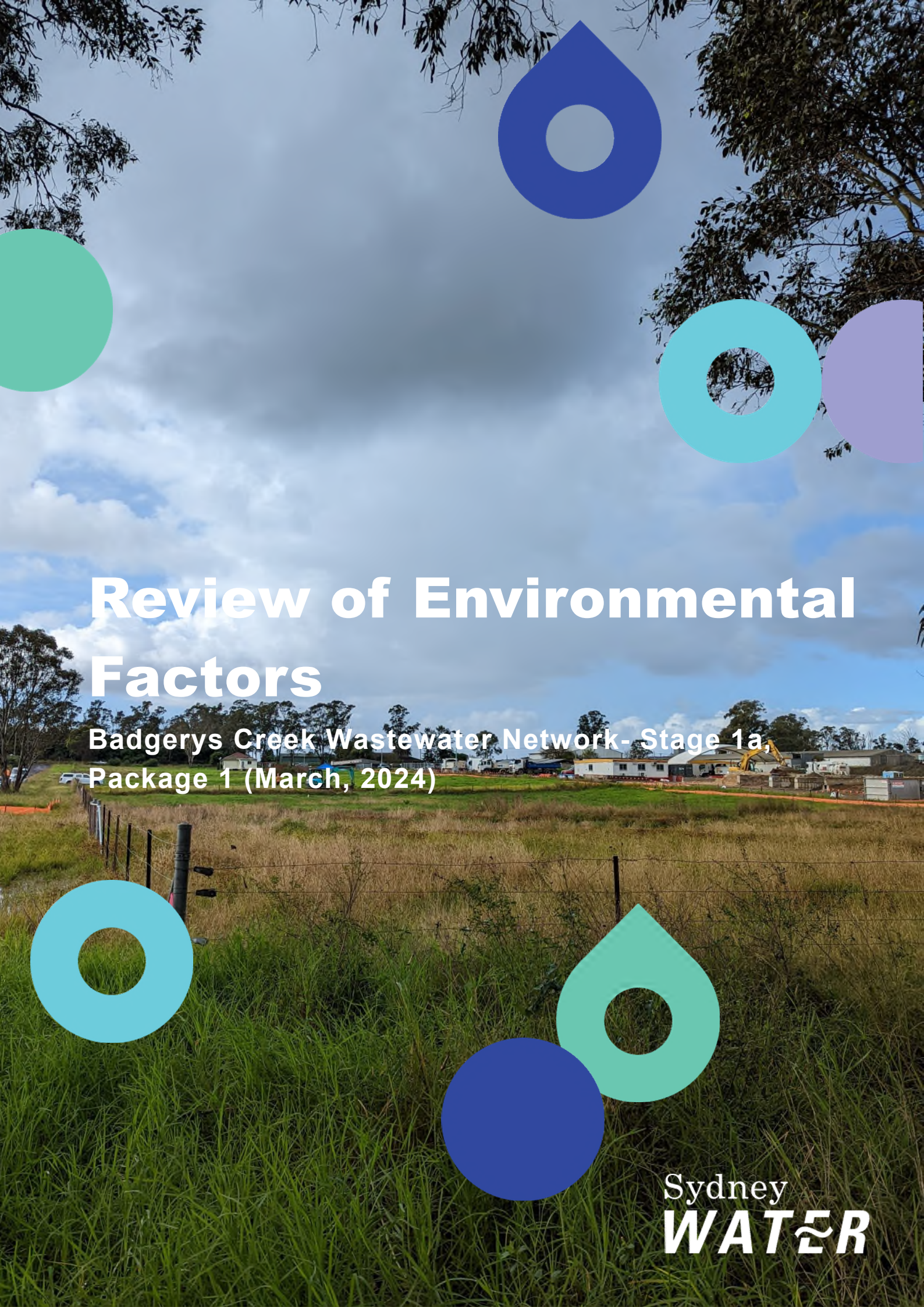

Review of Environmental Factors

Badgerys Creek Wastewater Network- Stage 1a, Package 1 (March, 2024)

Sydney WATER

Table of contents

Figures

Tables

Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of Badgerys Creek wastewater network stage 1a, package 1. The REF was prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

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

Decision Statement

The main potential construction environmental impacts of the proposal include impacts from excavation, noise and traffic. During operation, the main potential impacts are associated with visual amenity, noise and odour. The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

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

Certification

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

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
[redacted]	[redacted]	[redacted]	[redacted]
Samantha Prior REF author Sydney Water Date: 13/3/2024	Grace Corrigan Senior Environmental Scientist Sydney Water Date: 18/3/2024	Matthew Lewis Project Manager Sydney Water Date: 18/3/2024	Murray Johnson Manager, Environment and Heritage Sydney Water Date: 22/03/2024

1 Introduction

1.1 Context

Sydney Water provides water, wastewater, recycled water and some stormwater services to over five million people. We operate under the *Sydney Water Act 1994* and have three equal objectives to protect public health, protect the environment and be a successful business.

We are a statutory State-owned corporation and are classified as a public authority, and a determining authority for the proposal under Division 5.1 of the EP&A Act. This REF assesses the potential environmental impacts associated with Badgerys Creek wastewater network and identifies mitigation measures that avoid or minimise potential impacts.

1.2 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	Badgerys Creek catchment is one of 9 wastewater catchments that will service the Western Sydney Aerotropolis Growth Area (WSAGA). This catchment will service parts of Badgerys Creek, Dwyer Road, Agri-business, Northern Gateway and Aerotropolis Core precincts as well as most of the Western Sydney Airport (WSA). Badgerys Creek catchment currently has no wastewater service. This project is needed to provide wastewater servicing for the growth expected in this catchment as part of the WSAGA and WSA. The new wastewater infrastructure will connect to the existing Southern Suburbs Sewage Treatment System (Environment Protection Licence (EPL) 372). The catchment will ultimately be serviced by the Upper South Creek Advanced Water Recycling Centre (USC AWRC) in Kemps Creek. A staged approach to the wastewater servicing is required to keep up with the pace of development in the area and is described below. **Interim Operating Plan (IOP)** The interim stage of this project is currently under construction and includes an IOP for WSA. This involves a temporary pump out system where wastewater is tankered from the IOP to one of Sydney Water's existing pump stations, where it will be discharged. **Stage 1** During stage 1 the network will operate by collecting wastewater via gravity mains, then pumping flows to the Liverpool wastewater network for an interim period while USC AWRC is under construction.

Aspect	Relevance to proposal
	Due to forecast development in the catchment, delivery of stage 1 of the Badgerys Creek wastewater network will be packaged as follows: • Stage 1a, package 1: - 0.9 km of wastewater gravity carrier (BCG02) and maintenance hole (MH01) - 10.1 km of existing recycled water main repurposed to a wastewater rising main • Stage 1a, package 2: - 2.5 km of BCG02 - 0.8 km of wastewater gravity carrier (BCG03) • Stage 1b - 3.4 km of BCG03 - 1.2 km of wastewater gravity carrier (BCG04). **Stage 2** When the USC AWRC is operational in 2026, SP1229 will transfer flows to the catchment's terminal pump station (SP1230) at Badgerys Creek. From there, the flow will be transferred to the USC AWRC. The proposed scheme is summarised in Figure 1-1. This REF assesses stage 1a, package 1 only.
Proposal objectives	The proposal objective is to provide appropriate wastewater infrastructure to support development and growth in the WSAGA and WSA.
Consideration of alternatives/options	Alternatives and options for the proposal were considered. The long list of options was subject to a high level fatal flaw analysis to eliminate options that were not viable. Three options were short listed. The options were similar in nature with proposed wastewater mains following the existing creek alignment. The key difference were the number of pump stations proposed, depth of pipes and pumping stations, servicing flexibility and ability to meet operational and maintenance requirements for self-cleansing and slime control. The preferred option was selected as it meets the projects objectives and: • provides the greatest flexibility • has shallower pipes which reduces operational and maintenance issues • reduces construction risk • minimises impacts to developable land.

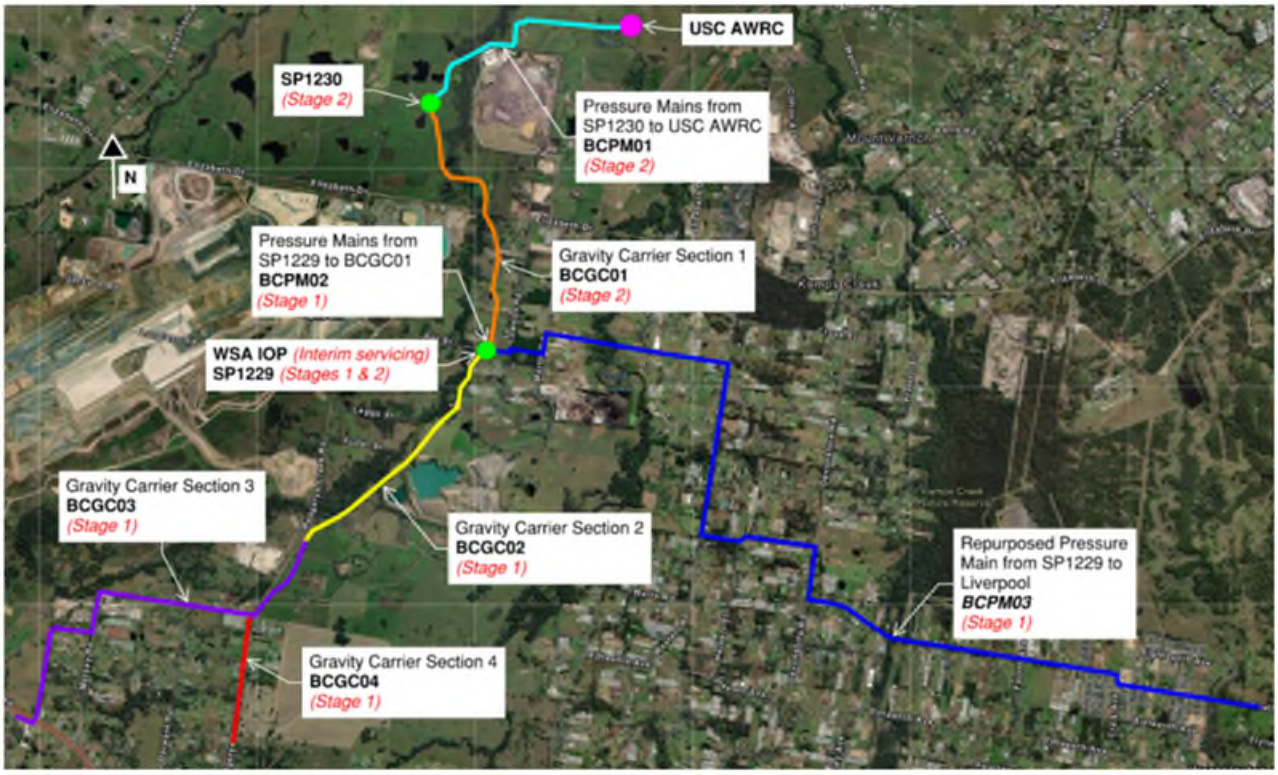

Figure 1-1 Overview of the proposed Badgerys Creek wastewater network

1.3 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 overall environmental impact of the proposal was minimised by avoiding Aboriginal heritage sites, avoiding vegetation removal on non-certified land and repurposing existing recycled water infrastructure.
Inter-generational equity - *the present generation should ensure that the health, diversity and*	The proposal will help to meet the needs of future generations by providing a reliable wastewater

Principle	Proposal alignment
productivity of the environment are maintained or enhanced for the benefit of future generations.	service in the South West Growth Centre (SWGC) to support 250,000 new jobs in Western Sydney.
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. There will be no significant impact to any threatened species or communities. Only certified vegetation (200 m^2) will be removed.
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 by providing a new wastewater service and repurposing existing infrastructure.

2 Proposal description

2.1 Proposal details

Table 2-1 describes the proposal and Figure 2-1 to 2-6 shows the location and key environmental constraints.

Table 2-1 Description of proposal

Aspect	Detailed description
Proposal description	The proposal comprises construction and operation of a new wastewater network to service the Badgerys Creek catchment. The network will consist of the following key assets: • one new wastewater pumping station (SP1229) located off Pitt Street • 10.1 km of existing recycled water main repurposed to a wastewater main with barometric loop • 0.9 km of wastewater gravity main (BCG02) with maintenance hole (MH01) and vent shaft. SP1229 has been designed with an ultimate pumping capacity of 798 L/s. Key elements of the pumping station include: • loop road with a single entry and exit • in ground wet well with 4 submersible pumps in a 2 x duty/standby arrangement • valve chamber and inlet maintenance hole • emergency storage and relief system • odour control unit (OCU) • chemical dosing unit • vent shafts and supporting infrastructure and amenities • above ground electrical kiosk and switch room building.
Location and land ownership	The proposal is located within the suburbs of Badgerys Creek, Kemps Creek, Austral and West Hoxton in the Liverpool Local Government Area (LGA). SP1229 will be located within 185 Lawson Road, Badgerys Creek (Lot 1, DP 566109). The property is being acquired by Sydney Water with settlement forecast to occur prior to construction. The gravity pipeline, MH01 and vent shaft will be located within 195 Lawson Road, Badgerys Creek (Lot 2, DP 566109). The property is privately owned.

Aspect	Detailed description
	The existing recycled water main traverses the suburbs of Badgerys Creek, Kemp Creek, Austral and West Hoxton. Camlocks will be retrofitted at 9 hydrant locations along the main (within the road reserve) near: • 130-140 and 150 Martin Road, Badgerys Creek • 16 Sumbray Avenue, Kemps Creek • 23, 65, 115 and 225 Gurner Avenue, Austral • 53 and 71 Seventeenth Avenue, Austral. Carbon canisters will be installed at 12 locations along the main (within the road reserve) near: • Corner of Cuthel and Lawson Road, Badgerys Creek • 140 Martin Road, Badgerys Creek • 113-125, 280 and 294 Western Road, Kemps Creek • 15 Exeter Road, Kemps Creek • 5 Tavistock Road, Kemps Creek • 305 Devonshire Road, Kemps Creek • 4, 45 and 83 Gurner Avenue, Austral • 5 Seventeenth Avenue, Austral. The barometric loop will be located in the southern verge of Southern Cross Avenue adjacent to 2-64 Flynn Avenue, West Hoxton. This section of Southern Cross Avenue is gated and not publicly accessible.
Site establishment and access tracks	Site establishment will involve: • marking out and establishing designated areas of the proposal such as the construction corridor, access tracks and compounds • establishing no-go zones (including the Potential Archaeological Deposit (PAD) location at SP1229) • establishing erosion and sediment controls • grubbing site, stripping and stockpiling of topsoil for reuse during restoration. Most of the proposal can be accessed via the local road network and existing private property access. Access improvement works, including temporary widening, resurfacing and drainage management are required along Pitt Street for safe vehicle movements during construction. A new access road will be required at SP1229.
Ancillary facilities (compounds)	Two project compounds are proposed to be established at 185 Lawson Road adjacent to the SP1229 site. One compound is proposed on land currently being

Aspect	Detailed description
	acquired by Sydney Water, the second is proposed on the remaining private land at 185 Lawson Road (subject to landowner agreement). The compounds will include project office amenities and material laydown and storage areas. The exact location of the compound will be chosen by the contractor and remain within the study area, in consultation with the landowner(s) and approved by Sydney Water's Project Manager as described in the mitigation measures in Section 6.
Methodology	**Pre-construction** Pre-construction works will include: • geotechnical, contamination and survey investigations • service locating and potholing • soil sampling and waste classification • access improvement works to the SP1229 site. **SP1229** Construction of SP1229 will include: • performing bulk earthworks to establish required levels • piling and shoring works • performing deep excavation works for the pump station sub structure • installing deep pipework via trenchless methods • installing concrete structures including inlet maintenance hole, wet well, emergency storage and valve chamber • backfilling and installing shallow pipework and discharge maintenance hole • installing slab foundations for the OCU, switch room, substation and associated services • performing building and mechanical fit out works • installing permanent power supply • performing site electrical works • installing access road, hardstand, and associated ancillary works • restoring site and installing landscaping • testing and commissioning of the station • performing IOP cutover and site integrations works • decommissioning the IOP and disposal of tank.

Aspect	Detailed description
	Wastewater main The wastewater gravity main that connects to SP1229 will be installed underground using trenchless techniques. Micro tunnelling is the preferred methodology and will include: • excavating the launch and receival pits (7 x 7 m) • stockpiling excavated material beside launch and receival pits • benching the excavation • micro-tunnelling the wastewater main (about 9 m deep) • managing waste generated from soil displacement • installing concrete cast-in situ MH01 with vent shaft at the launch pit site • refilling the pits once the assets have been installed • reinstating existing surfaces. **Repurposing existing recycled water main** To repurpose the existing recycled water main into a wastewater main the following works are required: • hydrostatic testing of the pipeline from existing stop valves to verify condition • retrofitting camlocks onto existing hydrants at 9 locations • retrofitting carbon canisters at 12 existing air valves • constructing 11 m high stainless steel barometric loop structure and associated pipework and maintenance hole at downstream end of the recycled water main • installing pavement (20 x 3.4 m) for maintenance access and chain-link perimeter fencing • connecting the recycled water main to the existing wastewater network • retrofitting OCU at existing vent shaft at downstream end of the recycled water main • decommissioning of some fittings and pipework sections that are no longer required • performing cutover of main to the barometric loop and SP1229 rising main connection point.
Commissioning	Commissioning involves testing and running the new equipment to ensure it works correctly and is integrated with existing plant operations. Commissioning will be carried out according to Sydney Water procedures. The exact commissioning steps depend on the type of the equipment, but typically include:

Aspect	Detailed description
	• preparing and testing new infrastructure which may include pressure leak tests, checking of all equipment and safety devices • performance testing including sampling where required • providing site labelling (signage and labelling of equipment) • operator training and preparing maintenance manuals.
Restoration	Non-operational areas of the work site will be restored to the pre-existing condition following construction in consultation with landowners and/or local council. The Construction Environmental Management Plan (CEMP) will detail site restoration works to be undertaken once construction works are finished. Site restoration activities will include: • backfilling of trenches as soon as works are finished • dismantling compounds, removal and disposal of waste material and removing construction signage • restoring ground cover and native vegetation • restoration of road pavement surfaces and drainage • removing erosion and sediment controls, fencing and traffic management measures.
Materials/equipment	Materials/equipment may include the following: • compactor • concrete agitator trucks • concrete saws • concrete truck and pump • confined spaces safety equipment (e.g. gantry/davit) • cranes • excavators • generators • hand tools • horizontal borer • hydraulic pipe jackers • semi-trailers and large delivery trucks • signage • site facilities and amenities • skip bins • storage containers • temporary fencing • tip trucks • tunnelling machine • vacuum trucks • vibratory roller • water cart and pump • light vehicles.
Work hours	Work and deliveries will be scheduled to occur during standard daytime hours of:

Aspect	Detailed description
	• 7am to 6pm, Monday to Friday • 8am to 1pm, Saturdays. Some work outside of standard construction hours may be required at SP1229 or for works within the road reserve. A condensed construction program (6 days per week) may be required to accelerate delivery of the works and meet the critical customer requirements of the WSA. Sydney Water's Project Manager can approve work outside of standard daytime hours, in addition to the out of hours work assessed in this REF. The approval process is described in the mitigation measures in Section 5.
Proposal timing	Construction is expected to start in late 2024 and take about 36 months.
Operational requirements	SP1229 will operate largely automatically without the need for a permanent presence at the site. The station will be operated in accordance with Sydney Water's existing EPL 372 for the Southern Suburbs Sewage Treatment System under the *Protection of the Environment Operations Act 1997*. Routine and emergency maintenance would occur as required.

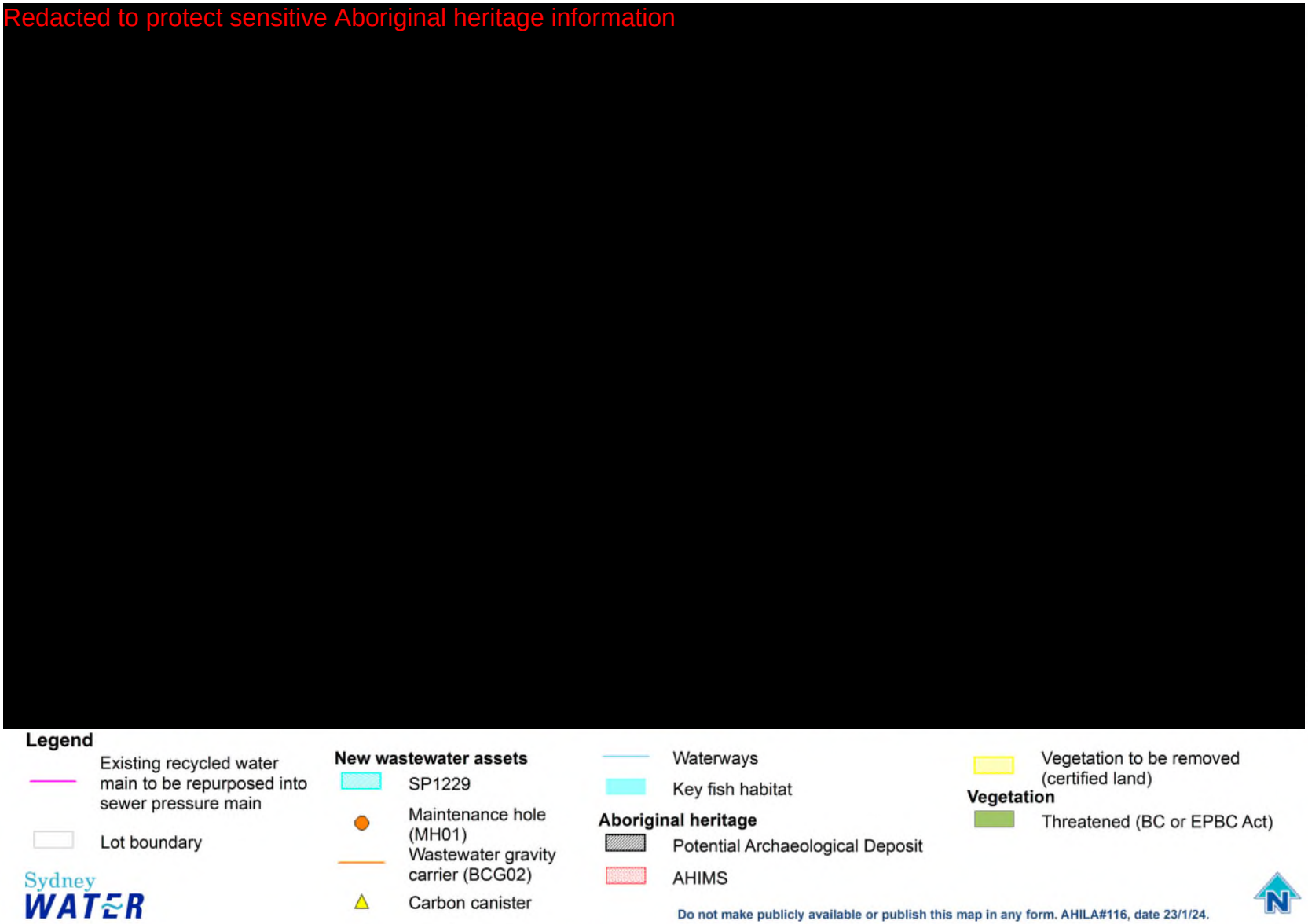

Figure 2-1 Location of proposal and key environmental constraints – SP1229

Figure 2-2 Location of proposal and key environmental constraints

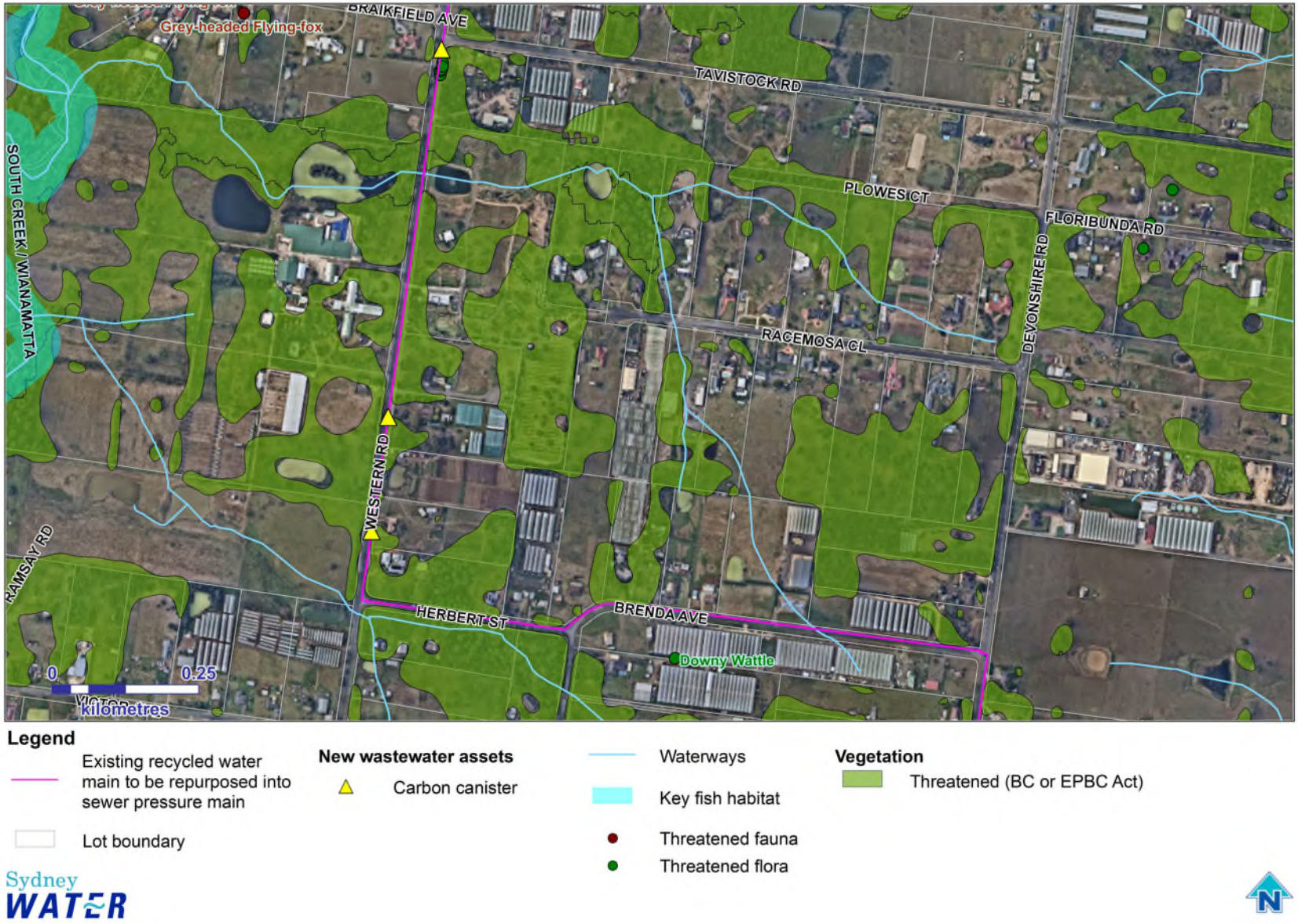

Figure 2-3 Location of proposal and key environmental constraints

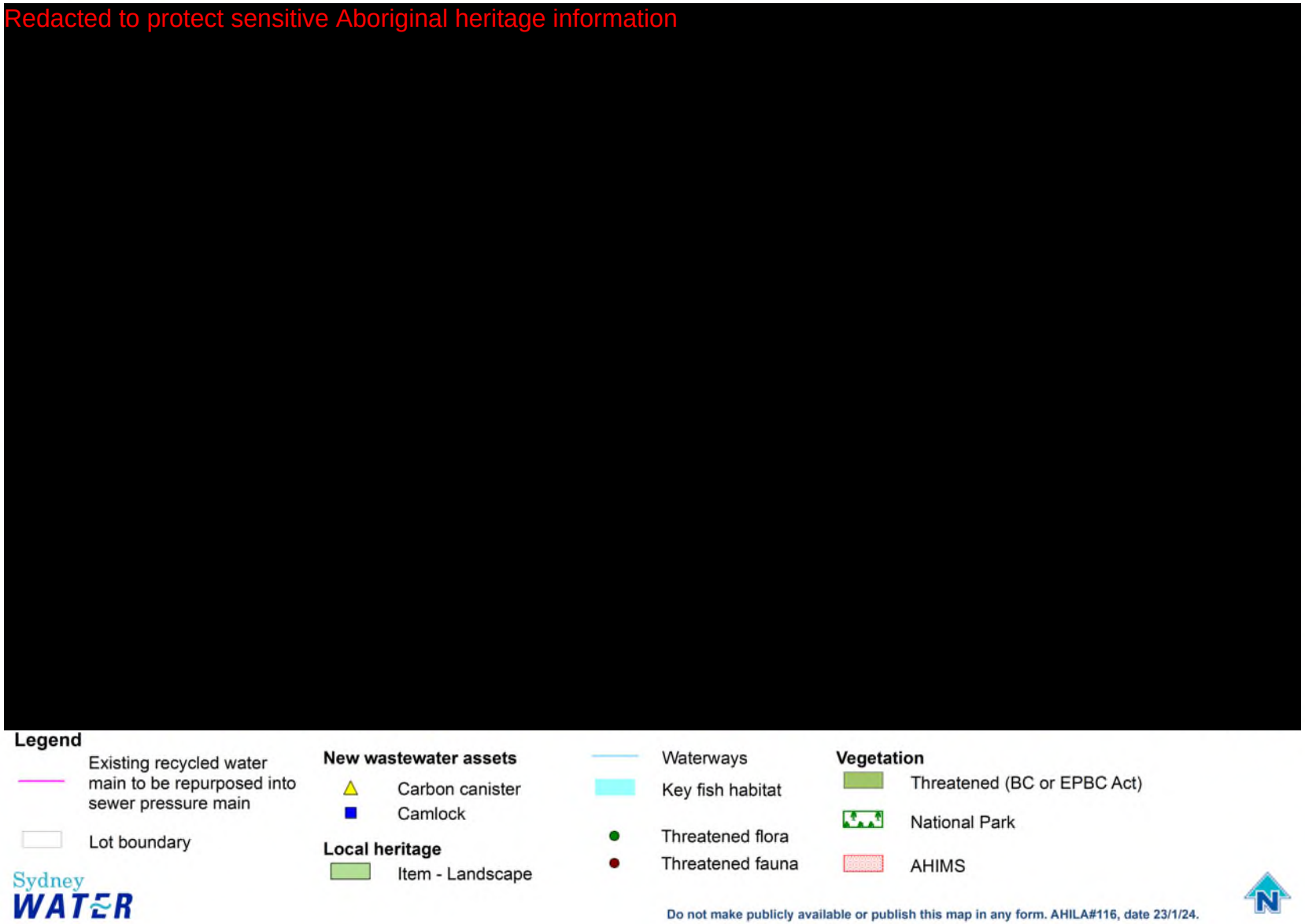

Figure 2-4 Location of proposal and key environmental constraints

Figure 2-5 Location of proposal and key environmental constraints

Figure 2-6 Location of proposal and key environmental constraints - barometric loop

2.2 Field assessment area and changes to the scope of work

The proposal shown in this REF is indicative and based on the latest design at the time of REF preparation. The final proposal may change based on detailed design and construction planning. If the construction corridor, construction methods or construction timing described in this document change significantly, supplementary environmental impact assessment must be prepared for the amended components in accordance with SWEMS0019.

The study area comprises Lot 1 and 2 DP 566109, and the road reserve along the length of the existing recycled water main between Badgerys Creek and the corner of Edge Road and Southern Cross Avenue, West Hoxton.

An addendum is not required provided the change:

- remains within the REF study area and has no net additional environmental impact, or
- is outside the REF study area but reduces the proposal's overall environmental impact (subsection 5.4(a) of the EP&A Act).

Changes to the proposal outside the construction corridor can only occur:

- to reduce impacts to biodiversity, heritage or human amenity, or
- to avoid engineering (for example, geological, topographical) constraints, and
- after consultation with any potentially affected landowners and relevant agencies.

The contractor will demonstrate in writing how the changes meet these requirements. If the changes meet these requirements, Sydney Water's Project Manager can approve them in consultation with the environmental and community representatives.

3 Consultation

3.1 Community and stakeholder consultation

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

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

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

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

We will also provide local councils with reasonable notice when we would like to commence works. Liverpool City Council will continue to be consulted about matters identified in environmental planning instruments (refer Section 3.2 below), including public safety issues, the placement of any temporary site sheds or laydown areas on council land, or full or partial road closures and excavation of council managed roadways.

3.2 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 s2.10(f) of the TISEPP as the proposal involves temporary closures and excavation of council roads. Liverpool City Council is being consulted as part of the proposal and the contractor will continue consultation to ensure closeout of any concerns prior to construction commencing. Further detail is provided in **Appendix B**.

Sydney Water has consulted with the Western Parkland City Authority on 12 March 2024 as the proposal has a capital investment value of over $30 million and is in the Western City operational area. Any comments received within 21 days will be considered and incorporated into the detailed design of the project, where practical.

4 Legislative requirements

4.1 Previous approvals

A REF has been prepared for delivery of an IOP on the same site as SP1229. This is required to service the WSA in the interim. The overflow pipe that will be utilised by SP1229 is being delivered under this previous approval. The IOP will be decommissioned as part of the proposal in this REF.

4.2 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	The proposal is located within the Liverpool Local Government Area (LGA). Part of the proposal is located on land zoned Primary Production Small Lots (RU4) under this LEP.
SEPP (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126(6) of the TISEPP permits development by or on behalf of a public authority for sewage reticulation systems without consent on any land in the prescribed circumstances. The proposal involves development of a sewage reticulation system. Under section 2.126(1)(a), the development is carried out in the prescribed circumstances as it is being carried out by a public authority. As Sydney Water is a public authority, the proposal is permissible without consent.
SEPP (Biodiversity and Conservation) 2021	**Vegetation in non-rural areas (Chapter 2)** Chapter 2 of this SEPP applies as it is in an area or zone listed in subsection 2.3(1) (Liverpool City Council). 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.

Environmental Planning Instrument	Relevance to proposal
	Koala habitat protection (2020 and 2021) (Chapters 3 and 4) The works are on land to which this SEPP applies (Liverpool City Council LGA). The aim of the policy is to "encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline." No koala feed trees or habitat will be impacted by the works.
SEPP (Precincts - Western Parkland City) 2021	The proposal is located on land zoned under this SEPP including: • Enterprise (ENT) • Environment and Recreation (ENZ) • Low Density Residential (R2) • Infrastructure (SP2) • Medium Density Residential (R3) • unzoned land within Western Sydney Parklands. **Sydney Region Growth Centres (Chapter 3)** Chapter 3 of this SEPP aims to co-ordinate the release of land for residential, employment and other urban development in the North West Growth Centre, the SWGC, the Wilton Growth Area and the Greater Macarthur Growth Area. The proposal falls entirely within the SWGC on both certified and non-certified land. No vegetation impacts will occur on non-certified land. **Western Sydney Aerotropolis (Chapter 4)** The proposal is partly located within land to which Chapter 4 of this SEPP applies. As per Subsection 4.5, the provisions of the SEPP (Infrastructure) 2007 (now TISEPP) still apply as the proposal does not meet the modifications noted in that section. Therefore, the proposal can be undertaken without development consent. **Western Sydney Parklands (Chapter 7)** The proposal is partly located within the Western Sydney Parklands (WSP) on unzoned land. As per Subsection 7.5A(2) WSP is taken to be a prescribed zone for the purposes of the TISEPP.

Table 4-2 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations (POEO) Act 1997	The proposal will pump wastewater to Liverpool wastewater network part of the Southern Suburbs Sewage Treatment System which is operated under EPL 372. The proposal is consistent with an existing activity under this EPL and existing compliance requirements. Temporary relaxation of, or variation to, the EPL is not required.	Conditions in existing EPL 372	NA
Biodiversity Conservation (BC) Act 2016	The BC Act lists species and ecological communities which are protected in NSW. The impact of the proposal on threatened species, communities and their habitats has been assessed in Section 5.2.3. The proposal is partly on certified land within the SWGC. The certification of land is governed by Part 8 of this Act. Section 8.4(5) of this Act states that a determining authority under Part 5 of the EP&A Act is not required to consider the effect on biodiversity of an activity to the extent that it is carried out on biodiversity certified land. No vegetation impacts are required on non-certified land.	NA	NA
National Parks and Wildlife (NPW) Act 1974	This Act provides for the establishment, preservation, and management of areas such as national parks, state conservation areas, nature reserves, and Aboriginal areas. This Act also provides for the protection of Aboriginal heritage, including Aboriginal objects and places. The proposal in not within National Parks, State Conservation areas or nature reserves. An Aboriginal Heritage Due Diligence (AHDD) assessment was completed for the site which identified an area of Potential Archaeological Deposit (PAD) along Badgerys Creek within the SP1229 site	AHDD	Pre-construction, Sydney Water

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	(Figure 2-1). Impact to this item will be avoided.		
Water Act 1912/ Water Management Act 2000	All dewatering activities require an approval under Section 91B of the Water Management Act 2000. Section 60A of the Water Management Act states that it is an offence to take water without a licence. A Water Access Licence (WAL) is required under section 61 where groundwater extraction will be greater than 3 ML. Groundwater is likely to be extracted from excavations during construction. It is unlikely that groundwater extractions would exceed 3 ML per water year. A Water Supply Works Approval (WSWA) will be submitted to DPE Water.	WSWA (for <3 ML)	Pre-construction, Contractor
Roads Act 1993	The works would be accessed using local roads under the control and management of Liverpool City Council. The proposal will impact local council managed roads and one regional road managed by TfNSW. Full or partial road closures may be required. A Road Occupancy Licence (ROL) will be required.	ROL	Pre-construction, Contractor
Environment Protection and Biodiversity Conservation (EPBC) Act 1999	It is unlikely that there will be a significant impact to a Matter of National Environmental Significance as a result of the proposal, so no referral to the minister is required.	NA	NA

5 Environmental assessment

Section 5.2 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 Existing environment

The proposal is located across the suburbs of Badgerys Creek, Kemps Creek, West Hoxton and Austral within the Liverpool LGA. Existing land use is mostly rural/agricultural and extensive past clearing of native vegetation and intensive grazing by cattle is evident across the landscape. Badgerys Creek is present to the west of the SP1229 site. The WSA is under construction to the west of the study area. The environmental features within and adjacent to the study area are detailed below.

5.2 Environmental aspects, impacts and mitigation measures

5.2.1 Topography, geology and soils

Existing environment

The topography of the study area is relatively flat adjacent to Badgerys Creek, with elevation generally increasing from north to south. The study area is mostly underlain by Bringelly Shale of the Wianamatta Group, with alluvial floodplain deposits along the banks of Badgerys Creek. The soil landscapes within the study area are predominantly comprised of South Creek soils, with Blacktown soils present along the recycled water main. These soil landscapes have moderate to high erodibility.

The proposal is not in an area impacted by known contamination as indicated on NSW Environment Protection Authority (EPA) list of notified sites accessed on 27 February 2024 (EPA, 2024).

A Detailed Site Investigation (DSI) was undertaken to assess existing soil and surface conditions at SP1229 and within areas planned for excavation/ground disturbance. The DSI found that hazards to human and ecological health in soil at these locations are generally considered to be low.

Additionally, the proposal:

- is in an area with localised salinity hazard (DPIE, 2023b)
- is not in an area impacted by an existing exploration or mining title
- is not in an area impacted by acid sulfate soils (ASS) (DPIE, 2023a).

Construction impacts

During construction, we will need to disturb ground, excavate and stockpile soil to install underground infrastructure. The footprint required for the pump station is about 6,110 m^2. Deep excavation is required to construct the pump station and for send and receive pits (7 x 7 m). The pump station wet well would be the deepest structure (13.5 m deep and 8 m wide). Minor excavation is required for the carbon canister and barometric loop works to connect to the existing recycled water main. These activities have the potential to cause erosion and sedimentation. Excavation will expose soil and increase the risk of soil mobilising during rain or windy conditions.

The excavation works associated with the proposal would occur in areas with high potential for salinity and in known areas of salinity. The disturbance of saline soils has the potential to impact the local environment if not managed appropriately. The erosion and transfer of saline sediments offsite has the potential to alter the water quality of receiving environments which in turn has the potential to impact upon flora and fauna that are sensitive to elevated levels of salinity.

Operation impacts

Generally, the works would not permanently change the surface topography of the area.

Installation of above ground elements at SP1229 and the barometric loop will result in a minor change to the runoff from the site during operation. The amount of hardstand within the site would increase, so there will be less permeable surfaces. The direction of surface runoff is not expected to change.

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 low.

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

Mitigation measures
Prevent sediment moving offsite in accordance with Managing Urban Stormwater, Soils and Construction, Volume 1 and 2A (Landcom 2004 and DECC 2008), including: • develop a Soil and Water Management Plan (SWMP) as part of the CEMP • 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.

Mitigation measures
Delivery Contractor to ensure imported material is Virgin Excavated Natural Materials (VENM) or meets a relevant NSW EPA Resource Recovery Order and Resource Recovery Exemption, or is a commercially supplied material that is not waste. If using materials that are subject to a NSW EPA Resource Recovery Order/Exemption the contractor must ensure the conditions in that Order/Exemption are strictly adhered to.
Stop work in the immediate vicinity of suspected contamination. Indicators of contamination include discoloured soil, anthropogenic material within fill, asbestos, chemical or petrol odours and leachate. Contain disturbed material on an impermeable surface and cordon areas off. Notify the Sydney Water Project Manager and the Environmental Representative (who will contact Property Environmental Services) 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: • stabilise existing areas of erosion • minimise water use on site • avoid rotation and vertical displacement of the original soil profile • backfill excavations deeper than one metre in the same order, or treat or use this material as fill at depths more than one metre from the finished level.

5.2.2 Water and drainage

Existing environment

SP1229 is located about 50 m east of Badgerys Creek, and retrofitting works will occur about 43 m east of Kemps Creek and 97 m east of South Creek. Each of these waterways are mapped as key fish habitat. Existing water quality in these waterways is influenced by runoff from nearby roads, development sites (e.g. WSA) and agricultural land.

The Upper Canal (WaterNSW special area) passes through the study area about 50 m west of retrofitting works (Figure 2-6).

The proposal is partially located in flood prone areas adjacent Badgerys Creek. SP1229 is located outside the 1% AEP flood event level (South Creek Flood Study, 2020).

The groundwater levels across the pump station site are varied. Groundwater was intercepted during site investigations at 0.585 m and 3.69 m below ground level (GIR, 2021).

Construction impacts

Construction work would include the disturbance of groundcover, trenching and excavation of soils, the establishment of temporary soil stockpiles and storage of fuels and chemicals. Poor site management may lead to potential sedimentation impacts to local waterways including Badgerys Creek.

The proposal is not likely to adversely affect flood behaviour given the works would not permanently change surface topography and drainage patterns. Flooding has the potential to impact construction and increase movement of spoil offsite. Pollutants such as sediment, soil nutrients, construction waste, chemicals and gross pollutants have the potential to enter drainage lines and creek systems, particularly during high rain events, which potentially could result in a decline of water quality.

The proposal requires excavation up to 13.5 m deep which is likely to intercept groundwater. Based on known inflows, groundwater level, construction method and schedule, it was determined that the volume of groundwater extracted for the duration of the proposal would likely be 3.05 ML. A WSWA is required for all activities that involve dewatering of groundwater. The volume of dewatered groundwater would be monitored across the proposal area and a WAL sought if the dewatering volume will exceed 3 ML per water year.

The proposal will involve the discharge of drinking water during hydrostatic testing of the existing recycled water main. Where test water cannot be drained through the existing system it will be discharged to the environment in accordance with Sydney Water's Water Quality Management During Operational Activities Policy (D0001667). Erosion controls, discharge rate, dichlorination and monitoring will mitigate any localised impacts from this activity.

The proposal may require on-site fuel and chemical storage, which will be managed in accordance with the mitigation measures below to avoid any pollution of nearby waterways. Fuels and chemicals would typically be stored within site compounds.

Operational impacts

Once complete, the proposal would be mainly underground with limited surface infrastructure. The SP1229 site has been designed with permeable surfaces to reduce runoff. We do not anticipate any long-term impacts on surface water, drainage, flooding or groundwater.

The new infrastructure will be designed and operated to comply with Sydney Water’s existing environment protection licence for the Southern Suburbs Sewage Treatment System (EPL 372).

SP1229 is designed to store wastewater during wet weather events, preventing wastewater discharges most of the time. During extreme weather events, the wastewater storage capacity at SP1229 may be exceeded and untreated wastewater could flow from the overflow point. This is necessary to avoid internal surcharges in the wastewater system. These overflow events will impact water quality in Badgerys Creek, contributing to an increase in background nutrient loads, pathogen levels and trace pollutant loads. The impact of these temporary and infrequent wastewater discharges would be minimised by the large catchment flows that occur during extreme wet weather events.

SP1229 has been designed with 2 overflow points. The first overflow point is a DN675 bypass pipe that will reduce environmental discharges by containing overflows within the system and directing them to the downstream pumping station. The main overflow will be a DN675 pipe directed towards Badgerys Creek which includes a headwall as well as a duckbill check valve to prevent backflow (already constructed as part of the IOP project). It is anticipated that the main overflow will only be required should incoming flow exceed peak wet weather flow into SP1229, or if the bypass overflow is isolated for maintenance/repair activities. Repairs to wastewater infrastructure are anticipated to occur infrequently.

Mitigation measures

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

Table 5-2 Environmental mitigation measures — water and drainage

Mitigation measures
Locate portable site amenities, chemical storage and stockpiles of erodible materials away from watercourses, drainage lines and flood prone areas.
Bund potential contaminants and store on robust waterproof membrane, away from drainage lines.
Keep functioning spill kit on site for clean-up of accidental chemical/fuel spills and aquatic spill kit on site for clean-up of accidental chemical/fuel spills in mapped key fish habitat. Keep the spill kits stocked and located for easy access.
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.
The contractor will obtain a groundwater Water Supply Works Approval and where dewatering is >3 ML per water year (from 1 July) a Water Access Licence from DPE Water will also be obtained. The contractor is responsible for complying with the approval conditions (such as protecting water quality; minimising aquifer extraction volumes, monitoring extraction with flow meters and recording volumes).
During the works, stockpiles are to be kept to a minimum to ensure that off-site disposal or adequate mitigation measures to prevent sedimentation of waterways can be established in the event of a large flood warning.
Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Ensure bunded areas have 110% capacity of the largest chemical container, or an additional 25% capacity of the total volume stored within (whichever is greater). Tightly secure chemicals and fuels in vehicles. Clearly label all chemicals.
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.

Mitigation measures
Conduct any equipment wash down within a designated washout area.
Ensure equipment is leak free. Repair oil/fuel leaks immediately or remove from site and replace with a leak-free item.

5.2.3 Flora and fauna

Existing environment

Vegetation within the study area mainly consists of exotic grasses with mature riparian vegetation present along Badgerys Creek. The works are entirely within the SWGC on certified land and non-certified land (Figure 5-1).

One threatened fauna species, Cumberland Plain Land Snail (*Meridolum corneovirens*), has been recorded within the study area, in the southern verge of Gurner Avenue, about 150 m east of a carbon canister install location. Other threatened fauna species records within 100 m of the study area include:

- White Bellied Sea Eagle (*Haliaeetus leucogaster*)
- Grey-headed Flying Fox (*Pteropus poliocephalus*)
- Southern Myotis (*Myotis aelleni*).

One threatened flora species, *Dillwynia tenuifolia*, has been recorded within the study area about 22 m south of a carbon canister install location on Western Road (Figure 2-2).

A previous flora and fauna assessment along Badgerys Creek, in the SP1229 site (Biosis, May 2022) identifies the riparian vegetation as PCT 835 Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion. The vegetation community is in a low condition state with multiple weeds present at ground level and above. This PCT is listed as a Threatened Ecological Community (TEC) under the BC Act. No threatened flora or fauna species were identified during the field investigation; however, PCT 835 is potential habitat for the Cumberland Plain Land Snail. Three priority weed species (Madeira Vine, Bridal creeper, Green Cestrum) were also identified during the field investigation.

The proposal is located within and adjacent to bushfire prone land. The contractor will review NSW rural fire service updates and follow Total Fire Ban (TOBAN) mandates.

The riparian corridor of Badgerys Creek is mapped as a high potential terrestrial groundwater dependent ecosystem (GDE).

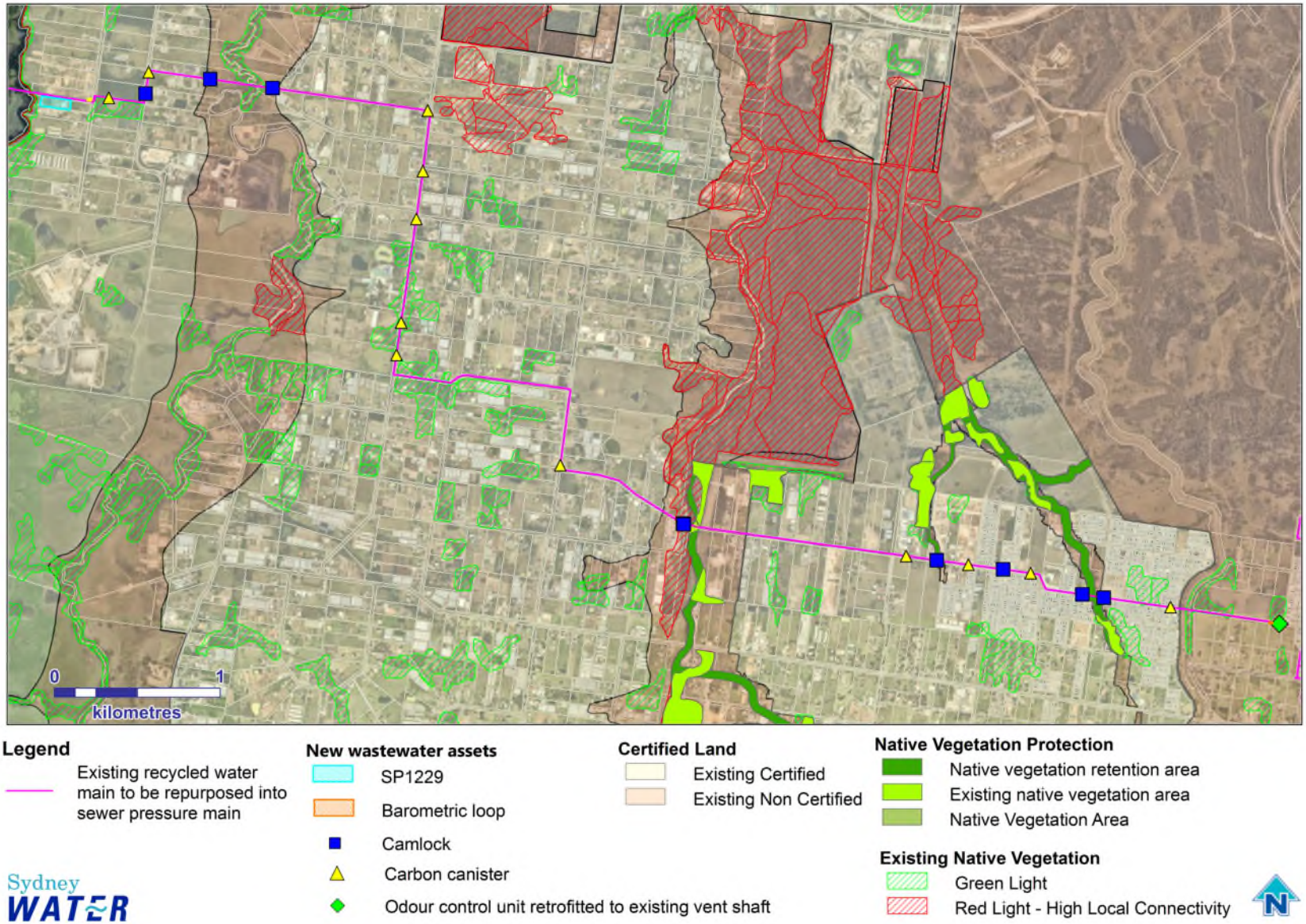

Figure 5-1 Biodiversity certification – South West Growth Centre

Construction impacts

During construction, clearing of about 200 m^2 of certified vegetation (shrubs and long grasses) on the northern corner of Pitt Street and Lawson Road, Badgerys Creek is required to improve sight distances and visibility around the corner (Figure 5-2). The removal of this certified vegetation has already been offset under the Growth Centres Biodiversity Offset program and application of the Sydney Water Biodiversity Offset Guide is not required.

Figure 5-2 Vegetation to be removed at the corner of Pitt Street and Lawson Road, Badgerys Creek

No impacts to the threatened species or TEC mentioned above are expected given the lack of suitable habitat within the work sites and the minor vegetation removal proposed. The carbon canister installation works closest to the *Dillwynia tenuifolia* records on Western Road are within the road reserve and the adjacent verge is regularly mowed (see Figure 5-3). No impacts to this threatened flora are expected and as the works are within certified land, no further threatened species assessment is required.

Figure 5-3 Work location closest to *Dillwynia tenuifolia* records

There is a low likelihood of potential impacts to GDEs within the study area. Impacts could occur through drawdown of the water table from excavation activities, creation of potential barriers to underground flow, and wastewater or chlorinated water entering the environment due to pipe failure during operation. Mitigation measures within this REF would reduce the risk of impacts to GDEs.

Operational impacts

Landscape vegetation will be planted around the outside of SP1229 along the fence line.

No direct operational impacts are anticipated on vegetation communities, flora or fauna. Indirect operational impacts to biodiversity may result from noise disturbance and infrequent wastewater discharge. Bushfire risk is considered low as the above ground infrastructure (i.e. the pump station) is clear of surrounding vegetation.

Mitigation measures

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

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, without additional environmental assessment (but only after consultation with the Environmental and Community Representatives and affected landowners). Sydney Water considers vegetation removal in these circumstances has minimal environmental impact. • Any minor: - vegetation trimming or - removal of exotic vegetation or - removal of planted native vegetation where the vegetation is not a threatened species (including a characteristic species of a threatened community or population), heritage listed, in declared critical habitat or in a declared area of outstanding biodiversity value. • Any removal of remnant vegetation where there is no net change to environmental impact (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 native fauna is encountered on site, stop work and allow the fauna to move away unharassed. Engage a licenced ecologist if assistance is required to move fauna.
If any threatened species (flora or fauna) is discovered during the works, stop work immediately and notify the Sydney Water Project Manager. Work will only recommence once the impact on the species has been

Mitigation measures
assessed and appropriate control measures provided.
If any damage occurs to vegetation outside of the study area (as shown in the CEMP), notify the Sydney Water Project Manager and Environmental Representative so that appropriate remediation strategies can be developed.
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. Record Pesticides and Herbicides use in accordance with SWEMS00017.
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.
In TOBAN: Activities involving general purpose hot works (that are not essential/emergency works) require an exemption. Exemption requests are to be submitted to CDResiliencePrograms@sydneywater.com.au or CustomerHub.DutyManager@sydneywater.com.au
If replanting near Sydney Water pipelines refer to '*Which trees can damage wastewater pipes?'* link from Sydney Water website.
Protect Groundwater Dependent Ecosystems by minimising extraction of groundwater and removal of native vegetation.

5.2.4 Heritage

Existing environment and potential impacts

Aboriginal heritage

The proposal is located within a high risk landscape for Aboriginal Heritage (<200 m from a waterway). A search of the AHIMS database was completed on 17 January 2024. There are 6 sites located within 200 m of the works. Inspection of the site cards and an extensive search revealed these sites are remote to the work area and will not be impacted (see Table 5-4 for details). [redacted]

Table 5-4 Aboriginal Heritage sites within 200m of the proposal

Redacted to protect sensitive Aboriginal heritage information

A heritage specialist from Kelleher Nightingale Consulting inspected the SP1229 site to determine the presence/absence of Aboriginal heritage in October 2022. The area along the creek line within 185 Lawson Road, and a small portion of the adjoining property at 195 Lawson Road, was identified as a PAD (Figure 2-1). SP1229 has been positioned to avoid any impacts to this area of PAD. The site has been previously disturbed by construction of the existing residence, associated utilities and the IOP.

The barometric loop site is within an existing Aboriginal Heritage Impact Permit (AHIP) application area (C000010554, AHIMS ID: 3837). This AHIP is held by Sydney Water for the Austral Precinct Wastewater Servicing Stage 1, South West Growth Centre project. No Aboriginal heritage items are documented in this location and the site has been extensively disturbed during construction of the existing recycled water main and roadway.

The works are occurring in an area previously disturbed by development, the construction of the roadways and underground utilities, so the risk of potential Aboriginal objects existing within the study area is low. Provided the mitigation measures below are implemented the proposal is unlikely to have any impacts on Aboriginal heritage. The works can proceed with caution.

Non-Aboriginal heritage

No works will occur within the curtilage of any heritage item. The existing recycled water main crosses the curtilage of the State heritage listed Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) ID:01373. No disturbance is required in this area and therefore no impact to this item will occur.

Mitigation measures

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

Table 5-5 Environmental mitigation measures — heritage

Mitigation measures
Do not make publicly available or publish, in any form, Aboriginal heritage information on sites / potential archaeological deposits, particularly regarding location.
Repeat the basic AHIMS search if it is older than 12 months. Conduct additional assessment if new sites are registered and could be impacted by the works.
If any Aboriginal object or non-Aboriginal relic is found, cease all excavation or disturbance in the area and notify Sydney Water Project Manager in accordance with SWEMS0009.
All site personnel must be inducted by a heritage specialist (or delegate) before starting work on site. The induction should include clear explanation of heritage constraints, go and no-go areas, processes and measures to avoid impacts, stop work procedures, and contact details to obtain further heritage guidance if needed.
Strictly no works ground disturbing works to occur within the mapped PAD (Figure 2-1) at the SP1229 site without further investigation and/or an AHIP.

5.2.5 Noise and vibration

Existing environment

The proposal is in a predominantly rural residential/agricultural setting. Existing noise levels in the study area are primarily influenced by traffic on surrounding local roads, noise from nearby development sites, construction of the WSA, combined with noise from the mixed rural residential environment. The Badgerys Creek precinct will be affected by aircraft noise and is not suitable for noise sensitive land uses such as residential development. It will provide land for a range of employment generating uses that will benefit from proximity to the WSA.

The nearest residential receiver to SP1229 is within the same lot, about 75 m east, with frontage along Lawson Road. The SP1229 site is also adjacent to the boundary of the WSA on the western side of Badgerys Creek. The nearest residential receiver to the barometric loop site is about 85 m east of the works.

Construction impacts

The proposal will generate noise and vibration during construction from plant and associated construction activities. Equipment, vehicles and machinery that would typically be used during construction of the proposal and that have potential to generate noise include:

- excavators
- drill rig
- backhoes
- concrete saws
- compactor

- concrete pumps
- air compressors
- generators
- light and heavy vehicles movements.

Most work and deliveries would be scheduled to occur during standard daytime hours during the working week:

- 7am to 6pm, Monday to Friday
- 8am to 1pm on Saturday
- No work on Sundays or public holidays.

Some nightwork may be required for works within/adjacent to roadways to minimise impacts to traffic. The proposal is expected to take up to 36 months to construct. There are a limited number of residential dwellings in proximity to the SP1229 site and therefore, only a limited number of sensitive receivers would be affected for extended periods of time. Retrofitting works along the existing recycled water main will be temporarily noisy and will take up to 2 days at any one location. The barometric loop works will be short term (<2 months) with infrequent noise generating works.

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 will be low-medium risk and therefore a quantitative noise impact assessment was undertaken.

The purpose of the noise assessment is to assess the predicted worst-case noise impacts. This will identify recommended additional mitigation measures for impacted receivers at different distances from the works, which will guide the community engagement for the sites. The Transport for NSW (TfNSW) Construction and Maintenance noise estimator tool (TfNSW, 2022) was used for the assessment. The noisiest plant chosen for the noise assessment is the 13.5 t excavator with hammer, as this is the closest size equipment to the 30 t excavator with hammer that may be used.

As a conservative, worst-case approach the noise assessment considered that noise from this equipment will be generated at the boundary of SP1229, at the closest point to receivers. The works at the SP1229 site are considered low-medium risk as there will be no night works required, there are very few sensitive receivers in close proximity and noisy works will occur intermittently throughout the construction program. There are also options for noise containment including the use of noise blankets.

The predicted worst case noise impacts for residential receivers during day work are shown in Figure 5-4. This figure includes recommended mitigation measures at different distances from sensitive receivers, as identified by the noise estimator tool. These are to be considered by the community team and offered where appropriate and include notification (e.g. letter box drop) of sensitive receivers within 170 m of the site.

All reasonable and feasible measures will be implemented to reduce noise impacts during construction, therefore potential noise impacts are considered minor.

The noise estimator includes indicative minimum working distances for different vibratory plant and equipment. The largest vibratory plant (i.e. large excavator with hammer) required for construction works at the SP1229 site has a minimum working distance of 22 m. No physical structures are present within this distance and therefore no structural impacts from vibration are expected.

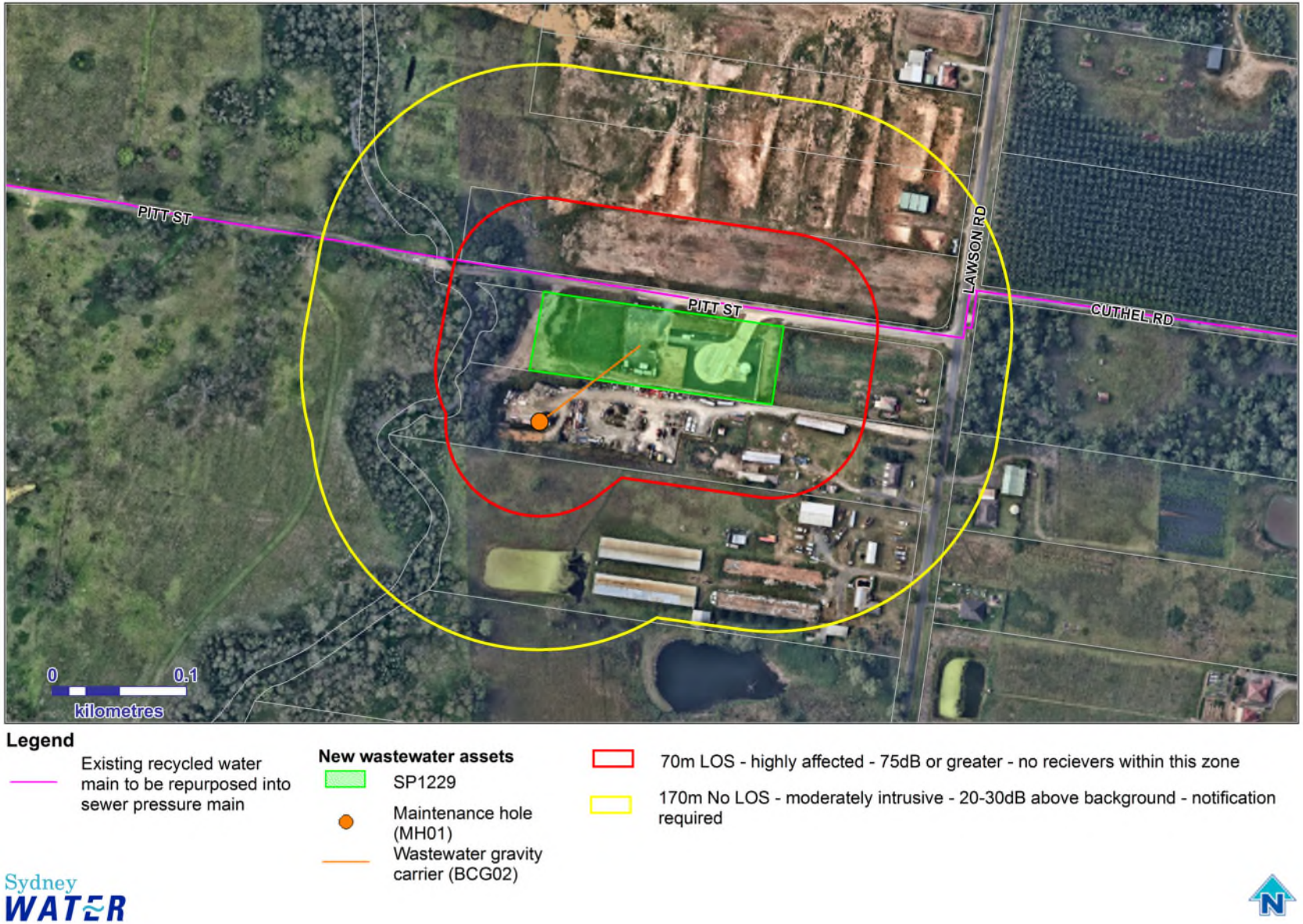

Figure 5-4 Worst case noise impacts at SP1229 - day work

Operational impacts

During operation, noise from the pump station is likely to be minimal and would not result in a detectable noise increase perceptible to existing nearby residents, about 75 m away. The pump station is not expected to be intrusive to potential future receivers that would be in closer proximity as it consists of underground, submersible pumps and will be designed to comply with the EPA Noise Policy for Industry (2017). Operational noise levels will be assessed during detailed design and any noise attenuation measures identified and implemented to ensure compliance with the Noise Policy for Industry (EPA, 2017).

Noise may be generated during operational maintenance activities, however these would generally be of short duration and mitigated through consultation with receivers. No operational vibrations are expected to occur.

Mitigation measures

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

Table 5-6 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 mitigation measures into the CEMP: • identify and consult with the potentially affected residents prior to the commencement: - 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 (e.g. 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 • plant or machinery will not be permitted to warm-up near residential dwellings before the nominated working hours • appropriate plant will be selected for each task, to minimise the noise impact (e.g. all stationary and mobile plant will be fitted with residential type silencers) • engine brakes will not be used when entering or leaving the work site(s) or within work areas

Mitigation measures

- regularly inspect and maintain equipment in good working order
- arrange work sites where possible to minimise noise (e.g. generators away from sensitive receivers, site set up to minimise use of vehicle reversing alarms, site amenities and/ or entrances away from noise sensitive receivers)
- use natural landforms/ mounds or site sheds as noise barriers
- schedule noisy activities around times of surrounding high background noise (local road traffic or when other noise sources are active).

If works beyond standard daytime hours are needed, the contractor would:

- justify the need for out of hours work (OOHW) and why it is not possible to carry out the works during standard daytime hours
- consider potential noise impacts and: implement the relevant standard daytime hours mitigation measures; Sydney Water's Noise Management Code of Behaviour (SWEMS0056.01) and document all reasonable and feasible management measures to be implemented
- identify additional community notification requirements and outcomes of targeted community consultation
- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

If night works are needed, the contractor would:

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

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

- justify why all other times are not feasible
- consider potential noise impacts and, implement relevant standard daytime, out of hours and night-time mitigation measures and other reasonable and feasible management measures
- identify community notification requirements
- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

Mitigation measures
Community engagement will begin before work starts, with notification recommended to impacted residents within the zone of influence (170 m from noise generating works).
Consider less vibration intensive methodologies where practicable and use only the necessary sized and powered equipment.

5.2.6 Air and energy

Existing environment

A search of the National Pollution Inventory identified no pollutant sources within 1 km of the proposal. The nearest listed items are Boral Bricks about 1.2 km away and Inghams Poultry Farm about 1.4 km away (DCCEEW, 2023). Local pollution sources include odours from agriculture, vehicle emissions, solid fuel heaters, bushfires and backyard burning.

The proposal is in a low density rural residential/agricultural area. Potential sensitive receivers include scattered rural residential/commercial properties surrounding the site.

Construction impacts

During construction, the proposal has the potential to impact on air quality by generating:

- dust during excavation and stockpiling
- dust generated by construction vehicles travelling on disturbed/unsealed access routes, prior to installation of the sealed access road
- emissions from machinery, equipment and vehicles used during construction.

During construction, dust and exhaust gases (air emissions) could impact the air quality and amenity of nearby sensitive receivers, and would be dependent upon atmospheric conditions. Construction work and restoration of disturbed areas will be undertaken progressively. This will minimise potential air quality impacts and reduce the exposure of any one sensitive receiver to air emissions. These potential air quality impacts will be localised and short-term in nature, and unlikely to have a significant impact with the application of the environmental mitigation measures.

Operational impacts

The proposal has been designed with appropriate ventilation and odour management systems to avoid any operational odour impacts being experienced by sensitive receivers.

Odour and corrosion modelling will be completed during detailed design of the project. Space has been allocated within the SP1229 footprint for an OCU.

During operation, wastewater maintenance holes and the pump station may be opened when maintenance or repair works are required. This may result in odour impacts to nearby receivers which would largely be dependent on wind direction and strength. These impacts would be temporary in nature and appropriate mitigation measures would be implemented to minimise the potential for adverse impacts.

The proposal would require increased energy to operate SP1229 and this would marginally increase Sydney Water's total energy use. The proposal would be operated in accordance with energy use procedures that apply to Sydney Water's existing network.

Mitigation measures

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

Table 5-7 Environmental mitigation measures — air and energy

Mitigation measures
Use alternatives to fossil fuels where practical and cost-effective.
Track energy use as per SWEMS0015.28 Contractor NGER template.
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.
Minimise the potential for odours (e.g. select appropriate heights for vent stacks, install carbon canisters on existing air valves, minimise the number of open access chambers.)

5.2.7 Waste and hazardous materials

Existing environment and potential environmental impacts

Our corporate objectives include 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.

The proposal has the potential to generate the following waste streams:

- general construction waste such as excess concrete, redundant pieces of pipe/fittings
- broken bricks, timber, paper, plastic and metal

- green waste from clearing vegetation including weeds
- domestic waste including food scraps, aluminium cans, glass bottles, plastic and paper containers, and putrescible waste generated by site construction personnel
- wastewater and grey water from temporary amenities
- spoil that is not suitable for backfilling, from trenching and other excavations
- groundwater dewatered from excavations
- wastewater and drilling fluid generated from trenchless construction and the compound sites
- IOP tank and associated pipework and fittings.

The largest volume of waste generated by construction would be excess spoil from excavations. Wherever possible, suitable excavated spoil would be re-used on site for backfilling, landscaping and other uses. Should any material be found to be unsuitable, it would be disposed of as detailed in the mitigation measures below. If spoil is unable to be re-used on-site, opportunities for off-site re-use would be investigated.

If re-use opportunities are unable to be identified, or the spoil is unsuitable for re-use due to its geotechnical or contamination characteristics (including asbestos), spoil would be tested and classified according to the Waste Classification Guidelines (NSW EPA, 2014) and disposed of at an appropriately licensed facility.

Construction by trenchless methods will involve the use of drilling fluids. The drilling fluids that will be used will be an environmentally benign substance such as bentonite. The drilling fluids will be circulated through the trenchless section and then screened to remove drill cuttings. Any waste drill cuttings and drilling fluid will be tested, classified, treated and disposed of appropriately.

General workforce waste including food packaging will be generated in minor quantities and will be classified as putrescible or non-putrescible general solid waste.

No hazardous wastes are expected to be generated. It is not expected that the proposal will involve managing hazardous waste or HBM. Should the works uncover asbestos or any other hazardous or contaminated material, it will be managed through an unexpected finds procedure.

Opportunities to reduce, recycle and reuse on this project would be sought with the contractor and documented in the Waste Management Plan or CEMP.

Operational impacts

Operation of the proposal may generate minor volumes of waste during maintenance activities. Any wastewater discharged would be in accordance with Sydney Water's Discharge Protocols Standard Operating Procedure. Any operational wastes generated during maintenance would be managed and disposed of in accordance with Sydney Water's standard operating procedures and disposed of at an appropriately licensed waste disposal or recycling facility.

Mitigation measures

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

Table 5-8 Environmental mitigation measures — waste and hazardous materials

Mitigation measures
Manage waste in accordance with relevant legislation and maintain records to show compliance e.g. 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, sort waste streams to maximise reuse/recycling in accordance with the *Waste Avoidance and Resource Recovery Act 2001*.
Manage waste and excess spoil in accordance with the NSW EPA Resource Recovery Orders and Exemptions (if applicable) and / or Waste Classification Guidelines. Where materials are not suitable or cannot be reused onsite or offsite, recycle soils at a licensed soil recycling facility or dispose at an appropriately licenced landfill facility.
Prevent pollutants from escaping including covering skip bins.
Dispose excess vegetation (non-weed) that cannot be used for site stabilisation at an appropriate green waste disposal facility.
If fibro or other asbestos containing material is identified, restrict access and follow Sydney Water's Asbestos Management – Minor Works procedure, Document Number 746607. Contact Sydney Water Project Manager (who will consult with Property Environmental Services propertyenvironmental@sydneywater.com.au).
The contractor should use the Sydney Water Material Stockpile and Material Receiver Dashboard and Register to identify potential opportunities for spoil reuse between projects. The Material Receiver Dashboard can also be used to identify suitable waste facilities for material that cannot be reused. It can be accessed via the SWDelivery Portal.

5.2.8 Traffic and access

Existing environment

Most of the proposal will be constructed on private property or in the road reserve and can be accessed via the local road system. Access to SP1229 will be from Pitt Street, Badgerys Creek. Pitt Street is currently a combined single lane road in both directions with no formalised footpaths. All roads affected by the proposal are local roads managed by Liverpool City Council except for Devonshire Road, Kemps Creek which is a regional road managed by TfNSW. There are 2 bus stops within the study area along Western Road.

The barometric loop site is in the verge of a disused section of Southern Cross Avenue (see Figure 5-5) with no formalised footpaths. Access to this area is through a locked gate. Concrete blocks have been installed at this location to prevent public use of the road.

Figure 5-5 Barometric loop location on Southern Cross Avenue, Hoxton Park

Potential impacts

The hydrostatic testing and retrofitting works are located on or adjacent to various local roads with low to medium density traffic. Temporary lane closures and traffic management will be required to safely divert traffic around the work sites (see Figure 5-6 for typical footprint). While traffic volumes on these roads are expected to be low, this has the potential to cause minor traffic delays. A traffic management plan (including any required ROLs from council) would be prepared in consultation with the Liverpool City Council before construction starts. Temporary access through private property at 16 and 23 Sumbray Avenue may be required to reach the camlock retrofit location adjacent 16 Sumbray Avenue.

Figure 5-6 Typical footprint of retrofitting works in the road reserve

The proposal would result in a minor, short-term increase in heavy vehicle movements on the surrounding road network. Total vehicle numbers and movements are expected to be low, with up to 20 vehicles at one time. The proposal will require heavy vehicle movements during construction for the delivery of construction materials including concrete and excavation and haulage operations. In addition, light vehicles would be required to transport staff and small items of equipment to and from the work sites. The vehicles would be located at individual sites for short periods of time and would be moving progressively along the alignment. Some private property access and street parking may be temporarily impacted during the works.

There will be more regular plant and vehicle movement in and out of the SP1229 site, with vehicle movements likely to peak at the start and end of each shift. Partial road closures may be required at Pitt Street during construction of the pump station. A traffic management plan (including any required ROLs from council) would be prepared in consultation with Liverpool City Council before construction starts.

A new permanent all-weather sealed access road (8 m wide), off Pitt Street, is required for the pumping station. A vehicle turning and parking area capable of taking a maximum length semi-trailer (20kL) with 8 tonne axle loads shall be provided within the site. Bollards shall be placed, where required, to protect the wet well, valve chamber, emergency storage structure and above ground structures from vehicles.

During operation, maintenance activities would be performed in line with Sydney Water's existing maintenance procedures. An increase in traffic during operation is not expected.

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 low.

Table 5-9 Environmental mitigation measures — traffic and access

Mitigation measures
Prepare a Traffic Management Plan (TMP) in consultation with council before construction starts. Liverpool City Council, emergency services, bus companies and the community would be notified of traffic control arrangements including the timing of any temporary road and lane closures.
Consult with the relevant traffic authority about managing impacts to pedestrian traffic, signposting, parking, line-marking or if traffic control or pavement restoration is required.
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.).
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.

5.2.9 Social and visual

Existing environment

The existing visual environment is representative of a rural-residential area interspersed with areas of development including the WSA. Residential properties are predominantly single or double storey detached dwellings on acreage lots. The proposal is currently within a rural-residential area, however future industrial developments are anticipated for the area.

The existing recycled water main is surrounded by rural, rural living and/or agricultural lots, and lots undergoing earthworks for residential housing. The pipeline is also located within 200 m of a college, an artificial drainage system, a memorial park and assorted agricultural and light industrial businesses, including a farm, garden centre, real estate agency, property management company and a catering company.

The proposal could potentially impact on social amenity in a variety of ways, some of which have been assessed in other sections of this REF:

- Noise and vibration (Section 5.2.5)
- Air quality (Section 5.2.6)
- Traffic and access (Section 5.2.8).

Construction impacts

During construction, there would be temporary impacts on visual amenity from equipment, generation of waste and construction activities such as earthworks within the study area. There will also be some temporary visual impacts associated with the establishment of site compounds and worksites during construction. These temporary visual impacts would be mitigated in consultation with stakeholders, such as council and residents, and the mitigation measures listed below.

Operational impacts

Once operational, the proposal would have significant social benefits, enabling the development of WSAGA and WSA by providing a wastewater network that supports the growth of the Badgerys Creek precinct and the creation of 250,000 new jobs in Western Sydney.

Most of the new infrastructure would be located below ground and would not be visible once operational. Visual impacts associated with above ground structures would consist of:

- SP1229 buildings
- barometric loop (11 m tall)
- ventilation shafts (up to 18 m tall).

Considering the future industrial use of the Badgerys Creek precinct, these new above ground structures are not expected to significantly impact the visual character of the environment. The barometric loop is required temporarily and will be decommissioned and removed prior to stage 2 works. The pump station will be landscaped to minimise any permanent visual impacts. The pipelines will be entirely underground and will not be visible. There will be a positive social impact during operation by capturing and transferring wastewater for treatment.

Mitigation measures

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

Table 5-10 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.
Minimise visual impacts (e.g. retain existing vegetation where possible).
Restore work sites to pre-existing condition or better.
Direct artificial light away from sensitive receivers where possible (i.e. residents, fauna or roadways).
Maintain work areas in a clean and tidy condition.
Regular engagement with the local community and WSA will be performed in accordance with the project Community and Stakeholder Engagement Plan to manage any impacts and ensure the scope of works performed by Sydney Water is communicated accurately.

5.2.10 Cumulative and future trends

Potential environmental impacts

The proposal is located in an area that is subject to ongoing development of the Badgerys Creek precinct. Cumulative impacts are unlikely given the small scale of the proposal relative to the overall works planned within the SWGC.

A search of the Major Projects Planning Portal was undertaken and identified a number of development projects planned within the Liverpool LGA.

Cumulative impacts with other local development occurring in the area may include:

- cumulative noise and air quality impacts from works being undertaken concurrently
- potential traffic management issues during construction
- community construction fatigue as a result of works being undertaken simultaneously or concurrently.

The proposal is required to support the future population growth in the SWGC and as such facilitates the progression of residential developments in the locality. Implementing mitigation measures will reduce the scale and extent of any potential cumulative impacts.

During operation, minor increases in noise and traffic are anticipated due to maintenance activities of the pump station. However, with the rapid development of the SWGC, these additions to the greater environment are considered negligible.

Future trends such as climate change were considered including factors such as bushfires, flooding, extreme heat and extreme storm events that could impact the proposal. The proposal is unlikely to be impacted by future trends because most of the infrastructure is located below ground and the pump station is located above the 1% AEP flood level. SP1229 has also been designed with permeable surfaces to reduce runoff that could add to the future trend of increased local floods.

Mitigation measures

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

Table 5-11 Environmental mitigation measures — cumulative and future trends

Mitigation measures
Coordination of works with other ongoing or proposed development would be required to minimise negative impacts or conflicts with construction scheduling.

5.2.11 General environmental management

Table 5-12 Environmental mitigation measures — general environmental management

Mitigation measures
Prepare a Construction Environmental Management Plan (CEMP) addressing the requirements of this environmental assessment. The CEMP should identify licence, approval and notification requirements. Prior to the start of work, all project staff and contractors will be inducted in the CEMP. The CEMP must be readily available on site and include a site plan which shows: • go/ no go areas (e.g. PAD extent) and boundaries of the work area including locations of lay-down and storage areas for materials and equipment • location of environmental controls (including erosion and sediment controls, any fences or other measures to protect vegetation or fauna, spill kits) • location and full extent of any vegetation disturbance.
Sydney Water's Project Manager (after consultation with the Project's environment and community representatives and affected landowners) can approve temporary ancillary construction facilities (such as compounds and access tracks), without additional environmental assessment or approval if the facilities meet the following principles: • limit proximity to sensitive receivers • no disruption to property access • no impact to known items of non-Aboriginal and Aboriginal heritage • outside high-risk areas for Aboriginal heritage • use existing cleared areas and existing access tracks • no impacts to remnant native vegetation or key habitat features • no disturbance to waterways • potential environmental impacts can be managed using the mitigation measures in this REF • no disturbance of contaminated land or acid sulfate soils • will be rehabilitated at the end of construction. The contractor must demonstrate in writing how the proposed ancillary facilities meet these principles. Any facilities that do not meet these principles will require additional environmental impact assessment. The agreed location of these facilities must be shown on the CEMP site plan and appropriate environmental controls installed.
Prepare an Incident Management Plan (IMP) outlining actions and responsibilities during: • predicted/ onset of heavy rain during works • spills • unexpected finds (e.g. heritage and contamination) • other potential incidents relevant to the scope of works.

Mitigation measures
All site personnel should be inducted into the IMP.
To ensure compliance with legislative requirements for incident management (e.g. *Protection of the Environment Operations Act 1997)*, Sydney Water's employees and contractors will follow SWEMS0009. Attach SWEMS0009 to the CEMP.
The Delivery Contractor must conduct pre-mobilisation and post-demobilisation soil sampling on compound sites to confirm no residual impacts.
Complaints to be managed in accordance with Sydney Water's Complaints Procedure and relevant Community Engagement Plan.
Should the methodology or alignment change from the EIA, no further environmental assessment is required provided the change: • remains within the study area for the EIA and has no net additional environmental impact • is outside the study area for the EIA but: - reduces impacts to biodiversity, heritage or human amenity after consultation with any potentially affected landowners and relevant agencies - avoids engineering (for example, geological, topographical) constraints after consultation with any potentially affected landowners and relevant agencies. The contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.

6 Conclusion

Sydney Water has prepared this REF to assess the potential environmental impacts of Badgerys Creek Wastewater Network Stage 1, Package 1. The proposal is required to provide a reliable wastewater network that facilitates further development of the SWGC and WSA.

The main potential construction environmental impacts of the proposal include impacts from excavation, noise and traffic. During operation, the impacts are associated with visual amenity, noise and odour. 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.

Appendix A – Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community from noise, traffic and odour. There will be environmental improvements by providing a reliable wastewater service.
Any transformation of a locality	The proposal will not result in the transformation of a locality. The pump station site already contains above ground wastewater infrastructure (IOP tank). Although parts of SP1229 and the barometric loop are above ground, it is a small-scale project compared to other nearby projects such as WSA.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality. The proposal will lead to environmental improvements by ensuring a reliable wastewater service to collect and treat wastewater, minimising any impacts on the ecosystem
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal will not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	The proposal will not have any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations. Impacts to known Aboriginal heritage items and PADs have been avoided by design.
Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)	The proposal will not have any impact on the habitat of protected animals.
Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air	The proposal will not be endangering any species of animal, plant or other form of life, whether living on land, in water or in the air.
Any long-term effects on the environment	The proposal will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable and modern wastewater service for the area.
Any degradation of the quality of the environment	The proposal will not cause the degradation of the quality of the environment.
Any risk to the safety of the environment	The proposal will not increase risk to the safety of the environment.

Section 171 checklist	REF finding
Any reduction in the range of beneficial uses of the environment	The proposal will not reduce the range of beneficial uses of the environment.
Any pollution of the environment	Environmental mitigation measures will mitigate the potential for the proposal to pollute the environment. The proposal will operate in accordance with EPL 372.
Any environmental problems associated with the disposal of waste	Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not increase demand on resources, that are, or are likely to become, in short supply.
Any cumulative environmental effect with other existing or likely future activities	The proposal is unlikely to have a cumulative environmental effect with other existing or likely future activities.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal will not have any impact on coastal processes or hazards, and coastal processes and coastal hazards will not have any impact on the proposal.
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	The proposal is to service growth and the applicable strategic planning statements or plans have been considered in the system planning and options selection process.
Any other relevant environmental factors.	The proposal has been assessed against the factors listed above, and there are no other relevant environmental factors to consider.

Appendix B – Consideration of 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
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 (i.e. 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

Aboriginal heritage information must not be made publicly available or be published in any form or by any means by Sydney Water or our contractors / joint ventures, unless written approval has been provided to Sydney Water from DPE's AHIMS Registrar .

For publicly displayed REFs, all Aboriginal heritage information that identifies individual sites must be removed.

SW 57 04/24

SWEMS0025.01v21