Review of Environmental Factors Addendum

Cosgroves Creek Wastewater Network Stage 1 – SP1246 Services and Pipeline Alignment Changes

Determination

This Review of Environmental Factors Addendum (REFA) assesses potential environmental impacts of Cosgroves Creek SP1246 Services and Pipeline Alignment Changes (the proposal change). The REFA 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 Cosgroves Creek Wastewater Network Stage 1 Review of Environmental Factors (Approved REF) (April 2025). 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:
Sara Gibbons Environmental Planner (CreekConnect) Date: 10/04/2026	Deana Filipas Environment Representative Sydney Water Date: 29/04/2026	Sam Sader Project Manager Sydney Water Date: 30/4/26

Decision Statement

The main potential additional construction environmental impact of the proposal change includes impacts to Aboriginal heritage. The proposal change incorporates landowner feedback into the design, minimising potential impacts on the community. The proposal change will not result in any changes to the operational impacts assessed in the approved REF. 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 REFA, 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:		Elissa Howie, A/Senior Manager Environment and Heritage, Sydney Water Date: 13 May 2026

1. Proposal description

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

Aspect	Relevance to proposal
Approved REF	Cosgroves Creek Wastewater Network Stage 1 Review of Environmental Factors (April 2025)
Proposal need and objectives	The proposal is part of the Upper South Creek Network (USCN) program. This program is required to provide wastewater servicing to new growth and development areas within the Liverpool and Penrith local government areas (LGAs). The USCN program is designed to service development within the Upper South Creek (USC) precinct. It is required to meet Sydney Water's objective to provide timely delivery of reliable wastewater infrastructure to support development and growth in the South West Growth Area (SWGA) and Western Sydney Aerotropolis Growth Area (WSAGA) as stated in the Growth Servicing Plan (2019-2024). All flows from the proposal will ultimately connect to the USC Advanced Water Recycling Centre (AWRC) and will be operated under the future USC catchment and AWRC Environment Protection Licence (EPL). Until the future USC catchment EPL is in place, a scheduled development work licence under s47 of the ***Protection of the Environment Operations Act 1997*** (POEO Act) will be required for construction of the proposal. The key driver for the proposal is to ensure there is sufficient wastewater system capacity to service the government's planned development within the Western Sydney Aerotropolis.
Proposal change description and methodology	The proposal change involves construction of a services corridor to provide electricity and water services to SP1246 pumping station. It also includes modifying the Cosgroves Creek gravity carrier (CCGC01 and CCGC04) and Cosgroves Creek pressure main (CCPM) alignments, including the relocation of maintenance holes/pits along the alignments. Specifically, the proposal change involves: • Construction of a services corridor adjacent to the CCGC04 alignment within 546-640 Luddenham Road, from Luddenham Road to SP1246 to provide electricity and water to the pump station (refer to **Figure 1**) • Modifying the gravity carrier alignments (CCGC01 and CCGC04), including the relocation and removal of maintenance holes along the alignment as below: o CCGC01: Shifted east through 812-844 Luddenham Road (refer to **Figure 3**) o CCGC04: Shifted northwest through 546-640 Luddenham Road (refer to **Figure 1**) • Changing the CCPM alignment, including the relocation of the Horizontal Directional Drilling (HDD) launch/receival pits in two locations: o Shifted southwest at 546-640 Luddenham Road (refer to **Figure 1**)

Aspect	Relevance to proposal
	o Shifted south at 1793 Elizabeth Drive (refer to **Figure 2**) The pipeline alignments will be constructed using a combination of open trenching and trenchless construction methods (e.g., HDD, Horizontal Auger Boring (HAB) and micro-tunnelling). The alignment change for CCGC01 has removed the need for one maintenance hole and has reduced the length of gravity carrier by approximately 46m.
Justification for proposal change	The proposal change is a result of design optimisation, landowner feedback and construction and operational requirements. **Design optimisation** During design development, the CCGC04 alignment at 546-640 Luddenham Road was shifted northwest to be outside of a future road in the Western Sydney Aerotropolis Precinct Plan to minimise impacts on future development. A section of the CCPM alignment at 1793 Elizabeth Drive was shifted south during detailed design after a future road corridor from Transport for NSW's Outer Sydney Orbital was moved south. This allowed the CCPM alignment to be repositioned to reduce impacts on developable land in consultation with the landowner (University of Sydney). Relocating the alignment resulted in the associated launch/receival pit to be located outside of the approved REF boundary, requiring an extension of the construction impact area. **Landowner feedback** The landowner at 812-844 Luddenham Road requested to move the CCGC01 alignment to the edge of their property boundary to minimise impacts on developable land and future development. The CCGC01 alignment along 812-844 Luddenham Road was shifted to be outside of the proposed future development on the property. The revised alignment also reduced the length of CCGC01 by approximately 46m and removed the need for one maintenance hole. This would reduce material waste, lower resource consumption and minimise the overall environmental footprint. **Construction and operational requirements** Construction of the launch/receival pits along the CCPM alignment near SP1246 requires additional laydown and working space beyond the approved boundary to ensure safe construction. The additional area is required due to the proximity to the pump station which is scheduled to be constructed concurrently and limits the available space for safe plant movement, material handling and pit excavation. A service corridor is required to supply electrical and water services to the approved SP1246 pump station to enable long-term operation. The corridor has been designed adjacent to the gravity carrier alignment and connects into an existing electricity network at Luddenham Road.
Location and land ownership	The proposal change is located within the suburbs of Luddenham and Badgerys Creek within the City of Penrith and City of Liverpool LGAs. The proposal change intersects private property and developer owned land.

Aspect	Relevance to proposal
	Due to the proposal change, impacts at the following properties have changed: • 846-890 Luddenham Road (Lot 38/DP211842) • 812-844 Luddenham Road (Lot 37/DP211842) • 546-640 Luddenham Road (Lot 23/DP1277418 & Lot 25/DP1277418) • 1793 Elizabeth Drive (Lot 212/DP1272676) No new properties will be affected due to the proposal change.

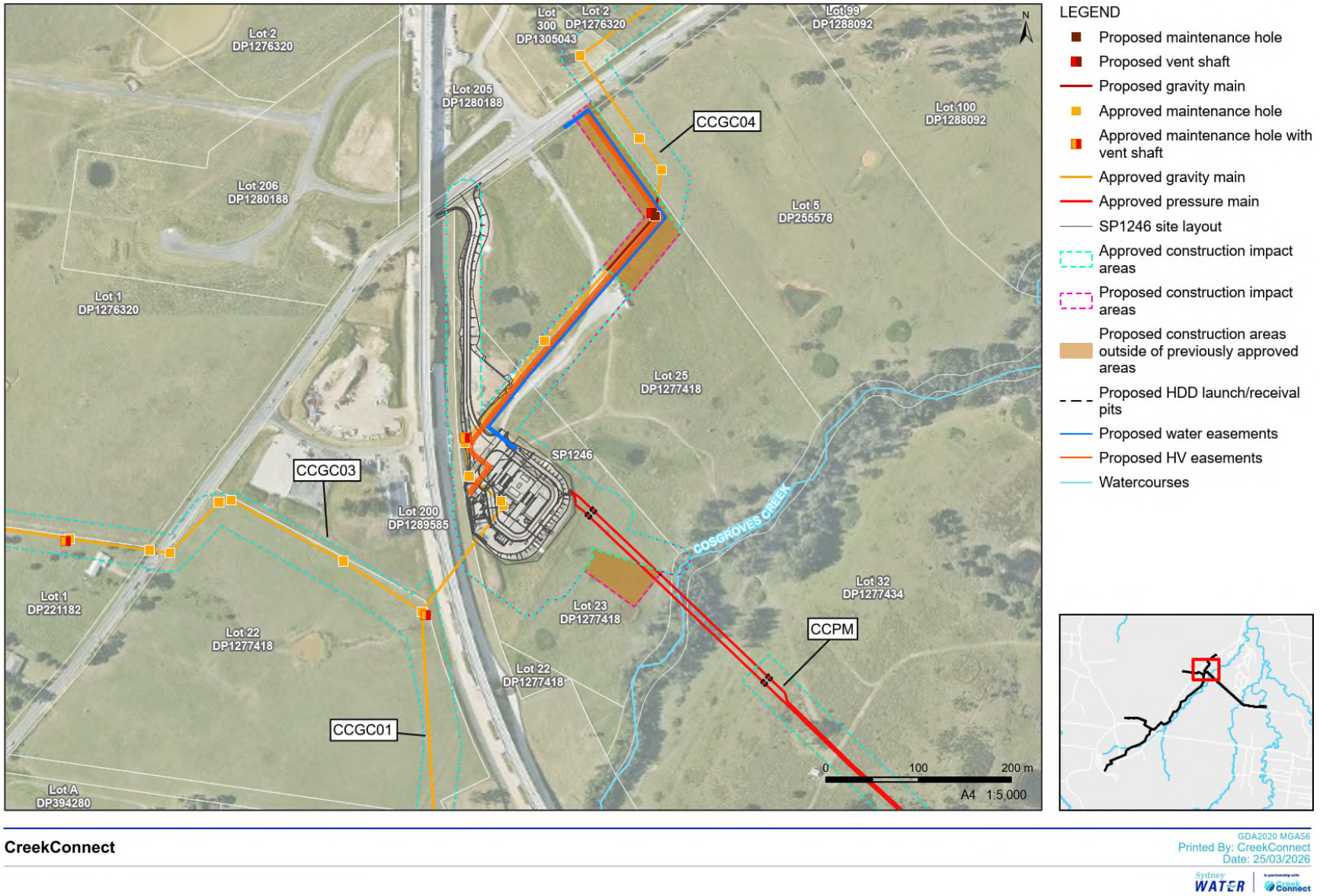


Figure 1: Proposal change (1 of 3)

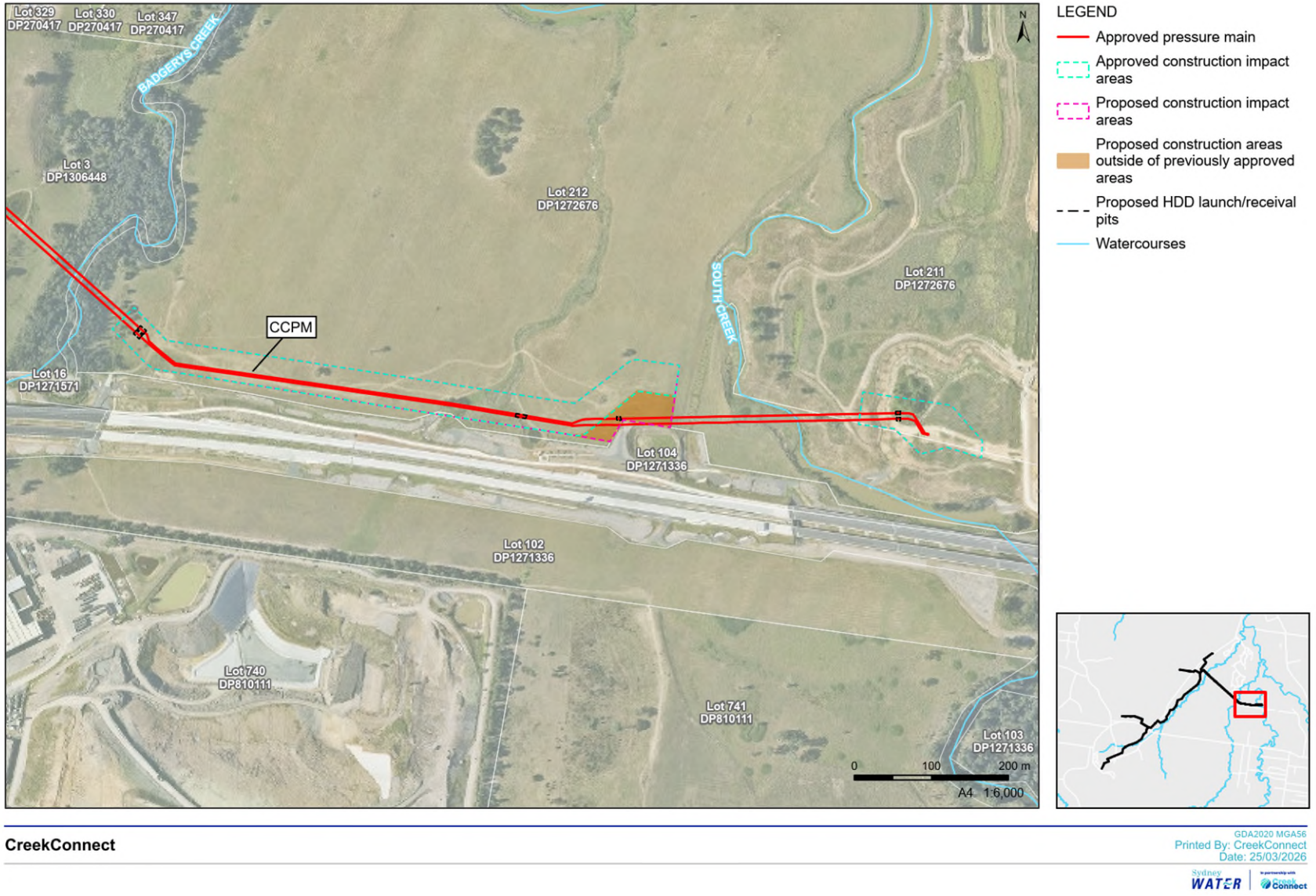


Figure 2: Proposal change (2 of 3)

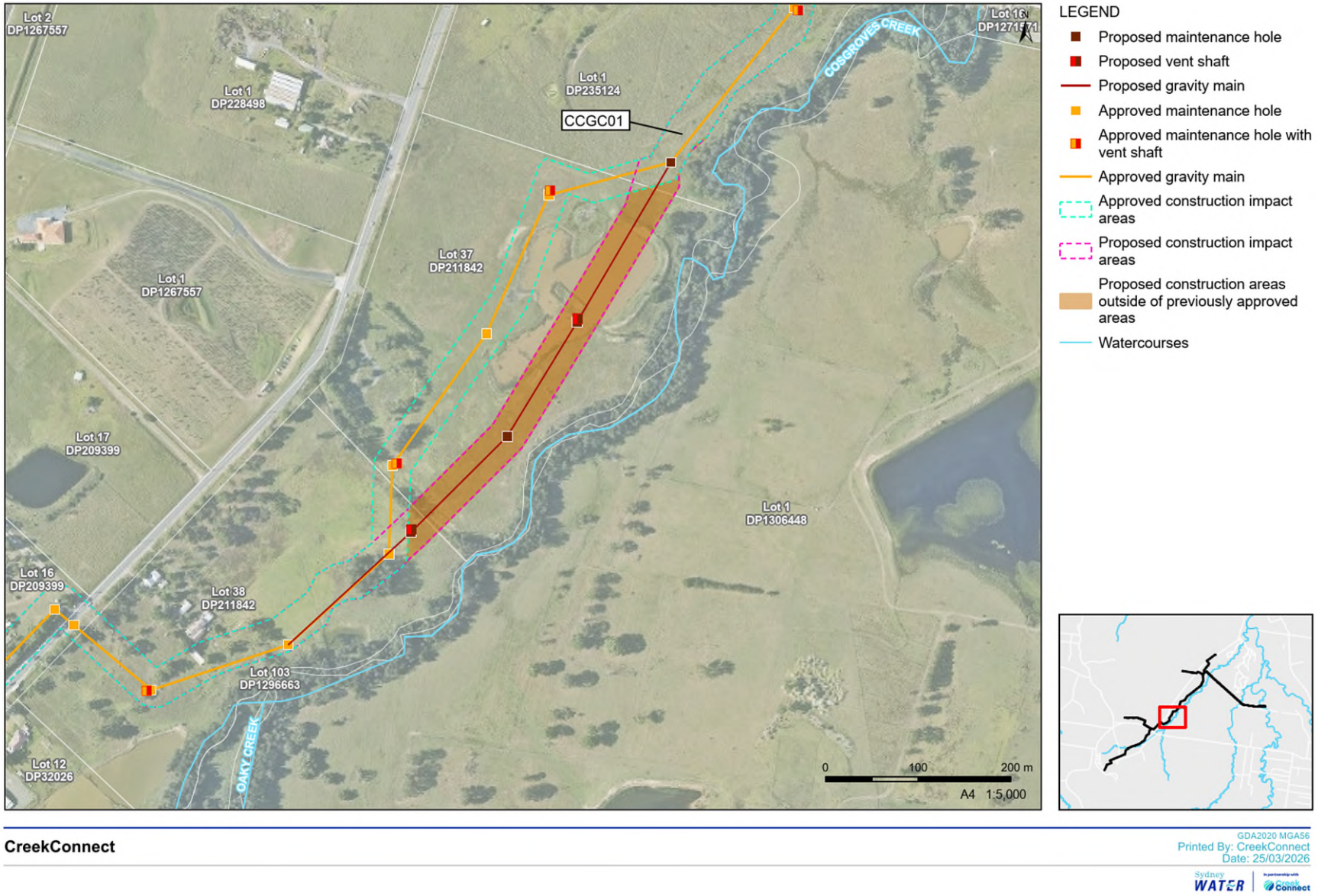


Figure 3: Proposal change (3 of 3)

2. Consultation

Consultation matters in addition to those matters considered in the approved REF are detailed below.

2.1 Community and stakeholder consultation - proposal

Some of the proposed changes have been made in response to landowner feedback received during consultation on the detailed design. The proposal change will not impact any additional private properties; however, it does change the impact for several properties. Impacted landowners will continue to be consulted throughout design and delivery.

Endeavour Energy was consulted on the proposal change, specifically in relation to the proposed services corridor and the electricity connection point into the existing grid. Endeavour Energy raised no objection to the proposed services corridor.

2.2 Consultation required under State Environmental Planning Policies and other legislation

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

Consultation is required under section 2.15 as the proposal has a capital investment value of over $30 million and is in the Western City operational area. Sydney Water consulted with Bradfield City Authority (formerly Western Parkland City Authority) on 6 December 2024 as part of the approved REF. No response was received. As the proposal change does not substantially alter the project or the project objectives, no additional consultation was undertaken for this REFA.

Department of Primary Industries and Regional Development – Fisheries (DPIRD Fisheries) was notified under s199 of the ***Fisheries Management Act 1994*** during the preparation of the approved REF, as the work involves reclamation or dredging in a waterway classified as 'Key Fish Habitat'. DPIRD Fisheries raised no objection to the proposal provided that the mitigation measures included in the approved REF are implemented. The proposal change will extend the construction impact areas at 812-844 Luddenham Road and 546-640 Luddenham Road closer to Cosgroves Creek, which is mapped as Key Fish Habitat (KFH). However, the approved REF had construction areas within mapped KFH and the mitigation measures from the approved REF will be implemented. Therefore, no additional consultation with DPIRD Fisheries was undertaken for the proposal change.

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
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	Section 2.126 of the TISEPP permits development by or on behalf of a public authority for sewerage reticulation systems without consent on any land in the prescribed circumstances. Development is carried out in the prescribed circumstances if the development is 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 (BCSEPP) and Section 171A of the Environmental Planning and Assessment Regulation 2021	**Water Catchments (Chapter 6)** Chapter 6 of this SEPP applies as the proposal is within the Hawkesbury-Nepean Catchment, a regulated catchment. Section 4 of the approved REF assessed potential environmental impacts on water quality and quantity, aquatic ecology, flooding, access, cultural heritage, flora and fauna, and scenic quality and considered the requirements of Part 6.2 of the SEPP. Section 4 of this REFA assesses potential environmental impacts of the proposal change on water quality and quantity, aquatic ecology, cultural heritage, and flora and fauna. The assessment confirmed that potential impacts of the proposal change are negligible/minimal and meet the requirements of Part 6.2 of the SEPP. The other aspects were not considered in this REFA as there are no changes to the potential impacts from the approved REF.

Table 3-2 Consideration of key environmental legislation

Legislation	Relevance to proposal	Permit or approval	Timing and responsibility
National Parks and Wildlife Act 1974 (NPW Act)	This Act provides for the establishment, preservation, and management of areas such as national parks, state conservation areas, nature reserves, and Aboriginal areas. This Act also provides for the protection of Aboriginal heritage, including Aboriginal objects and places. The proposal in not within National Parks, State Conservation areas or nature reserves. An Aboriginal Heritage Impact Permit (AHIP) is required as the proposal will disturb known areas of Aboriginal heritage. The AHIP application was submitted on 9 May 2025 and the AHIP was approved on 8 July 2025 (AHIP 5434). The proposal change has altered the extent of impacts on identified Aboriginal heritage areas. Therefore, a variation to AHIP 5434 is required. Refer to Section 4 for further details.	AHIP variation	Post REF, pre-construction, Sydney Water (for AHIP variation)
Heritage Act 1977	The ***Heritage Act 1977*** provides protection for items of environmental heritage (Aboriginal and non-Aboriginal heritage) that are of value to the state of New South Wales. The proposal change intersects with the curtilage of one non-Aboriginal heritage item, Fleurs Radio Telescope Site, which is listed as being of local heritage significance under the Western Parkland City SEPP (ID: I5). The proposal change will avoid impacts to surveyed archaeological points of this heritage item. Refer to Section 4 for further details.	N/A	Pre-construction, Sydney Water

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 4-2 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	The volume of excavated materials is expected to decrease due to the proposed reduction of approximately 46m in the length of the CCGC01 pipeline and the removal of one maintenance hole along the CCGC01 alignment. Construction of the services corridor will require additional excavation. However, excavation for the water and electricity services is minimal and will be less than 1m deep and approximately 500mm to 2m wide. Therefore, it is anticipated that the overall volume of excavated materials is expected to slightly decrease because of the proposal change. Excavation works will occur in areas with moderate to high potential for salinity. The proposed change on CCGC01 at 812-844 Luddenham Road and for CCPM are in proximity to Cosgroves Creek where there is high potential for salinity. Increased disturbance of saline soils increases the potential for transfer of saline sediments offsite, especially in proximity to creek lines. Potential impacts can be managed through implementation of the mitigation measures in the approved REF. No additional measures are required.
Water and drainage	The proposal change will not directly impact watercourses, alter surface water drainage patterns or adversely affect flood behaviour. The proposal change involves shifting the CCGC01 alignment at 812-844 Luddenham Road closer to Cosgroves Creek, through an existing dam on the property. The revised alignment is approximately 40m from Cosgroves Creek at its nearest point. The existing dam will be drained by the developer (Cornish) under their Development Approval prior to construction of the gravity pipeline. Associated maintenance holes on CCGC01 remain outside of terrestrial groundwater-dependent ecosystems (GDE), but their locations have shifted closer to the boundary of the mapped GDE. Due to the short duration of the works (approximately 7 months) associated with the construction of these maintenance holes and the reduction of one maintenance hole along this section of the alignment (i.e., less groundwater ingress), the proposal change is not anticipated to have a measurable change to impacts on these ecosystems. Any potential impacts can be managed through implementation of the mitigation measures in the approved REF.
Flora and fauna	The proposal change is located within the Cumberland Plain Conservation Plan (CPCP) boundary. A desktop review of the NSW State Vegetation Type Map (SVTM) was undertaken on 09 March 2026 to identify Plant Community Types (PCTs) and threatened ecological communities (TECs) within the proposed areas.

Aspect	Potential additional impacts
	No PCTs or TECs were identified within non-certified lands under the CPCP for all of the proposed areas. The desktop assessment identified a small patch of PCT 4025: Cumberland Red Gum Riverflat Forest within certified land under the CPCP along the revised CCGC01 alignment at 812-844 Luddenham Road. Historic satellite imagery from October 2018 shows that this area has since been cleared or disturbed (refer to **Figure 7**). There is a small patch of PCT 3320: Cumberland Shale Plains Woodland within certified land that intersected with the approved CCGC01 alignment. Impacts to this patch of native vegetation will now be avoided due to the proposal change. No additional impacts to flora and fauna are anticipated due to the proposal change. Any potential impacts can be managed through the implementation of the mitigation measures in the approved REF.
Heritage ***This information has been redacted to protect sensitive Aboriginal heritage information***	**Aboriginal Heritage**

Aspect	Potential additional impacts
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Non-Aboriginal Heritage

The proposal change intersects with one non-Aboriginal heritage item: The Fleurs Radio Telescope Site, a local heritage item listed in Western Parkland SEPP (ID: I5).

In 2019, the University of Sydney (owners of the Fleurs Radio Telescope Site) commissioned Cultural Resources Management (CRM) to complete a heritage assessment to identify the cultural resources that remain within the site and determine the heritage significance of the site (CRM, 2019). This included completion of a site survey to identify and map areas of high archaeological potential, including physical remnants scattered throughout the site (refer to **Figure 5**).

No identified Fleurs Radio Telescope Relics are within the proposed construction impact area. One relic is located approximately 1m south of the proposed construction area for the pressure main. Barrier fencing will be installed along the boundary of the construction impact area and identified as a "no-go zone" to ensure that construction activities do not extend into areas of the sites outside of the proposed area. Therefore, no impacts are anticipated.

Table 4-2 Mitigation measures

Mitigation measures
An application for a variation of the existing AHIP 5434 should be made under section 90D of the ***National Parks and Wildlife Act 1974*** for the land and associated objects within the boundaries of the proposed construction impact area. The AHIP variation should be sought to include the specified Aboriginal sites and Aboriginal objects contained within the proposed construction areas as shown in **Figure 8** to **Figure 10**.
Harm to the impacted areas of SCW T2, CCW AFT1, CCW AFT2, CCGC PAD 2 and CC AS1 that are outside of the approved AHIP 5434 boundary is only permitted once the AHIP variation has been granted and community collection completed.

Mitigation measures

All works within the approved AHIP area and AHIP variation area must be undertaken in accordance with the conditions of the AHIP.

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Figure 4: Environmental Constraints (1 of 3)

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Figure 5: Environmental Constraints (2 of 3)

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Figure 6: Environmental Constraints (3 of 3)



Figure 7: Historic Satellite Imagery at 812-844 Luddenham Road (October 2018)

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Figure 8: AHIP Variation Areas (1 of 3)

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Figure 9: AHIP Variation Areas (2 of 3)



Figure 10: AHIP Variation Areas (3 of 3)

5. Conclusion

Sydney Water has prepared this REFA to assess the potential environmental impacts of Cosgroves Creek SP1246 Services and Pipeline Alignment Changes. The proposal change is required to meet Sydney Water's objective to provide timely delivery of reliable wastewater infrastructure to support development and growth expected in the SWGA and WSAGA. It will create an efficient wastewater management system while minimising impacts to landowners in the area.

The main potential additional construction environmental impacts of the proposal change include impacts to Aboriginal heritage. The proposal change incorporates landowner feedback into the design, minimising potential impacts on the community. The proposal change will not result in any changes to the operational impacts assessed in the approved REF.

The proposal change aligns with the principles of Ecologically Sustainable Development (ESD) listed in the approved REF. ESD considerations in addition to those covered in the approved REF are provided in **Appendix B**. The proposal change 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 reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal change will alter the extent of impacts on identified Aboriginal heritage areas. Potential impacts to Aboriginal heritage may reduce the scientific value of the locality. A variation to the approved AHIP (AHIP 5434) will be in place prior to any impacts to Aboriginal heritage outside of the approved AHIP boundary. Salvage has been completed in accordance with the conditions of the approved AHIP 5434 for the Aboriginal heritage areas within the approved AHIP boundary. Additional community collection will be undertaken as required by the AHIP variation once it is received.
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 will alter the extent of impacts on identified Aboriginal heritage areas. Potential impacts to Aboriginal heritage may result in impacts to anthropological, archaeological, cultural, historical or scientific value for present or future generations. However, a variation to the approved AHIP (AHIP 5434) will be in place prior to any impacts to Aboriginal heritage outside of the approved AHIP boundary. Salvage has been completed in accordance with the conditions of the approved AHIP 5434 for the Aboriginal heritage areas within the approved AHIP boundary and approved REF. Additional community collection will be undertaken as required by the AHIP variation once it is received, to ensure knowledge of the Aboriginal heritage sites is collected prior to construction commencement.

Appendix B – Consideration of Ecologically Sustainable Development

Additional ESD consideration are covered in the table below.

Principle	Proposal alignment
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 change decreases the overall cost to deliver the wastewater infrastructure, providing efficient use of resources and 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		

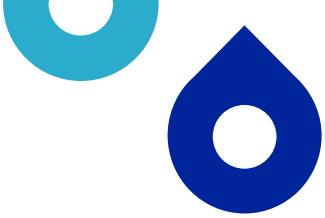
TISEPP section	Yes	No
Will the proposal be on land adjacent to land reserved under the ***National Parks and Wildlife Act 1974*** or land acquired under Part 11 of that Act***? If so, consult with DPE (NPWS).***		X
Will the proposal be on land in Zone C1 National Parks and Nature Reserves or on a land 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

Appendix D – Aboriginal Cultural Heritage Assessment Amendment Report

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.

This information has been redacted to protect sensitive Aboriginal heritage information



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