Review of Environmental Factors Addendum

Prospect Pre-treatment Plant – Stage 2 Power and Wastewater Connections

Determination

This Review of Environmental Factors Addendum (REFA) assesses the potential environmental impacts of the Prospect Pre-treatment Plant (PPTP) stage 2 power and wastewater connections. 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 REFA and the PPTP Augmentation and Upgrade – Package 1 REF (February, 2025) (approved REF). Additional environmental impact assessment may be required if the scope of work or work methods described in this REFA change significantly following determination.

Certification

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

Prepared by:	Reviewed and endorsed by:	Endorsed by:
[redacted]	[redacted]	[redacted]
Samantha Prior Principal Environmental Scientist Date: 5/12/2025	Sally Spedding Environmental Assessment Team Manager Date: 16/12/2025	Jesse Mulholland Project Manager Date: 16/12/2025

Decision Statement

The main potential additional construction environmental impacts of the proposal change include impacts to non-Aboriginal heritage. No operational 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.

Determined by:	[redacted]	Murray Johnson Senior Manager Environment and Heritage Services Sydney Water Date: 16/01/2026

1. Proposal description

Table 1-1 Proposal need, objectives and consideration of alternatives

Aspect	Relevance to proposal
Approved REF	Prospect Pre-treatment Plant Augmentation and Upgrade – Package 1 (February, 2025).
Proposal need and objectives	The Prospect WFP is the main source of drinking water for the Prospect Water System, which supplies more than 80% of Greater Sydney's water. However, the sensitivity of the treatment process and the deterioration of raw water supply quality (from extreme weather events) has resulted in reduced treatment capacity and production at Prospect WFP. Greater Sydney's population is predicted to grow by 23% (to 6.1 million) by 2041, increasing the demand for drinking water. As demand increases, so does the need for upgrades to Prospect WFP to ensure the supply of safe drinking water. A new pre-treatment plant and upgrades to the Prospect WFP are required to ensure we can meet the current and future drinking water demand of our customers.
Proposal change description and methodology	The proposal change includes construction of: • about 1.1 km of High Voltage (HV) cable from the western side of the Upper Canal to the South Prospect Zone Substation • about 0.85 km of DN90 wastewater pipeline from the western side of the Upper Canal to an existing maintenance hole near the Prospect WFP, south of Chandos Road. The alignments follow existing roads, cleared transmission easements and underbore native vegetation. The assets will be installed underground via a combination of open trenching and Horizontal Directional Drilling (HDD). The HV trench will be about 1 m wide and 1.2 m deep. The wastewater trench will be about 0.3 m wide and 0.8 m deep. The HDD launch and receival pits will be about 4 m long x 2.5 m wide x 1.5 m deep. The trenches and HDD pits will be restored to their pre existing condition upon completion of the works. Topsoil will be stripped and reused and spoil will be used for backfill, where possible. Plant and equipment required to construct these assets include: • vacuum truck • excavators/backhoes • directional boring machine • tippers • compaction equipment. The proposal change is shown in Figure 1-1. The environmental constraints associated with the proposal change are shown in Figure 1-2 – 1-3. A staged approach to the construction of these assets has been adopted while the design progresses. This REFA covers Stage 2 (east of the Upper Canal). The

Aspect	Relevance to proposal
	specialist studies also include an alignment west of the Upper Canal that was assessed separately.
Justification for proposal change	The HV and wastewater alignment had not been finalised during preparation of the approved REF. The approved REF mentions the need for ancillary services such as HV power and wastewater in the scope of work. These services are essential to the operation of the PPTP.
Location and land ownership	The proposal change is on Sydney Water land (Lot 304 DP 1122291) off Ferrers Road, Horsley Park in the Fairfield Local Government Area (LGA).
Proposal timing	Construction is expected to start in early 2026 and take about three months.

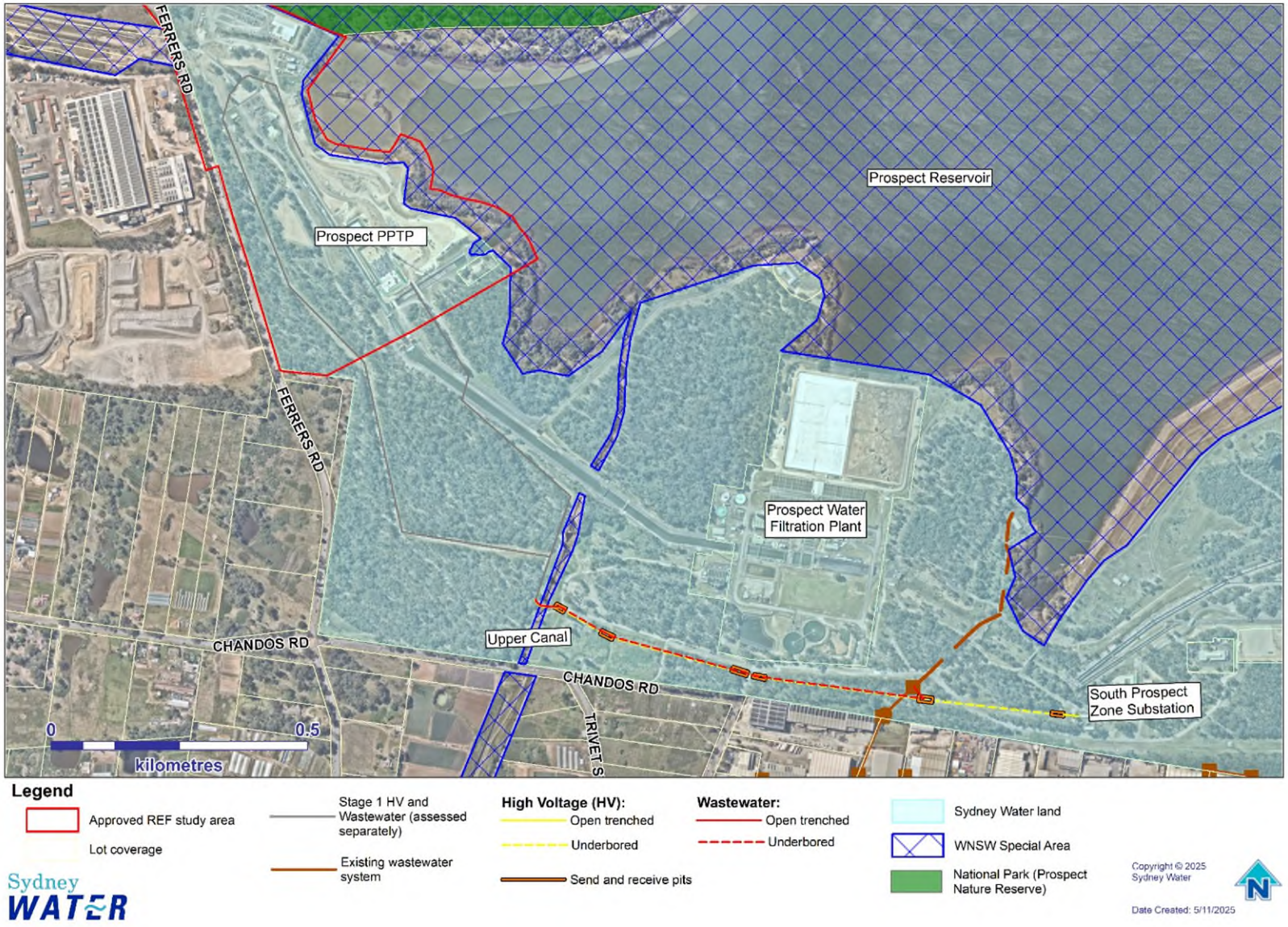

Figure 1-1 Proposal change and site context

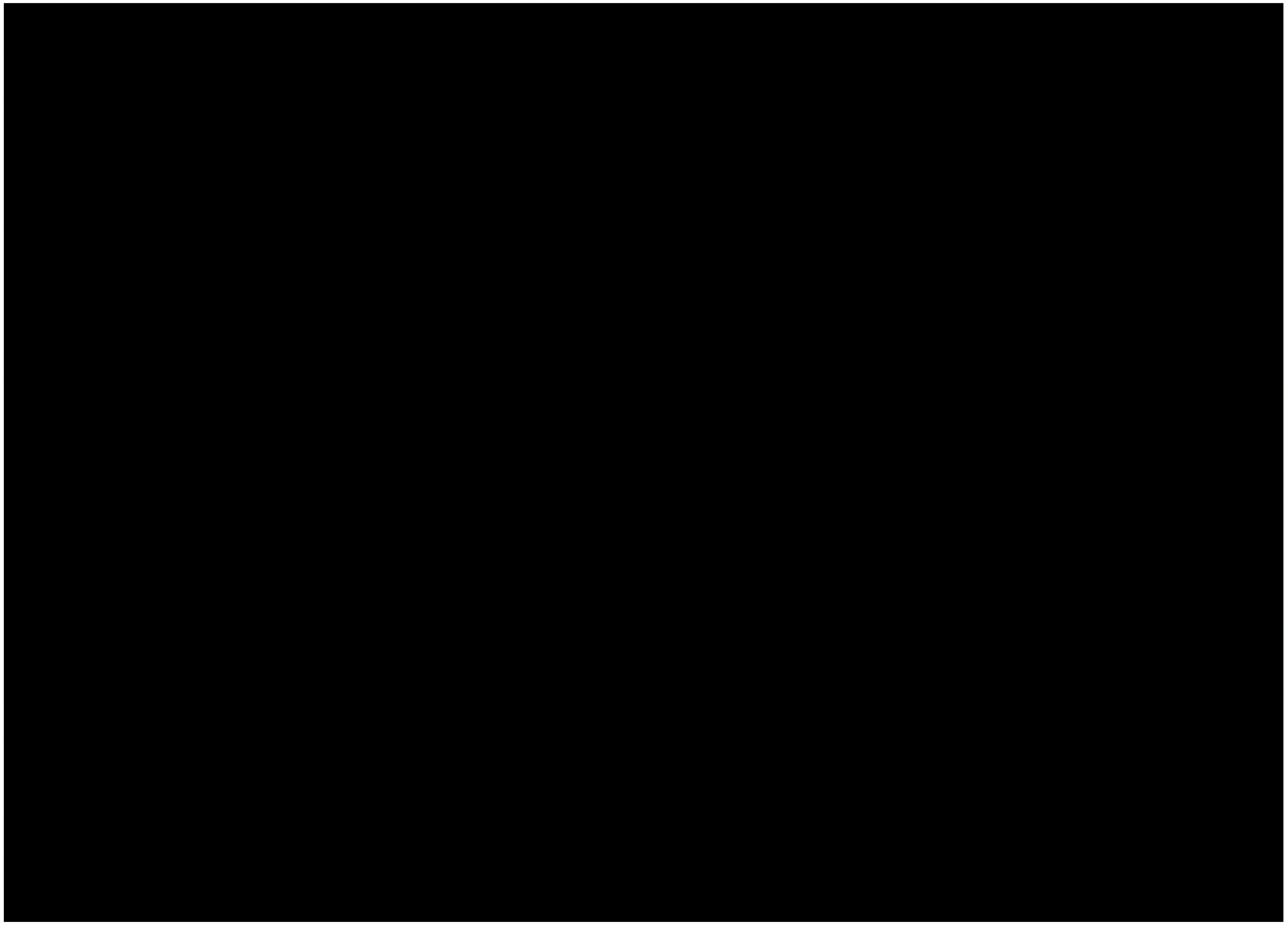

Figure 1-2 Heritage constraints

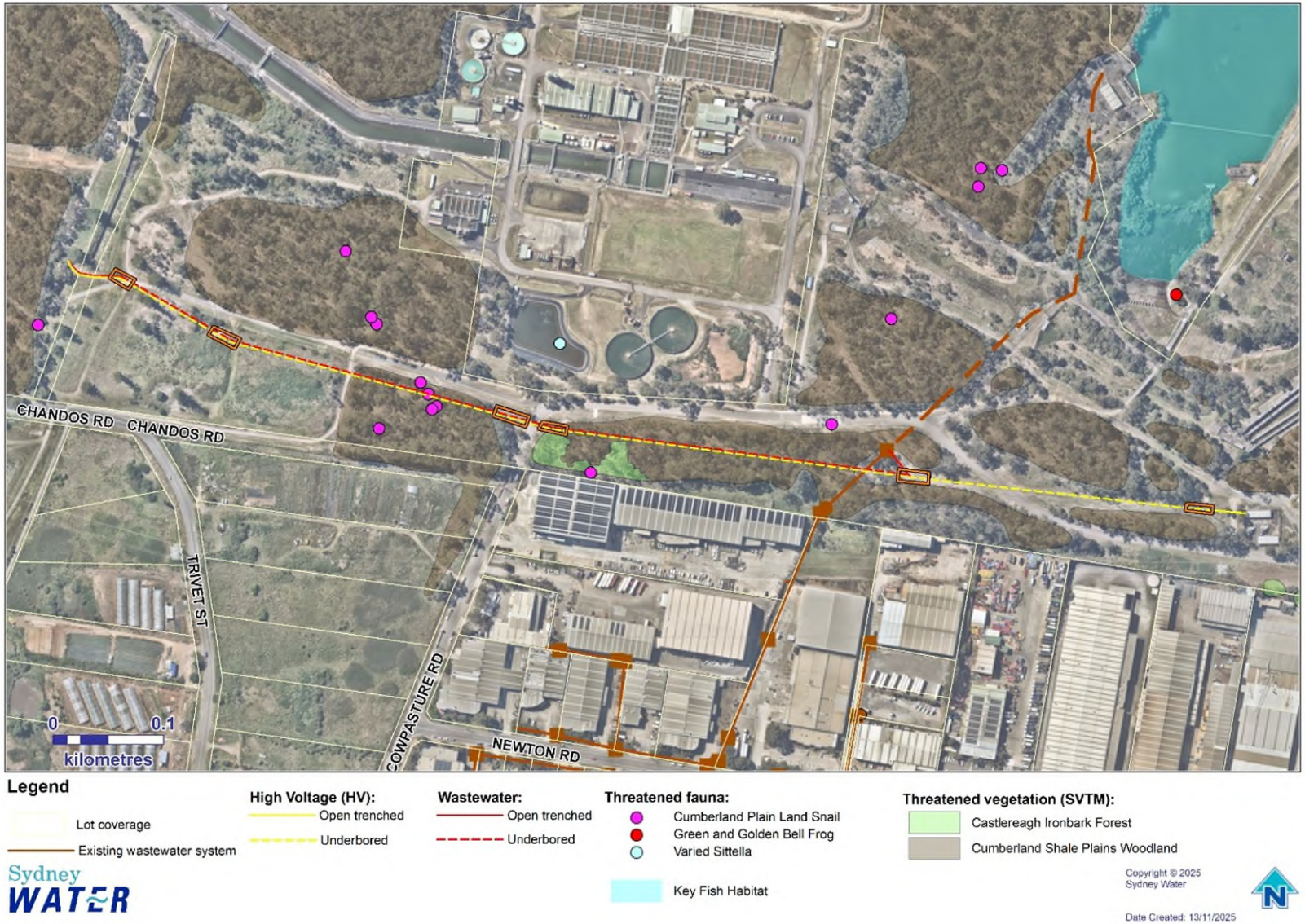

Figure 1-3 Biodiversity constraints

2. Consultation

Additional consultation matters above those already assessed in the approved REF are detailed below.

2.1 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 is required under the TISEPP for the proposal change.

Part of the change is on WaterNSW owned land. WaterNSW has reviewed this REFA and had no fundamental objections to the works. They were concerned about potential impacts to the heritage listed hoop pines which has been addressed in Table 4-1. Additional mitigation measures suggested by WaterNSW have also been adopted in Table 4-4. Work on WaterNSW land will be completed in accordance with the Sydney Water and WaterNSW – Joint Access Procotol (D0000755).

3. Legislative requirements

Additional legislative requirements above those already assessed in the approved REF are detailed in Table 3-1 and Table 3-2.

Table 3-1 Environmental planning instruments relevant to the proposal change

Environmental Planning Instrument	Relevance to proposal
Fairfield Local Environmental Plan 2013 (Fairfield LEP)	The proposal is in the Fairfield LGA. The study area is not zoned under this LEP as it is in the Western Sydney Parklands and is subject to the provisions of Chapter 7 of the State Environmental Planning Policy (Precincts - Western Parkland City) 2021.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.44(1) of the TISEPP permits development for the purpose of an electricity transmission or distribution network without consent by a public authority on any land. Section 2.126(6) of the TISEPP permits development for wastewater reticulation systems without consent by a public authority on any land. As Sydney Water is a public authority, the proposal change is permissible without consent.
State Environmental Planning Policy (Precincts- Western Parkland City) 2021 (Precincts – Western Parkland City SEPP)	**Western Sydney Parklands (Chapter 7)** The works are on land to which chapter 7 of this SEPP applies. Under section 7.8(2), the proposal site is unzoned. Section 7.5A(2) of the SEPP states that Western Sydney Parklands is taken to be a prescribed zone for the purposes of Part 2.3 of the TISEPP. With the application of this clause, the proposal change is permissible without consent under section 2.44 and 2.126 of the TISEPP.
State Environmental Planning Policy (Biodiversity and Conservation) 2021 (BCSEPP)	**Water Catchments (Chapter 6)** Chapter 6 of this SEPP applies as the proposal is within the Sydney Drinking Water Catchment, a regulated catchment. Potential environmental impacts on water quality and quantity, aquatic ecology, flooding, access, cultural heritage, flora and fauna, and scenic quality (where applicable) are discussed in Section 4 of this REFA. The assessment confirmed that potential impacts are negligible/minimal and meet the requirements of part 6.2 of the SEPP. In accordance with section 171A of the EP&A Regulation, an assessment of neutral or beneficial effect on water quality was undertaken (following *the Neutral or Beneficial Effect on Water Quality Assessment Guideline* (Water NSW, 2022)). The assessment confirmed that potential impacts are neutral.

Table 3-2 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
Protection of the Environment Operations Act 1997 (POEO Act)	Construction and operation of the wastewater pipeline is covered by an existing EPL (372) and meets the EPL compliance requirements. Temporary relaxation of EPL 372 is not required during construction/ commissioning. A variation to EPL 372 is not required for operation.	N/A	N/A
National Parks and Wildlife Act 1974 (NPW Act)	An Aboriginal Heritage Due Diligence (AHDD) found the proposal change would not impact Aboriginal Heritage and an AHIP is not required (see Appendix D).	AHDD	Pre-construction, Sydney Water
Heritage Act 1977	A Heritage Impact Assessment addendum (Appendix E) was undertaken for the proposal. The proposal change falls within the curtilage of the state heritage listed Prospect Reservoir and Surrounding Area (ID 01370) and Upper Canal System (Pheasants Nest Weir to Prospect Reservoir (ID 01373). A Section 60 approval from the Heritage Council is required for activities that impact an item on the State Heritage Register unless an exemption applies. Sydney Water's Natural Asset and Heritage Team Manager assessed the proposal change and confirmed that no adverse impacts to the significance of the heritage items will occur. The proposed works within ID 01370 comply with Sydney Water's Agency Specific Exemption 4 – Excavation. The works within ID 01373 comply with: • Standard Exemptions Activity 7: Non-significant Telecommunications Facilities and Water, Wastewater and Stormwater Infrastructure • Standard Exemptions Activity 9: Excavation. The works are permissible without approval under Section 57(2) of the *Heritage Act 1977*. A Section 57(2) exemption record has been completed for the works and relevant mitigation measures incorporated in Table 4-4.	Section 57(2) exemption	Pre-construction, Sydney Water
Water NSW Act 2014	Parts of the proposal change are on WaterNSW land in the Upper Canal Schedule 1 Controlled Area.	REFA review by WaterNSW	Pre-construction, Sydney Water

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
	Under the Water NSW Act, WaterNSW controls development and activities by public authorities within the designated Special and Controlled Areas. The WaterNSW Act requires either notice to and/or approval from WaterNSW before public authorities undertake activities within these areas. Sydney Water owned land is considered private land and is excluded from the Special Areas. The Raw Water Supply Protocols (RWSP) outline notification requirements for Sydney Water and WaterNSW prior to undertaking work on each other's land. The proposal change is considered a Type C activity in line with the RWSP. As a Type C activity, Sydney Water is required to consult with WaterNSW and allow WaterNSW to review and comment on the REFA prior to determination. The work will be conducted in accordance with the WaterNSW and Sydney Water Joint Access Protocol (D0000755). The Sydney Water project manager is responsible for ensuring that the RWSP are followed when undertaking work on WaterNSW land.		

4. Environmental assessment

The environmental impacts checklist (SWEMS0019.01) was considered for the proposal change. Table 4-1 includes only the potentially impacted/changed aspects and Table 4-4 lists additional mitigation measures. All other environmental impacts in the approved REF remain the same and will be incorporated into the contractor's CEMP.

Table 4-1 Review of environmental aspects

Aspect	Potential additional impacts
Topography, geology and soils	Potential impacts to topography, geology and soils during construction include erosion and sedimentation from additional trenching, excavation and temporary stockpiling of excavated material. The HV and wastewater pipeline will be installed via open trenching and HDD. The HV trench will be about 1 m wide and 1.2 m deep. The wastewater trench will be about 0.3 m wide and 0.8 m deep. The HDD launch and receival pits would be about 4 m long x 2.5 m wide x 1.5 m deep. The excavations will be progressively backfilled and restored to their pre-existing condition. Additional impacts can be managed through implementation of the mitigation measures in the approved REF.
Water and drainage	The alignments cross the Upper Canal in an existing roadway at the Trafalgar Tunnel. The Upper Canal is owned by WaterNSW and is in the Upper Canal Schedule 1 Controlled Area. Construction activities will involve excavation and temporary stockpiling, with the potential to cause sedimentation to waterways if not adequately managed. The excavations will be progressively backfilled and restored to their pre-existing condition. The nearest groundwater monitoring well (0.7 km away) indicates groundwater at a depth of 7 m. It is unlikely that groundwater will be intercepted during excavation (0.8 – 1.2 m deep) for the proposal change, therefore, a WSWA will not be required. As the proposal change is within the Sydney Drinking Water Catchment a Neutral or Beneficial Effect (NorBE) on water quality assessment is required. The NorBE assessment (see Table 4-2) concluded that the proposal change will have a neutral effect on water quality in the Upper Canal and broader catchment. The Sydney Water and Water NSW - Joint Access Protocol applies and Water NSW has reviewed this REFA. The mitigation measures below incorporate feedback received.

Table 4-2 NorBE assessment

NorBE assessment – will there be a NorBE on water quality?	
1. Are there any identifiable potential impacts on water quality? What pollutants are likely? *Major potential pollutants are sediments (fine and coarse), nitrogen, phosphorus, pathogens and hazardous chemicals and contaminants such as oil/fuel.*	The major potential pollutants of concern during construction are sediments (fine and coarse) and hazardous chemicals and contaminants such as oil/fuel. As the land will be stabilised and restored to pre-existing condition, no operational impacts to water quality are expected.

At what stage do the impacts occur? (i.e. during construction and/or post construction?)	
2. For each pollutant list the safeguards needed to prevent or mitigate potential impacts on water quality? These may be WaterNSW endorsed current recommended practices (CRPs) and/or equally effective other practices).	The approved REF includes various mitigation measures to protect water quality and mitigate potential impacts (see Table 6-2 and Table 6-13). Additional mitigation measures are provided in Table 4-4.
3. Will the safeguards be adequate for the time required? How will they need to be maintained?	Yes. The safeguards will be in place for the entire duration of construction. They will be maintained via daily inspections and regular site audits. All erosion and sedimentation controls will be designed to cope with expected seasonal weather conditions and will be maintained regularly in accordance with the mitigation measures in the approved REF to ensure they remain effective. Functioning spill kits (including aquatic spill kits) will be kept on site to clean up accidental chemical/fuel spills. These kits will be kept well stocked and located for easy access. No fuels or chemicals will be stored within the Upper Canal Schedule 1 Controlled Area. All chemicals and fuels will be stored in accordance with relevant Australian Standards and Safety Data Sheets within bunded areas with 110% capacity.
4. Will all impacts on water quality be effectively contained on the site by the identified safeguards (above) and not reach any watercourse, waterbody or drainage depression? Or will impacts on water quality be transferred outside the site for treatment? How? Why?	Yes. The recommended safeguards will be incorporated into a CEMP addendum. Sediment will be effectively contained on the site during construction provided the required erosion and sediment controls are properly installed and maintained. Water from the Upper Canal is treated downstream at the Prospect WFP which adds another layer of water quality protection outside the immediate site.
5. Is it likely that a neutral or beneficial effect on water quality will occur?	A neutral effect on water quality is likely provided the mitigation measures in the approved REF and REFA are implemented.

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Additional construction impacts to water and drainage can be managed through implementation of the mitigation measures in the approved REF.

Flora and fauna	Prospect Reservoir has a Property Environmental Management Plan (PEMP) (EMM Consulting, 2024) that includes a flora and fauna assessment of the site. The open trenched sections of the alignment are in existing cleared roadways and easements. The send and receive pits are in existing cleared areas adjacent roadways and in easements. Minor ground cover disturbance is required to establish the pits, no mature trees will be impacted. No other vegetation removal is required for the proposal change. The remnant vegetation adjacent the works is mapped as Cumberland Shale Plains Woodland (PCT 3320) and Castlereagh Ironbark Forest (PCT 3448). Both PCTs are associated with the Cumberland Plain Woodland threatened ecological community (TEC) listed under the BC and EPBC Act (see Figure 1-3). Threatened fauna recorded within 100 m of the alignments include: • Cumberland Plain Land Snail (*Meridolum corneovirens*) • Varied Sitella (*Daphoensitta chrysoptera*). No impacts to the above TEC or threatened species are anticipated given the lack of native vegetation removal and lack of suitable habitat within the disturbed roadways, mowed transmission easement and disturbed send and receive pit locations. Impacts to flora and fauna can be managed through implementation of the mitigation measures in the approved REF.

Heritage	A Heritage Impact Assessment addendum was completed for the proposal change by AECOM in May 2025 (Appendix E) and is summarised below.
	
	The proposal change is located within the curtilage of multiple heritage items including:
	
	• State Heritage Register:
	  - Prospect Reservoir and surrounding area (ID 01370)
	  - Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) (ID 01373)
	• WaterNSW Section 170 Heritage and Conservation Register:
	  - Upper Nepean Scheme (including Upper Canal and Prospect Reservoir) (ID 4580004)
	• Sydney Water Section 170 Heritage and Conservation Register:
	  - Prospect Reservoir (ID 457804)
	• Precincts-Western Parkland City SEPP Heritage Register:
	  - Spotted Gum Forest (ID 5)
	  - Group of Hoop Pines (ID 6).
	
	The Upper Canal System (ID 01373 and ID 4580004) and Group of Hoop Pines (ID 6) are additional items to those discussed in the approved REF. The proposal change intersects the curtilage of these two items where it crosses the Upper Canal within an existing roadway above the Trafalgar Tunnel (see Figures 1-2 and 4-1).

Figure 4-1 Crossing of the Upper Canal System at the Trafalgar Tunnel

Group of Hoop Pines (ID 6)

The Group of Hoop Pines are planted adjacent the Upper Canal and are listed as an item of local heritage significance under the Precincts – Western Parkland City SEPP. These significant plantings are also mentioned in the state heritage listing for the Upper Canal System. The proposal change will not impact the trees and mitigation measures to ensure they are protected are outlined in Table 4-4.

The Upper Canal System (ID 01373)

The Upper Canal system was constructed in 1888 and is owned and managed by WaterNSW. The system forms part of the Upper Nepean Scheme and is a 64 km gravity fed water supply canal that delivers water from Pheasants Nest Weir on the Nepean River to Prospect Reservoir. The canal sits within a linear corridor and includes over one hundred item types including the open canal itself, tunnels, aqueducts, bridges, various types of drainage, cultural plantings, depots and archaeological sites. The item is listed on the NSW State Heritage Register in recognition of its outstanding heritage significance.

A Conservation Management Plan (CMP) was prepared for the Upper Canal for WaterNSW in 2016. The CMP provides clear conservation guidelines to assist WaterNSW retain the heritage values of the Upper Canal while maintaining it as an operational asset, as well as documenting its history and significance. The CMP describes the section of the Upper Canal intersected by the proposal change as follows:

From the northern portal of Trafalgar Tunnel the Canal has a masonry lined, rectangular, open cross section, and leads to the Prospect Inlet measuring weir and basin. The upper portion of the basin is lined with stone masonry, while the lower section of the basin and the weir is constructed of concrete, dropping down to a concrete-lined, semi-circular 'race'. Adjacent to the weir is a small brick gauge house and concrete footbridge providing access across the canal.

The precinct features stands of cultural plantings from the late 19th and early 20th centuries as a means of emphasising the arrival of the canal at Prospect Reservoir. Plantings include lines of Hoop Pines above and around the northern portal of Trafalgar Tunnel, while the junction of the canal with Prospect Reservoir is marked by a grouping of Stone and Hoop pines.

The CMP contains a schedule of significant elements across the site. The avenue of Hoop Pines, Trafalgar Tunnel and masonry lined canal are listed as having exceptional significance.

No other heritage items or elements have been identified within or in the vicinity of the proposal change.

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Potential impacts

There is at least 5 m of overburden in the road crossing above the Trafalgar Tunnel (see Figure 4-2). The maximum depth of the wastewater pipeline trenching is 0.8 m and the HV conduit is 1.2 m. Given there is about 3.8 m of clearance between the base of the trench and the crown of the tunnel, no direct physical impacts will occur to the item. There is potential for indirect impact through vibration during open trenching. Vibration is discussed further in the noise and vibration section below.

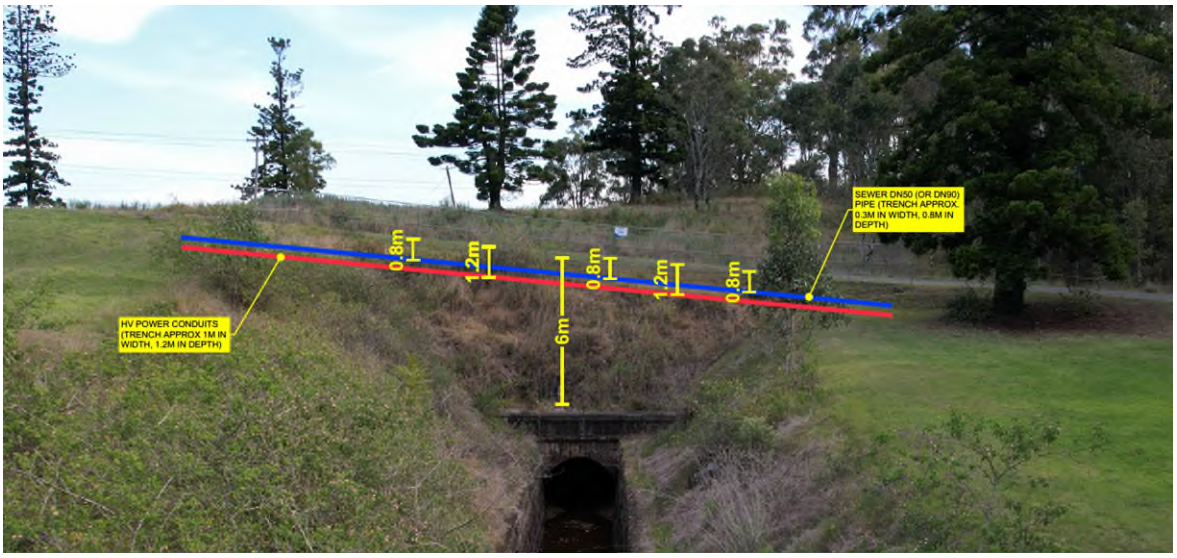

Figure 4-1 Cross section of Upper Canal crossing

The assets will be installed at least 5 m away from the Hoop Pine closest to the Trafalgar Tunnel. This tree is growing downslope of the road where the trenching will occur. Hoop Pines have a deep taproot that anchor the tree firmly in the ground and extensive fibrous lateral roots which help with nutrient and water absorption. No trenching will occur within the structural root zone of the Hoop Pines and strictly no impact to the tap root will occur. A qualified arborist will be engaged if any roots >50 mm in diameter are encountered when trenching past the Hoop Pines. Protective hoarding or barriers will be established to prevent accidental tree damage during the works.

The proposal change will have no impacts to any built heritage elements or archaeological deposits within the Prospect Reservoir and surrounds generally. According to the Prospect Reservoir CMP (draft, 2024) there is nil-low archaeological potential across the study area (Figure 4-3). The assets will be underground and cause negligible visual impacts.

Figure 4-2 Archaeological potential within the Southern Operational precinct (Prospect Reservoir CMP (draft, 2024))

Sydney Water's Natural Asset and Heritage Team Manager assessed the proposal change. The proposed works are permissible without approval under Section 57(2) of the *Heritage Act 1977* as they comply with the following exemptions:

- Sydney Water's Agency Specific Exemption 4 – Excavation:
  - (k) Excavation or disturbance of land
  - (r) Directional drilling
- Standard Exemption Activity 7 – Non-significant Telecommunications Facilities and Water, Wastewater and Stormwater Infrastructure
- Standard Exemption Activity 9 - Excavation.

A Section 57(2) exemption record has been completed for the works and relevant mitigation measures incorporated in Table 4-4.

Aboriginal Heritage

An Aboriginal Heritage Due Diligence was completed for the proposal change by AECOM in April 2025 (Appendix D) and is summarised below.

The proposal change is in a high risk landscape for Aboriginal Heritage (<200 m from a waterway). A search of the Aboriginal Heritage Information Management System (AHIMS) did not reveal any Aboriginal heritage sites along the alignment. There are

Redacted to protect sensitive Aboriginal heritage information

A visual inspection of the alignment was undertaken on 14 March 2025. No new Aboriginal objects or areas of Potential Archaeological Deposits (PAD) were identified.

Surface disturbing works are located outside of the areas of Aboriginal archaeological potential mapped in the Prospect Reservoir CMP (draft, 2024) (Figure 4-4). Given the history of disturbance within the study area from construction of the water and wastewater infrastructure, roads, easements and reforestation, the likelihood of encountering unknown Aboriginal Heritage items is low. Works can proceed with caution.

Figure 4-4 Aboriginal archaeological potential at Prospect Reservoir (Prospect Reservoir, Draft CMP)

Noise and vibration

Noise

The nearest receiver to the proposal change is a steel fabrication industrial property about 40 m south of the nearest send and receive pit. The nearest residential receiver is over 400 m away. There is no line of sight to the works and no night works are required.

The proposal change would be installed via open trenching and HDD, with plant and equipment consistent with those in the approved REF. The works are linear and will not cause noise impacts to any one receiver for an extended period of time. Construction noise impacts can be managed through implementation of the mitigation measures in the approved REF.

Vibration

The Upper Canal is sensitive to vibration and settlement, given its age. The Guideline for Development Adjacent to the Upper Canal and Warragamba Pipelines (WaterNSW, 2021) identifies vibration velocity values that should be adopted when working in the Upper Canal corridor.

At present, no Australian Standards exist for the assessment of damage caused by vibration. WaterNSW accepts Line 3 of Table 1 from the German Standard DIN 4150 - “Structural Vibration Part 3: Effects of vibration in structures” as the maximum vibration acceptable at water supply infrastructure (see Table 4-3).

Table 4-3 Guideline values for short-term vibration on structures (DIN 4150)

Type of structure	Guidelines for maximum velocity (mm/s)		
	Vibration frequency at the foundation:		
	1 – 10 Hz	10 – 50 Hz	50 – 100 Hz*
Structures that, because of their particular sensitivity to vibration, cannot be classified under Lines 1 and 2 and are of great intrinsic value (e.g. listed under a preservation order)	3	3 - 8	8 – 10

*At frequencies above 100 Hz, the values in this column may be used as minimum values.

Vibration intensive works such as rock breaking, pile driving or jackhammering are not required for the proposal change. Vibration will be monitored to ensure excavation adjacent the Upper Canal corridor does not exceed the maximum velocities in Table 4-3.

The proposal change would not result in any operational noise or vibration.

Air and energy

The proposal change has the potential to impact on air quality by generating additional dust and emissions during construction of the HV and wastewater alignment.

Potential operational impacts on air quality would include odours from the pipeline. However, the pipeline is small (DN90) and will be pressurised with no maintenance holes or vent shafts along its route. As such, operational odour impacts are expected to be negligible.

The approved REF assesses the PPTP operational energy requirements.

Waste and hazardous materials

The proposal change has the potential to generate additional waste consistent with the waste types in the approved REF. Most of the additional waste would be excess spoil from excavation. 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.

Additional waste generated from the proposal change can be managed in accordance with the mitigation measures in the approved REF.

Table 4-4 Mitigation measures

Mitigation measures
Revise the Construction Environmental Management Plan (CEMP) to address the additional requirements of this environmental assessment. Prior to the start of work, all project staff and contractors will be inducted in the CEMP. The CEMP must be readily available on site and include a site plan which shows: • go/no go areas and boundaries of the work area 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 for heritage items to be protected, construction corridor and no go zones. Delineate approved disturbance boundary before construction.
No stockpiling, material storage, laydown or construction vehicle parking is to occur within the curtilage of the Upper Canal.
Install temporary high-visibility fencing and signage around AHIMS 45-5-0767 during the works (refer to section 10.1.1 of Appendix D for coordinates and detailed site description).
All construction staff must be inducted by a heritage specialist (or delegate) before starting work on site. The induction should include a clear explanation of the Aboriginal and non-Aboriginal heritage constraints on site and why they are significant, the contractors' statutory obligations relating to heritage, go and no-go areas, protection methods to be used during construction to prevent accidental damage, stop work procedures and contact details to obtain further heritage guidance if needed.
The contractor must notify WaterNSW if unexpected heritage finds are encountered at the crossing of the Upper Canal or if an incident occurs on or near WaterNSW land.
Vibration adjacent the Upper Canal (Lot 1 and DP 1062094) must not exceed the maximum guideline velocities listed in Table 4-3, in accordance with German Standard DIN 4150.
A vibration report should be prepared prior to construction to identify the risks of vibration to the Upper Canal System from open trenching. If a risk is identified as part of the vibration report, pre-construction and post-construction assessments must be undertaken to validate the assumptions and ensure no vibration impacts.
A vibration monitoring procedure and management plan should be developed prior to construction (and submitted to Water NSW for review). Vibration monitoring should occur during construction as per the vibration monitoring procedure approved by Water NSW.
Low vibration machinery should be used within the curtilage of the Upper Canal System to minimise vibration impacts.
The Hoop Pines in vicinity of the Upper Canal should be protected during construction with protective hoarding or barriers to prevent accidental tree damage. No ground disturbing works are permitted within the structural root zone of any of the hoop pines.

Mitigation measures

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.

All vegetation removal should be minimised and avoided where possible.

5. Conclusion

Sydney Water has prepared this REFA to assess the potential environmental impacts of the PPTP stage 2 power and wastewater connections. The proposal is required to ensure Sydney Water can meet the current and future drinking water demand of our customers. This proposal change was required to ensure the PPTP has a suitable HV power supply and wastewater service.

The main potential additional construction environmental impacts of the proposal change include impacts to non-Aboriginal heritage. No operational impacts are anticipated. Given the nature, scale and extent of impacts and implementation of the mitigation measures outlined in this REFA and the approved REF, the proposal is unlikely to have a significant impact on the environment. Therefore, an environmental impact statement is not required under Division 5.1 of the EP&A Act.

The REF considers how the proposal aligns with the principles of Ecologically Sustainable Development (ESD) (Appendix B). There will be environmental improvements by providing a reliable wastewater service to the PPTP. The proposal will not result in the degradation of the quality of the environment and will not pose a risk to the safety of the environment.

Appendix A – Section 171 checklist

Requirements in addition to the approved REF are considered in the table below.

Section 171 checklist	REF finding
Any environmental impact on a community	The proposal change will have negligible impact on the surrounding community. The site is not visible or accessible to the public and sensitive receivers are distant. There will be environmental improvements by providing a reliable wastewater service and power supply to the PPTP enabling it to produce clean drinking water for the community.
Any transformation of a locality	The proposal change will not result in the transformation of a locality. The new assets will be underground and will not be visible.
Any environmental impact on the ecosystems of the locality	The proposal change will not result in environmental impacts to ecosystems of the locality. The proposal change will lead to environmental improvements by ensuring a reliable power supply to the PPTP.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal change will not reduce these factors.
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 change is located within the curtilage of the state heritage listed Prospect Reservoir and Surrounding Area and the Upper Canal. A Statement of Heritage Impact has been completed and concluded that the proposal change would not materially affect the heritage values.
Any impact on the habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*)	The proposal will not have any impact on the habitat of protected animals. No native vegetation removal is proposed.
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 endanger any species.
Any long-term effects on the environment	The proposal change will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable and modern pre-treatment plant.
Any degradation of the quality of the environment	The proposal change will maintain the quality of the environment.
Any risk to the safety of the environment	The proposal change will ensure the safety of the environment.

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

Section 171A of the EP&A Regulation requires a determining authority to take into account the matters a consent authority must consider under Part 6.2 of the BC SEPP for a proposal within a 'regulated catchment'. As the proposal is within the Sydney Drinking Water catchment, the requirements of Section 171A(1) are applicable and are considered in the table below.

Section 171A checklist (Development in regulated catchments)	REF finding
BCSEPP – Section 6.6(1) - Water quality and quantity In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following:	
(a) whether the development will have a neutral or beneficial effect on the quality of water entering a waterway	Mitigation measures will be implemented during construction to ensure that the proposal change has a neutral impact on the quality of water entering waterways.
(b) whether the development will have an adverse impact on water flow in a natural waterbody	The proposal change will not modify or adversely affect water flows in the regulated catchments during construction or operation.
(c) whether the development will increase the amount of stormwater run-off from a site	The proposal change will not increase the area of impervious surfaces. The final landform will ensure that the proposal will not increase the volume of stormwater run-off from the site.
(d) whether the development will incorporate on-site stormwater retention, infiltration or reuse	The proposal change will not increase the area of impervious surfaces. Provision for on-site stormwater retention, infiltration or reuse is not required.
(e) the impact of the development on the level and quality of the water table	The proposal change is unlikely to encounter groundwater during construction. Impacts to groundwater levels and quality are expected to be negligible.
(f) the cumulative environmental impact of the development on the regulated catchment	The proposal change addresses the need to increase drinking water supply infrastructure to cater for growth. By implementing environmental mitigation measures, the potential for cumulative impacts between the proposal and other projects within the catchments is low.
(g) whether the development makes adequate provision to protect the quality and quantity of ground water.	Impacts to the level and quality of the groundwater are not expected.

Section 171A checklist (Development in regulated catchments)	REF finding
BCSEPP – Section 6.6(2) - Water quality and quantity Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied the development ensures:	
(a) the effect on the quality of water entering a natural waterbody will be as close as possible to neutral or beneficial	Mitigation measures in the approved REF will ensure that the proposal change will have a neutral or beneficial effect on the water quality of regulated catchments.
(b) the impact on water flow in a natural waterbody will be minimised	The proposal change will not modify or adversely affect water flows within the regulated catchments during construction or operation.
BCSEPP – Section 6.7(1) - Aquatic Ecology In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the following:	
(a) whether the development will have a direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation	The proposal change requires minor vegetation removal in a managed landscape adjacent to Channel 2. Direct, indirect or cumulative adverse impacts to terrestrial, aquatic or migratory animals or vegetation of the locality will be negligible.
(b) whether the development involves the clearing of riparian vegetation and, if so, whether the development will require: (i) a controlled activity approval under the *Water Management Act 2000*, or (ii) a permit under the *Fisheries Management Act 1994*	Not applicable
(c) whether the development will minimise or avoid: (i) the erosion of land abutting a natural waterbody, or (ii) the sedimentation of a natural waterbody	Mitigation measures in the approved REF will minimise and avoid the potential for erosion and sedimentation impacts to these areas within the regulated catchment.
(d) whether the development will have an adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area	There are no wetlands close to the proposal change.
(e) whether the development includes adequate safeguards and rehabilitation measures to protect aquatic ecology	Mitigation measures to protect aquatic ecology within the regulated catchments are included in the approved REF.

Section 171A checklist (Development in regulated catchments)	REF finding
(f) if the development site adjoins a natural waterbody, whether additional measures are required to ensure a neutral or beneficial effect on the water quality of the waterbody	Not applicable
BCSEPP – Section 6.7(2) - Aquatic Ecology Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied of the following:	
(a) the direct, indirect or cumulative adverse impact on terrestrial, aquatic or migratory animals or vegetation will be kept to the minimum necessary for the carrying out of the development	Appropriate mitigation measures are included in the approved REF to ensure that impacts on terrestrial, aquatic or migratory animals or vegetation are limited to the minimum extent necessary.
(b) the development will not have a direct, indirect or cumulative adverse impact on aquatic reserves	There are no aquatic reserves close to the proposal change.
(c) if a controlled activity approval under the *Water Management Act 2000* or a permit under the *Fisheries Management Act 1994* is required in relation to the clearing of riparian vegetation—the approval or permit has been obtained	Not applicable
(d) the erosion of land abutting a natural waterbody or the sedimentation of a natural waterbody will be minimised	Mitigation measures to minimise the potential for erosion and sedimentation impacts to these areas within the regulated catchments are included in the approved REF
(e) the adverse impact on wetlands that are not in the coastal wetlands and littoral rainforests area will be minimised	There are no wetlands close to the proposal change.
BCSEPP – Section 6.8(1) – Flooding	
In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider the likely impact of the development on periodic flooding that benefits wetlands and other riverine ecosystems	The majority of the assets will be below ground. The proposal change will not have adverse impacts on beneficial flooding events.
BCSEPP – Section 6.8(2) – Flooding Development consent must not be granted to development on flood liable land in a regulated catchment unless the consent authority is satisfied the development will not:	

Section 171A checklist (Development in regulated catchments)	REF finding
(a) if there is a flood, result in a release of pollutants that may have an adverse impact on the water quality of a natural waterbody, or	Mitigation measures to minimise the potential for erosion and sedimentation and potential contamination impacts in the regulated catchments are included in the approved REF.
(b) have an adverse impact on the natural recession of floodwaters into wetlands and other riverine ecosystems	The majority of the proposal change will be below ground. The proposal will not alter the existing contours of the land and will not affect the overland flow path(s) of floodwaters.
BCSEPP – Section 6.9(1) - Recreation and public access In deciding whether to grant development consent to development on land in a regulated catchment, the consent authority must consider:	
(a) the likely impact of the development on recreational land uses in the regulated catchment	The proposal change is on land owned by Sydney Water and WaterNSW that is not publicly accessible. There will be no impact on recreational land uses.
(b) whether the development will maintain or improve public access to and around foreshores without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation	Not applicable.
BCSEPP – Section 6.9(2) - Recreation and public access Development consent must not be granted to development on land in a regulated catchment unless the consent authority is satisfied of the following:	
(a) the development will maintain or improve public access to and from natural waterbodies for recreational purposes, including fishing, swimming and boating, without adverse impact on natural waterbodies, watercourses, wetlands or riparian vegetation	Not applicable.
(b) new or existing points of public access between natural waterbodies and the site of the development will be stable and safe	Not applicable.
(c) if land forming part of the foreshore of a natural waterbody will be made available for public access as a result of the development but is not in public ownership—public access to and use of the land will be safeguarded	Not applicable.

Appendix B – Consideration of Ecologically Sustainable Development

There are no ESD considerations in addition to those covered in the approved REF.

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		

TISEPP section	Yes	No
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

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

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

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Appendix D – Aboriginal Heritage Due Diligence

Appendix E – Heritage Impact Assessment Addendum