Review of Environmental Factors

Frenchs Forest Reservoir Refurbishment

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of Frenchs Forest Reservoir Refurbishment. The REF was prepared under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with Sydney Water both the proponent and determining authority.

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

Decision Statement

The main potential construction environmental impacts of the proposal include impacts to flora, noise, traffic and visual amenity. During operation, minimal visual amenity impacts are anticipated. 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]
Andrea Glass Environmental Scientist Sydney Water Date: 19/12/2024	John Eames Environment Representative Sydney Water Date: 14/01/2025	Giovanni Boggio Project Manager Sydney Water Date: 20/02/2025	Murray Johnson Snr Mgr. Environment and Heritage Sydney Water Date: 21/03/2025

2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal needs and objectives	This proposal is part of the reservoir renewals program. The program is required to meet Sydney Water's commitment to ensure ongoing safety and security of water supply. The site includes one reservoir (asset number WS0283) which was built in 1974 and has the storage capacity of about 9.1 mega litres (ML). The objectives of the proposal are to: • protect public health and the environment by improving reliability of the reservoir • improve chemical dosing to the reservoir. The capacity of the reservoir would not increase as a result of this proposal.
Consideration of alternatives/options	Two roof layout options were considered for the proposal: • Option 1 – Grid roof arrangement • Option 2 – Radial roof arrangement. Option 1 was identified as the preferred option as it aligned with the proposals objectives and is the most cost-effective of the options, while maintaining the asset based on its service requirement.
Proposal description and methodology	The proposal involves the refurbishment of Frenchs Forest Reservoir (WS0283) and installation of a chemical dosing unit (CDU). Refer to Figure 1 for an indicative site layout. The methodology includes: • site establishment including the installation of site amenities, hardstand and vegetation trimming and removal • civil works including the excavation and installation of permanent services including electrical cables, security system and CDU • demolition works and disposal of redundant assets including pipes, reservoir roof infrastructure and hazardous building materials • repairs and remediation works including abrasive blasting, relining of the reservoirs and path upgrades, if required • installation of new roof structure including but not limited to internal columns, handrails, hatches, ventilations, electrical and instrumentation • site restoration and demobilisation. Indicative plant and equipment to be used for the proposal: • ablution sediment tank • air compressor • automated dosing system • compaction roller

Aspect	Detailed description
	• compactor • concrete agitator trucks • concrete pumps • concrete saws • confined spaces safety equipment (e.g. gantry/davit) • cranes (100 t or greater) • elevated work platform • enclosed fuel cells • enclosed generators • excavators (13 t or greater) • hand tools • jackhammers • light vehicles • scaffolding • site facilities and amenities • skip bins • storage containers • street sweeper • tip trucks • vac-truck.
Location and land ownership	The site is located at 8 Panorama Crest, Frenchs Forest. The site is in the Northern Beaches Local Government Area. The land is owned by Sydney Water. Relevant lot and DPs include: • Lot 1 DP 744930 • Lot 22 DP 25162 • Lot A DP 389832.
Site establishment and access tracks	Vehicular access to the site is via an access gate located off Panorama Crest with a sealed driveway providing access from the street to the base of the reservoir. Site establishment would include tree trimming, vegetation removal and installing temporary site amenities.
Ancillary facilities (compounds)	Construction compounds will likely be required to house site sheds, construction amenities and materials laydown. Indicative location for the site compound is shown on Figure 1.

Aspect	Detailed description
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 may require work outside these hours for the provision of an alternate water supply or deliveries. This has been assessed and mitigation measures are provided in Section 6.
Proposal timing	Construction is expected to start late 2025 and take about 15 months.

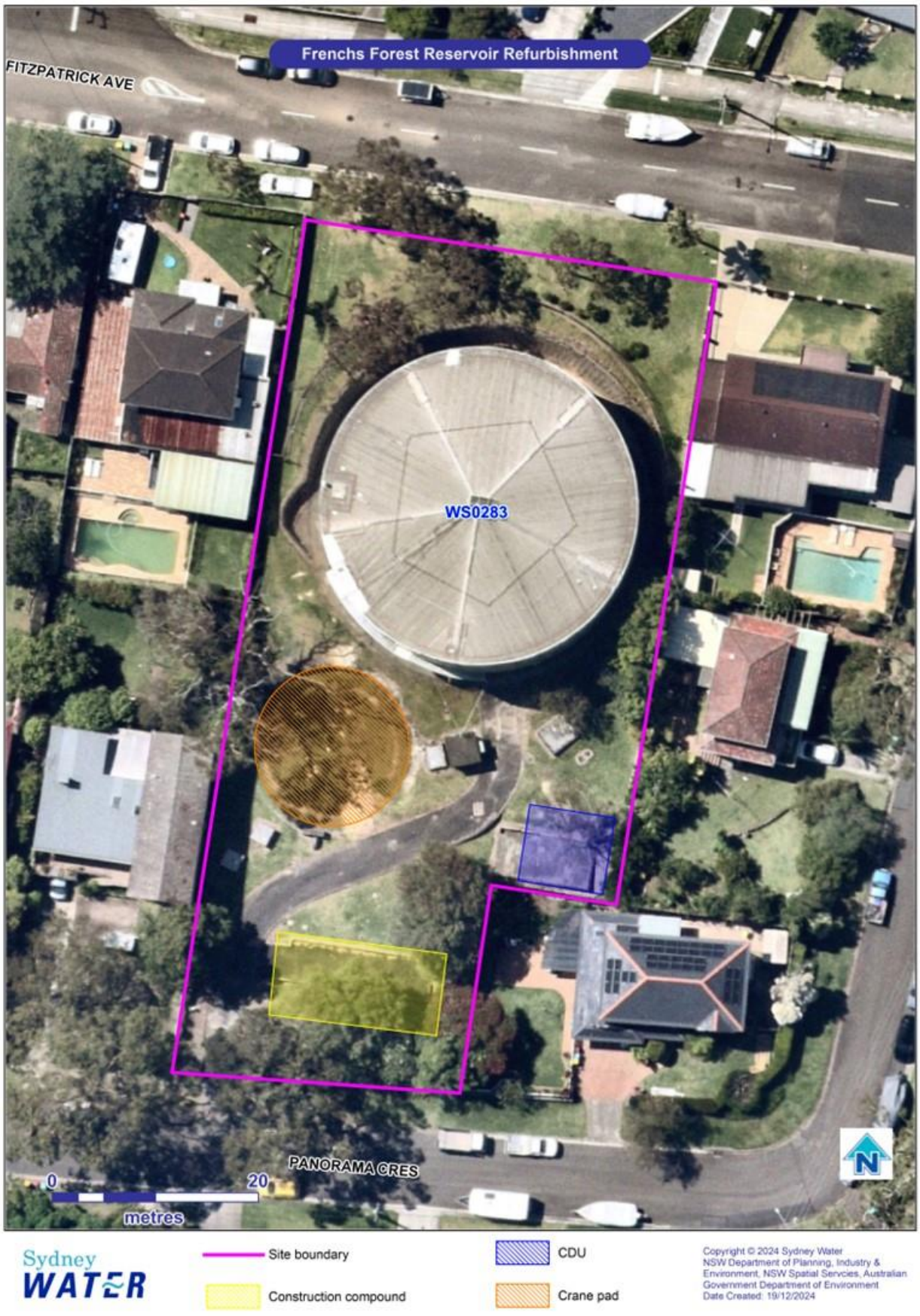

Figure 1 Site layout

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.

Sydney Water must consult with councils and other authorities for work in sensitive locations or where the work may impact other agencies' infrastructure or land. This is specified in the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). No formal consultation was required under the TISEPP. Further detail is provided in Appendix C.

Sydney Water proposes to trim some of the trees that are overhanging into the site to allow for construction activities. Consultation with the affected landowners will occur prior to the commencement of construction.

4 Legislative requirements

Table 2 Environmental planning instruments relevant to the proposal

Environmental Planning Instrument	Relevance to proposal
Warringah Local Environmental Plan 2011	The proposal is located on land zoned R2 Low Density Residential.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.159 of the TISEPP permits development by or on behalf of a public authority for water reticulation systems without consent on any land. Section 2.158 of the TISEPP defines that water reticulation systems also include water supply reservoirs. As Sydney Water is a public authority, the proposal is permissible without consent.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	**Vegetation in non-rural areas (Chapter 2)** The proposal is in an area or zone listed in subsection 2.3(1). However, subsection 2.4(1) states: '*This Policy does not affect the provisions of*

Environmental Planning Instrument	Relevance to proposal
	any other SEPP….', and as the works are permissible under the TISEPP, a council permit to clear vegetation under this SEPP is not required. **Koala habitat protection (2020 and 2021) (Chapter 4)** The proposal site is on land zoned Koala Habitat Protection, under section 4.4 of the BC SEPP. As the proposal is undertaken per Part 5 of the EP&A Act, and the site is less than 1 hectare, Chapter 4 of the BCSEPP is not applicable.

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)	An EPL does not apply to the proposal. Chapter 5 of the POEO Act defines different types of pollution incidents. Part 5.7 of the POEO Act specifies the duty to notify harm to the environment where there is actual or potential environmental harm. Should one of these incidents occur during construction, the response and investigation to the incident would follow SWEMS0009 - Responding to incidents with an environmental impact.	N/A	N/A
Biodiversity Conservation Act 2016 (BC Act)	No threatened species, ecological communities or their habitats are anticipated to be significantly impacted by the proposal. Vegetation trimming and tree removal will be required for the proposed work and would be managed in accordance with the mitigation measures in Section 6.	REF	Pre-construction, Sydney Water
Water Act 1912/ Water Management Act 2000	If groundwater removal is required, a Water Supply Works Approval (WSWA) and/or Water Access Licence (WAL) application is required. A WSWA or WAL is required before any groundwater dewatering can start.	N/A	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	The topography of the site ranges from 147 to 155 metres Australian Height Datum and slopes down towards the southern end of the site. No areas of acid sulphate soils or salinity have been recorded within the site. Excavation would be required for the installation of the CDUs associated infrastructure, electrical cabling and path replacement if required. In a worst-case scenario, excavations would be up to 3 metres deep and limited to the site. Local topography would not be substantially altered once operational when excavations have been filled in. There is the potential for soil to become contaminated through accidental chemical or fuel spills and leaks from construction plant and equipment, and maintenance activities during operation. Potential topography, geology and soil impacts will be managed by implementing the mitigation measures listed in Section 6.
Water and drainage	There are no waterways or potential groundwater dependent ecosystems within 200 metres of the site. Before replacing the reservoir roof, the water in the reservoir would be reduced to a low level through customer use of water. The remaining water would then be dewatered into the environment via an existing scour. Water will be discharged in accordance with Sydney Water's discharge protocol to prevent any water quality impacts. Groundwater is not anticipated to found during construction works however if encountered it may need to be removed. A WSWA and/or WAL (if greater than 3 ML) must be obtained before groundwater dewatering begins. The proposal will require temporary storage of fuels and/or chemicals for equipment and machinery operation during construction and operation. Potential impacts include accidental leaks, spills and seepage into the soils or stormwater system. Any fuels and chemicals required to be stored on site will be securely bunded. Potential impacts to water and drainage will be managed by implementing the mitigation measures listed in Section 6.
Flora and fauna	RPS was engaged to complete an ecological assessment for the potential impacts of the proposal to flora and fauna, refer to Appendix D. No threatened flora species were identified within the site. The site has planted native vegetation, exotic vegetation and plant community type (PCT) 3259: Sydney Coastal Shale-Sandstone Forest, which is associated with the BC Act listed Endangered Ecological Community *Duffys Forest Ecological Community in the Sydney Basin Bioregion*, refer to Figure 2. No threatened fauna species were identified within the site; however, the precautionary approach has been undertaken for suitable habitat that may be impacted by the proposal for potentially occurring threatened fauna species; Grey-headed Flying-Fox (*Pteropus poliocephalus),* Eastern False Pipistrelle (*Falsistrellus*

Aspect	Potential impacts
	tasmaniensis), Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis),* Southern Myotis (*Myotis macropus)* and the Yellow-bellied Sheathtail-bat *(Saccolaimus flaviventris)*. The proposal would remove approximately 0.032 ha of vegetation, refer to Figure 2. The vegetation to be removed includes 0.031 ha of planted native and exotic vegetation and 0.012 ha of PCT 3259, consistent with the Duffys Forest EEC. The trimming of one hollow-bearing tree which may provide habitat of threatened fauna is also required. The removal of the vegetation may result in the loss of habitat for the threatened fauna that may occur within the site. A Test of Significance was undertaken for the potentially impacted fauna and concluded that none would be significantly impacted by the removal of the vegetation. Due to the removal of Duffys Forest EEC, a Test of Significance was undertaken. As the vegetation is maintained on an ongoing basis and is of low quality, the proposal would not have a significant impact on the EEC. Offsetting will be completed in line with the Sydney Water Biodiversity Offset Guideline (2024). The Guideline outlines that the following offsets are required: • 246 m^2 of Duffys Forest EEC (123 m^2 of Duffys Forest EEC x 2) • 9 trees (2 native trees x 3 and 3 non-locally native/exotic trees x 1) • 4 nest boxes or salvaged hollows (2 hollows x 2). Revegetation would occur within the site. Where it is not possible to meet the offset requirement on site, an appropriate nearby site would be selected. With the implementation of mitigation measures in Section 6 and the minor nature of the proposed works, it is unlikely that the proposal would result in a significant flora or fauna impact.
Heritage	There are no known non-Aboriginal or Aboriginal heritage items within 200 metres of the site, therefore no impacts to known heritage is expected. The site has been highly disturbed by the construction of the reservoirs, therefore the potential to impact unidentified Aboriginal heritage items is considered very low. Potential impacts to heritage will be managed by implementing the mitigation measures listed in Section 6.
Noise and vibration	The proposal is within a residential setting. The existing noise environment is influenced by road traffic. Sensitive receivers who may be impacted by noise from the works includes residents immediately adjacent to the site. The works would generate noise during construction from the operation of machinery and equipment. Works are proposed to be carried out over 5 shifts per week (i.e. Monday through Friday 7am to 6pm). Construction would occur during standard daytime hours and is expected to take about 15 months to complete. 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

Aspect	Potential impacts
	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 Transport for NSW Construction and Maintenance Noise Estimator. The modelled scenarios comprised of the following inputs: • Representative noise environment – R3 • Distance based noisiest plant – abrasive blasting • Line of sight to the receiver – Yes. Noise levels higher than the existing environment during the day would be heard within 70 metres of the proposed works. The abrasive blasting works would occur within the reservoir and last approximately 14 weeks. Residential receivers would be impacted by noise during construction, refer to Figure 4. Additional mitigation measures from the Transport for NSW Construction and Maintenance Noise Estimator that should be considered by the community team are as follows: • N: Notification (letter box drop) • PC: Phone call • RO: Respite offer (e.g. work blocks of 2 hours with one hour breaks in between). No operational noise impacts are anticipated. **Vibration** It is anticipated that the works would involve minor vibratory activities such as the use of an abrasive blaster. There are no structures adjacent to the reservoir that may be impacted to the minor vibratory activities. No vibration impacts are anticipated.
Air and energy	The nearest sensitive receivers which may be impacted by changes to air quality are the residents located adjacent to the site. Dust and pollution impacts may result from: • dust generated during excavation • dust generated by construction vehicles travelling on disturbed/ unsealed access routes or on unsealed laydown areas or road verges • emissions from machinery, equipment and vehicles used during construction. Nearby receivers may be affected by minor changes in air quality during construction. Air quality impacts would be managed by implementing the mitigation measures listed in Section 6. During construction the proposal would require increased energy, and this would marginally increase Sydney Water's total energy use. During operation the proposal would be operated in accordance with energy use procedures that apply to Sydney Water's existing network.

Aspect	Potential impacts
Waste and hazardous materials	HazCentral identified asbestos and lead paint and within the site. Before construction starts the reservoirs would be inspected for these hazardous materials to confirm their location and appropriate removal of the materials if required. Construction waste streams are anticipated to include: • Redundant assets • Domestic waste • Contaminated materials • Excavated soil • Green waste. Waste will be stored in separate skip bins or delineated areas within the compound or taken directly off-site to a facility licenced to accept the waste. Recycling or re-use of waste streams such as green waste and concrete is encouraged where possible. Waste and hazardous materials would be managed by implementing the mitigation measures listed in Section 6.
Traffic and access	The site is accessed via a locked gate from Panorama Crescent, a local road managed by Northern Beaches Council. At peak construction, up to 18 light vehicles and some heavy vehicles would access the site per shift. Temporary road closures may be required for the infrequent delivery and pick of materials and equipment. Traffic management would be undertaken to minimise delays where possible. As Panorama Crecent is a local road and there are no traffic signals within 100 metres, a Road Occupancy Licence is not required. Parking of construction vehicles would occur along Panorama Crescent and other nearby side streets, limiting available parking in the immediate vicinity during construction. Access to nearby residential properties, and existing Sydney Water assets would be maintained. It is not expected that any traffic control would be required. Traffic and access would be managed by implementing the mitigation measures listed in Section 6.
Social and visual	The proposal has the potential to cause social impacts associated with air quality and noise, which have been assessed above. Visual impacts from the loss of vegetation and presence of construction personnel and equipment are anticipated. The impacts to visual amenity during operation would be limited. The new roof would be like for like and the additional infrastructure, such as the new CDU would be consistent with the existing use of the site. Due to the removal of vegetation within the site, vegetation would be planted to screen the additional infrastructure at the site from nearby residents. Social and visual impacts would be managed by implementing the mitigation measures listed in Section 6.

Aspect	Potential impacts
Cumulative and future trends	Development applications on the Northern Beaches Council website currently (December 2024) active or determined in the last 6 months for the suburb of Frenchs Forest relate to localised residential developments and changes to existing buildings. The Major Project website was checked in December 2024. A project which may result in cumulative impacts is located about 850 metres to the east of the site and includes the construction of the Northern Beaches Mental Health Hub (application was approved in 2023). Construction of the project is anticipated to begin in late 2024, duration of construction is not known however it is may overlap with the construction of the proposal. Cumulative impacts are anticipated to be limited to traffic, from the delivery of materials and equipment. The cumulative impacts are anticipated to be negligible due to the ability of the existing roadways to handle the minor increase in traffic. Overall, potential impacts of the proposed works are expected to be minor and localised, and unlikely to make a significant contribution to any cumulative environmental impact on a local or regional scale.

Figure 2 Vegetation within the site

Figure 3 Vegetation to be impacted

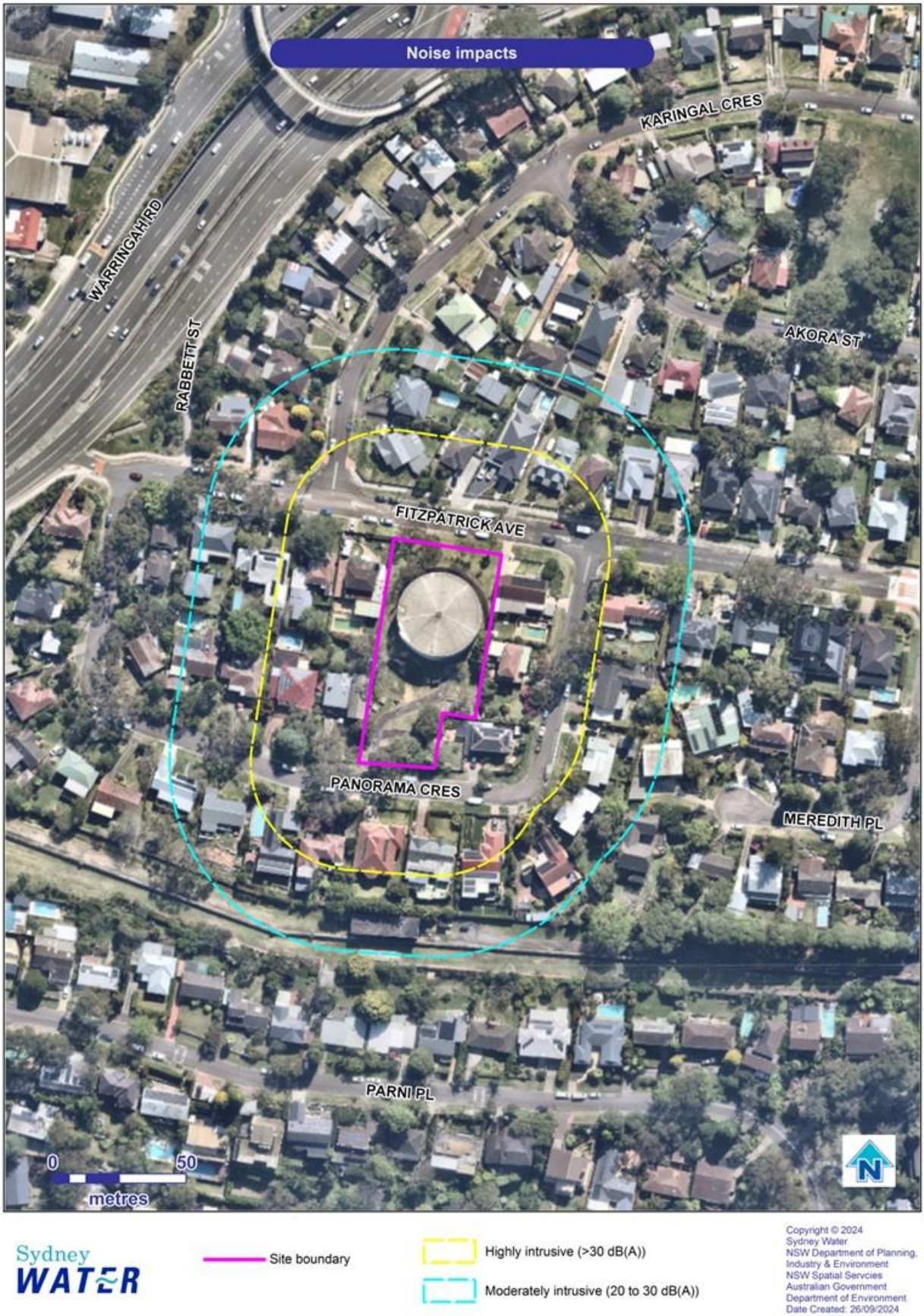

Figure 4 Noise impacts

6 Environmental mitigation measures

Table 5 Mitigation measures

Mitigation measures
Sydney Water's Project Manager (after consultation with the environmental and community representatives and affected landowners) can approve temporary ancillary construction facilities (such as compounds and access tracks), without additional environmental assessment or approval if the facilities: • limit proximity to sensitive receivers • do not disrupt property access • have no impact to known items of non-Aboriginal and Aboriginal heritage • are outside high-risk areas for Aboriginal heritage • use existing cleared areas and existing access tracks • have no impacts to remnant native vegetation or key habitat features • have no disturbance to waterways • do not require additional mitigation measures beyond those included in the EIA • do not disturb contaminated land or acid sulfate soils • will be rehabilitated at the end of construction. The Delivery Contractor must demonstrate in writing how the proposed ancillary facilities meet these principles. Any facilities that do not meet these principles will require additional environmental impact assessment. The agreed location of these facilities must be shown on the CEMP site plan and appropriate environmental controls installed.

Should the proposal change from the EIA, no further environmental assessment is required provided the change:
• remains within the site and has no net additional environmental impact or
• is outside the site but:
  ○ reduces impacts to biodiversity, heritage or human amenity or
  ○ avoids engineering (for example, geological, topographical) constraints and
  ○ after consultation with any potentially affected landowners and relevant agencies.
The Delivery Contractor must demonstrate in writing how the changes meet these requirements, for approval by Sydney Water's Project Manager in consultation with the environmental and community representatives.

Prepare a Construction Environmental Management Plan (CEMP) addressing the requirements of this environmental assessment. The CEMP should specify licence, approval and notification requirements. Prior to the start of work, all project staff and contractors will be inducted in the CEMP. The CEMP must be readily available on site and include a site plan which shows: • boundaries of the proposed works 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.

Mitigation measures

Prepare an Incident Management Plan (IMP) outlining actions and responsibilities for:

- 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.

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

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

Assign single person with accountability for coordinating communication and information flow across contractors and consultants and provide the contact details of this person in the EWMS and/or 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:

- install sediment and erosion controls before construction starts
- reuse topsoil where possible and stockpile separately
- inspect controls at least weekly and immediately after rainfall
- rectify damaged controls immediately
- remove controls once surfaces have been stabilised, including removing trapped sediment in drainage lines.

Minimise ground disturbance and stabilise disturbed areas progressively.

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

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

Water and drainage

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

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

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

Mitigation measures

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

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

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 (e.g. a different area of vegetation is removed but the total area is the same or less than assessed in the EIA).

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

Offset residual impacts to native vegetation and trees in accordance with the Biodiversity Offset Guideline (SWEMS0019.13).

Revegetation within the site is to be prioritised for the offsetting requirements.

Protect trees in accordance with the requirements of Australian Standard 4970-2009 for the Protection of Trees on Development Sites. Do not damage tree roots unless absolutely necessary and engage a qualified arborist where roots >50mm are impacted within the Tree Protection Zone.

Notify potentially affected residents 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 hollow bearing trees), engage WIRES or a licenced ecologist to inspect and relocate fauna before works.

If any damage occurs to vegetation outside of the site (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 SWEMS0017.

Mitigation measures

Heritage

Repeat the basic AHIMS search if it is older than 12 months. Conduct additional assessment if new sites are registered and could be impacted by the works.

If any Aboriginal object or non-Aboriginal relic is found, cease all excavation or disturbance in the area and notify Sydney Water Project Manager in accordance with SWEMS0009.

Noise and vibration

Works must comply with the EPA Construction Noise Guideline (Draft, 2021), including scheduling work and deliveries during standard daytime working hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. No work to be scheduled on Sunday nights or public holidays. Any proposed work outside of these hours must be justified.

The Proposal will also be carried out in accordance with:

- Sydney Water's Noise Management Procedure SWEMS0056
- Noise Policy for Industry (EPA, 2017).

All reasonable and feasible noise mitigation measures should be justified, documented and implemented on-site to mitigate noise impacts.

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

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

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

- consider potential noise impacts and implement the relevant standard daytime hours safeguards, follow Sydney Water's Noise Management Code of Behaviour (SWEMS0056.01) and document all reasonable and feasible management measures to be implemented
- identify additional community notification requirements and outcomes of targeted community consultation

Mitigation measures

- seek approval from the Sydney Water Project Manager in consultation with the environment and communications representatives.

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

- 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.

Air and energy

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

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

Switch off vehicles/machinery when not in use.

Cover all transported waste.

Waste and hazardous material

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

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

Minimise stockpile size and ensure delineation between different stockpiled materials.

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

Manage lead paint in accordance with the WHS Regulation (2017) Part 7.2 and the Australian Standard Lead Paint Management Guidelines. Consult with Contamination and Hazardous Materials team where works involve removal of lead-based paint. Develop a Lead Management Plan if required.

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

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

Mitigation measures
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. • Treat community enquiries appropriately.
Restore work sites to pre-existing condition or better.
Maintain work areas in a clean and tidy condition.

Appendix A – Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There may be impacts on the community related to flora and fauna, noise, traffic and visual amenity. There will be environmental improvements by providing a reliable water 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 significant impacts to ecosystems of the locality. The proposal will lead to environmental improvements by ensuring a reliable drinking water service.
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 a significant 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 proposal is anticipated to have negligible cumulative traffic effect, for the delivery of materials and equipment.
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 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.
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 (i.e. non-certified land)? *If so, notify DPE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021).*		X

Appendix D – Ecological Assessment Memo

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