020). As such, the REF requires that:

- Detailed design of the proposal site would include the provision of appropriate on-site stormwater detention and sediment retention facilities. Outlet sizing would be designed to satisfactorily mitigate potential increases in peak flows in frequent events (mitigation measure F2).

The combined on-site stormwater detention and sediment retention basin ensures that flows and sediments from the site are detained such that an overall increase in impervious runoff from the site is mitigated and not expected to have an impact on Ropes Creek peak flows.

4.5. Impacts on overland flooding and drainage

As identified in the REF, development of the site would fill in existing overland flow paths and there may be potential impacts associated with the obstruction of overland flows and

drainage (Jacobs, 2020). The Technical Paper (Jacobs, 2020) also identified that design coordination with the drainage arrangements for Archbold Road would be undertaken.

The REF requires that:

- Detailed design of the proposal site would include the provision of appropriate flow diversion channels or culverts for management of external flows (mitigation measure F3).
- Detailed design would integrate with proposed Archbold Road cross drainage and road drainage outlets (mitigation measure F4)
- Detailed design would provide appropriate scour protection works at channel/culvert discharge points to Ropes Creek (mitigation measure F5).

The design of the proposed basin would satisfactorily mitigate potential impacts on flooding and drainage as follows:

- Remains unchanged from approved REF flow channel design
- Any relevant drainage relating to the Northern Precinct Yard has been considered as part of the OSD sizing
- As mentioned in section 2.2, scour protection has been sized at both the inlet to the proposed OSD basin as well as the outlet within the site boundary to ensure flows that eventually discharge to Ropes Creek are controlled.

5. Mitigation and management measures

A range of mitigation and management measures were provided for the REF and Determination Report to manage the potential impacts to hydrology and flooding (and surface water). These are listed below in Table 2 and remain relevant to the proposed works.

Table 2 Management and mitigation measures for the project

Ref	Impact	Condition
Hydrology and flooding		
F1	Potential increase in mainstream peak flood flows	Detailed design of the proposal site would include provision of appropriate onsite stormwater detention/flood detention facilities
F2	Potential geomorphic impacts due to changed flow regime in low flows and frequent flood event	Detailed design of the proposal site would include the provision of appropriate on-site stormwater detention/flood detention facilities. Outlet sizing would be designed to satisfactorily mitigate potential increases in peak flows in frequent events.
F3	Potential impacts on overland flooding and drainage conditions	Detailed design of the proposal site would include the provision of appropriate flow diversion channels or culverts for management of external flows.
F4	Potential impacts on overland flooding and drainage conditions	Detailed design would integrate with the planned Archbold Road upgrade and extension cross drainage and road drainage outlets.
F5	Potential impacts on overland flooding and drainage conditions	Detailed design would provide appropriate scour protection works at channel/culvert discharge points within the site boundary extents, upstream of Ropes Creek.
F6	Potential impacts on the proposal resulting from flooding	Detailed design would provide filling to a height of at least 0.5m above Ropes Creek 1% AEP flood level.
Surface water		
SM2	Potential erosion and sedimentation	Erosion and sediment measures have been implemented in accordance with the principles and requirements in Managing Urban Stormwater – Soils and Construction, Volume 1 (Landcom, 2004), and Volume 2D (NSW DECCW, 2008), commonly referred to as the 'Blue Book'. Additionally, any water collected from the proposal site would be appropriately treated and discharged to avoid any potential contamination or local stormwater impacts.