Review of Environmental Factors Addendum

IN.P0000434 Potts Hill Pressure Tunnel shutdown and inspection - revised groundwater dewatering volume

Determination

This Review of Environmental Factors Addendum (REFA) assesses potential environmental impacts of groundwater dewatering for the planned shutdown and inspection of the Pressure Tunnel. 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 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]
James Salinas Environmental Scientist Sydney Water Date: 11/06/2026	Emma McIntyre Senior Environmental Scientist Sydney Water Date: 11/06/2026	Sameed Ejaz Project Manager Sydney Water Date: 12/06/2026

Decision Statement

The main potential additional construction environmental impacts of the proposal change include impacts to availability of groundwater for other users and impacts to biodiversity values that are dependent on groundwater. Additional impacts to these values are considered unlikely. After works are complete the Pressure Tunnel will recommence standard operation. 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]

Jill Berwick, A/Senior Manager
Environment and Heritage Services,
Sydney Water
Date: 19/06/2026

1 Proposal description

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

Aspect	Relevance to proposal
Approved REF and REFA	Pressure Tunnel Inspection (August 2025). Presssure Tunnel shutdown Ausgrid electrical works (March 2026)
Proposal need and objectives	The proposal is part of the Potts Hill Pressure Tunnel shutdown and inspection program. This program is to comply with Sydney Water's requirement to inspect the Pressure Tunnel every 30 years. The next inspection is scheduled for winter 2027. The shutdown is to assess the tunnel's condition and remove monitoring equipment. Works for the proposal are expected to commence in mid-2027 and be completed within 8 months. This includes enabling works, shutdown, dewatering, inspection, repairs, maintenance and demobilisation as detailed in the approved REF.
Proposal change description and methodology	The proposal involves works to enable and support the shutdown, dewatering and inspection of the Pressure Tunnel. The approved REF assumed dewatering of 3.23 ML of groundwater from the Pressure Tunnel's crown drain via shafts 5 and 11. Since the determination of the REF, a detailed technical review of the groundwater conditions, previous assessments and a trial shutdown of the Pressure Tunnel in 2018 was undertaken as part of detailed design for the proposal. This technical review identified the need to revise the volume of anticipated groundwater to be dewatered. The revised total groundwater dewatering volume is now estimated to be up to 156.21 ML from Shaft 5 and 251.6 ML from Shaft 11. This is a revised total of up to 407.81 ML over the 8 months that the Pressure Tunnel will be shut down. The revised volume adopts a conservative value to be extracted for assessment, and g is likely to be less than this No changes are proposed to the methods used in extraction, disposal or management of groundwater.
Justification for proposal change	The proposal requires shutdown of the Pressure Tunnel for a period of about 8 months. This is to allow adequate inspection of the total length of the Pressure Tunnel. The revised groundwater dewatering volume is based on a technical review (Appendix D) of previous dewatering and groundwater assessments including the 2018 trial shutdown, which resulted in extraction of 61.7 ML in a period of one month.
Location and land ownership	Groundwater dewatering is via shafts 5 and 11 on the Pressure Tunnel. Locations and respective land zoning are listed below: • Shaft 05: 30 Therry Street West, Strathfield South, SP2 Infrastructure • Shaft 11: 9 Weston Street, Dulwich Hill, SP2 Infrastructure.

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.

2 Consultation

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

2.1 Community and stakeholder consultation – proposal

Sydney Water and the Delivery Contractor are undertaking consultation with local councils and residents as part of the approved REF and approved REFA. The proposal requires additional consultation with the Strathfield and Inner West Councils prior to the delivery of the works. This is to advise councils of the proposed change in dewatering volume assessed in this REFA.

Sydney Water has consulted with NSW Department of Climate Change, Energy the Environment and Water (DCCEEW) to advise on the increased volume of water proposed to be extracted. This consultation occurred to provide advanced notice of the change.

This REFA and the approved REF from August 2025 will form part of the submission to DCCEEW for the Water Supply Works Approval (WSWA).

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).

No formal consultation was required under the TISEPP. The Delivery Contractor is required to consult with local councils, adjacent businesses and residents prior to the commencement of works. Further detail is provided in Appendix C.

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
Strathfield Local Environmental Plan 2012	The proposal is located on land zoned: Shaft 05: 30 Therry Street West, Strathfield South, SP2 Infrastructure.
Inner West Local Environmental Plan 2022	The proposal is located on land zoned: Shaft 11: 9 Weston Street, Dulwich Hill, SP2 Infrastructure.
State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP)	The Pressure Tunnel is a large water pipeline transporting water from Potts Hill to near Waterloo. Section 2.159(1) of the TISEPP permits development by or on behalf of a public authority for water reticulation systems without consent on any land. The proposal is to inspect the Pressure Tunnel and meets the definition of a "water reticulation system". As Sydney Water is a public authority, the proposal is permissible without consent.

Table 3-2 Consideration of key environmental legislation

Legislation	Relevant to proposal	Permit or approval	Timing and responsibility
Water Management Act 2000	The proposal details the revised volume of groundwater proposed to be extracted during the winter 2027 shutdown and inspection of the pressure tunnel. The revised volume of water is 407.81 ML to be extracted over the 8 months. A WSWA is required to be obtained from DCCEEW for the extraction of groundwater.	WSWA.	Pre-construction, Sydney Water.
Sydney Water Act 1994	Groundwater is to be discharged to the wastewater network to avoid the potential contamination of waterways, in line with the approved REF.	Approval to discharge to wastewater network.	Pre-construction, Sydney Water.
Protection of the Environment Operations Act	Dewatered potable water from the pipeline is to be treated and discharged in line with the approved REF.	No EPL is required.	N/A

1997 (POEO Act)			
Heritage Act 1977	A s57 exemption was obtained from Sydney Water's Heritage Advisor in August 2025 to support the approved REF. This exemption was updated in March 2026 to allow for works detailed in the approved REFA. The proposal relates to the revised volume of water proposed to be extracted during dewatering of the Pressure Tunnel. The Pressure Tunnel and associated shafts are listed on Sydney Water's section 170 heritage register, the State Heritage Register and under the different LEPs of the local councils they are situated in. Sydney Water's Heritage Advisor has reviewed the proposal change and determined that the existing s.57 exemption is still applicable for the works, including the proposal change.	s57 exemption.	Pre-construction, Sydney Water (obtained)

4 Environmental assessment

The environmental impacts checklist (SWEMS0019.01) was considered for the proposal change. Table 4-1includes only the potentially 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

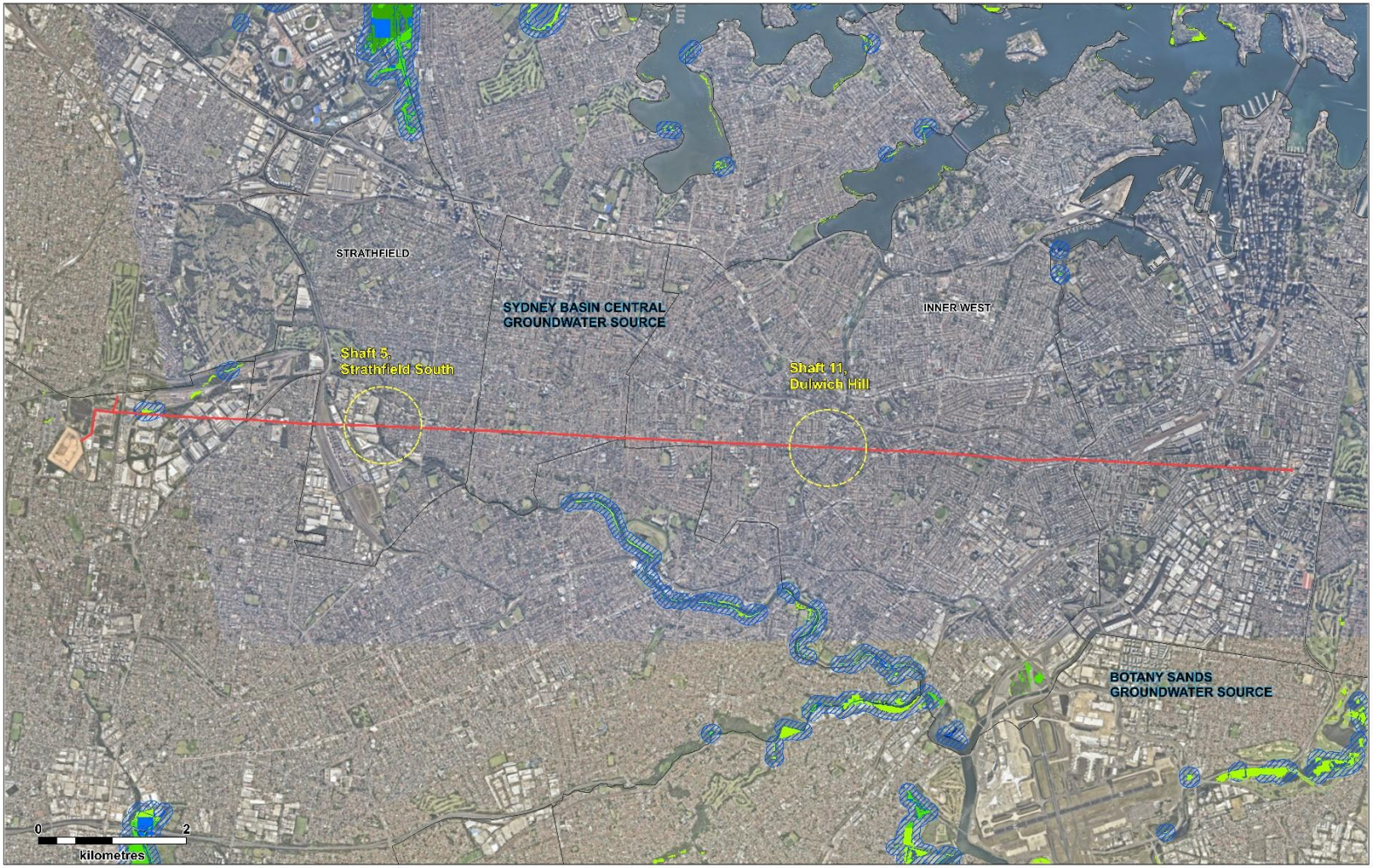
Aspect	Potential additional impacts
Water and drainage (groundwater)	This assessment has considered the potential impacts of the increased groundwater dewatering volume on availability of groundwater for other users. The approved REF established that there would be no surrounding users that would be impacted by the proposal. Groundwater is to be extracted via the crown drain which drains groundwater from outside the Pressure Tunnel to avoid the risk of potential collapse. Impacts to the availability of groundwater for other users as a result of the proposal change are considered unlikely. This is based on studies undertaken at the time of previous shutdowns which indicate the area of drawdown is limited: • there was no obvious groundwater level response observed in groundwater monitoring piezometers at Shafts 5 or Shaft 9 during a previous dewatering period in 1993 (GHD 2018) • the standing water levels in the monitoring piezometers at shafts 5, 9 and 15 remained stable during the 2018 dewatering event, suggesting that the Pressure Tunnel dewatering did not have an obvious impact on standing groundwater levels at these locations (Ensure 2018) • theoretical drawdown calculations by WSP (2026) for the proposed 2027 shutdown are between 1.0 m for shallower parts of the Pressure Tunnel and 1.4 m for deeper parts of the Pressure Tunnel. • groundwater drawdown is confined to the immediate tunnel corridor. This is due to the limited connectivity of the crown drain with the surrounding aquifer and low hydraulic conductivity (WSP 2026) • the influence of potential drawdown decreases with increasing distance from each shaft site (and Pressure Tunnel) (GHD 2018). The assessment indicates that additional groundwater to be extracted as a result of the proposal change would not expand the area of drawdown, and no surrounding groundwater users would be impacted. The proposal is within the Sydney Basin Central and Botany Sands groundwater sources. The groundwater assessment completed for the approved REF determined that groundwater is likely to be contaminated and should be discharged to the wastewater network (or to a licensed facility). The proposal is not expected to have any other impacts on surface water, drainage or groundwater.
Flora and fauna	This assessment has considered the potential impacts of the increased groundwater dewatering volume on biodiversity values that are dependent on availability of groundwater. Review of locations of NSW wetlands listed under environmental planning instruments (EPI), coastal wetlands listed under the

	Resilience and Hazards SEPP, Ramsar wetlands listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and groundwater dependant ecosystems (GDEs) was undertaken to inform this assessment. Figure 4-1 shows the proposed dewatering locations in Strathfield South and Dulwich Hill, and mapped wetland areas in the vicinity. Impacts to EPI, coastal, and Ramsar wetlands and GDEs are considered unlikely as: • there are no EPI listed or Ramsar wetlands in proximity to the proposal • there are no coastal wetlands or GDEs within 500m of the dewatering shaft sites (shafts 5 and 11) • groundwater drawdown is confined to the immediate tunnel corridor. This is due to the limited connectivity of the crown drain with the surrounding aquifer and low hydraulic conductivity (WSP 2026) • the influence of potential drawdown decreases with increasing distance from each shaft site (and Pressure Tunnel) (GHD 2018).
Cumulative and future trends	The proposal is comprised of groundwater dewatering during shutdown and inspection of the Pressure Tunnel. Sydney Water is required to undertake this activity every 30 years. Potential cumulative impacts from the proposal and the dewatering works are to be managed through the implementation of the mitigation measures listed in Table 4-2, the approved REF and the approved REFA

Table 4-2: Mitigation measures

Mitigation measures
General
Implement mitigation measures from the approved REF and the approved REFA. Incorporate those measures into the Construction Environmental Management Plan (CEMP).
Water and drainage
Seek approval for the revised volume of water and discharge criteria from the relevant Sydney Water Network Area Manager prior to discharge of groundwater to the wastewater system. Otherwise, tanker by a licensed waste contractor and dispose off-site to an appropriately licensed facility.
Obtain a WSWA from NSW DCCEEW for the revised volume of groundwater and comply with any relevant conditions.

Figure 4-1 Proximity of groundwater dependant biodiversity values to dewatering shafts



5 Conclusion

Sydney Water has prepared this REFA to assess the potential environmental impacts of the increase in groundwater to be extracted during the shutdown and inspection of the Pressure Tunnel. The proposal change was required due to additional groundwater information becoming available, including the findings of a recent detailed technical review of the groundwater and dewatering assessment including information from the Pressure Tunnel test shutdown in 2018.

The main potential additional construction environmental impacts of the proposal change include impacts to the availability of groundwater and impacts to biodiversity values that are dependent on groundwater.

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). 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

There are no requirements in addition to those considered in the approved REF

Section 171 Checklist	REF finding
Any environmental impact on a community	There may be short-term impacts on the community. These have been assessed in the approved REF. There will be environmental improvements by providing a reliable water service to the local community.
Any transformation of a locality	The proposal will not result in the transformation of a locality.
Any environmental impact on the ecosystems of the locality	The proposal will not result in environmental impacts to ecosystems of the locality. Potential impacts to GDEs have been considered in this REFA. No impacts are anticipated due to the distance of the dewatering from GDEs and other groundwater dependent biodiversity values.
Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality	The proposal 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 Pressure Tunnel and associated shafts are listed on the state heritage register, section 170 register and the various LEPs. The proposal will not have an adverse impact on the significance of the Pressure Tunnel and associated shafts. The proposal seeks to ensure the continued operation of the Pressure Tunnel. A s.57 heritage exemption has been obtained from Sydney Water's Heritage Advisor and applies to all works associated with the Pressure Tunnel shutdown and inspection.
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. The proposal does not involve vegetation removal or impacts to flora and fauna.
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. Impacts to flora and fauna have been considered in this REFA and the approved REF. There are no changes to the approved REF.
Any long-term effects on the environment	The proposal will not have any long-term impacts on the environment but will have a long-term benefit by providing a reliable and modern water service for the areas serviced by the Pressure Tunnel.
Any degradation of the quality of the environment	The proposal will maintain the quality of the environment. No change from the approved REF.

Any risk to the safety of the environment	The proposal will ensure 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. Groundwater is to be discharged to the wastewater network reducing the risk of potential contamination.
Any pollution of the environment	Environmental mitigation measures will mitigate the potential for the proposal to pollute the environment. No pollution of the environment is expected. The proposal does not require an EPL.
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 affect demand on resources.
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 these factors.
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 maintenance 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 Ecologically Sustainable Development

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

Principle	Proposed 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. There is non scientific uncertainty relating to the proposal. Potential impacts to groundwater have been assessed through a technical specialist study. A conservative value has been identified for the volume of groundwater proposed to be extracted.
Inter-generational equity – *the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations.*	The proposal will help to meet the needs of future generations by providing a reliable water service through the ongoing use of the Pressure Tunnel.
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. Potential impacts to flora and fauna and GDEs have been considered for this REFA. No impacts were identified given the distance of dewatering works to GDEs and other groundwater dependent biodiversity values.
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

Appendix D – Technical Review of Groundwater Dewatering Report (WSP 2026)

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