Review of Environmental Factors

Sewer Line, Stuart Street, Canley Vale

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of the Sewer Line, Stuart Street, Canley Vale. 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 conducted 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, traffic and access. No operational impacts are anticipated as part of the proposal. The proposal will not be carried out in a declared area of outstanding biodiversity value and is not likely to significantly affect threatened species, populations or ecological communities, or their habitats. Therefore, a Species Impact Statement (SIS) and/or Biodiversity Development Assessment Report (BDAR) is not required.

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

Certification

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

Prepared by:	Reviewed by:	Endorsed by:	Approved by:
Nikolas Kenny REF author Sydney Water Date: 05/03/25	Prinya Khamphounvong Senior Environmental Scientist Sydney Water Date: 05/03/2025	Tam Huynh Project Manager Sydney Water Date: 05/03/2025	Murray Johnson Senior Manager Environment and Heritage Sydney Water Date:

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2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal needs and objectives	The retic DN150mm DICL wastewater pipe services 11 properties adjacent to Orphan School Creek, Canley Vale. Heavy wet weather events in 2022 caused significant stormwater flows through Orphan School Creek. Additionally, debris loading and has led to the failure of the aqueduct and its piers. As a result, a temporary pipeline has been installed across the creek, supported by scaffolding. Currently, temporary wastewater services in this area are pumped through a pump setup in front of property 31 Stuart St and discharged to the nearest maintenance hole (MH) on Stuart St. A new wastewater pipeline needs to be urgently designed and constructed to minimise the risk of temporary pipe failure and lead to a potential EPA licence breach and customer complaints.
Consideration of alternatives/options	A 'do nothing' option was not considered feasible as it would not address the ongoing issues with the current temporary pipeline. The second option (preferred option) was to undertake the proposal as described below.

Proposal description and methodology	The proposal includes the installation of about 330 metres (m) of new wastewater line that runs from The Avenue, south down Hampton Street and along Stuart Street where it will connect to the existing wastewater system in the backyard of 31 Stuart Street. The proposal would be delivered through a combination of microtunnelling and open trench excavation. The proposal includes the excavation of 2 launching pits and 2 receiving pits:
	• receiving pit on The Avenue (4m x 4m)
	• launch pit on Hampton Street (10m x 5m)
	• receiving pit on Hampton Street (4m x 4m)
	• launch pit on Stuart Street (10m x 5m) (See Figure 1).
	
	The methodology for the proposal includes:
	• site establishment works –
	  ○ set up of fencing, construction compounds (yet to be confirmed) etc.
	• trenching –
	  ○ deep excavation for all MH, including the existing MH in property 31 Stuart St and MH in The Avenue. The excavation footprint for the MH will be 2m long by 2m wide and 2m deep.

- open trench (approximately 12 m) from Chainage 0 to MH01
- open trench (approximately 50 m) and lay new pipe between MH04 and M05
- microtunnelling from MH01 to MH04.

- pipe laying –
  - open trench and pipe laying between MH04 and MH05
  - microtunnelling from MH01 to MH04.
- restoration –
  - backfill around the new MH
  - site restoration activities.

The following is an indicative list of plant and machinery expected to be used during the proposal:

- confined spaces safety equipment (e.g. gantry/davit)
- skip bins
- sediment tank
- concrete pumps
- air compressors
- generators
- concrete saws
- backhoes
- jackhammers
- hand tools
- site facilities and amenities
- storage containers
- excavators
- tip trucks
- concrete agitator trucks
- street sweepers
- light vehicles
- compactor
- cranes
- vacuum trucks
- microtunnelling machine.

Location and land ownership	The proposal is located on The Avenue, Hampton Street and Stuart Street, Canley Vale, within the Fairfield City Council Local Government

	Area (LGA) (see Figure 1). The work will primarily be within the road reserve with the exception of about 50m of open trenching (about 2.5m deep and 2m wide) that will take place within Lot 2//DP518917 and Lot 57/1/DP1059.
Ancillary facilities (compounds)	During the design phase, the location of compounds and access tracks could not be confirmed. The exact location of these will be chosen by the contractor and remain within the field assessment area, in consultation with the landowner(s) and approved by Sydney Water's Project Manager as described in the mitigation measures in Section 6.
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. Most of the works would be completed during standard daytime hours above; however, due to the need to close traffic lanes, six night shifts over 1 week would be required for the works. This would include five nights for the open cut section and 1 night for connection works. See Section 6 for further details. 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 May 2025 and take about 7 months to complete.

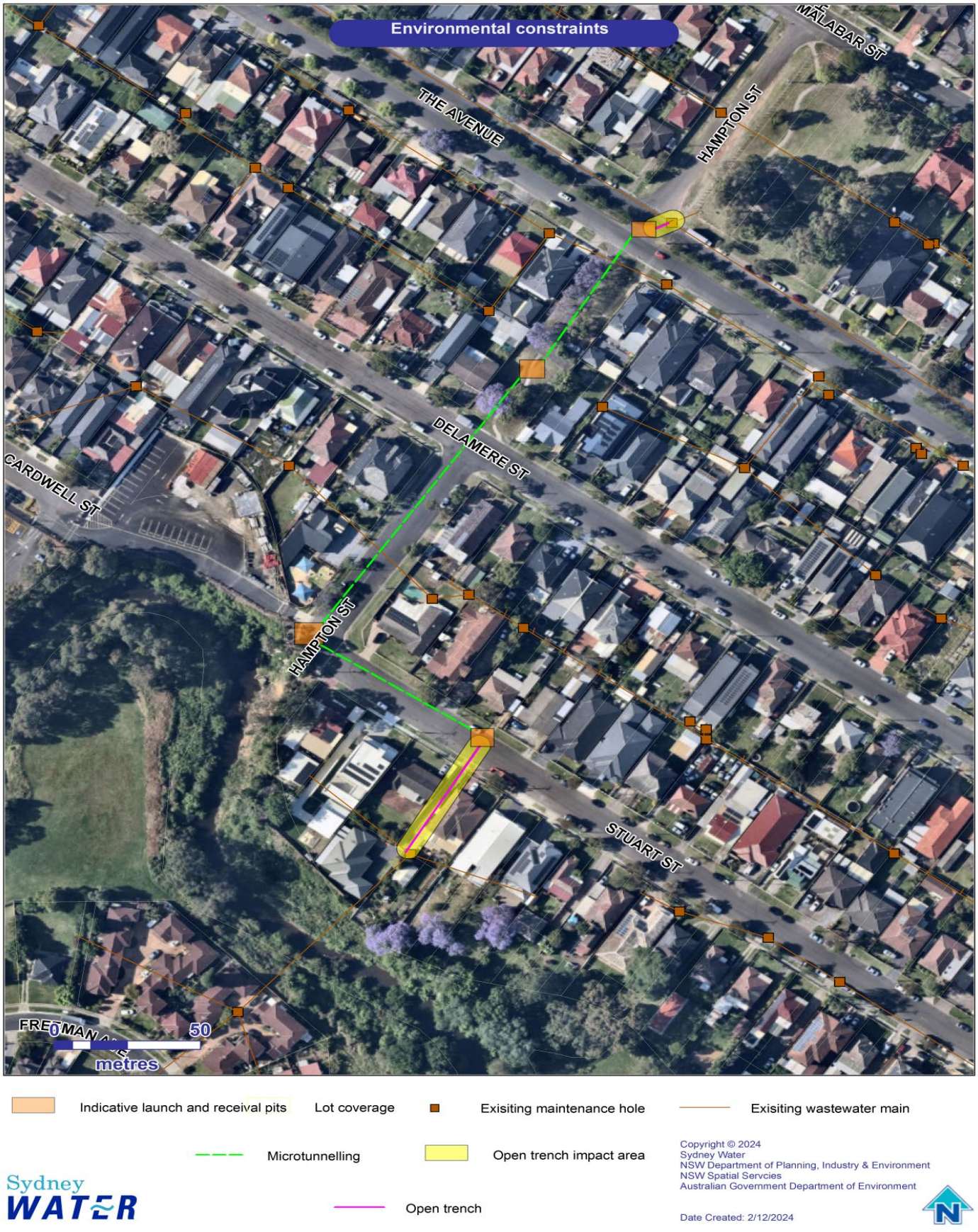

Figure 1 Location of proposal and environmental constraints

3 Consultation

Community and stakeholder consultation

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

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

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

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

We will also provide local councils with reasonable notice when we would like to commence works. Council will be consulted about matters identified in environmental planning instruments (refer Section 4.2 below). This includes public safety issues, temporary works on council land, and full or partial road closures of council managed roads.

Consultation with affected residents will be guided by the requirements of the Transport for NSW noise estimator tool and Sydney Water's community and stakeholder engagement guidelines. Further detail is provided in Section 5.

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 with Fairfield City Council is required as the proposal involves excavation of a council owned road and footpath. Written notification of the proposal was sent to Council under section 2.10 and section of the TISEPP on 24 January 2024. No formal response has been received. Any feedback received will be incorporated into the CEMP. 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
Fairfield Local Environmental Plan 2013 (Fairfield LEP)	The proposal is located on land zoned R2 – Low Density Residential and R3 – Medium Density Residential as per the Fairfield LEP.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126 of the TISEPP permits development for the purpose of a sewage reticulation system without consent on any land in the prescribed circumstances. Section 2.126 (1a) of the TISEPP outlines that the prescribed circumstances apply if the development is carried out by or behalf of a public authority. As Sydney Water is a public authority, the proposal is permissible without consent.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	**Water catchments (Chapter 6)** Chapter 6 of this SEPP applies as the proposal is within the Georges River 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.

Table 3 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations Act 1997 (POEO Act)	The proposal is covered by an existing EPL (372 (Malabar)) and meets the EPL compliance requirements. There is a requirement under Part 5.7 of the POEO Act to immediately report any pollution incidents to the relevant authority where material harm to the environment is caused or threatened. The definition of material harm and the relevant authorities are defined in Part 5.7 of the POEO Act. The contractor is responsible for immediately reporting such incidents in accordance with SWEMS0009 Responding to incidents with an environmental impact.	EPL 372 (Malabar)	N/A

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Biodiversity Conservation Act 2016 (BC Act)	The study area was assessed for potential presence of threatened species, populations, and ecological communities listed under the BC Act and concluded that there would be no adverse impacts as a result of the proposal given that the mitigation measures outlined below are implemented.	REF	Pre-construction, Sydney Water
Fisheries Management Act 1994 (FM Act)	Orphans School Creek is mapped as Key Fish Habitat under the FM Act. No works would be undertaken within the creek. If works are required within the creek, notification to Fisheries would be required.	N/A	Pre-construction, Sydney Water
Water Act 1912/ Water Management Act 2000	Groundwater is likely to be encountered due to excavation during construction. The volume of water to be extracted is estimated to be 1.8ML. Therefore, a Water Supply Works Approval (WSWA) will be required for the proposal. A WSWA application will be submitted to the Department of Climate Change, Energy, the Environment and Water (DCCEW) before works commence. It is not expected that the proposal will involve the extraction of ground water >3ML and as such a Water Access License will not be required.	WSWA	Pre-construction, Sydney Water
Roads Act 1993	The proposal is not impacting/ within 100 m of a TfNSW road, or within 100m of a traffic signal. However, the proposal will impact council-managed roads (managed under section 138 of the Act).	Road Occupancy Licence and/or Road opening Permit.	Pre-construction, contractor

5 Environmental assessment

The environmental impacts checklist (SWEMS0019.01) was completed for the works which considers all environmental aspects. Table 5 includes only the potentially impacted aspects.

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

Aspect	Potential impacts
Topography, geology and soils	The proposal includes construction activities that would disturb and expose the surface including vegetation removal, excavation, and stockpiling of materials and soils. This could result in potential offsite erosion and sedimentation of surrounding land and Orphans School Creek which lies about 40m to the south. The proposal is not anticipated to permanently change the surface topography and drainage patterns of the area. The area will be returned to its original topography and drainage pattern following construction. Construction activities would be designed to minimise the extent of soil disturbance and disturbed areas would be stabilised and reinstated as soon as practical. Topography, geology, and soil impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Water and drainage	The proposal falls within the Prospect Creek Catchment which drains into the Georges River about 4km southeast of the proposal. Orphan School Creek lies about 40m to the south of the proposal and is mapped as Key Fish Habitat (KFH). The proposal will include construction activities that would disturb and expose the surface including vegetation removal, excavation, and stockpiling of materials. These activities have the potential to temporarily expose soils, increasing the risk of erosion. If sediment laden run-off from stockpiles and excavation enters Orphan School Creek, this may result in increased turbidity and enhanced sedimentation. Increased sediments and pollutants in waterways can result in decreased light levels for submerged aquatic vegetation and smothering of benthic organisms. During construction, there is potential for spills of hydraulic oils and fluids from equipment and vehicles. In the instance of a spill occurring. Adequate storage and refuelling controls would be installed to mitigate any impacts. Plant and equipment would be maintained to minimise the potential for leakages. Groundwater is likely to be encountered due to the excavation during construction. The volume of water to be extracted is estimated to be 1.8 megaliters (ML). Therefore, a Water Supply Works Approval (WSWA) will be required. Water and drainage impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Flora and fauna	Riparian vegetation of Orphans School Creek is mapped as Plant Community Type (PCT) 4024 – Cumberland Blue Box Riverflat Forest. This vegetation occurs about 25m south of the proposal.

	The proposal would not involve any activity in this mapped PCT and vegetation removal would be limited to one planted citrus tree in the backyard of 31 Stuart Street. A search of the BioNet Atlas highlighted 47 threatened species sightings within 10km of the proposal including: • Green and Golden Bell Frog (*Litoria aurea*) • Barking Owl (*Nixon connivens*) • Grey-headed Flying Fox (*Pteropus poliocephalus*). Potential impacts to these species and biodiversity in general are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Heritage	**Aboriginal Heritage** *This information has been redacted to protect sensitive Aboriginal heritage information.*
	Non-Aboriginal Heritage A search of the following heritage database searches has been completed as part of the proposal: • NSW State Heritage Inventory • World Heritage Properties and National Places • Australian Heritage Database • Fairfield LEP 2013. A search of the above databases was undertaken on the 5 November 2024 to determine to extent of potential impacts of the proposal on non-Aboriginal heritage. One LEP listed heritage item occurs near the proposal: • Victorian House (Fairfield LEP listing – I32) – about 200m east southeast of the proposal. The proposal is unlikely to impact this heritage item as there is no work in the curtilage of this item. Heritage impacts are expected to be negligible and can be managed through the mitigation measures listed in Section 6.
Noise and vibration	The proposal is bordered by residential properties along The Avenue, Hampton Street and Stuart Street. The proposal involves the temporary use of a driveway at 33A Stuart Street where concrete cutting will be required for the

installation of the new infrastructure. Likewise, access to an existing MH in the backyard of 31 Stuart Street will be required to remove an existing citrus tree and MH construction activities.

Based on the risk profile of the works from Table 2 of the Draft Construction Noise Guideline (EPA, 2020), a quantitative noise assessment was performed for the proposal. The purpose of the noise assessment was to assess the predicted worst-case noise impacts. This identified recommended additional mitigation measures for impacted receivers at different distances from the works, which would guide community engagement for the site.

The noise assessment was performed using the TfNSW Construction and Maintenance Noise Estimator. The modelled scenarios comprised of the following inputs:

- Representative noise environment – R3
- Distance based noisiest plant – Concrete Saw
- Line of sight to the receiver – Yes.

The assessment concluded that highly intrusive impacts are anticipated for sensitive receivers within 35m of the proposal and moderately intrusive impacts within 55 m of the proposal during the day. During the night, highly intrusive impacts are anticipated for sensitive receivers within 50 m of the proposal and moderately intrusive impacts within 135 m of the proposal. The worst-case noise impacts have been displayed in Figure 2 and Figure 3. below along with recommended mitigation measures at different distances (recommended mitigation measures are highlighted in the legend of Figure 2 and Figure 3). The recommended mitigation measures to be considered by the community team and offered where appropriate include:

- N: Notification (e.g. letterbox drop)
- SN: specific Notification
- PC: Phone calls
- RO: Respite Offer (e.g. work blocks of 2 hours with one hour breaks in between).
- R2: Respite period 2
- DR: Duration Respite.

Vibratory equipment required for the proposal include:

- jackhammer
- excavator
- roller and compactor.

The noise estimator identifies minimum working distance for vibration intensive plant from sensitive receivers as:

- jackhammer – 1 m for structures, 2 m for heritage items and 3 m for human response

	• vibratory roller 3.5 tonne– 6m for structures, 16 m for heritage, 20 m for human response. Where structures are within the minimum working distance listed above when the relevant vibratory equipment is used, additional mitigation measures such as monitoring, dilapidation surveys, and use of smaller / less intensive equipment should be considered. In relation to the distance/s shown above for human response, the minimum working distances relate to continuous vibration. For most construction activities, including this proposal, vibration emissions are intermittent in nature and therefore higher vibration levels occurring over shorter periods are allowed. Noise and vibration impacts are expected to be minimal provided the mitigation measures outlined in Section 6 are implemented.
Air and energy	The existing air quality around the proposal is characterised by urban and industrial land use and is primarily influenced by traffic along local roads and train movements. There is potential for air quality impacts as a result of the proposal due to: • dust generated during the excavation and stockpiling of materials • dust generated by the transport of loose materials • emissions from construction machinery, equipment and vehicles • odour from the operation of construction machinery, equipment and vehicles. Short-term odour impacts may also be encountered when connecting the new asset with the existing wastewater system. Air and energy impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Waste and hazardous materials	A review of the EPA's contaminated lands register on 5 November revealed that no listed sites occur in the suburb of Canley Vale. The proposal is not expected to generate a significant amount of waste. However, some waste would be produced during the construction phase including: • green waste • concrete waste • minor quantities of spoil • general litter, office and construction waste. Waste impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Traffic and access	Majority of the proposal is on The Avenue, Hampton Street and Stuart Street which are classified as Local roads. The roads immediately surrounding the proposal are managed by Fairfield City Council and include Delamere Street, and Malabar Street and Railway Parade.

	Vehicle movement on the above roads are likely to be associated with local residents, buses, and business in the surrounding area. The proposal would require partial road closures of Hampton Street and Stewart Street with disruptions expected on the Avenue and Delamere Street. A Traffic Management Plan (TMP) would be prepared for the partial closure of these roads in consultation with Council. The proposal is expected to generate several heavy vehicle and light vehicle movements per shift. Most vehicle movements are expected to occur during works arrival and departure. Given the minimal increase in traffic volumes, no significant impact to existing traffic is expected for the proposal. Site access would be via existing roads. There may be some temporary disruptions to private property access along The Avenue, Hampton Street and Stuart Street. However, access would be maintained via use of road plates and/or hot mix (asphalt). During operation, there would be minor periodic maintenance works on the mains and connection points. These activities are not expected to result in additional traffic impacts to the surrounding road network, access, parking and public transport. Traffic and access impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Social and visual	There are several residential sensitive receivers surround the proposal along The Avenue, Hampton Street and Stuart Street. 31 and 33A Stuart Street will be the closest residential receivers as works will occur in their properties. The closest business is A & X Corporation (Beauty and Spa) located about 140 m east from the proposal at 19 Malabar Street. There is also public recreational infrastructure to the east of the proposal area including Johnny Mac Reserve and Canley Vale Dog Park. The existing visual landscape is dominated by urban development and roadways. There would be some short-term negative impacts to local residents on The Avenue, Hampton Street and Stuart Street during the construction with regards to air quality, noise and traffic. There would also be some short-term visual impacts to residents as a result of the proposal including the presence of construction vehicles, machinery and plant and equipment, stockpiling of materials, site amenities, temporary compound areas and safety barriers. Social and visual impacts are expected to be minimal and can be managed through the mitigation measures listed in Section 6.
Cumulative and future trends	Given the small scale of the proposal, potential impacts would be minor and localised, and unlikely to make a significant contribution to any cumulative environmental impact on a local or regional scale. A search of the Major Project Register and the Fairfield Council website on 5 November 2024 identified no projects within 1km of the proposal area. No cumulative impacts associated with the proposal are anticipated.

Figure 2 Predicted worst case noise impacts – day work

Figure 3 Predicted worst case noise impacts - Night work

6 Environmental mitigation measures

Table 5 Mitigation measures

Mitigation measures
General
Sydney Water's Project Manager (after consultation with the environmental and community representatives and affected landowners) can approve temporary ancillary construction facilities (such as compounds and access tracks), without additional environmental assessment or approval if the facilities meet the following principles: • limit proximity to sensitive receivers • no disruption to property access • no impact to known items of non-Aboriginal and Aboriginal heritage • outside high-risk areas for Aboriginal heritage • use existing cleared areas and existing access tracks • no impacts to remnant native vegetation or key habitat features • no disturbance to waterways • potential environmental impacts can be managed using the mitigation measures 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.
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 and boundaries of the work area/disturbance corridor including locations of lay-down and storage areas for materials and equipment • location of environmental controls (such as erosion and sediment controls, fences or other measures to protect vegetation or fauna, spill kits) • location and full extent of any vegetation disturbance.
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. All site personnel must be inducted into the IMP.
Immediately notify the Sydney Water Project Manager, Community Relations Representative (Program Delivery) and Environmental Representative (Program Delivery) 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.
Topography Geology and Soils
Prevent sediment moving offsite in accordance with Managing Urban Stormwater, Soils and Construction, Volume 1 and 2A (Landcom 2004 and DECC 2008), including, but not limited to: • 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.

Include a Stockpile Management Plan (SMP) as part of the SWMP to adequately manage any proposed temporary and permanent stockpiles. This will include detail on:

- exact location of stockpiles
- height, slopes and batters
- consideration of future maintenance
- capping
- erosion and sediment control
- restoration.

The Stockpile Management Plan will be prepared by the Delivery Contractor and approved by the Sydney Water Project Manager in consultation with the Environmental Representative and Contamination and Hazardous Materials Team.

Minimise ground disturbance and stabilise disturbed areas progressively.

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

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

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

Water and Drainage

Use appropriate controls to avoid potential sedimentation to Orphans School Creek.

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 and aquatic spill kit on site for clean-up of accidental chemical/fuel spills near mapped key fish habitat (Orphans School Creek). Keep the spill kits stocked and located for easy access.

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

The works will encounter groundwater during excavation. Sydney Water will obtain a groundwater Water Supply Works Approval from the Department of Climate Change, Energy, the Environment and Water (DCCEW) before works commence.

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:

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

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.

Prepare Drilling Fluid Management plan to avoid impacts, including:

- contain and monitor drilling fluids at entry/exit points
- identify and manage frac-outs.re-use and/or disposal of drilling fluids (checking waste classification).

Flora and Fauna

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

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

where the vegetation is not a threatened species (including a characteristic species of a threatened community or population), heritage listed, in declared critical habitat or in a declared area of outstanding biodiversity value.

- Any removal of remnant vegetation where there is no net change to environmental impact (eg a different area of vegetation is removed but the total area is the same or less than assessed in the EIA).

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

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

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

If any damage occurs to vegetation outside of the proposal (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 geofabric to prevent seed spread.

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.

Harm to any Aboriginal objects and declared Aboriginal places is only permitted once an Aboriginal Heritage Impact Permit (AHIP) has been granted. Include Aboriginal Heritage Management Plan (AHMP) in CEMP to address AHIP conditions.

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

Recommended mitigation measures (refer to legend of Figure 2 and Figure 3) at different distances to be considered by the community team and offered where appropriate and include:

- N: Notification (e.g. letterbox drop)
- SN: specific Notification
- PC: Phone calls
- RO: Respite Offer (e.g. work blocks of 2 hours with one hour breaks in between).
- R2: Respite period 2
- DR: Duration Respite.

Works must comply with the Construction Noise Guideline (Draft, 2021), including scheduling work and deliveries during standard daytime working hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. Any proposed work outside of these hours must be fully 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 clearly justified, documented and implemented on-site to mitigate noise impacts.

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

- 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)
- implement a complaints handling procedure for managing 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.
- regularly inspect and maintain equipment in good working order
- arrange work sites where possible to minimise noise (eg generators away from sensitive receivers, site set up to minimise use of vehicle reversing alarms, site amenities and/ or entrances away from noise sensitive receivers).
- schedule noisy activities around times of surrounding high background noise (local road traffic or when other noise sources are active).

As works extend 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.

As 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 safeguards 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 safeguards and other reasonable and feasible management measures
- identify community notification requirements
- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

Consider less vibration intensive methodologies where practicable and use only the necessary sized and powered equipment.

Air and Energy

Use alternatives to fossil fuels where practical and cost-effective.

Track energy use as per SWEMS0015.28 Contractor NGER template.

Minimise the potential for odours (eg minimise the number of open access chambers, close maintenance holes overnight.)

Ensure odour control measures are available and ready to use during the works.

Maintain equipment in good working order, comply with the clean air regulations of the *Protection of the Environment Operations Act 1997*, have appropriate exhaust pollution controls, and meet Australian Standards for exhaust emissions.

Switch off vehicles/machinery when not in use.

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.

Waste and Hazardous Materials

A Waste and Resource Recovery Plan (WRRP) would be incorporated into the CEMP and must be prepared to appropriately manage and classify any materials including soils, construction /demolition wastes and associated stockpiles.

The plan will be prepared by the Delivery Contractor (or nominated environmental consultant) and approved by the Sydney Water Project Manager in consultation with the Environmental Representative Contamination and Hazardous Materials team.

The WRRP should include:

- expected waste types and their location
- delineation of waste /resource types including identification of likely vertical and lateral extents (where warranted)

- visual monitoring of materials during excavation and measures to be undertaken to prevent co-mingling / cross-contamination of waste / resource types
- ex-situ waste and resource recovery classification program, including timing relative to project / excavation phases as well as proposed hold points
- waste minimisation and resource recovery methodologies (including consideration of onsite reuse or management if contaminated)
- roles and responsibilities in relation to stockpile and material management and monitoring program
- proposed onsite reuse locations and reuse methodology (if applicable)
- proposed offsite reuse, offsite recycling and / or offsite disposal locations / facilities
- legislative compliance requirements
- consideration of future maintenance
- restoration.

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

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

Minimise 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 transported waste and skip bins.

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

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 (e.g. 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 (e.g. retain existing vegetation where possible).
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 would be some negative impacts on the local residents on The Avenue, Hampton Street and Stuart Street during the construction with regards to air quality, noise and traffic. There would also be some negative visual impacts to residents as a result of the proposal including the presence of construction vehicles, machinery and plant and equipment, stockpiling of materials, site amenities, temporary compound areas and safety barriers. There will be environmental improvements by providing a reliable wastewater service to the local community.
Any transformation of a locality	The proposal will not result in the transformation of a locality.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality. The proposal will lead to environmental improvements by ensuring a reliable wastewater service to collect and treat wastewater, minimising any impacts on the ecosystem.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal will not reduce the aesthetic, recreational, scientific, or other environmental quality or value of the locality.
Any effect upon a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or any other special value for present or future generations	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 adverse 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.

Section 171 checklist	REF finding
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. The proposal will operate in accordance with EPL372 (Malabar).
Any environmental problems associated with the disposal of waste	Waste disposal will be in accordance with the environmental mitigation measures, and no environmental problems associated with the disposal of waste are expected.
Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply	The proposal will not increase demand on resources, that are, or are likely to become, in short supply.
Any cumulative environmental effect with other existing or likely future activities	The proposal will not have any cumulative environmental effect with other existing or likely future activities.
Any impact on coastal processes and coastal hazards, including those under projected climate change conditions	The proposal will not have any impact on coastal processes or hazards, and coastal processes and coastal hazards will not have any impact on the proposal.
Any applicable local strategic planning statements, regional strategic plans or district strategic plans made under the EP&A Act, Division 3.1	There are no applicable strategic planning statements or plans, as the proposal forms part of a renewals program.
Any other relevant environmental factors.	The proposal has been assessed against the factors listed above, and there are no other relevant environmental factors to consider.

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

Principle	Proposal alignment
Precautionary principle - *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.
Inter-generational equity - *the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*	The proposal will help to meet the needs of future generations by providing a reliable wastewater service.
Conservation of biological diversity and ecological integrity - *conservation of the biological diversity and ecological integrity should be a fundamental consideration in environmental planning and decision-making processes.*	The proposal will not significantly impact on biological diversity or impact ecological integrity.
Improved valuation, pricing and incentive mechanisms - *environmental factors should be included in the valuation of assets and services, such as 'polluter pays', the users of goods and services should pay prices based on the full life cycle costs (including use of natural resources and ultimate disposal of waste) and environmental goals*	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community and environment.

Appendix C – Consideration of TISEPP consultation

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