Review of Environmental Factors

SP0419 new Odour Control Unit, Fairfield

1 Determination

This Review of Environmental Factors (REF) assesses potential environmental impacts of a new Odour Control Unit (OCU) at SP0419, Fairfield. 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 and fauna and noise. During operation, the main potential impacts are associated with visual amenity, however there will be a positive long-term impact from the reduction in odour emissions. 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]
Aaron Panozzo REF author Sydney Water Date: 1 October 2025	John Eames Senior Environmental Scientist Sydney Water Date: 1 October 2025	David Duong Project Manager Sydney Water Date: 1 October 2025	Murray Johnson Snr Manager Environment and Heritage Sydney Water Date: 1 October 2025

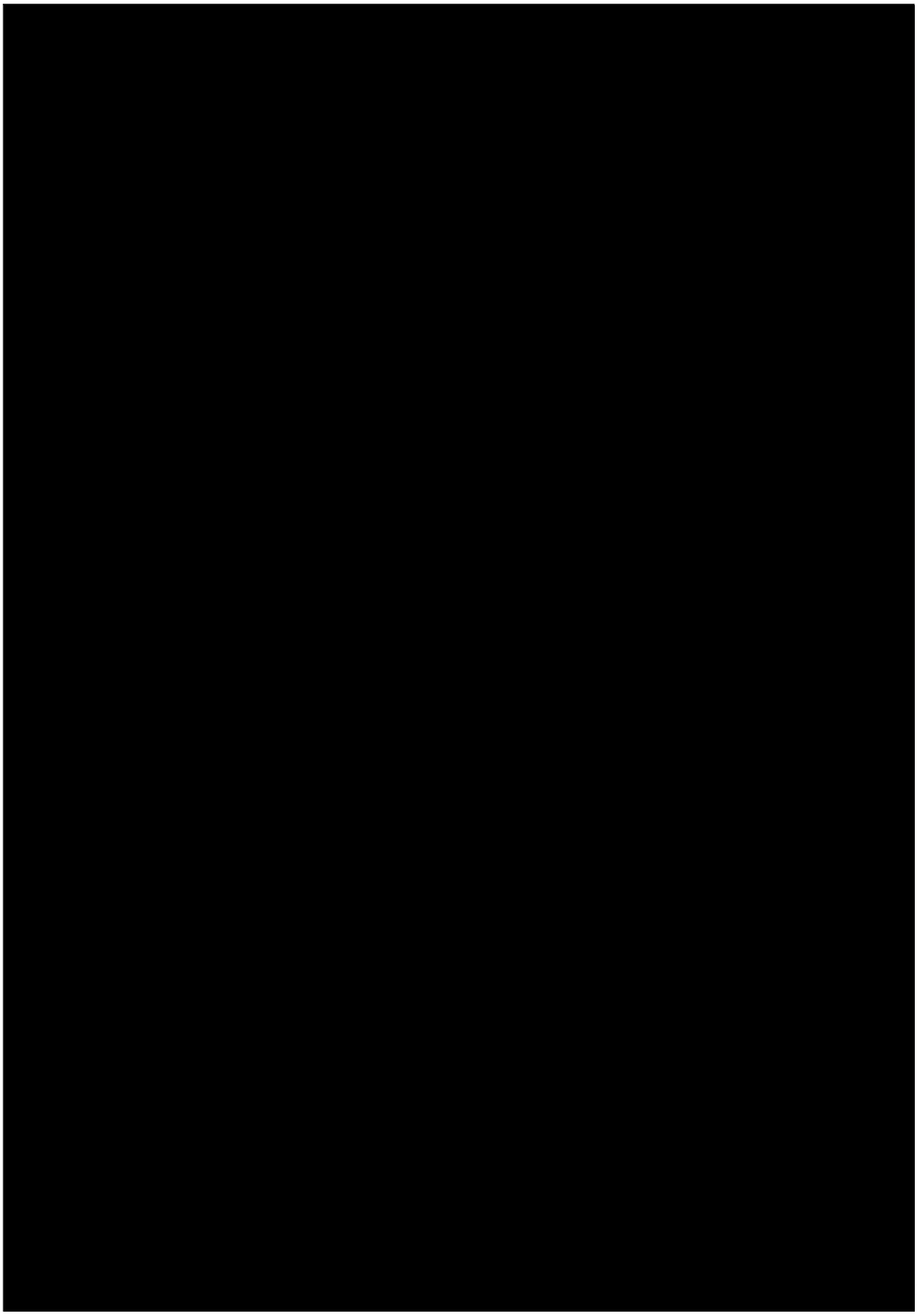
2 Proposal description

Table 1 Description of proposal

Aspect	Detailed description
Proposal need and objectives	The purpose of the proposal is to install an odour control unit (OCU) to treat foul air from wastewater pump station, SP0419. This is in response to a series of community complaints made to Sydney Water and Fairfield City Council regarding odour and foul air around Prospect Creek.
Consideration of alternatives/options	A 'do nothing' approach would not satisfy the objectives of the proposal and would not resolve the existing issues and complaints regarding foul air from SP0419. The preferred option is the provision of an OCU and associated structures to meet the objectives and help to resolve complaints from the community (refer Section 3).
Proposal description and methodology	The scope of works for the new OCU at SP0419 include the following: • Site establishment and set up: - survey and service locating - site set up and laydown • OCU site preparation: - vegetation clearing and site preparation for OCU - ERSED controls setup - topsoil stripping and earthworks levelling for OCU - temporary pile platform installation - bored piling for foundation into rock (20-25 m) - concrete works – formwork, slab pouring and shaft foundation (Including foundation for the vent stack and OCU and retaining wall for the OCU). • OCU mechanical and electrical installation works: - installation of a new activated carbon OCU to treat foul air from SP0419. - installation of new vent stack to discharge treated air from the OCU. - build unloading platforming around the OCU for maintenance. - install all new interconnecting OCU above ground ductwork between the OCU and vent stack. - install new OCU electrical cabinet/panels - installation of all valves and instruments associated with the OCU. - install above ground DN750 GRP duct from SP0419 penstock to the OCU with inspection port, sampling point and drains. - install power cable from SP0419 to the new OCU panel with appropriate drainage to DN750 ductwork. - modify water supply to allow installation hose reel and filter washing basin for the OCU. • Connection works: - install lightning protection to the vent stack (Subcontractor to undertake an earthing and lightning study.) - install an earthing conductor between the duct support and the earthing ring. - install an earthing conductor between the OCU and the earthing ring. - installation of all cables between electrical equipment and components

	- testing and commissioning of all electrical equipment and components - vent line installation through SP0419 site perimeter - pipework and duct install through the SP0419 site next to dry well - bypass on SP0419 for connection to wet well. • Car park works • Site clean-up and restoration.
Equipment	The plant/equipment needed to deliver the scope of works include: • 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 • bored piling equipment.
Location and land ownership	The proposed works are located at SP0419 off Vine Street, Fairfield. Works will occur on both Sydney Water owned land (Lot 1 DP 600793) and crown land managed by Fairfield City Council (Lot C DP82372) within the Fairfield Local Government Area (LGA).
Site access	Access to SP0419 will be via the existing driveway off Vine Street, Fairfield. Additional site access is available to the rear of SP0419 through the Fairfield Leisure Centre carpark (see Figure 1). No new access tracks are required.
Ancillary facilities (compounds)	Construction compound and laydown areas will likely be required to house site sheds, construction amenities and materials laydown. Site compounds would be located within the project footprint outlined in Figure 1. Two compound/laydown areas are shown in Figure 1.
Work hours	Work and deliveries will be scheduled during standard daytime hours: • 7 am to 6 pm, Monday to Friday • 8 am to 1 pm, Saturdays.

	The proposal is not expected to require work outside these hours. However, Sydney Water's Project Manager can approve work outside of standard daytime hours. The approval process is described in the mitigation measures in Section 6.
Proposal timing	Construction is expected to start in late 2025 and due to project complexity it will take about 2 and a half years for operational completion.



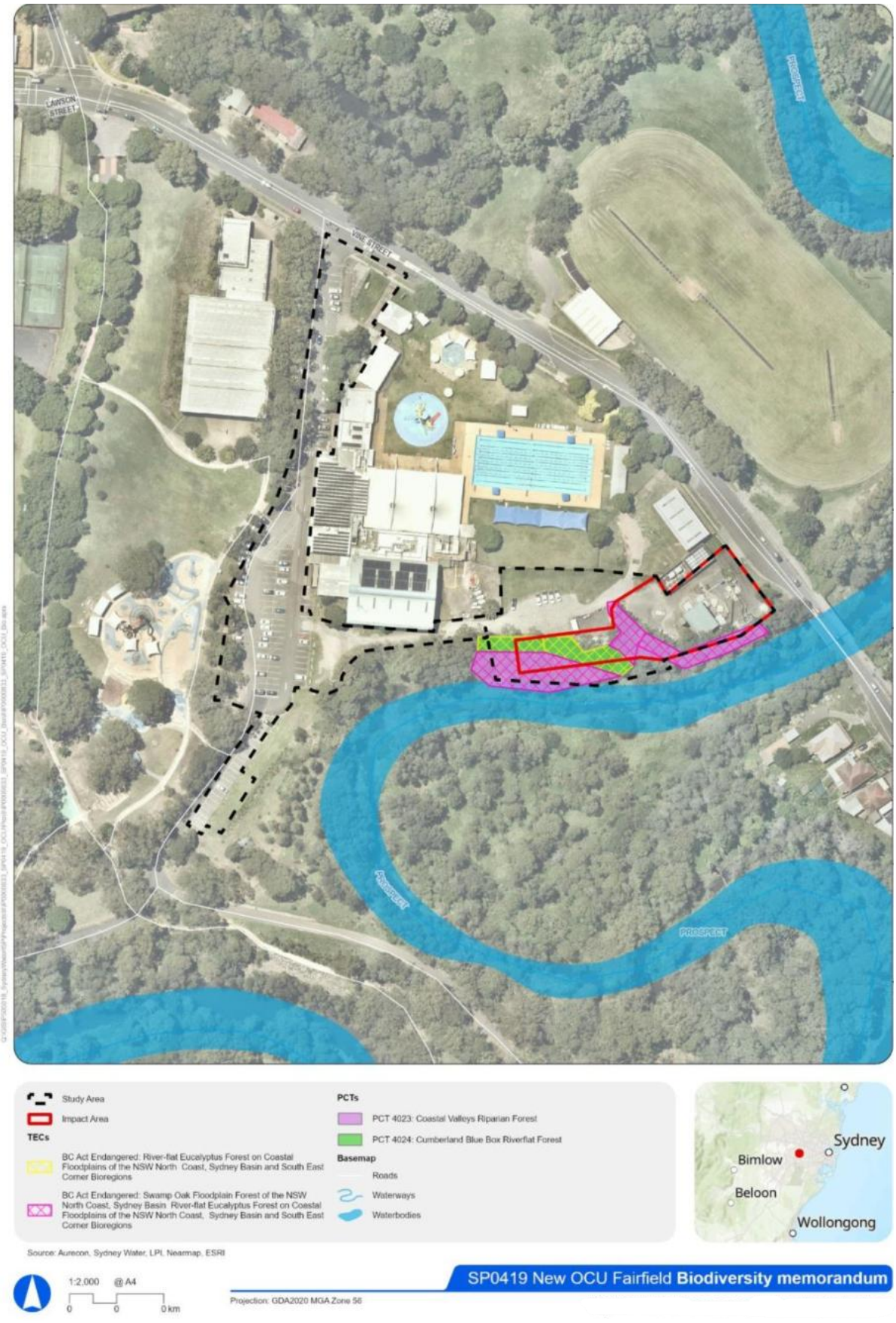


Figure 1 Location of proposal and environmental constraints

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. Local council(s) 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.

Odour complaints

The purpose of the proposal is to help resolve community complaints in regard to odour and foul air emissions in Fairfield, NSW. A total of 54 customer complaints regarding odour in Fairfield were made to Sydney Water between 2017 to 2024 via phone calls. Petitions were also made to Fairfield City Council between 2016 and 2018 requesting a resolution of odour emissions and pollution in Prospect Creek.

Sydney Water will continue to monitor customer and community complaints and engagement through ongoing community consultation and discussions with Fairfield City Council.

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).

No formal consultation was required under the TISEPP. Further detail is provided in Appendix C.

The Department of Primary Industry (Crown Land) and Fairfield City Council were notified of the proposed activities during preparation of the REF as the proposal is located in a Crown Reserve (LRegNo – R83727, managed by Fairfield City Council). Crown Land responded with general acceptance and a recommendation to notify council. No response was received from Fairfield council.

The Department of Primary Industry (DPI Fisheries) was notified under s199 of the *Fisheries Management Act 1994* during REF preparation, as the work involves reclamation or dredging in a waterway classified as 'Key Fish Habitat'. A response was received on 24 February 2025. This response included a series of recommendations to be implemented as mitigation measures as part of this REF.

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 RE1 (Public recreation), SP2 (Infrastructure) and C2 (Environmental Conservation).
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126 (6) of the TISEPP permits development by or on behalf of a public authority for sewage reticulation systems without consent on any land in the prescribed circumstances. The proposal involves development of a sewage reticulation system. Under section 2.126 (1) (a), the development is carried out in the prescribed circumstances as it is being carried out by a public authority. As Sydney Water is a public authority, the proposal is permissible without consent.
State Environmental Planning Policy (Biodiversity and Conservation) 2021	**Vegetation in non-rural areas (Chapter 2)** The proposal is in an area or zone listed in subsection 2.3(1). However, subsection 2.4(1) states: 'This Policy does not affect the provisions of any other SEPP….', and as the works are permissible under the TISEPP, a council permit to clear vegetation under this SEPP is not required. **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/minimal and meet the requirements of part 6.2 of this SEPP.
State Environmental Planning Policy (Resilience and Hazards) 2021 (RHSEPP)	**Coastal Management (Chapter 2)** The works are on land to which Chapter 2 of this SEPP applies. The works are in an area mapped as Coastal Wetland Proximity Area, Coastal Environment Area and Coastal Use Area. According to section 2.8, 2.10 and 2.11 development consent is not required.

Table 3 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations Act 1997 (POEO Act)	The proposal is covered by an existing EPL 372 and meets the EPL compliance requirements. Temporary relaxation of EPL 372 is not required	N/A	N/A

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	during construction/commissioning. A variation to EPL 372 is not required for operation.		
Biodiversity Conservation Act 2016 (BC Act)	The BC Act protects flora, fauna, habitats and ecological communities threatened in NSW. Five-part tests were completed for one threatened species and two threatened ecological communities (TECs) protected under the BC Act. These tests determined that the impacts to the species and communities as a result of the Project are considered unlikely to be significant.	REF	Pre-construction, Sydney Water
National Parks and Wildlife Act 1974 (NPW Act)	[redacted]. A Sydney Water Aboriginal Heritage Due Diligence (AHDD) was completed, and this determined that the proposed works are unlikely to impact on the AHIMS site.	AHDD	During REF, Sydney Water
Fisheries Management Act 1994 (FM Act)	The FM Act protects aquatic biodiversity and habitat in NSW. The proposed works are located within the boundary of Prospect Creek Key Fish Habitat. As such consultation with DPI fisheries was undertaken on 30 January in accordance with section 199 of the FM Act.	Notification	Pre-construction, Sydney Water
Crown Land Management Act 2016	The proposal is partly located on Crown land (ID 556597) managed by Fairfield City Council. Consultation with DPI Crown lands and Fairfield Council was undertaken.	Notification	During REF, Sydney Water

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 proposal area is relatively flat, sloping south towards Prospect Creek. The proposed works are in an area of class 5 Acid Sulfate Soils (ASS) and localised salinity hazard. Therefore, encountering ASS and potential impacts due to salinity are not considered likely. If encountered apply the mitigation measures in Section 6. Excavations to a depth of 2 m and piling to a depth of 20-25 m are required for the OCU foundation. These excavations are partially located in the riparian zone of Prospect Creek. Potential impacts from excavation or ground disturbance associated with this project include: • soil erosion and generation of sediment laden run-off from excavation and stockpiles into drainage lines • inadvertent transfer of soil off-site by work vehicles • mismanagement of unexpected, contaminated soil during excavation • dust impacts to nearby receivers. Potential topography, geology and soils impacts would be managed by implementing the mitigation measures listed in section 6.
Water and drainage	The proposal is located adjacent to Prospect Creek, which is a Key Fish Habitat. The proposal is within a high flood risk precinct (Prospect Creek Floodplain Management Plan Review 2010, Bersher Consulting Pty Ltd). Groundwater is not anticipated to be intercepted during shallow excavation. Groundwater may be intercepted during deep piling works however no dewatering would occur. Ground disturbing works have the potential to cause sedimentation to waterways if not adequately managed. The works would not permanently alter surface topography or effect existing drainage patterns. Any impacts from flooding during construction are considered minor and temporary, as stockpiles will be limited in size and contingency measures will be in place to prevent sedimentation of waterways. The proposal will require temporary storage of fuels and/or chemicals for equipment and machinery operation during construction. Potential impacts include accidental leaks, spills and seepage into the soils, groundwater, or local stormwater system. Potential water and drainage impacts would be managed by implementing the mitigation measures listed in Section 6.
Flora and fauna	A Biodiversity Assessment was undertaken by Aurecon in May 2025 (see Appendix D). Vegetation within the study area consists of two plant community types (PCTs): • PCT 4023 - Coastal Valleys Riparian Forest • PCT 4024 Cumberland Blue Box Riverflat Forest. These PCTs conform to the following BC Act listed Threatened Ecological Communities (TEC): • PCT 4023 - Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin River-flat Eucalyptus Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.

- PCT 4024 -River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions.

No threatened flora species were recorded within the study area. One threatened fauna species (Little Lorikeet (*Glossopsitta pusilla*)) has a moderate or higher likelihood occurrence within the study area.

There was moderate to high weed incursion within the study area, mainly by Green Panic (Panicum maximum var. trichoglume), Rhodes Grass (Chloris gayana), and Wandering Trad (Tradescantia fluminensis). There were no NSW state priority weeds or Weeds of National Significance (WoNS) identified within the study area (NSW Government and Greater Sydney Local Land Services, 2022).

Vegetation clearing and ground leveling is proposed around the existing pump station to accommodate the new OCU structure and above ground vent pipework. About 818 m^2 of native vegetation would be removed within the impact area (see Figure 1) including:

- 514 m^2 of PCT 4023
- 304 m^2 of PCT 4024.

Both of these PCTs are considered to be potential threatened species habitat for the Little Lorikeet (*Glossopsitta pusilla*).

Tests of Significance under the BC Act were completed and confirmed that the proposal would not have a significant impact on the above TECs or Little Lorikeet (*Glossopsitta pusilla*).

There are no subterranean, aquatic, or terrestrial Groundwater Dependent Ecosystems (GDEs) in the study area according to the Bureau of Meteorology GDEs Atlas. There are high potential terrestrial GDEs about 50 m south, and 150 m north-east of the study area, associated with Prospect Creek.

The works are in a coastal use, coastal environment and coastal wetland proximity area. Coastal wetlands are mapped immediately south of the study area, associated with Prospect Creek. The works will not significantly impact on the biophysical, hydrological or ecological integrity of the adjacent coastal wetland.

Although formal offsets are not required under the BC Act, Sydney Water has an internal position to maintain or enhance biodiversity outcome if the proposal has residual biodiversity impacts. Vegetation removal will be offset 3:1 in accordance with Sydney Water's Biodiversity Offset Guideline (SWEMS0019.13). A total of 2454 m^2 of offsets are required. This will include revegetation on site where possible as well as offsite.

Potential flora and fauna impacts would be managed by implementing the mitigation measures listed in Section 6.

Heritage

Aboriginal heritage

The proposal is located in a high risk landscape for Aboriginal Heritage (<200 m from a waterway). A search of the Aboriginal Heritage Information Management System (AHIMS) was completed on 5 February 2025. [redacted]

A Sydney Water AHDD was completed for the works. The proposal area has been previously disturbed during the construction of SP0419 and associated access roads. The AHDD found that the likelihood of encountering unknown Aboriginal heritage items in the proposal area is low.

Non-Aboriginal heritage

A review of the Fairfield LEP, State and National heritage registers was conducted on 5 February 2025 to identify any heritage items in proximity to the proposed works. The nearest heritage item to the proposal is the locally listed Von Heiden Gardens (ID I35) about 83 m south of the staff parking area. No impacts to this item will occur.

Noise and vibration	The proposal is in a recreational and residential area. The existing noise environment is influenced by road traffic and recreation activities in the adjacent Fairfield Leisure Centre and Fairfield Reserve. The closest resident is located 65 m from the proposal. Patrons of the Fairfield Leisure Centre will have line of site to the works. Nearby sensitive receivers include: • residents along Vine Street (numbers 97, 99, 101, 101A, 110) • residents along Diprose Street (numbers 7, 9, and 11) • the Catholic Church of the Spanish Community • Fairfield Leisure Centre. *Construction impacts* The works would generate noise and vibration during construction from excavation, piling and the operation of machinery and equipment. The likelihood of noise impact from the proposal was reviewed against risk factors (based on Table 2 of the EPA's 2020 Draft Construction Noise Guideline). The review indicated that the construction noise impact would be medium-low risk and therefore a quantitative noise impact assessment was undertaken. The purpose of the noise assessment is to assess the predicted worst-case noise impacts. This will identify recommended additional mitigation measures for impacted receivers at different distances from the works, which will guide the community engagement for the sites. The Transport for NSW (TfNSW) Construction and Maintenance noise estimator tool (TfNSW, 2022) was used for the assessment. The predicted worst case noise impact is shown in Figure 2. Construction noise will be moderately intrusive for receivers within 60 m and highly intrusive for receivers within 35 m. All receivers within these distances will be notified of the works (e.g. letterbox drop) as per recommendations in the TfNSW noise estimator tool.



Figure 2 Noise impacts to sensitive receivers

Operational impacts

The proposal will be operated in accordance with Noise Policy for Industry (EPA, 2017). Thus impacts to any sensitive receivers are not anticipated.

	Vibration impacts Excavation and piling have the potential to cause vibration. A minimum working distance of 7 m is recommended for light-framed structures (i.e. residential buildings made with wooden framing). All buildings are set back over 7 m from the works, no vibration impacts are anticipated.
Air and energy	A review of the National Pollutant Inventory identified four sites within 1 kilometre of the proposal: • Capral Aluminium Ltd Yennora (750 m) • Fairfield Water Resource Recovery Facility (750 m) • Fairfield Recycled Water Plant (1 km) • Tip Top Bakeries Fairfield (800 m). Sensitive receivers in the vicinity of the proposed works include neighbouring residential properties along Vine Street and Diprose Street, Fairfield Leisure Centre and the Catholic Church of the Spanish Community. During the works there is the potential to impact air quality from: • dust generated during excavation and the movement of disturbed ground • emissions from machinery, equipment and vehicles used during construction • odour from wastewater. The potential air quality impacts during construction would be localised and temporary and unlikely to have a substantial impact on the surrounding environment with the application of environmental safeguards in Section 6. While no odour monitoring was undertaken as a part of this assessment the installation of the odour control unit would reduce overall odour emissions from pump station SP0419 after construction and result in a long-term positive impact to air quality.
Waste and hazardous materials	Waste streams likely to be generated during the works include: • general construction waste • excavated material • green waste from vegetation clearing • contaminated material, if encountered. Where possible, it is preferred to reuse excavated materials from site as backfill instead of importing fill material. Where excavated materials cannot be reused as backfill, they would be classified and taken off-site for disposal at a licenced facility. There is a potential risk of spills or leaking of fuels and chemicals from plant/equipment onsite. Spill kits and inductions would manage any potential impacts.
Traffic and access	The site will be accessed via the leisure centre carpark off Vine Street and along the existing rear access track to SP0419. Vine Street is a regional road and the surrounding roads are local roads. Traffic impacts would be minimal with slightly elevated traffic levels from delivery vehicles as well as worker/staff vehicles. There would be a minor reduction in leisure centre parking spaces due to construction worker parking. No partial or total road closures would be required for the proposed activities. Access impacts include reduced/restricted public access to the access track behind the leisure centre and possible restricted access across the pathway at the entrance to the carpark during delivery arrivals or departures.

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 associated with the construction are expected to be low, as the works are not visible from local residences with existing vegetation in between. The proposal includes the provision of a new OCU and supporting ventilation ducts that connect to the existing SP0419. These additional structures would be constructed partially within the pre-disturbed area behind the Leisure Centre and partially within existing bushland. While bushland clearing is required for the new structure, this is unlikely to impact social and visual amenity as it would largely be obscured from public view by surrounding buildings, the pumping station and other bushland. The OCU would also include a vent stack about 10 m tall that may be visible over the surrounding buildings by visitors to the Leisure Centre and motorists along Vine Street. This visual impact is considered minor as the vent stack would be screened from most angles by existing vegetation and buildings and likely blend into the remaining vegetation.
Cumulative and future trends	Sydney Water is not aware of any planned or future work that will overlap with these works being performed. Any cumulative amenity impacts (e.g. noise, dust, traffic) would be minimal.

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: • 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 safeguards 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.
The Delivery Contractor should consider conduct pre-mobilisation and post-demobilisation soil sampling on compound sites to confirm no residual impacts.

Should the proposal methodology change from the EIA, no further environmental assessment is required provided the change:
• remains within the study area for the EIA and has no net additional environmental impact or
• is outside the study area for the EIA but:
  ○ reduces impacts to biodiversity, heritage or human amenity
  ○ avoids engineering (for example, geological, topographical) constraints
  ○ 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: • go/no go areas and boundaries of the construction area including locations of lay-down and storage areas for materials and equipment • location of environmental controls (such as erosion and sediment controls, fences or other measures to protect vegetation or fauna, spill kits) • location and full extent of any vegetation disturbance.

The CEMP will identify appropriate delineation with (e.g. metal fencing for AHIMS, white flagging for construction corridor, red flagging for no go zones etc). Delineate approved impact area before construction.

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

- predicted/onset of heavy rain during works
- spills
- unexpected finds (eg heritage and contamination)
- other potential incidents relevant to the scope of works.

All site personnel must be inducted into the IMP.

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:

- 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.

A sedimentation and erosion control plan is to be prepared by the Delivery Contractor and approved by Sydney Water prior to works starting to avoid indirect impacts due to runoff of building materials and/or water into adjacent vegetation and waterways.

Minimise ground disturbance and stabilise disturbed areas progressively.

Delivery Contractor to ensure imported material is Virgin Excavated Natural Materials (VENM) or meets a relevant NSW EPA Resource Recovery Order and Resource Recovery Exemption, or is a commercially supplied material that is not waste.

If using materials that are subject to a NSW EPA Resource Recovery Order/Exemption the Delivery Contractor must ensure the conditions in that Order/Exemption are strictly adhered to.

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

Eliminate ponding and erosion by restoring natural landforms to the pre-works condition.

Manage acid sulfate soils in accordance with the Acid Sulfate Soils Management Advisory Committee: Acid Sulfate Soils Assessment Guidelines (ASSMAC, 1998). Prepare an Acid Sulfate Soils Management Plan (ASSMP) (if required).

Adopt appropriate soil salinity mitigation measures in accordance with Western Sydney Salinity Code of Practice (Western Sydney Regional Organisation of Councils, 2003). This may include:

- treating existing salinity with gypsum
- establishing salt tolerant species in existing or potential salinity problem areas after construction
- stabilising existing areas of erosion
- minimising water use on site
- avoiding rotation and vertical displacement of the original soil profile
- backfilling excavations deeper than one metre in the same order, or treating or using this material as fill at depths more than one metre from the finished level.

Water and drainage

Use appropriate controls to avoid potential sedimentation to waterbodies.

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/or aquatic spill kit on site for clean-up of accidental chemical/fuel spills in mapped key fish habitat]. Keep the spill kits stocked and located for easy access.

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

Keep stockpiles to a minimum and ensure adequate contingency measures are in place to prevent sedimentation of waterways in the event of a large flood event.

If the potential for intercepting groundwater is identified after the REF is determined, the Delivery Contractor will obtain a groundwater Water Supply Works Approval. 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).

Store all chemicals and fuels in accordance with relevant Australian Standards and Safety Data Sheets. Record stored chemicals on site register. Ensure bunded areas have 110% capacity of the largest chemical container, or an additional 25% capacity of the total volume stored within (whichever is greater). Tightly secure chemicals and fuels in vehicles. Clearly label all chemicals.

Conduct refuelling, fuel decanting and vehicle maintenance in compounds where possible. If field refuelling is necessary, designate an area away from waterways and drainage lines with functioning spill kits close by.

No wash down of equipment permitted onsite.

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

DPIRD Fisheries recommended mitigation measures:

Erosion and sediment mitigation devices are to be erected in a manner consistent with current Best Management Practice (i.e. Managing Urban Stormwater: Soils and Construction 4th Edition Landcom, 2004) to prevent entry of

sediment into the waterway prior to any earthworks being undertaken. These are to be maintained in good working order for the duration of the works and subsequently until the site has been stabilised and the risk of erosion and sediment movement from the site is minimal.

There is to be no complete blockage of fish passage during the works.

Prior to use at the site and/or entry into the waterway, machinery is to be appropriately cleaned degreased and serviced. Spill kits are to be available on site at all times during the works.

On completion of the works the site is to be rehabilitated and stabilised including but not limited to:

- Surplus construction materials and temporary structures (other than silt fences and other erosion and sediment control devices) installed during the course of the works are to be removed.
- Replanting the disturbed area with native endemic riparian vegetation.
- Appropriate maintenance of erosion and sediment control devices is to be undertaken until the vegetation has successfully established and the site has stabilised.

DPIRD Fisheries (1800 043 536) and the Environmental Protection Authority (EPA) (131 555) are to be notified immediately if any fish kills occur in the vicinity of the works. In this situation, all works other than emergency response procedures are to cease until the issue is rectified and approval is given by DPIRD Fisheries and/or the EPA for the works to proceed.

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).

Proposed offset location should be documented in the CEMP prior to construction.

Revegetated areas and trees planted must be monitored so that their survival until establishment is achieved. This will secure long-term offset.

Map and report native vegetation clearing greater than 0.01 ha in extent (and any associated rehabilitation) to the Sydney Water Environmental Representative. Track vegetation clearing as per SWEMS0015.26 Contractor Native Vegetation Clearing and Rehabilitation template.

Minimise vegetation clearance and disturbance, including impacts to standing dead trees and riparian zones. Where possible, limit clearing to trimming rather than the removal of whole plants.

Physically delineate vegetation to be cleared and/or protected on site and install appropriate signage prior to works commencing.

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

Protect trees in accordance with the Program Delivery Guidance Standard 9.3 Biodiversity Management (EV-GS-003).

Retain dead tree trunks, bush rock or logs in-situ unless they are in the disturbance corridor and moving is unavoidable. Reposition material elsewhere on the site or approved adjacent sites.

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. See Fauna Encounters on Construction Sites Factsheet if you need further guidance.

If any threatened species (flora or fauna) is discovered during the works, stop work immediately and notify the Sydney Water Project Manager. Work will only recommence once the impact on the species has been assessed and appropriate control measures implemented.

If any damage occurs to vegetation outside of the disturbance corridor (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.

If green waste is likely to contain herbicides or other chemical or physical contaminants (including man-made and other foreign materials), do not send for offsite recycling.

For works in council managed bushland the Delivery Contractor will consult with Fairfield City Council to identify known plant pathogens or pests and management requirements. Prepare a Hygiene Management Plan if there is a risk of infestation and spread.

To prevent spread of weeds, wrap straw bales in geofabric to prevent seed spread.

Bag all plant parts and excavated topsoil that may be infested with weed propagules and dispose at a licensed waste disposal facility. Weed species that need to be bagged should be identified specifically. This would be through ecologist specialist study, or consultation with Council.

A Total Fire Ban Exemption is required for all non-essential work in TOBAN periods.

Staff and contractors should use the Sydney Water Total Fire Ban Exemption Framework to determine exemption permissibility and approval pathway.

Heritage

Do not make publicly available or publish, in any form, Aboriginal heritage information on sites / potential archaeological deposits, particularly regarding location.

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

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

Air and energy

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

Minimise the potential for odours (e.g. 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.

Cover all transported waste.

Waste and hazardous materials

Prepare a Waste and Resource Recovery Plan (WRRP) to appropriately manage and classify any materials including soils, construction/demolition wastes and associated stockpiles.

The plan will be prepared by the Delivery Contractor (or nominated environmental consultant) and approved by the Sydney Water Project Manager in consultation with the Environmental Representative and Contaminated and Hazardous Building 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 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 waste and excess spoil in accordance with the NSW EPA Resource Recovery Orders and Exemptions (if applicable) and / or Waste Classification Guidelines. Where materials are not suitable or cannot be reused onsite or offsite, recycle where appropriate. Recycle soils at a licensed soil recycling facility or dispose at an appropriately licenced landfill facility.

Prevent pollutants from escaping including by covering skip bins.

Dispose excess vegetation (non-weed) that cannot be used for site stabilisation at an appropriate green waste disposal facility.

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 complaints handling procedure.
- Do not warm-up plant or machinery near residential dwellings before the nominated working hours.
- Select appropriate plant for each task, to minimise the noise impact (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:

- justify the need for out of hours work (OOHW) and why it is not possible to carry out the works during standard daytime hours

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

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

Traffic and Access

Develop management measure to minimise traffic impacts near residential properties, schools and businesses by consulting with them (e.g. no major materials deliveries at school drop off or pick up times etc).

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

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.

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.

References

Fairfield City Council (2004) Review of Prospect Creek flood levels. online: prospect_creek_flood_study.pdf

Mary Dallas (2017) Fairfield Council Aboriginal Heritage Study. Mary Dallas Consulting Archaeologists, May 2017

Appendix A – Section 171 checklist

Section 171 checklist	REF finding
Any environmental impact on a community	There will be impacts on the community as a result of vegetation removal as well as noise impacts from the construction activities and equipment. There will be environmental improvements by providing a reliable wastewater service to the local community and a reduction in odour impacts from SP0419.
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 result in the removal of 818 m^2 of TEC which would have a minor impact on the ecosystems of the locality. The ToS assessment found this was not a significant impact. Mitigation measures, including biodiversity offsets have been identified to avoid or minimise these impacts.
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 require the removal of approximately 818 m^2 of native vegetation which is potential habitat for the Little Lorikeet. Tests of significance under the BC Act concluded that the proposed works will not significantly impact TECs or threatened species. Biodiversity offsets will further mitigate any impact on the habitat of protected animals.
Any endangering of any species of animal or plant or other form of life, whether living on land, in water or in the air	The proposal will not be endangering any species of animal, plant or other form of life, whether living on land, in water or in the air.
Any long-term effects on the environment	The proposal will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable and modern wastewater service for the area and a reduction in odour impacts 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 reduce the potential for the proposal to pollute the environment. During construction of the proposal, there would be noise impacts from construction activities and vehicles. During operation of the proposal, air quality and odour impacts will be reduced as a result of the odour control unit installation.
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. A Flora and Fauna assessment was completed to determine the impact of the proposal on the surrounding environment. With the implementation of recommended mitigation measures and the non-statutory offsetting, impacts to biodiversity would be managed. The new OCU and supporting ventilation was located in previously disturbed land as much as possible to reduce the impact to surrounding vegetation.
Improved valuation, pricing and incentive mechanisms - *environmental factors should be included in the valuation of assets and services, such as 'polluter pays', the users of goods and services should pay prices based on the full life cycle costs (including use of natural resources and ultimate disposal of waste) and environmental goals*	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community and environment.

Appendix C – Consideration of TISEPP consultation

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

Will the proposal clear native vegetation on land that is not subject land (ie non-certified land)? *If so, notify DPE at least 21 days prior to work commencing. (Requirement under s3.24 Chapter 3 Sydney Region Growth Centres - of the SEPP (Precincts – Central River City) 2021).*		X

Appendix D – Specialist studies

Flora and Fauna Assessment

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