Review of Environmental Factors

SWGA, Drinking Water Infrastructure Augmentation, Austral-Liverpool (April, 2026)

Sydney WATER

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04/2026

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Sydney Water respectfully acknowledges the Traditional Custodians of the land and waters on which we work, live and learn. We pay respect to Elders past and present.

Sydney Water recognises the physical and cultural connection of local Aboriginal communities to waters and the land.

Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of the South West Growth Area (SWGA), Drinking Water Infrastructure Augmentation in Austral, Liverpool. 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.

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 and section 171A (Appendix A) and the guidelines approved under section 170 of the EP&A Regulation. The information it contains is neither false nor misleading.

Prepared by:	Reviewed and endorsed by:	Endorsed by:
[redacted] Aaron Panozzo REF Author Sydney Water Date: 03/03/2026	[redacted] Stuart Dawson Senior Environmental Scientist Sydney Water Date: 03/03/2026	[redacted] Graham Knox Senior Project Manager Sydney Water Date: 10/03/2026

Decision Statement

The main potential construction environmental impacts of the proposal include impacts to biodiversity, noise, traffic and heritage. 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.

Determined by:		
	Elissa Howie, A/Senior Manager Environment and Heritage Services, Sydney Water	**Date**: [redacted] 2 April 2026

1. Introduction

1.1 Proposal background and need

Table 1-1 summarises the proposal need, objectives and consideration of alternatives.

Table 1-1 Proposal need, objectives and consideration of alternatives

Aspect	Relevance to proposal
Proposal need	The proposal is part of the South West Growth Area (SWGA) Drinking Water Augmentation program. The primary need of the program is to service proposed urban growth forecast in the Austral and Leppington North growth precinct. The proposal is limited to Austral in the Liverpool local government area (LGA). Delivery of the proposal is critical for Sydney Water to meet short-term local development requirements in the SWGA.
Proposal objectives	The objectives of the proposal are to: • maintain level of service by providing robust drinking water infrastructure for these new precincts • improve reliability and resilience of the system by augmenting existing infrastructure to cater for the increased demands • ensure that the assets comply with the Sydney Water and agreed stakeholder requirements • optimise design to minimise the capital cost • ensure safe and efficient integration of the new assets into the existing network whilst minimising supply disruption to customers.

1.2 Consideration of Ecologically Sustainable Development

Table 1-2 considers how the proposal aligns with the principles of ecologically sustainable development (ESD).

Table 1-2 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 mitigation measures have been designed to reduce scientific uncertainty relating to the proposal. The design has been developed to include a trenchless section beneath the unnamed tributary of Kemps Creek to reduce any potential impacts to biodiversity and water in that area. The biodiversity and Aboriginal heritage assessments have been completed to determine the level of impact and

Principle	Proposal alignment
	recommend specific measures to reduce potential impacts from the proposal, which have been adopted.
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 water 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, as concluded in the biodiversity assessment. Direct impacts to biodiversity will be limited to certified land under the South West Growth Area. No direct impacts to biodiversity in non-certified areas are anticipated as a result of the proposal and any indirect impacts would be managed with the implementation of mitigation measures.
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.

2. Proposal description

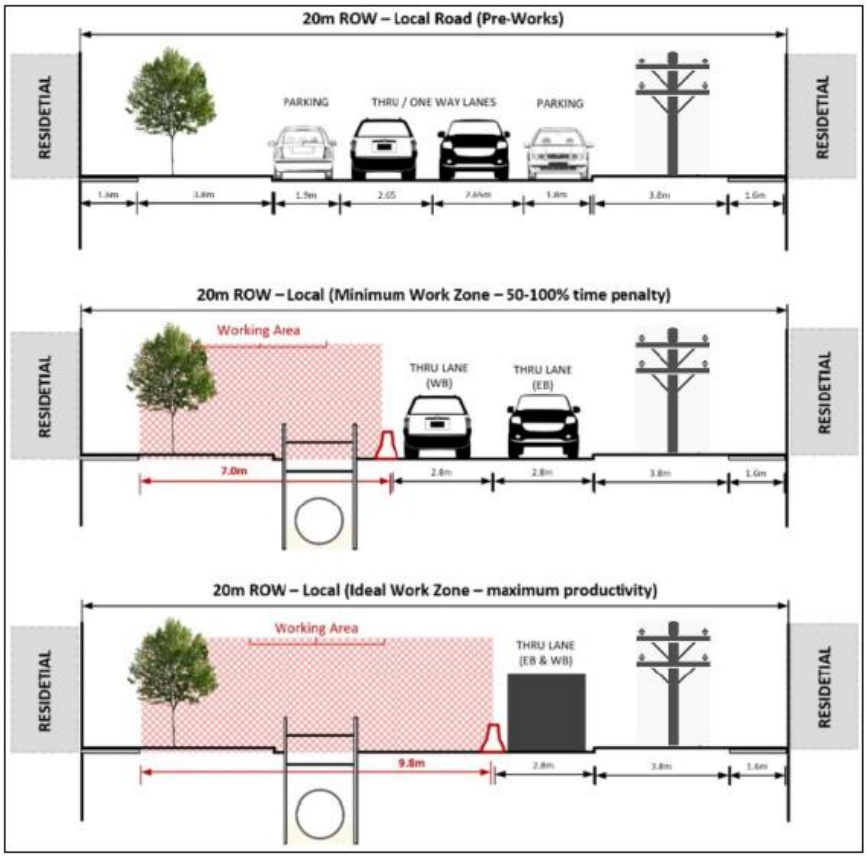
2.1 Proposal details

Table 2-1 describes the proposal and Figure 2-1 shows the location. Figure 2-2 to 2-4 show key environmental constraints.

Table 2-1 Description of proposal

Aspect	Detailed description
Proposal description	The proposal involves constructing about 2.3 kilometres of DN500 drinking water pipeline in Austral, in the Liverpool LGA. It will run along Edmondson Avenue from Ninth Avenue to Fifteenth Avenue, then continue east towards Craik Avenue, terminating near 5 Craik Avenue. The proposal involves cross connections to the existing water network in six locations along the alignment as well as tie ins at both ends (refer to Figure 2-1). The alignment will be predominantly open trenched with some areas set for trenchless installation (refer to 'Methodology' below).
Location and land ownership	The entire alignment will be contained within the road corridors of Edmondson Avenue, Fifteenth Avenue and Craik Avenue which includes the traffic lanes, road shoulders, verges and footpaths. These roads are owned and managed by Liverpool City Council. Areas identified for potential site compounds are all privately owned residential lots. Consultation with landowners is ongoing (refer to Section 3.2).
Ancillary facilities (compounds)	Construction compound(s) will likely be required to house site sheds, construction amenities and materials laydown. Indicative compound locations are shown on Figure 2-1 to 2-4, and are listed below: • Lot 1 DP1146302 on the west side of Edmondson Avenue • Lot 761 DP2475 on the west side of Edmondson Avenue • Lot 419 DP2475 on the southeast corner of Fifteenth Avenue and Edmondson Avenue • Lot 23 DP1264548 on the northeast corner of Fifteenth Avenue and Craik Avenue.
Methodology	The alignment will be predominantly open trenched along Edmondson Avenue, Fifteenth Avenue and Craik Avenue with sections of trenchless installation in areas where constraints are present, such as utilities or environmental sensitivities. ***Open cut trenching*** Trenching will be undertaken along the northbound lane of Edmondson Avenue between Ninth Avenue and Fourteenth Avenue before crossing over to the southbound lane halfway between Fourteenth and Fifteenth Avenues. Trenching will be to depths between 2-3 metres with a width of about 1 metre.

Aspect	Detailed description
	The construction footprint for trenched sections would remain within the road corridor using one lane of traffic, the road shoulder and the road verge. Minimum and ideal working zones are shown below.



Trenchless

Trenchless installation will be carried out using guided auger boring at a depth of about 6 metres. Bore shafts will measure about 3 metres by 6 metres, with a construction footprint of about 7 metres by 20 metres.

Guided auger boring is proposed in the following areas:

- about 65 metres between Eleventh Avenue and Twelfth Avenue beneath the unnamed tributary of Kemps Creek
- about 40 metres beneath the Twelfth Avenue intersection to avoid underground utilities
- about 100 metres in two reaches on Fifteenth Avenue and Craik Avenue before connecting back into the existing network.

The proposal will tie into the existing network at either end of the alignment. Cross connections will occur in six locations along the alignment (refer to Figure 2-1).

Construction equipment	The following plant/equipment are required: • ancillary equipment • grader

Aspect	Detailed description
	• backhoe loaders • compaction equipment • compactors • concrete and shotcrete pump • concrete saws • concrete trucks • cranes • delivery vehicles • excavators (up to 13.5 ton) • front end loaders • generators • hand tools • light vehicles • paver • pressure testing plugs and gauges • pumping equipment • pumps and other dewatering equipment • semi-trailers • trenching machines • vacuum trucks • water trucks • welding equipment.
Restoration	The work site will be restored to the pre-existing condition following construction, in consultation with landowners.
Work hours	Work and deliveries will be scheduled to occur during standard daytime hours of: • 7am to 6pm, Monday to Friday • 8am to 1pm, Saturdays. 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 to minimise impact to nearby sensitive receivers or if otherwise justified. The approval process is described in the mitigation measures in Section 5.1.5.
Proposal timing	Construction is expected to start late 2026 and take about 14-16 months.
Operation	The proposal will be buried after completion with the surface sealed and restored to its original condition.
Commissioning	Commissioning involves testing and running the new assets to ensure that they are working correctly and integrated with existing operations. Commissioning typically includes: • cleaning and disinfection of the pipes • pressure testing • inspecting and testing joints and fittings and any other operating component. • performance testing.

Figure 2-1 Location of proposal

The following image has been redacted to protect sensitive Aboriginal heritage

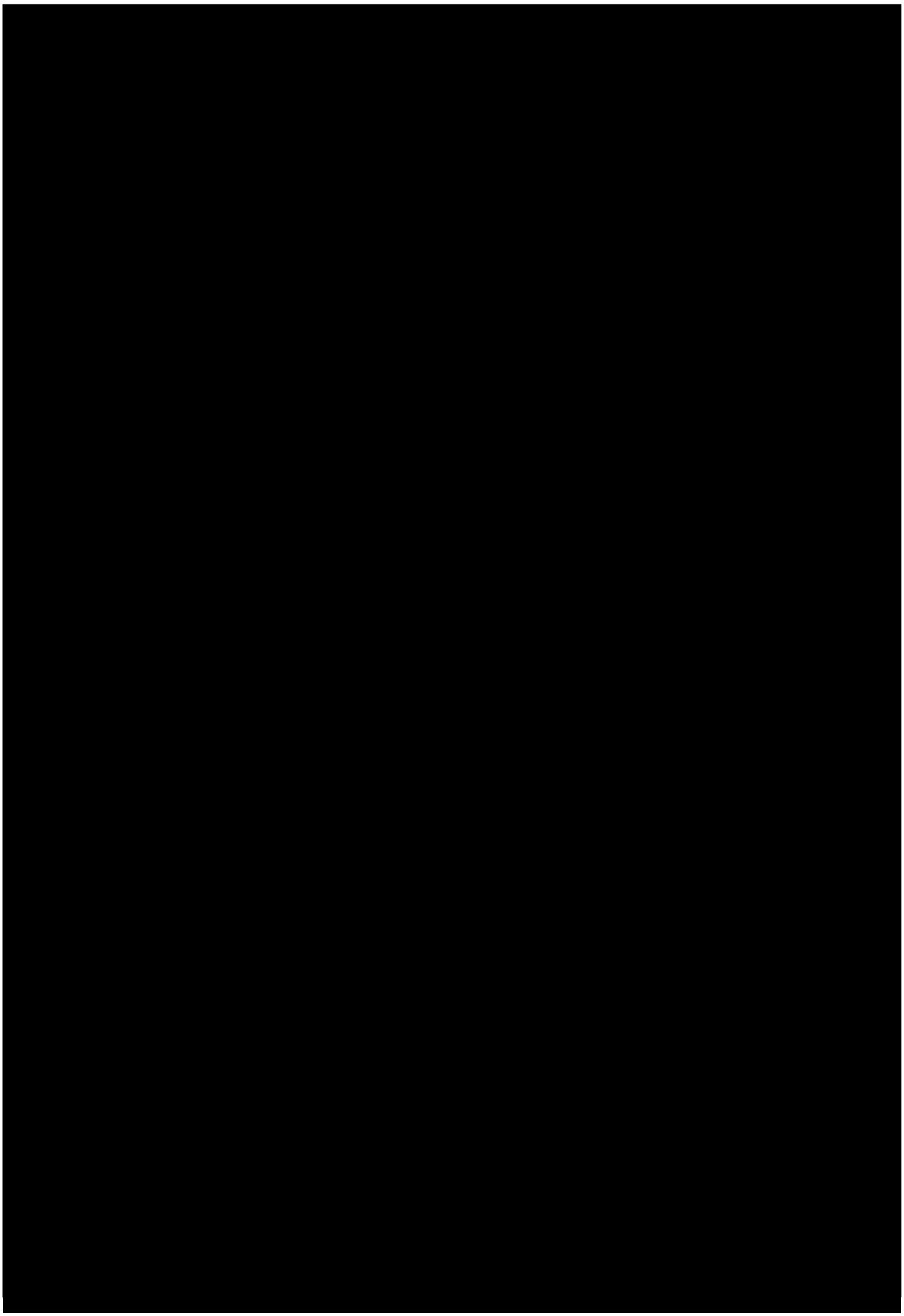


Figure 2-2 Location of proposal and key environmental constraints (1 of 3)

The following image has been redacted to protect sensitive Aboriginal heritage

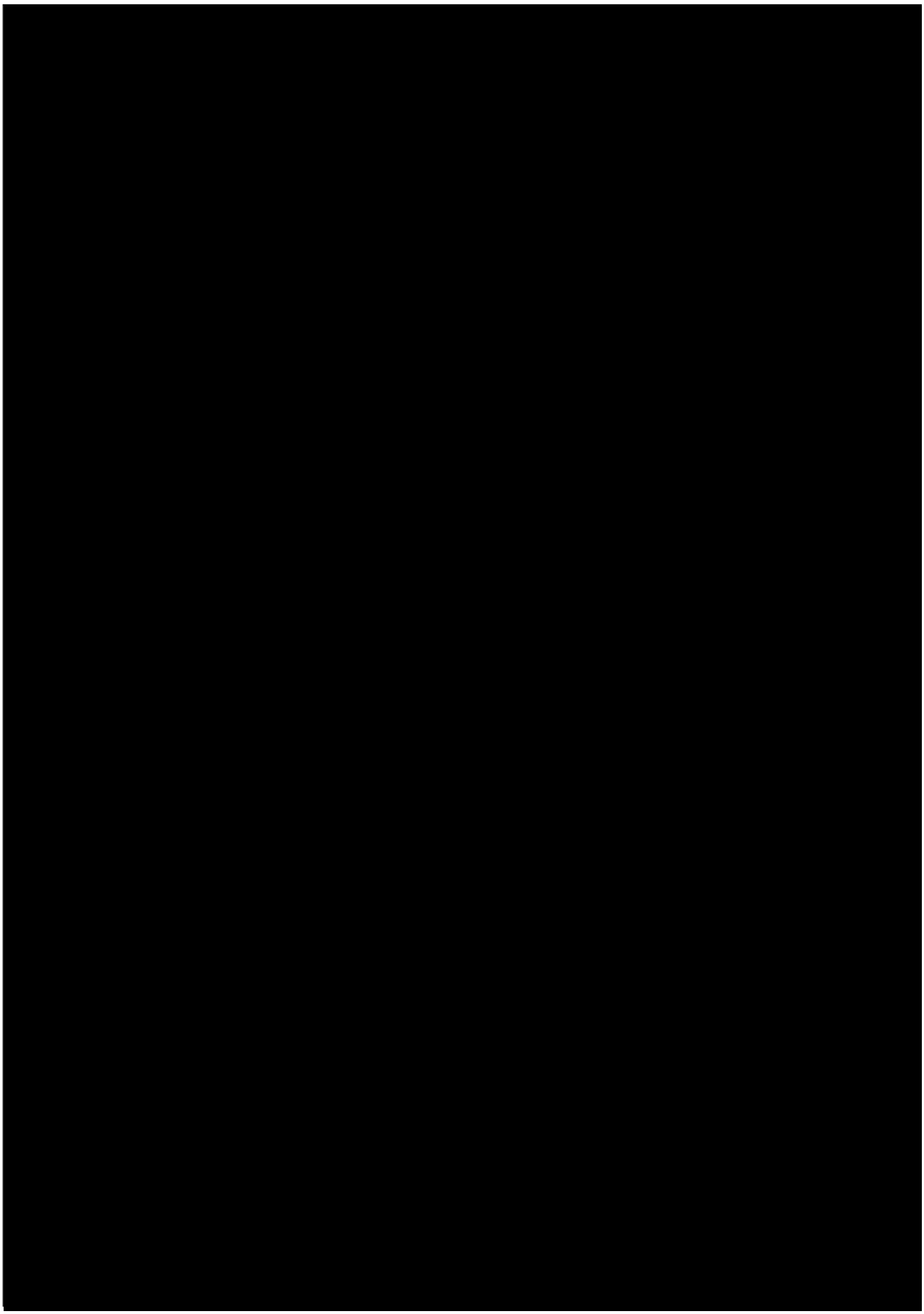


Figure 2-3 Location of proposal and key environmental constraints (2 of 3)

The following image has been redacted to protect sensitive Aboriginal heritage

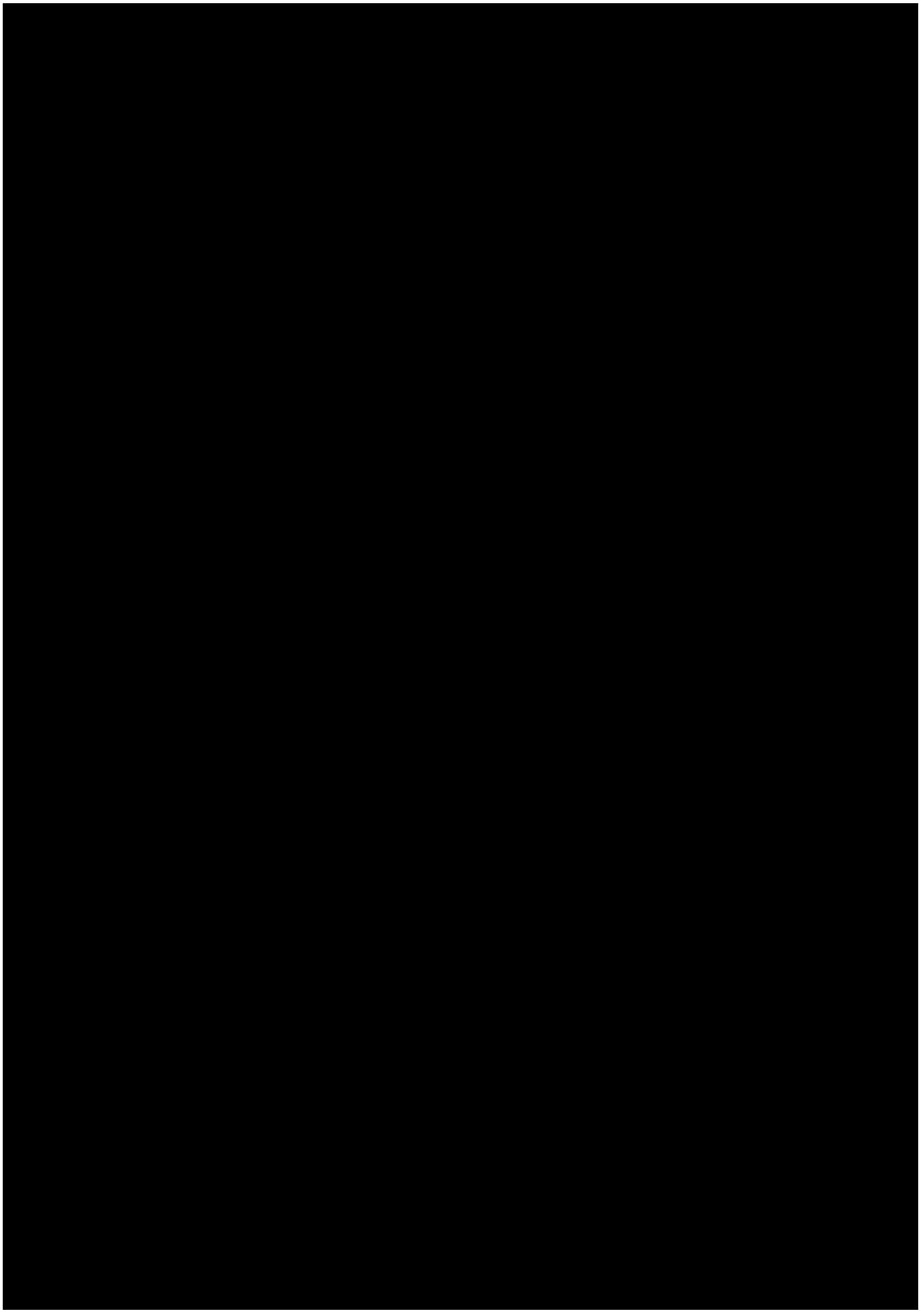


Figure 2-4 Location of proposal and key environmental constraints (3 of 3)

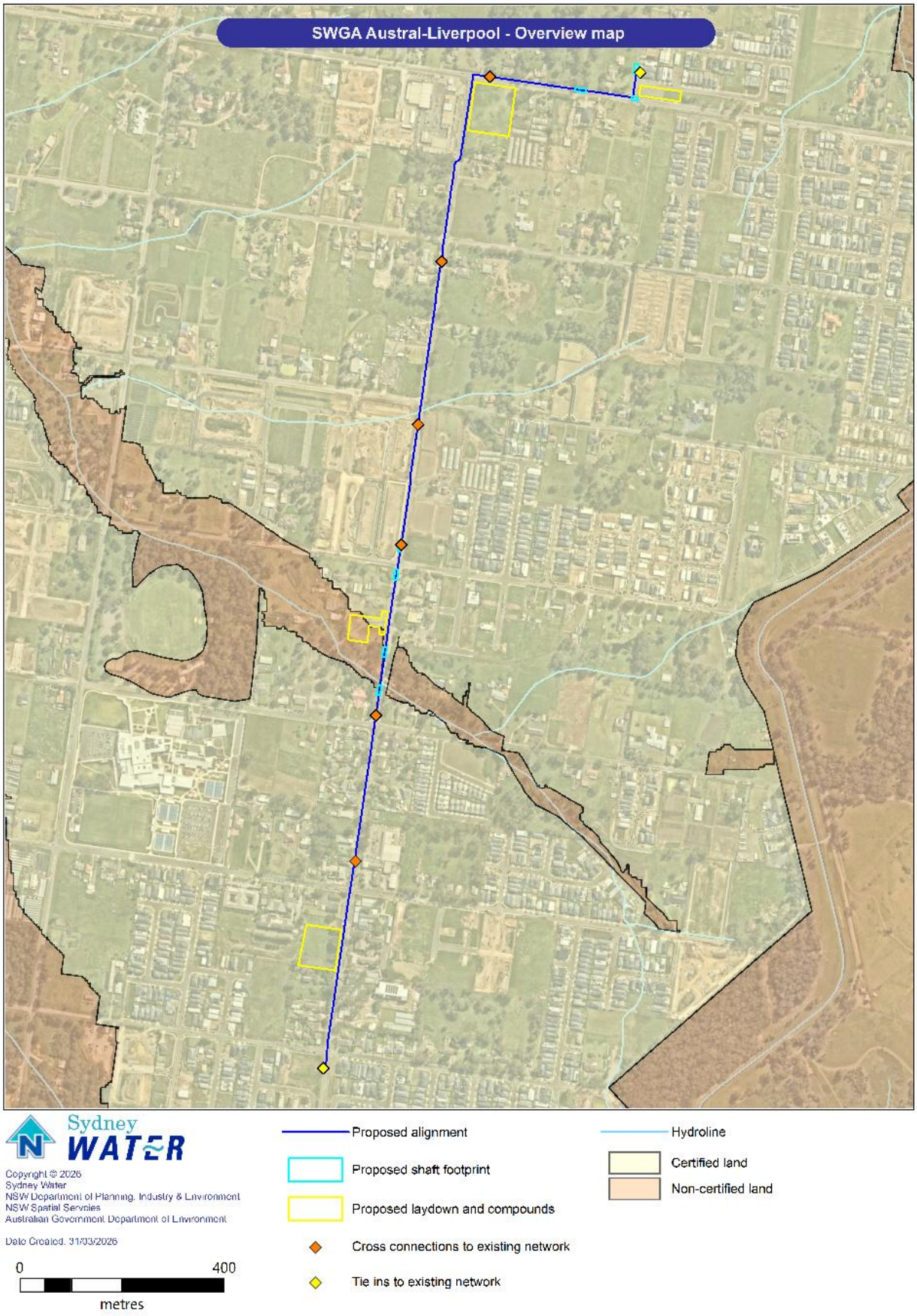


Figure 2-5 Location of the proposal within certified land

2.2 Construction footprint and changes to the scope of work

The proposal shown in this REF is indicative and based on the latest concept design at the time of REF preparation. The final proposal may change based on detailed design and construction planning. The general mitigation measures outline when changes to the proposal trigger supplementary environmental impact assessment. If required, further assessment must be prepared in accordance with SWEMS0019.

The proposal encompasses the current scope of works including the DN500 pipeline, cross connections and tie-ins, as well as the construction footprint for trenching and auger bore shafts, site compounds and laydown areas.

The construction footprint encompasses all areas required for construction activities including the construction corridor during trenching and areas closed off for the auger bore launch and receival shafts (refer to Table 2-1).

Site compounds and laydown areas include the locations set aside for vehicle parking, material stockpiles, equipment storage and staff amenities (refer to Figure 2-1).

A field assessment was undertaken on 27 October 2025. This field assessment included site walkovers for both the Aboriginal Heritage Due Diligence and the Flora and Fauna Assessment. Information from the field assessments informed the relevant specialist studies that have been incorporated into the REF.

3. Consultation

3.1 Community and stakeholder consultation – general

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. Local council(s) will be consulted about matters identified in environmental planning instruments such as public safety issues, temporary works on council land, and full or partial road closures of council managed roads (refer below).

3.2 Community and stakeholder consultation – proposal

Sydney Water prepared a Community and Stakeholder Engagement Plan (CSEP) during concept design of the proposal. The identification of community impacts and risks in the CSEP led to development of a detailed action plan for how Sydney Water and its contractors would engage with project stakeholders and the affected community as the proposal moved from planning and into design.

Some of the key impacts and risks identified in the CSEP related to:

- investigation and construction work having the potential to affect private property
- government agencies, local government and multiple project teams working in the same area
- ongoing property development occurring in Austral and nearby Leppington
- the potential for impacts to people and nearby properties from construction noise, dust and traffic.

The CSEP and related action plan identified key project stakeholders for ongoing consultation into the construction phase, including information about the main non-English languages spoken at home.

The plan also identifies the study area includes residential properties, commercial and retail businesses, restaurants and cafes, market gardens, properties under development, schools, three places of worship, a playgroup and community centre, a spiritual healing business and medical services.

This information helped tailor the consultation program and will help guide activities during the construction planning and delivery phases.

Community consultation – homes and businesses

Community consultation with nearby properties has been ongoing throughout the proposal's planning and design. Residents and businesses within at least 100 metres of the proposal were notified in August 2025 about upcoming field investigations and the expected project benefits. They have continued to be updated about ongoing investigations work and affected landowners have been informed about potential site compound locations.

A project web page has been advertised in communication material along with a community information line (1800 000 229) and email (SWGAdrinkingwater@sydneywater.com.au) where people could ask questions or register to receive future updates.

Consultation and communication with impacted homes and businesses is outlined in the table below.

Date	Activity	Outcome
10 August 2025	Project introduction notification distributed to 217 properties that were within 100 metres of the proposal	• Introduced the proposal, need and benefits • Explained upcoming site investigations and likely pipeline corridor • Promoted project email and phone number for enquiries and feedback
26 August 2025	Notification to 27 adjacent properties about geotechnical investigations	• Informed adjacent properties of upcoming geotechnical investigations • Promoted project email and phone number for enquiries and feedback
27 August 2025	Phone call	• Received permission to enter private property to investigate potential use of land as a future site compound or materials storage area • Agreed process for future discussions
19 October 2025	Project update notification distributed to 217 properties that were within 100 metres of the proposal	• Explained the ongoing site investigations and design work • Promoted project email and phone number for enquiries and feedback
20 October 2025	Phone calls and emails	• Received permission to enter private property from several landowners so that initial environmental investigations could occur

Date	Activity	Outcome
		• Informed landowners of pipeline proposal and potential use of land as a future site compound or materials storage area
Late 2025	Phone calls and emails	• Update provided to several developers and property owners who were interested in when new water infrastructure would be delivered (to enable further development to occur)
3 February 2026	Project update notification distributed to 4,712 properties that may be affected by night work	• Informed more properties about the proposal including the need for day and night-time investigations work in the area • Provided website details for the latest project information • Explained the expected timing for project delivery, subject to approvals

Community feedback to date has been limited. Affected landowners have given permission for site investigations to occur on their properties and enquiries have been received and responded to about the timing for project delivery.

Consultation with local government and government agencies

The proposal is located within the Liverpool Local Government Area under the jurisdiction of Liverpool City Council (Council). Consultation with Council was initiated at the start of the project and will continue throughout the duration of the project. Council has been involved in reviewing the concept design and will continue to be involved during detailed design.

Transport for NSW (TfNSW) were also consulted at the start of the project as they are managing the planning and design of a major road upgrade along Fifteenth Avenue. The key outcome of the consultation was that the proposal is constructed at a depth that will not interfere with or require future relocation during their road upgrades.

Consultation with First Nations stakeholders

Sydney Water will share information and consider feedback from First Nations stakeholders about this and other planned water and wastewater projects in the Aerotropolis and South West Growth Area. This consultation is non-statutory engagement with traditional custodians that is guided by Sydney Water's senior advisor for First Nations engagement.

3.3 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).

Consultation was required under section 2.10 (e) and (f) as the proposal involves enclosing a section of a council owned road as well as excavation in a council owned road that is not minor or inconsequential respectively. Liverpool City Council was consulted on 22 January 2026 and a response was not received. Sydney Water will consider any matters raised by Council.

Consultation was required under section 2.15 (2)(h) as the proposal involves development within the Western City operational area with a capital investment of $30 million or more. Western Parkland City Authority (WPCA) was consulted on 25 March 2026, and a response was received the same day. WPCA had no comments on the proposal.

Further detail is provided in Appendix B.

3.4 Consultation during construction planning and delivery

No significant issues have been raised by the community so far. Future community consultation will include project newsletters and meetings with directly affected landowners to inform them about how and when construction will occur and what Sydney Water's Delivery Contractor will do to manage potential impacts.

Sydney Water and its contractors will continue to provide ways for people who speak a language other than English to engage with the project team.

Liaison with TfNSW and Liverpool City Council will continue throughout the proposal.

4. Legislative requirements

4.1 Environmental legislation

Sydney Water is the proponent and determining authority under the EP&A Act. The proposal does not require development consent and is not classified as State significant infrastructure. We have assessed this proposal under Division 5.1 of the EP&A Act. This REF has concluded that the proposal is unlikely to have a significant impact on the environment.

The following environmental planning instruments (Table 4-1) and legislation (Table 4-2) are relevant to the proposal. Table 4-2 also documents any licences and permits required, and timing and responsibility for obtaining them.

Table 4-1 Environmental planning instruments relevant to the proposal

Environmental Planning Instrument	Relevance to proposal
Liverpool Local Environmental Plan 2008 (Liverpool LEP)	The proposed alignment is within the Liverpool LGA on land zoned SP2 (infrastructure). Compounds are proposed on land zoned: • R2 - Low density residential • R3 - Medium density residential • C4 - Environmental living • B2 - Local centre.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.159 of the TISEPP permits development for the purpose of water reticulation systems without consent on any land when carried out by or on behalf of a public authority. The proposal involves development of a water reticulation system and 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 in an area or zone listed in subsection 2.3 (1). However, subsection 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. **Koala habitat protection (2020 and 2021) (Chapter 3 and 4)** These chapters aim to encourage the proper conservation and management of areas of natural vegetation that provide koala habitat. This is to ensure that permanent free-living populations are protected in their present

Environmental Planning Instrument	Relevance to proposal
	range, and to reverse the current trend of population decline. The SEPP contains prescriptions for the consideration of 'potential koala habitat' and 'core koala habitat' for developments within local government areas listed in schedule 2 of the SEPP. The proposal lies within the Liverpool LGA, which is in the Central Coast Koala management area. Chapter 3 and 4 of the BCSEPP apply to development that requires consent. As Sydney Water is the determining authority for the proposal and does not require development consent these chapters do not apply. Impacts to biodiversity are assessed in Section 5.1.3 and appropriate measures have been provided.
State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (Precincts SEPP)	**Sydney Region Growth Centres (Chapter 3)** The proposal is located on land to which Chapter 3 of this SEPP applies. The proposal is located within the boundaries of the South West Growth Centre. The alignment is predominantly located within biodiversity-certified land, with a short section crossing over non-certified land around the unnamed watercourse between Eleventh and Twelfth Avenues. Available mapping shows vegetation in this area is also classified as Existing Native Vegetation (ENV). The Flora and Fauna assessment determined that no vegetation classified as ENV is located within the construction footprint. Impacts to ground-truthed ENV nearby are not anticipated. Available mapping shows several heritage items previously identified under the former Sydney Region Growth Centres SEPP 2006, with these provisions now incorporated into the relevant Precinct SEPP (refer to Section 5.1.4).

Table 4-2 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Biodiversity Conservation Act 2016 (BC Act)	Schedules 1 and 2 of the BC Act list threatened species and threatened ecological communities in NSW. Sydney Water is required to assess impacts to listed entities in accordance with section 7.3 of the BC act.	REF	Pre-construction, Sydney Water

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	Most of the proposal is within land that is biodiversity-certified under the former Sydney Region Growth Centres SEPP, now the Precincts SEPP. This means that for works within mapped certified areas, further assessment of threatened-species or threatened ecological communities is not required. A flora and fauna assessment has been completed for non-certified areas (Appendix C). The assessment found that the proposal is unlikely to significantly affect any threatened species or ecological communities. Potential impacts to threatened species and communities have been assessed and mitigation measures provided in Section 5.1.3.		
National Parks and Wildlife Act 1974 (NPW Act)	Under section 86 of this Act, it is an offence to harm or desecrate an Aboriginal place or object unless authorised by an Aboriginal heritage impact permit (AHIP) or where it is reasonably determined that no Aboriginal object would be harmed. Parts of the proposal are within or nearby Aboriginal Heritage Information Management System (AHIMS) sites. An Aboriginal Heritage Due Diligence has been completed for the works (Appendix D). All works will be within previously disturbed areas. The proposal will not directly or indirectly impact any known Aboriginal archaeological sites, Aboriginal objects, or places. Potential impacts to Aboriginal Heritage have been assessed and mitigation measures provided in Section 5.1.4.	Approval not required	N/A
Water Act 1912/ Water Management Act 2000	All dewatering activities require an approval under Section 91B of the ***Water Management Act 2000.*** Excavation for the proposal may require dewatering in various locations including at the creek crossing of the unnamed stream between Eleventh Avenue and Twelfth Avenue. A Water Supply Works Approval is required for dewatering of groundwater. The groundwater assessment (Pentium, 2025) estimates that about 1.1 megalitre (ML) of groundwater will need to be removed. Therefore, a Water Supply Works Approval (WSWA) is required.	WSWA	Pre-construction, Sydney Water

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	Potential impacts to water have been assessed and mitigation measures provided in Section 5.1.2.		
Roads Act 1993	This Act regulates works in, on or over a public road. Approval under Section 138(1) of this Act is required for carrying out works within, that dig up or disturb a classified road. Construction of the proposal will require excavation and partial road closures along Edmondson Avenue, Fifteenth Avenue, and Craik Avenue. A traffic management plan (TMP) and Road Occupancy Licence (ROL) would manage traffic control and potential impacts to traffic. As the proposal is limited to council managed roads the ROL will be acquired through Liverpool council. Potential impacts to traffic and access have been assessed and mitigation measures provided in Section 5.1.8.	Road Occupancy Licence	Pre-construction, contractor
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	***The Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act) is the principal environmental law administered by the Commonwealth. It provides for the protection of matters of national environmental significance. Under the EPBC Act, an action that is likely to have a significant impact on a matter of national environmental significance (MNES) must be referred to the Commonwealth Minister for Climate Change, Energy, the Environment and Water. The Sydney Growth Centres Strategic Assessment considers the impact of development on MNES under the EPBC Act and ensures eligible developments within existing certified land don't need individual approval. The assessment uses several mechanisms to protect and manage biodiversity within growth centres including: • rezoning of high value areas • additional planning controls and environmental management controls • implementation of the growth centres conservation fund and biodiversity offset program. One EPBC listed threatened ecological community (Cumberland Shale Plain Woodlands and Shale-Gravel Transition Forest) was	Referral not required	N/A

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	recorded within the study area. This community exists entirely within existing certified land and does not require formal assessment under the EPBC Act. The Flora and Fauna Assessment (Appendix C) concluded that the proposal is unlikely to have a significant impact on MNES within areas of non-certified land and accordingly, referral is not required. Potential impacts to flora and fauna have been assessed and mitigation measures provided in Section 5.1.3.		

5. Environmental assessment

Section 5.1 describes the existing environment and assesses direct and indirect impacts of construction and operation**.** It also identifies mitigation measures to minimise impacts. These will be incorporated into contract documents and a Construction Environmental Management Plan (or similar) prior to starting work.

5.1 Environmental aspects, impacts and mitigation measures

5.1.1 Topography, geology and soils

Existing environment and potential impacts

Existing environment

The proposal:

- is in an area impacted by localised soil salinity hazard, with the area around the creek crossing mapped as having extensive soil salinity hazard (DLWC Salinity Hazard)
- is located on Bringelly Shale of the Wianamatta Group, comprising shale, carbonaceous claystone, laminate, and fine- to medium grained sandstone
- is in an area of gently undulating hills. The area now comprises a largely modified landscape shaped by the construction of roads and residences
- is not in an area impacted by acid sulphate soils (ASS)
- has no contaminated sites notified to the EPA within 2 kilometres.

Construction impacts

During construction, the road surface will be disturbed, and soil will be excavated and stockpiled. Spoil from excavations will be temporarily stockpiled adjacent to the work area. These activities will expose soil, which could result in potential off-site erosion and sedimentation of surrounding land and waterways.

Inappropriate management of saline soils or construction materials could also lead to off-site leaching of contaminants or saline soils, potentially impacting surrounding land and waterways.

Given the previous rural land uses of the surrounding area, there is the potential to uncover unexpected contamination. The unexpected finds protocol would manage any potential impacts.

The proposal does not involve permanent changes to the existing surface topography or drainage patterns. Following construction, the area will be reinstated to its original topography and drainage configuration.

Operation impacts

Following construction, all excavations will be backfilled, the pipeline will be sealed and buried and the road surface reinstated. As such, no operational impacts to topography, geology or soils are anticipated.

Mitigation measures

With the implementation of the mitigation measures below, impacts to topography, geology and soils can be adequately managed, and residual impacts are expected to be minor.

Table 5-1 Environmental mitigation measures — topography, geology and soils

Mitigation measures
Prevent sediment moving off-site 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.
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 Hazards 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.
Adopt appropriate soil salinity mitigation measures in accordance with Western Sydney Salinity Code of Practice (Western Sydney Regional Organisation of Councils, 2003). This may include: • treating existing salinity with gypsum • stabilising existing areas of erosion • minimising water use on site • avoiding rotation and vertical displacement of the original soil profile • backfilling excavations deeper than one metre in the same order or treating or using this material as fill at depths more than one metre from the finished level.

5.1.2 Water and drainage

Existing environment and potential impacts

Existing environment

The proposal is about 1.7 kilometres from the nearest major waterway, Kemps Creek, which is classified as Key Fish Habitat. The alignment crosses an unnamed tributary of Kemps Creek between Eleventh Avenue and Twelfth Avenue and a drainage line to this tributary at the Thirteenth Avenue intersection. These minor watercourses form part of the local surface water drainage network and ultimately contribute flows to Kemps

Creek. At the time of the field survey, no water flow was observed and there was no evidence of recent stream flow suggesting these waterways are seasonal/ephemeral.

Flood mapping from the NSW Flood Data Portal (NSW SES, 2025) and Liverpool City Council indicate that the proposal is outside a flood prone area.

Geotechnical investigations completed by Douglas Pty Ltd Partners on 22 October 2025 indicate that groundwater levels across the alignment are high, varying between 1 and 3.6 metres below ground level. Excavation to a depth of 1.8 metres is required for the trenched sections of the alignment and up to 6 metres for the trenchless sections. Therefore, it is anticipated that groundwater will be encountered during construction and dewatering will be required. A preliminary Hydrogeological Assessment undertaken by Pentium Water Pty Ltd (2025) estimated that about 1.1 ML of groundwater would need to be removed.

Construction impacts

The proposal requires:

- guided auger boring beneath a waterway on Edmondson Avenue
- excavation and stockpiling
- storage of fuels and chemicals on site
- dewatering of groundwater during construction.

Potential impacts to waterways have been reduced through the selection of guided auger boring, which allows the pipeline to be installed beneath existing watercourses without disturbing flow, the bed or banks.

Disturbance of soil and stockpiling of spoil adjacent to work areas creates the potential for sediment movement into the unnamed tributary and associated drainage lines if not appropriately managed. Although the proposal is outside mapped flood-prone land, significant rainfall events may still mobilise spoil, increase erosion risk, or cause off-site sedimentation. In addition, poor handling of fuels, chemicals or water generated during the works could result in contamination of surface water or shallow groundwater.

Dewatering has the potential to cause localised drawdown, which may temporarily affect nearby groundwater-dependent vegetation communities near the creek crossing (further consideration is given to this in the Fauna and Flora section below). Extraction of groundwater also creates a requirement for suitable treatment, reuse, or disposal to avoid adverse impacts on the receiving environment.

Discharge of drinking water from existing infrastructure and commissioning will be in line with Sydney Water's D0001667 Water Quality Management During Operational Activities procedure.

Operational impacts

Following construction, all excavations will be backfilled, the pipeline will be sealed and buried, and the road surface reinstated. No operational discharges, alterations to surface-water drainage, or ongoing groundwater interactions are proposed. As such, no operational impacts to water quality, hydrology, or drainage are anticipated.

Mitigation measures

With the implementation of the mitigation measures below, impacts to water and drainage can be adequately managed, and residual impacts are expected to be minor.

Table 5-2 Environmental mitigation measures — water and drainage

Mitigation measures
Use appropriate controls to avoid potential sedimentation to waterbodies.
Creek crossings will be underbored to reduce impacts to the waterways. If detailed design determines this is not feasible, alternative design will require additional assessment.
Bund potential contaminants and store them on a robust waterproof membrane, away from drainage lines.
Locate portable site amenities away from watercourses or drainage lines.
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.
Keep a functioning spill kit on site for the clean-up of accidental chemical/fuel spills. Keep the spill kits stocked and located for easy access.
Sydney Water will obtain a groundwater Water Supply Works Approval. The Delivery Contractor is responsible for: • preparing all application material including a Dewatering Management Plan prior to construction • complying with the conditions of the approvals (such as protecting water quality; minimising aquifer extraction volumes, monitoring extraction with flow metres and recording volumes).
Minimise groundwater ingress during detailed design. As part of the CEMP, prepare a Dewatering Management Plan for groundwater dewatering. This should include elements such as how water quality will be protected and how extraction volumes will be monitored.
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. If discharge of water to the environment is not possible: • Seek approval and discharge criteria from the relevant Sydney Water Network Area Manager prior to discharge of water to the wastewater system. Otherwise tanker by a licensed waste contractor and dispose off-site to an appropriately licensed facility.

5.1.3 Flora and fauna

Existing environment and potential impacts

A flora and fauna assessment was completed by Biosis Pty Ltd (Biosis) on 20 February 2026 (Appendix C). A field assessment was undertaken on 28 October 2025.

Existing environment

The study area is characterised by residential living with mixed land uses. Native vegetation in the study area is predominantly in low condition, occurring in narrow linear remnants influenced by adjacent land

uses. A 20 metre buffer was applied to the proposed alignment for the field assessment as shown in Figure 2-2 to 2-4.

The majority of the study area is located on certified land under the South West Growth Area (SWGA) (Chapter 3 of the Western City Parklands SEPP). However, about 0.29 ha of native vegetation within the riparian corridor of the unnamed tributary of Kemps Creek is mapped as non-certified land. The assessment of threatened species and their habitats only applies to areas of existing non-certified land.

The following vegetation communities were identified across the entire study area (refer Figure 2-2 to 2-4):

- PCT 3320 Cumberland Shale Plains Woodland
    - ***Cumberland Plain Woodland in the Sydney Basin Bioregion*** (CEEC, BC Act)
    - ***Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest*** (CEEC, EPBC Act).
- PCT 4025 Cumberland Red Gum Riverflat Forest
    - ***River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions*** (EEC, BC Act).
    - ***River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria*** (CEEC, EPBC Act).
- Urban native/exotic vegetation.

The proposal is adjacent to mapped groundwater dependant ecosystem (GDE) Cumberland Red Gum Riverflat Forest. The GDE is categorised as low value and is not high priority under the High Ecological value aquatic ecosystem (HEVAE) framework. Aquatic habitats in the study area are centred around the tributary of Kemps Creek. The riparian zone is dominated by aquatic weeds and exotic grasses.

Four priority weeds were recorded within the study area, including:

- Alligator Weed (***Alternanthera philoxeroides***)
- African Boxthorn (***Lycium ferocussimum***)
- African Olive (***Olea europaea*** subsp. ***cuspidate***)
- Prickly Pear (***Opuntia stricta***).

Desktop review identified 30 threatened flora species and 64 threatened fauna species recorded or predicted to occur within 5 kilometres of the study area. Species considered most likely to occur within the study area include the following:

Flora

- Downy Wattle ***Acacia pubescens*** (Vulnerable, EPBC Act and BC Act)
- ***Dillwynia tenuifolia*** (Vulnerable, BC Act)
- ***Pultenaea parviflora*** (Vulnerable, EPBC Act and Endangered BC Act).

Fauna

- Cumberland Plain Land Snail ***Meridolum corneovirens,*** (Endangered, BC Act)
- Eastern Coastal Free-tailed Bat ***Mormopterus norfolkensis*** (Vulnerable, BC Act)
- Southern Myotis ***Myotis macropus*** (Vulnerable, BC Act)
- Grey-headed Flying-fox ***Pteropus poliocephalus*** (Vulnerable, EPBC and BC Act).

Outcomes of the likelihood of occurrence assessments for the above threatened species are in Appendix C.

Construction impacts

Two threatened entities listed under the BC Act (Cumberland Plain Land Snail and River-Flat Eucalypt Forest) were recorded or have a medium or greater likelihood of occurring within the existing non-certified sections of the study area. Indirect impacts may include:

- disturbance of nearby fauna due to noise, vibration and human presence during construction activities
- temporary disturbance of foraging, shelter or movement habitat for nearby fauna
- potential edge effect on adjacent vegetation such as accidental damage, dust deposition or weed invasion.

There is the potential to spread weeds due to the movement of personnel and equipment into, around and out of the proposal area.

Construction of the proposal will not result in any direct impacts to vegetation and threatened species within non-certified land under the SWGA. Any potential impacts will be of an indirect nature.

The proposal will be contained to the road corridor and pre-disturbed lots, and with the application of mitigation measures impacts to flora and fauna are considered unlikely.

Dewatering has the potential to cause localised drawdown, which may affect nearby groundwater-dependent vegetation communities. The estimated volume of dewatering required is about 1.1 ML and the duration of dewatering will be limited and temporary. The groundwater assessment (Pentium, 2025) states that drawdown will be very shallow and limited. As such, there is minimal risk to nearby groundwater dependent ecosystems.

Operational impacts

Following construction, the pipeline will be buried, and all disturbed surfaces reinstated to their pre-existing condition. Therefore, no operational impacts to flora and fauna are expected.

Mitigation measures

With the implementation of the mitigation measures below, potential impacts to flora and fauna can be adequately managed, and residual impacts are expected to be minor.

Table 5-3 Environmental mitigation measures — flora and fauna

Mitigation measures
Provided it is essential for delivering the project, Sydney Water's Project Manager can approve the following vegetation removal and tree trimming, in areas of certified land, 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: o vegetation trimming or o removal of exotic vegetation or

Mitigation measures
o 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 (e.g. 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).
If impacts to vegetation cannot be avoided, minimise vegetation clearance and disturbance, including impacts to standing dead trees and riparian zones. Where possible, limit clearing to trimming rather than the removal of whole plants. The removal of existing native vegetation (ENV) is not permitted under this assessment. If any future design requires it, additional assessment is required.
Physically delineate vegetation to be cleared and/or protected on site and install appropriate signage prior to works commencing.
Adjust methodology (e.g. avoid area, hand excavate, implement exclusion fencing) to protect sensitive areas where possible (such as mature trees, known threatened species, populations or ecological communities).
An arborist assessment will be undertaken during detailed design to determine any impacts to tree root zones. Any recommendations from the report should be considered. Should tree removal be required, consult with the Project Manager and Environmental Representative.
Protect trees in accordance with the requirements of Australian Standard 4970-2009 for the Protection of Trees on Development Sites. Do not damage tree roots unless absolutely necessary, and engage a qualified arborist where roots >50mm are impacted within the Tree Protection Zone
Retain dead tree trunks, bush rock or logs in-situ unless they are in the impact area and moving is unavoidable. Reposition material elsewhere on the site or approved adjacent sites. If native fauna is likely to be present, a licensed ecologist should inspect the removal and undertake fauna relocation.
If native fauna is encountered on site, stop work and allow the fauna to move away un-harassed. Engage a licensed ecologist if assistance is required to move fauna
Avoid impeding/blocking fish passage. Retain snags and natural obstructions in waterways where possible.
Stop work immediately and notify the Sydney Water Project Manager if any threatened species (flora or fauna) is discovered during the works. Work will only recommence once the impact on the species has been assessed and appropriate control measures provided.

Mitigation measures

Manage biosecurity in accordance with:

- ***Biosecurity Act 2015*** (see NSW Weedwise), including reporting new weed infestations or invasive pests
- contemporary bush regeneration practices, including disposal of sealed bagged weeds to a licenced waste disposal facility.

To prevent spread of weeds:

- clean all equipment including PPE prior to entering or leaving the work sites
- wrap straw bales in geo-fabric to prevent seed spread.

Minimise impacts on native vegetation in non-certified areas, native vegetation retention areas and areas outside the growth centre. Options to consider where feasible include:

- alternative construction methodologies (under bore vegetation and waterways, compressed construction corridors)
- avoiding impact to hollow bearing and habitat trees.

Vegetation removal required must not occur until the following are complete:

- the area to be removed has been physically delineated
- the Contractor's Environmental Representative has confirmed consistency with approval documentation
- pre-clearing surveys, if relevant
- written authorisation to commence clearing from Sydney Water Project Manager.

All stockpile and compound areas are to be located within existing cleared areas and existing access tracks. Any impacted area will be rehabilitated at the end of construction.

All staff on site are to be educated on the ID characteristics of the threatened species identified as having a moderate likelihood of occurrence and advised to not handle fauna species under any circumstances during toolbox talks.

No-go fencing installed for retained vegetation to ensure surrounding area remains undisturbed.

5.1.4 Heritage

Existing environment and potential impacts

Aboriginal heritage

An Aboriginal archaeological due diligence assessment was completed by AECOM (refer to Appendix D). A field inspection of the proposal was completed on 28 October 2025.

Consideration of the landscape context of the project area uses factors such as topography, geology, hydrology, and local resources as well as an understanding of historical and contemporary land use to determine archaeological potential and assess for impacts.

Existing archaeological survey data for the Cumberland Plain indicate a strong trend for the presence of open artefact sites along watercourses, specifically, on creek banks, terraces and bordering lower slopes. Artefact distributions within these areas have typically been referred to as 'background scatter'.

Extant vegetation has been cleared during the gradual development of the area and historical aerial imagery indicates the road corridor has been highly disturbed. Proposed compound and laydown areas are less disturbed but have still been cleared of vegetation and subject to localised disturbance.

A search of the Aboriginal Heritage Information Management System (AHIMS) database identified several sites in the search area, however only three sites were within or nearby the proposal:

- [redacted]

[redacted]

[redacted]

A review of the State Heritage Inventory identified no Aboriginal sites or places within or nearby the proposal.

Key findings of the due diligence assessment included the following:

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- No new Aboriginal objects/sites were identified.
- [redacted]
- [redacted]

[redacted]

Non-Aboriginal heritage

A review of the State Heritage Inventory (SHI) identified no World, Commonwealth or State heritage items nearby. The proposal is adjacent to the several local heritage items that were formerly identified under the Sydney Region Growth Centres SEPP 2006. These items are now incorporated in the heritage provisions and mapped areas of the Precincts (Western City Parkland) SEPP 2021 (refer Figure 2-4):

- Austral town centre (ID: C1) – Heritage conservation area

- Ian's hardware and House, 256 Edmondson Ave (ID: 7) – General heritage item
- H.J. Starr Progress Hall, 264 Edmondson Ave (ID: 3) – General heritage item
- 275-277 Edmondson Avenue (ID: 5) – General heritage item.

Construction impacts

The construction footprint will occur within the road reserve and is outside the curtilage of all listed non-Aboriginal heritage items. Works are not expected to alter the significance or the physical integrity of the listed heritage items.

[redacted]

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[redacted]

Given the distance from the works and the nature of the construction plant to be used, vibration levels are expected to remain below thresholds associated with heritage structural sensitivity. (see Section 5.1.5).

Accordingly, direct or indirect construction impacts to Aboriginal or Non-Aboriginal heritage are unlikely.

Operational impacts

Following construction, the pipeline will be buried, and all disturbed surfaces reinstated to their pre-existing condition. No above-ground infrastructure will be visible or alter the heritage setting. Therefore, no operational impacts to Aboriginal or Non-Aboriginal heritage are expected.

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Mitigation measures

With the implementation of the mitigation measures below, potential impacts to heritage can be adequately managed, and residual impacts are expected to be negligible.

Table 5-4 Environmental mitigation measures — heritage

Mitigation measures
Use of the compound and laydown area [redacted] may occur subject to the following conditions: • use is restricted to the area previously used by Sydney Water and no new previously undisturbed areas are impacted • no additional subsurface disturbance is to occur beyond what was previously undertaken • consideration should be given to the use of geofabric or similar material to protect underlying soils • use of the area is generally consistent with Sydney Water's previous use of the site.
[redacted]
Subject to adherence to the above measure, no further Aboriginal heritage assessment works are considered warranted for the proposed activity.
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, measures to avoid impacts, stop work procedures, and contact details to obtain further heritage guidance if needed.
In the event that Aboriginal objects/sites, including possible human skeletal material (remains), are identified during the proposed activity all works in the area must cease immediately and the relevant provision of Sydney Water's Environmental Management System (SWEMS0009) should be followed. The stop work procedure should be included within the Project's construction management plan.
If any non-Aboriginal relic is found, cease all excavation or disturbance in the area and notify Sydney Water Project Manager in accordance with SWEMS0009.
Do not make publicly available or publish, in any form, Aboriginal heritage information on sites / potential archaeological deposits, particularly regarding location.

5.1.5 Noise and vibration

Existing environment and potential impacts

Existing environment

The proposal is in a rural residential area with surrounding receivers including medium density residential properties, small businesses, educational facilities, places of worship and recreational areas. The closest residential receivers are within 20 metres of the proposed works on both sides of the alignment. The closest non-residential receiver is within 20 metres. The works will be contained to the road corridor.

Austral Public School (220 Edmondson Ave) is within 20 m of the proposal. School times are between 8:30 am and 3:30 pm Monday to Friday.

Construction impacts

The proposal will generate noise during construction from site establishment, excavation and pipe laying, connection works, and site demobilisation. Work will generally occur during standard daytime hours.

The likelihood of noise impact was assessed using Table 2 of the Draft Construction Noise Guideline (EPA 2020). The review indicated that the likelihood of noise impact is medium to high risk and therefore a quantitative noise impact assessment was undertaken.

The works are of moderate duration (about 40 weeks) and a quantitative assessment has been completed. This identified that the works are likely have a potential impact on sensitive receivers. This includes construction activities, material and equipment deliveries, and compound operation.

The TfNSW Construction Noise Estimator (June, 2025) was used to determine the extent of noise impacts and appropriate mitigation measures. The following inputs were selected:

- Representative noise environment: R1
- Activity 1 – Distance based, using noisiest plant: Concrete saw
- Activity 2 – Distance based, using compound operation scenario
- Time period: standard day hours
- Propagation type: developed settlements.
- Line of site to all receivers

The outputs of the noise estimator are described in Table 5-5 and are presented in Figure 5-2 to Figure 5-5.

Table 5-5 Noise assessment results – residential receivers

	$L_{Aeq\ (15\ minute)}$ noise level above background (L_{A90})					
	20 to 30 dB(A)		>30 dB(A)		75 dB(A) or greater (Highly affected)	
	Moderately intrusive		Highly intrusive			
	Within distance (m)	Measures	Within distance (m)	Measures	Within distance (m)	Measures
Activity 1	185	N	75	N	45	N, PC, RO
Activity 2	165	N	60	N	30	N, PC, RO

The outputs of the noise estimator for non-residential receivers are described in Table 5-6. This scenario uses activity 1 noise levels as the worst-case scenario.

Table 5-6 Noise assessment results – non-residential receivers

	$L_{Aeq\ (15\ minute)}$ noise level above NML			
	10 to 20 dB(A)		75 dB(A) or greater (Highly affected)	
	Within distance (m)	Measures	Within distance (m)	Measures
Education facilities	120	N	45	N, PC, RO
Place of worship	120	N	45	N, PC, RO
Passive recreation	75	N	45	N, PC, RO
Retail outlets	-	-	45	N, PC, RO

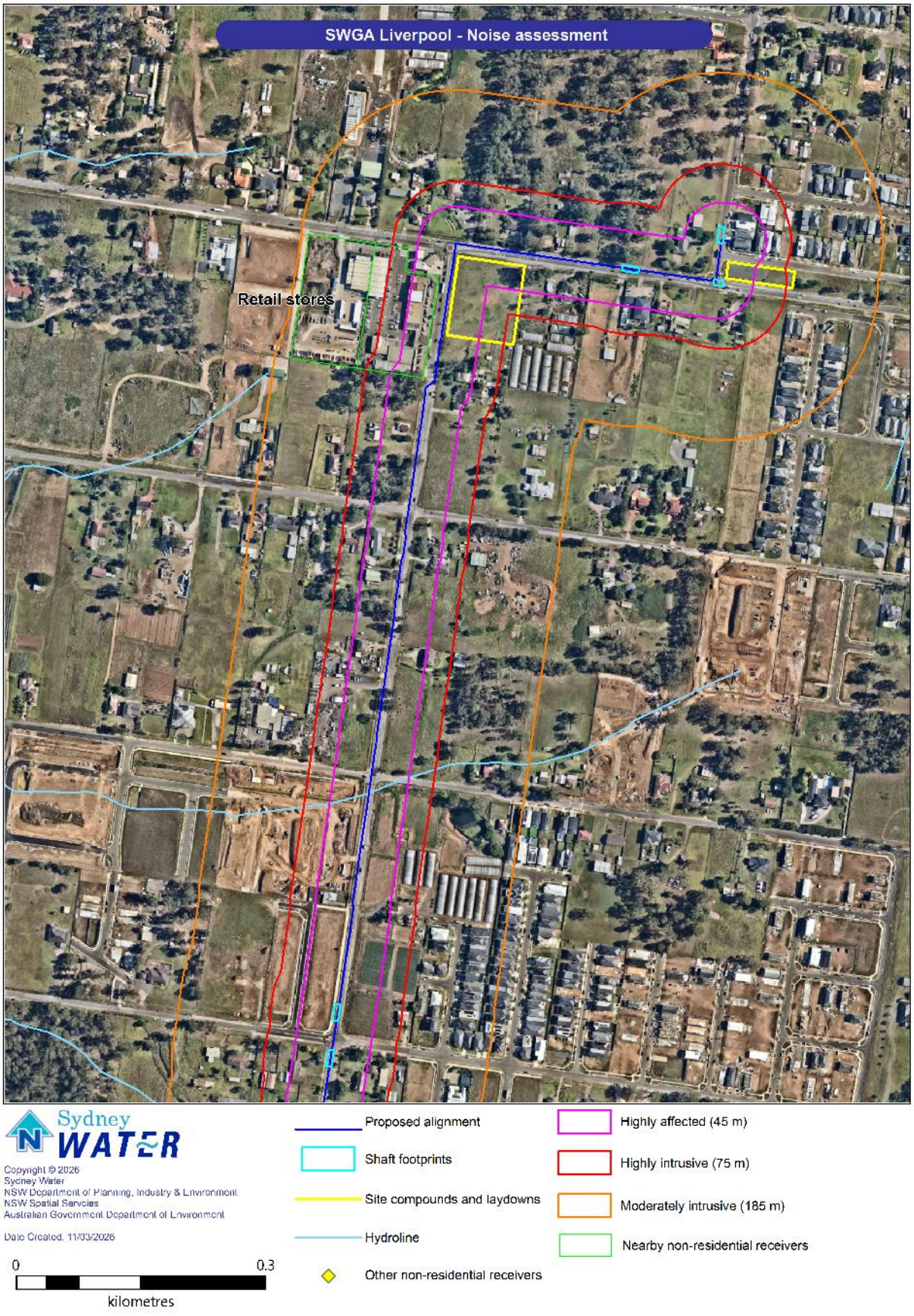

Figure 5-2 Activity 1 (North) noise assessment contours

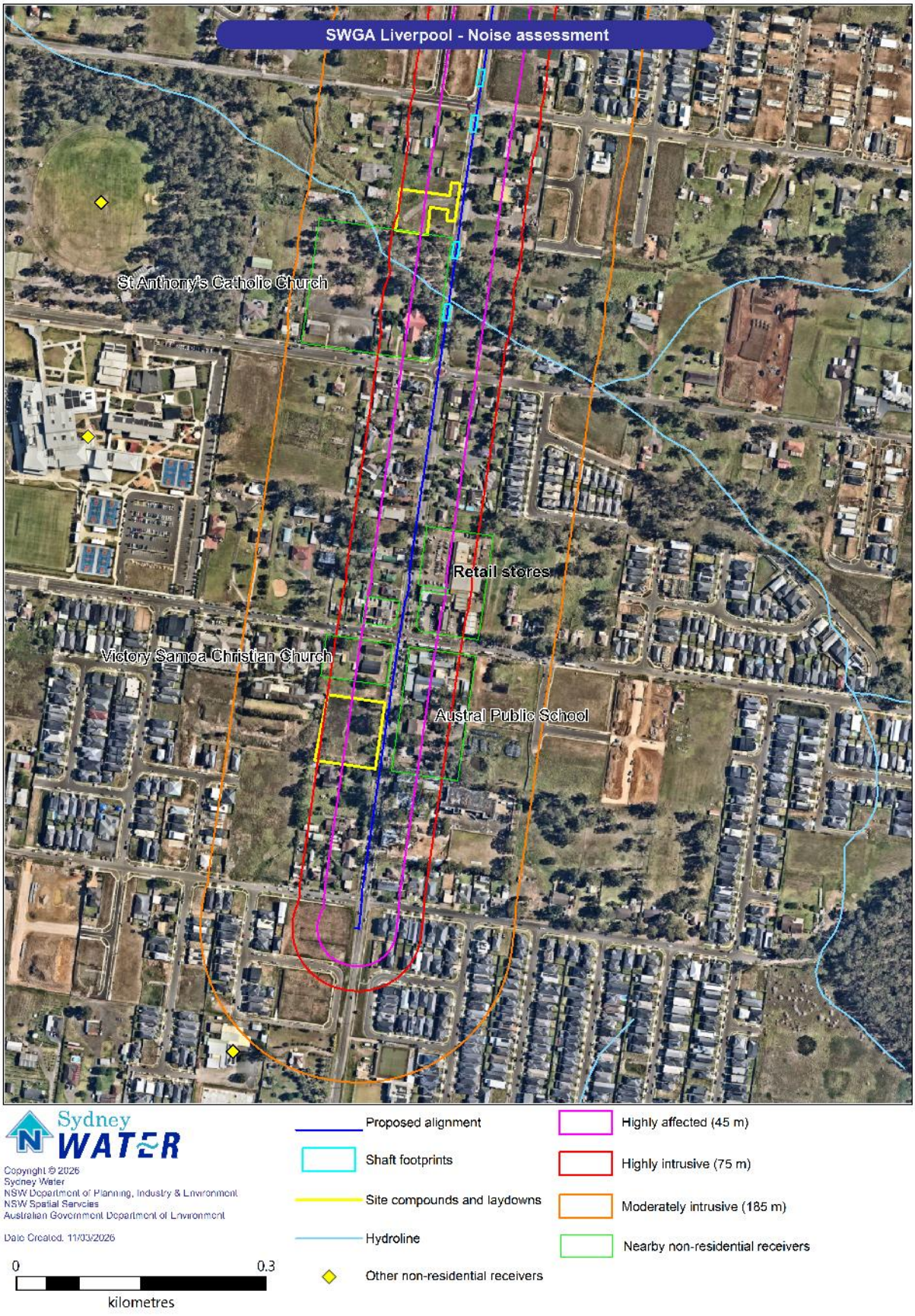

Figure 5-3 Activity 1 (South) noise assessment contours

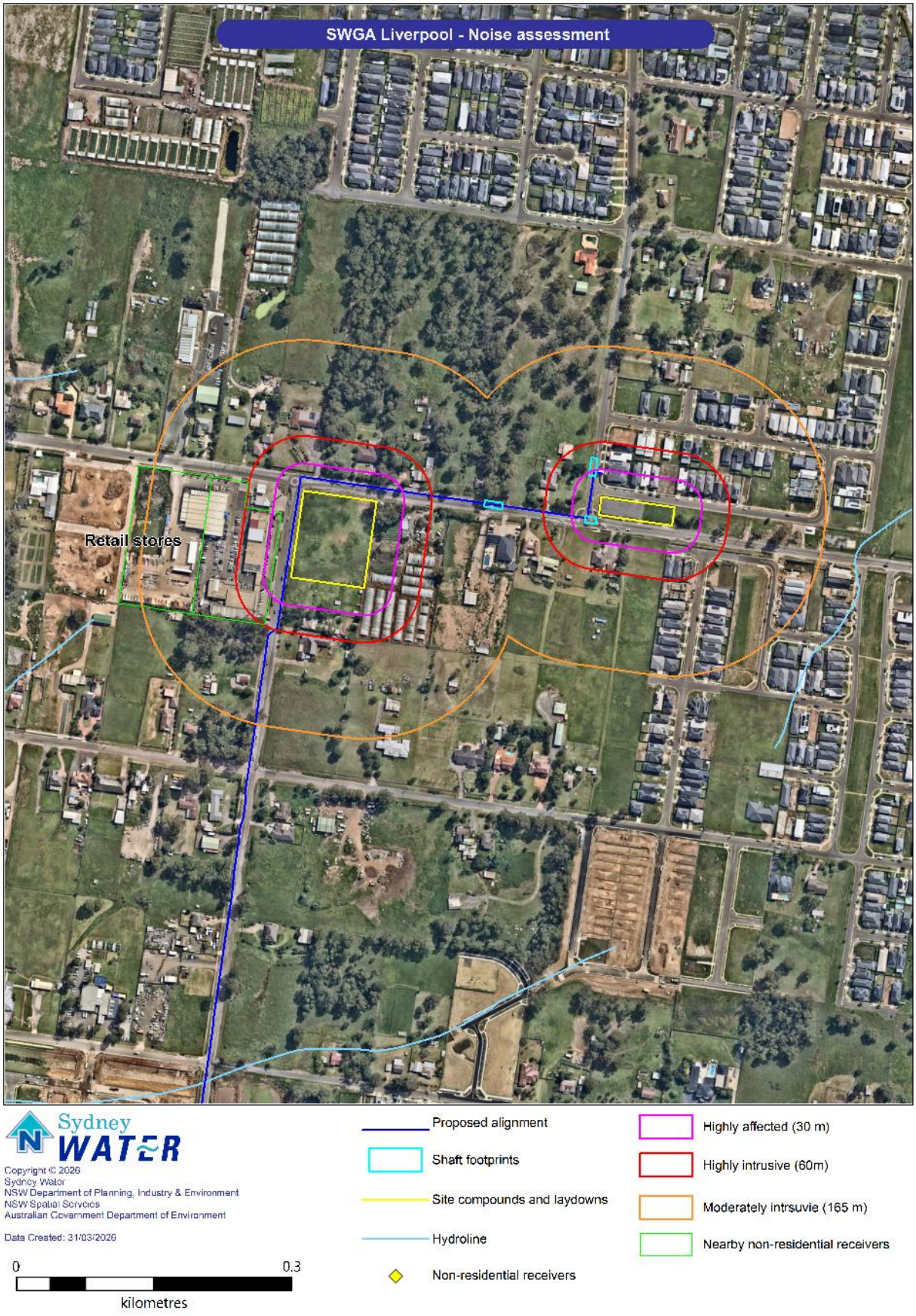

Figure 5-4 Activity 2 (North) noise assessment contours

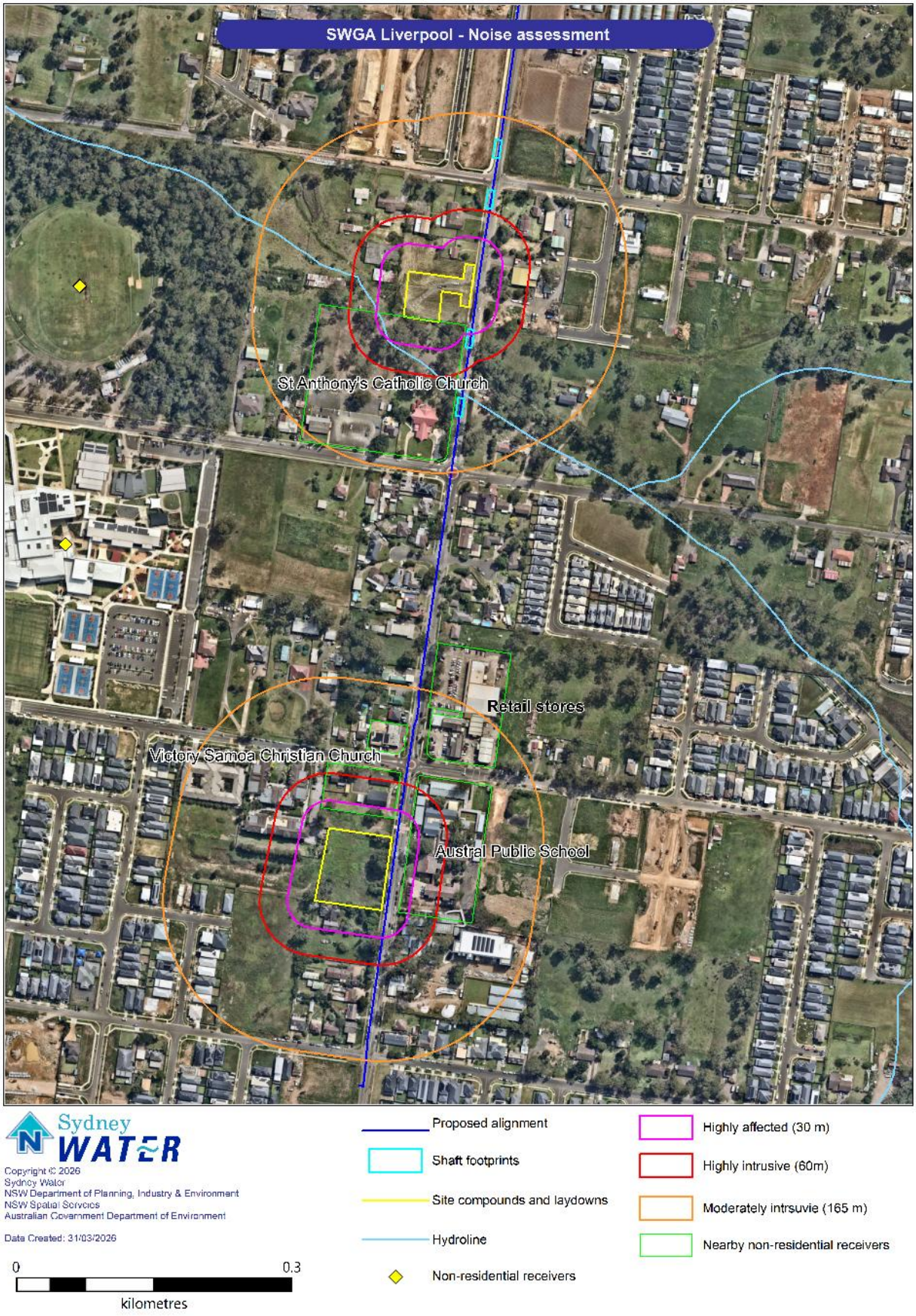

Figure 5-5 Activity 2 (South) noise assessment contours

All residences along either side of the alignment are likely to be impacted by the proposed works. This includes all construction activities for the proposed alignment as well as operations within the site compounds/laydowns. The estimator has recommended the additional mitigation measure ‘Notification’ (N) to all receivers within the above noise contours. ‘Phone calls’ (PC) and ‘Respite Offer’ (RO) have also been recommended for sensitive receivers within the highly affected zones. As the works will be completed during standard construction work hours, and with the implementation of mitigation measures impacts to nearby receivers are anticipated to be minor.

High noise activities may cause disruption to nearby non-residential sensitive receivers including Austral Public School, and places of worship. Works between Ninth and Tenth Avenues should be scheduled to reduce impacts to the school. Consultation with nearby places of worship will also be undertaken to minimise impacts.

Construction activities may disrupt retailers and small businesses along Edmondson Avenue. Impacts would be of a temporary nature and would be managed under the mitigation measures.

The proposal will generate vibration during construction from equipment and machinery such as jackhammers and excavators. However, all sensitive receivers, including heritage structures, are outside the minimum working distance for these pieces of machinery. Therefore, vibration impacts are not anticipated.

Operational impacts

Following construction, the pipeline will be buried, and all disturbed surfaces reinstated to their pre-existing condition. No above-ground infrastructure or ongoing activities are proposed. Therefore, no operational impacts to noise and vibration are expected.

Mitigation measures

With the implementation of the mitigation measures below, impacts to noise and vibration can be adequately managed, and residual impacts are expected to be minor.

Table 5-7 Environmental mitigation measures — noise and vibration

Mitigation measures
Works must comply with the EPA 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.
Incorporate standard daytime hours noise management safeguards into the CEMP, including but not limited to: • Identify and consult with the potentially affected residents and other sensitive receivers prior to commencement of works. This should:

Mitigation measures

  - 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 (eg 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 (eg 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).

Construction works between Ninth and Tenth Avenues should, where practical, be scheduled outside of the school term to reduce impacts to Austral Public School.

Where works cannot be completed outside of the school term, the contractor must schedule high-noise activities outside of school times (8:30 am to 3:30 pm).

Consideration should be given to undertake noisy or disruptive work outside of standard hours.

Work schedule should be shared with Austral Public School and consultation will be ongoing.

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.

Noise blankets and screens will be used where possible to reduce noise impacts to nearby receivers.

Minimise noise and vibration impacts where possible

5.1.6 Air quality

Existing environment and potential impacts

The proposal is in a rural-residential area, with potential sensitive receivers including residents and nearby small businesses, places of worship and schools. Air quality within the study area is typical of a rural landscape with minimal sources of dust and odour. Nearby main roads such as Bringelly Road may cause fluctuation in air quality due to high traffic volumes during peak times.

Construction impacts

The proposal will potentially result in temporary impacts from:

- dust generated during excavations and earthworks
- dust generated by construction vehicles travelling on disturbed/ unsealed access routes
- emissions from construction machinery, equipment and vehicles.

These impacts are expected to be short-term and localised.

Operational impacts

Following construction, the pipeline will be buried, and all disturbed surfaces reinstated to their pre-existing condition. No above-ground infrastructure or ongoing emissions are proposed. Therefore, no operational impacts to air quality are expected.

Mitigation measures

With the implementation of the mitigation measures below, impacts to air quality can be adequately managed, and residual impacts are expected to be minor.

Table 5-8 Environmental mitigation measures — air and energy

Mitigation measures
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.
Implement measures to prevent offsite dust impacts, for example: • water exposed areas (using non-potable water source where possible such as water from excavation pits) • cover exposed areas with tarpaulins or geotextile fabric • modify or cease work in windy conditions • modify site layout (place stockpiles away from sensitive receivers) • vegetate exposed areas using appropriate seeding.
Cover all transported waste.

5.1.7 Waste and hazardous materials

Existing environment and potential environmental impacts

One of our corporate objectives is to be a resource recovery business with an increasing portfolio of circular economy products and services. This includes reducing waste through recycling and re-use and encouraging our suppliers to minimise waste.

There are no known contaminated sites or contaminated land notified to the EPA within a 2-kilometre radius of the proposal. Unexpected contamination may be identified during excavation given the nature of the area (refer Section 5.1.1).

Construction impacts

The proposal will generate the following waste streams:

- spoil and excavated material
- general construction waste
- green waste from vegetation removal
- domestic waste from construction workers.

The contractor will seek opportunities to reduce, recycle and reuse materials. This will be documented in the Waste Management Plan or CEMP.

Waste from excavations will be stockpiled onsite at the nominated laydowns (refer to Figure 3-1). Improper management of waste and spoil can result in the off-site movement of material and the potential contamination of the surrounding land and waterways.

Operational impacts

Following construction, all excavations will be backfilled, the pipeline will be sealed and buried, and the road surface reinstated. All waste and hazardous materials associated with the proposal will be removed at the completion of works. Therefore, no operational impacts associated with waste and hazardous materials are expected.

Mitigation measures

With the implementation of the mitigation measures below, impacts to waste can be adequately managed, and residual impacts are expected to be minor.

Table 5-9 Environmental mitigation measures — waste and hazardous materials

Mitigation measures
Prepare a Waste and Resource Recovery Plan (WRRP) to appropriately manage and classify any materials including soils, construction/demolition wastes and associated stockpiles The plan will be prepared by the Delivery Contractor (or nominated environmental consultant) and approved by the Sydney Water Project Manager in consultation with the Environmental Representative and Contamination and Hazardous Materials team. The WRRP should include:

Mitigation measures
• expected waste types and their location • delineation of waste /resource types including identification of likely vertical and lateral extents (where warranted) • visual monitoring of materials during excavation and measures to be undertaken to prevent co-mingling / cross-contamination of waste / resource types • ex-situ waste and resource recovery classification program, including timing relative to project / excavation phases as well as proposed hold points • waste minimisation and resource recovery methodologies (including consideration of onsite reuse or management if contaminated) • roles and responsibilities in relation to stockpile and material management and monitoring program • proposed onsite reuse locations and reuse methodology (if applicable) • proposed offsite reuse, offsite recycling and / or offsite disposal locations / facilities • legislative compliance requirements • consideration of future maintenance • restoration.
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 stockpile size and ensure delineation between different stockpiled materials.
Minimise the generation of waste and sort waste streams to maximise reuse/recycling in accordance with the legislative requirements.
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 where appropriate. Recycle soils at a licensed soil recycling facility or dispose at an appropriately licenced landfill facility.

5.1.8 Traffic and access

Existing environment and potential impacts

The proposal is:

- on Edmondson Avenue, a regional road
- on Fifteenth Avenue and Craik Avenue, both local roads
- within 20 metres of Austral Public School
- accessed via Ninth Avenue, Tenth Avenue, Eleventh Avenue, Twelfth Avenue, Thirteenth Avenue, Fourteenth Avenue and Fifteenth Avenue.

The proposal is not

- within 100m of a TfNSW road
- within 100m of a traffic signal.

Construction impacts

The proposal will require light and heavy vehicle movements during construction. This includes material and equipment deliveries, worker movements and equipment operation.

Construction of the proposal will be contained to the road corridor, taking up one lane of traffic, the road shoulder and road verge. Traffic control would manage traffic flow along the open lane.

Partial temporary road closures are required. A road occupancy licence and notification will be required. The proposal will impact access to private properties adjacent to the works during construction. Street parking will be temporarily impacted during the works due to presence of construction equipment and activities. Consultation with landowners will be ongoing (refer Section 3.4) to manage access and access will be restored outside of construction hours.

Construction activities may cause disruption to Austral Public School. Impacts include reduced street parking and increased congestion from partial road closures, especially during school pick up and drop offs. Works between Ninth and Tenth Avenues should be scheduled to reduce impacts to the school.

Construction activities may impact retailers and small businesses on the west corner of Fifteenth Avenue and Edmondson Avenue as well as the corner of Edmondson Avenue and Tenth Avenue. Access to carparks would be maintained via alternate entrances. These impacts would be of a temporary nature and would be managed under the mitigation measures.

Construction activities may cause disruptions to bus stops along and pedestrian access along Edmondson Avenue. Impacts are anticipated to be temporary as the works will move progressively along the route and individual properties would not be impacted for the entire construction period.

Consultation with council will be ongoing to manage traffic and access impacts.

Operational impacts

Following construction, all excavations will be backfilled, the pipeline will be sealed and buried, and the road surface reinstated. Therefore, no operational impacts to traffic and access are expected. Vehicle movements during operation are generally not expected, except as required for maintenance activities.

Mitigation measures

With the implementation of the mitigation measures below, impacts to traffic and access can be adequately managed, and residual impacts are expected to be minor.

Table 5-10 Environmental mitigation measures — traffic and access

Mitigation measures
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.

Mitigation measures
The TMP must incorporate management measures for bus stops along the alignment as well as access to private properties on Edmondson Avenue and Fifteenth Avenue.
TMP must consider management of traffic and access impacts to Austral Public School.
Develop management measure to minimise traffic impacts near residential properties, schools and businesses by consulting with them (e.g. no major materials deliveries at school drop off or pick up times etc).
Construction works between Ninth and Tenth Avenues should, where practical, be scheduled outside of the school term to reduce impacts to Austral Public School. Consideration should be given to undertake disruptive work outside of school hours. Work schedule should be shared with Austral Public School and consultation will be ongoing.
Manage sites to allow people to move safely past the works, including alternative pedestrian, bicycle, pram and wheelchair access.
Consult with the relevant traffic authority about managing impacts to pedestrian traffic, signposting, metres, parking, line-marking or if traffic control or pavement restoration is required.
Erect signs to inform road users of the proposed works and any temporary road closures.
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.

5.1.9 Social and visual

Existing environment and potential impacts

The proposal is in a rural town centre surrounded by low and medium density residences, small businesses and educational facilities. Other construction activities and earthworks are currently ongoing within various lots along Edmondson Road (refer to Section 5.1.10).

Construction impacts

Temporary visual impacts associated with site compounds and worksites during construction are expected. Compounds and laydowns will be fenced off; however, the presence of construction equipment and materials may impact visual amenity. Noise and traffic impacts would also impact social amenity due to noisy works and restricted access to adjacent properties. Impacts will be managed with mitigation measures in sections 5.1.5 and 5.1.8.

The temporary visual impacts will be mitigated in consultation with stakeholders such as council and residents, in accordance with the mitigation measures below.

Operational impacts

The proposal will not require new permanent above ground structures and will not alter the visual character of the environment over the long-term. Following construction, all excavations will be backfilled, the pipeline will be sealed and buried, and the road surface reinstated. As such, no operational impacts to social and visual aspects are anticipated.

Mitigation measures

With the implementation of the mitigation measures below, impacts to social and visual amenity can be adequately managed, and residual impacts are expected to be minor.

Table 5-11 Environmental mitigation measures — social and visual

Mitigation measures
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.
Minimise visual impacts (e.g. retain existing vegetation where possible).
Maintain work areas in a clean and tidy condition.

5.1.10 Cumulative and future trends

Potential environmental impacts

Other works close by include the Fifteenth Avenue Road Upgrades by TfNSW – Stage 2 (TfNSW). However, the proposal is expected to be completed prior to these works commencing and cumulative impacts are not expected. Ongoing consultation with TfNSW has been undertaken. The design has incorporated various recommendations including ensuring the pipeline is outside of major development locations where possible, and the pipeline is deep enough to not impede road construction. Sydney Water will continue to work with TfNSW to reduce impacts as required.

A review of the Liverpool City Council website identified other local developments occurring along Edmondson Avenue and in the surrounding area. Cumulative impacts may occur from increased traffic from construction vehicles as well as dust and noise from construction activities. Sydney Water will continue to work with council to reduce cumulative impacts where possible.

Future trends that could impact the proposal were considered, such as bushfires, coastal hazards, flooding, extreme heat and extreme storm events related to climate change.

The proposal has considered future trends and is unlikely to further exacerbate them. The proposal has been developed to account for urban growth in the surrounding area. As the proposal would be buried and sealed once complete, climate related impacts are not anticipated.

Following construction, all excavations will be backfilled, the pipeline will be sealed and buried, and the road surface reinstated. Therefore, no operational cumulative impacts are expected.

Mitigation measures

With the implementation of the mitigation measures below, impacts from cumulative impacts can be adequately managed, and residual impacts are expected to be minor.

Table 5-12 Environmental mitigation measures — cumulative and future trends

Mitigation measures
Consultation with Transport for NSW will continue throughout the duration of the project to ensure any potential cumulative impacts are reduced where possible.
Consultation with Council will continue throughout the duration of the project to ensure any potential cumulative impacts are reduced where possible.

5.1.11 General environmental management

Table 5-13 Environmental mitigation measures — general environmental management

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 on 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 mitigation measures beyond those included in the REF • 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 REF, no further environmental assessment is required provided the change:

Mitigation measures
• remains within the proposal area for the REF and has no net additional environmental impact or • is outside the proposal area for the REF 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 REF. The CEMP should specify license, 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 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 with (e.g. metal fencing for AHIMS, white flagging for construction corridor, red flagging for no go zones etc). Delineate approved disturbance boundary (or use EIA terminology) before construction.

6. Conclusion

Sydney Water has prepared this REF to assess the potential environmental impacts of the South West Growth Area (SWGA), Drinking Water Infrastructure Augmentation in Austral, Liverpool. The proposal is required to service proposed urban growth forecast in the Austral and Leppington North growth precinct.

The main potential construction environmental impacts of the proposal include impacts to biodiversity, noise, traffic and heritage. 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, an environmental impact statement is not required under Division 5.1 of the EP&A Act.

The REF considers how the proposal aligns with the principles of ESD. The proposal will result in positive long-term environmental improvements. The proposal will not result in the degradation of the quality of the environment and will not pose a risk to the safety of the environment.

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References

EPA (NSW Environment Protection Authority) (2017) ***NSW Noise Policy for Industry,*** EPA website, accessed 13 January 2026.

EPA (NSW Environment Protection Authority) (2020) ***Draft Construction Noise Guideline,*** EPA website, accessed 13 January 2026.

Pentium Water (2025) Hydrogeological assessment, SWGA Austral – Liverpool Drinking Water Service, Pentium Water Pty Ltd.

Appendices

Appendix A – Section 171 checklist and Section 171A checklist

Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community from noise, traffic and access due to construction. The proposal will provide long-term environmental benefits by delivering a reliable water service to the local community.
Any transformation of a locality	The proposal will not result in the transformation of a locality. The locality will be temporarily impacted during construction, but the pipeline will be buried upon completion and the area will be returned to its pre-construction condition.
Any environmental impact on the ecosystems of the locality	The proposal will result in minor environmental impacts to local ecosystems. The flora and fauna assessment determined that most impacts will be in certified areas. Biodiversity impacts in non-certified areas would be indirect and would be managed through the mitigation measures in Section 5.1.3. The proposal will ultimately support environmental outcomes by providing reliable water services, minimising any potential 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 these factors. Any visual impacts will be temporary.
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 affect these values. Several AHIMS sites occur nearby; however, the AHDD determined they are outside the proposal footprint. [redacted] The AHDD also determined that the archaeological potential of the proposal area is low due to previous disturbance.
Any impact on the habitat of any protected animals (within the meaning of the ***Biodiversity Conservation Act 2016***)	The majority of the proposal is located on certified land, with the exception of the area around the unnamed tributary of Kemps Creek. As works will remain within the road corridor (except for compounds), impacts to fauna habitat are unlikely.

Section 171 checklist	REF finding
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 endanger any species. No direct impacts to flora or fauna are anticipated outside of certified areas, and any indirect impacts will be managed through the mitigation measures in Section 5.1.3.
Any long-term effects on the environment	The proposal will not have long-term adverse effects on the environment. It will provide long-term benefits through improved reliability of the water service.
Any degradation of the quality of the environment	The proposal will maintain the quality of the environment.
Any risk to the safety of the environment	The proposal will not pose a risk to environmental safety. Construction traffic will temporarily increase traffic movements; however, traffic control measures will be implemented during partial road closures on Edmondson Avenue, Fifteenth Avenue and Craik Avenue.
Any reduction in the range of beneficial uses of the environment	The proposal will maintain the range of beneficial environmental uses.
Any pollution of the environment	Environmental mitigation measures will prevent pollution. No pollution of the environment is expected.
Any environmental problems associated with the disposal of waste	Waste will be managed in accordance with the environmental mitigation measures. No environmental problems associated with waste disposal are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not affect demand on resources.
Any cumulative environmental effect with other existing or likely future activities	Nearby projects have been considered and there may be minor cumulative impacts due to increased vehicle traffic and construction related noise and emissions. Ongoing consultation with project managers for these projects to coordinate activities would ameliorate any potential impacts.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal will not have any impact on these factors.

Section 171 checklist	REF finding
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	Providing a water service contributes to strategic plans for the South West Growth Centre including: • South West Growth Centre, Updated Structure Plan • 'Connected Liverpool 2040' Liverpool City Council's Local Strategic Planning Statement.
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.

Section 171A checklist

Biodiversity and Conservation SEPP Section		Yes	N/A
Regulated Catchments			
Water quality and quantity			
6.6 (1)	Has Sydney Water considered:		
	(a) whether the development will have a neutral or beneficial effect on the quality of water entering a waterway	☐	☒
	(b) whether the development will have an adverse impact on water flow in a natural waterbody	☐	☒
	(c) whether the development will increase the amount of stormwater run-off from a site	☐	☒
	(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse	☐	☒
	(e) the impact of the development on the level and quality of the water table	☐	☒
	(f) the cumulative environmental impact of the development on the regulated catchment	☐	☒
	(g) whether the development makes adequate provision to protect the quality and quantity of ground water.	☒	☐
6.6 (2)	Is Sydney Water satisfied that:		
	(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial, and	☐	☒
	(b) the impact on water flow in a natural waterbody will be minimised.	☐	☒
Aquatic ecology			
6.7 (1)	Has Sydney Water considered:		
	(a) whether the development will have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation,	☒	☐
	(b) whether the development involves the clearing of riparian vegetation and, if so, whether the development will require—		

	(i) a controlled activity approval under the Water Management Act 2000, or	☐	☒
	(ii) a permit under the Fisheries Management Act 1994,	☐	☒
	(c) whether the development will minimise or avoid—		
	(i) the erosion of land abutting a natural waterbody, or	☒	☐
	(ii) the sedimentation of a natural waterbody,	☒	☐
	(d) whether the development will have an adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area,	☐	☒
	(e) whether the development includes adequate safeguards and rehabilitation measures to protect aquatic ecology,	☒	☐
	(f) if the development site adjoins a natural waterbody—whether additional measures are required to ensure a neutral or beneficial effect on the water quality of the waterbody.	☒	☐
6.7 (2)	Is Sydney Water satisfied that:		
	(a) the direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation will be kept to the minimum necessary for the carrying out of the development,	☒	☐
	(b) the development will not have a direct, indirect or cumulative adverse impact on aquatic reserves,	☐	☒
	(c) if a controlled activity approval under the ***Water Management Act 2000*** or a permit under the ***Fisheries Management Act 1994*** is required in relation to the clearing of riparian vegetation—the approval or permit has been obtained,	☐	☒
	(d) the erosion of land abutting a natural waterbody or the sedimentation of a natural waterbody will be minimised,	☒	☐
	(e) the adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area will be minimised.	☐	☒
Flooding			
6.8 (1)	Has Sydney Water considered:		
	The likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems?	☒	☐

6.8 (2)	Are the works on flood liable land? If yes, is Sydney Water satisfied that the development will not:		
	(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody, or	☐	☒
	(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems.	☐	☒
Recreation and public access			
Note: This section (6.9) does not apply if the works are in a special area under the ***Water NSW Act 2014***.			
6.9 (1)	Has Sydney Water considered:		
	(a) the likely impact of the development on recreational land uses in the regulated catchment, and	☐	☒
	(b) whether the development will maintain or improve public access to and around foreshores without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation.	☐	☒
6.9 (2)	Is Sydney Water satisfied:		
	(a) the development will maintain or improve public access to and from natural waterbodies for recreational purposes, including fishing, swimming and boating, without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation,	☐	☒
	(b) new or existing points of public access between natural waterbodies and the site of the development will be stable and safe,	☐	☒
	(c) if land forming part of the foreshore of a natural waterbody will be made available for public access as a result of the development but is not in public ownership—public access to and use of the land will be safeguarded.	☐	☒
Sydney Drinking Water Catchment			
Note: Section 6.6 (1) (a) or 6.6 (2) (a) does not apply if the activity is in the Sydney Drinking Water Catchment.			
171A (3)	For works in the Sydney Drinking Water Catchment, has Sydney Water also taken into account whether the activity: (i) will have a neutral or beneficial effect on water quality, and	☐	☒

	(ii) is consistent with the NorBE Guideline within the meaning of *State Environmental Planning Policy (Biodiversity and Conservation) 2021*, Part 6.5		
Sydney Harbour Catchment			
6.28 (1)	Has Sydney Water considered:		
	(a) whether the development is consistent with the following principles— (i) Sydney Harbour is a public resource, owned by the public, to be protected for the public good, (ii) the public good has precedence over the private good, (iii) the protection of the natural assets of Sydney Harbour has precedence over all other interests,	☐	☒
	(b) whether the development will promote the equitable use of the Foreshores and Waterways Area, including use by passive recreation craft,	☐	☒
	(c) whether the development will have an adverse impact on the Foreshores and Waterways Area, including on commercial and recreational uses of the Foreshores and Waterways Area,	☐	☒
	(d) whether the development promotes water-dependent land uses over other land uses,	☐	☒
	(e) whether the development will minimise risk to the development from rising sea levels or changing flood patterns as a result of climate change,	☐	☒
	(f) whether the development will protect or reinstate natural intertidal foreshore areas, natural landforms and native vegetation,	☐	☒
	(g) whether the development protects or enhances terrestrial and aquatic species, populations and ecological communities, including by avoiding physical damage to or shading of aquatic vegetation,	☐	☒
	(h) whether the development will protect, maintain or rehabilitate watercourses, wetlands, riparian lands, remnant vegetation and ecological connectivity.	☐	☒

Appendix B – 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 ***National Parks and Wildlife Act 1974*** or land acquired under Part 11 of that Act***? If so, consult with DPE (NPWS).***		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? ***If so, consult with DPE (NPWS).***		X

TISEPP section	Yes	No
Will the proposal include a fixed or floating structure in or over navigable waters? ***If so, consult TfNSW.***		X
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.***		X
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***.	X	
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).***		X

Appendix C – Flora and Fauna assessment

Appendix D – Aboriginal Heritage Due Diligence