Review of Environmental Factors

Project title: SWEMS0025.12_Mamre Road Precinct Recycled Water - Clifton Avenue, Kemps Creek

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of the Mamre Road Precinct – Installation of Recycled Water Pipeline on Clifton Avenue. 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 noise and vibration, in addition to social and visual amenity impacts. There are no expected impacts during the operation. The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

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

Certification

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

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
[redacted]	[redacted]	[redacted]	[redacted]
REF author Sydney Water Date: 26.11.2024	Senior Environmental Scientist Sydney Water Date: 26.11.2024	Project Manager Sydney Water Date: 26.11.2024	Senior Manager Environment and Heritage Services Sydney Water Date: 29/01/2025

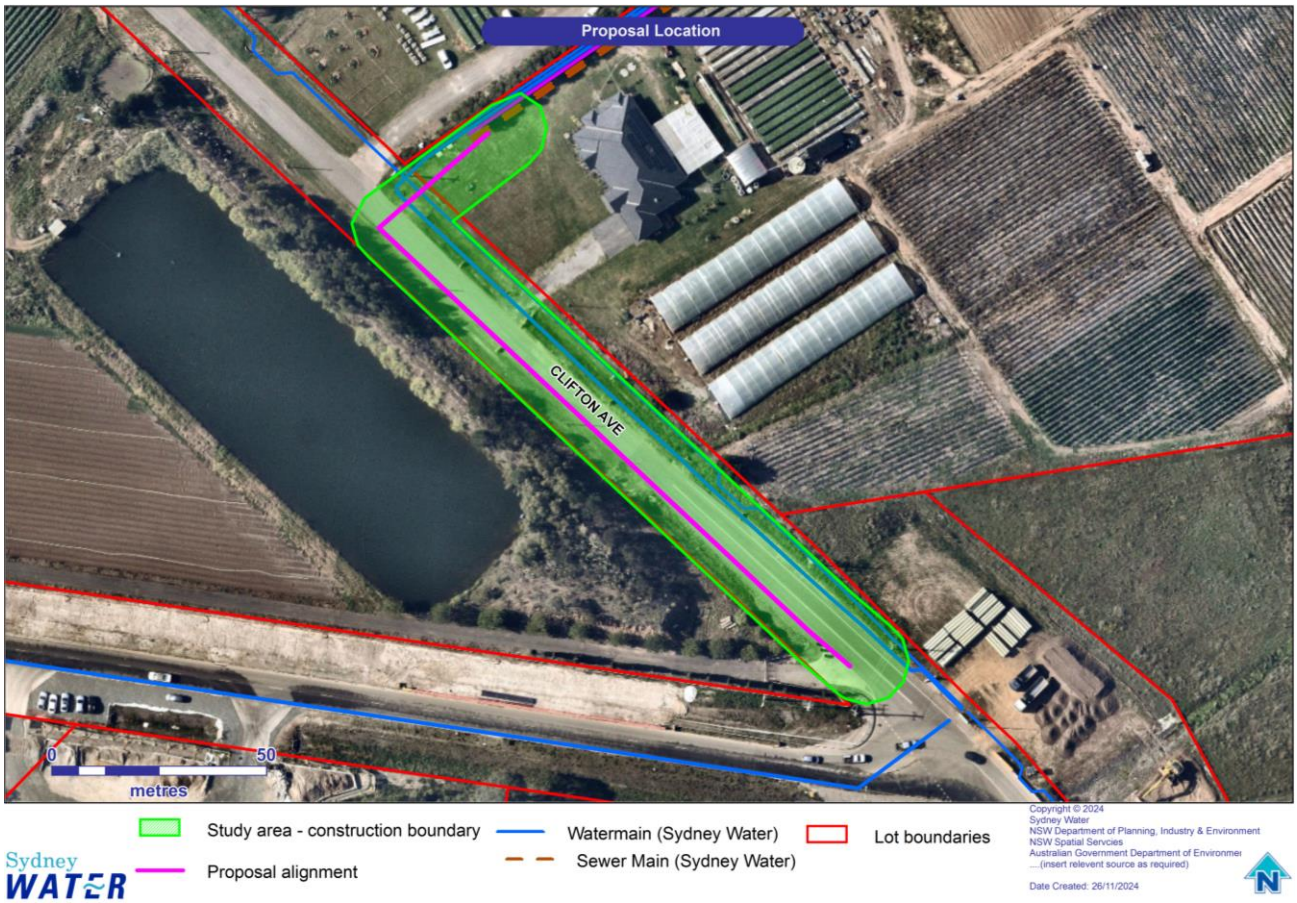
2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal need and objectives	The proposal is part of the Mamre Road Precinct program. This program is required to ensure Sydney Water can meet and service the growing demand for recycled water within the Mamre Road Precinct.
Consideration of alternatives/options	Two options were considered: • Option 1: 'do nothing', and • Option 2: the proposal. Option 1: 'do nothing' was not considered as his option would not meet the demand for water infrastructure within the Mamre Road Precinct. To meet Sydney Water's commitment to service the growing demand for the Mamre Road Precinct program, Option 2 was recommended and is the subject of this REF
Proposal description and methodology	The proposal includes the construction of a 280 m long recycled water pipeline (approx.). The pipeline route for the proposal passes through areas of private property and within the road reserve of Clifton Avenue, Kemps Creek. The upstream end of the pipeline will connect with infrastructure currently being delivered as part of the Advanced Water Recycling Centre (AWRC) near the corner of Clifton Avenue and Paper Road, with the downstream end to connect with existing infrastructure within privately owned land at 258 Clifton Road. The size of the pipeline will be confirmed during the detailed design but is expected to have a diameter of between 500 mm – 600 mm, and will be installed via open trenching methods. A temporary construction compound will also be established to support construction activities for the duration of the works. While the details of the location of the construction compound will be confirmed as part of the development of the detailed design, the construction compound will be located within the study area (refer to Figure 1)
Location and land ownership	The pipeline route for the proposal passes through areas of private property and within the road reserve of Clifton Avenue, Kemps Creek. Details of the land parcels affected by the proposal are as follows:

	Owner	Lot	Land zoning
	Private	Lot 8 / DP 812284	R2 – Rural Landscape
	Penrith City Council	Road Reserve	R2 – Rural Landscape
	The location of the proposal is shown in Figure 1. An existing 4.5 m wide easement for a drinking water main exists along the northwestern boundary of the Lot 8 / DP 812284 (privately owned land). The terms of this easement would be checked to confirm that the installation of the recycled water pipeline is enabled under the terms of the easement prior to construction.		
Site establishment and access tracks	The study area can be accessed via the existing sealed road of Clifton Avenue. No mature treed vegetation is required to be removed.		
Ancillary facilities (compounds)	A construction compound will likely be required to house site sheds, construction amenities and materials laydown. While these details will be confirmed as part of the development of the detailed design, the construction compound will be located within the study area (refer to **Error! Reference source not found.**). The final location of these will be selected by the delivery contractor and remain within the study area, in consultation with the landowner(s), prior to approval by Sydney Water's Project Manager (as described in Section 6 (mitigation measures)).		
Work hours	Work and deliveries will be scheduled during standard daytime hours: • 7 am to 6 pm, Monday to Friday • 8 am to 1 pm, Saturdays. The proposal is not expected to require work outside these hours. However, Sydney Water's Project Manager can approve work outside of standard daytime hours. The approval process is described in the mitigation measures in Section 6.		
Proposal timing	Construction is expected to start in early to mid 2024 and take about eight months to complete.		

Figure 1 Location of proposal and environmental constraints



3 Consultation

Consultation required under State Environmental Planning Policies and other legislation

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

Consultation was required under section 2.10 of the TISEPP as the proposal involves the excavation of land adjacent to a Council owned road. Sydney Water, first consulted with Penrith City Council regarding the proposal and other works within the Mamre Road Precinct on 23 May 2024 via email. At the time of writing this REF, no feedback from Council had been received. Sydney Water will continue to consult with Penrith City Council throughout the detailed design phase and any comments received will be considered and incorporated as part of the project delivery as appropriate.

Further detail is provided in Appendix C.

4 Legislative requirements

Table 2 Environmental planning instruments relevant to the proposal

Environmental Planning Instrument	Relevance to proposal
Penrith Local Environmental Plan 2010 (Penrith LEP)	The proposal is located on land zoned RU2 - Rural Landscape
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126 (4) of the TISEPP permits development for the purpose of water recycling facilities to be carried out without consent on land in a prescribed zone in the prescribed circumstances. Development is carried out in the prescribed circumstances if the development is carried out by or on behalf of a public authority. Section 2.125 (Definitions) identifies that *"biosolids treatment facility, sewage reticulation system, sewage treatment plant, sewerage system and* ***water recycling facility*** *have the same meanings as in the Standard Instrument"*. **[emphasis added]**. The *Standard Instrument - Principal Local Environmental Plan (2006 EPI 155a)*, identifies that "Water recycling facilities are a type of sewerage system", which is defined as follows: "Sewerage system" means any of the following: (a) biosolids treatment facility, (b) sewage reticulation system, (c) sewage treatment plant, (d) water recycling facility, (e) a building or place that is a combination of any of the things referred to in paragraphs (a)–(d). Under Section 2.125 of the (TISEPP), a prescribed zone includes RU2 (Rural Landscape). Accordingly, as the proposal is being carried out by or on behalf of a public authority in a prescribed zone under the prescribed circumstances, the proposal is permissible without consent.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	**Vegetation in non-rural areas (Chapter 2)** The proposal is in an area or zone listed in subsection 2.3(1). However, subsection 2.4(1) of the BCSEPP states: '*This Policy does not affect the provisions of any other SEPP….*'. Similarly, Section 2.7(1) of the TISEPP identifies that in the event of any inconsistency between the provisions of Chapter 2 of the TISEPP and any other environmental planning instrument, the TISEPP prevails to the extent of the inconsistency. Accordingly, as the works are permissible without consent under the TISEPP, a

Environmental Planning Instrument	Relevance to proposal
	council permit to clear vegetation under this SEPP is not required. **Water catchments (Chapter 6)** Chapter 6 of this SEPP applies as the proposal is within the Hawkesbury-Nepean Catchment, a regulated catchment area. Section 5 of this REF assessed potential environmental impacts on water quality and quantity, aquatic ecology, flooding, access, cultural heritage, flora and fauna, and scenic quality. The assessment confirmed that potential impacts are negligible and meet the requirements of part 6.2 of the SEPP.
State Environmental Planning Policy (Precincts - Western Parkland City) 2021 (WPC SEPP)	The proposal is within land to which Chapter 4 of this SEPP applies. The proposal is on land zoned RU2 Rural Landscape. As per Subsection 4.5 of the WPC SEPP, the provisions of the TISEPP still apply as the proposal does not meet the exceptions noted in that clause. Therefore, the proposal can be undertaken without development consent. The proposal does not require any vegetation removal in areas mapped as 'existing native vegetation' on the High Biodiversity Value Areas Map under section 4.25A of the WPC SEPP. Written notice to the Planning Secretary is not required.

Table 3 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations Act 1997 (POEO Act)	Section 120 of the POEO Act states that it is an offence to pollute any waterway. The works have the potential to pollute from spills during construction. Provided the safeguards outlined in Section 6 of this REF are applied during construction, no pollution is expected. A variation to the existing EPL is not required for operation. The delivery contractor will notify the EPA and all relevant authorities as soon as they become aware of any pollution incidents that have caused or threatened material harm to the environment.	EPL variation not required	N/A
Biodiversity Conservation Act 2016 (BC Act)	Schedules 1 and 2 of the BC Act list terrestrial species, populations, and ecological communities threatened in NSW. Sydney Water are required to assess impacts to listed items according to section 7.3 of the Act. A desktop assessment has been completed which considered the impact of the proposal on threatened species, communities and their habitats, and is described in Section 5 of this REF. The assessment found that the proposal is unlikely to affect any threatened species. As such, we will not require a Species Impact Statement (SIS)/Biodiversity Development Assessment Report (BDAR) and / or approvals under this Act.	REF	N/A
National Parks and Wildlife Act 1974 (NPW Act)	The proposal will not directly or indirectly impact any known Aboriginal Archaeological sites, Aboriginal objects, or places. Also, all works will be within previously disturbed areas. It is therefore considered that the likelihood of disturbing previously unidentified Aboriginal objects is low. Refer to Section 5 of this REF.	Approval not required	N/A
Heritage Act 1977	The proposal will not directly or indirectly impact the heritage significance of any non-Aboriginal heritage listed items. Refer to Section 5 of this REF.	Approval not required	N/A

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Fisheries Management Act 1994 (FM Act)	The proposal does not include work within Key Fish Habitat or affect marine vegetation.	Permit not required	N/A
Water Act 1912/ 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 is required. However, an exemption from the need to obtain a WAL exists where the volume of water will be less than 3 ML per year. Notwithstanding, a Water Supply Work Approval (WSWA) is required under Section 90(2) for all activities that involve dewatering groundwater (e.g. dewatering an excavation such as a trench, or horizontal directional drilling), irrespective of the volume extracted. The proposal is not expected to require >3ML of dewatering during construction however some dewatering will be conducted, as such a WSWA approval is required.	WSWA (for <3ML)	Pre-construction, Sydney Water
Roads Act 1993	The proposal will require traffic control on Clifton Avenue and the nearby road intersection with Paper Road during construction. It is anticipated that there will be temporary lane closures, with a contra flow in place. Refer to Section 5 of this REF.	Road Occupancy Licence	Pre-construction, contractor
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	The proposal will not have a significant impact on any species listed on the matters of national environmental significance (MNES) or include works on Commonwealth lands	Referral not required	N/A
Water NSW Act 2014	The proposal is not located on WaterNSW lands.	Landowner consent not required	N/A

5 Environmental assessment

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

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

Aspect	Potential impacts
Topography, geology and soils	Construction of the proposal is via open trenching. Construction of the proposal will require excavation and ground disturbance which could result in potential offsite erosion and sedimentation of surrounding land and waterways. Typical trench dimensions will be up to about 2.5 m deep (from the finished surface level) and up to 1.5 m wide. Ground disturbance for the construction compounds is likely to be minimal. The proposal is not anticipated to have an adverse impact on the site topography, geology or soils of the study area and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.
Water and drainage	Previous geotechnical investigations along Clifton Avenue for the *Mamre Road Precinct Wastewater Network Review of Environmental Factors (November 2021)* encountered groundwater at 1.8m below ground level. As the proposal will be undertaken via open trenching at a depth of 2.5 m, it is likely that groundwater will be encountered during construction of the proposal and will require dewatering from excavations. As noted in Table 4 (*Water Act 1912/ Water Management Act 2000*) The anticipated groundwater extraction for the entire project is estimated to be less than 3 ML and a WAL will therefore not be required. However, the extraction (dewatering) of any intercepted groundwater can only be undertaken in accordance with a WSWA. The construction compounds are not anticipated to encounter, or impact, groundwater. The proposal is not anticipated to have an adverse impact on the water and drainage of the study area and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.
Flora and fauna	Previous assessments for the *Mamre Road Precinct Wastewater Network Review of Environmental Factors (November 2021)* identified that the study area is devoid of native vegetation. The proposal does not require the removal of any mature treed vegetation, or native vegetation along Clifton Avenue. Exotic grasses are anticipated to be removed for the compound site. Any groundcover impacted will be reinstated upon restoration of the compound sites. The proposal is not anticipated to have an adverse impact on the flora and fauna of the study area and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.

Aspect	Potential impacts
Heritage	A previous Aboriginal Cultural Heritage Due Diligence Assessment (Kelleher Nightingale Consulting, 2021) and subsequent consistency assessment (Kelleher Nightingale Consulting, 2023) identified the study area to be highly disturbed as a result of historical road construction, adjacent farming practices and residential development. The section of new pipeline will be constructed within the existing asphalt road and road corridor known as Clifton Avenue. A smaller section om the northern boundary of Lot 8 DP812284 (258 Clifton Ave, Kemps Creek) runs parallel to existing DN400mm and DN150mm water pipelines which have been subject to previous disturbance. A Basic AHIMs search was undertaken on 6 November 2024 (refer to Attachment 3), with the nearest registered site being [redacted] Based on these factors, it is considered that there are no landscapes within the study area that are likely to contain Aboriginal objects/sites. The proposal can be managed using the environmental mitigation measures specified in the *Mamre Road Precinct Wastewater Network Review of Environmental Factors (November 2021)* and the additional mitigation measures in Section 6.
Noise and vibration	Construction of the proposal is via open trenching, with potential noise and vibration impacts to nearby sensitive receivers along Clifton Avenue. The nearest sensitive receivers are 235 and 258 Clifton Ave which are approximately 150 m northeast and 30 m to the east of the proposal respectively. The proposal is expected to require the use of a number of plant and equipment including: • Articulated dump truck • Backhoe • Concrete/ boom pump • Concrete vibrator • Diesel generator • Excavator • Mobile crane • Vibration plate • Pumps • Vibration roller

Aspect	Potential impacts
	• Grader (where required). The minimum safe working distance for the vibration roller (1-2 tonnes) is assumed to be 5 m for light framed structures, 14 m for heritage and other sensitive structures and 15-20 m in accordance with the EPA Vibration Guideline (Transport for NSW Noise Estimator Tool). The proposal is approximately 20 m from the nearest sensitive receiver and is likely to experience minor vibration impacts. However, as the proposal moves further away, the minor impacts associated with vibration are anticipated to reduce. As the proposal moves further away from a receiver, the predicted construction noise impact would similarly reduce. Works will be conducted during standard construction hours and potential impacts will be short-term due to the linear nature of the works, and minimised by implementing the safeguards listed in Section 6 of this REF. The proposal is anticipated to have a /moderate noise and vibration impact of the study area and the works, which can be adequately managed using the environmental mitigation measures specified in Section 6 of this REF.
Air and energy	Air quality is usually considered in terms of odour and dust. Existing odour and dust are minimal in the study area due to the low density of residential properties and farmland. The proposal may potentially result in minor and temporary air quality impacts from: • dust generated during earthworks, and • emissions from machinery, equipment and vehicles used during construction. Given the relatively small area of disturbance for the pipeline, and the linear nature of the works, the potential for substantive dust emissions from the proposal is considered to be low. No major air quality impacts are anticipated during operation and is considered negligible. The proposal is anticipated to have a minor impact on the air quality of the study area and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.
Waste and hazardous materials	Construction of the proposal will be undertaken using an open trenching method. Typical trench dimensions will be up to about 2.5 m deep (from the finished surface level) and up to 1.5 m wide. Ground disturbance for the construction compounds is likely to be minimal. Excavated material will be used to backfill the trench, however there will be an overall surplus of spoil. This surplus will comprise the majority of the waste generated from the proposal.

Aspect	Potential impacts
	Previous site investigations for the *Mamre Road Precinct Wastewater Network Review of Environmental Factors (November 2021)* took samples soil from the study area and the results indicated that the samples were screened against threshold values from the NSW EPA Waste Classification Guidelines (2014) to establish an indicative waste classification for likely excavated materials during construction. Based on the results of the soil testing, the natural soil analysed may meet the definition of Excavated Natural Material (ENM) and could potentially be beneficially re-used on site or elsewhere. Additional samples are required to meet the densities in the ENM Resource Recovery Order. If the soils do not meet the ENM classification, the soils are classified as General Solid Waste – non-putrescible. Selected samples were also analysed for asbestos containing material. Hazards to human and ecological health from the proposal is considered to be low. The proposal is not anticipated to have an adverse impact regarding waste and hazardous substances of the study area and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.
Traffic and access	Site establishment and construction activities within the Clifton Avenue road reserve will require temporary lane closures with a contra flow arrangement in place and associated speed limit reductions. A Road Occupancy Licence(s) (ROL(s)) will be obtained by the delivery contractor in accordance with the requirements of the Roads Act prior to the commencement of relevant works. The proposal is not anticipated to have a significant adverse impact on traffic and access. The works will be managed in accordance with the environmental mitigation measures specified in Section 6 of this REF.
Social and visual	A construction compound is required for the construction of the proposal, which will be located within the study area. The compound is likely to be located within the Clifton Avenue road reserve and will be visible from Clifton Avenue for the duration of the work. A portion of the proposal lies within private property, which will be disturbed during construction, however, these areas will be reinstated to the original condition (or better) following the completion of construction activities. The proposal is not anticipated to have an adverse social or visual amenity impacts, and the works can be managed using the environmental mitigation measures specified in Section 6 of this REF.
Cumulative and future trends	A search of the DPHI's Major Projects website was conducted on 25 November 2024 and identified the following approved projects within 5 km of the proposal:

Aspect	Potential impacts
	• M12 Motorway – about 250 m to the southwest of the proposal • Sydney Metro – Western Sydney Airport – about 3.5 km to the west of the proposal In addition, the proposal is located about 3.6 km from the Western Sydney International Airport. All of the projects are currently under construction, and will fully overlap with the 8-month works program for the installation of the recycled water main. In comparison to the scope of works being delivered for the above-mentioned major projects, construction activities for the proposal will be minor and localised in nature, and will result in a negligible increase in noise, air quality, and traffic impacts at a local or regional scale. Any cumulative impacts are therefore likely to be imperceptible and will be minimised using the environmental mitigation measures specified in Section 6 of this REF. Future trends such as climate change were considered. Factors such as bushfires, flooding, extreme heat and extreme storm events that could impact the proposal were considered. The proposal is unlikely to further exacerbate future trends as the proposal lies below ground.

6 Environmental mitigation measures

Table 5 Mitigation measures

Mitigation measures
General Mitigation Measures
Sydney Water's Project Manager (after consultation with Sydney Water's environmental and community representatives and affected landowners) can approve temporary ancillary construction facilities (such as compounds and access tracks), without additional environmental assessment or approval if the facilities meet the following principles: • limit proximity to sensitive receivers • no disruption to property access • no impact to known items of non-Aboriginal and Aboriginal heritage • outside high risk areas for Aboriginal heritage • use existing cleared areas and existing access tracks • no impacts to remnant native vegetation or key habitat features • no disturbance to waterways • potential environmental impacts can be managed using the safeguards in the EIA • no disturbance of contaminated land or acid sulfate soils • will be rehabilitated at the end of construction. The Contractor must demonstrate in writing how the proposed ancillary facilities meet these principles. Any facilities that do not meet these principles will require additional environmental impact assessment. The agreed location of these facilities must be shown on the CEMP site plan and appropriate environmental controls installed.
Contractors must complete pre-mobilisation and post-demobilisation soil sampling on compound sites to confirm no residual impacts.
Should the study area change from the EIA, no further environmental assessment is required provided the change: • remains within the assessment/ study area for the EIA (or use EIA terminology) and has no net additional environmental impact; or • is outside the assessment/study area for the EIA (or use EIA terminology) but: - reduces impacts to biodiversity, heritage or human amenity; or - avoids engineering (for example, geological, topographical) constraints; and - after consultation with any potentially affected landowners and relevant agencies. The Contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.
Prepare a Construction Environmental Management Plan (CEMP) addressing the requirements of this environmental assessment. The CEMP should specify licence, approval and notification requirements. Prior to the start of work, all project staff and contractors will be inducted in the CEMP. The CEMP must be readily available on site and include a site plan which shows: • Go/no go areas (eg heritage/AHIP zones) are to be professionally surveyed. Mark the boundary with highly visible non-ground-disturbing and 'environmental protection zone' signs.) and

Mitigation measures
boundaries of the study area including locations of lay-down and storage areas for materials and equipment • location of environmental controls (such as erosion and sediment controls, fences or other measures to protect vegetation or fauna, spill kits) • location and full extent of any vegetation disturbance. The CEMP will identify appropriate delineation with (eg metal fencing for AHIMS, white flagging for construction corridor, red flagging for no go zones etc). Delineate approved study area before construction.
Prepare an Incident Management Plan (IMP) outlining actions and responsibilities during: • predicted/onset of heavy rain during works • spills • unexpected finds (eg heritage and contamination) • other potential incidents relevant to the scope of works. All site personnel must be inducted into the IMP.
Immediately notify the Project Manager, Community Relations Representative (Delivery Management) and Environmental Representative (Delivery Management) of any complaints.
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.
Assign a single person with accountability for coordinating communication and information flow across contractors and consultants
Consultation to be undertaken with Penrith City Council regarding potential impacts to road infrastructure as part of the detailed design development process.
Property
Prior to the commencement of construction, a review of the terms of the existing 4.5 m wide drinking water easement along the northwestern boundary of Lot 8 / DP 812284 is to be undertaken to confirm that the installation of the recycled water pipeline is consistent with the terms of the easement. Where the terms of the easement do not enable the installation of the recycled water pipeline, a variation of easement form would be completed and lodged with NSW Land Registry Services in accordance with the requirements of the *Real Property Act 1900* prior to the commencement of works on Lot 8 / DP 812284 to enable installation of the pipeline.
Topography and Soils
Prevent sediment moving offsite in accordance with Managing Urban Stormwater, Soils and Construction, Volume 1 and 2A (Landcom 2004 and DECC 2008), including: • 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

Mitigation measures
• reuse topsoil where possible and stockpile separately • inspect controls at least weekly and immediately after rainfall • rectify damaged controls immediately • remove controls once surfaces have been stabilised, including removing trapped sediment in drainage lines.
Minimise ground disturbance and stabilise disturbed areas progressively.
Contractor to ensure imported material is certified for intended use and is free from contamination including asbestos.
Stop work in the immediate vicinity of suspected contamination. Indicators of contamination include discoloured soil, anthropogenic fill material, asbestos, strong 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. Sydney Water Project Manager to contact Contamination and Hazardous Materials team for advice regarding management options.
A Contamination Management Plan would be prepared by a suitably qualified person as part of the CEMP and reviewed by Sydney Water's Environmental Representative in consultation with the Sydney Water Contamination and Hazardous Materials team. The plan would identify the type and location of known/potential contamination, management and disposal measures.
Stop work during heavy rainfall or in waterlogged conditions when there is a risk of sediment loss off site.
Sweep up any sediment/soil transferred off site at least daily, or before rainfall.
Eliminate ponding and erosion by restoring natural landforms to the pre-works condition.
Water and Drainage
Bund open maintenance holes if risk of wastewater spills.
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. Keep the spill kits stocked and located for easy access.
Locate portable site amenities away from watercourses or drainage lines.
If potential for intercepting groundwater is identified Sydney Water will obtain a groundwater Water Supply Approval and where dewatering is >3ML per water year (from 1 July) a Water Access Licence from NRAR will also be obtained. The Delivery Contractor is responsible for: • preparing a Dewatering Management Plan • complying with the approval conditions (such as protecting water quality; minimising aquifer extraction volumes, monitoring extraction with flow meters and recording volumes).

Mitigation measures
Minimise groundwater ingress during detailed design. Prepare Dewatering Management Plan as part of the CEMP for groundwater dewatering, including: (eg protecting water quality, monitor extraction volumes).
Discharge all water in accordance with Sydney Water's Discharge Protocols Standard Operating Procedure (WPIMS5021), including erosion controls, discharge rate, dechlorination, monitoring. Re-use potable / groundwater water where possible.
Dewater excavations in accordance with the Delivery Management Guidance Standard 9.1 Excavation Dewatering.
If discharge to the environment is not possible, seek approval and discharge criteria from the relevant Sydney Water Network Area Manager prior to discharge to the wastewater system. Otherwise, tanker by a licensed waste contractor and dispose off-site to an appropriately licensed facility.
If wastewater bypass is required: • pressure test hoses before, and monitor during bypass • monitor wastewater flows to ensure critical flows are not reached • stop bypass if leaks occur • bund access chambers • contain wastewater spills and pump back to wastewater system or disposal tanker.
Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Bunded areas to have 110% capacity of stored liquid volume. Chemicals and fuels in vehicles must be tightly secured. All chemicals to be clearly labelled.
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.
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.
Flora and Fauna
Provided it is essential for delivering the project, Sydney Water's Project Manager can approve the following vegetation removal and tree trimming, without additional environmental assessment (but only after consultation with Sydney Water's 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

Mitigation measures
where the vegetation is not a threatened species (including a characteristic species of a threatened community or population), heritage listed, in declared critical habitat or in a declared area of outstanding biodiversity value. • Any removal of remnant vegetation where there is no net change to environmental impact (eg a different area of vegetation is removed but the total area is the same or less than assessed in the EIA). Written explanation of the application of this clause (including justification of the need for trimming or removal and any proposed revegetation) should be provided when seeking Project Manager approval. Any impacts to native vegetation and trees must be offset in accordance with the Biodiversity Offset Guideline (SWEMS0019.13).
Minimise vegetation clearance and disturbance, including impacts to standing dead trees and riparian zones. Where possible, limit clearing to trimming rather than the removal of whole plants.
Physically delineate vegetation to be cleared and/or protected on site and install appropriate signage prior to works commencing.
Adjust methodology (eg avoid area, hand excavate, implement exclusion fencing) to protect sensitive areas where possible (such as mature trees, known threatened species, populations or ecological communities).
Potentially affected residents will be notified of any tree removal.
Inspect vegetation for potential fauna prior to clearing or trimming. If fauna is present, or ecological assessment has determined high likelihood of native fauna presence, including removal of hollow bearing trees, engage a licenced ecologist to inspect and relocate fauna before works.
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 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

Mitigation measures
• wrap straw bales in geofabric to prevent seed spread.
Bag all plant parts and excavated topsoil that may be infested with weed propagules and dispose at a licensed waste disposal facility.
If replanting near Sydney Water pipelines refer to 'Which trees can damage wastewater pipes? ' link from Sydney Water website.
In TOBAN period: 1. Check specific TOBAN notice to confirm whether the work can be carried out under standard exemptions (Govt Gazette No18 Feb 2018) 2. If not, apply to RFS for specific exemption.
Air and Energy
Use alternatives to fossil fuels where practical and cost-effective.
Track energy use as per SWEMS0015.28 Contractor NGER template as applicable.
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.
Waste Generation
Manage waste in accordance with relevant legislation and maintain records to show compliance eg waste register, transport and disposal records. Record and submit SWEMS0015.27 Contractor Waste Report.
Provide adequate bins for general waste, hazardous waste and recyclable materials.
Minimise the generation of waste, 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 Waste Classification Guidelines. Dispose wastes at an appropriately licenced facility.
Prevent pollutants from escaping including covering skip bins.

Mitigation measures
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 the Sydney Water Contamination and Hazardous Materials team - propertyenvironmental@sydneywater.com.au).
Review existing hazardous building materials (HBM) report and implement relevant safeguards. Conduct hazardous materials survey prior to commencement where works could impact hazardous materials not surveyed in the HBM.
Heritage
Do not make publicly available or publish, in any form, Aboriginal heritage information on sites / potential archaeological deposits, particularly regarding location.
Repeat the basic AHIMS search if it is older than 12 months. Conduct additional assessment if new sites are registered and could be impacted by the works.
If any Aboriginal object or non-Aboriginal relic is found, cease all excavation or disturbance in the area and notify SW Project Manager in accordance with SWEMS0009.
Noise and Vibration
Works must comply with the Interim Construction Noise Guideline (DECC 2009), including schedule 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 Sundays or public holidays. The Proposal will also be carried out in accordance with: • Sydney Water's Noise Management Procedure SWEMS0056 • Noise Policy for Industry (EPA, 2017). Reasonable and feasible noise mitigation measures should be implemented to mitigate noise impacts.
Incorporate **standard daytime hours noise management safeguards** 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 (eg times identified by the community that are less sensitive to noise such as mid-morning or mid-afternoon for works near residences) - acceptance by the community of longer construction periods in exchange for restriction to construction times. • implement a complaints handling procedure for dealing with noise complaints • 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 (eg 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 (eg generators away from sensitive receivers, minimise use of vehicle reversing alarms). • schedule noisy activities around times of surrounding high background noise (local road traffic or when other noise sources are active).
Traffic and Access
Prepare a Traffic Management Plan (TMP) in consultation with the relevant traffic authority. Meet NSW Roads and Maritime Service's Traffic Control at Worksites Manual v5 requirements for TfNSW roads. The Contractor will obtain a Road Occupancy Licence (ROL) from TfNSW, including if works are within 100m of traffic signals when construction commences.
Minimise traffic impacts near residential properties, schools and businesses by consulting with them (eg no major materials deliveries at school drop off or pick up times etc.).
Manage sites to allow people to move safely past the works, including alternative pedestrian, bicycles, pram and wheelchair access.
Consult with the relevant traffic authority about managing impacts to pedestrian traffic, signposting, meters, parking, line-marking or if traffic control or pavement restoration is required.
Erect signs to inform road users of the proposed works and any temporary road closures.
Ensure work vehicles do not obstruct vehicular or pedestrian traffic, or private driveway, public facility or business access unless necessary and only if appropriate notification has been provided.
Social and Visual
Undertake works in accordance with Sydney Water Communications policies and requirements including: • notify impacted residents and businesses • erect signs to inform the public on nature of work • personnel treat community enquiries appropriately.
Work sites will be restored to pre-existing condition or better.
Minimise visual impacts (eg retain existing vegetation where possible).
Direct artificial light away from sensitive receivers where possible (ie residents, fauna or roadways).
Maintain work areas in a clean and tidy condition.

Appendix A – Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community during construction from noise and traffic control, however these potential impacts would be short term in nature and are anticipated to be minor.
Any transformation of a locality	The proposal will not result in the transformation of a locality.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal will not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	The proposal will not have any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations.
Any impact on the habitat of any protected animals (within the meaning of the *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 water service for the area.
Any degradation of the quality of the environment	The proposal will not cause the degradation of the quality of the environment.
Any risk to the safety of the environment	The proposal will not increase risk to the safety of the environment.
Any reduction in the range of beneficial uses of the environment	The proposal will not reduce the range of beneficial uses of the environment.
Any pollution of the environment	Environmental mitigation measures will mitigate the potential for the proposal to pollute the environment. No pollution of the environment is expected.

Section 171 checklist	REF finding
Any environmental problems associated with the disposal of waste	Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not increase demand on resources, that are, or are likely to become, in short supply.
Any cumulative environmental effect with other existing or likely future activities	The construction schedule of the proposal will overlap with several major projects which are currently being delivered within 5 km of the work location, including the Western Sydney Internation Airport, M12 Motorway and Sydney Metro Western Sydney Airport. In comparison to the scope of works being delivered for the above-mentioned major projects, construction activities for the proposal will be minor and localised in nature, and will result in a negligible increase in cumulative noise, air quality, and traffic impacts at a local or regional scale. Any cumulative impacts are therefore likely to be imperceptible.
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 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 the mitigation measures have been designed to reduce scientific uncertainty relating to the proposal. 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 recycled water service for the area.
Inter-generational equity - *the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*	The proposal will help to meet the needs of future generations by facilitating a reliable recycled water service.
Conservation of biological diversity and ecological integrity - *conservation of the biological diversity and ecological integrity should be a fundamental consideration in environmental planning and decision-making processes.*	The proposal will not significantly impact on biological diversity or impact ecological integrity. 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 recycled water service for the area.
Improved valuation, pricing and incentive mechanisms - *environmental factors should be included in the valuation of assets and services, such as 'polluter pays', the users of goods and services should pay prices based on the full life cycle costs (including use of natural resources and ultimate disposal of waste) and environmental goals*	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community and environment.

Appendix C – Consideration of TISEPP consultation

TISEPP section	Yes	No
Section 2.10, council related infrastructure or services – consultation with council		
Will the work:		
Potentially have a substantial impact on stormwater management services provided by council?		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 (ie non-certified land)? *If so, notify DPE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021).*		X

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