

B Consolidated mitigation measures

This appendix consolidates the mitigation measures for the Killingworth to Kooragang Island Pipeline (SSI-46360740).

Table B.1 outlines the mitigation measures as outlined in the *Lenaghan Lateral Pipeline Modification 1 – Modification Report* (Umwelt 2023) (Modification 1 Report).

Table B.2 outlines additional mitigation measures specific to the Hunter Lateral Pipeline (HLP; Modification 3). These additional mitigation measures are indicated in **red text**.

There were no additional mitigation measures proposed as part of Modification 2.

Table B.1 Consolidated mitigation measures for Modification 1 (Umwelt 2023)

Reference	Mitigation measure
Biodiversity	
B1	Salvage of biodiversity features, including habitat resources (e.g., hollow logs, tree hollows, fallen timber and rocks/boulders).
B2	A pre-clearing procedure will be implemented to minimise the potential for impacts on native fauna species (focusing on threatened species) as a result of the clearing of hollow-bearing trees. The pre-clearing procedure is designed to minimise impacts to hollow-dependent and ground-dwelling fauna.
B3	Water management measures consistent with the APGA [Australian Pipelines and Gas Association] <i>Code of Environmental Practice</i> (2017) will be employed during the construction of the Proposed Modification.
B4	All machinery and equipment will be cleaned thoroughly prior to entering the Development Subject land.
B5	Appropriate fencing and signposting of areas to prevent the uncontrolled entry of people, accidental disturbance and to minimise vehicular and human traffic
B6	Clear and visible signage is to be appropriately located to inform the workforce and others of the restricted access or otherwise of areas outside the Subject land.
B7	Locking of gates to prevent unauthorised vehicle, person access and disturbance
B8	Preparation of a Soil and Water Management Plan (SWMP). The SWMP will be incorporated into the CEMP [Construction Environmental Management Plan] and include mitigation measures.
B9	Minimising to the extent practicable the period of time the trench is open.
B10	Providing opportunities for fauna to exit the trench such as trench plugs or other appropriate measures at a minimum of every 500 m along the trench
B11	Installation of fauna shelter devices such as sawdust filled bags at 250 m intervals along the trench.
B12	Daily pre-start inspections of the open trench and removal of trapped fauna by suitably qualified personnel as required
B13	Welded pipe strings will be end capped to prevent fauna entry.
B14	A Construction Environmental Management Plan will be prepared to document the environmental impact mitigation, performance targets and monitoring requirements for the construction and operational phases of the Proposed Modification

Reference	Mitigation measure
Aboriginal Cultural Heritage	
A1	The Proponent should ensure that all employees and contractors are aware that it is an offence under Section 86 of the NPW Act [<i>National Parks and Wildlife Act 1974 (NSW)</i>] to harm or desecrate an Aboriginal object unless that harm has been subject to approval as part of the necessary approvals process.
A2	An Aboriginal Cultural Heritage Management Plan for the Modification should be developed in consultation with the registered Aboriginal parties. It should include measures that will be implemented for: • Impact to the area of archaeological potential identified in Section 6.2 and 6.3 (i.e. KKLP PAD08) [of the Modification 1 Report] that cannot be practically avoided. This will include the provision of methodologies for the completion of the recommended mitigation activities. This may include community collection and/or excavation (refer to Section 11.0 [of the Modification 1 Report] for methodologies). • Protocols to be followed in the instance that additional ground disturbance works are required outside the Modification Area. This will include requirements for further survey and assessment of any such works. • The management of any new Aboriginal archaeological sites that may be identified during these inspections or over the course of construction or operational activities (refer to Section 11.3 [of the Modification 1 Report]). • The management of Aboriginal skeletal remains should any be identified within the construction or operational activities for the Modification (refer to Section 11.4 [of the Modification 1 Report]). • Monitoring and reporting on the effectiveness of these measures and the outcome of any approved mitigation works. • Ensuring that all staff and contractors working on the Modification receive Aboriginal cultural heritage awareness training and are informed of their obligations to comply with the requirements of the Aboriginal Cultural Heritage Management Plan.
Water	
W1	A construction monitoring program is recommended to be developed and included in the CSWMP [sic] for the Proposed Modification to observe any changes in surface water quality during construction and inform appropriate management measures.
W2	Development and implementation of a CEMP that addresses temporary storage and handling of fuels, oils and chemicals, including a Spill Response Plan.
W3	Preparation of a Dewatering Procedure to be implemented in the event of excavations encountering ephemeral or temporary groundwater, including shoring advice to minimise groundwater inflows, water quality requirements before discharge, any recommended treatment, discharge location and method, monitoring requirements and permits and records required
W4	Excavation activities will implement testing and management procedures for potential acid sulfate soils in accordance with [the] <i>Acid Sulphate Soil Manual</i> (Acid Sulphate Soil Management Advisory Committee, 1998).
W5	Monitoring of the receiving waterways downstream of the pipeline location to identify any evidence of channel erosion and scour.
W6	An operational monitoring program is recommended to be developed and included in the OEMP [Operations Environmental Management Plan] for implementation following completion of construction to observe any changes in surface water from operation of the Proposed Modification.
Noise	

Reference	Mitigation measure
N1	A Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the Construction Environmental Management Plan (CEMP). The NVMP will generally follow the approach in the ICNG [<i>Interim Construction Noise Guideline</i>] and identify: • All potential significant noise and vibration generating activities associated with the Modification • Feasible and reasonable mitigation measures to be implemented • A monitoring program to assess performance against relevant noise and vibration criteria • Arrangements for consultation with affected neighbours and sensitive receivers, including notification and complaint handling procedures • Contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.
N2	All sensitive receivers likely to be affected by highly or moderately intrusive noise levels, or noise levels above the Sleep Disturbance NMLs [Noise Monitoring Levels] for work outside of standard construction hours (identified in the Hydrostatic testing scenario) will be notified at least 7 days prior to commencement of any planned works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: • The Modification • The construction period and construction hours • Contact information for Modification management staff • Complaint and incident reporting • How to obtain further information.
N3	All employees, contractors and subcontractors are to receive an environmental induction. The induction must include at a minimum: • All applicable mitigation measures • Hours of works • Any limitations on high noise-generating activities • Location of nearest sensitive receivers • Designated parking areas • Relevant approval conditions • Incident procedures.
N4	Where feasible, contractors are to keep noise to a minimum including no shouting or the use of loud stereos/radios on site.
N5	No dropping of materials from height, throwing of metal items or slamming of car doors.
N6	In the event of noise complaints from the community, a noise verification program should be carried out in accordance with the NVMP for the Modification.
N7	The combined noise levels of plant and equipment must have operating sound power levels consistent with those assessed in each scenario.
N8	Non-tonal reversing beepers must be fitted and used on all construction vehicles and mobile plant used regularly on site and for any out of hours work.
N9	Limit the use of engine compression brakes at night.
N10	The CEMP and NVMP should be regularly updated to account for any changes in noise and vibration management of the Modification.
N11	Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration should be scheduled during less sensitive time periods.

Reference	Mitigation measure
N12	Noise emitting plant to be directed away from sensitive receivers.
N13	Plant used intermittently to be throttled down or shut down when not in use.
N14	Where practical, loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers.
N15	Given the distance between the Modification and receivers, no construction vibration impacts are anticipated based on the safe working distances outlined in the CNVG [<i>Construction Noise and Vibration Guideline</i>]. Should more intensive vibration generating equipment be proposed at locations nearer to receivers or near identified heritage structures, it is recommended that a targeted vibration assessment be undertaken to determine impacts and specific mitigation measures, if required.
N16	Vibration generating plant listed in Table 5.6 [of the Modification 1 Report] should not be used within the identified safe working distances. If vibratory rollers or other vibration inducing construction sources are required within the safe working distances for residential receivers nominated in Table 5.6 [of the Modification 1 Report] the following is recommended: • An independent specific structural assessment is undertaken on the structure to ascertain the structural integrity and its ability to withstand vibration, and establishment of an appropriate vibration criterion • A dilapidation survey is undertaken on the structure prior to works commencing, and regular inspection of the structure throughout the construction activities • Pre-construction vibration monitoring to establish baseline vibration impacts induced on the structure from road traffic • Where appropriate, continuous vibration monitoring is conducted on the structure for the duration of the period of construction while vibration generating equipment is used. The vibration logger should be equipped with the facility to remotely alert the site to reduce or cease construction activities if vibration levels are approaching the criterion threshold • Stationary noise sources should be enclosed or shielded where feasible or reasonable.
Hazards	
H1	All underground pipelines and stations will be designed and constructed in accordance with relevant standards including the AS/NZS 2885 series and ASME B31.12 (for pipelines and stations that are to be 10 mol% hydrogen ready).
H2	All fittings and equipment will be Australian Gas Association (AGA) certified and suitably rated for the area in which it is installed.
H3	The transmission pipeline will be designed and constructed not to rupture when subject to the identified credible threats (including ground movement and buoyancy, external interference, flooding, lightning, corrosion, fatigue) along the pipeline alignment. These threats will be mitigated through: • Minimum pipeline wall thickness • Appropriate depth of cover • Unconsolidated backfill for pipeline sections with greater potential for ground movement (areas with potential for mine subsidence) • Corrosion protection coatings (fusion bonded epoxy) and cathodic protection systems • Lightning protection • Selection of pipeline alignment to as far as practicable avoid residential land use and areas of geotechnical instability.
H4	Pipeline systems will have appropriate controls and interlocks to detect significant loss of containment events and automatically shut down gas supply. This will limit the potential for ignition of a gas release by limiting the duration of the release as well as limiting the duration of a jet fire event should the release be ignited.

Reference	Mitigation measure
H5	Surface facilities will be located in a secure compound.
H6	Asset protection zones around the compounds will be maintained free of combustible material
H7	Hazardous area classification will be undertaken for all installations and a hazardous area dossier prepared for the Proposed Modification.
H8	Weekly site checks of surface facilities which will include audible and visual leak inspections.
H9	Atmosphere testing (e.g. oxygen, LEL) as required (depending on activities) for personnel entry to surface facility compounds and mandatory testing for vehicle entry (as a vehicle is an ignition source).
H10	Surface facility fencing to ensure off-site ignition sources (e.g. smokers) are excluded from the defined hazardous envelope.
H11	Bollards and concrete edging/kerbing (generally at edge of hazardous area) to protect pipe and fittings from vehicle/mobile plant impacts.
H12	Commissioning activities will be strictly controlled to ensure no ignition sources near vented gas.
H13	A maintenance system will be implemented that includes routine inspection and maintenance plans in accordance with AS/NZS 2885.3.
H14	A work permit system and job safety analyses will be implemented for maintenance activities.
H15	Hot work procedures and permits.
H16	Signage and pipeline markers will be located in consultation with land holders, with markers placed at a frequency to ensure continual line of sight along the alignment and will also be located at any bends, at property boundary fences and either side of crossings such as roads or watercourses.
H17	Pipeline marker tape will be buried above the along entire length of the underground pipeline to indicate the presence of the pipeline to anyone undertaking an excavation.
H18	The location of the underground pipeline will be registered with Dial Before You Dig.
H19	Prepare, or update as appropriate, emergency management plans consistent with HIPAP No. 1 Emergency Planning (Department of Planning, 2011b) and <i>Planning for Bushfire Protection 2019</i> (NSW Rural Fire Service, 2019) for both the construction and operation phases of the Proposed Modification.

Table B.2 Consolidated mitigation measures for Modification 3

Reference	Mitigation measure	Timing
Stakeholder engagement		
SE1	The Stakeholder Management Plan (SMP) will be updated to include the following: - Identification of any additional key stakeholders that may have an interest in the modification as it is constructed and operated. - Procedures to ensure continuous, regular engagement with landholders, near neighbours, community service providers and Aboriginal groups. - Clear communication procedures with host landholders and near neighbours to advise them of after-hours construction activities and	Detailed design Planning Construction

Reference	Mitigation measure	Timing
	transport movements, and to consult on the modification as it progresses. • A complaints and grievances mechanism to receive, investigate, act and report back on community complaints and feedback received about the modification. • Monitoring and evaluation measures to ensure the SMP is supporting effective stakeholder engagement and communications.	
Hazards		
HZ1	The Hunter Lateral Pipeline will be designed to have sufficient depth of cover to prevent pipeline damage arising from ground movement or traffic loads.	Detailed design
HZ2	Jemena will ensure that the detailed design of the Hunter Lateral Pipeline will incorporate the 'Flood Impacts' mitigation measures outlined in Table 8-6 of the <i>Surface Water and Groundwater Assessment</i> (Stantec 2026) (SWGA). This includes: • Elevating ground-level critical pipeline components are elevated above the 1 in 100-year ARI (Average Recurrence Interval) + 20% rainfall increase flood level. A 0.5 m freeboard for critical pipeline components will also be included. • For electrical fixtures, installing fixtures above the Flood Planning Level (FPL) where practical, or installing fixtures on separate earth-leakage protected circuits if the fixture is located below the FPL. – The FPL is the 1% AEP (Annual Exceedance probability) flood level, with a freeboard of 500 mm. • Selecting construction materials that suit the flood hazard level for the modification area.	Detailed design
HZ3	'Flood Impacts' mitigation measures for construction works, per Table 8-6 of the SWGA, will be incorporated into a project Construction Environmental Management Plan (CEMP). Mitigation measures will include: • Ensuring major works for the Hunter Lateral Pipeline is conducted during the dry season. • Subscribing to flood watch, flood warning and rainfall/river height monitoring notifications from the Bureau of Meteorology (BOM). • Installing portable flood barriers or bunds around laydown areas when a flood watch or flood warning is issued by the BOM.	Construction
HZ4	A Safety Management Study (SMS) consistent with AS/NZS 2885.6:2018 requirements will be conducted. The SMS will identify threats to the pipeline and identify appropriate measures to mitigate identified threats.	Construction Commissioning
HZ5	A Flood Emergency Management Plan (FEMP) will be prepared to manage human risks throughout the modification area. The FEMP will detail warning triggers, shut-down procedures and evacuation arrangements.	Construction
HZ6	An Emergency Response Plan (ERP) will be developed and implemented to address all pipeline-related emergency events. The ERP will detail response and recovery strategies and procedures for all pipeline-related emergencies, including: • Loss of containment. • Full-bore ruptures. • Fires.	Commissioning

Reference	Mitigation measure	Timing
	Natural events.	
HZ7	Jemena will ensure that the Hunter Lateral Pipeline's integrity is continuously monitored and maintained in accordance with a pipeline management system. This includes ensuring the pipeline corridor is managed in accordance with section 7 of Australian Standards (AS) 2885.	Operation
Aboriginal cultural heritage		
AH1	The Cultural Heritage Management Plan (CHMP) for SSI-46360740 will be amended to include provisions for impacts to site 38-4-1810.	Prior to construction
AH2	If the status of Site 38-4-1810 remains valid on the Aboriginal Heritage Information Management System (AHIMS), a surface salvage of the site will be attempted in accordance with the procedures in Section 5.5.1 of the CHMP. - No further management of the site is necessary if the site is marked as 'destroyed' on AHIMS. - After salvage works are completed, arrangements will be made to temporarily store Site 38-4-1810 during construction in a secure area.	Prior to construction
AH3	If Site 38-4-1810 is salvaged, the proponent will determine an appropriate location to rebury the Aboriginal cultural heritage artefact in consultation with the Registered Aboriginal Parties (RAPs). Consultation will be conducted and logged in accordance with the CHMP.	Prior to construction
AH4	An unexpected finds and ancestral remains procedure will be included as part of the Hunter Lateral Pipeline's CEMP. The procedure will be consistent with the recommendations of Section 9.2.3 and 9.2.4 of the <i>Aboriginal Cultural Heritage Assessment Report (OzArk 2026)</i> (ACHAR).	Prior to construction
Traffic and transport		
TF1	A construction Traffic Management Plan (TMP) will be developed for the modification, in accordance with the recommendations provided in Chapter 7 of the <i>Traffic Impact Assessment (Amber 2026)</i> (TIA). The TMP will include management and monitoring measures to: - schedule deliveries to minimise simultaneous entry/exit heavy vehicle movements at site access points - develop driver communication protocols and deploy traffic controllers to manage vehicle movements - ensure compliance with conditions and restrictions that apply to roads - ensure safe driving behaviour, through a driver's code of conduct - address complaints and feedback related to construction traffic - notify relevant stakeholders and the local community of after-hours heavy and oversize/overmass vehicle movements.	Prior to construction
TF2	Engagement with the following key stakeholders will be conducted to ensure the modification does not create adverse impacts to ongoing major projects and road safety: - CDC NSW, the operator of the Newcastle region's public and school buses. - The M1 Pacific Motorway Extension project team.	Prior to construction Throughout construction

Reference	Mitigation measure	Timing
	Sydney Trains, freight rail operators and Transport Asset Manager for NSW, which are relevant stakeholders for the Main Northern Line.	
Noise and vibration		
NV1	Develop a Construction Noise and Vibration Management Plan (NVMP), in accordance with the measures outlined in Appendix V of the <i>Construction Noise and Vibration Impact Assessment</i> (JTA 2026) (Construction NVIA). The Construction NVMP will outline a framework to guide the: - preparation of Construction Method Statements, with measures to minimise noise and vibration impacts when specific works are undertaken - monitoring and reporting on noise and vibration impacts, especially at the two NSRs that will be most affected by construction noise impacts - actions to identify the reasons and remedy any non-compliance with noise and vibration limits. The Construction NVMP will also include management and monitoring measures for noise and vibration, including: - Scheduling works and providing respite periods for sensitive receivers. - Installing temporary hoardings around work areas with no gaps. - Selecting quieter construction methods, plant and equipment. - Encouraging good work behaviours (for example, avoiding excessive engine braking, minimising shouting and loud conversations).	Prior to construction
NV2	In the Community and Stakeholder Engagement Plan (CSEP), include: - a complaints and grievances mechanism, which includes a structured procedure for responding and documenting complaints - a procedure to provide advance notice of noisy works and works outside of standard construction hours to near neighbours across multiple communication channels - provision for a community engagement liaison to maintain regular communication with near neighbours.	Prior to construction
NV3	Conduct additional noise and vibration measurements during the pipeline's commissioning phase, to verify the findings of the <i>Operations Noise and Vibration Impact Assessment</i> (JTA 2026) (Operations NVIA).	Commissioning
Air quality		
AQ1	Air quality management measures will be included in the project's CEMP, based on the recommendations provided in Chapter 4 of the <i>Construction Air Quality Impact Assessment</i> (EMM 2026) (CAQIA). The CEMP will include measures to: - Notify surrounding sensitive receivers about the modification, works to be undertaken, as well as contact details for feedback and complaints. - Keep site barriers clean using wet methods. - Ensure proper maintenance of equipment engines, and prevent engines from running at idle where possible. - Confine and stage vegetation and topsoil clearing to the area required for construction. - Revegetate exposed areas and earthworks as soon as practicable.	Prior to construction

Reference	Mitigation measure	Timing													
	- Limit works during hot, dry and windy conditions, and when dust is seen leaving the site. - Ensure vehicle loads entering or exiting the modification area are covered. - Clean any material tracked out onto public loads using water-assisted dust sweepers.														
AQ2	Air quality monitoring measures will be included in the project's CEMP, based on the recommendations provided in Chapter 4 of the CAQIA. The CEMP will include measures to: - Carry out daily site inspections and monitoring of local meteorological forecasts. - Recording site inspection results in a site inspection register. - Maintain and log dust-related complaints in a complaints register	Prior to construction													
Surface water and groundwater															
SG1	Jemena will implement the mitigation measures outlined in Table 8-6 of the SWGA through an Erosion and Sediment Control Plan (ESCP) and Stormwater Management Plan (SWMP). This includes measures to: - manage stormwater flows throughout the modification area - implement erosion and sediment controls - avoid water contamination resulting from hydrocarbon and chemical spills, as well as litter - ensure the stability of waterways and levees.	Throughout construction													
SG2	An Acid Sulfate Soil Management Plan (ASSMP) will be prepared for the modification. The ASSMP will include the groundwater dewatering mitigation measures outlined in Table 8-6 of the SWGA.	Prior to construction													
SG3	A surface water and groundwater monitoring regime will be integrated into the modification's CEMP. The monitoring regime will ensure the modification meets the performance benchmark outlined in Table 8-7 of the SWGA. Table 8-7 is replicated below. <table><tr><th>Parameter</th><th>Release criteria</th></tr><tr><td>Litter or waste</td><td rowspan="2">No release</td></tr><tr><td>Coarse sediment</td></tr><tr><td>Turbidity</td><td>Discharge turbidity value shall be less than 50 NTU and/or no greater than 10% above receiving waters immediately downstream of discharge.</td></tr><tr><td>Hydrocarbons, tannins and paint</td><td>No visible trace</td></tr><tr><td>Suspended solids</td><td>Discharges shall be less than 50 mg/l Total Suspended Solids (TSS) or equivalent turbidity as determined by laboratory analysis through the correlation of turbidity with the suspended solids limit.</td></tr><tr><td>pH</td><td>pH value 6.5 – 8.5, except where and to the extent that the natural waters lie outside of this range.</td></tr></table>	Parameter	Release criteria	Litter or waste	No release	Coarse sediment	Turbidity	Discharge turbidity value shall be less than 50 NTU and/or no greater than 10% above receiving waters immediately downstream of discharge.	Hydrocarbons, tannins and paint	No visible trace	Suspended solids	Discharges shall be less than 50 mg/l Total Suspended Solids (TSS) or equivalent turbidity as determined by laboratory analysis through the correlation of turbidity with the suspended solids limit.	pH	pH value 6.5 – 8.5, except where and to the extent that the natural waters lie outside of this range.	Prior to construction Throughout construction
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pH	pH value 6.5 – 8.5, except where and to the extent that the natural waters lie outside of this range.														

Reference	Mitigation measure	Timing
SG4	Jemena will incorporate a spill management procedure in the ERP. This procedure will include steps to be taken in the event of a hydrocarbon or chemical spill on site.	Prior to construction
Flora and fauna		
FF1	Jemena will develop a Biodiversity Management Plan (BMP) which will incorporate the mitigation measures outlined in Table 26 of the <i>Biodiversity Development Assessment Report (OzArk 2026)</i> (BDAR). These measures include the: • Prevention of over-clearing by demarcating 'no-go zones', inducting construction workers on the legislative consequences of unauthorised vegetation clearing, and ensuring authorised vegetation removal does not cause unnecessary damage to surrounding vegetation and threatened faunae. • Prevention of significant weeds and pests from establishing within the modification area by using clean fill, and ensuring machinery is clean and free from soils and weeds before entering work sites. • Protection of native fauna and their habitat by relocating any dead wood or hollows to the edge of the modification area, and relocating any fauna found in the modification area to adjoining habitat prior to vegetation clearing works.	Prior to construction
FF2	Jemena will incorporate measures in the CEMP to ensure: • Stockpiling of materials, equipment and topsoil does not occur outside the modification area or in no-go zones. • No parking occurs outside of the modification area, or in no-go zones.	Prior to construction
FF3	The management measures outlined in Section 6.6.3 of the Modification 3 Report will be implemented. This includes developing an ESCP and ASSMP, monitoring the quality of surface water and ground water, as well as providing spill response procedures in the ERP.	Prior to construction Throughout construction
FF4	Jemena will retire the required ecosystem and species credits through the Biodiversity Offsets Scheme. Credits will be retired in accordance with the offset rules set out in the <i>Biodiversity Conservation Regulation 2017</i> (NSW) (BC Regulation).	Prior to construction
Greenhouse gas		
GH1	Fuel efficiency management measures will be included in the project's CEMP, based on the recommendations provided in Section 3.7 of the <i>Greenhouse Gas Assessment</i> (EMM 2026). The CEMP will include measures to: • Minimise haul distances and double handling of materials. • Maintenance of vehicles and haul roads. • Minimising engine idling. • Conducting pre-start inspections.	Prior to construction
GH2	The project will utilise materials from local sources and low carbon materials where practical.	Design Construction
GH3	In accordance with the mitigation measures defined in Section 6.6.3 of the Modification 3 Report, disturbed areas will be progressively rehabilitated throughout construction.	Throughout construction Commissioning

Reference	Mitigation measure	Timing
GH4	A leak detection monitoring program will be established while the pipeline is in operation. Formal leak detection surveys will be conducted every 1-5 years.	Construction Operation
Historic heritage		
HH1	An unexpected finds procedure will be included as part of the CEMP. The procedure will be consistent with the notification requirements outlined in Section 146 of the <i>Heritage Act 1977</i> (NSW).	Prior to construction
HH2	The proponent will ensure construction and operational vehicles and plant will be located within clearly demarcated work zones or access roads leading to the modification area.	Throughout construction
Land contamination		
LC1	Any areas previously identified as Areas of Environmental Concern (AECs) in previous contamination assessments will be avoided where practical.	Planning
LC2	The CEMP will incorporate the acid sulphate soil, surface water and groundwater mitigation and monitoring measures outlined in Section 6.6.3 of the Modification 3 Report.	Planning Prior to construction
LC3	Further soil assessments will be undertaken where AECs cannot be avoided by the modification. If any part of the modification area contains contaminated soil, a Remediation Plan will be developed to remediate any localised contaminated soil.	Planning Prior to construction Throughout construction
LC4	The CEMP will incorporate measures to protect construction workers from health effects arising from contaminated groundwater and surface water.	Planning Prior to construction
LC5	Any special, restricted or hazardous construction waste (including contaminated soil and water) will be classified, treated and disposed in accordance with the requirements of the <i>Protection of the Environment Operations Act 1997</i> (NSW) and relevant NSW Environment Protection Authority (NSW EPA) guidelines.	Planning Throughout construction
Agricultural capability		
AG1	An ESCP will be developed, in accordance with the mitigation measures outlined in the SWGA.	Prior to construction
AG2	The CSEP will include targeted engagement activities with host landholders to ensure landholders understand: - the location of Jemena easements for the modification - what activities and land uses are allowed within the easement - how Jemena can be contacted to discuss agricultural issues in relation to the easement.	Prior to construction Construction
AG3	The CEMP will include measures to manage and monitor noxious weeds and pests, in accordance with the <i>Biosecurity Act 2015</i> (NSW).	Prior to construction
Social impacts		
SO1	A Local Participation Plan (LPP) will be developed for the modification, in accordance with the <i>Social Impact Assessment</i> (Umwelt 2026) (SIA)'s recommendations. The LPP will include measures to:	Prior to construction

Reference	Mitigation measure	Timing
	- Maximise local employment and procurement from local communities and businesses. - Support training, up-skilling and capacity of the local workforce, in collaboration with local stakeholders and training providers. - Develop 'stretch' local employment and procurement commitments in collaboration with relevant stakeholders. - Extend employment and procurement opportunities to women, Aboriginal people and people with disabilities, through appropriate target-setting. - Develop a preferred supplier panel for Aboriginal-owned businesses. - Monitor and evaluate the effectiveness of measures outlined in the LPP.	
SO2	A local buy and spend incentive will be introduced for the construction workforce.	Throughout construction
SO3	Negative social impacts will be avoided or minimised by implementing the mitigation measures outlined in this Modification Report and associated technical reports. These measures will be incorporated into a CEMP, to be developed prior to construction activities commencing.	Prior to construction
SO4	A first aid officer or nurse will be provided for the modification to provide frontline medical treatment to construction workforce.	Throughout construction
SO5	The SMP will be updated to include the following measures: - Promote Jemena's community grants program to communities in proximity to the modification - Ensure information about the modification (including its benefits, service catchment and measures to mitigate any risks) are communicated to the community.	Prior to construction Throughout construction
Cumulative impacts		
CI1	A protocol will be developed to coordinate construction activities with surrounding major projects and land uses.	Throughout construction
CI2	Early notifications of construction activities and heavy vehicle movements will be provided to the surrounding major projects and land uses.	Throughout construction