Review of Environmental Factors

SP0564 Pumping Station Renewal

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of the SP0564 Pumping Station Renewal (the proposal). The REF was prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

The Sydney Water Project Manager is accountable for ensuring the proposal is carried out as described in this REF. Additional environmental impact assessment may be required if the scope of work or work methods described in this REF change significantly following determination.

Decision Statement

The main potential construction environmental impacts of the proposal include potential impacts to asbestos management. There are no expected operational impacts. The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

Given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this REF, the proposal is unlikely to have a significant impact on the environment. Therefore, we do not require an Environmental Impact Statement (EIS) and the proposal may proceed.

Certification

I certify that I have reviewed and endorsed this REF and, to the best of my knowledge, it is in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation). The proposal has been considered against matters listed in section 171 (Appendix A) and the guidelines approved under section 170 of the EP&A Regulation. The REF considers how the proposal aligns with the principles of ecologically sustainable development (Appendix B). The information it contains is neither false nor misleading.

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
[redacted]			
Prinya Khamphounvong REF author Sydney Water Date: 08/01/2025	Florence Jeong Senior Environmental Scientist Sydney Water Date: 08/01/2025	Steven Liew Project Manager Sydney Water Date: 08/01/2025	Murray Johnson Senior Manager Environment and Heritage Services Sydney Water Date: 16/01/2025

2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal need and objectives	The Riverstone SP0564 wastewater pumping station was constructed in 1978 and consists of three vertical split case pumps with a capacity of 427 litre per second (L/s) (two pumps in parallel via two separate rising mains). The pumping station discharges directly into the Riverstone Water Resource Recovery Facility (WRRF). The mechanical and electrical assets have exceeded their design life and are obsolete with spare parts unavailable. Furthermore, SP0564 has a short detention time of only 4 hours due to the number of pump stations (i.e. SP1154, SP1202, SP1160, SP1173) with flows directed to this pump station. Due to the depth of the wet well, it is very difficult to set up a suitable bypass pumping arrangement in the event of a failure. This proposal aims to renew the pump station's mechanical, low voltage (LV), and high voltage (HV) assets to the same capacity of 427 L/s. The proposal's objectives include: • replace aging mechanical and electrical equipment • address safety and operational resilience concerns • address non-compliance to current Sydney Water specifications and relevant Australian Standards.
Consideration of alternatives/options	A do-nothing option risks further asset deterioration and potentially leads to failures. This would disrupt wastewater services to customers, potentially cause damage to the surrounding environment and have safety implications. Renewal of SP0564 would meet the current industry specifications and current safety standards. In doing so, the risk of wastewater overflows and negative environmental impacts would be minimised.
Proposal description and methodology	The proposal would involve the following: **Mechanical works** Dry Well • replace existing pumps with four new dry submersible pumps • install new pipework, valves, and actuators associated with the new pumps • install two sump pumps • construction and installation of intermediate platform, which would be used for construction and pump maintenance purposes • assess dry well waterproofing condition and remediate as required.

Aspect	Detailed description
	Wet Well • remove redundant stairs and platforms in wet well 1 and 2 • construct and install a dividing wall penstock on wet well 1 • remove redundant pump 1 pipework in wet well 1. Valve Chamber • replace valves and pipework for rising main 1 and 2 • modify existing valve chamber cover, and install a new access hatch and stairs • assess condition and replacement/repair of existing scour line and drainage (if required) • install valves and pipework for future rising main 3, to the existing blank flanges in the valve chamber. This would include a connection point to rising main DN375 • provide blank flange connection points for existing rising mains for future bypass provision. Add the proposed location of the future bypass manifold in the detailed drawings. Inlet Maintenance Hole • remove redundant stairs and platforms • install new stainless steel access ladder. Bypass • install a bypass connection point to existing 375 millimetre (mm) rising main in the valve chamber. Flowmeter Chamber • construct a new flowmeter chamber adjacent to SP0564 • install a clamp-on ultrasonic flow meter system on rising main 1 and 2. HVAC / Ventilation • assess heat load and airflow calculations • reconfigure the ventilation system to accommodate new location of VSDs. Flood Gates • install plastic flood gates around the existing SP0564. **Electrical works** HV scope • replace existing HV switchgear and transformers with two new 1MVA HV kiosk substations • install HV incomer cables from underground to overhead (UGOH) to SP0564, and Riverstone WRRF HV switchroom to

Aspect	Detailed description
	SP0564. This would be via 110 metres (m) of open trench up to 3 m deep and 1 m wide • supply and install a new 48 V battery charger in the dry well mezzanine level • install two HV remote operating panels • replace underground HV cable from SP0564 to Riverstone WRRF HV switchroom (if required). Low Voltage Scope • install LV switchboard • assess if any of the existing panels can be re-used (e.g. ventilation control panel) • replace and install new LV assets. Generator • install 750 kVA backup diesel generator.
Location and land ownership	The proposal is located in the suburb of Richards, in the Blacktown Local Government Area (LGA). The addresses, lot and DP numbers are listed below: • Wastewater Pumping Station, SP0564 (Lot 1/DP598194) • Land owned by Sakkara (the developer) (Lot 211/DP830505). Both Riverstone WRRF and SP0564 are owned and operated by Sydney Water.
Site establishment and access tracks	The proposal would be confined to previously disturbed areas where possible, such as existing road and road reserves. As discussed above, the proposal would involve construction of new access road around the proposed electrical installation. The proposal locations are generally accessible from the existing road network (Bandon Road) and a series of internal roads owned by Sakkara (the developer) and Sydney Water.
Ancillary facilities (compounds)	Construction compound(s) will likely be required to house site sheds, construction amenities and materials laydown. An indicative location for the compound is shown on Figure 1.
Work hours	Work and deliveries will be scheduled during standard daytime hours: • 7 am to 6 pm, Monday to Friday • 8 am to 1 pm, Saturdays. The proposal is expected to require work outside these hours to minimise the operational impact of both SP0564 and the WRRF. This has been assessed and mitigation measures are provided in Section 6.
Proposal timing	Construction is expected to start early 2025 and take about 18 months.

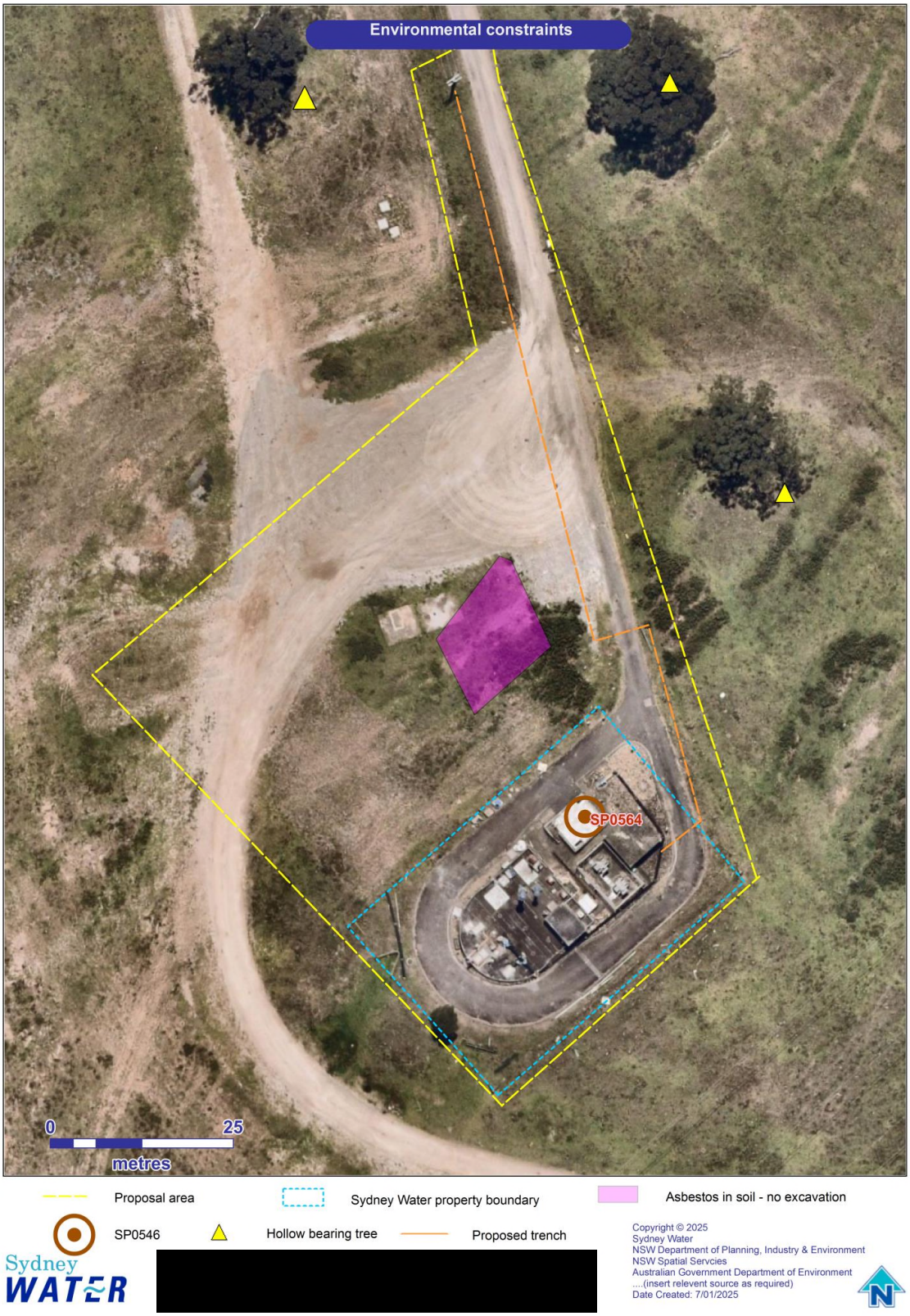

Figure 1 Location of proposal and environmental constraints

3 Consultation

Community and stakeholder consultation

Our approach to community and stakeholder consultation is guided by Sydney Water's community and stakeholder engagement guidelines.

Stakeholder and community engagement is a planned process of initiating and maintaining relationships with external parties who have an interest in our activities. Community and stakeholder engagement:

- enables us to explain strategy, policy, proposals, proposal or programs
- gives the community and stakeholders the opportunity to share their knowledge, issues and concerns
- enables us to understand community and stakeholder views in our decision-making processes alongside safety, environment, economic, technical and operational factors.

The nature, scale and extent of the proposal's potential impact has been evaluated in this REF. If our work impacts the community in some way, we will consult with affected groups throughout the proposal. This includes engaging the broader community and stakeholders during plan or strategy development or before making key decisions.

[redacted]

Consultation required under State Environmental Planning Policies and other legislation

Sydney Water must consult with councils and other authorities for work in sensitive locations or where the work may impact other agencies' infrastructure or land. This is specified in the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP).

No formal consultation was required under the TISEPP. Further detail is provided in Appendix B.

4 Legislative requirements

Table 2 Environmental planning instruments relevant to the proposal

Environmental Planning Instrument	Relevance to proposal
Blacktown Local Environmental Plan 2015 (Blacktown LEP)	The proposal is located on land zoned SP2 - Infrastructure and IN1 - General Industrial.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126 of the TISEPP permits development by or on behalf of a public authority for sewerage without consent on any land in a prescribed zone. The proposal involves development of a sewerage system and is in land zoned SP2 and IN1, which is considered a 'prescribed zone'.

Environmental Planning Instrument	Relevance to proposal
	As Sydney Water is a public authority, the proposal is permissible without consent.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	**Vegetation in non-rural areas (Chapter 2)** The proposal is located in the Blacktown LGA as listed in section 2.3(1)(a), and the zones listed in section 2.3.(1)(b). However, section 2.4(1) states: 'This Policy does not affect the provisions of any other SEPP….', and as the works are permissible under the TISEPP, a council permit to clear vegetation under this SEPP is not required. The proposal would require minor non-native vegetation removal. **Water catchments (Chapter 6)** Chapter 6 of this SEPP applies as the proposal is within the Hawkesbury-Nepean Catchment, a regulated catchment area. Section 6 of this REF assessed potential environmental impacts on water quality, aquatic ecology, flooding, access, cultural heritage, flora and fauna, and scenic quality. The assessment confirmed that potential impacts are minimal and meet the requirements of Part 6.2 of the SEPP.
State Environmental Planning Policy (Precincts – Central River City) 2021	**Sydney region growth centres (Chapter 3)** The proposal is located within the North West Growth Centre on 'certified land', which is referred as 'subject land' in Section 3.12 of this SEPP. Clause 5 of the Biodiversity Conservation Order (BCO) indicates that no further threatened species assessment would be required on 'certified land'. Section 3.24 of the SEPP relates to public utility undertakings and clearing of native vegetation on land that is 'not subject land' (non-certified land). As the proposal would not involve any vegetation clearing and is located on 'subject land', no further assessment or notification would be required under this SEPP.

Table 3 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations Act 1997 (POEO Act)	The proposal is consistent with existing scheduled activities licensed under EPL 1796 and has been designed to comply with the EPL requirements. No variation to the EPL 1796 is required during construction and operation of the proposal. The Contractor is responsible for immediately reporting any pollution incidents during construction in accordance with *SWEMS0009 – Responding to incidents with an environmental impact*.	N/A	N/A
National Parks and Wildlife (NPW) Act 1974	[redacted]	[redacted]	Post REF, preconstruction, Sydney Water
Water Act 1912 / Water Management Act 2000	Although unlikely, the proposal has the potential to encounter groundwater during construction. If groundwater is encountered a Water Supply Works Approval (WSWA) under Section 90 of the WM Act, is required if the project expects less than 3 ML of groundwater dewatering. However, if the project requires more than 3 ML of groundwater to be extracted, a WSWA and a Water Access Licence (WAL) is to be obtained prior to any dewatering.	WSWA (for < 3 ML) and WAL (for > 3 ML)	Post REF and pre-construction, Sydney Water

5 Environmental assessment

The environmental impacts checklist (SWEMS0019.01) was completed for the works which considers all environmental aspects. Table 4 includes only the potentially impacted aspects.

Table 4 Key environmental aspects and potential impacts of construction and operation

Aspect	Potential impacts
Topography, geology and soils	The proposal is located in an area impacted by soil contamination, mainly asbestos fibre cement fragments. These fragments are present in the subsurface soil throughout various areas of the site. This is discussed further in the section waste and hazardous material below. Further investigations and/or removal works may be required if fragments are encountered during future works onsite. During construction, the main potential impact is erosion and sedimentation. Ground disturbance would be required for the following activities: • about 110 m of open trenching (up to 3 m deep and 1 m wide) for the laying of underground electrical cables • levelling for the construction of a new pad for the backup generator, access road and transformer yard, as shown in Figure 1 • minor levelling of compound areas, if required, to ensure a flat surface for plant and equipment laydown. Excavated material from and levelling would generally be stockpiled within the construction compound. Spoil stockpiling would occur and used for backfilling where practicable. Rainfall or high wind could result in erosion and run off of any stockpiled material into adjacent land and waterways. Inappropriate management of soil stockpiles has potential to impact surrounding land and waterways from dust generation, off-site leaching of contaminants and saline soils and exposure of contaminated soil. Salinity potential mapping of Western Sydney indicates that the site has the potential to contain saline soils (Department of Infrastructure, Planning and Natural Resources, 2002). These higher levels of salinity may increase maintenance requirements and decrease the lifespan of the proposal due to the potential corrosive effects. The proposal should consider salt-resistant materials to minimise these potential impacts. With appropriate site management, the works are not expected to cause erosion and would not permanently change the surface topography of the area. The area would be returned to its original conditions following construction. During operation, maintenance works would be carried out, however, are likely to have a negligible impact on soils. Potential impacts can be adequately mitigated by implementing the erosion and sediment control safeguards identified in this REF.

Aspect	Potential impacts
Water and drainage	The proposal is located about 200 m east of an unnamed tributary of Eastern Creek. The location of existing waterways is shown in Figure 1. The proposal is located within an area mapped as Low Flood Risk by the Blacktown City Council and is therefore unlikely to be flood affected during the 1 in 100 year average recurrence interval (ARI) event. Nevertheless, the proposal has considered the impact of flooding and has designed the proposal to be constructed above the 1% AEP flood level. Construction work will include excavation of soils, temporary soil stockpiles, storage of fuels and chemicals and stockpiling. Poor site management during excavation activities may increase the risk of sediment-laden runoff from exposed areas. This has the potential to enter stormwater and receiving waters and cause turbidity and enhanced sedimentation. This risk will be minimal given the relatively minor and temporary nature of the trenching. Pollutants such as sediment, soil nutrients, construction waste, chemicals, fuels and gross pollutants have the potential to enter waterways, particularly during high rain events, which could result in a decline of water quality. Control of construction water run-off will therefore be necessary to avoid these potential impacts to the nearby waterways and downstream environments. Although unlikely, there is potential for groundwater to be encountered. If groundwater is encountered, a Water Supply Work Approval (WSWA) under the *Water Management Act 2000* will be required for dewatering. During detailed design, the Contractor would confirm the dewatering volume estimate to support the application. If the estimate is more than 3 ML, a Water Access Licence would be required.
Flora and fauna	Given the modified nature of the proposal site, only non-native vegetation clearing or trimming will be required. As shown in Figure 1, three hollow bearing trees are recorded in close proximity to the proposal. No hollow-bearing trees will be removed as part of the proposal. The Grey-headed Flying-fox and Eastern Coastal-Free-tailed Bat were also known to occur locally, though are not recorded within 200 m of the proposal. However, these are highly mobile species and able to move away to adjacent habitat during works, if disturbed. Given this, the proposed works are unlikely to significantly impact any of the above threatened species and a ToS is not required.
Aboriginal heritage	An Aboriginal Heritage Information Management System (AHIMS) search was completed on 22 April 2024, which identified [redacted] • [redacted]

Aspect	Potential impacts
	• [redacted] [redacted]
	[redacted]
Non-Aboriginal heritage	There are no non-Aboriginal heritage sites within close proximity to the proposal. Harm to previously unidentified items during construction are considered unlikely due to the previous disturbance caused by road and utilities construction. To minimise residual risk, an unexpected finds procedure identified in this REF will be implemented to minimise unforeseen impacts.
Noise and vibration	The proposal is primarily in a rural industrial setting with rural residential properties located 400 m east of SP0564. The existing noise environment around the proposed works is influenced by low levels of road traffic and the day-to-day operations of the WRRF and SP0564. Other sensitive noise receivers include: • Riverstone Yard (construction company) located 350 m north east of SP0564 • Transgrid Vineyard Substation located 720 m west of SP0564. The proposal would generate noise and vibration during construction from excavation and operation of heavy machinery. Additional vehicle movements would temporarily increase noise and vibration levels and may be audible or felt at adjacent land uses. The likelihood of noise impact from the proposal was reviewed against risk factors (based on Table 2 of the Draft Construction Noise Guideline (EPA, 2020)). The review indicated that the noise impact would be low risk and therefore a qualitative noise assessment was considered appropriate. The proposal would largely be performed during standard construction hours and take roughly 18 months to complete. The noise generated from the proposal would have a negligible impact on sensitive receivers compared to the existing background noise. Any impact would be

Aspect	Potential impacts
	localised and temporary in nature, and unlikely to have a significant impact. While the works would elevate the background day time noise environment, mitigation measures would be implemented to minimise and manage the noise impact to sensitive receivers. During operation, there will be no permanent changes to background noise. Noise generated during operation would not exceed the noise criteria in the Noise Policy for Industry (EPA 2017).
Air and energy	The following activities have the potential to cause adverse impacts on air quality: • emissions from construction machinery, equipment and vehicles • release of trapped gases from the wastewater system when access chambers are opened • odour emissions from opening up the wastewater system and during the cleaning process • dust generated during excavation, stockpiling and exposed soils. Due to the short term and minor scale of the works, emissions to air and odour impacts are not expected to be noticeable at the nearest sensitive receivers. There would be additional energy use through fuel consumption in vehicles and machinery. This is anticipated to have only a minimal impact due to the limited extent of the proposal. During operation, there would not be changes to background odour at nearby receivers. The proposal would not result in any permanent or operational impacts upon air quality. The proposal would ultimately improve the overall odour profile of the wastewater system.
Waste and hazardous materials	Detailed site investigations (DSI) identified asbestos in fill material across the SP0564 site. Efforts were made during design to avoid this known contaminated fill area to minimise waste and impacts to the surrounding receivers. However, there is potential for asbestos to be present in fill material across other areas of the site. The proposal would generate waste during construction, however, the nature and volume of waste would generally be non-hazardous and minor. The following solid wastes resulting from excavation and installation of pipes would likely be generated: • redundant pipes, pipe fittings and pipe off-cuts • excess concrete and steel • excess spoil • general site waste.

Aspect	Potential impacts
	The proposal may involve the transportation of asbestos waste (associated with soil containing asbestos and the removal of recycled building aggregate). Requirements to track waste via the EPA's Waste Locate online tracking System will be confirmed by the contractor. A contamination assessment is required to rule out the asbestos risk in the soil prior to excavation. A known area of soil containing asbestos has been identified during the Detailed Site Investigation (DSI) as seen in Figure 1. Part of this area will be used for a construction compound. No excavation is proposed in this area. However, there is still potential for soil disturbance through the use of machinery e.g. tyre track slips. Additional mitigation measures have been provided in Section 6 to ensure there are no disturbances of asbestos soils. An Asbestos Management Plan will be prepared as part of the CEMP as detailed in Section 6. The plan will provide management requirements (waste minimisation, waste segregation, classification and tracking requirements) and reuse, offsite recycling and/or disposal measures. The contractor will seek opportunities to reduce, recycle and reuse materials. This will be documented in the Waste Management Plan or CEMP. The proposal would not generate significant quantities of waste material or spoil. There is the potential, however, for some of the waste materials generated to be contaminated. Any root material, sediment and redundant pipes removed from the wastewater system, for example, would be contaminated with a range of organic and inorganic pollutants. Waste would be classified and disposed of by a qualified and approved contractor and disposed to a licensed facility. Nevertheless, provided adequate construction site management processes are followed, in conjunction with the safeguards identified below, the generation of waste by the works would not result in any adverse impacts on human health or the environment. During operation, the proposal would generate minimal waste from routine maintenance activities.
Traffic and access	The proposal would be accessed via Bandon Street, off Riverstone Parade. Construction of the proposal would generate up to up to 15 light vehicle movements per day. Heavy vehicles would be required for the delivery of construction equipment. The proposal would also involve the construction of a new access road around the new switch room and transformer yard. Traffic would be managed by a Traffic Management Plan. The proposal would not impact access to private properties nor would it affect the availability of street parking. As such, potential impacts to traffic and access are expected to be negligible.

Aspect	Potential impacts
	During operation, routine maintenance activities are not anticipated to result in additional traffic impacts to the surrounding road network, access and parking.
Social and visual	The existing landscape is largely rural and cleared of vegetation. Visual impacts would be associated with the temporary presence of plant, machinery and construction compounds. During operation, the proposal is not expected to result in any visual impacts to the surrounding community, as the proposed infrastructure would be located over 400 metres from the nearest sensitive receiver. Overall, the proposal is expected to have a negligible impact.
Cumulative and future trends	There is industrial development underway adjacent to the proposal. Cumulative impacts will be managed in consultation with the developer (Sakkara) and Blacktown City Council. This would include consultation on access to land not owned by Sydney Water.

6 Environmental mitigation measures

Table 5 Mitigation measures

Mitigation measures
General

Sydney Water's Project Manager (after consultation with the environmental and community representatives and affected landowners) can approve temporary ancillary construction facilities (such as compounds and access tracks), without additional environmental assessment or approval if the facilities meet the following principles:

- limit proximity to sensitive receivers
- no disruption to property access
- no impact to known items of non-Aboriginal and Aboriginal heritage
- outside high risk areas for Aboriginal heritage
- use existing cleared areas and existing access tracks
- no impacts to remnant native vegetation or key habitat features
- no disturbance to waterways
- potential environmental impacts can be managed using the safeguards in the EIA
- no disturbance of contaminated land or acid sulfate soils
- will be rehabilitated at the end of construction.

The contractor must demonstrate in writing how the proposed ancillary facilities meet these principles. Any facilities that do not meet these principles will require additional environmental impact assessment.

The agreed location of these facilities must be shown on the CEMP site plan and appropriate environmental controls installed.

To ensure compliance with legislative requirements for incident management (eg *Protection of the Environment Operations Act 1997)*, Sydney Water's employees and contractors will follow SWEMS0009. Attach SWEMS0009 to the CEMP.

Prepare a Construction Environmental Management Plan (CEMP) addressing the requirements of this environmental assessment. The CEMP should specify licence, approval and notification requirements. Prior to the start of work, all project staff and contractors will be inducted in the CEMP.

The CEMP must be readily available on site and include a site plan which shows:

- Go/no go areas (AHIP zones professionally surveyed. Mark the boundary with highly visible non-ground-disturbing and 'environmental protection zone' signs.) and boundaries of the work area/disturbance corridor including locations of lay-down and storage areas for materials and equipment
- location of environmental controls (such as erosion and sediment controls, fences or other measures to protect vegetation or fauna, spill kits)

The CEMP will identify appropriate delineation with the approved construction footprint before construction.

Should the proposal change from the EIA, no further environmental assessment is required provided the change:

- remains within the assessment/study area for the EIA has no net additional environmental impact; or
- is outside the assessment/study area for the EIA but:
- reduces impacts to biodiversity, heritage or human amenity; or
- avoids engineering (for example, geological, topographical) constraints; and
- after consultation with any potentially affected landowners and relevant agencies.

The Contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.

Topography, geology and soils

Prevent sediment moving offsite in accordance with Managing Urban Stormwater, Soils and Construction, Volume 1 and 2A (Landcom 2004 and DECC 2008), including, but not limited to:

- divert surface runoff away from disturbed soil and stockpiles
- install sediment and erosion controls before construction starts
- reuse topsoil where possible and stockpile separately
- inspect controls at least weekly and immediately after rainfall
- rectify damaged controls immediately
- remove controls once surfaces have been stabilised, including removing trapped sediment in drainage lines.

Minimise ground disturbance and stabilise disturbed areas progressively.

Contractor to ensure imported material is Virgin Excavated Natural Materials (VENM) or meets a relevant NSW EPA Resource Recovery Order and Resource Recovery Exemption, or is a commercially supplied material that is not waste.

If using materials that are subject to a NSW EPA Resource Recovery Order/Exemption the contractor must ensure the conditions in that Order/Exemption are strictly adhered to.

Stop work in the immediate vicinity of suspected contamination. Indicators of contamination include discoloured soil, anthropogenic material within fill, asbestos, chemical or petrol odours and leachate. Contain disturbed material on an impermeable surface and cordon areas off. Notify the Sydney Water Project Manager and the Environmental Representative (who will contact Contamination and Hazardous Materials team) to agree on proposed management approach.

Stop work during heavy rainfall or in waterlogged conditions when there is a risk of sediment loss off site.

Sweep up any sediment/soil transferred off site at least daily, or before rainfall.

Eliminate ponding and erosion by restoring natural landforms to the pre-works condition.

Water and drainage

Bund open maintenance holes if risk of wastewater spills.

Keep functioning spill kit on site for clean-up of accidental chemical/fuel spills. Keep the spill kits stocked and located for easy access.

Locate portable site amenities, chemical storage and stockpiles of erodible materials away from watercourses, drainage lines and flood prone areas.

Conduct refuelling, fuel decanting and vehicle maintenance in compounds where possible. If field refuelling is necessary, designate an area away from waterways and drainage lines with functioning spill kits close by.

Ensure equipment is leak free. Repair oil/fuel leaks immediately or remove from site and replace with a leak-free item.

Conduct any equipment wash down within a designated washout area.

If the potential for intercepting groundwater is identified after the REF is determined, Sydney Water will obtain a groundwater Water Supply Works Approval and where dewatering is > 3 ML per water year (from 1 July) a Water Access Licence from NRAR will also be obtained. The Delivery Contractor is responsible for:

- providing expert hydrogeological technical information to obtain the approvals preparing a Dewatering Management Plan
- complying with the approval conditions (such as protecting water quality; minimising aquifer extraction volumes, monitoring extraction with flow meters and recording volumes).

Flora and fauna

Provided it is essential for delivering the project, Sydney Water's Project Manager can approve the following vegetation removal and tree trimming, without additional environmental assessment (but only after consultation with the Environmental and Community Representatives and affected landowners). Sydney Water considers vegetation removal in these circumstances has minimal environmental impact.

- Any minor:
    - vegetation trimming or
    - removal of exotic vegetation or
    - removal of planted native vegetation.

  where the vegetation is not a threatened species (including a characteristic species of a threatened community or population), heritage listed, in declared critical habitat or in a declared area of outstanding biodiversity value.
- Any removal of remnant vegetation where there is no net change to environmental impact (eg a different area of vegetation is removed but the total area is the same or less than assessed in the EIA).

Written explanation of the application of this clause (including justification of the need for trimming or removal and any proposed revegetation) should be provided when seeking Project Manager approval. Any impacts to native vegetation and trees must be offset in accordance with the Biodiversity Offset Guideline (SWEMS0019.13).

An exclusion zone will be marked out around the hollow bearing trees. Should the tree need to be removed it must be checked for any wildlife by an ecologist and any animals within relocated to a suitable environment.

If native fauna is encountered on site, stop work and allow the fauna to move away unharassed. Engage WIRES or a licenced ecologist if assistance is required to move fauna.

If any threatened species (flora or fauna) is discovered during the works, stop work immediately and notify the Sydney Water Project Manager. Work will only recommence once the impact on the species has been assessed and appropriate control measures provided.

Heritage

Do not make publicly available or publish, in any form, Aboriginal heritage information on sites / potential archaeological deposits, particularly regarding location.

Repeat the basic AHIMS search if it is older than 12 months. Conduct additional assessment if new sites are registered and could be impacted by the works.

[redacted].

Include an Aboriginal Heritage Management Plan (AHMP) in the CEMP.

If any Aboriginal object or non-Aboriginal relic is found, cease all excavation or disturbance in the area and notify Sydney Water Project Manager in accordance with SWEMS0009.

All site personnel must be inducted by a heritage specialist (or delegate) before starting work on site. The induction should include clear explanation of heritage constraints, go and no-go areas, processes and measures to avoid impacts, stop work procedures, and contact details to obtain further heritage guidance if needed.

Noise and vibration

Works must comply with the Construction Noise Guideline (Draft, 2021), including scheduling work and deliveries during standard daytime working hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. No work to be scheduled on Sunday nights or public holidays. Any proposed work outside of these hours must be justified.

The Proposal will also be carried out in accordance with:

- Sydney Water's Noise Management Procedure SWEMS0056
- Noise Policy for Industry (EPA, 2017)

All reasonable and feasible noise mitigation measures should be justified, documented and implemented on-site to mitigate noise impacts.

As works beyond standard daytime hours are needed, the Contractor would:

- justify the need for out of hours work (OOHW) and why it is not possible to carry out the works during standard daytime hours

- consider potential noise impacts and: implement the relevant standard daytime hours safeguards; Sydney Water's Noise Management Code of Behaviour (SWEMS0056.01) and document all reasonable and feasible management measures to be implemented
- identify additional community notification requirements and outcomes of targeted community consultation
- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

Air and energy
Use alternatives to fossil fuels where practical and cost-effective.
Ensure odour control measures are available and ready to use during the works.
Maintain equipment in good working order, comply with the clean air regulations of the *Protection of the Environment Operations Act 1997*, have appropriate exhaust pollution controls, and meet Australian Standards for exhaust emissions.
Switch off vehicles/machinery when not in use.
Cover all transported waste.

Waste and hazardous material
Manage waste in accordance with relevant legislation and maintain records to show compliance eg waste register, transport and disposal records.
The Contractor will ensure an Asbestos Management Plan (AMP) is prepared by a suitably qualified person as part of the CEMP. The AMP is to be reviewed by Sydney Water's Environmental Representative in consultation with Contamination and Hazardous Materials team. The plan must identify the type and location of known/potential contamination, management requirements (waste minimisation, waste segregation and classification) and reuse, offsite recycling and/or disposal measures. The AMP should also consider findings of the Sydney Water Hazardous Building Materials Management Plan (Nov 2020).
Provide adequate bins for general waste, hazardous waste and recyclable materials.
Minimise stockpile size and ensure delineation between different stockpiled materials.
Minimise the generation of waste, sort waste streams to maximise reuse/recycling in accordance with the *Waste Avoidance and Resource Recovery Act 2001*.
Manage waste and excess spoil in accordance with the NSW EPA Resource Recovery Orders and Exemptions (if applicable) and / or Waste Classification Guidelines. Where materials are not suitable or cannot be reused onsite or offsite, recycle soils at a licensed soil recycling facility or dispose at an appropriately licenced landfill facility.
Prevent pollutants from escaping including covering skip bins.

Walkover of the proposal by a Licensed Asbestos Assessor will be required. The assessor will collect/remove any observed asbestos fragments from the soil surface.

The construction contractor will lay a geofabric marker layer to mark the asbestos contaminated soils below. This layer will be maintained throughout occupation. Clean verified soil materials/gravels (VENM/ENM) could also be used.

Prior to demobilisation, a Licensed Asbestos Assessor will recheck the area to ensure the soil surface is free from visible asbestos.

If fibro or other asbestos containing material is identified, restrict access and follow Sydney Water's Asbestos Management – Minor Works procedure, Document Number 746607 and SafeWork NSW requirements. Contact Sydney Water Project Manager (who will consult with Contamination and Hazardous Materials team).

Traffic and access

Prepare a Traffic Management Plan (TMP) in consultation with the relevant traffic authority.

Ensure work vehicles do not obstruct vehicular or pedestrian traffic, or private driveway, public facility or business access unless necessary and only if appropriate notification has been provided.

Social and visual

Undertake works in accordance with Sydney Water Communications policies and requirements including:

- notify impacted residents and businesses
- erect signs to inform the public on nature of work
- personnel treat community enquiries appropriately.

Work sites will be restored to pre-existing condition or better.

Minimise visual impacts (e.g. retain existing vegetation where possible).

Maintain work areas in a clean and tidy condition.

Cumulative impacts and future trends

Perform ongoing consultation with the developer (Sakkara) and other adjacent developments on any potential cumulative impacts.

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Appendix A – Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community from erosion, sedimentation, and dust. There will be environmental improvements by providing a reliable wastewater service to the local community.
Any transformation of a locality	The proposal will not result in the transformation of a locality.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality The proposal will lead to environmental improvements by ensuring a reliable wastewater service to collect and treat wastewater, minimising any impacts on the ecosystem.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal will not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	[redacted]
Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)	The proposal will not have any impact on the habitat of protected animals.
Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air	The proposal will not be endangering any species of animal, plant or other form of life, whether living on land, in water or in the air.
Any long-term effects on the environment	The proposal will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable and modern wastewater service for the area.
Any degradation of the quality of the environment	The proposal will not cause the degradation of the quality of the environment.
Any risk to the safety of the environment	The proposal will not increase risk to the safety of the environment.
Any reduction in the range of beneficial uses of the environment	The proposal will not reduce the range of beneficial uses of the environment.

Section 171 checklist	REF finding
Any pollution of the environment	Environmental mitigation measures will mitigate the potential for the proposal to pollute the environment. The proposal will operate in accordance with EPL 1796.
Any environmental problems associated with the disposal of waste	Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not increase demand on resources, that are, or are likely to become, in short supply.
Any cumulative environmental effect with other existing or likely future activities	The proposal will not have any cumulative environmental effect with other existing or likely future activities.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal will not have any impact on coastal processes or hazards, and coastal processes and coastal hazards will not have any impact on the proposal.
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	Under the Greater Sydney Region Plan – A Metropolis of Three Cities (Greater Sydney Commission, 2018), the proposal aligns to Planning Priority C1 – planning for a city supported by infrastructure for the Central River City catchment for which the NWGA wastewater catchment is located.
Any other relevant environmental factors.	The proposal has been assessed against the factors listed above, and there are no other relevant environmental factors to consider.

Appendix B – Consideration of principles of ecologically sustainable development (ESD)

Principle	Proposal alignment
Precautionary principle - *if there are threats of serious or irreversible environmental damage, lack of scientific uncertainty should not be a reason for postponing measures to prevent environmental degradation. Public and private decisions should be guided by careful evaluation to avoid serious or irreversible damage to the environment where practicable, and an assessment of the risk-weighted consequences of various options.*	The proposal will not result in serious or irreversible environmental damage and there is no scientific uncertainty relating to the proposal. The potential environmental impacts have been considered to avoid serious or irreversible damage to the environment. This has been assessed in Section 5 of the REF. The environmental impacts of construction will be minor, localised and short-term.
Inter-generational equity - *the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*	The proposal will help to meet the needs of future generations by providing a reliable wastewater service.
Conservation of biological diversity and ecological integrity - *conservation of the biological diversity and ecological integrity should be a fundamental consideration in environmental planning and decision-making processes.*	The proposal will not significantly impact on biological diversity or impact ecological integrity. The proposal has minimised the impact to biological biodiversity and ecological integrity by not removing vegetation.
Improved valuation, pricing and incentive mechanisms - *environmental factors should be included in the valuation of assets and services, such as 'polluter pays', the users of goods and services should pay prices based on the full life cycle costs (including use of natural resources and ultimate disposal of waste) and environmental goals*	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community and environment.

Appendix C – Consideration of TISEPP consultation

TISEPP section	Yes	No
Section 2.10, council related infrastructure or services – consultation with council		
Will the work:		
Potentially have a substantial impact on stormwater management services provided by council?		✓
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		✓
Connect to, and have a substantial impact on, the capacity of a council owned sewerage system?		✓
Connect to, and use a substantial volume of water from a council owned water supply system?		✓
Require temporary structures on, or enclose, a public space under council's control that will disrupt pedestrian or vehicular traffic that is not minor or inconsequential?		✓
Excavate a road, or a footpath adjacent to a road, for which the council is the roads authority, that is not minor or inconsequential?		✓
Section 2.11, local heritage – consultation with council		
Is the work likely to affect the heritage significance of a local heritage item, or of a heritage conservation area (not also a State heritage item) more than a minor or inconsequential amount?		✓
Section 2.12, flood liable land – consultation with council		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and will works alter flood patterns other than to a minor extent?		✓
Section 2.13, flood liable land – consultation with State Emergency Services		
Will the work be on flood liable land (land that is susceptible to flooding by the probable maximum flood event) and undertaken under a relevant provision*, but not the carrying out of minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance? * (e) Div.14 (Public admin buildings), (g) Div.16 (Research/ monitoring stations), (i) Div.20 (Stormwater systems)?		✓
Section 2.14, development with impacts on certain land within the coastal zone– council consultation		
Is the work on land mapped as coastal vulnerability area and inconsistent with a certified coastal management program?		✓
Section 2.15, consultation with public authorities other than councils		
Will the proposal be on land adjacent to land reserved under the *National Parks and Wildlife Act 1974* or land acquired under Part 11 of that Act*? If so, consult with DPE (NPWS).*		✓
Will the proposal be on land in Zone C1 National Parks and Nature Reserves or on a land use zone that is equivalent to that zone? *If so, consult with DPE (NPWS).*		✓
Will the proposal include a fixed or floating structure in or over navigable waters? *If so, consult TfNSW.*		✓
Will the proposal be on land in a mine subsidence district within the meaning of the *Coal Mine Subsidence Compensation Act 2017*? *If so, consult with Subsidence Advisory NSW.*		✓
Will the proposal be on land in a Western City operational area specified in *the Western Parkland City Authority Act 2018,* Schedule 2 and have a capital investment value of $30 million or more? *If so, consult the Western Parkland City Authority*.		✓
Will the proposal clear native vegetation on land that is not subject land (ie non-certified land)? *If so, notify DPE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021).*		✓