

Review of Environmental Factors

Wastewater Main Renewal - Slade Park, Austinmer

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of the wastewater main renewal at Slade Park, Austinmer. 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.


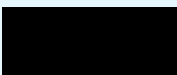


Decision Statement

The main potential construction environmental impacts of the proposal include impacts to soils, water, noise, access and visual amenity. No impacts are anticipated during the operation of the proposal. 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


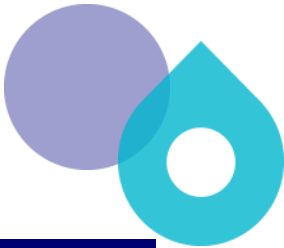
I certify that I have reviewed and endorsed this REF and, to the best of my knowledge, it is in accordance with the EP&A Act and the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation). The proposal has been considered against matters listed in section 171 (Appendix A) and the guidelines 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:
 Andrea Glass REF author Sydney Water Date: 07/08/2024	 Grace Corrigan Environment Representative Sydney Water Date: 26/08/2024	 Ananta Mukherjee Project Manager Sydney Water Date: 30/08/2024	 Murray Johnson Environment and Heritage Services Senior Manager Sydney Water Date: 26/09/2024

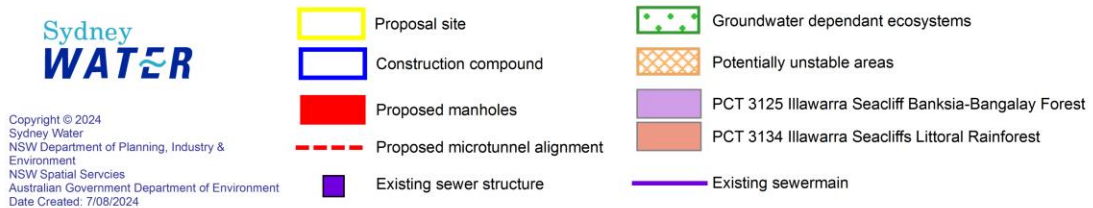
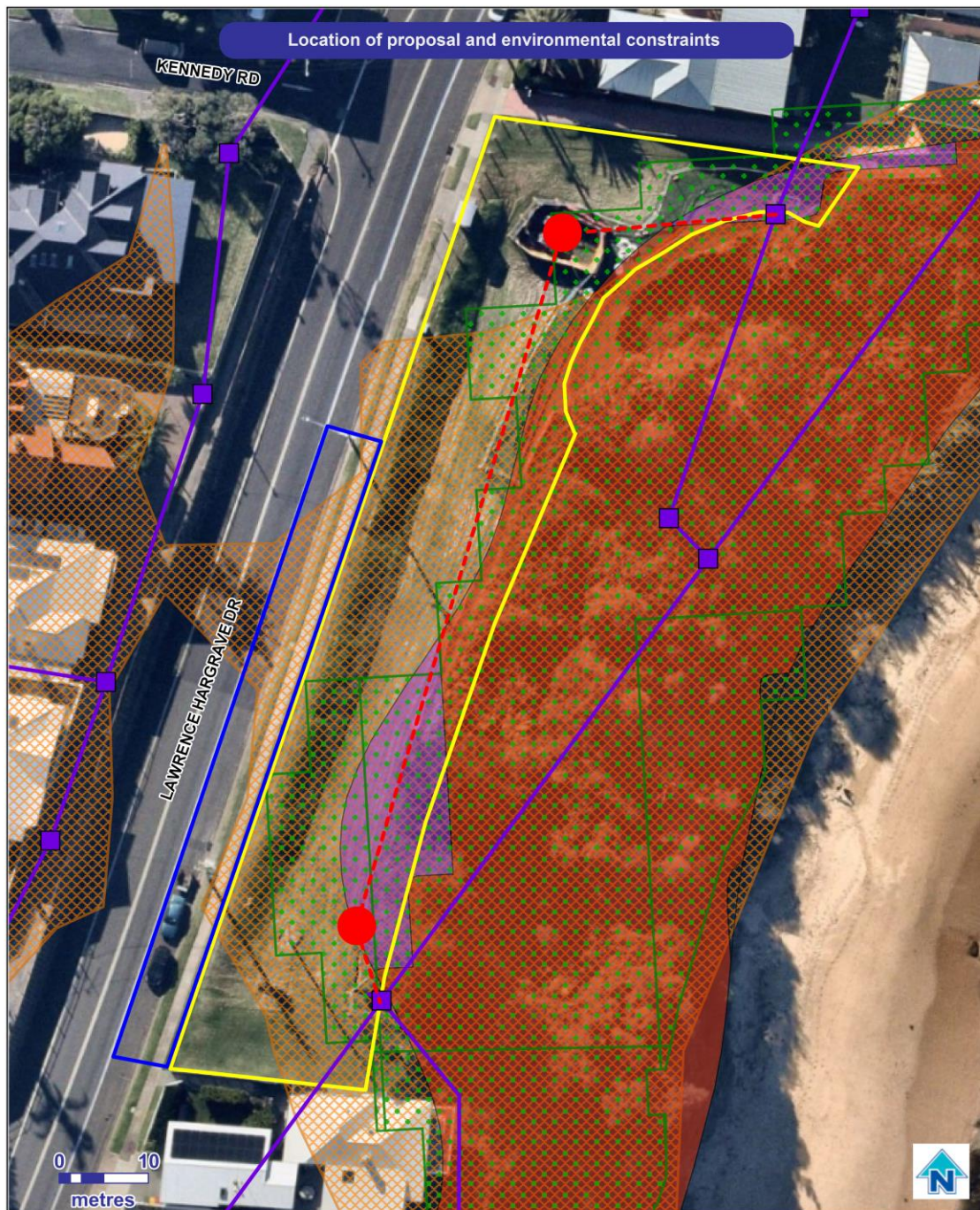
2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal need and objectives	<p>In March 2022, a landslide occurred at a public reserve on the coastline at Slade Park, Austinmer. This landslide impacted a section of a Sydney Water wastewater main pipe. The wastewater main services 6 residential properties and flows into the Austinmer Carrier.</p> <p>In the interim to service the affected properties Sydney Water has installed a temporary bypass pumping arrangement. The bypass is from the maintenance hole upstream of the failed wastewater main to a maintenance hole on the carrier at the southern end of Slade Park.</p> <p>The objective of the proposal is to:</p> <ul style="list-style-type: none"> • provide a permanent replacement wastewater main that provides an alternate servicing option to the six properties • address the risk of future landslips impacting the wastewater main and construction in a potential landslide fill area.
Consideration of alternatives/options	<p>An options assessment identified 9 options for the proposal, however only 4 were shortlisted as the most likely options:</p> <ul style="list-style-type: none"> • Individual pressure wastewater main installation at each property • Single pressure wastewater main and pressure main • New gravity wastewater main to downstream carrier maintenance hole • Gravity line and direct bore or microtunnel into the southern carrier maintenance hole. <p>The new gravity wastewater main to downstream carrier maintenance hole was selected as the preferred option as no ongoing maintenance or land acquisition is required. This option would achieve the proposal objectives.</p>
Proposal description and methodology	<p>The proposal includes installing a new gravity wastewater main and two maintenance holes to connect to an existing discharge maintenance hole.</p> <p>The proposal scope includes the following works:</p> <ul style="list-style-type: none"> • Site establishment including compound setup, and earthworks to level areas around the proposed maintenance holes • Construct maintenance holes to be used as launch/receival pits • Microtunnelling between the new and existing maintenance holes • Demobilise site. <p>The proposal area includes the proposal site and construction compound, as shown in Figure 1.</p>
Location and land ownership	<p>The proposal is located at Slade Park and the adjacent road corridor, in the suburb of Austinmer in the Wollongong Local Government Area (LGA). Slade</p>

Aspect	Detailed description
	Park is on land managed by Wollongong City Council (Lot 114 DP 4928). The adjacent road corridor on Lawrence Hargrave Drive is a State road managed by Transport for NSW.
Ancillary facilities (compounds)	A construction compound 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	<p>Work and deliveries will be scheduled during standard daytime hours:</p> <ul style="list-style-type: none"> • 7am to 6pm, Monday to Friday • 8am to 1pm, Saturdays. <p>The proposal is not expected to require work outside these hours. However, Sydney Water's Project Manager can approve work outside of standard daytime hours. The approval process is described in the mitigation measures in Section 6.</p>
Proposal timing	Construction is expected to start late 2024 and take about 6 months.



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 NSW Department of Planning, Industry &
 Environment
 NSW Spatial Services
 Australian Government Department of Environment
 Date Created: 7/08/2024

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.

We will also provide local councils with reasonable notice when we would like to commence works. Wollongong City Council will be consulted about matters identified in environmental planning instruments. This includes public safety issues, temporary works on council land, and full or partial road closures of council managed roads.

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 C.

4 Legislative requirements

Table 2 Environmental planning instruments relevant to the proposal

Environmental Planning Instrument	Relevance to proposal
Wollongong Local Environmental Plan 2009 (Wollongong LEP)	The proposal is located on land zoned RE1 Public Recreation.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	<p>Section 2.126 of the TISEPP permits development by or on behalf of a public authority for sewerage systems without consent on any land in a prescribed circumstance.</p> <p>Development carried out by or on behalf of a public authority is a prescribed circumstance.</p> <p>As Sydney Water is a public authority, the proposal is permissible without consent.</p>
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	<p>Vegetation in non-rural areas (Chapter 2)</p> <p>The proposal is in an area or zone listed in subsection 2.3(1). However, subsection 2.4(1) states: '<i>This Policy does not affect the provisions of any other SEPP....</i>', and as the works are permissible under the TISEPP, a council permit to clear vegetation under this SEPP is not required.</p> <p>Koala habitat protection (2020 and 2021) (Chapters 3 and 4)</p> <p>The proposal site is on land zoned Koala Habitat Protection, under section 4.4 of the BC SEPP.</p> <p>The BC SEPP outlines that development consent cannot be granted unless there is a plan of management prepared for the relevant local government area. Sydney Water is the determining authority and does not require development consent for vegetation removal in koala habitat.</p> <p>No vegetation disturbance is required for the proposal, refer to Section 5 of this REF.</p>
State Environmental Planning Policy (Resilience and Hazards) 2021 (RHSEPP)	<p>Coastal Management (Chapter 2)</p> <p>The works are on land to which Chapter 2 of this SEPP applies.</p> <p>The works are in an area mapped as coastal use area (section 2.11). As Sydney Water is the determining authority, development consent is not required to work in this area.</p> <p>The proposal will be managed to avoid adverse impacts to coastal processes and would not increase risk of coastal hazards.</p>

Table 3 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
<i>Protection of the Environment Operations Act 1997 (POEO Act)</i>	<p>The proposal is covered by an existing Environmental Protection Licence (EPL) 218 and meets the EPL compliance requirements. Temporary relaxation of the EPL 218 is not required during construction/ commissioning. A variation to EPL 218 is not required for operation.</p> <p>There is a requirement under Part 5.7 of the POEO Act to immediately report any pollution incidents to the relevant authority where material harm to the environment is caused or threatened. The definition of material harm and the relevant authorities are defined in Part 5.7 of the POEO Act. The delivery contractor is responsible for immediately reporting such incidents in accordance with SWEMS0009 Responding to incidents with an environmental impact.</p>	N/A	N/A
<i>Roads Act 1993</i>	<p>Temporary traffic control may be required during construction to allow for deliveries and use of the laydown area.</p> <p>Lawrence Hargrave Drive is a State road and managed by Transport for NSW.</p> <p>Consultation will be undertaken with Transport for NSW before construction starts to obtain a Road Occupancy Licence in accordance with section 138 of the Act.</p>	Road Occupancy Licence	Pre-construction, contractor
<i>Water Act 1912 / Water Management Act 2000</i>	<p>Section 60A of the <i>Water Management Act 2000</i> states that it is an offense to take water without a licence. A Water Access Licence (WAL) is required under section 61 of the Act where groundwater extraction would be greater than 3 ML.</p> <p>A water supply work (WSWA) approval is required under Section 90(2) of the Act to construct or use a water supply work.</p> <p>It is anticipated that less than 3 ML of groundwater would be extracted during construction. A WAL would not be required for the proposal.</p> <p>However, if it is identified during later detailed design and construction staging phases that more than 3 ML of groundwater is required to be extracted, a WSWA approval and a WAL is required with a temporary</p>	WSWA (for <3 ML) and WAL (for >3 ML)	Pre-construction, contractor

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	allocation of the estimated volume of water to be extracted.		

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

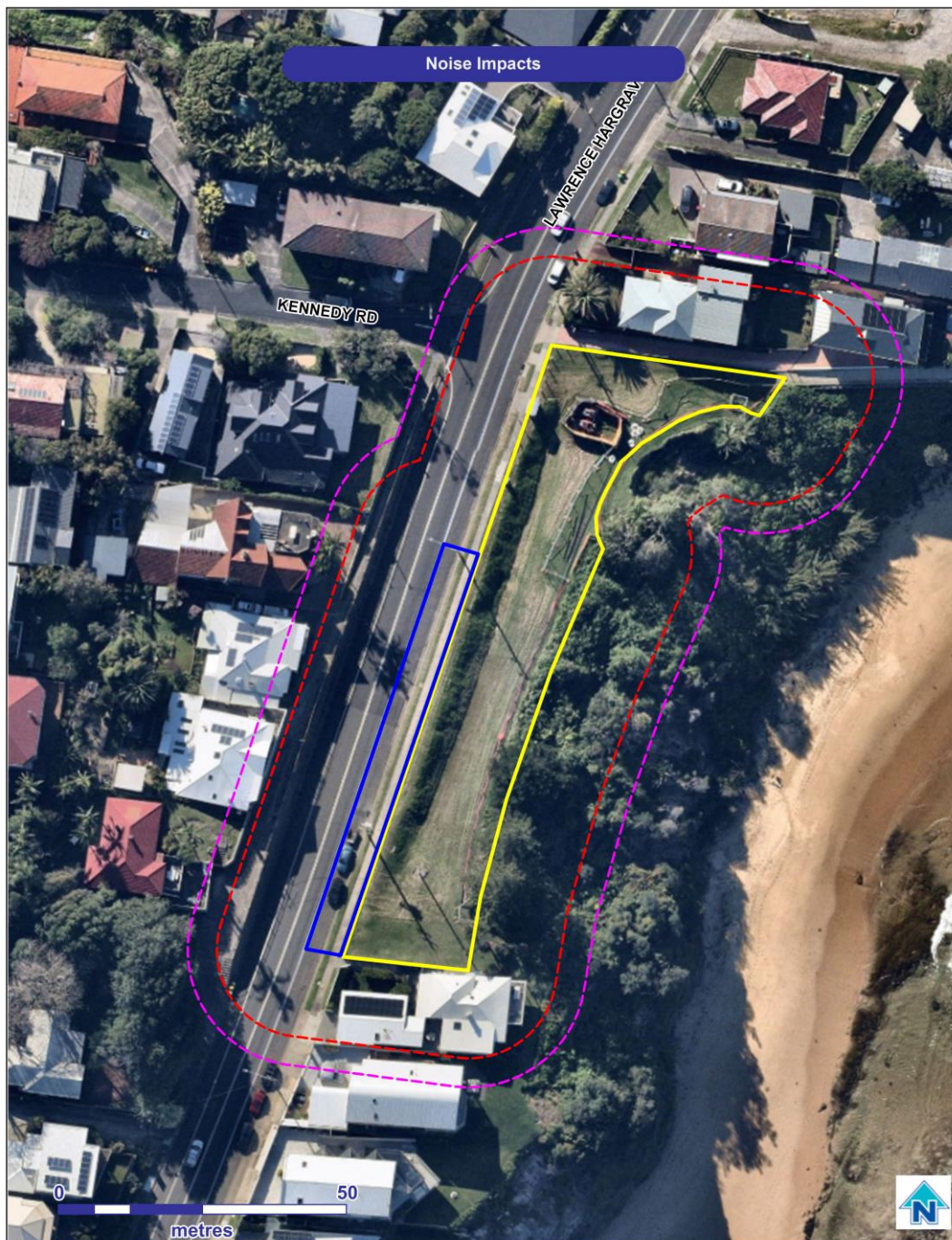
Aspect	Potential impacts
Topography, geology and soils	<p>The proposal is within a potentially unstable area. No areas of contaminated land, salinity or acid sulfate soils were identified within the site.</p> <p>Construction activities involve excavation of 2 maintenance holes which would be used as microtunnel launch/receival pits and temporary stockpiling of excavated material. Excavation would be about 6 metres long, 3 meters wide and up to 16 metres deep. Excavated material would be stockpiled as far as practicable from waterways to minimise potential erosion and sedimentation impacts.</p> <p>The proposal is not anticipated to permanently change the surface topography and drainage patterns of the proposal area.</p> <p>Potential impacts to topography, geology and soils will be managed by implementing the mitigation measures listed in Section 6.</p>
Water and drainage	<p>The closest waterway is the Pacific Ocean (Herah's Beach) located about 30 metres east of the proposal.</p> <p>Groundwater would be encountered during construction and would need to be dewatered. Groundwater dewatering is anticipated to be less than 3 ML.</p> <p>The proposal will require temporary storage of fuels and/or chemicals for equipment and machinery operation during construction. Use of temporary amenities may also generate wastewater. Potential impacts include accidental leaks, spills and seepage into the soils, groundwater or nearby waterway. Any fuels and chemicals required to be stored on site will be securely banded. Minimal wastewater is expected to be generated during construction. The temporary bypass pumping arrangement will continue during construction.</p> <p>Potential impacts to water and drainage will be managed by implementing the mitigation measures listed in Section 6.</p>
Flora and fauna	<p>There are no recorded threatened fauna within 100 metres of the proposal. Two plant community types (PCTs) have been recorded within the proposal site: PCT 3125 Illawarra Seacliff Banksia-Bangalay Forest and PCT 3134 Illawarra Seacliffs Littoral Rainforest. PCT 3134 has associated threatened ecological communities. The proposal would not remove any vegetation.</p>

Aspect	Potential impacts
	<p>Groundwater dependant ecosystems (GDEs) have been recorded where the proposed works are anticipated. The proposal may impact GDEs due to the removal of groundwater for the proposal.</p> <p>Potential impacts to flora and fauna will be managed by implementing the mitigation measures listed in Section 6.</p>
Heritage	<p>Non-Aboriginal heritage</p> <p>There are no non-Aboriginal heritage sites within 100 metres of the proposal area. No impacts to non-Aboriginal heritage are anticipated.</p> <p>Aboriginal heritage</p> <p>An Aboriginal Heritage Information Management System (AHIMS) search was completed on 15 May 2024. No AHIMS sites were identified within 100 metres of the proposal area.</p> <p>The proposal is within 100 metres of a high-risk area for finding unexpected archaeological items (waterways), however the site has been highly disturbed by the construction of previous wastewater mains and the potential to impact unidentified Aboriginal heritage items is very low.</p> <p>Works may proceed with caution and any potential impacts are to be managed in accordance with the mitigation measures in Section 6.</p>
Noise and vibration	<p>The proposal is within a primarily recreational and residential setting. The existing noise environment is influenced by road traffic. The works would generate noise and vibration during construction from excavation, piling and the operation of machinery and equipment. Construction would occur during standard daytime hours. Construction is expected to take about 6 months to complete.</p> <p>Based on the risk profile of the works from Table 2 of the Draft Construction Noise Guideline (EPA, 2020), a quantitative noise assessment was performed for the proposal. The purpose of the noise assessment was to assess the predicted worst-case noise impacts. This identified recommended additional mitigation measures for impacted receivers at different distances from the works, which would guide community engagement for the proposal. The receivers that may be impacted by noise from the construction of the proposal include residents and recreational users of Slade Park. The residential receiver closest to the works would be about 5 metres north of the proposal area. The noise assessment was performed using the Transport for NSW Construction and Maintenance Noise Estimator.</p> <p>The assessment confirmed that the worst-case noise impacts would affect residents within 15 metres of the works, refer to Figure 2. Mitigation measures from the Transport for NSW Construction and Maintenance Noise Estimator are to be considered by the community team, and offered where appropriate and include:</p> <ul style="list-style-type: none"> • N: Notification (e.g. letterbox drop) • RO: Respite Offer (e.g. work blocks of 2 hours with one hour breaks in between) • PC: Phone calls.

Aspect	Potential impacts
	<p>Vibratory plant will be used during construction. No vibration impacts are anticipated as there are no sensitive structures within the minimum safe working distance.</p> <p>Noise impacts would be managed by implementing the mitigation measures in Section 6.</p>
Air and energy	<p>Minor and temporary air quality impacts may result from construction and compound activities due to emissions from machinery, equipment and vehicles. Air quality around the proposal area may be impacted by dust generated during excavation works. Potential odour issues may occur during construction, if the setup and operation of the temporary bypass is not appropriately managed. Temporary amenities may also generate odour if not appropriately managed.</p> <p>Due to the small number of emission sources during construction, the proposal is unlikely to have a significant impact on air quality with implementation of the safeguards in Section 6.</p>
Waste and hazardous materials	<p>Waste would be generated during construction, including:</p> <ul style="list-style-type: none"> • removal of redundant assets • excavation and disturbance of soil • general construction waste. <p>Where possible, it is preferred to reuse excavated materials from site as backfill instead of importing fill material. Where excavated materials cannot be reused as backfill, they would be classified and taken off-site for disposal at a licenced facility.</p> <p>Minor impacts from waste and hazardous materials are expected, and the safeguards in Section 6 would be implemented to further minimise these impacts.</p>
Traffic and access	<p>The site is located on Lawrence Hargrave Drive, a busy State road managed by Transport for NSW. There is a footpath and bus stop (ID: 251532) adjacent to the site.</p> <p>During construction, 2 heavy vehicle and up to 6 light vehicle movements per day are anticipated on average, as most of the plant and equipment would be kept on site during construction. Partial road closures may be required for the infrequent delivery and pick of materials and equipment. Traffic management would be undertaken to minimise delays where possible.</p> <p>Parking of construction vehicles would occur along Lawrence Hargrave Drive and other nearby side streets, limiting available parking in the immediate vicinity during construction. The footpath and parking lane adjacent to the works would be closed during construction as it would be used as the construction laydown area. The footpath on the western side of the road would be available for pedestrians.</p> <p>The bus stop would be temporarily relocated during construction. This may have a minor impact on those utilising the bus stop, however the new location of the bus stop would be located at an appropriate nearby location. Consultation with the bus authority will be undertaken.</p>

Aspect	Potential impacts
	<p>Traffic and access would be managed by implementing the mitigation measures listed in Section 6.</p>
<p>Social and visual</p>	<p>During construction, work vehicles, equipment and material are a potential source of visual impacts for residents, motorists, and pedestrians within proximity to the works. Social impacts related to noise, air quality and traffic have been addressed in the sections above. Given the works would limited to a small area and have been fenced off since the installation of the temporary bypass in 2022, potential social impacts would be relatively minor.</p> <p>The proposal would have a positive operational social impact as the residents which were impacted by the landslide would have a new, modern and reliable wastewater system. No visual impacts are anticipated during operation as all the new infrastructure would be underground.</p> <p>Potential impacts will be managed by implementing the mitigation measures listed in Section 6.</p>
<p>Cumulative and future trends</p>	<p>Sydney Water is not aware of any planned or future work that will occur while these works are being undertaken. Development applications currently (July 2024) active or determined in the last 6 months for the suburb of Austinmer relate to localised residential developments and changes to existing buildings. Any cumulative amenity impacts (e.g. noise, dust, traffic) would be minimal.</p>



Sydney
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Proposal site
Construction compound

Moderately intrusive (20 to 30 dB(A))
Highly intrusive (>30 dB(A))

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NSW Spatial Services
Australian Government Department of Environment
Date Created: 18/06/2024

Figure 2 Noise impacts

6 Environmental mitigation measures

Table 5 Mitigation measures

Mitigation measures

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:

- limit proximity to sensitive receivers
- do not disrupt property access
- have no impact to known items of non-Aboriginal and Aboriginal heritage
- are outside high risk areas for Aboriginal heritage
- use existing cleared areas and existing access tracks
- have no impacts to remnant native vegetation or key habitat features
- have no disturbance to waterways
- do not require additional safeguards beyond those included in the EIA
- do not disturb contaminated land or acid sulfate soils
- will be rehabilitated at the end of construction.

The Delivery 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.

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

- remains within the proposal area for the EIA and has no net additional environmental impact or
- is outside the proposal 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 Delivery 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.

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 (eg land slip areas) and boundaries of the proposal area 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)
- location and full extent of any vegetation disturbance.

The CEMP will identify appropriate delineation of the proposal area before construction.

Mitigation measures

To ensure compliance with legislative requirements for incident management (eg *Protection of the Environment Operations Act 1997*), Follow [SWEMS0009](#) and attach [SWEMS0009](#) to the CEMP.

Complaints to be managed in accordance with Sydney Water's Complaints Procedure and relevant Community Engagement Plan.

Assign single person with accountability for coordinating communication and information flow across contractors and consultants and provide the contact details of this person in the CEMP.

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).

Minimise ground disturbance and stabilise disturbed areas progressively.

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.

Water and drainage

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

Where the potential for intercepting groundwater is identified, Sydney Water will obtain a groundwater Water Supply Works Approval. Where dewatering is >3ML per water year (from 1 July), Sydney Water will also obtain a Water Access Licence from DCCEEW. The Delivery Contractor is responsible for:

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

Discharge all water in accordance with Sydney Water's Water Quality Management During Operational Activities Policy (D0001667) including erosion controls, discharge rate, dechlorination, monitoring. Re-use potable / groundwater water where possible.

Dewater excavations in accordance with the Program Delivery Guidance Standard 9.1 Excavation Dewatering (ENV-GS-001).

Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Ensure bunded areas have 110% capacity of the largest chemical container, or an additional 25% capacity of the total volume stored within (whichever is greater). Tightly secure chemicals and fuels in vehicles. Clearly label all chemicals.

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

Protect Groundwater Dependent Ecosystems by minimising extraction of groundwater and removal of native vegetation.

Mitigation measures

Flora and fauna

No vegetation is to be removed.

Adjust methodology (eg avoid area, hand excavate, implement exclusion fencing) to protect sensitive areas where possible (such as mature trees, known threatened species, populations or ecological communities).

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.

Heritage

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](#).

Noise and vibration

Works must comply with the Draft Construction Noise Guideline (EPA, 2020), 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.

Incorporate standard daytime hours noise management safeguards into the CEMP, including but not limited to:

- Identify and consult with the potentially affected residents prior to commencement of works. This should:
 - describe the nature of works, the expected noise impacts, approved hours of work, duration, complaints handling and contact details
 - determine need for, and appropriate timing of respite periods (eg times identified by the community that are less sensitive to noise such as mid-morning or mid-afternoon for works near residences).
- Implement a noise complaints handling procedure.
- Do not warm-up plant or machinery near residential dwellings before the nominated working hours.
- Select appropriate plant for each task, to minimise the noise impact (e.g. all stationary and mobile plant will be fitted with residential type silencers).
- Do not use engine brakes when entering or leaving the work site(s) or within work areas.
- Regularly inspect and maintain equipment in good working order.
- Arrange work sites where possible to minimise noise (e.g. generators away from sensitive receivers, site set up to minimise use of vehicle reversing alarms, site amenities and/ or entrances away from noise sensitive receivers).
- Use natural landforms/ mounds or site sheds as noise barriers.
- Schedule noisy activities around times of surrounding high background noise (local road traffic or when other noise sources are active).

Mitigation measures

If works beyond standard daytime hours are needed (beyond those identified in this REF), the Delivery 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, follow 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.

If night works are needed (beyond those identified in this REF), the Delivery Contractor would:

- justify the need for night works
- consider potential noise impacts and implement the relevant standard daytime and out of hours safeguards and document consideration of all reasonable and feasible management measures
- identify community notification requirements (ie for scheduled night work (not emergency works))
- notify all potentially impacted residents and sensitive noise receivers not less than one week prior to commencing night work
- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

If works on Sundays or public holidays are required, the Delivery Contractor would:

- justify why all other times are not feasible
- consider potential noise impacts and implement relevant standard daytime, out of hours and night-time safeguards and other reasonable and feasible management measures
- identify community notification requirements
- 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.


Minimise the potential for odours (e.g. minimise the number of open access chambers, close maintenance holes overnight, dispose of waste regularly.)

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.



Mitigation measures

Waste and hazardous materials

Manage waste in accordance with relevant legislation and maintain records to show compliance eg waste register, transport and disposal records. Record and submit [SWEMS0015.27 Contractor Waste Report](#).

Provide adequate bins for general waste, hazardous waste and recyclable materials.

Minimise the generation of waste and sort waste streams to maximise reuse/recycling in accordance with the legislative requirements.

Traffic and access

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

Meet NSW Roads and Maritime Service's Traffic Control at Worksites Manual v5 requirements for TfNSW roads. The Delivery Contractor will obtain a Road Occupancy Licence (ROL) from TfNSW, including if works are within 100m of traffic signals when construction commences.

Consult with the bus service provider to relocate the bus stop during construction to an appropriate nearby location.

Manage sites to allow people to move safely past the works, including alternative pedestrian, bicycle, pram and wheelchair access.

Erect signs to inform road users of the proposed works and any temporary road closures.

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.
- Treat community enquiries appropriately.

Restore work sites to pre-existing condition or better.

Maintain work areas in a clean and tidy condition.

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 impacts to soils, water, noise, access and visual amenity. 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, 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	The proposal will not have 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.
Any impact on the habitat of any protected animals (within the meaning of the <i>Biodiversity Conservation Act 2016</i>)	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.
Any pollution of the environment	The proposal will operate in accordance with EPL 218.



Section 171 checklist	REF finding
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	There are no applicable strategic planning statements or plans, as the proposal forms part of a maintenance program.
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.

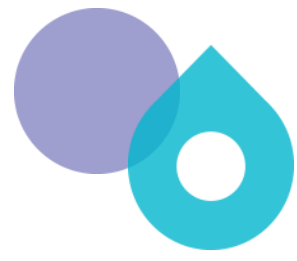


Appendix B – Consideration of principles of ecologically sustainable development (ESD)

Principle	Proposal alignment
Precautionary principle - <i>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.</i>	The proposal will not result in serious or irreversible environmental damage and mitigation measures have been designed to reduce scientific uncertainty relating to the proposal.
Inter-generational equity - <i>the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.</i>	The proposal will help to meet the needs of future generations by providing a reliable wastewater service.
Conservation of biological diversity and ecological integrity - <i>conservation of the biological diversity and ecological integrity should be a fundamental consideration in environmental planning and decision-making processes.</i>	The proposal will not significantly impact on biological diversity or impact ecological integrity. No vegetation impacts are expected.
Improved valuation, pricing and incentive mechanisms - <i>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</i>	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?		X
Be likely to generate traffic that will strain the capacity of the road system in the LGA?		X
Connect to, and have a substantial impact on, the capacity of a council owned sewerage system?		X
Connect to, and use a substantial volume of water from a council owned water supply system?		X
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?		X
Excavate a road, or a footpath adjacent to a road, for which the council is the roads authority, that is not minor or inconsequential?		X
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?		X
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?		X
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)?		X
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?		X
Section 2.15, consultation with public authorities other than councils		
Will the proposal be on land adjacent to land reserved under the <i>National Parks and Wildlife Act 1974</i> or land acquired under Part 11 of that Act? <i>If so, consult with DPE (NPWS).</i>		X
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? <i>If so, consult with DPE (NPWS).</i>		X
Will the proposal include a fixed or floating structure in or over navigable waters? <i>If so, consult TfNSW.</i>		X
Will the proposal be on land in a mine subsidence district within the meaning of the <i>Coal Mine Subsidence Compensation Act 2017</i> ? <i>If so, consult with Subsidence Advisory NSW.</i>		X
Will the proposal be on land in a Western City operational area specified in the <i>Western Parkland City Authority Act 2018</i> , Schedule 2 and have a capital investment value of \$30 million or more? <i>If so, consult the Western Parkland City Authority.</i>		X
Will the proposal clear native vegetation on land that is not subject land (ie non-certified land)? <i>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).</i>		X



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